Grandview Elementary School
Gym Addition & HVAC Renovation

500 Grandview Avenue - Bellevue, Kentucky 41073

Bellevue Independent Schools Board of Education

Misty Middleton, Superintendent

DESIGN DEVELOPMENT
BG #24-059

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

DESIGN DEVELOPMENT SET

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CARDINAL ENGINEERING LAND SURVEYING

REH&A ARCHITECTS

GOP Limited Structural Engineers

KLH ENGINEERS

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Vicinity Map

Grandview Elementary
500 Grandview Drive
Bellevue, KY 41073

General Notes

1. Construct all partitions up through finish ceiling space and terminate against structural deck above. Fill heads of all partitions and walls with safing insulation, including space between top of roof beams, joists and partitions. All accessory rooms shall be extended to the drywall and made smoke tight such as at Mechanical Rooms.
2. Floor mats and window blinds are not in contract.
3. Construct partitions snug to all ductwork penetrations, electrical panel recesses, cabinet unit heater recesses, and all other miscellaneous openings. See specs regarding fire resistant sealants in fire rated partitions. Location of ductwork, cable trays and piping is not indicated on architectural drawings. Refer to mechanical / electrical / plumbing and / or fire protections drawings for extent of ductwork, piping, conduit, etc.
4. Install all access panels furnished by Plumbing, Mechanical & Sprinkler subcontractors.
5. See structural drawings for additional notes and locations regarding additional lintels, bond beams and reinforcing in masonry walls which are not indicated on architectural drawings.
6. Provide control joints in walls exceeding 30' of unbroken length and as indicated on Details and Plans
7. Some of the miscellaneous steel sizes and configurations are indicated on structural drawings. Coordinate miscellaneous steel & lintels with architect'l and structural drawings.
8. Provide sealant where dissimilar materials adjoin such as at perimeter of window frames, door frames, etc.
9. See Specifications Division 2 Section, "Earthwork" regarding earthwork allowance.
10. See Structural for lintel schedule including at doors, windows, recesses, etc.; coordinate with architectural drawings.
11. Contractor shall coordinate with various trades to ensure that all fire rated assemblies, penetrations through fire rated assemblies and joints within fire rated assemblies are constructed in accordance with approved listed assemblies per KBC 2018 Sections 714 and 715. Details of all listed assemblies utilized by the contractor on this project shall be available for the Building Inspector's review at the job trailer.
12. All penetrations through fire rated partitions shall be properly sealed as outlined in the construction documents.
13. See Building Code Notes, Sheet 0.CN for notes regarding continuous air barrier and other items.
14. Dimensions listed shall take precedence over scaled dimensions. If a dimension isn't shown, please ask architect to provide and make no assumptions.
15. General Contractor shall be responsible for coordinating all trades to avoid wall mounted items such as fire strobes/markerboards, etc.
16. Openings such as conduits, ductwork, etc. in fire-rated walls shall be sealed/filled with approved UL listed materials to maintain fire rating of the wall.
17. All full height metal stud partitions shall have deflection tracks at head.
18. Contractors shall coordinate all recessed electrical/CT boxes to ensure none of them are back-to-back, but rather offset to ensure as little sound transmission as possible.
19. All work shall conform to the 2015 International Building Code, 2018 KBC Building Code & ANSI a117.1 accessibility code.
20. The word "Typical" applies to all similar conditions unless otherwise noted.
21. Any thru-roof penetrations (ductwork, roof hatch, vents, etc.) shall have spray-foam installed around the perimeter to ensure no air leakage.
22. It is the masonry subcontractor's responsibility to provide all lintels for HVAC ductwork.
23. All exposed steel, mechanical ductwork, electrical conduits shall be painted.
24. All control joints, window perimeters, etc. shall have joint sealants applied to both sides. This includes above ceiling areas to ensure the entire joint is sealed up to the structure.
25. The general contractor shall be responsible for furnishing and installing all blocking, bracing, etc. for items such as casework, curtains, wall mounted items, etc. Blocking material shall be fire retardant blocking.
26. Contractor has option to provide non abuse-resistant drywall once above the acoustic ceiling instead of abuse resistant drywall on the entire wall. Otherwise, all drywall within exposed areas to be abuse resistant.

Legend / Symbols

- Metal wall panels on furring with rigid insulation on CMU wall, see Details
- CMU Wall
- 3 5/8" Metal studs with 5/8" backer ea. side & ceramic tile, ea. side, see Details (5 1/4")
- 3 5/8" Metal studs with 5/8" backer and ceramic tile, see Details (4 1/2")
- 3 5/8" Metal stud walls with 5/8" drywall each side & insulation, see Details (4 1/2")
- 6" Metal stud walls with 5/8" drywall each side & insulation, see Details (7 1/4")
- 100 — Door Number Notation: see Schedules on Sheet 4.0
- A — Window type-see Sheet 4.0
- Visual Display Board -see Sheet T-4 for schedule
- B/5 — Indicates section. Bottom number is the sheet on which section is drawn
- 1/7 — Structural grid centerlines
- A — Indicates enlarged detail or plan. Bottom number is the sheet on which detail is drawn
- Mech 112 — Room title, Room number
- Control Joint
- Fire extinguisher with cabinet (FEX Cab)
- DS — Downspout
- 1/7 — Indicates elevation. Bottom number is the sheet on which elevation is drawn

Sheet Index

TITLE SHEET
TS - TITLE SHEET

CIVIL/ARCHITECTURAL
D-1.1 LEVELS "C", "M" & "B" DEMOLITION
D-1.2 SITE DEMOLITION MAIN LEVEL
D-1.3 MAIN LEVEL DEMOLITION
D-1.4 SECOND FLOOR DEMOLITION
1.1 LEVELS "C", "M" & "B" FLOOR PLANS
1.2 MAIN LEVEL NEW ADDITION PLAN
1.3 MAIN LEVEL PLAN
1.4 SECOND FLOOR PLAN & DETAILS
2.1 REFLECTED CEILING PLANS "C", "M" & "B"
2.2 REFLECTED CEILING PLAN NEW ADDITION
2.3 REFLECTED CEILING PLAN MAIN LEVEL
2.4 REFLECTED CEILING PLAN SECOND FLOOR
3.0 ROOF PLAN
4.0 SCHEDULES
5.0 ELEVATIONS
5.1 ELEVATIONS, CONTINUED & DETAILS
6.1 GYM SECTIONS
6.2 GYM SECTIONS CONTINUED
7.0 WALL SECTIONS
7.1 GYM WALL SECTIONS

STRUCTURAL
S0.0 GENERAL NOTES
S1.0 FOUNDATION PLAN
S3.0 ROOF FRAMING PLAN
S7.0 FOUNDATION DETAILS
S8.0 FRAMING DETAILS

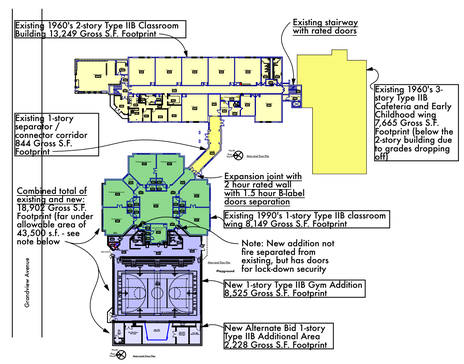
FIRE PROTECTION
F0-001 FIRE PROTECTION NOTES AND DETAILS
F2-100 FIRE PROTECTION ZONING LEVEL C
F2-101 FIRE PROTECTION ZONING LEVEL M
F2-102 FIRE PROTECTION ZONING LEVEL B
F2-103 FIRE PROTECTION ZONING LEVEL 1 OVERALL
F2-104 FIRE PROTECTION ZONING LEVEL 1 NEW GYM
F2-105 FIRE PROTECTION ZONING LEVEL 1 90'S ADDN
F2-106 FIRE PROTECTION ZONING LEVEL 2
F3-100 FIRE PROTECTION LEVEL C
F3-101 FIRE PROTECTION LEVEL M
F3-102 FIRE PROTECTION LEVEL B
F3-103 FIRE PROTECTION LEVEL 1 PLAN OVERALL
F3-104 FIRE PROTECTION LEVEL 1 NEW GYM
F3-105 FIRE PROTECTION LEVEL 1 90'S ADDN
F3-106 FIRE PROTECTION LEVEL 2 OVERALL

PLUMBING
P0-001 PLUMBING COVER SHEET
P1-102 PLUMBING DEMOLITION LEVEL B
P1-103 PLUMBING DEMOLITION LEVEL 1
P1-104 PLUMBING DEMOLITION LEVEL 1 90'S ADDN
P2-105 PLUMBING UNDERGROUND LEVEL 1 NEW GYM
P3-102 PLUMBING ABOVE GROUND LEVEL B
P3-103 PLUMBING ABOVE GROUND LEVEL 1
P3-104 PLUMBING ABOVE GROUND LEVEL 1 90's ADDN
P3-105 PLUMBING ABOVE GROUND LEVEL 1 NEW GYM
P5-501 PLUMBING DETAILS
P5-502 PLUMBING DETAILS
P7-901 PLUMBING SANITARY ISOMETRIC
P7-902 PLUMBING WATER ISOMETRIC
P7-903 PLUMBING GAS ISOMETRIC

MECHANICAL
M0-001 MECHANICAL COVER SHEET
M1-100 MECH'L DEMO LEVELS B, M & C PLAN OVERALL
M1-101 MECH'L DEMOLITION LEVEL 1 PLAN OVERALL
M1-102 MECH'L DEMOLITION LEVEL 2 PLAN OVERALL
M1-103 MECH'L DEMOLITION LOW ROOF PLAN LEVEL M
M1-104 MECH'L DEMOLITION ROOF PLAN OVERALL
M2-100 MECH'L ZONING LEVELS B, M & C PLAN OVERALL
M2-101 MECHANICAL ZONING GYM PLAN OVERALL
M2-103 MECHANICAL ZONING LEVEL 1 PLAN OVERALL
M2-104 MECHANICAL ZONING LEVEL 2 PLAN OVERALL
M3-100 MECH'L DUCTWORK LEVELS B, M & C PLANS
M3-101 MECHANICAL DUCTWORK GYM PLAN OVERALL
M3-102 MECH'L DUCTWORK LEVEL 1 PLAN OVERALL
M3-103 MECH'L DUCTWORK LEVEL 2 PLAN OVERALL
M3-104 MECH'L DUCTWORK LOW ROOF PLAN LEVEL M
M3-105 MECH'L DUCTWORK ROOF PLAN OVERALL
M3-106 MECHANICAL DUCTWORK GYM ROOF PLAN
M4-100 MECHANICAL PIPING LEVELS B, M & C PLANS
M4-101 MECHANICAL PIPING GYM PLAN OVERALL
M4-102 MECHANICAL PIPING LEVEL 1 PLAN OVERALL
M4-103 MECHANICAL PIPING LEVEL 2 PLAN OVERALL
M4-104 MECHANICAL PIPING LOW ROOF PLAN LEVEL M
M4-105 MECHANICAL PIPING GYM ROOF PLAN OVERALL
M4-106 MECHANICAL PIPING GYM ROOF PLAN
M6-500 MECHANICAL DETAILS
M6-501 MECHANICAL DETAILS
M6-601 MECHANICAL SCHEDULES
M6-602 MECHANICAL SCHEDULES
M6-603 MECHANICAL SCHEDULES

ELECTRICAL
E0-001 ELECTRIC COVER SHEET
E0-002 ELECTRIC SITE DEMO PLAN
E0-003 ELECTRIC SITE PLAN
E1-100 ELECTRIC DEMOLITION LEVELS B, M & C PLAN
E1-101 ELECTRIC DEMOLITION LEVEL 1 OVERALL
E1-102 ELECTRIC DEMOLITION LEVEL 2 PLAN OVERALL
E1-103 ELECTRIC DEMOLITION ROOF PLAN
E3-100 ELECTRIC LIGHTING LEVELS B, M & C
E3-101 ELECTRIC LIGHTING LEVEL 1 OVERALL
E3-102 ELECTRIC LIGHTING LEVEL 2 OVERALL
E3-103 ELECTRIC LIGHTING GYM PLAN
E3-104 ELECTRIC LIGHTING DETAILS
E4-100 ELECTRIC POWER LEVELS B, M & C
E4-101 ELECTRIC POWER LEVEL 1 OVERALL
E4-102 ELECTRIC POWER LEVEL 2 OVERALL
E4-103 ELECTRIC POWER GYM PLAN
E4-104 ELECTRIC POWER ROOF PLAN
E4-105 ELECTRIC POWER GYM ROOF PLAN
EP-501 ELECTRIC POWER - DETAILS
EP-601 ELECTRIC POWER - SINGLE LINE DIAGRAM
EP-602 ELECTRIC POWER - SCHEDULES
EP-603 ELECTRIC POWER - PANEL SCHEDULES

FIRE ALARM
FA-100 FIRE ALARM COVER SHEET
FA-101 FIRE ALARM LEVELS B, M & C
FA-102 FIRE ALARM LEVEL 1
FA-103 FIRE ALARM LEVEL 2
FA-104 FIRE ALARM GYM PLAN



New Addition and Existing Building Use Group "E" - Educational (Elementary School) per KBC 303.1.3, thus since sprinklered, allowable area is 43,500 s.f. footprint for Type IIB, Use Group "E" per KBC Table 506.2

Note: New Addition and all existing building will be 100% Sprinklered

Grandview Elementary Overall Building Code Diagram

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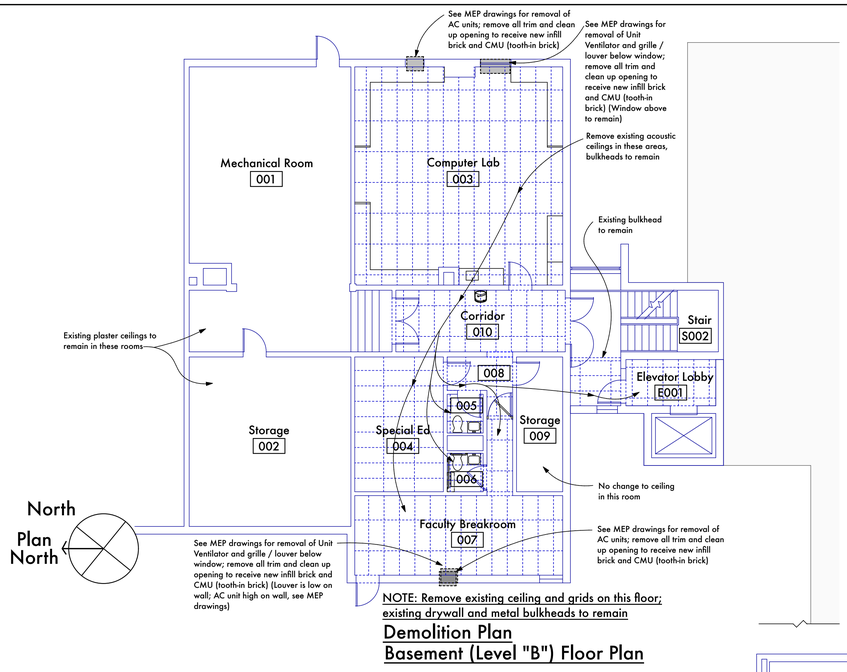
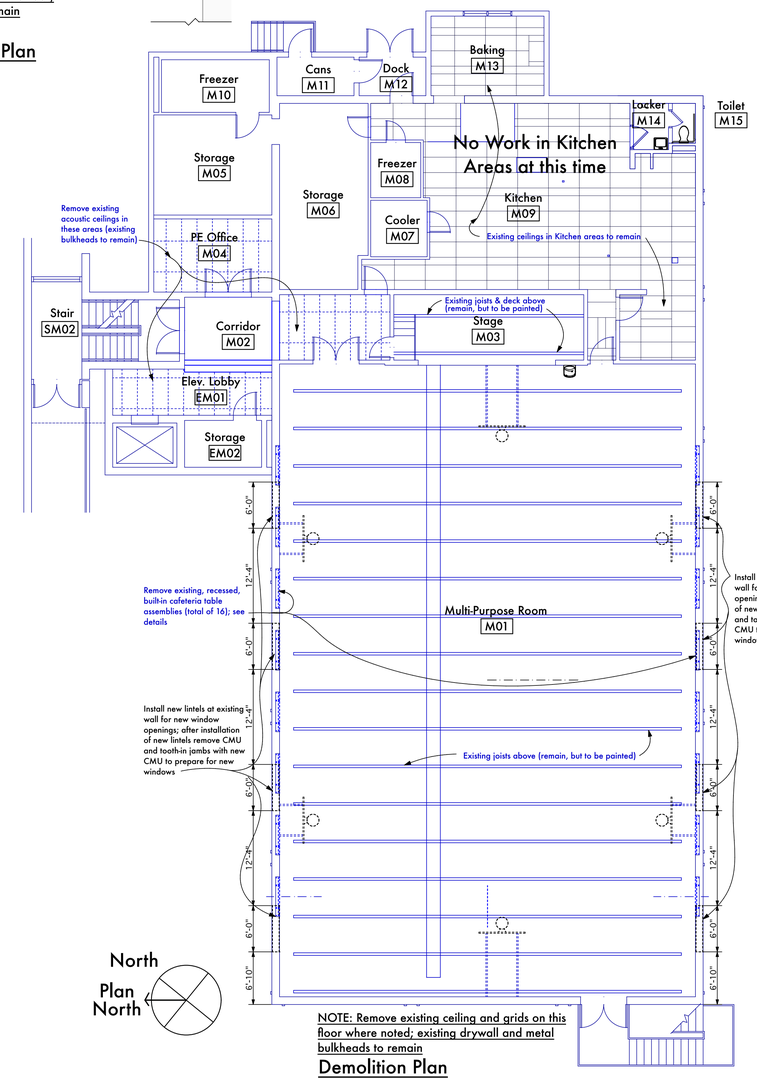


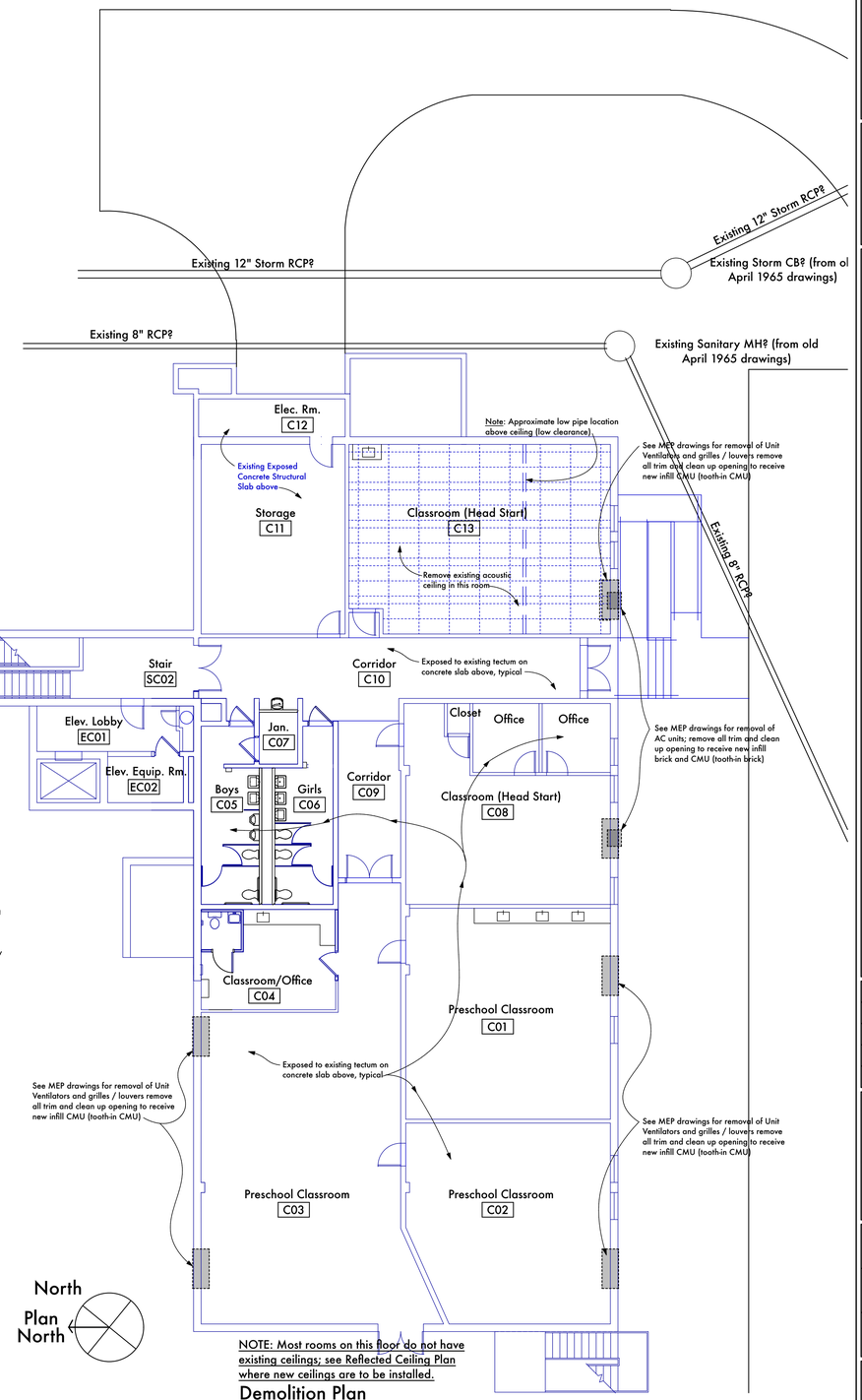
NOTE: Remove existing ceiling and grids on this floor; existing drywall and metal bulkheads to remain

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

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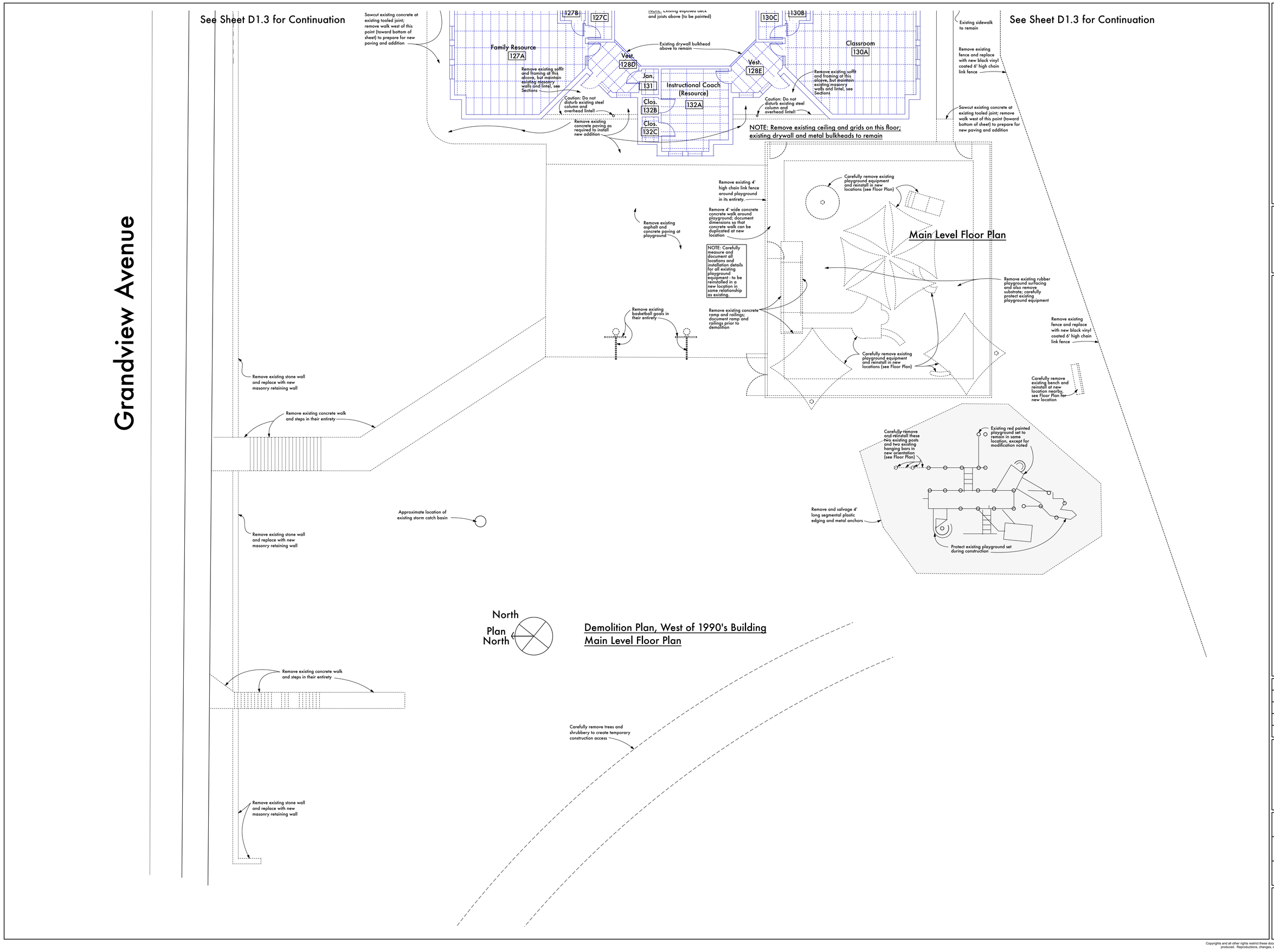

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to remain

G — G — G

See MEP drawings for removal of AC units; remove all trim and clean up opening to receive new infill brick and CMU (tooth-in brick)

See MEP drawings for removal of Unit Ventilators and grilles / louvers; remove all trim and clean up opening to receive new infill brick and CMU (tooth-in brick)

Media Center 101A

Office 101B

Vest. 101C

Classroom 103

Classroom 105

Classroom 107

Classroom 109

Conference 115

Girls 117A

Boys 118A

Janitor 119

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

Stair S101

Corridor 119

Stair S102

Elevator Lobby E101

Existing exposed concrete slab at ceiling in this area

104A

104

102E

102

102-1

SV-1

102A

102B

102C

102D

Existing acoustic ceilings to remain in these spaces

Classroom 106

Corridor 108

Workroom/Data/Stor. 111

Guidance 114

Classroom 116

Guidance Reception 110

118

Guidance 112

Existing drywall and metal bulkheads to remain

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

See MEP drawings for removal of AC units; remove all trim and clean up opening to receive new infill brick and CMU (tooth-in brick)

See MEP drawings for removal of AC units; remove all trim and clean up opening to receive new infill brick and CMU (tooth-in brick)

See MEP drawings for removal of Unit Ventilators and grilles / louvers; remove all trim and clean up opening to receive new infill brick and CMU (tooth-in brick)

See MEP drawings for removal of Unit Ventilators and grilles / louvers; remove all trim and clean up opening to receive new infill brick and CMU (tooth-in brick)

Corridor 121

North

Plan North

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

Demolition Plan

Main Level Floor Plan

Existing concrete driveway to remain

Existing stone pier

Kindergarten Classroom 122A

Kindergarten Classroom 123A

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

Speech Therapy 124

Toilet 122B

Toilet 123B

Corridor 125

Stor. 122C

Stor. 123C

Vest. 128B

Vest. 128C

Kindergarten Classroom 126A

Art/Music 129A

Existing drywall bulkhead above to remain

Remove existing stone wall and replace with new masonry retaining wall

Existing sidewalk to remain

Toilet 126B

Stor. 126C

Commons 128A

Toilet 129B

Stor. 129C

Toilet 127B

Stor. 127C

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

Toilet 130B

Stor. 130C

Sawcut existing concrete at existing tooled joint; remove walk west of this point (toward bottom of sheet) to prepare for new paving and addition

Existing drywall bulkhead above to remain

Family Resource 127A

Classroom 130A

Vest. 128D

Vest. 128E

Jan. 131

Instructional Coach (Resource) 132A

Remove existing soffit and framing at this alcove, but maintain existing masonry walls and lintel, see Sections

Clos. 132B

Clos. 132C

Caution: Do not disturb existing steel column and overhead lintel!

Remove existing concrete paving as required to install new addition

Caution: Do not disturb existing steel column and overhead lintel!

Remove existing soffit and framing at this alcove, but maintain existing masonry walls and lintel, see Sections

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

Remove existing fence and replace with new black vinyl coated 6' high chain link fence

Existing sidewalk to remain

Remove existing fence and replace with new black vinyl coated 6' high chain link fence

Sawcut existing concrete at existing tooled joint; remove walk west of this point (toward bottom of sheet) to prepare for new paving and addition

Remove existing 4' high chain link fence around playground in its entirety.

Carefully remove existing playground equipment and reinstall in new locations (see Floor Plan)

Remove 4' wide concrete concrete walk around playground; document dimensions so that concrete walk can be duplicated at new location

Remove existing asphalt and concrete paving at playground

Main Level Floor Plan

See Sheet D1.2 for Continuation

See Sheet D1.2 for Continuation

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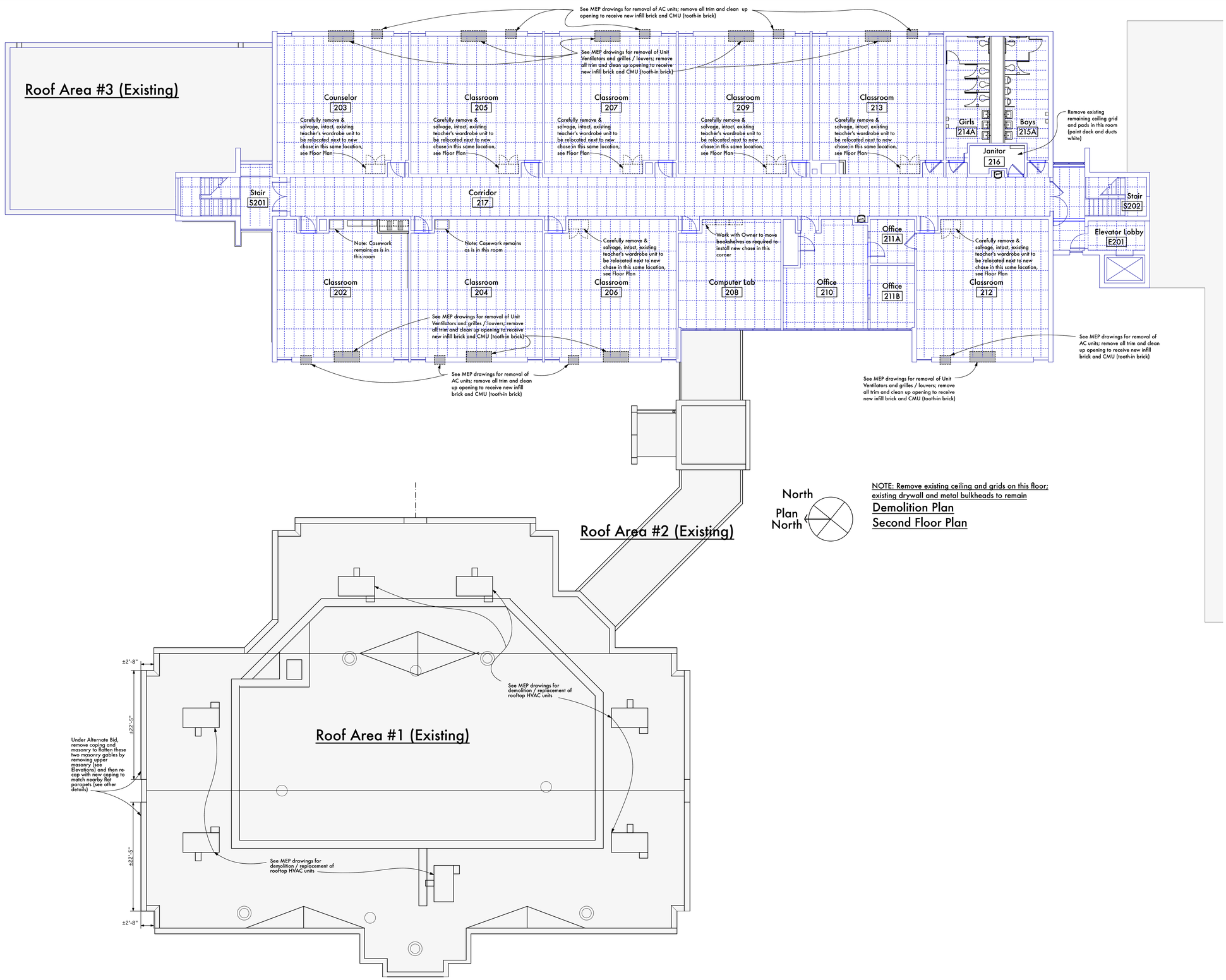

NOTE: Remove existing ceiling and grids on this floor; existing drywall and metal bulkheads to remain

Demolition Plan
Second Floor Plan

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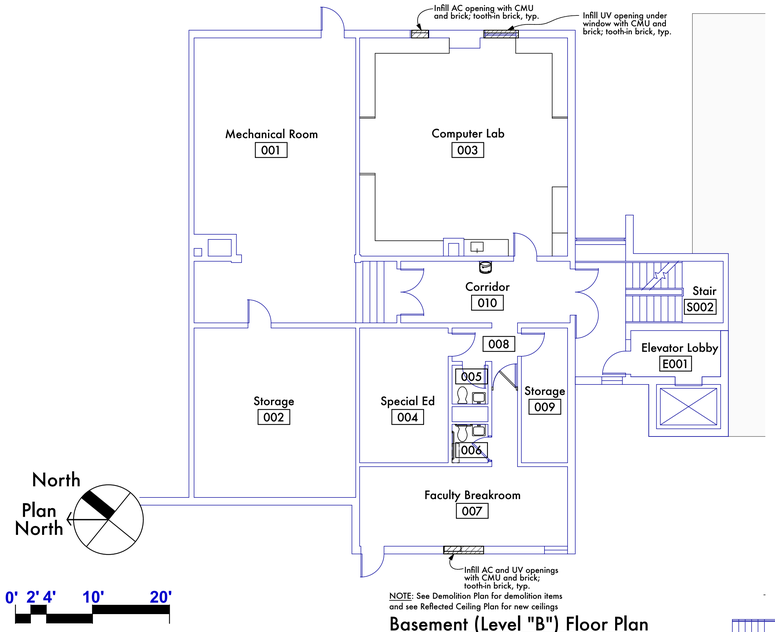
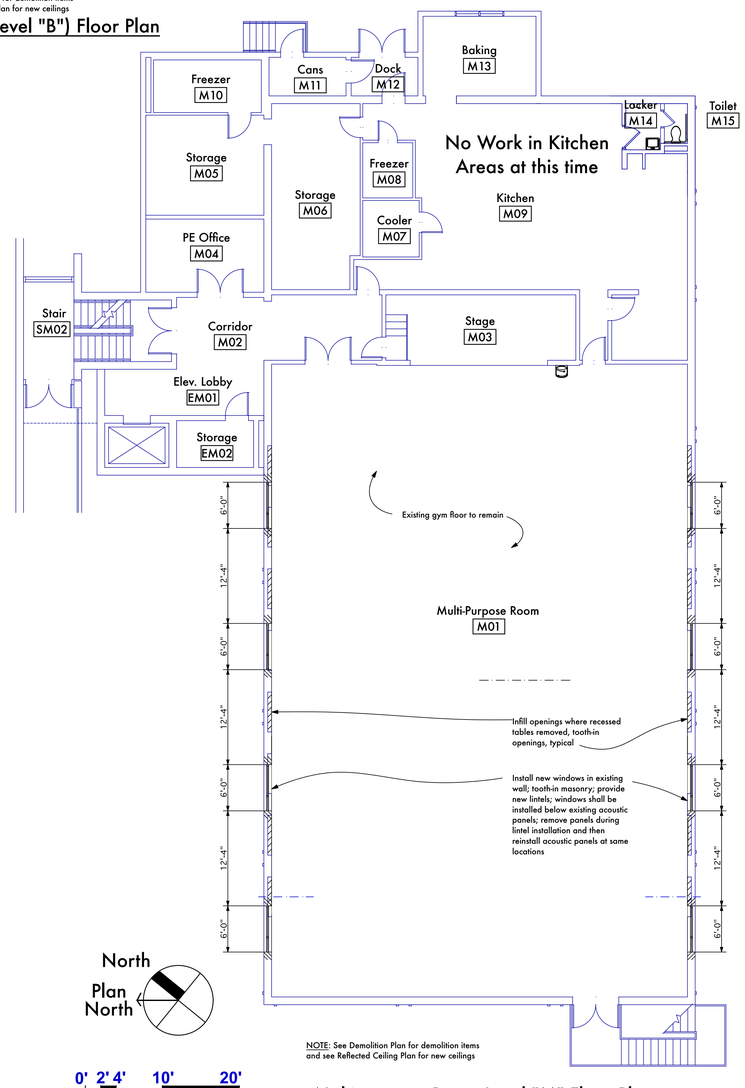


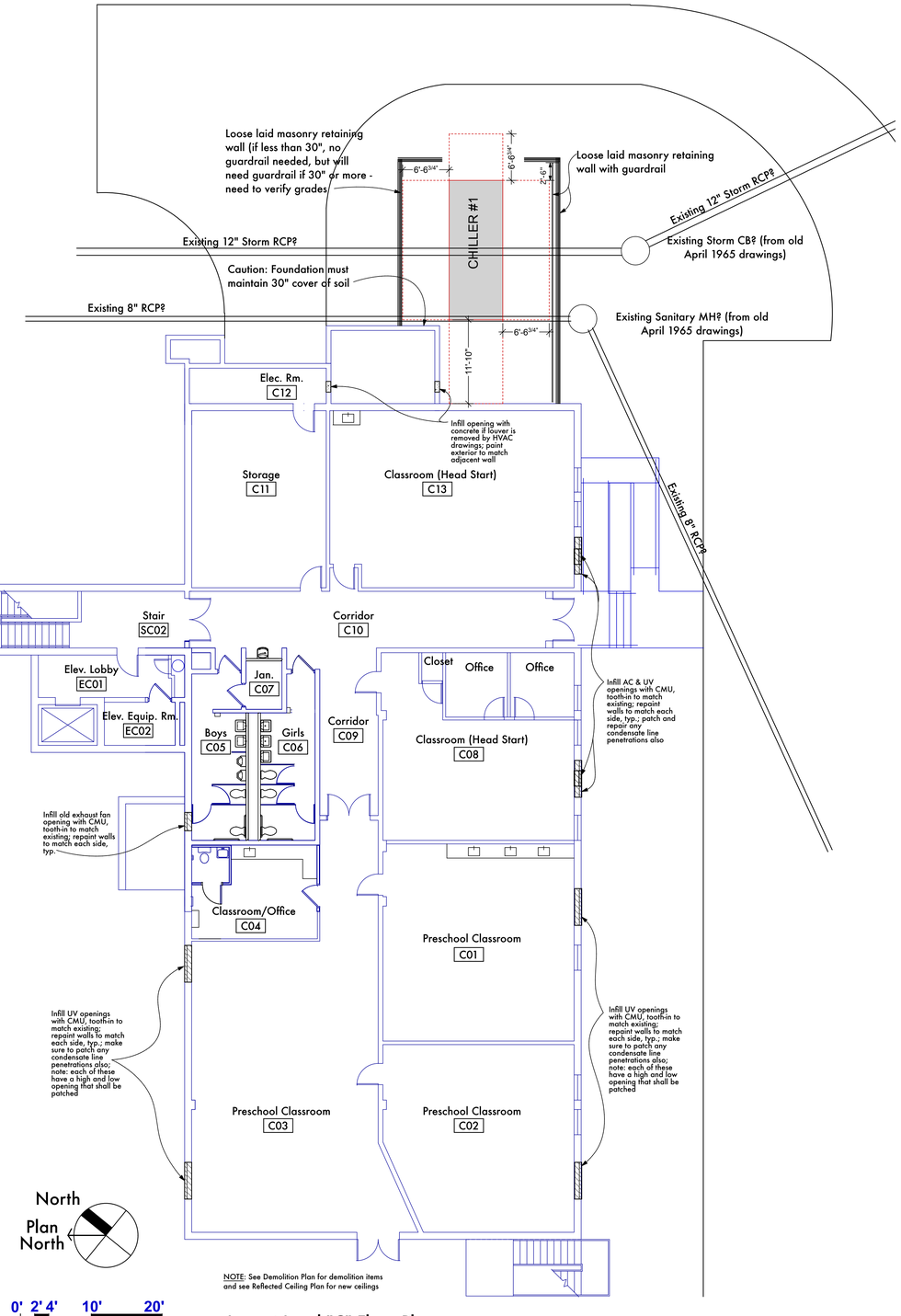
NOTE: See Demolition Plan for demolition items and see Reflected Ceiling Plan for new ceilings

Basement (Level "B") Floor Plan



NOTE: See Demolition Plan for demolition items and see Reflected Ceiling Plan for new ceilings

Multi-purpose Room Level "M" Floor Plan



NOTE: See Demolition Plan for demolition items and see Reflected Ceiling Plan for new ceilings

Lowest Level "C" Floor Plan

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1.1

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See Sheet 1.3 for Continuation

See Sheet 1.3 for Continuation

Replace Retaining Wall

New Ramp and retaining wall

Dry stack wall with decorative fence at top, see Detail 1/GV-C

Under Metal Panel Alternate Bid, also return panels to corner and replace coping on this parapet wing wall, miter coping

Also as part of Metal Panel Alternate Bid, provide furring and new metal wall panels (see Elevations, wrap panels at east and west end

Canopy above, see Roof Plan

Approximate location of existing storm catch basin

Family Resource 127A

Toilet 127B

Stor. 127C

Toilet 130B

Stor. 130C

Classroom 130A

Vest. 128D

Vest. 128E

Jan. 131

Instructional Coach (Resource) 132A

Clos. 132B

Clos. 132C

Panic Device

Elec. 133E

Water 133D

Girls 133F

Boys 133G

North Lobby 133A

Gym Lobby 133B

South Lobby 133C

Gym Entry

FEX Cab

604.37' FF

GRANDVIEW

Gym 134A

42' x 74' Basketball Court

51'-6" wide gym wall padding

52'-0" wide gym wall padding

When set up for basketball games, all obstructions must be 6'-0" min. clear from edge of court

14' wide gym wall padding

Insulated, translucent panels at platform opening

Alt. Bid Gym Off. 135A

Alt. Bid Gym Storage 135C

Alt. Bid Platform 136A

Alt. Bid Ramp 136D

Alt. Bid Platform Storage 136B

Alt. Bid Mech'l/Elec. 136E

Bi-parting theatrical curtains with valance curtain above

3-part cyclorama curtain with curved track at two corners and overlapping curtains

Existing concrete walk to remain

5" thick reinforced concrete walk

New 6' tall black vinyl coated chain link fence

Main Level Floor Plan

Playground

6" thick asphalt playground, shed water, see grading plan

5'-0" wide (measured from face of metal panels), 6" thick reinforced concrete walk

Basketball goals and backboards

Reinstall these two existing posts and two existing hanging bars in this orientation

Existing red painted playground set to remain in same location, except for modification noted

Reinstall existing bench in this location and orientation

Protect existing playground set during construction

4' tall black vinyl coated fencing around this playground area

5" thick reinforced concrete walk around playground; match same dimensions as existing prior to removal

New rubberized surface to match existing

Re-install all playground equipment in same locations relative to the sidewalk as before; document all existing equipment prior to removal and relocation to these new locations

Provide reinforced concrete ramp and steel railings to match existing ramp and railings that were removed (verify prior to removal)

North Plan North

Main Level Floor Plan

Alternate Bid Main Level Floor Plan

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

ADDENDA

SHEET TITLE

BG # 24-059

REH # 372-922

DATE 12/13/23

1.2

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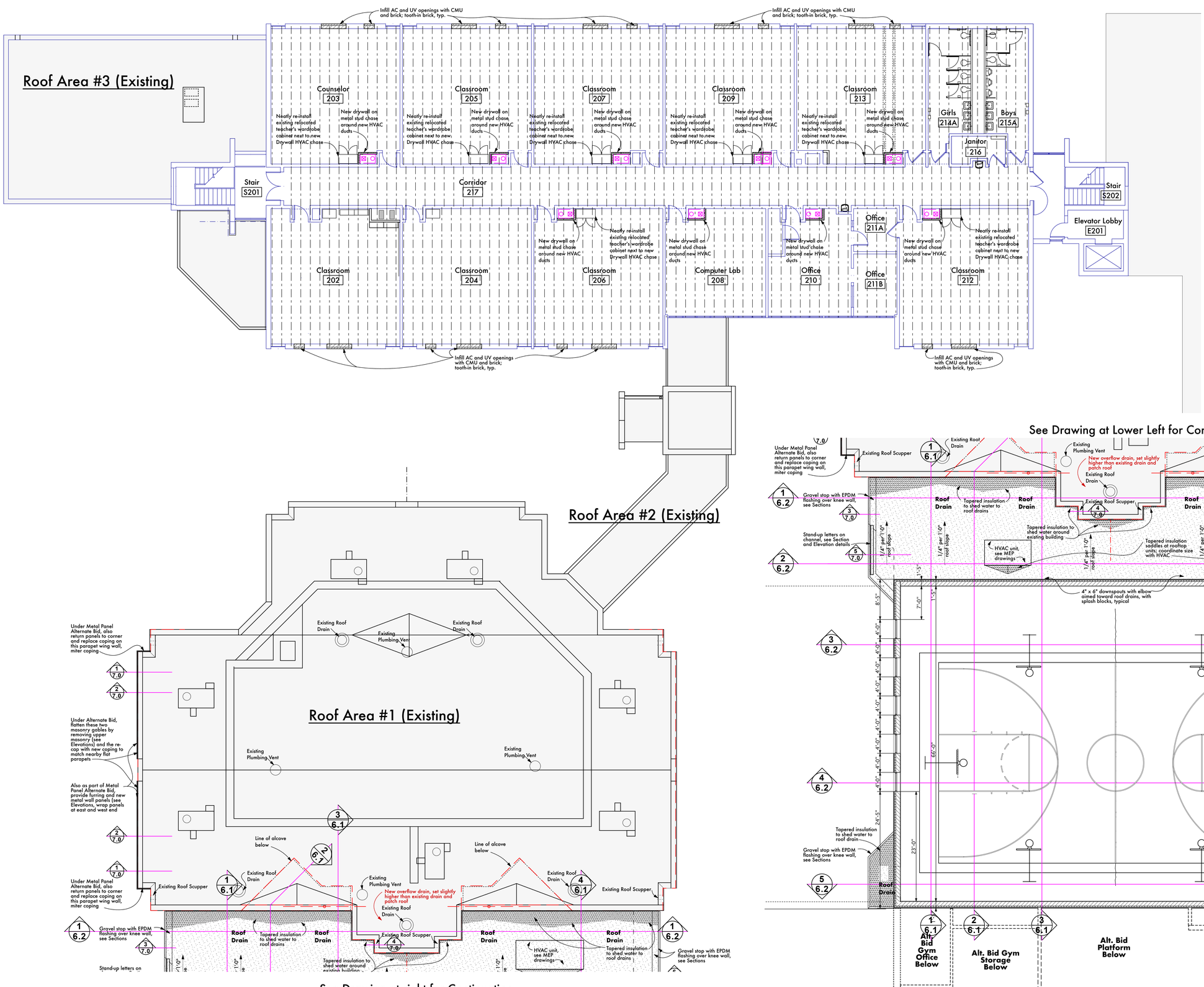

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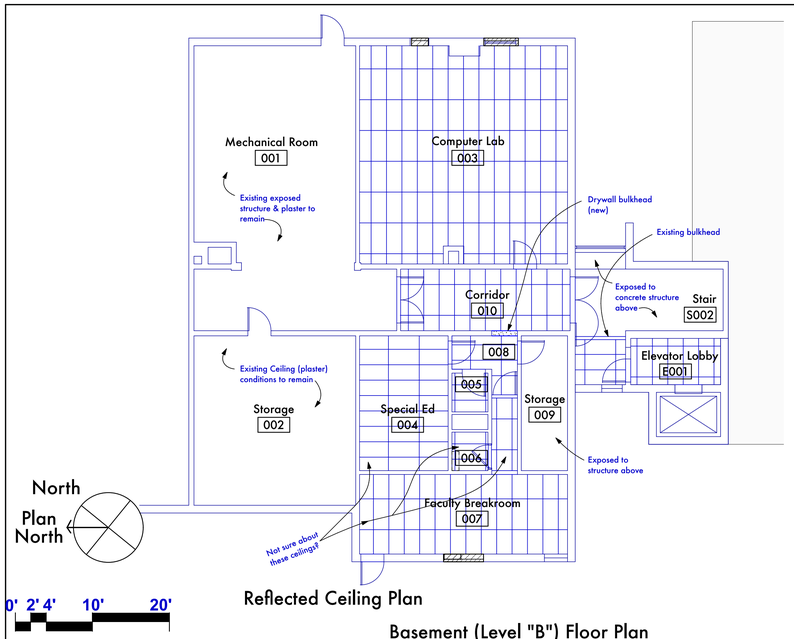
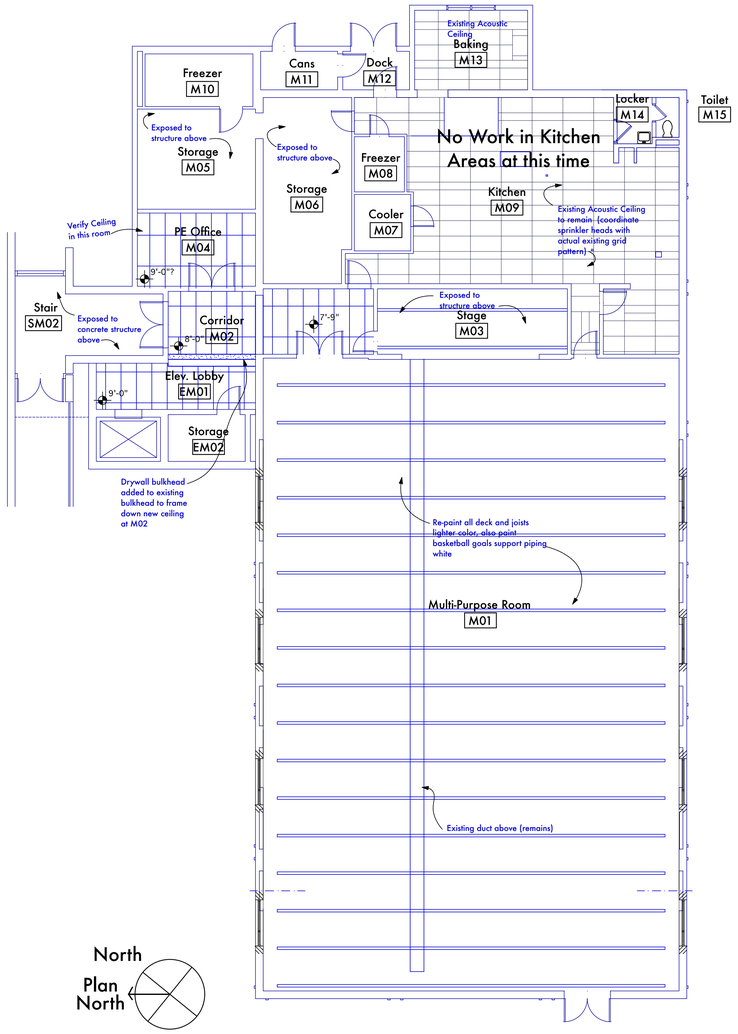


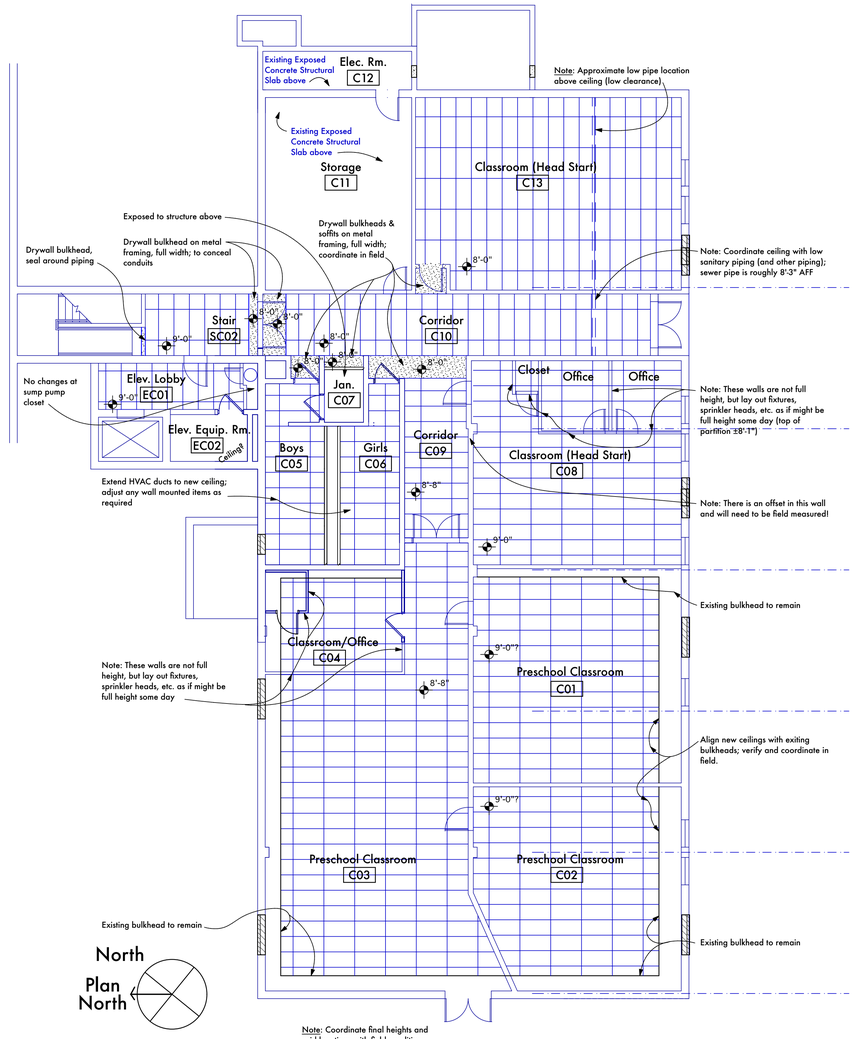
Reflected Ceiling Plan

Basement (Level "B") Floor Plan



Reflected Ceiling Plan

Multi-purpose Room Level "M" Floor Plan



Note: Coordinate final heights and grid locations with field conditions

Reflected Ceiling Plan

Lowest Level "C" Floor Plan

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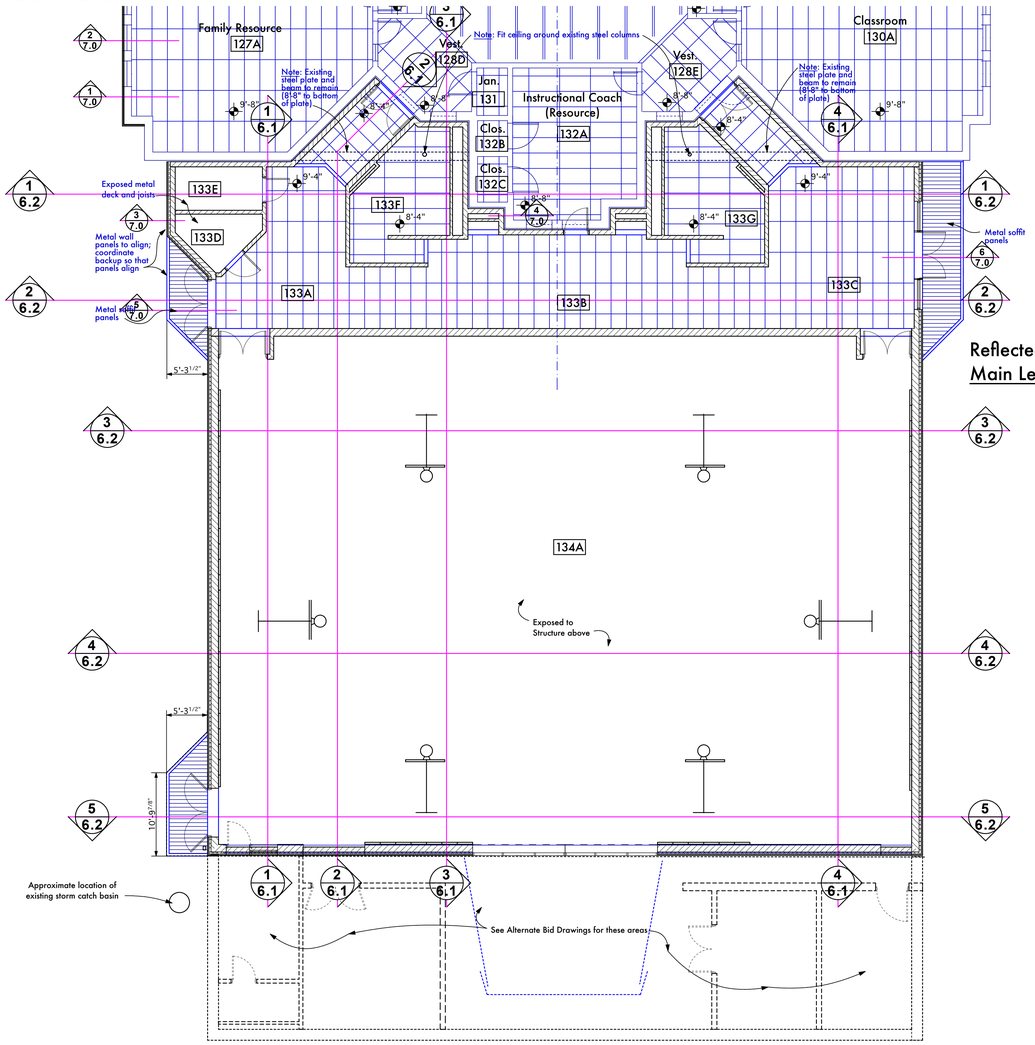
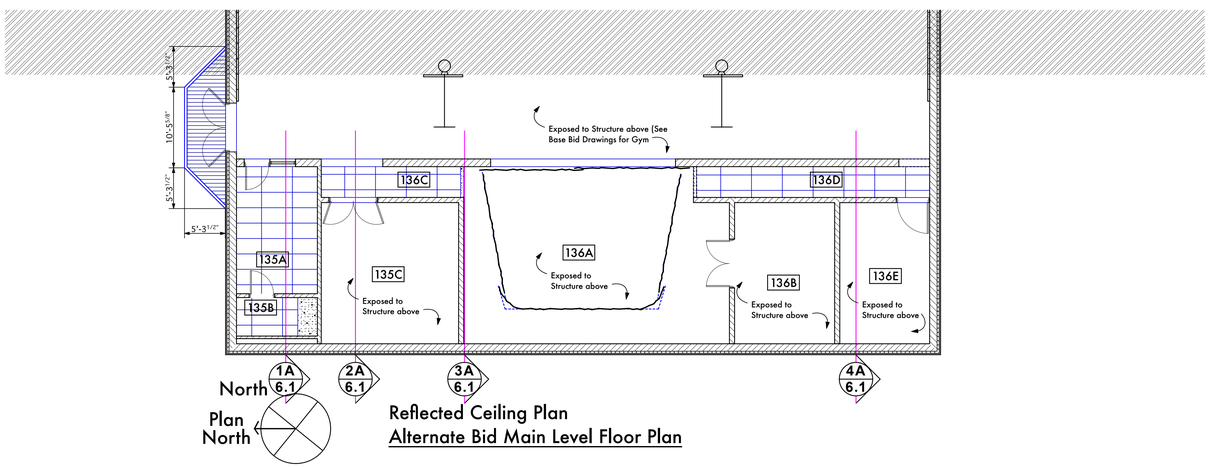


Reflected Ceiling Plan
Main Level Floor Plan



Reflected Ceiling Plan
Alternate Bid Main Level Floor Plan

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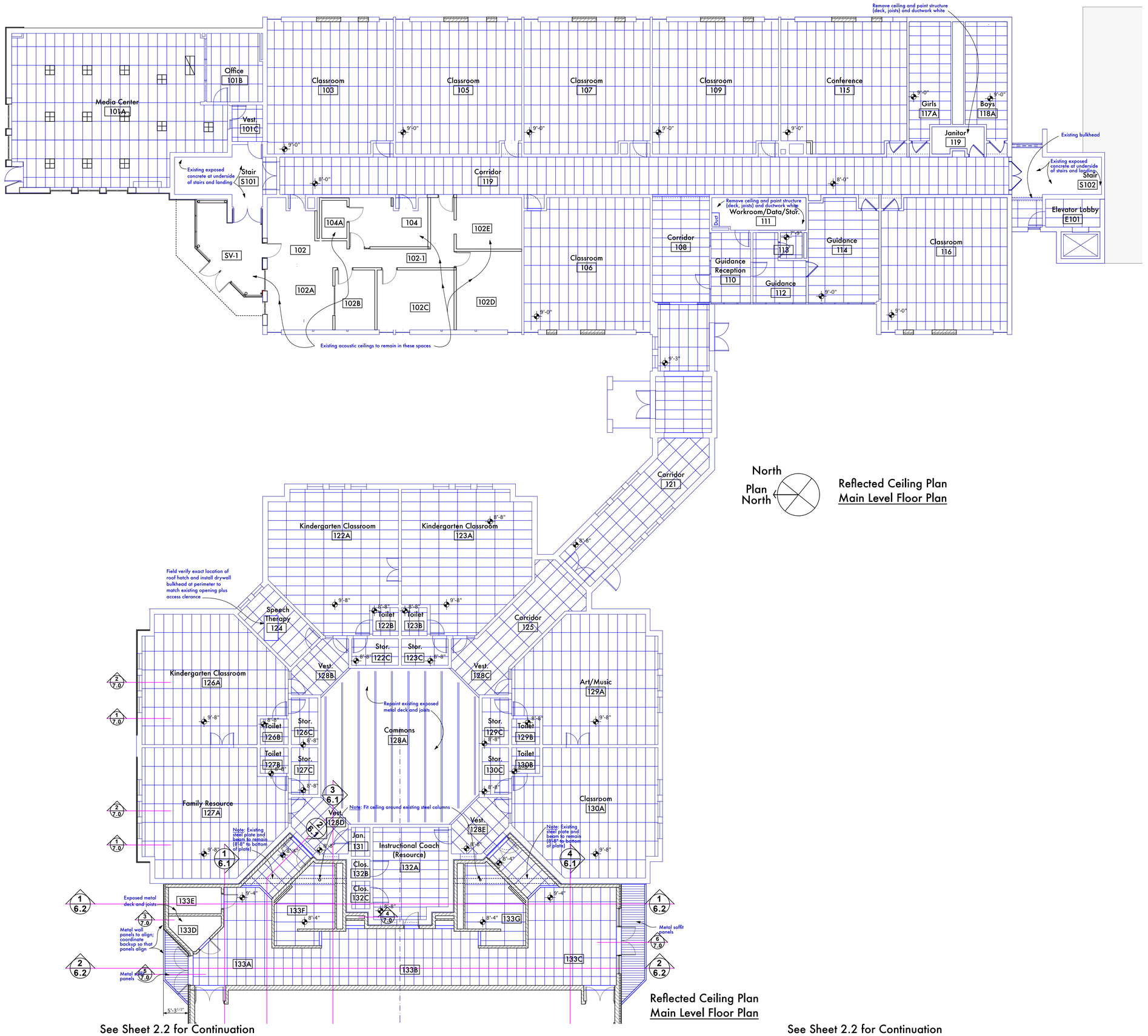

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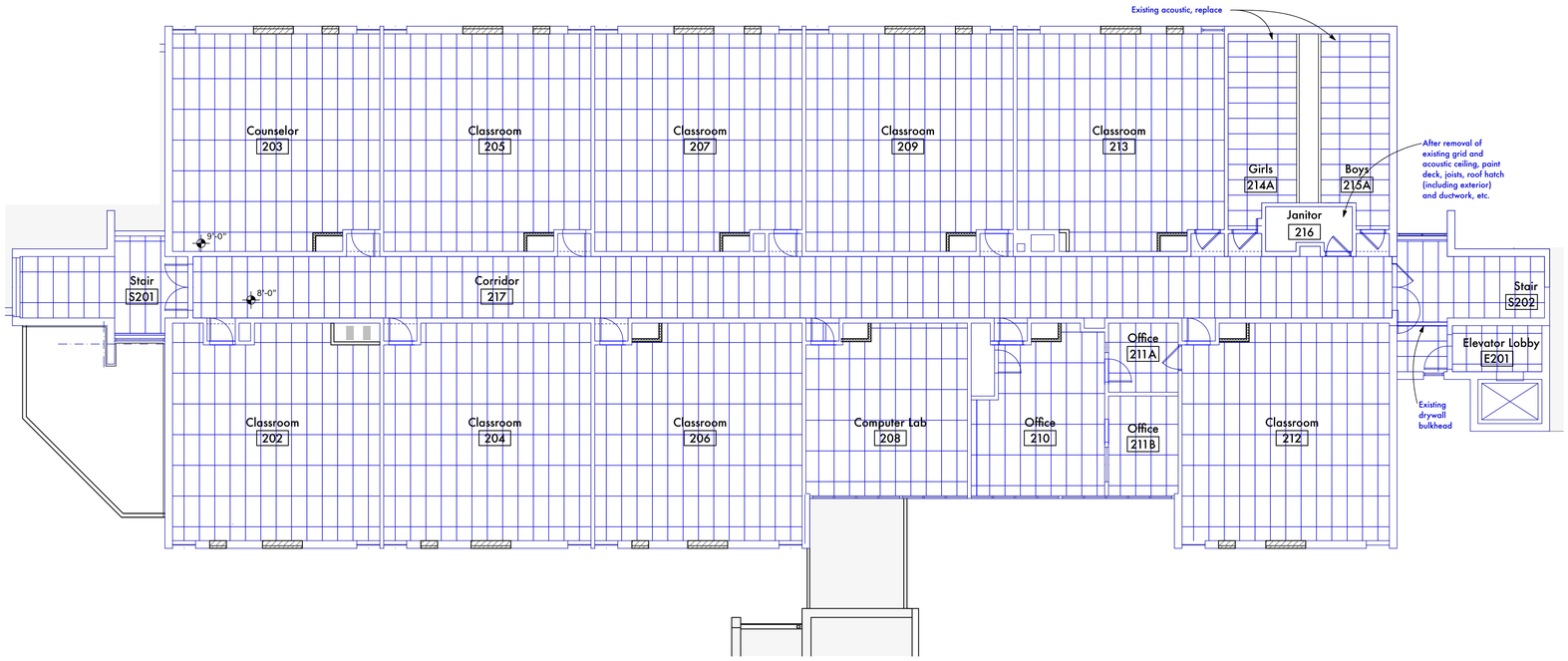

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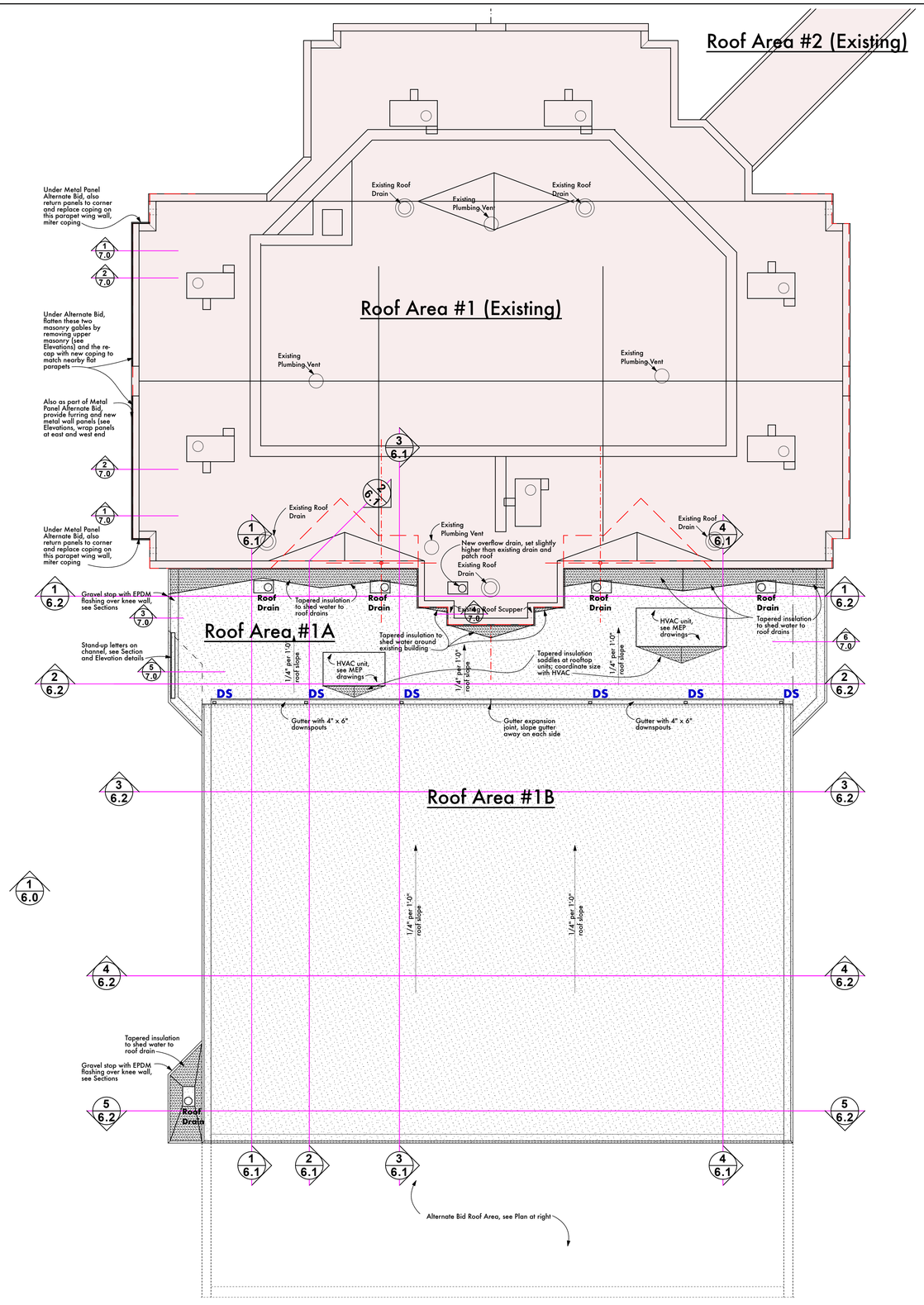
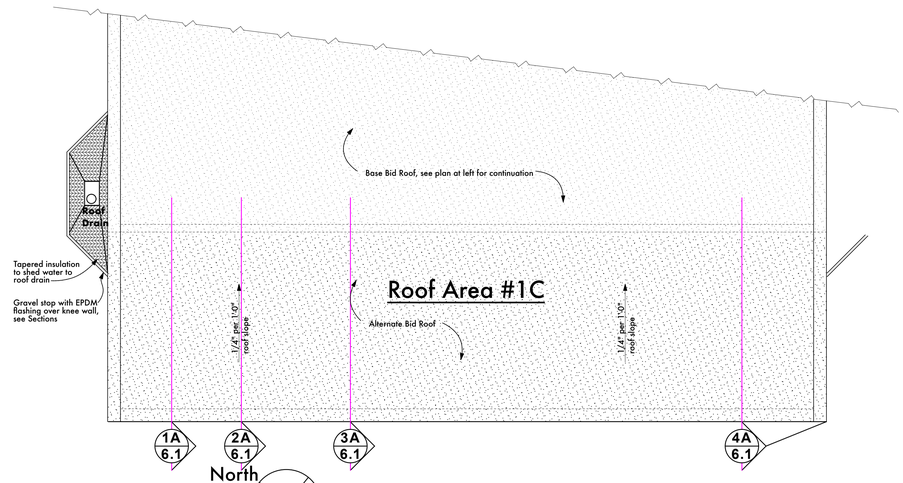


Roof Plan (Showing Base Bid Conditions)

1/8" = 1'-0"



Roof Plan (Showing Alt. Bid Conditions)

1/8" = 1'-0"

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DOOR SCHEDULE

Note: Grout all frames solid

	DOOR #	DOOR SIZE	DOOR MAT.	DOOR TYPE	FRAME MAT.	FRAME TYPE	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	LABEL	HRDW	REMARKS
Base Bid	128D	(2) 3'-0" X 7'-0" X 1 3/4"	HM	FG	HM						-	Mech'l Hold opens; panic devices; lockable
	128E	(2) 3'-0" X 7'-0" X 1 3/4"	HM	FG	HM						-	Mech'l Hold opens; panic devices; lockable
	133A	(2) 3'-0" X 7'-0" X 1 3/4"	AL	FG	AL						-	Coordinate with Owner's access control
	133B	3'-0" X 7'-0" X 1 3/4"	WD	VL	HM						-	Office function
	133C	(2) 3'-0" X 7'-0" X 1 3/4"	AL	FG	AL						-	
	134A-1	(2) 3'-0" X 7'-0" X 1 3/4"	WD	VL	HM						-	
	134A-2	(2) 3'-0" X 7'-0" X 1 3/4"	WD	VL	WD						-	
	134A-3	(2) 3'-0" X 7'-0" X 1 3/4"	AL	FG	AL						-	
Alternate Bid	135A	3'-0" X 7'-0" X 1 3/4"	HM	HG	HM							
	135B	3'-0" X 7'-0" X 1 3/4"	WD	F	HM							
	135C	(2) 3'-0" X 7'-0" X 1 3/4"	HM	F	HM							
	136B	(2) 3'-0" X 7'-0" X 1 3/4"	HM	F	HM							
	136E	4'-0" X 7'-0" X 1 3/4"	WD	F	HM							

Note: Grout all frames solid where located in CMU

DOOR SCHEDULE ABBREVIATIONS AND NOTES:

HM	Hollow metal	VL	Vision Lite door	HG	Half Glass Door
WD	Wood door	F	Flush (no glass) door	FG	Full Glass Door

1. All hollow metal frames shall be mitered, fully welded and ground smooth, ready for finish painting
2. All hollow metal frames to be grouted solid
3. Apply sealant @ perimeter of frames, each side (fire rated sealant @ all rated doors)
4. Egress doors shall be readily openable from the egress side without use of a key or special knowledge or effort.
5. Coordinate door undercuts w/ thresholds & floor finish thicknesses prior to ordering doors so that they are correct height to properly contact threshold & to clear floor finish.

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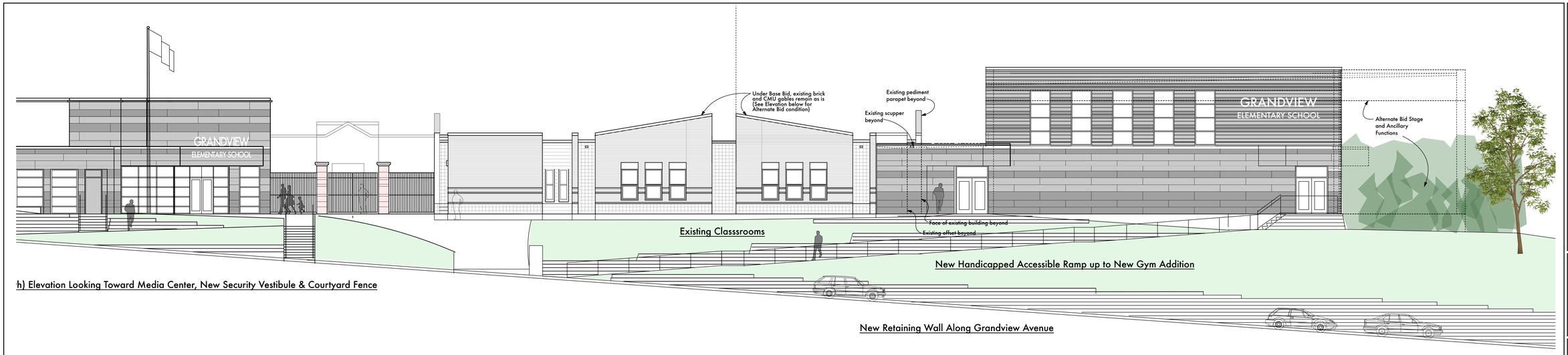
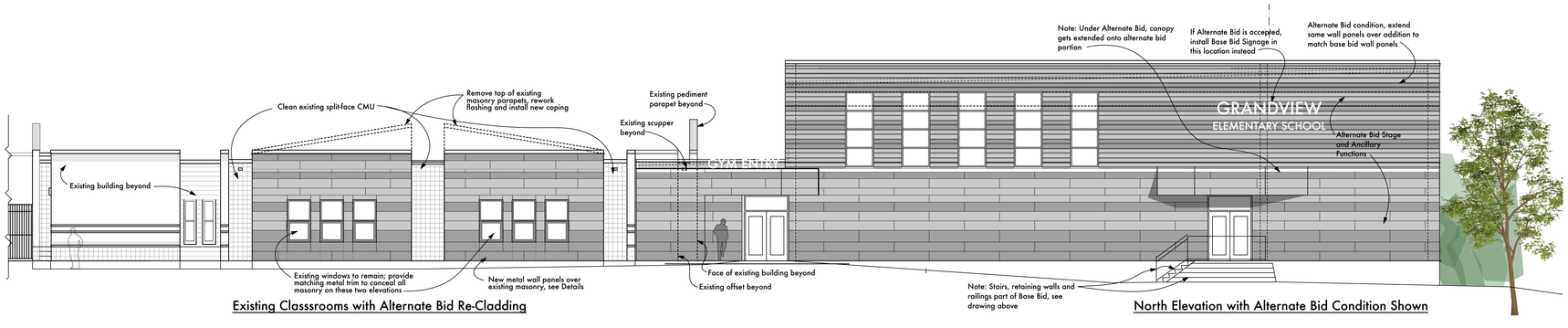
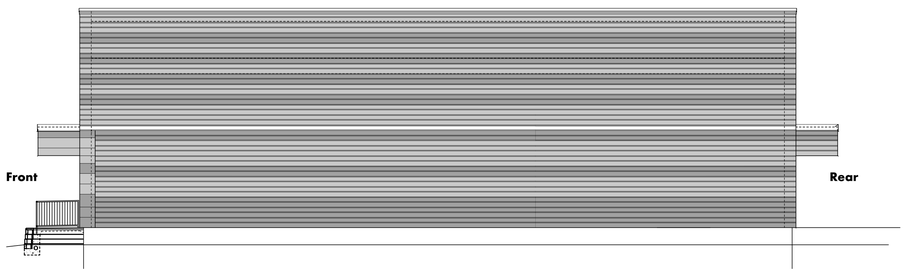


h) Elevation Looking Toward Media Center, New Security Vestibule & Courtyard Fence

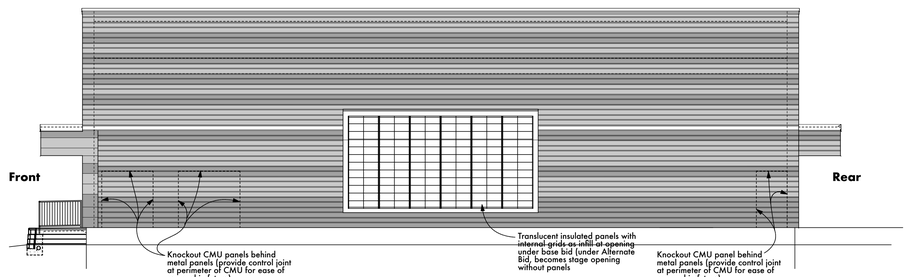


Existing Classsrooms with Alternate Bid Re-Cladding

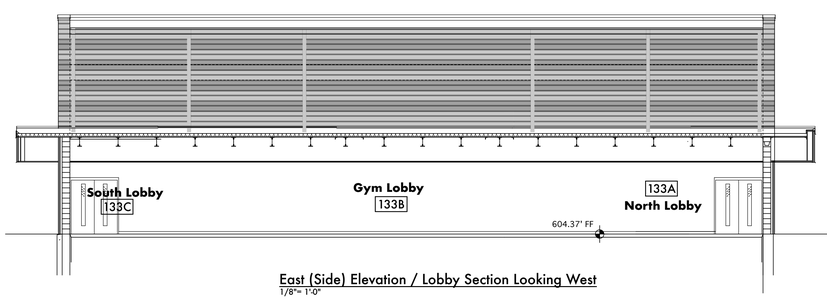
North Elevation with Alternate Bid Condition Shown



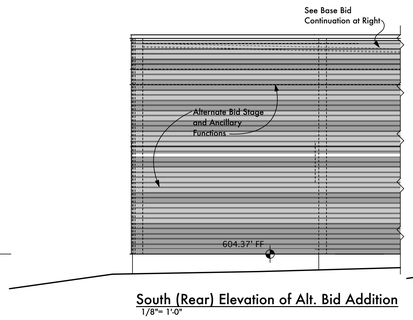
Alternate Bid West (Side) Elevation
1/8"= 1'-0"



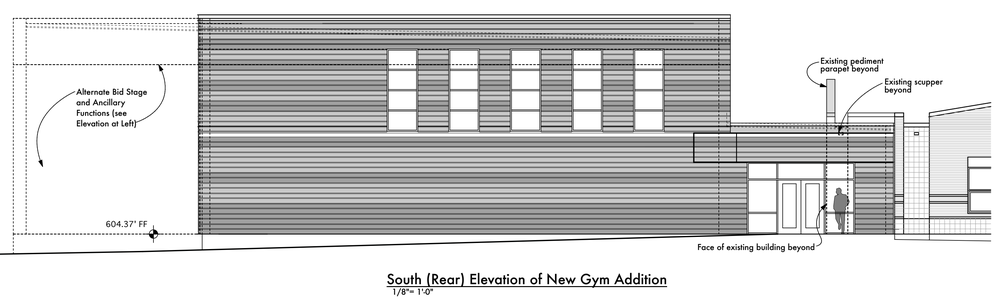
Base Bid West (Side) Elevation
1/8"= 1'-0"



East (Side) Elevation / Lobby Section Looking West
1/8"= 1'-0"



South (Rear) Elevation of Alt. Bid Addition
1/8"= 1'-0"



South (Rear) Elevation of New Gym Addition
1/8"= 1'-0"

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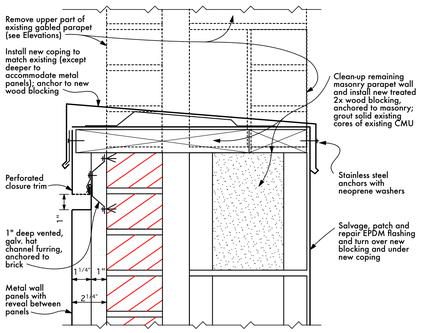
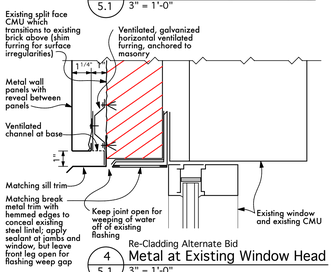
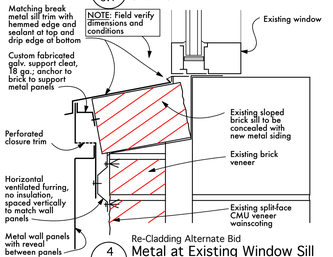


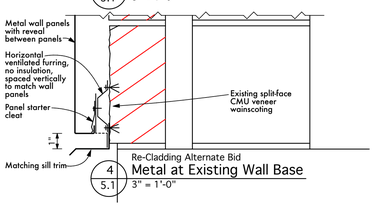
Re-Cladding Alternate Bid
4 / 5.1 Metal at Existing Wall Coping
3" = 1'-0"



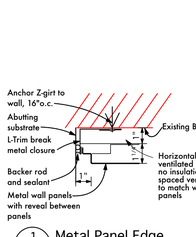
Re-Cladding Alternate Bid
4 / 5.1 Metal at Existing Window Head
3" = 1'-0"



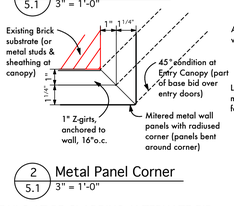
Re-Cladding Alternate Bid
4 / 5.1 Metal at Existing Window Sill
3" = 1'-0"



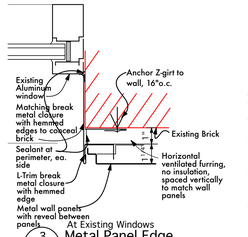
Re-Cladding Alternate Bid
4 / 5.1 Metal at Existing Wall Base
3" = 1'-0"



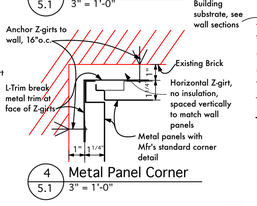
1 / 5.1 Metal Panel Edge
3" = 1'-0"



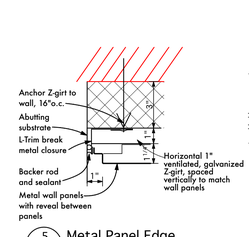
2 / 5.1 Metal Panel Corner
3" = 1'-0"



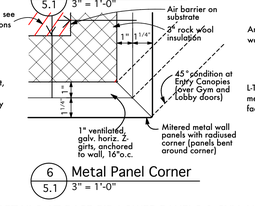
At Existing Windows
3 / 5.1 Metal Panel Edge
3" = 1'-0"



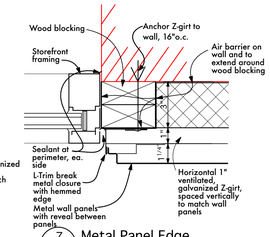
4 / 5.1 Metal Panel Corner
3" = 1'-0"



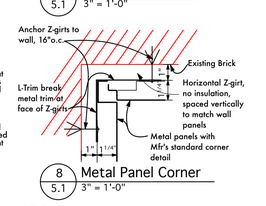
5 / 5.1 Metal Panel Edge
3" = 1'-0"



6 / 5.1 Metal Panel Corner
3" = 1'-0"



7 / 5.1 Metal Panel Edge
3" = 1'-0"

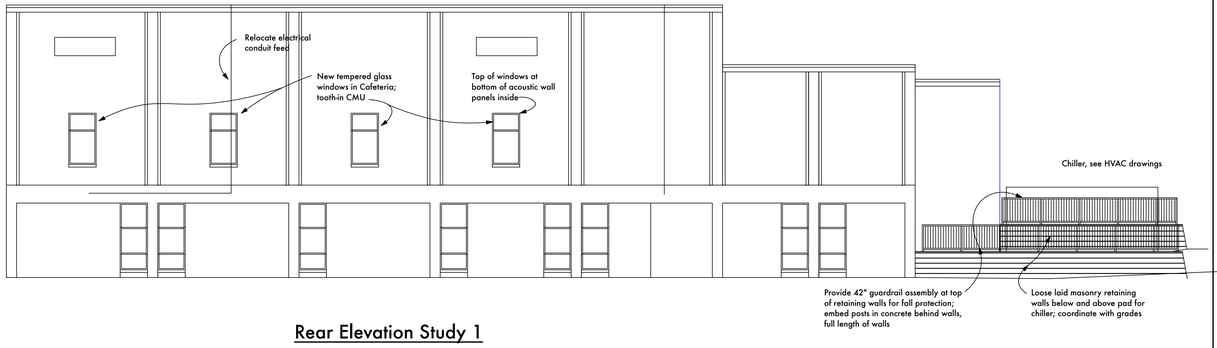


8 / 5.1 Metal Panel Corner
3" = 1'-0"

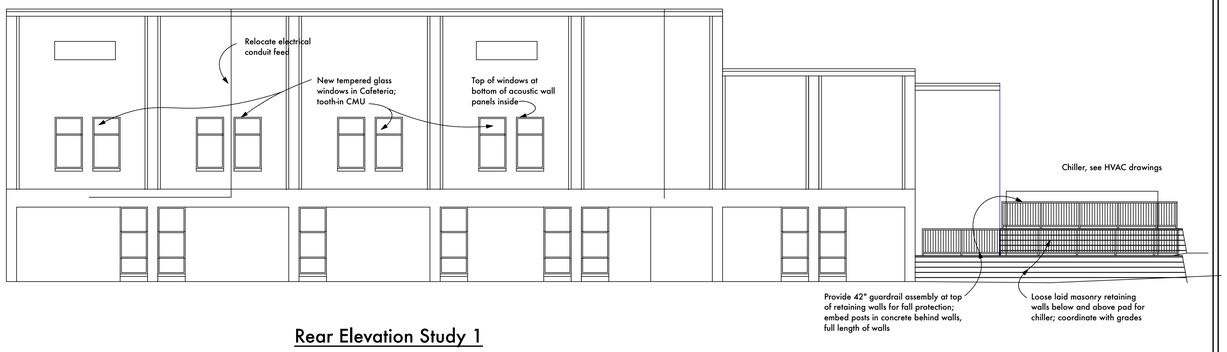
DETAILS AT RE-CLADDING ALTERNATE BID CONDITIONS (RE-CLADDING OF EXISTING BRICK)

DETAILS AT BASE BID LOWER PANELS & GYM ALT BID

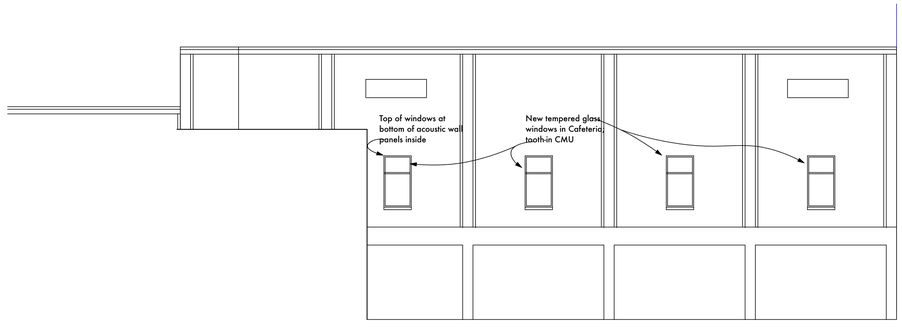
Typical Metal Wall Panel Details: Coordinate details with manufacturer and field conditions (varies depending on whether only Base Bid or if it includes Alternate Bid)



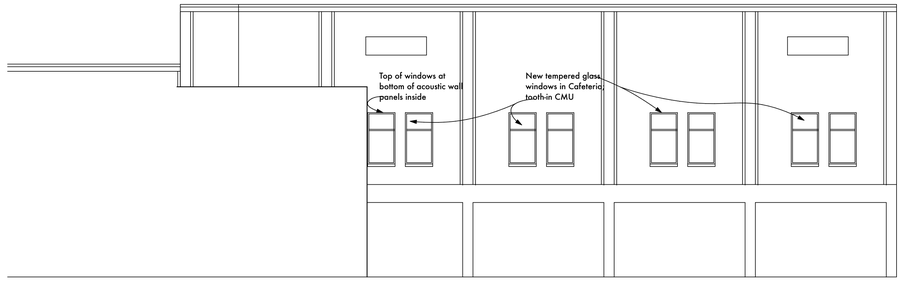
Rear Elevation Study 1



Rear Elevation Study 1



North Elevation at Cafeteria Study 1



North Elevation at Cafeteria Study 2

Alternate Bid to add windows to Cafeteria

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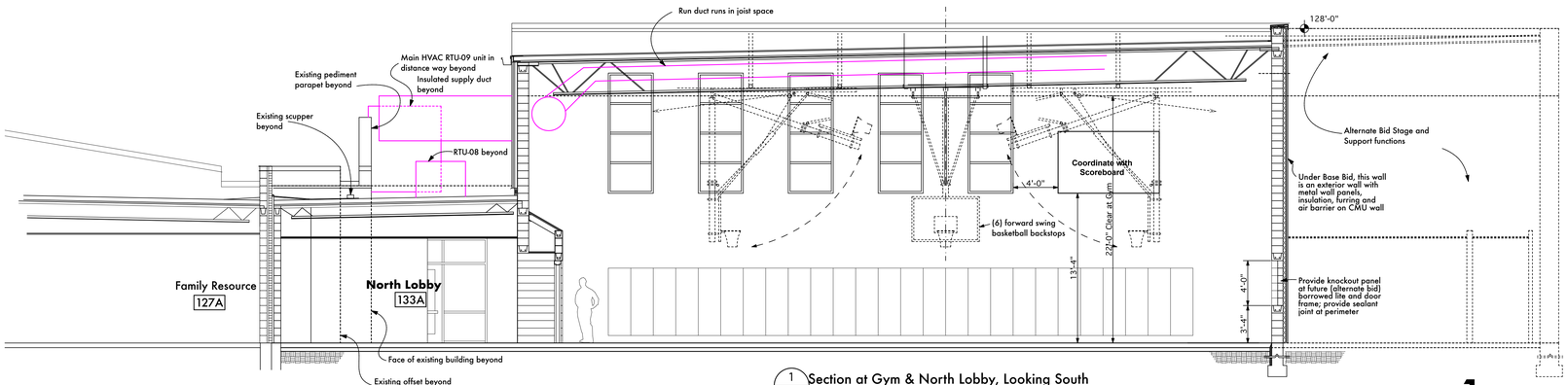
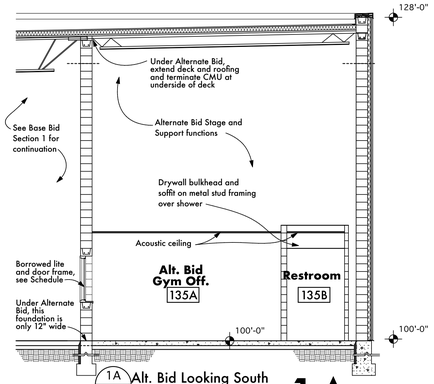


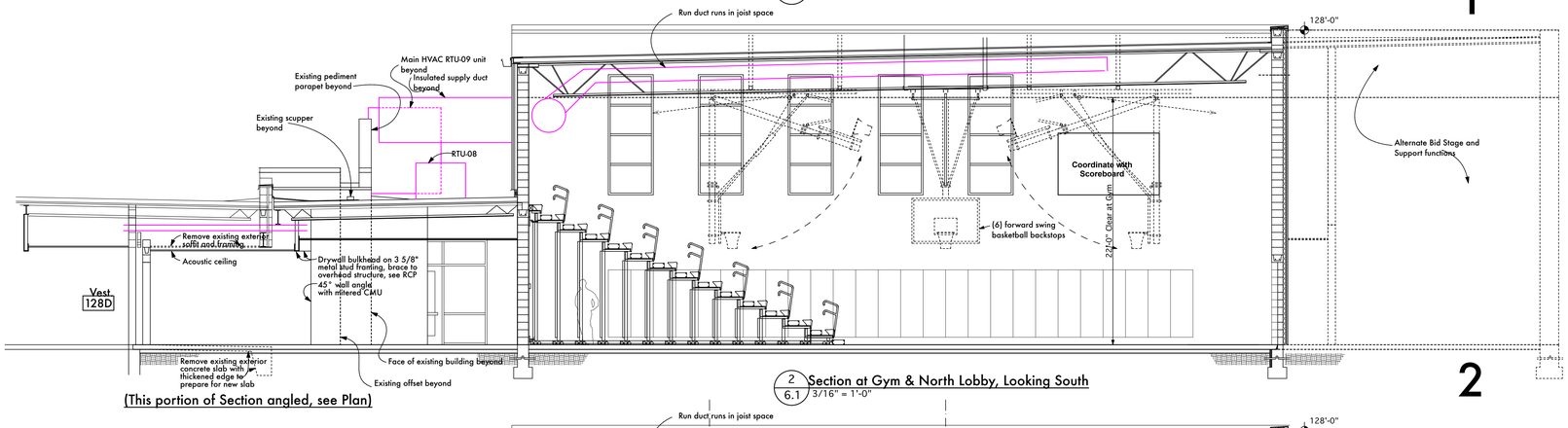
1 / 6.1 Section at Gym & North Lobby, Looking South
3/16" = 1'-0"

1



1A / 6.1 Alt. Bid Looking South
3/16" = 1'-0"

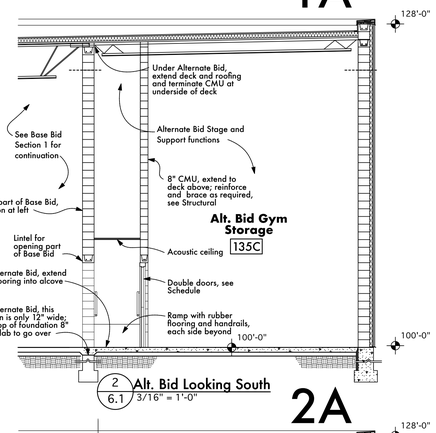
1A



(This portion of Section angled, see Plan)

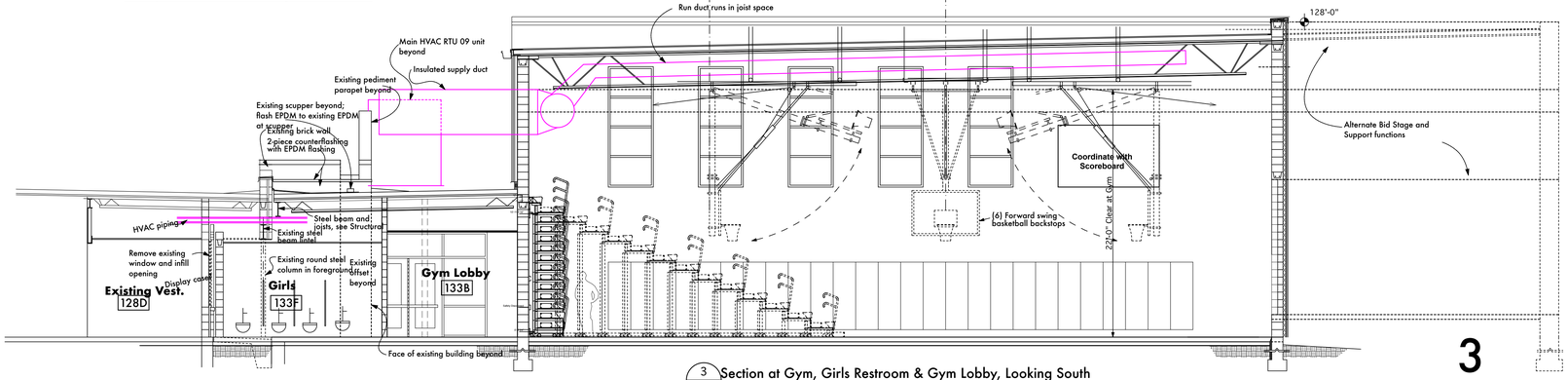
2 / 6.1 Section at Gym & North Lobby, Looking South
3/16" = 1'-0"

2



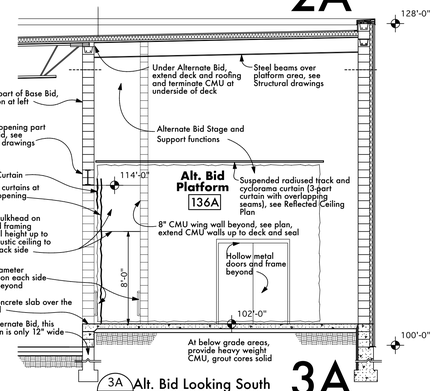
2A / 6.1 Alt. Bid Looking South
3/16" = 1'-0"

2A



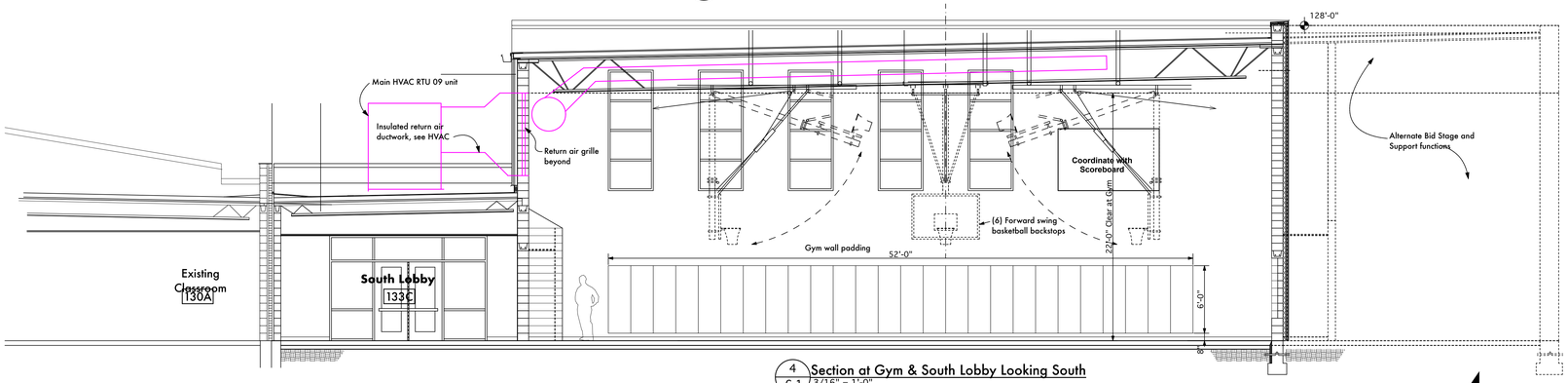
3 / 6.1 Section at Gym, Girls Restroom & Gym Lobby, Looking South
3/16" = 1'-0"

3



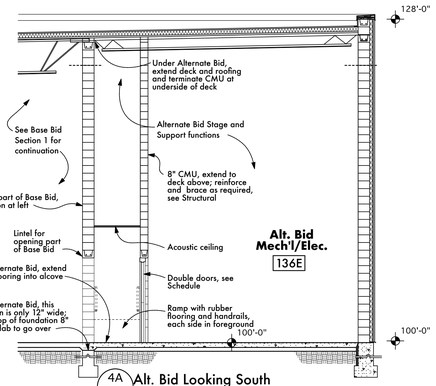
3A / 6.1 Alt. Bid Looking South
3/16" = 1'-0"

3A



4 / 6.1 Section at Gym & South Lobby Looking South
3/16" = 1'-0"

4



4A / 6.1 Alt. Bid Looking South
3/16" = 1'-0"

4A

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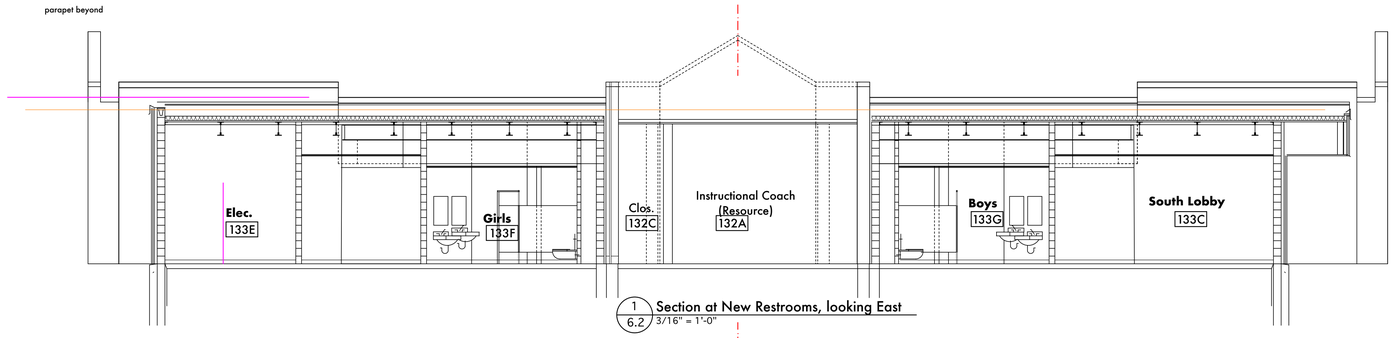
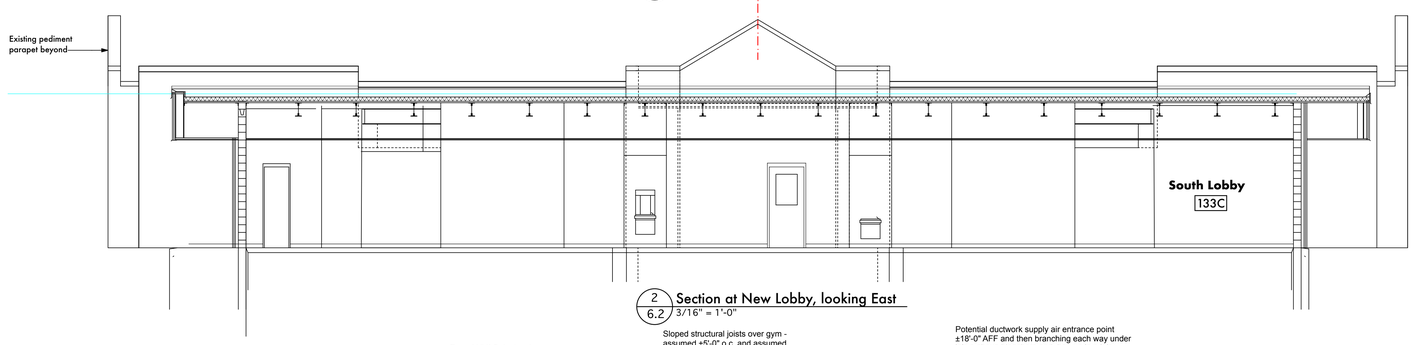
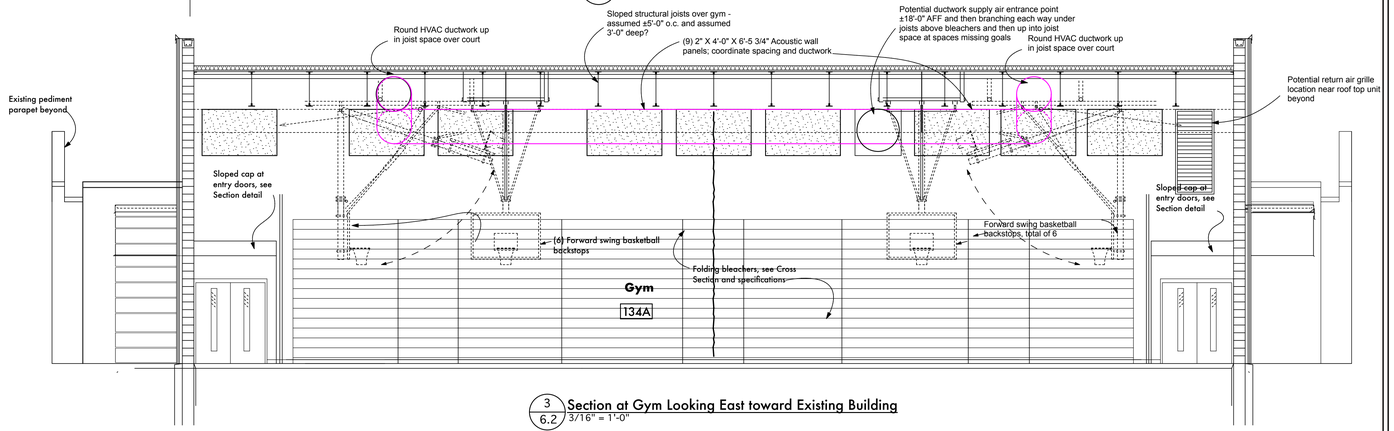


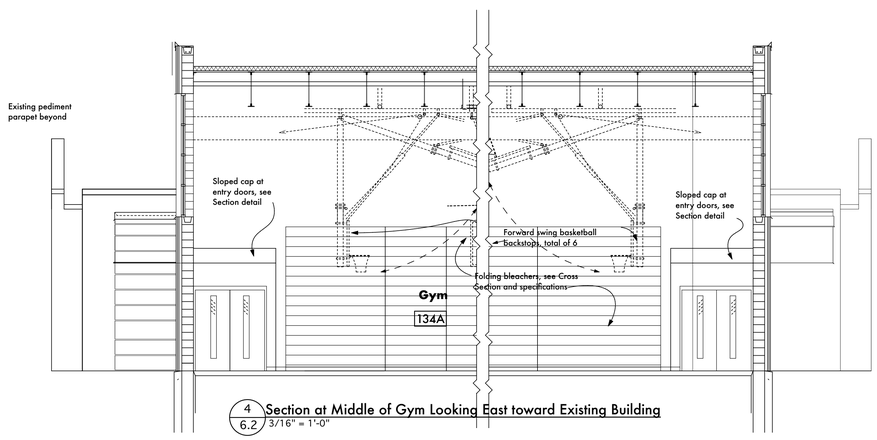
1 / 6.2 Section at New Restrooms, looking East
3/16" = 1'-0"



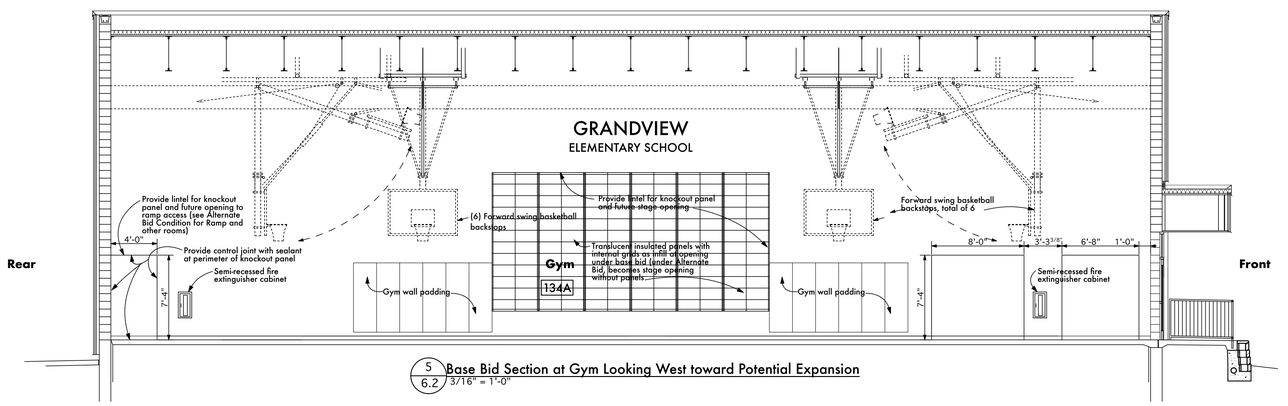
2 / 6.2 Section at New Lobby, looking East
3/16" = 1'-0"



3 / 6.2 Section at Gym Looking East toward Existing Building
3/16" = 1'-0"



4 / 6.2 Section at Middle of Gym Looking East toward Existing Building
3/16" = 1'-0"



5 / 6.2 Base Bid Section at Gym Looking West toward Potential Expansion
3/16" = 1'-0"

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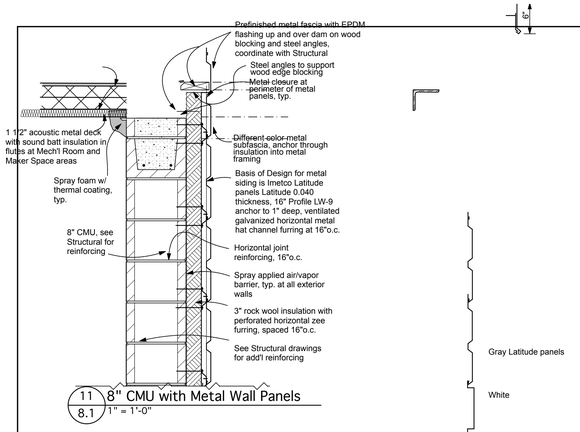
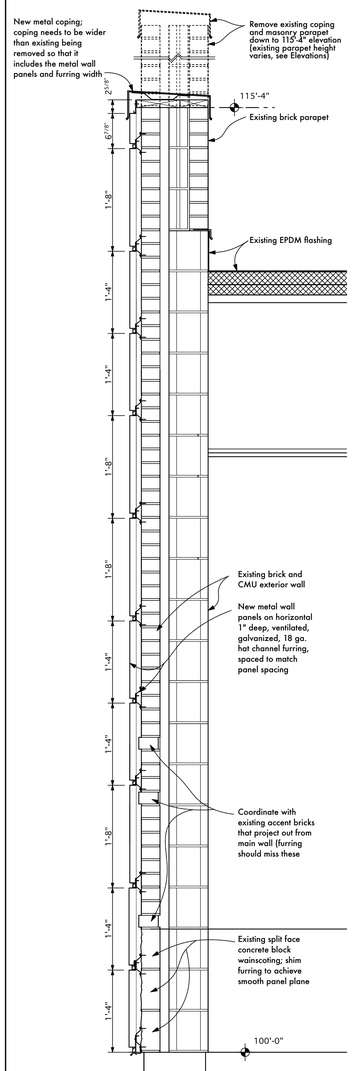


11 / 8.1 8" CMU with Metal Wall Panels
1" = 1'-0"

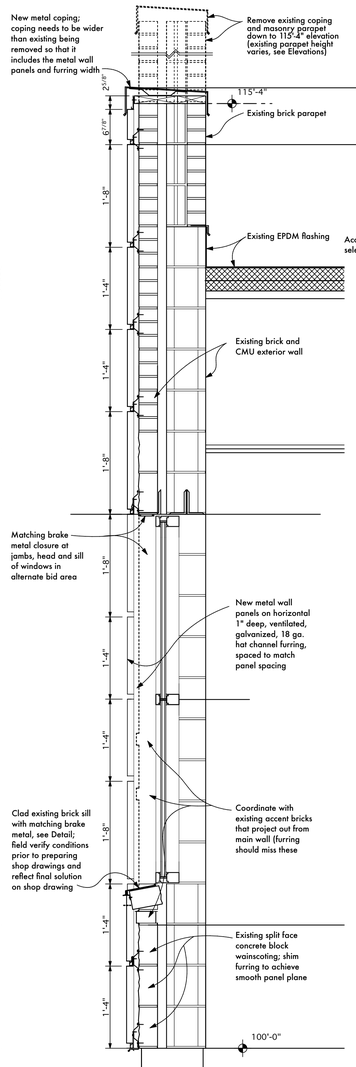
Gray Latitude panels

White

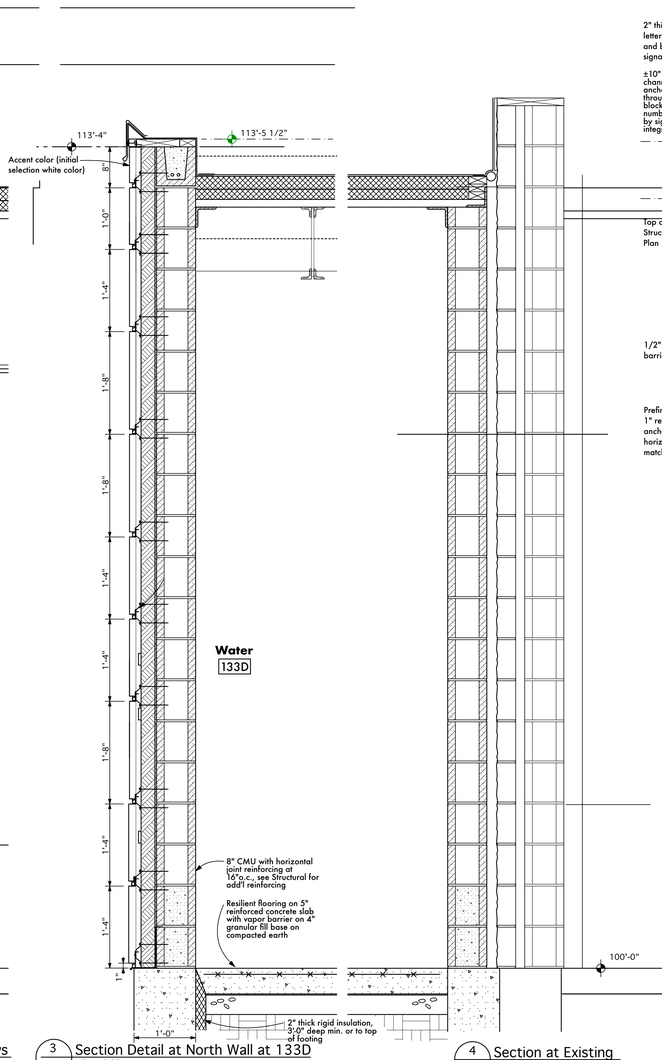
Gray 1" reveal panels



1 / 7.0 Part of "Re-cladding" Alt. Bid Section Detail at Existing North Wall
1" = 1'-0"

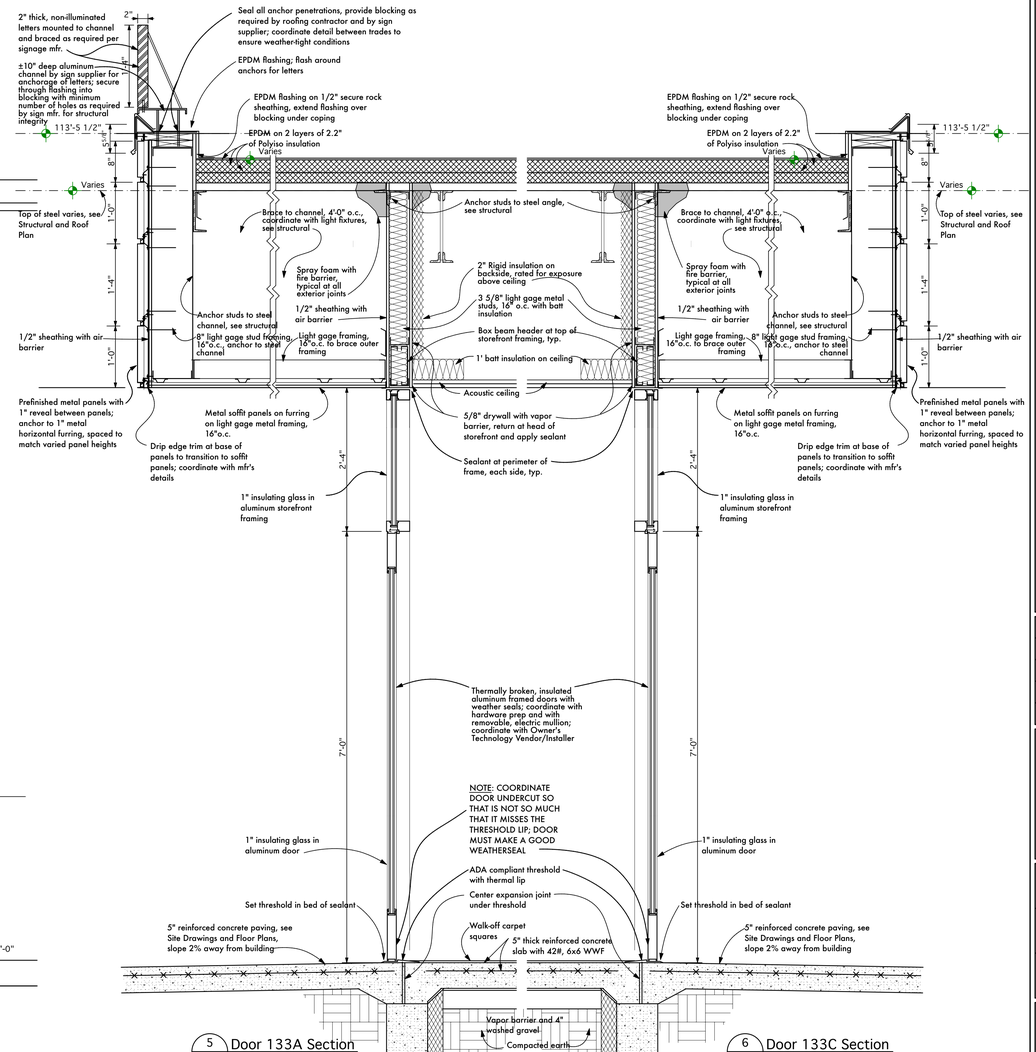


2 / 7.0 Part of "Re-cladding" Alt. Bid Section Detail at Existing North Wall Windows
1" = 1'-0"



3 / 7.0 Section Detail at North Wall at 133D
1" = 1'-0"

4 / 7.0 Section at Existing
1" = 1'-0"



5 / 7.0 Door 133A Section
1" = 1'-0"

6 / 7.0 Door 133C Section
1" = 1'-0"

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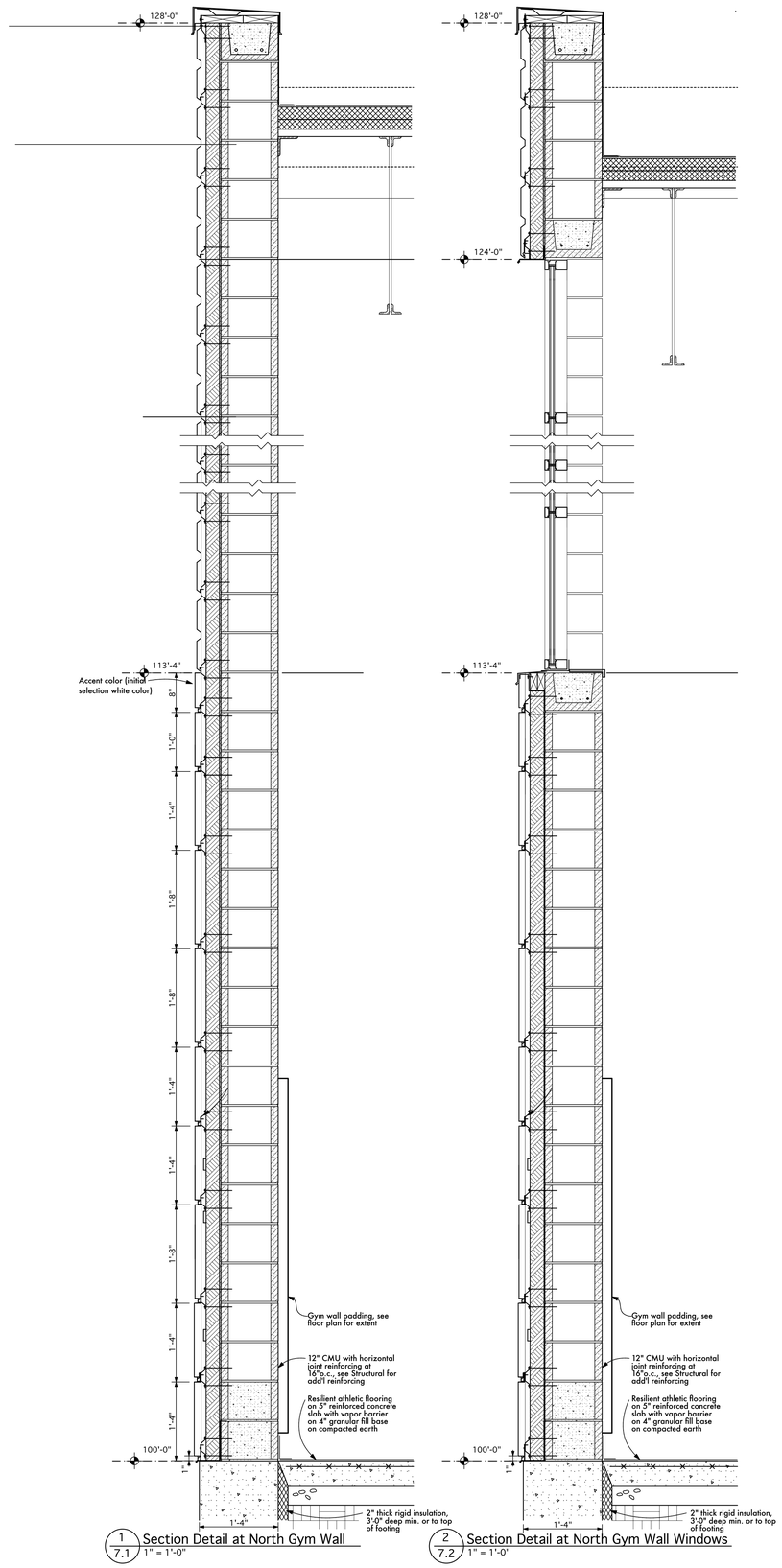

1 / 7.1 Section Detail at North Gym Wall
1" = 1'-0"

2 / 7.2 Section Detail at North Gym Wall Windows
1" = 1'-0"

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MATERIALS AND WORK REQUIRING SPECIAL INSPECTIONS

(PER 2015 INTERNATIONAL BUILDING CODE)

GENERAL NOTE

SPECIAL INSPECTION NOTES AND TABLES WITHIN CONSTRUCTION DOCUMENTS ARE TO BE USED IN CONJUNCTION WITH IBC 2015, CHAPTER 17.

1. INSPECTION OF FABRICATORS

UNLESS EXEMPT BY CODE SECTION 1704.2.5, THE SPECIAL INSPECTOR SHALL VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF THE WORKMANSHIP AND THE FABRICATORS ABILITY TO CONFORM TO APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS. THE SPECIAL INSPECTOR SHALL REVIEW THE PROCEDURES FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE CODE REQUIREMENTS FOR THE FABRICATORS SCOPE OF WORK.

2. STEEL CONSTRUCTION

THE SPECIAL INSPECTIONS FOR STEEL ELEMENTS OF BUILDINGS AND STRUCTURES SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360-10.

3. CONCRETE CONSTRUCTION

UNLESS EXEMPT BY CODE SECTION 1705.3 THE SPECIAL INSPECTIONS AND VERIFICATIONS FOR CONCRETE CONSTRUCTION SHALL BE AS REQUIRED BY TABLE 1705.3

4. MASONRY CONSTRUCTION

MASONRY CONSTRUCTION SHALL BE INSPECTED AND VERIFIED IN ACCORDANCE WITH TMS 402 / ACI 530 / ASCE 5 (TABLE 1.19.1, 1.19.2 OR 1.19.3) AND TMS 602 / ACI 530.1/ ASCE 6 QUALITY ASSURANCE PROGRAM REQUIREMENTS UNLESS EXEMPT BY CODE SECTION 1705.4.

5. SOILS (PERFORMED BY SITE TESTING AGENCY)

A. SITE PREPARATION

PRIOR TO PLACEMENT OF THE PREPARED FILL, THE SPECIAL INSPECTOR SHALL DETERMINE THAT THE SITE HAS BEEN PREPARED IN ACCORDANCE WITH THE APPROVED SOILS REPORT.

B. DURING FILL PLACEMENT OF 12" OR GREATER

DURING PLACEMENT AND COMPACTION OF THE FILL MATERIAL, THE SPECIAL INSPECTOR SHALL DETERMINE THAT THE MATERIAL BEING USED AND THE MAXIMUM LIFT THICKNESS COMPLY WITH THE APPROVED REPORT.

C. EVALUATION OF IN-PLACE DENSITY

THE SPECIAL INSPECTOR SHALL DETERMINE, AT THE APPROVED FREQUENCY, THAT THE IN-PLACE DRY DENSITY OF THE COMPACTED FILL COMPLIES WITH THE APPROVED REPORT.

D. REFER TO DRAWINGS FOR ALLOWABLE SOIL BEARING PRESSURE VERIFICATION.

6. COLD-FORM STEEL LIGHT-FRAME CONSTRUCTION

A. PERIODIC INSPECTION OF BOLT, SCREW, AND WELD ATTACHMENT OF ELEMENTS OF THE MAIN LATERAL FORCE RESISTING SYSTEM, INCLUDING: SHEAR WALLS, BRACES, DIAPHRAGMS, COLLECTORS (DRAG STRUTS), AND HOLD-DOWNS, IS REQUIRED

Table 1.19.2- Level B Quality Assurance
REQUIRED VERIFICATION AND INSPECTION OF MASONRY STRUCTURES & COMMENTARY

MINIMUM TESTS				
Verification of Slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with Specification Article 1.5 B.1.b.3 for self-consolidating grout				
Verification of f'm and f'aac in accordance with Specification Article 1.4B prior to construction, except where specifically exempted by this Code				
MINIMUM INSPECTION				
Inspection Task	Frequency(a)		Reference for Criteria	
	CONTINUOUS	PERIODIC	TMS 402/ ACI 530/ ASCE 5	TMS 602/ ACI 530.1/ ASCE 6
1. Verify compliance with the approved submittals		X		Art. 1.5
2. As masonry construction begins, verify that the following are in compliance:				
a. Proportions of site-prepared mortar		X		Art. 2.1, 2.6 A
b. Construction of mortar joints		X		Art. 3.3 B
c. Grade and size of prestressing tendons and achorages		X		Art. 2.4 B, 2.4 H
d. Location of reinforcement, connectors, and prestressing tendons and anchorages		X		Art. 3.4, 3.6 A
e. Prestressing technique		X		Art. 3.6 B
f. Properties of thin-bed mortar for AAC masonry	X(b)	X(c)		Art. 2.1 C
3. Prior to grouting, verify that the following are in compliance:				
a. Grout space		X		Art. 3.2 D, 3.2 F
b. Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages		X	Sec. 1.16	Art. 2.4, 3.4
c. Placement of reinforcement, connectors, and prestressing tendons and anchorages		X	Sec. 1.16	Art. 3.2 E, 3.4, 3.6 A
d. Proportions of site-prepared grout and prestressing grout for bonded tendons		X		Art. 2.6 B, 2.4, G.1.b
e. Construction of mortar joints		X		Art. 3.3 B
4. Verify during construction:				
a. Size and location of structural elements		X		Art. 3.3 F
b. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction	X		Sec. 1.16.4.3, 1.17.1	
c. Welding of reinforcement	X		Sec. 2.1.7.7.2, 3.3.3.4(c), 8.3.3.4(b)	
d. Preparation, construction and protection of masonry during cold weather (temp. below 40F (4.4C)) or hot weather (temp. above 90F (32.2C))		X		Art. 1.8 C, 1.8 D
e. Application and measurement of prestressing force	X			Art. 3.6 B
f. Placement of grout and prestressing grout for bonded tendons is in compliance	X			Art. 3.5, 3.6 C
g. Placement of AAC masonry units and construction of thin-bed mortar joints	X(b)	X(c)		Art. 3.3 B.8
5. Observe preparation of grout specimens, mortar specimens, and/or prisms		X		Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

(a) Frequency refers to the frequency of inspection, which may be continuous during the task listed or periodically during the listed task, as defined in the table.
(b) Required for the first 5000 square feet (465 square meters) of AAC masonry.
(c) Required after the first 5000 square feet (465 square meters) of AAC masonry.

Table 1705.2.2 (2015 INTERNATIONAL BUILDING CODE)
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

APPLICABLE (Unless noted N/A)	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD *
	1. Material verification of cold-formed steel deck:			
	a. Identification markings to conform to ASTM standards specified in the approved construction documents.	-	X	Applicable ASTM material standards
	b. Manufacturer's certified test reports.	-	X	
	2. Inspection of welding:			
	a. Cold-formed steel deck:			
	1) Floor and roof deck welds.	-	X	AWS D1.3
	b. Reinforcing steel:			
	1) Verification of weldability of reinforcing steel other than ASTM A 706.	-	X	AWS D1.4 ACI 318: Section 3.5.2
	2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	X	-	
	3) Shear Reinforcement.	X	-	
	4) Other reinforcing steel.	-	X	

For SI: 1 inch = 25.4 mm.
a. Where applicable, see also Section 1705.11, Special inspections for seismic resistance.

Table 1705.3 (2015 INTERNATIONAL BUILDING CODE)
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

APPLICABLE (Unless noted N/A)	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD *	IBC REFERENCE
	1. Inspection of reinforcing steel, including prestressing tendons, and placement.	X[c]	X	ACI 318: 3.5, 7.1-7.7	1910.4
	2. Inspection of reinforcing steel welding in accordance with Table 1705.2.2, Item 2b.	-	-	AWS D1.4 ACI 318: 3.5.2	-
	3. Inspection of anchors cast in concrete where allowable loads have been increased or where strength design is used.	-	X	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
	4. Inspection of anchors post-installed in hardened concrete members[b].	X[c]	X	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
	5. Verifying use of required design mix.	-	X	ACI 318: Ch. 4, 5.2-5.4	1904.2, 1910.2, 1910.3
	6. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	-	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1910.10
	7. Inspection of concrete and shotcrete placement for proper application techniques.	X	-	ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
	8. Inspection for maintenance of specified curing temperature and techniques.	-	X	ACI 318: 5.11-5.13	1910.9
	9. Inspection of prestressed concrete: a. Application of prestressing forces. b. Grouting of bonded prestressing tendons in the seismic force-resisting system.	X X	-	ACI 318: 18.20 ACI 318: 18.18.4	-
	10. Erection of precast concrete members.	-	X	ACI 318: Ch. 16	-
	11. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	-	X	ACI 318: 6.2	-
	12. Inspect formwork for shape, location and dim's of the concrete member being formed.	-	X	ACI 318: 6.1.1	-

For SI: 1 inch = 25.4 mm.
a. Where applicable, see also Section 1705.11, Special inspections for seismic resistance.
b. Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with ACI 355.2 or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.
c. Storm shelter area shall be inspected on a continuous basis.

Table 1705.6 (2015 INTERNATIONAL BUILDING CODE)
REQUIRED VERIFICATION AND INSPECTION OF SOILS

APPLICABLE (Unless noted N/A)	VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
	1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	-	X
	2. Verify excavations are extended to proper depth and have reached proper material.	-	X
	3. Perform classification and testing of compacted fill materials.	-	X
	4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X	-
	5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	-	X

Table N5.6-1
Inspection Tasks Prior to Bolting

Inspection Tasks Prior to Bolting	QC	QA
Manufacturer's certifications available for fastener materials	O	P
Fasteners marked in accordance with ASTM requirements	O	O
Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O
Proper bolting procedure selected for joint detail	O	O
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O
Proper storage provided for bolts, nuts, washers and other fastener components	O	O

Table N5.6-3
Inspection Tasks After Bolting

Inspection Tasks After Bolting	QC	QA
Document acceptance or rejection of bolted connections	P	P

Table N5.6-2
Inspection Tasks During Bolting

Inspection Tasks During Bolting	QC	QA
Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	O	O
Joint brought to the snug-tight condition prior to pretensioning operation	O	O
Fastener component not turned by the wrench prevented from rotating	O	O
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	O	O

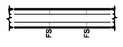
GENERAL FOUNDATION NOTES:

CONCRETE SLABS ON GRADE TO BE 5" CONCRETE SLAB w/ (1) LAYER 6x6 - W2.9xW2.9 MESH (CENTERED IN SLAB DEPTH) ON 4" (min) GRANULAR BASE. CONTROL JOINT SPACING SHALL NOT EXCEED 12'-6" IN EITHER DIRECTION. PROVIDE ADDITIONAL JOINTS AS REQUIRED TO AVOID RE-ENTRANT CORNERS. SEE S5.0 FOR JOINT INFORMATION.

FD - DENOTES FLOOR DRAIN LOCATION. REFER TO PLUMBING DRAWINGS TO VERIFY QUANTITIES AND LOCATIONS. SLOPE SLAB 1/16" per FT (MIN) TO FLOOR DRAINS - MAINTAIN SLAB THICKNESS. ANY SLOPES SHOWN ON PLAN ARE FOR COORDINATION ONLY - FINAL LAYOUT TO BE VERIFIED PRIOR TO POURING SLABS.

⊖ SLOPE SLAB TO DRAIN AT FLOOR DRAINS (FD), COORD. DRAIN LOCATION w/ PLUMBING DRAWINGS

PLUMBING LINES AND INVERT ELEVATIONS ARE ALSO SHOWN FOR EASE OF COORDINATION ONLY - FINAL LOCATIONS ARE TO BE TAKEN FROM PLUMBING DRAWINGS. FOOTINGS ARE TO BE STEPPED OR LEAN-CRETE OPTION ACCORDINGLY IF FINAL LAYOUT DIFFERS FROM WHAT IS SHOWN FOR COORDINATION ON STRUCTURAL DWG'S. SEE SHEET S5.0 FOR TYPICAL FOOTING STEP DETAILS.



FS - DENOTES FOOTING STEP. SEE SHEET S5.0 FOR EXTERIOR FOOTING STEP, INTERIOR FOOTING STEP, TRANSITION STEP FROM EXTERIOR TRENCH FOOTING TO INTERIOR FOOTING.

B/F EL xxx'-xx' - INDICATES BOTTOM OF FOOTING ELEVATION

PROVIDE THICKENED SLAB UNDER ALL MASONRY PARTITION WALLS NOT SHOWN RECEIVING A FOOTING PER PLAN. SEE SHEET S5.0 FOR TYPICAL DETAILS.

▽ - DENOTES CONTROL JOINTS. CONTROL JOINTS ON STRUCTURAL DWG'S ARE SHOWN FOR EASE OF COORDINATION ONLY - FINAL LOCATIONS ARE TO BE TAKEN FROM ARCHL DWG'S

NOTE D - DENOTES REINFORCE EACH CORE w/ (1) #5 BAR FULL HEIGHT AND GROUT EACH CORE SOLID FULL HEIGHT TO BEARING PLATE REQUIRED. MATCH LENGTH OF BEARING PLATE ABOVE

WALL ANGLE DESIGNATION:

NOTE A - DENOTES L 5 x 3 1/2 x 5/16 x CONT (LLV). ATTACHED TO CMU (IN FULLY GROUTED CELLS) w/ 3/4" Ø EXPANSION ANCHORS AT 24" c/c (3 1/4" MINIMUM EMBEDMENT)

NOTE C - DENOTES L3 1/2 x 3 x 1/4 x CONT. (LLH) WELDED TO JOIST ENDS FOR DECK SUPPORT AT DECKING TRANSITION

Table N5.4-1
Inspection Tasks Prior to Welding

Inspection Tasks Prior to Welding	QC	QA
Welding procedure specifications (WPSs) available	P	P
Manufacturer certifications for welding consumables available	P	P
Material Identification (type/grade)	O	O
Welder identification system (1)	O	O
Fit-up of groove welds (including geometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)	O	O
Configuration and finish of access holes	O	O
Fit-up of groove welds (including geometry) • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)	O	O
Check welding equipment	O	–

(1) The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used shall be the lo wethos type.

Table N5.4-3
Inspection Tasks After Welding

Inspection Tasks After Welding	QC	QA
Welds Cleaned	O	O
Size, length and location of welds	P	P
Welds meet visual acceptance criteria • Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld size • Undercut • Porosity	P	P
Arc Strikes	P	P
k-area (1)	P	P
Backing removed and weld tabs removed (if required)	P	P
Repair activities	P	P
Document acceptance or rejection of welded joint or member	P	P

(1) When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3in. (75mm) of the weld.

Table N5.4-2
Inspection Tasks During Welding

Inspection Tasks During Welding	QC	QA
Use of qualified welders	O	O
Control and handling of welding consumables • Packaging • Exposure Control	O	O
No welding over cracked tack welds	O	O
Environmental Conditions • Wind speed within limits • Precipitation and temperature	O	O
WPS followed • Settings on welding equipment • Travel Speed • Selected welding materials • Shielding gas type/flow rate • Preheat applied • Interpass temperature maintained (min./max.) • Proper position	O	O
Welding techniques • Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirements	O	O

STRUCTURAL DESIGN LOADS

ROOF DESIGN LOADS (KBC 2018):

Minimum Roof Live Load = 20 psf

SNOW LOAD: (ASCE 7-10)
Ground Snow Load, pg = 20 psf
Sloped Roof Snow Load, ps,balanced = 15.4 psf
Flat Roof Snow Load = 22 psf
Snow Importance Factor, IS = 1.1
Thermal Factor, Ct = 1.0
Exposure Factor, Ce = 1.0
Rain-on-Snow Surcharge (Slope < 2°/ft) = 5 psf
See Drifting Snow Diagram - S0.1

WIND LOAD: (ASCE 7-10)
Basic Wind Speed (3 second gust), V = 120 mph
Wind Importance Factor, IW = 1.0
Wind Exposure B
Internal Pressure Coefficient = +/- 0.18
Net Wind Uplift on Joists = -13 psf
Sloped Roof (mean roof ht = 16'-0"
-Nominal Wind Surface Pressures, ps30 (psf)

	Transverse	Longitudinal
Zone 1 =	12.73	-13.83
Zone 2 =	-19.1	-19.10
Zone 3 =	-12.07	-12.07
Zone 4 =	-10.32	-13.83
Zone 5 =	----	12.73
Zone 6 =	----	-10.32
Zone 1E =	17.34	-14.49
Zone 2E =	-27.44	-27.44
Zone 3E =	-15.59	-15.59
Zone 4E =	-13.39	-14.49
Zone 5E =	----	17.34
Zone 6E =	----	-13.39

SEISMIC LOAD: (ASCE 7-10)
Occupancy Category III
S_{DS} = 0.166 g S_S = 0.156 g
S_{D1} = 0.134 g S_1 = 0.084 g
Site Soil Class D
Seismic Design Category C
Basic Seismic Force Resisting System - Ordinary Reinforced Masonry Shear Walls
R = 2
IE = 1.25
Cs = 0.104
Cd = 1.75
Equivalent Lateral Force Procedure used in design
Base Shear:
V = 190 KIPS

FOUNDATION DESIGN CRITERIA:

MAXIMUM ALLOWABLE SOIL BEARING PRESSURE SHALL NOT EXCEED **3000 psf**

GENERAL ROOF NOTES:

SEE 'ROOF DECK PLAN' ON SHEET S3.0 FOR ROOF DECK AND ATTACHMENT INFORMATION

DECK IS DESIGNED FOR 3 SPAN CONDITION (U.N.O.). DECK MANUFACTURER SHALL VERIFY SPAN CONDITION AND LAYOUT AND SHALL INCREASE DECK GAGE (THICKNESS) AS REQUIRED FOR 1 AND 2 SPAN CONDITIONS FOR EQUIVALENT STRENGTH.

ROOF JOISTS ARE TO BE SPACED AT 5'-0" c/c (max) - U.N.O.

'K' - SERIES ROOF JOISTS TO HAVE 3 1/2" DEEP JOIST SEATS - U.N.O.

ROOF JOIST HAVE BEEN DESIGNED w/ CONSIDERATION OF DRIFTING SNOW AND MECHANICAL EQUIPMENT LOADS

JOIST BRIDGING (IF SHOWN) IS SHOWN DIAGRAMMATICALLY - ALL BRIDGING IS TO BE LOCATED AND INSTALLED PER CURRENT SJI SPECS

HB - IF SHOWN, DENOTES HORIZONTAL BRIDGING PER SJI

XB - IF SHOWN, DENOTES BOLTED X-BRIDGING PER SJI

UB - IF SHOWN, DENOTES UPLIFT BRIDGING PER SJI

SEE FOUNDATION PLANS FOR VERTICAL REINFORCING OF MASONRY WALL REQUIREMENTS

ROF - DENOTES ROOF OPENING FRAMING. SEE SHEET S6.0 FOR TYPICAL ROOF OPENING FRAMING DETAIL. ROOF OPENING SIZES AND QUANTITIES ARE TO BE VERIFIED w/ APPROPRIATE DISCIPLINES. NOTIFY ENGINEER IF OPENINGS DIFFER FROM WHAT IS SHOWN

SEE SHEET S8.0 FOR TYPICAL FRAMING AND STEEL DETAILS

(xxx'-xx") - DENOTES TOP OF STEEL ELEVATION (T/STL EL)

**** - IF SHOWN ALONG WITH JOIST DESIGNATION (i.e. ****XXXX), DENOTES PLUMBING LINE BUNDLES (DOMESTIC, HVAC , FIRE SUPRESSION, ETC.) HUNG FROM JOISTS. MINIMUM ATTACHMENT (PER DETAIL ON SHEET S8.0) TO OCCUR AT EVERY OTHER JOIST - TYPICAL. ATTACHMENTS OF 8" AND 8" MECHANICAL PIPING SHALL NOT EXCEED 5'-0" c/c UNLESS SUPPORTED BY SECONDARY FRAMING (UNISTRUT) BETWEEN TWO ADJACENT JOISTS. PROVIDE JOIST REINFORCEMENT PER DETAIL E2/S8.0 AT THESE LOCATIONS

[X] - DENOTES BEARING PLATE (SEE BEARING PLATE SCHEDULE). EACH BEARING PLATE TO HAVE 1/2" Ø x 5" LONG HEADED STUDS AT 24" c/c (max), MINIMUM OF (2) HEADED STUDS PER PLATE. CORES TO BE GROUTED SOLID 16" VERTICALLY AND 24" HORIZONTALLY UNDER BEARING PLATE. SEE SHEET S8.0 FOR DETAIL OF BEARING PLATE ANCHORAGE REQUIREMENTS AT CONTROL JOINTS

BEARING PLATE SCHEDULE

MARK		SIZE
D		PL 1/2" x 7 1/2" x 0'-5"
F		PL 1/2" x 7 1/2" x 0'-8"
H		PL 1/2" x 7 1/2" x 1'-0"
K		PL 1/2" x 7 1/2" x 1'-4"
KS	*	PL 1/2" x 7 1/2" x 1'-4"
L		PL 1/2" x 7 1/2" x 2'-0"
M		PL 1/2" x 11 1/2" x 2'-0"
MS	*	PL 1/2" x 11 1/2" x 2'-0"
N		PL 1/2" x 7 1/2" x 3'-0"
P		L 8" x 4" x 1/2" x 2'-0" LONG (LLH)
QS	*	L 8" x 4" x 1/2" x 2'-6" LONG (LLH)
RS	*	L 8" x 4" x 1/2" x 3'-0" LONG (LLH)
HH		(2) PL 1/2" x 7 1/2" x 1'-0" MITERED AT CORNER

NOTES:
PLATES TO HAVE (2) 1/2"Ø x 5" LONG HEADED STUDS
SOLID GROUT 16" VERTICALLY AND 24" HORIZONTALLY

MASON SHALL PROVIDE BEAM BEARING POCKETS NO LARGER IN WIDTH THAN THE BEARING PLATE DIMENSION. THIS PERTAINS TO STORM SHELTER AREA ONLY.

* DENOTES PLATE LOCATION w/ #5 BARS WELDED TO THE BOTTOM OF THE PLATE 30" LONG TO DEVELOP #5 BARS IN MASONRY

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431 Ohio Pike, 1500N, Cincinnati, Ohio 45255 (513) 621-7073

Grandview Elementary - Gym Addition & HVAC Renovation

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

SHEET TITLE

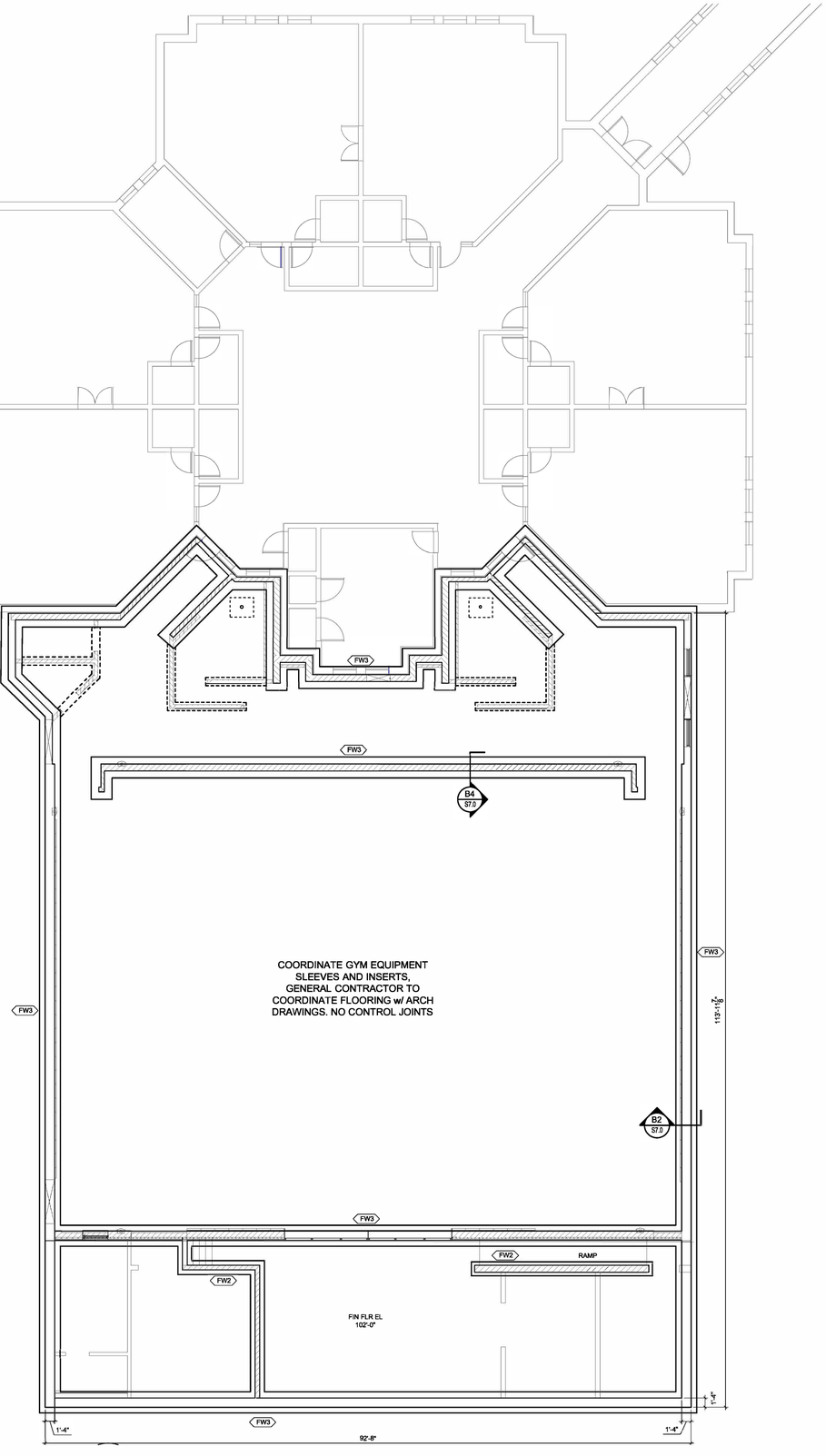
GENERAL NOTES

BG # 24-059

REH # #372-922

DATE 12-13-2023

S0.0



FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

SEE SHEET S0.0 FOR GENERAL FOUNDATION NOTES AND STRUCTURAL DESIGN LOADS

FOOTING SCHEDULE

MARK	SIZE	REINFORCING
FW2	2'-0" WIDE x 1'-0" THICK	(2) #5 CONTINUOUS
FW3	3'-0" WIDE x 1'-0" THICK	(3) #5 CONTINUOUS

EXTERIOR WALL
AT DOOR - TOP OF CONCRETE HELD DOWN 8"

INTERIOR WALL
REPRESENTS FLOOR SLAB TURNED DOWN OVER FOOTINGS

REPRESENTS WALL REINFORCING OUT OF FOUNDATION WALL INTO WALL ABOVE - SEE FOUNDATION PLANS AND NOTES THIS SHEET FOR SIZE AND SPACING OF BARS. COORDINATE w/ ARCH PLANS FOR DOOR AND WINDOW OPENINGS.

FOUNDATION NOTES:

1. **FINISHED FLOOR ELEVATIONS (FIN FLR EL) TO BE 100'-0" = xxx'-x" (USGS EL). ALL FRAMING ELEVATIONS SHALL BE WORKED FROM THIS ELEVATION**
2. **TYPICAL EXTERIOR WALL FOOTINGS TO BE FW3.0 - U.N.O. TYPICAL EXTERIOR BOTTOM OF FOOTING ELEVATION (B/F EL) TO BE 97'0" - U.N.O.**
3. **TYPICAL INTERIOR FOOTINGS TO BE FW2 - U.N.O. TYPICAL INTERIOR BOTTOM OF FOOTING ELEVATION (B/F EL) TO BE 97'-8" - U.N.O.**
4. **MASONRY REINFORCING FOR BEARING WALLS TO BE #5 BARS @ 48" c/c - U.N.O.**

FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

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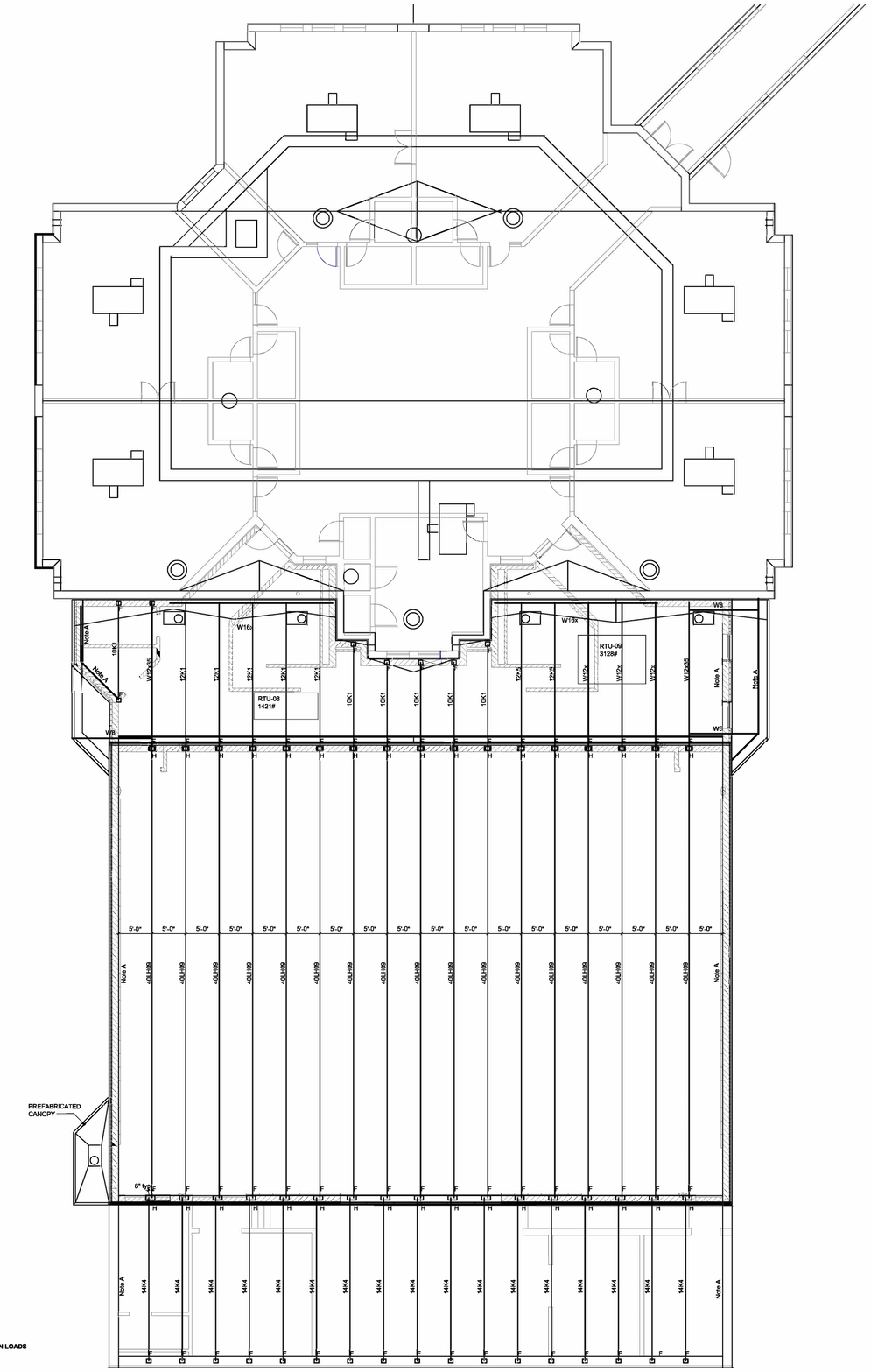
SHEET TITLE
FOUNDATION PLAN

BG # 24-059

REH # #372-922

DATE 12-13-2023

S1.0



ROOF FRAMING PLAN

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

SEE SHEET S0.0 FOR GENERAL ROOF FRAMING NOTES AND STRUCTURAL DESIGN LOADS

ROOF FRAMING NOTES:

1. TOP OF STEEL ELEVATION (T/STL EL) TO BE xxx'-x" - U.N.O.
2. ROOF JOIST BEARING ON CMU TO RECEIVE TYPE "F" BRG. PLATE - U.N.O.
3. JOIST BEARING ELEVATION REPRESENTS TOP OF BOND BEAM ELEVATION. BEARING PLATE SITS ON TOP OF BOND BEAM AND JOISTS SIT ON BEARING PLATE

ROOF FRAMING PLAN

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

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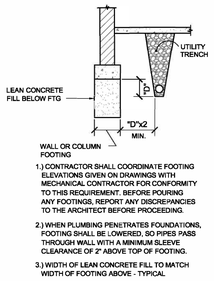
ROOF FRAMING PLAN

BG # 24-059

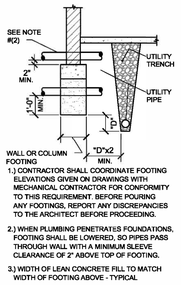
REH # #372-922

DATE 12-13-2023

S3.0



E1 S7.0 RELATION OF UTILITY TRENCH TO BUILDING FOUNDATIONS
SCALE: 3/4"=1'-0"



E2 S7.0 RELATION OF UTILITY TRENCH TO BUILDING FOUNDATIONS
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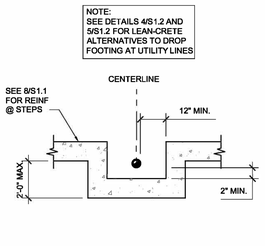
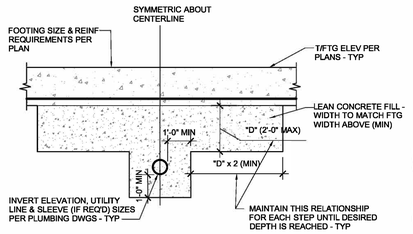
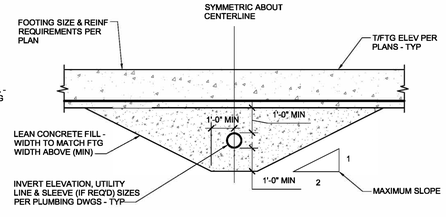


E3 S7.0 TYPICAL DROP FTG AT UTILITY LINE
SCALE: 3/4"=1'-0"



E4 S7.0 STEP FTG @ UTILITY LEAN-CRETE OPTION
SCALE: 3/4"=1'-0"



E5 S7.0 STEP FTG @ UTILITY (SLOPED) LEAN-CRETE OPTION
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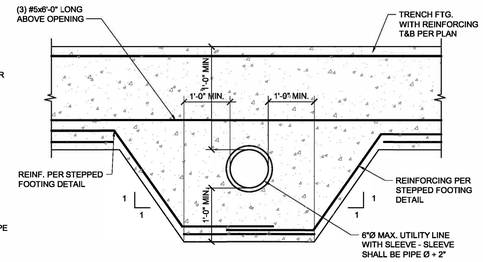
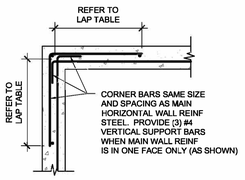
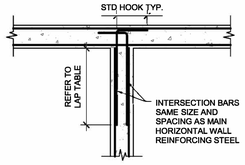


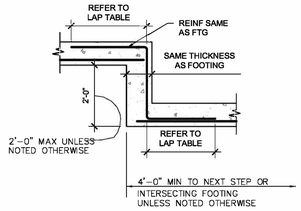
E6 S7.0 DROP EXTERIOR FOOTING AT UTILITY LINE
SCALE: NTS



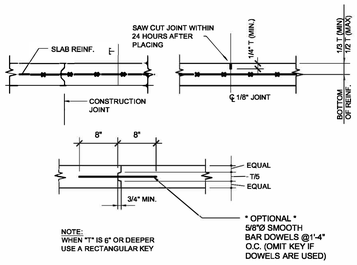
D1 S7.0 TYPICAL CORNER DETAIL WALL AND FOOTING
SCALE: NTS



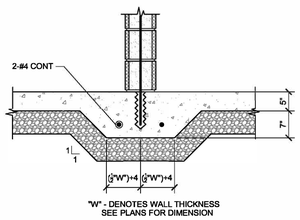
D2 S7.0 TYPICAL INTERSECTION DETAIL WALL AND FOOTING
SCALE: NTS



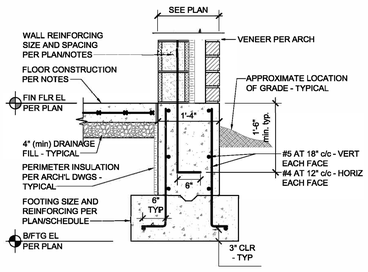
D3 S7.0 TYPICAL STEP FOOTING DETAIL
SCALE: NTS



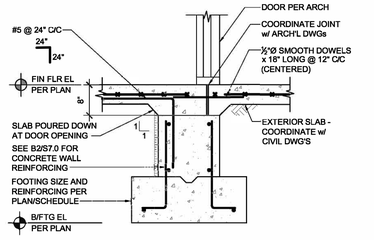
C1 S7.0 CONSTRUCTION JOINT
SCALE: 3/4"=1'-0"



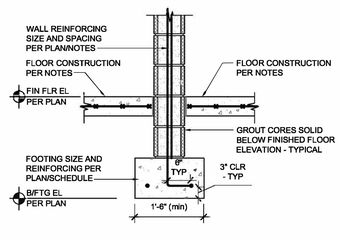
C3 S7.0 TYPICAL THICKENED SLAB UNDER NON-LOAD BEARING MASONRY PARTITIONS
SCALE: 3/4"=1'-0"



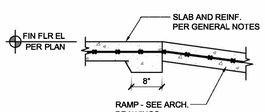
B2 S7.0 TYPICAL EXTERIOR WALL FOOTING
SCALE: 3/4"=1'-0"



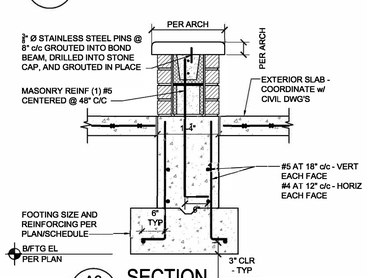
B3 S7.0 TYPICAL FROST WALL SECTION
SCALE: 3/4"=1'-0"



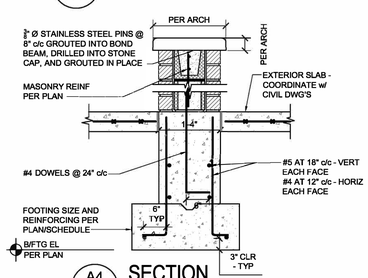
B4 S7.0 TYPICAL INTERIOR WALL FOOTING
SCALE: 3/4"=1'-0"



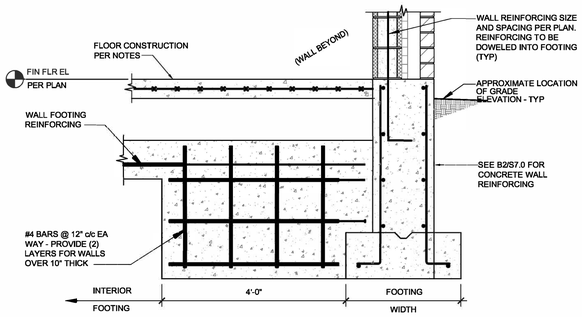
A2 S7.0 SECTION
SCALE: 3/4" = 1'-0"



A3 S7.0 SECTION
SCALE: 3/4" = 1'-0"



A4 S7.0 SECTION
SCALE: 3/4" = 1'-0"



A2 S7.0 TYPICAL TRANSITION FROM EXTERIOR FOOTING TO INTERIOR BEARING WALL FOOTING
SCALE: 3/4"=1'-0"

MINIMUM LAP SPLICE LENGTH	
BAR SIZE	CONCRETE (4000 psi)
#3	18"
#4	24"
#5	30"
#6	36"

TYPICAL LAP SCHEDULE FOR CONCRETE REBAR

(2015 International Building Code)

BAR SIZE	MINIMUM LAP SPLICE LENGTH, Inches
#3	27
#4	36
#5	45
#6	54
#7	63
#8	72
#9	82

Based on the stresses in the steel, fs, taken equal to 100% of the allowable reinforcement tensile stress of 24,000 psi for Grade 60 reinforcement.

Bars larger than #9 are required to be spliced by mechanical connectors.

Lap splice lengths are to be increased by 50% when epoxy coated reinforcement is used.

ALLOWABLE STRESS DESIGN - MASONRY REINFORCEMENT LAP SPLICE LENGTHS

A5 S7.0

GOP Limited
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Grandview Elementary - Gym Addition & HVAC Renovation

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

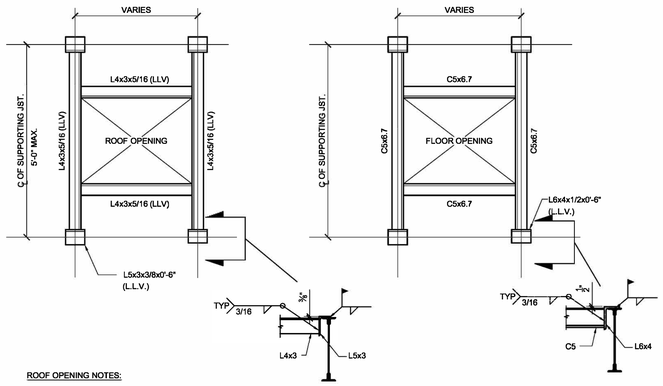
SHEET TITLE
FOUNDATION DETAILS

BG # 24-059

REH # #372-922

DATE 12-13-2023

S7.0



ROOF OPENING NOTES:

1. REINFORCE DECK AROUND OPENINGS LESS THAN 12 INCHES IN ANY DIRECTION WITH MINIMUM TWENTY (20) GA GALV STEEL SHEET AT LEAST 12 INCHES WIDER AND LONGER THAN THE OPENING PLACED OVER THE OPENING AND FASTEN TO THE TOP OF THE DECK AT EACH CORNER AND 6 INCHES c/c ALONG EACH SIDE.

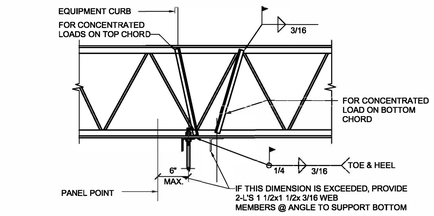
2. WHERE DECK OPENINGS ARE FROM 15 TO 30 INCHES WIDE, AND ARE NOT SUPPORTED BY STRUCTURAL MEMBERS, PROVIDE 1x1x1/4 INCH STEEL ANGLE TO THE UNDERSIDE OF THE DECK AT RIGHT ANGLES TO RIBS. EXTEND ANGLE TO THREE (3) RIBS BEYOND EACH SIDE OF THE OPENINGS. WELD TO THE BOTTOM OF EACH RIB. REINFORCE THE OPENING SIDE PARALLEL TO RIBS WITH MINIMUM TWENTY (20) GAUGE GALV STEEL SHEET 12 INCHES WIDE, WELDED AT EACH CORNER AND 6 INCHES c/c ALONG EACH SIDE. SIDE REINFORCING MAY BE OMITTED WHEN A ROOF SUMP PAN IS TO BE INSTALLED OVER THE OPENING.

3. ALL OTHER OPENINGS SHALL BE FRAMED AS SHOWN ON THIS SHEET.

NOTE: SEE MECHANICAL DRAWINGS FOR NUMBER, LOCATION AND SIZE OF ROOF OPENINGS AND MECHANICAL UNITS. ANGLE FRAMES SHALL ALSO BE PROVIDED UNDER CURBS OF ALL ROOFTOP MECHANICAL UNITS. COORDINATE LENGTHS AND LOCATION OF ANGLES WITH MECH. CONTRACTOR.

E1 / S8.0 TYPICAL OPENING FRAMES

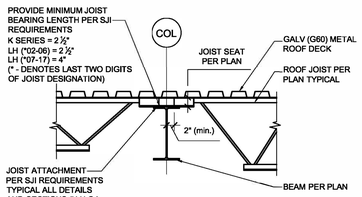
SCALE: 3/4"=1'-0" (JOIST SYSTEM)



* - FOR CONCENTRATED LOADS ON THE TOP CHORD > 100#
* - FOR CONCENTRATED LOADS ON THE BOTTOM CHORD > 100#

NOTE: JOIST MANUFACTURER MUST DESIGN CHORDS FOR THESE CONCENTRATED LOADS (WITHOUT SPECIAL WEB REINFORCEMENT)

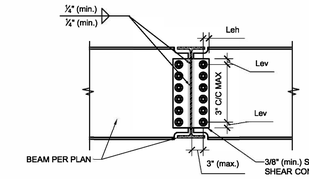
E2 / S8.0 TYPICAL REINFORCEMENT OF JOIST FOR CONCENTRATED LOAD NOT AT PANEL POINT



NOTE:
PROVIDE ERECTION BOLTS AS REQUIRED BY SJI AND OSHA.

D2 / S8.0 TYPICAL ROOF JOIST TO WF BEAM CONNECTION

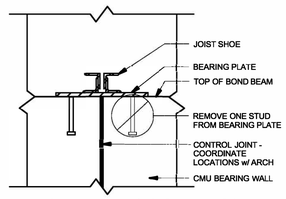
SCALE: 3/4"=1'-0"



NOTES:
1. CONNECTION TO DEVELOP UNIFORM LOAD CAPACITY OF BEAM (U.N.O.).
2. Leh & Lev PER AISC 360 REQUIREMENTS (TYP).
3. SHORT SLOTS PER AISC ARE ACCEPTABLE IN SINGLE PLATE, HOWEVER, SLOPED BEAMS SHALL HAVE STD HOLE SIZE PER AISC.

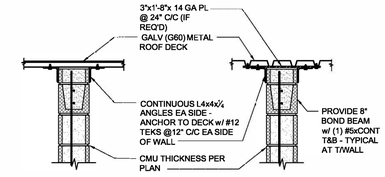
E4 / S8.0 TYPICAL WIDE FLANGE BEAM TO WIDE FLANGE BEAM CONNECTION

SCALE: 3/4"=1'-0"



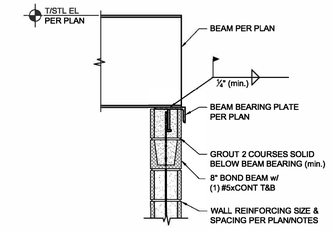
D3 / S8.0 BEARING PLATE / CONTROL JOINT CONFLICT

SCALE : 1-1/2" = 1' - 0"



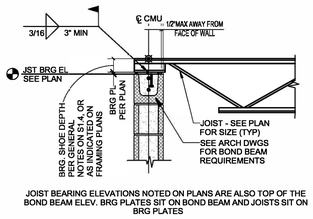
D5 / S8.0 TYP CONNECTION OF CMU PARTITION TO ROOF/FLOOR DECK (NON-SHEAR WALLS)

SCALE: 3/4"=1'-0"



C1 / S8.0 TYPICAL BEAM BEARING ON ON MASONRY WALL

SCALE: 3/4"=1'-0"



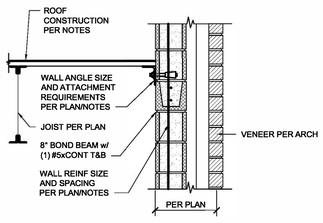
JOIST BEARING ELEVATIONS NOTED ON PLANS ARE ALSO TOP OF THE BOND BEAM ELEV. BRG PLATES SIT ON BOND BEAM AND JOISTS SIT ON BRG PLATES

C2 / S8.0 TYPICAL JOIST BEARING ON MASONRY

SCALE: 3/4"=1'-0"

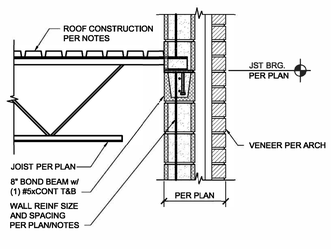
C6 / S8.0 TYPICAL DETAIL AT CHANGE IN DIRECTION OF DECK PAN

SCALE: 3/4"=1'-0"



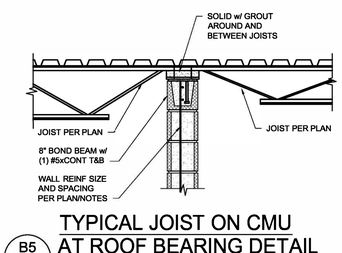
B3 / S8.0 ROOF WALL ANGLE

SCALE: 3/4"=1'-0"



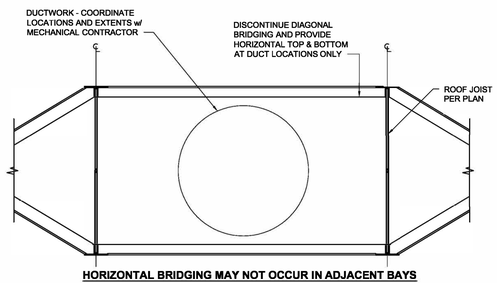
B4 / S8.0 ROOF JST BEARING

SCALE: 3/4"=1'-0"



B5 / S8.0 TYPICAL JOIST ON CMU AT ROOF BEARING DETAIL

SCALE: 3/4"=1'-0"



HORIZONTAL BRIDGING MAY NOT OCCUR IN ADJACENT BAYS

A1 / S8.0 TYPICAL HORIZONTAL BRIDGING @ DUCT LOCATION

SCALE: 3/4"=1'-0"

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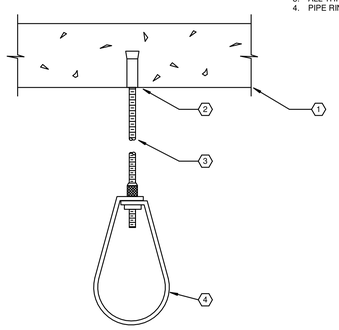
S8.0

OWNERSHIP OF INSTRUMENTS OF SERVICE
All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by the Consultant as instruments of service shall remain the property of the Consultant. The Consultant shall retain all common law, statutory and other reserved rights, including, without limitation, the copyright thereto.

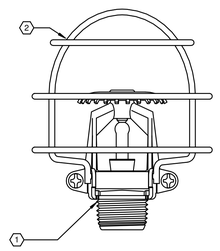
KEYED NOTES:
1. CONCRETE DECK ABOVE.
2. CONCRETE ANCHOR.
3. ALL THREAD ROD.
4. PIPE RING.



210529.00-01 - DRILLED CONCRETE ANCHOR HANGER - DECK

SCALE: NONE

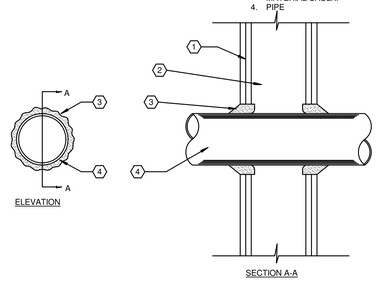
KEYED NOTES:
1. NEW UPRIGHT SPRINKLER.
2. NEW SPRINKLER GUARD.



211313.00-07 - UPRIGHT SPRINKLER GUARD

SCALE: NONE

KEYED NOTES:
1. WALL ASSEMBLY
2. WALL ASSEMBLY
3. FILL VOID OR CAVITY WITH MATERIAL CAULK.
4. PIPE

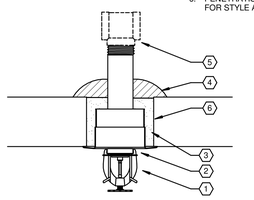


NOTE:
DETAIL FOR THROUGH PENETRATION OF A GYPSUM WALL WITH A FIRE RATING OF 1, 2, 3, OR 4 HOURS BY METAL PIPE

210517.00-01 - THROUGH PENETRATION DETAIL W-L-1001

SCALE: NONE

KEYED NOTES:
1. DRY PENDENT SPRINKLER.
2. ESCUTCHEON PLATE. REFER TO SPECIFICATIONS FOR STYLE.
3. OPEN CELL POLYETHYLENE FOAM BACKER ROD MATERIAL.
4. PLASTIC ADHESIVE SIMILAR TO DOWEL CORNING #739.
5. SYSTEM TEE - PROVIDE PLUG WHERE REQUIRED.
6. PENETRATION IN CEILING AS NEEDED FOR STYLE AND TYPE OF SPRINKLER

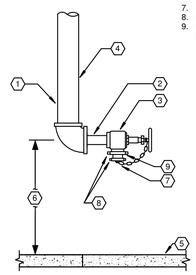


NOTE:
PROVIDE ESCUTCHEON DEPTH AS NEEDED TO COMPLY WITH NFPA-13 OBSTRUCTION RULES.

211313.00-29 - DRY PENDENT HEAD FREEZER COOLERS

SCALE: NONE

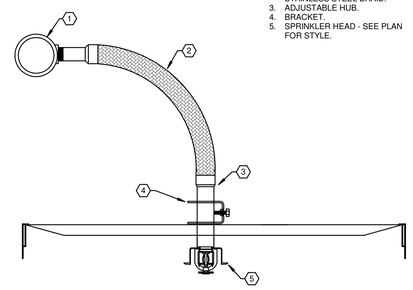
KEYED NOTES:
1. SUPPLY PIPE
2. 2-1/2" NIPPLE.
3. 2-1/2" FIRE DEPARTMENT HOSE VALVE. VERIFY THREAD ON VALVE WITH LOCAL FIRE DEPARTMENT.
4. SEE FLOOR PLAN FOR LOCATION.
5. FINISHED FLOOR/STAIR LANDING.
6. HOSE VALVE IS TO BE PLACED 4'-0" ABOVE THE FLOOR/LANDING.
7. CAP AND CHAIN.
8. SPANNER LUGS.
9. 2-1/2" X 1-1/2" REDUCER (IF REQUIRED BY LOCAL AHJ).



211200.00-04 - STANDPIPE HOSE VALVE

SCALE: NONE

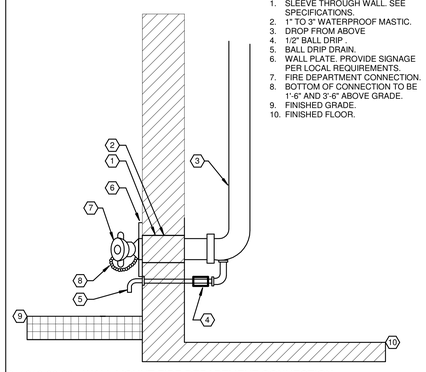
KEYED NOTES:
1. BRANCH LINE.
2. FLEX DROP - CORRUGATED STAINLESS STEEL HOSE WITH STAINLESS STEEL BRAID.
3. ADJUSTABLE HUB.
4. BRACKET.
5. SPRINKLER HEAD - SEE PLAN FOR STYLE.



211313.00-25 - FLEXIBLE DROP DETAIL

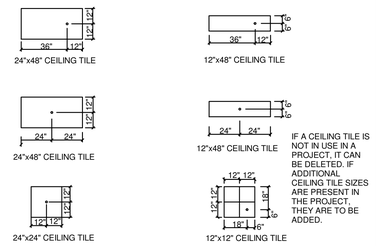
SCALE: NONE

KEYED NOTES:
1. SLEEVE THROUGH WALL. SEE SPECIFICATIONS.
2. 1" TO 3" WATERPROOF MASTIC.
3. DROP FROM ABOVE
4. 1/2" BALL DRIP.
5. BALL DRIP DRAIN.
6. WALL PLATE. PROVIDE SIGNAGE PER LOCAL REQUIREMENTS.
7. FIRE DEPARTMENT CONNECTION.
8. BOTTOM OF CONNECTION TO BE 1'-6" AND 3'-6" ABOVE GRADE.
9. FINISHED GRADE.
10. FINISHED FLOOR.



211313.00-20 - WALL MOUNT FIRE DEPARTMENT CONNECTION

SCALE: NONE

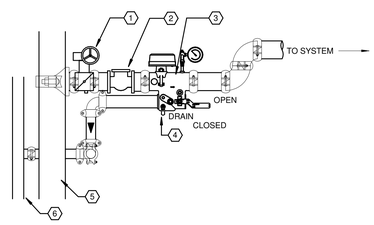


NOTE:
ALL LOCATIONS INDICATED ARE TO BE MAINTAINED WITHIN PLUS OR MINUS 1/2", AND ALIGNED WITH ADJACENT HEADS FOR A UNIFORM, EVEN APPEARANCE OF COMPLETED INSTALLATION. POSITIONS INDICATED APPLY TO FULL SIZE SMOOTH SURFACE TILES, AS WELL AS FULL SIZE SUBGRIDDED (SCORED OR GRAPHICALLY DIVIDED) SURFACE TILES. THE APPEARANCE OF THE FINISHED CEILING TILE FACE AS INSTALLED OVERRIDES THE ACTUAL PHYSICAL DIMENSIONS OF THE TILE FOR PLACEMENTS INDICATED HEREIN. VERIFY CEILING TILE TYPES FROM ARCHITECTURAL DOCUMENTATION.

211313.00-02 - SPRINKLER HEAD LOCATION

SCALE: NONE

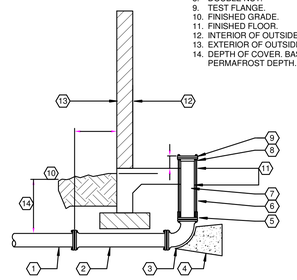
KEYED NOTES:
1. FLOOR CONTROL VALVE WITH TAMPER SWITCH.
2. SWING CHECK VALVE.
3. MANIFOLD ASSEMBLY WITH FLOW SWITCH, PRESSURE GAUGE, AND TEST DRAIN VALVE. PROVIDE RELIEF VALVE WHEN REQUIRED.
4. FLOOR TEST AND MAIN DRAIN.
5. SUPPLY PIPE.
6. MAIN DRAIN.



211200.00-05 - FLOOR CONTROL ASSEMBLY

SCALE: NONE

KEYED NOTES:
1. UNDERGROUND PIPE. SEE CIVIL PLANS.
2. DUCTILE IRON PIPE TO 5'-0" OUTSIDE.
3. MECHANICAL JOINT 90 DEGREE ELBOW.
4. THRUST BLOCK MINIMUM 5 SQ. FT. BEARING AGAINST SOLID GROUND.
5. RETAINING EYE AND DOUBLE NUT.
6. RETAINING ROD.
7. DUCTILE IRON FLANGE X SPIGOT PIECE. 2-HOLE FLANGE TO EXTERIOR WALL.
8. DOUBLE NUT.
9. TEST FLANGE.
10. FINISHED GRADE.
11. FINISHED FLOOR.
12. INTERIOR OF OUTSIDE WALL.
13. EXTERIOR OF OUTSIDE WALL.
14. DEPTH OF COVER, BASED ON LOCAL PERMAFROST DEPTH.



211313.00-30 - FIRE PROTECTION SERVICE ENTRANCE

SCALE: NONE

FIRE PROTECTION LEGEND

SYMBOL	DESCRIPTION
PIPING LINE TYPES	
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR 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 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).	
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	
FHV	FIRE PROTECTION SYSTEM STANDPIPE WITH HOSE VALVES
TS	CONTROL VALVE WITH TAMPER SWITCH
FS	FLOW SWITCH
FDC	FIRE DEPARTMENT CONNECTION
EB	ELECTRIC ALARM BELL
HAZARD OCCUPANCY	
LH	LIGHT HAZARD OCCUPANCY
OH1	ORDINARY HAZARD OCCUPANCY GROUP 1
OH2	ORDINARY HAZARD OCCUPANCY GROUP 2
EH1	EXTRA HAZARD OCCUPANCY GROUP 1
EH2	EXTRA HAZARD OCCUPANCY GROUP 2
RES	RESIDENTIAL OCCUPANCY GROUP
ACT	ACOUSTIC CEILING TILE
GYP	GYPSUM BOARD CEILING
EXP	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 INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT 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 OWNER'S 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 FDC'S 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 N.KY.W.D.. STATIC PRESSURE 95 PSI, RESIDUAL PRESSURE OF 76 PSI, AND A FLOW OF 1342 GPM.
M. THESE PLANS ARE PROVIDED TO ASSIST CONTRACTORS IN DEVELOPING AN ACCURATE FIRE PROTECTION BID. THESE PLANS WERE NOT PREPARED FOR SUBMITTAL TO AHJ'S 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

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ADDENDA

SHEET TITLE
FIRE PROTECTION NOTES AND DETAILS
DWN: GRS CHK: SKV

BG # 24-059
REH # 372-922
DATE 12-13-2023

F0-001
KLH PROJECT # 24599

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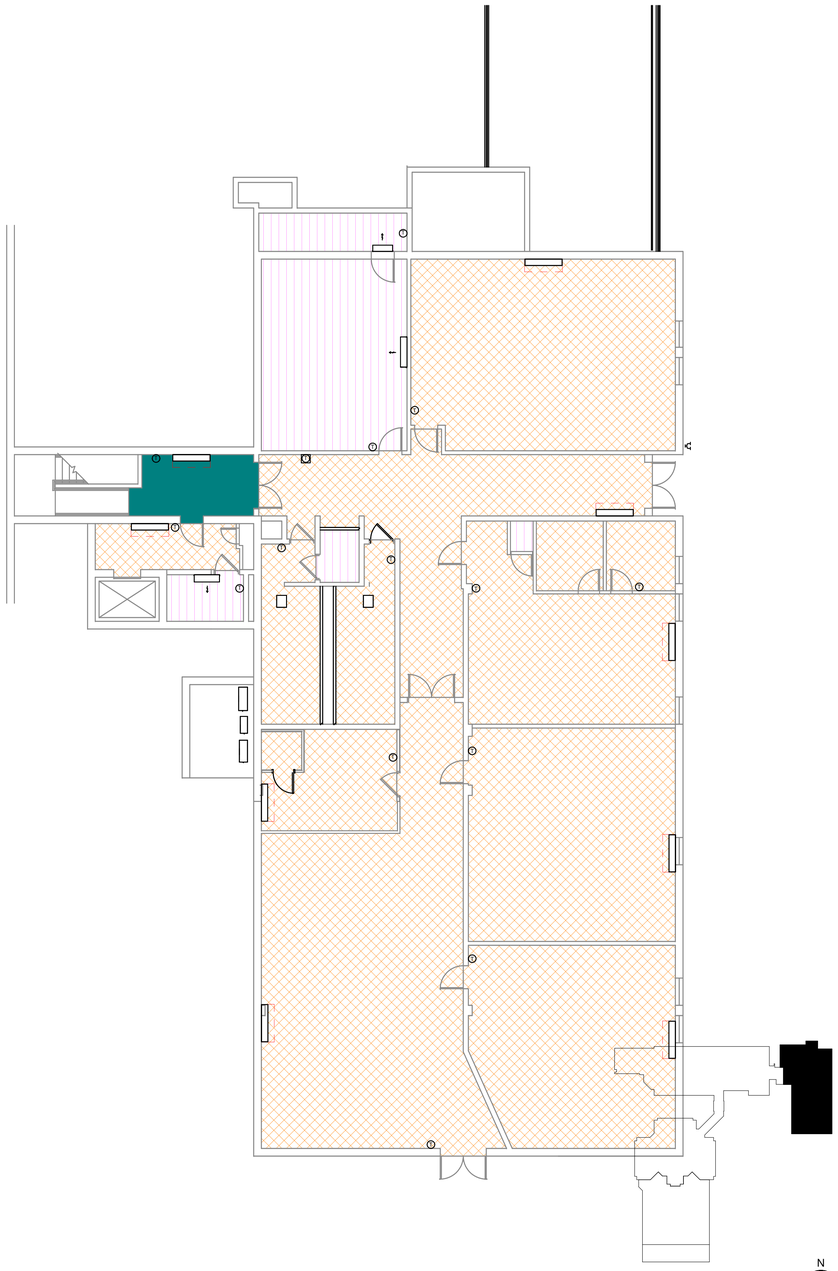

1 FIRE PROTECTION ZONING PLAN - LEVEL C - LEVEL C
1/8" = 1'-0"

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REH #
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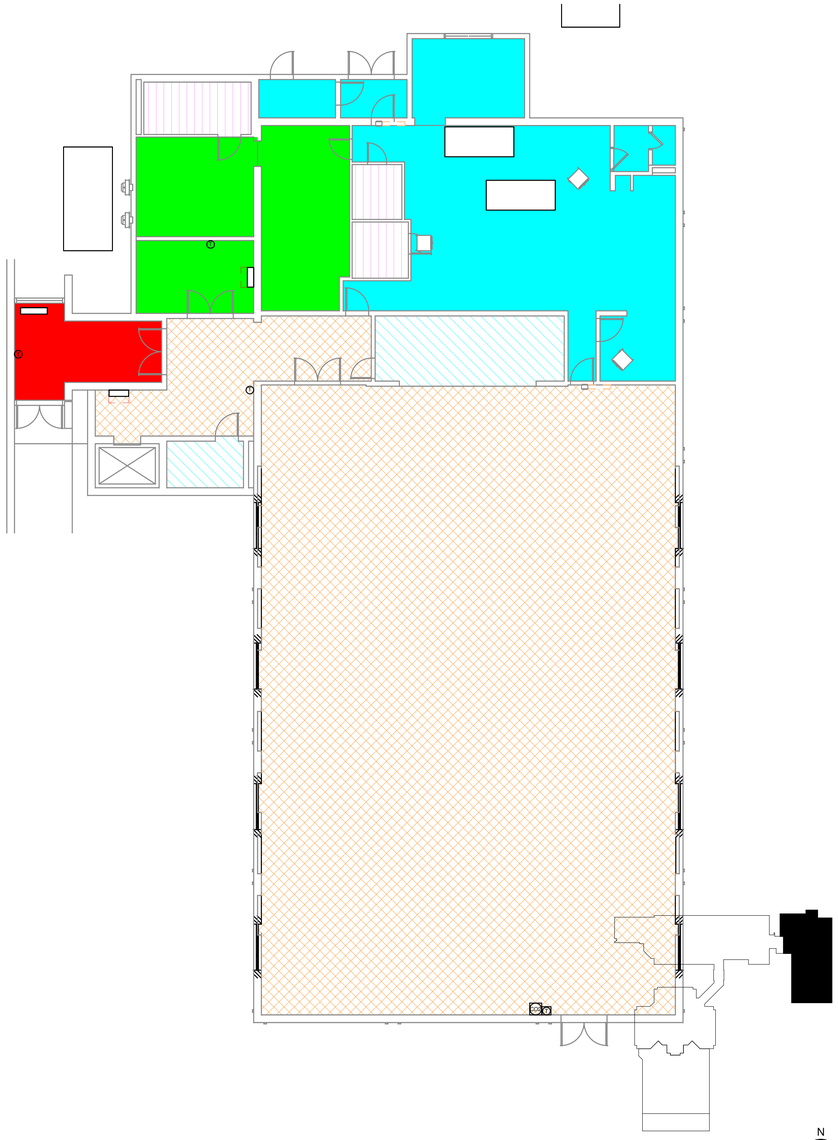

1 FIRE PROTECTION ZONING PLAN - LEVEL M - LEVEL M
1/8" = 1'-0"

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SHEET TITLE
FIRE PROTECTION ZONING LEVEL M PLAN LEVEL M
DWNAuthor CIChecker

BG # 24-059
REH # 372-922
DATE 12-13-2023

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REH #	372-922
DATE	12-13-2023
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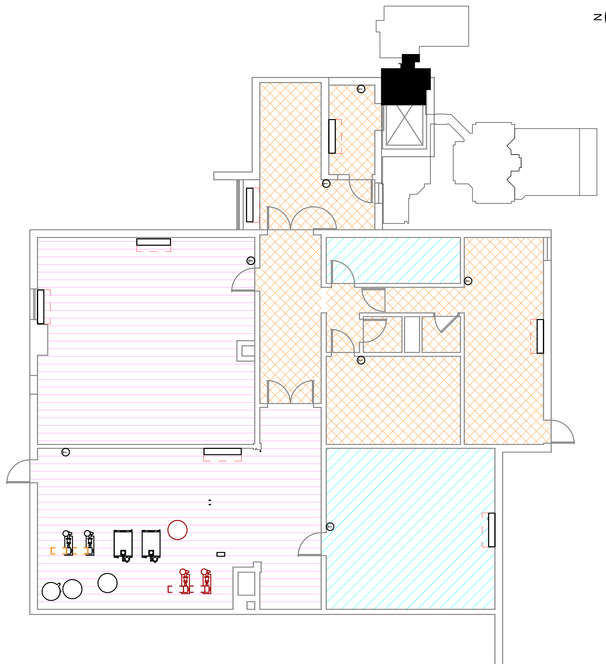

1 FIRE PROTECTION ZONING PLAN - LEVEL B - LEVEL B
1/8" = 1'-0"

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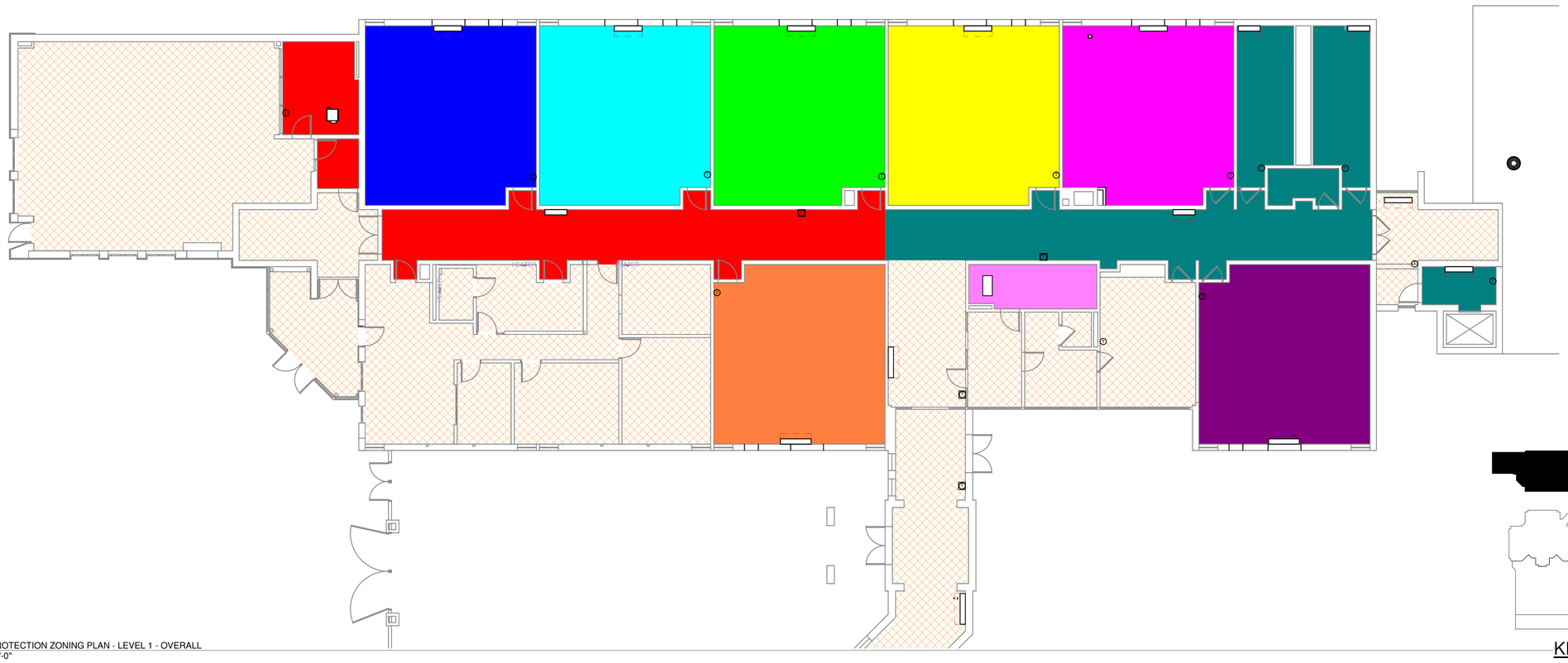
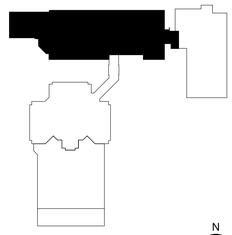


1 FIRE PROTECTION ZONING PLAN - LEVEL 1 - OVERALL
1/8" = 1'-0"



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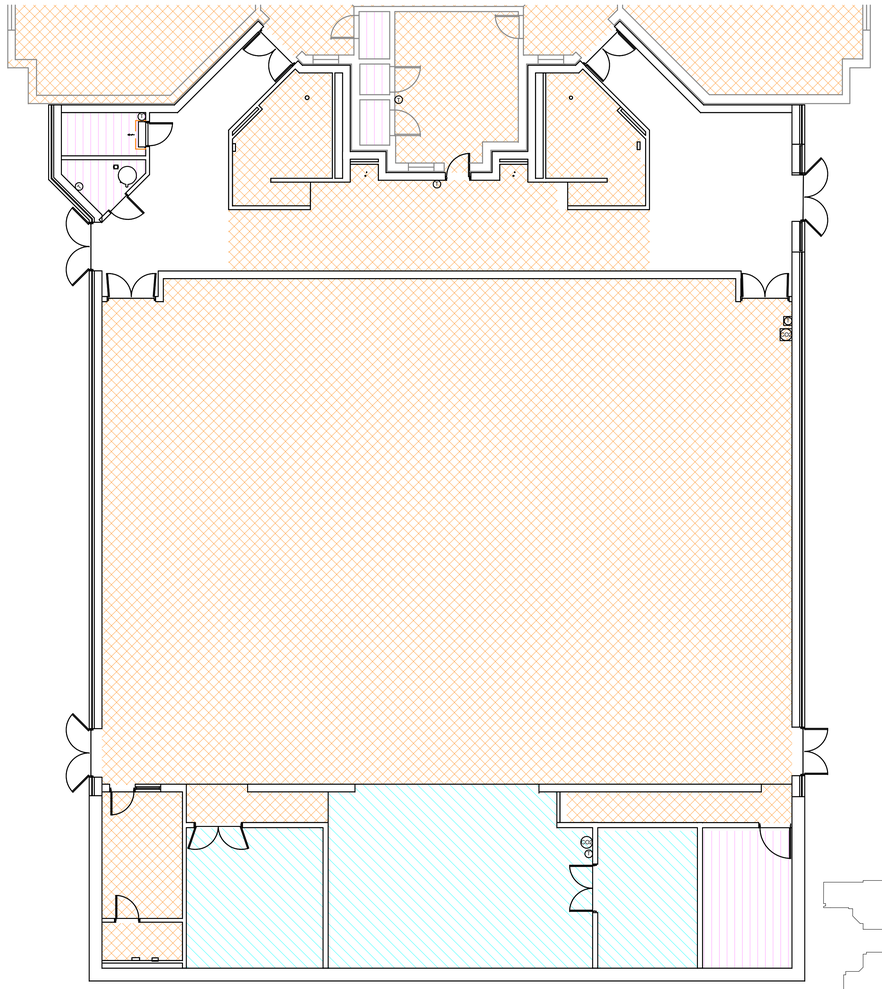

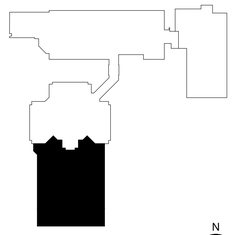

1 FIRE PROTECTION ZONING PLAN - LEVEL 1 - NEW GYM
1/8" = 1'-0"

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FIRE PROTECTION ZONING LEVEL 1 PLAN NEW GYM
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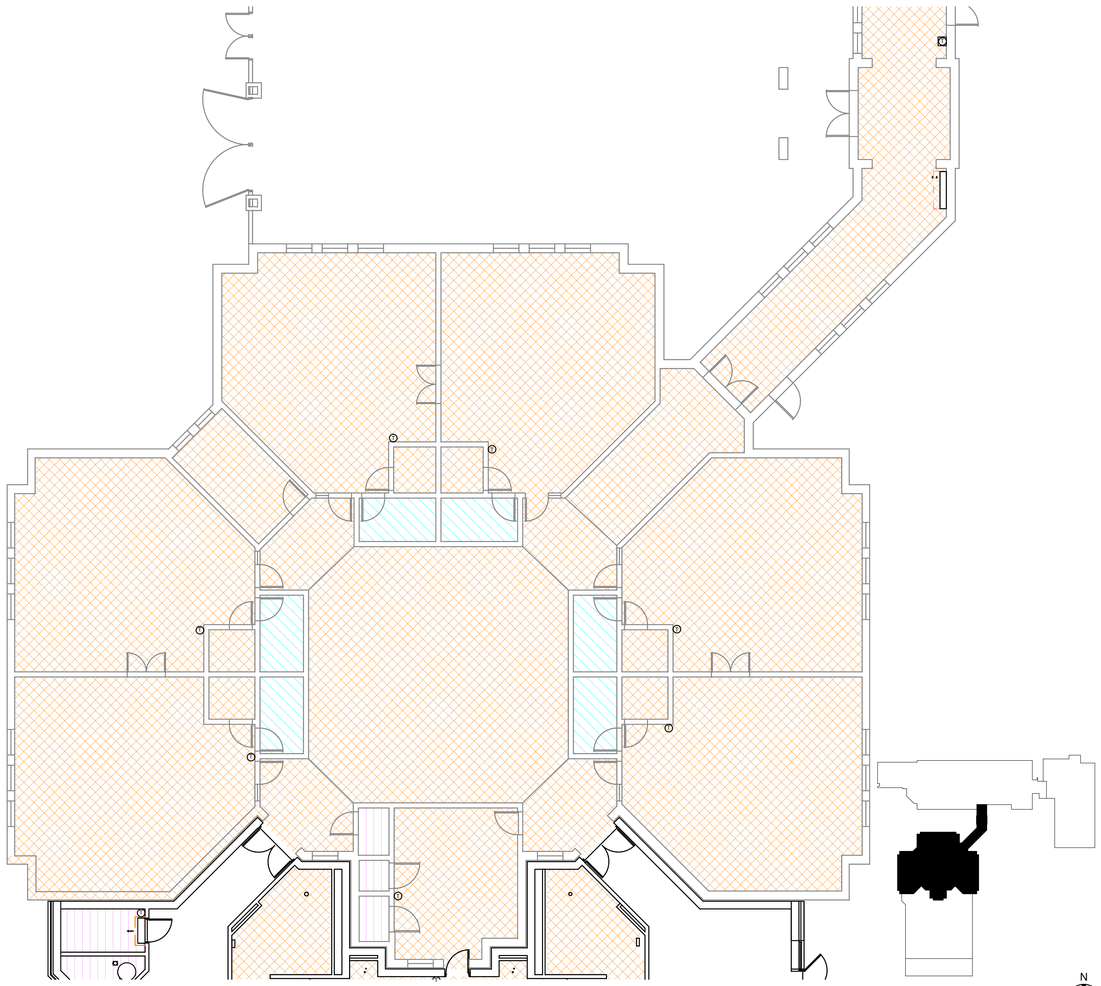

1 FIRE PROTECTION ZONING PLAN - LEVEL 1 - 90S ADDITION
1/8" = 1'-0"

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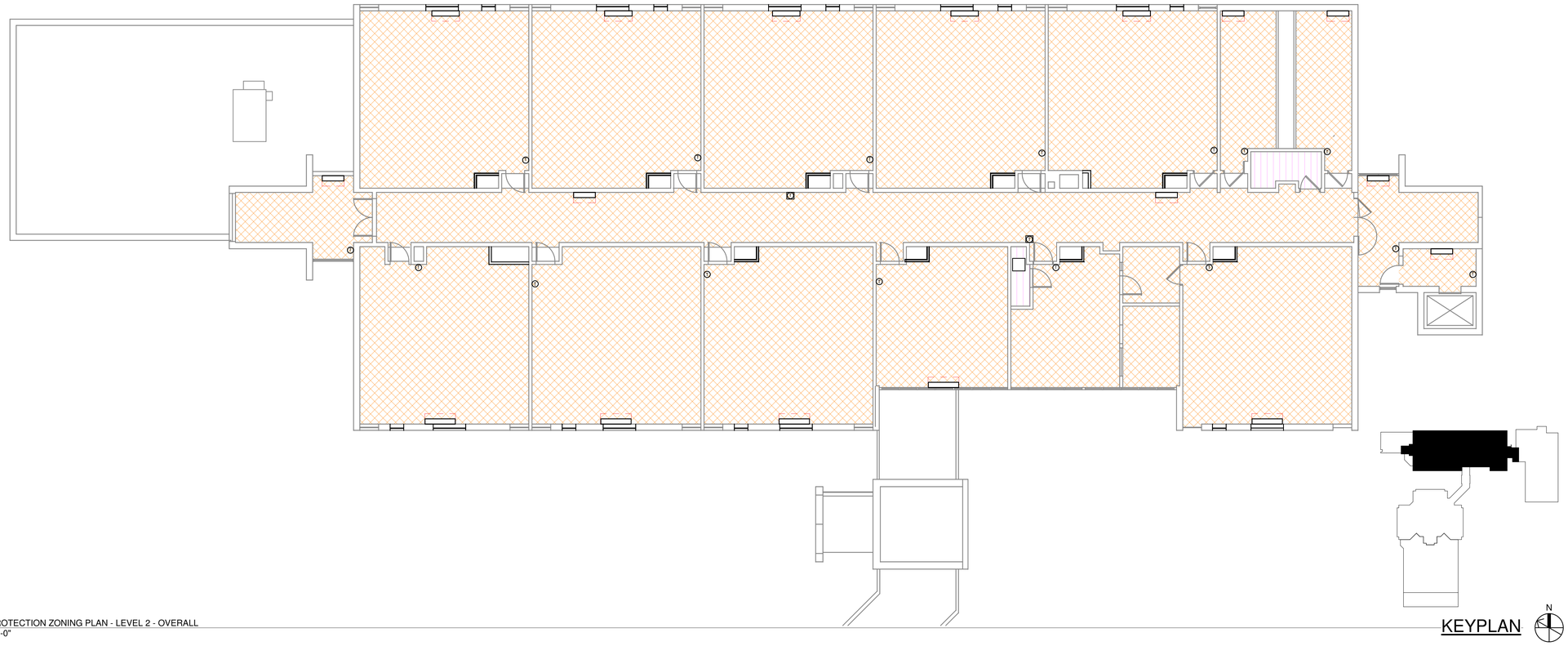

1 FIRST FLOOR FIRE PROTECTION ZONING PLAN - LEVEL 2 - OVERALL
1/8" = 1'-0"

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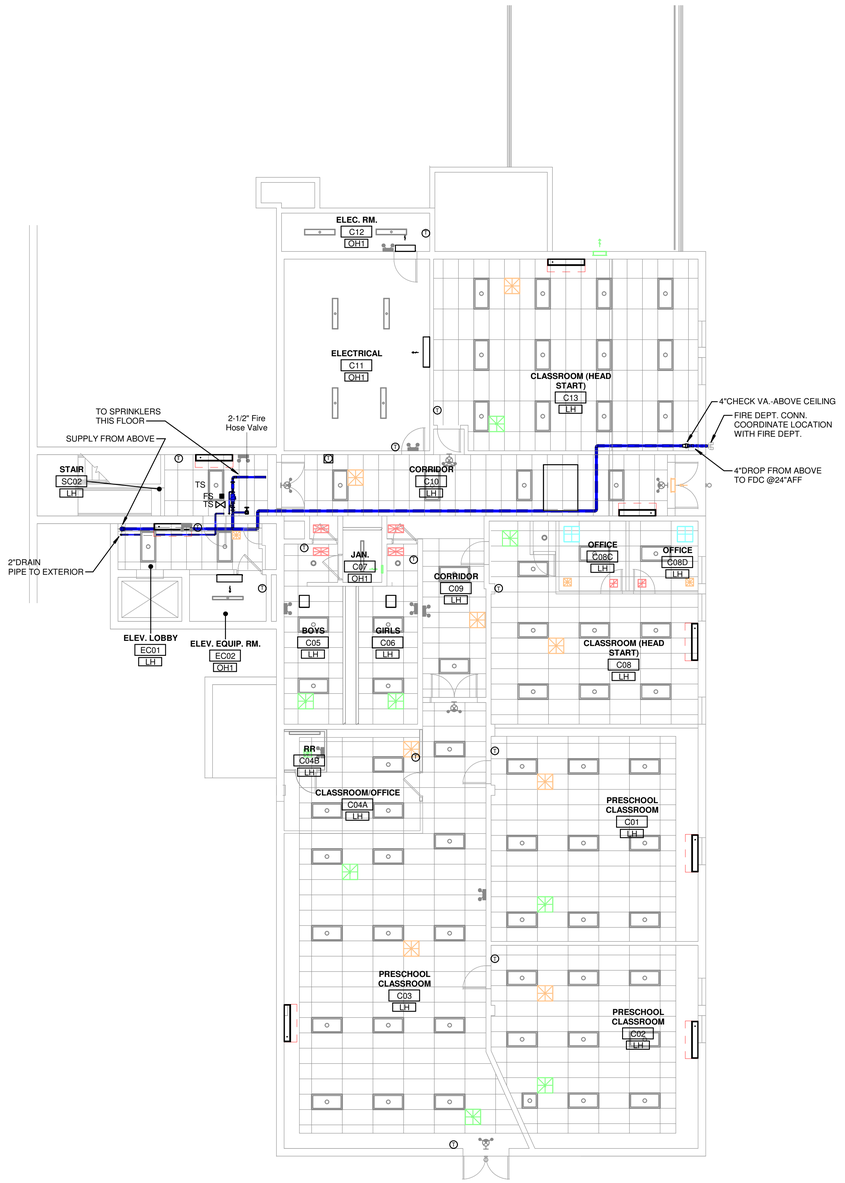
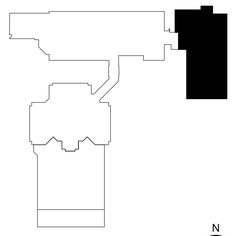


1 FIRE PROTECTION PLAN - LEVEL C - LEVEL C
1/8" = 1'-0"



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BG # 24-059

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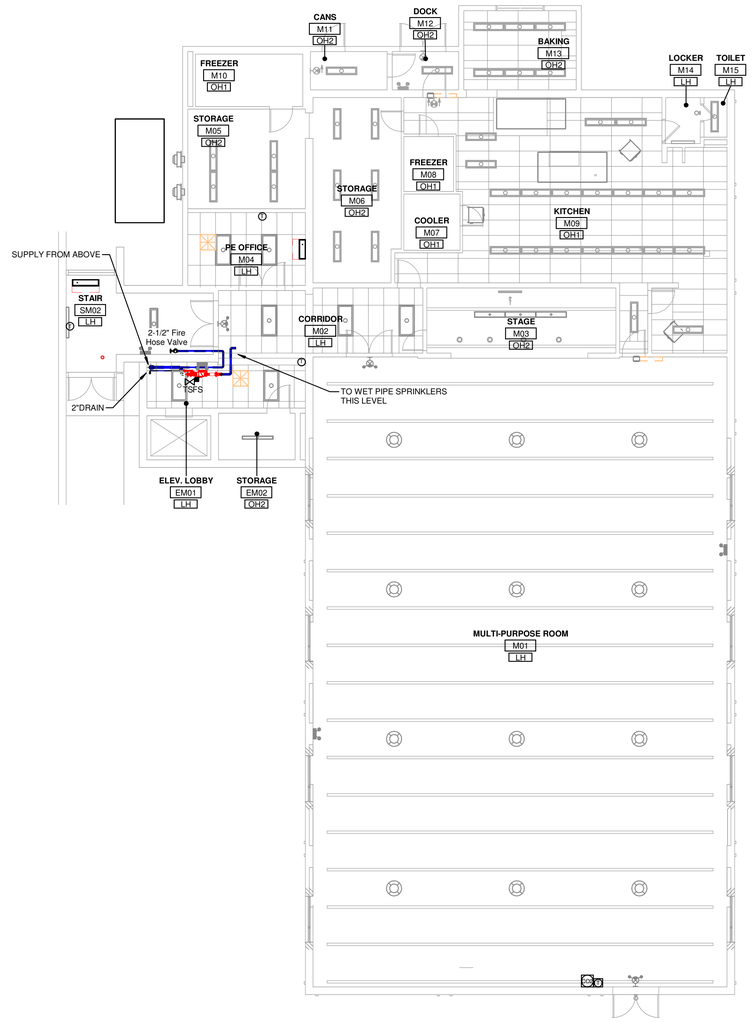

1 FIRE PROTECTION PLAN - LEVEL M - LEVEL M
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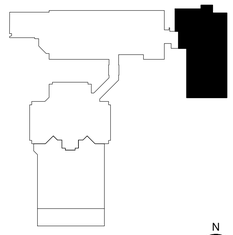

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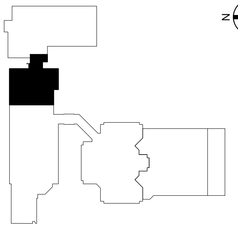

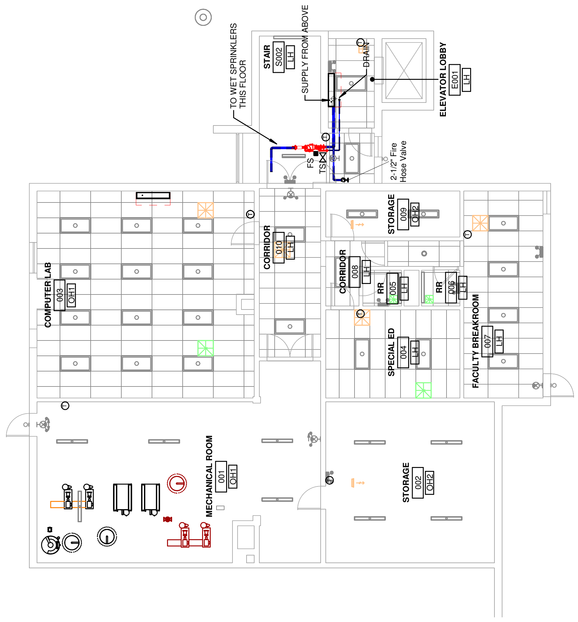

1 FIRE PROTECTION PLAN - LEVEL B - LEVEL B
1/8" = 1'-0"

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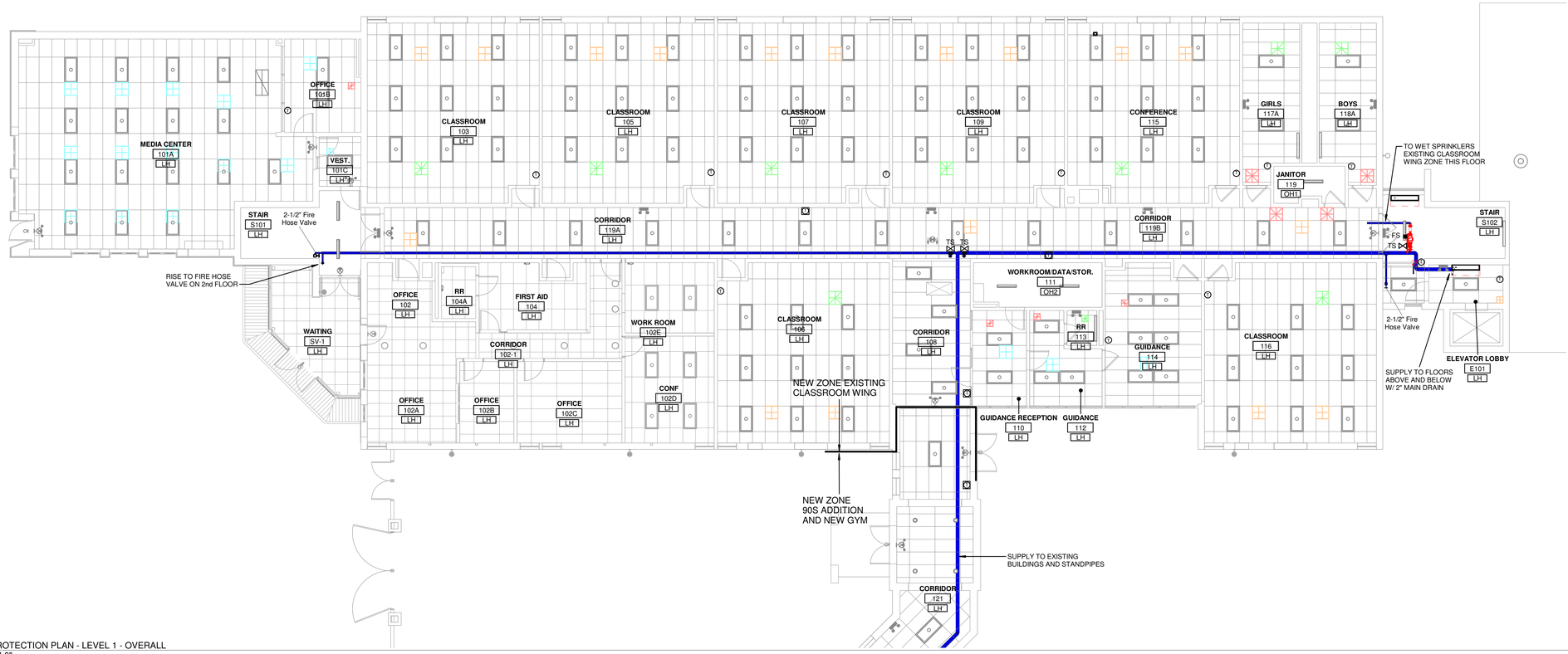

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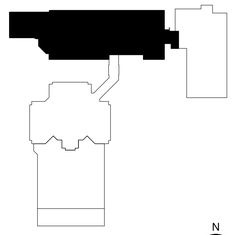
1/8" = 1'-0"



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Bellevue Independent Schools Board of Education
Misty Middleton - Superintendent

ADDENDA

SHEET TITLE
FIRE PROTECTION LEVEL 1 PLAN OVERALL

DWN: GRS CHK: SKV

BG # 24-059

REH # 372-922

DATE 12-13-2023

F3-103

KLH PROJECT # 24599

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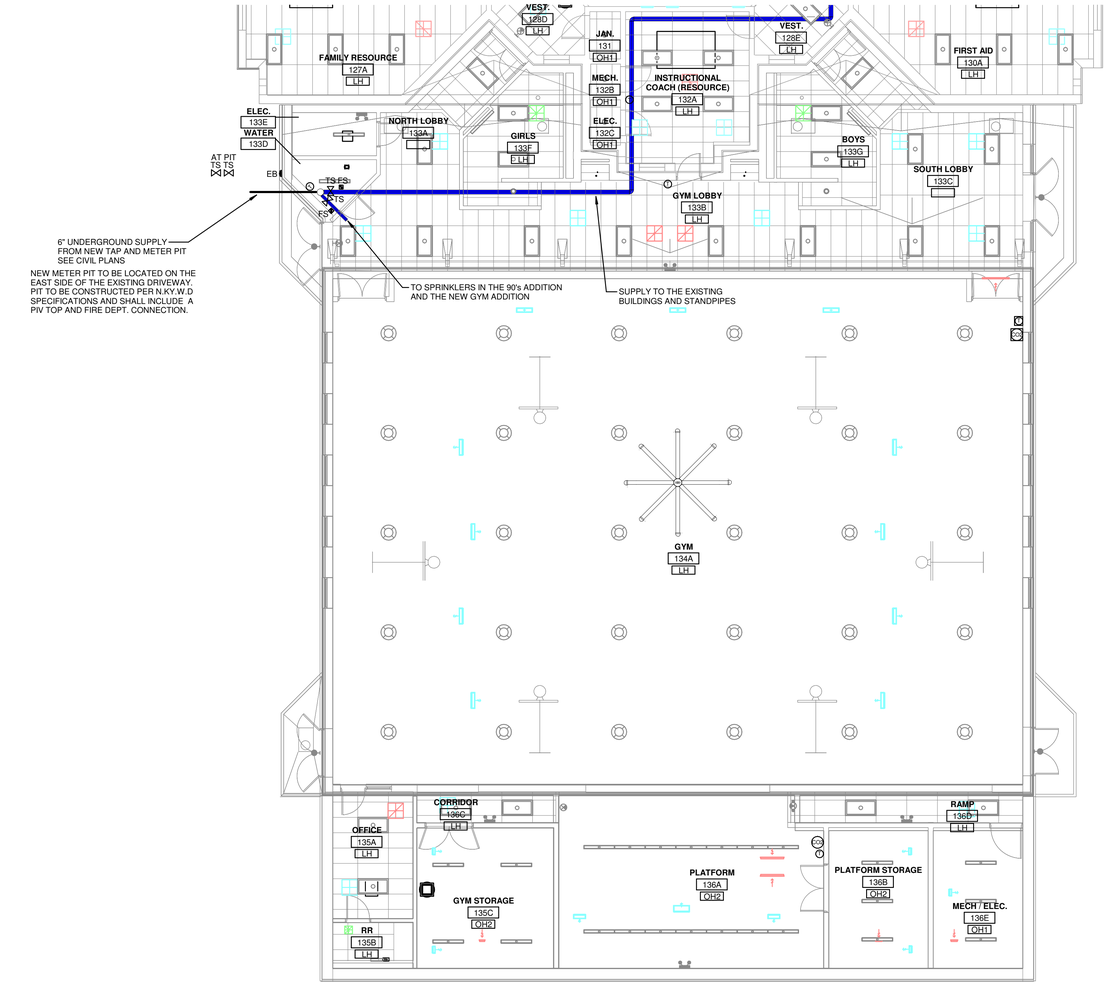
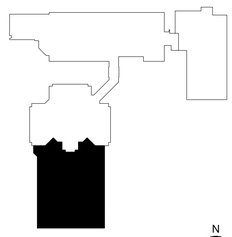


1 FIRE PROTECTION PLAN - LEVEL 1 - NEW GYM
1/8" = 1'-0"



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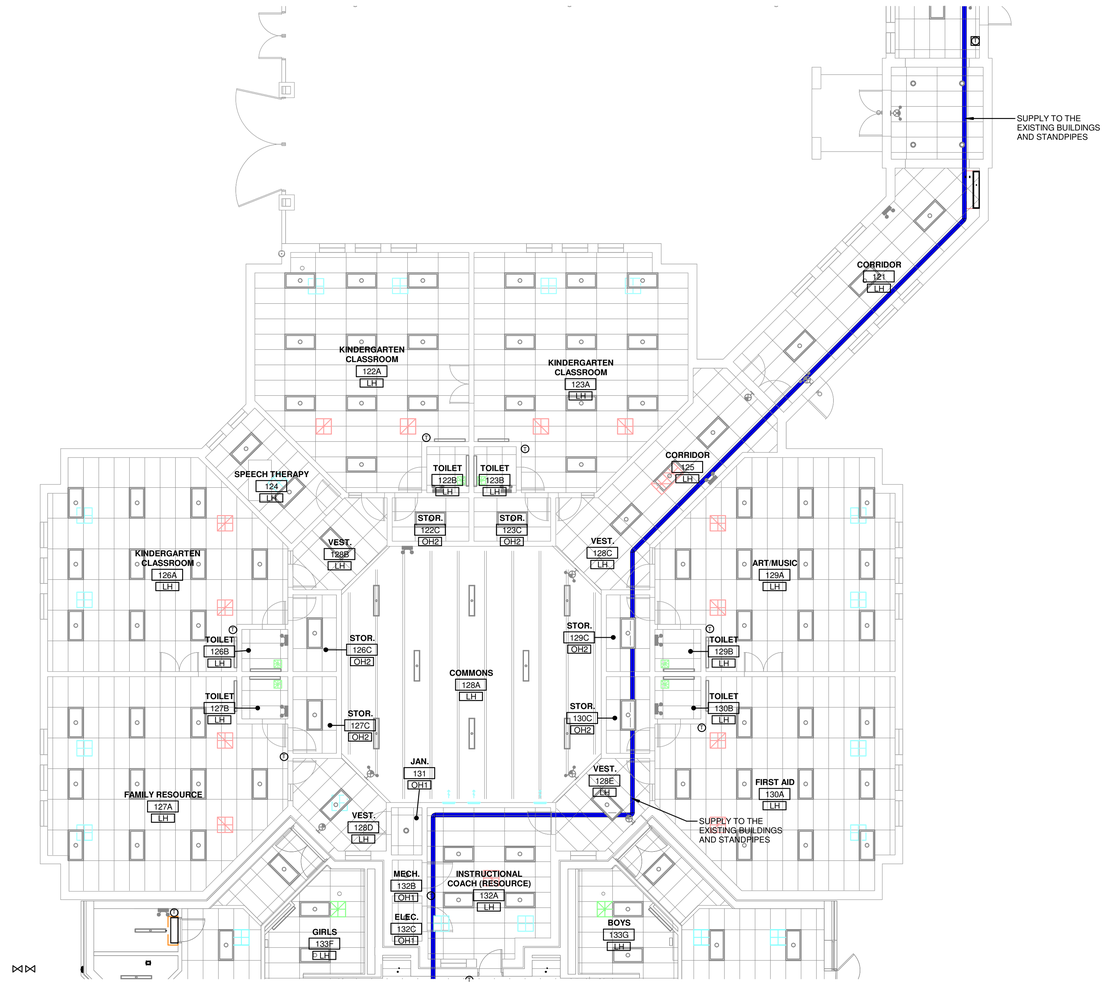
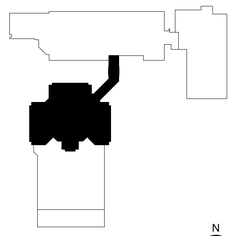


1 FIRE PROTECTION PLAN - LEVEL 1 - 90S ADDITION
1/8" = 1'-0"



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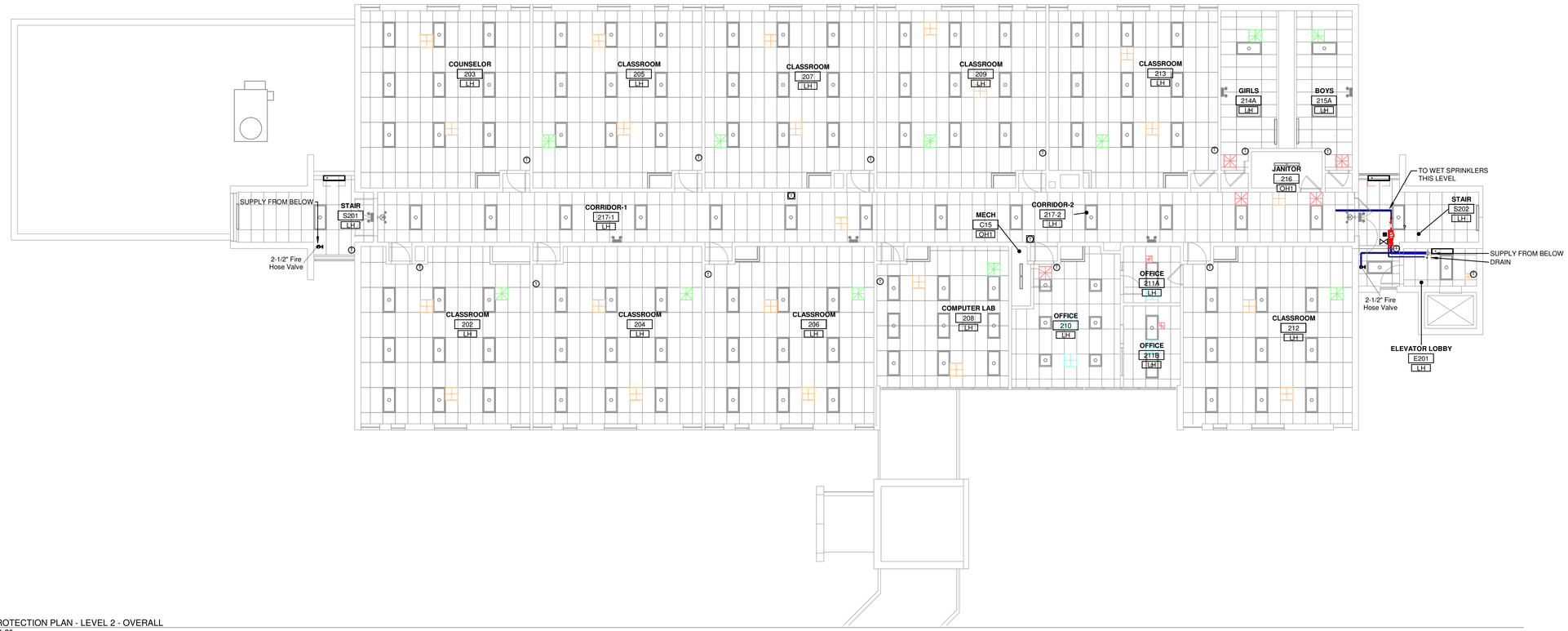
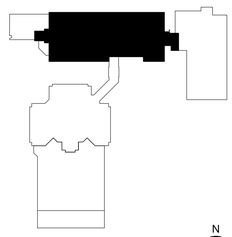


1 FIRE PROTECTION PLAN - LEVEL 2 - OVERALL
1/8" = 1'-0"



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CODE INFORMATION	
PLUMBING CODE	20XX [STATE] [INTERNATIONAL] [UNIFORM] [NATIONAL STANDARD] PLUMBING CODE
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 FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
	WORK SHOWN BOLD-CONTINUOUS 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". WWW.KLHENGRS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).
PIPING LINE TYPES	
S1	SANITARY WASTE PIPING
S8	CONDENSATE DRAIN PIPING
S9	INDIRECT WASTE PIPING
S11	STORM PIPING (PRIMARY)
S12	STORM OVERFLOW PIPING (SECONDARY)
V1	VENT PIPING
C1	DOMESTIC COLD WATER PIPING
H1	DOMESTIC HOT WATER PIPING
HR1	DOMESTIC HOT WATER RETURN PIPING
G1	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	MOCP	MAXIMUM OVERCURRENT PROTECTION
CP	CIRCULATION PUMP	MS	MOP SINK
CW	DOMESTIC COLD WATER	NIC	NOT IN CONTRACT
DN	DOWN	NOM	NOMINAL
DS	DOWNSPOUT	NTS	NOT TO SCALE
DSN	DOWNSPOUT NOZZLE	OCP	OVER CURRENT PROTECTION
EC	ELECTRICAL CONTRACTOR	OD	OVERFLOW DRAIN
ET	EXPANSION TANK	PC	PLUMBING CONTRACTOR
EWC	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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SHEET TITLE

PLUMBING
COVER SHEET

DWN: DMR CHK: RAL

BG # 24-059

REH # 372-922

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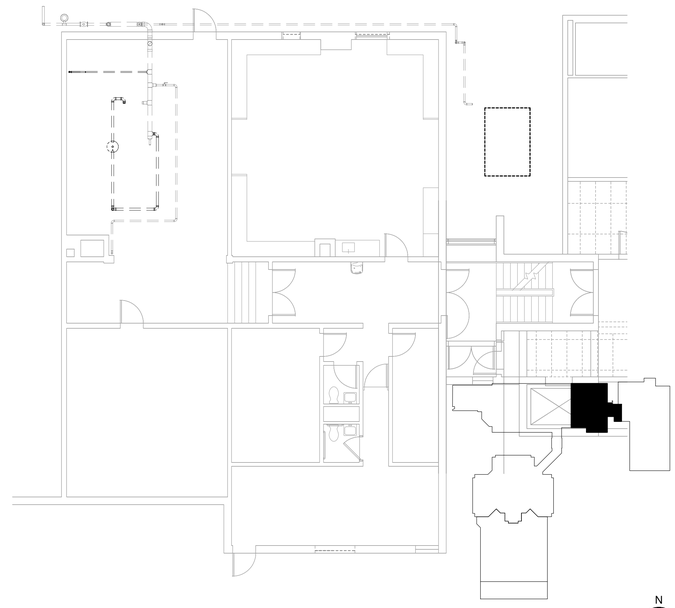

1 PLUMBING DEMOLITION PLAN - LEVEL B - LEVEL B
1/8" = 1'-0"

KEYPLAN

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PLUMBING DEMOLITION LEVEL B PLAN LEVEL B

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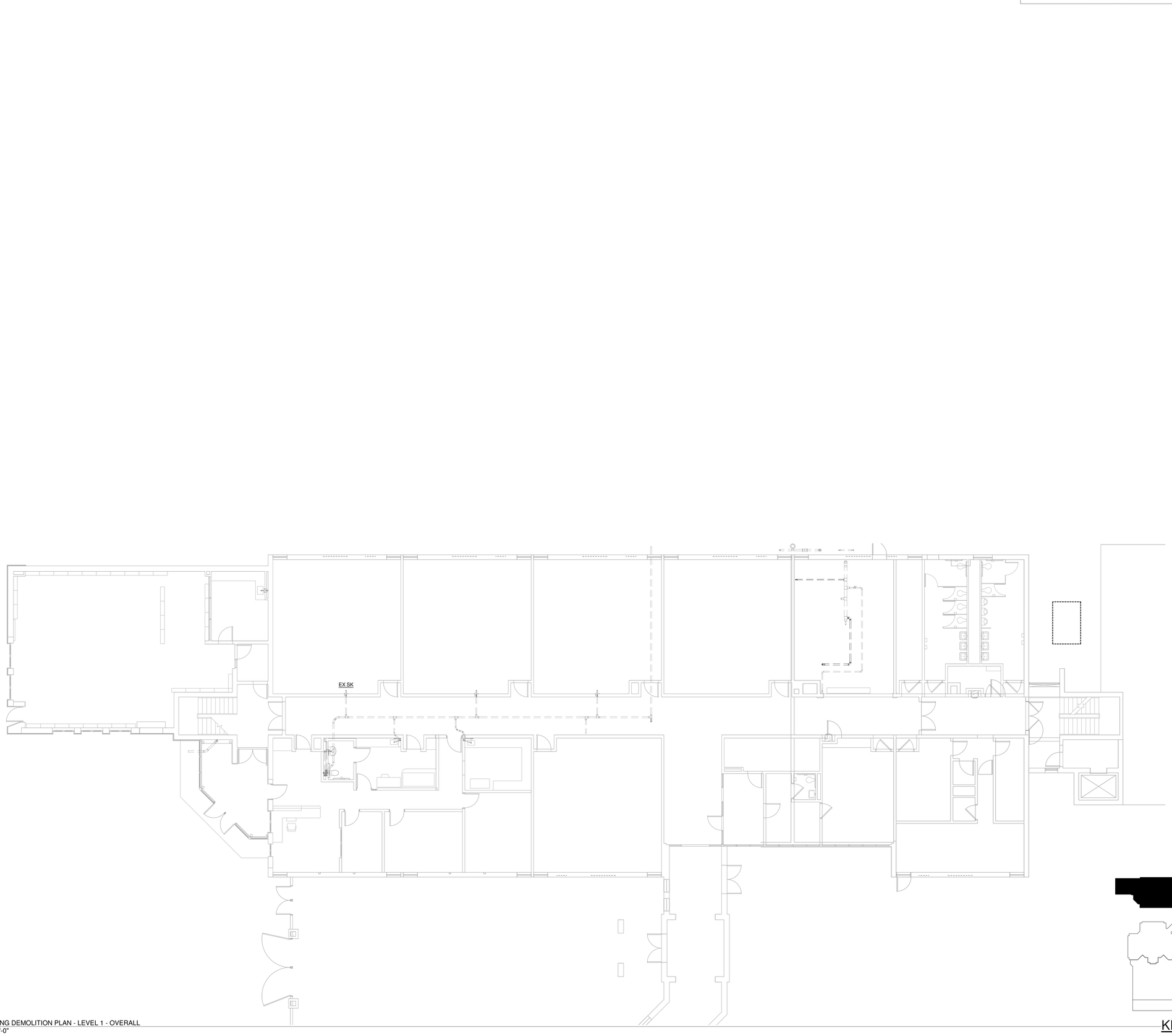

1 PLUMBING DEMOLITION PLAN - LEVEL 1 - OVERALL
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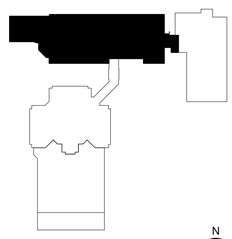

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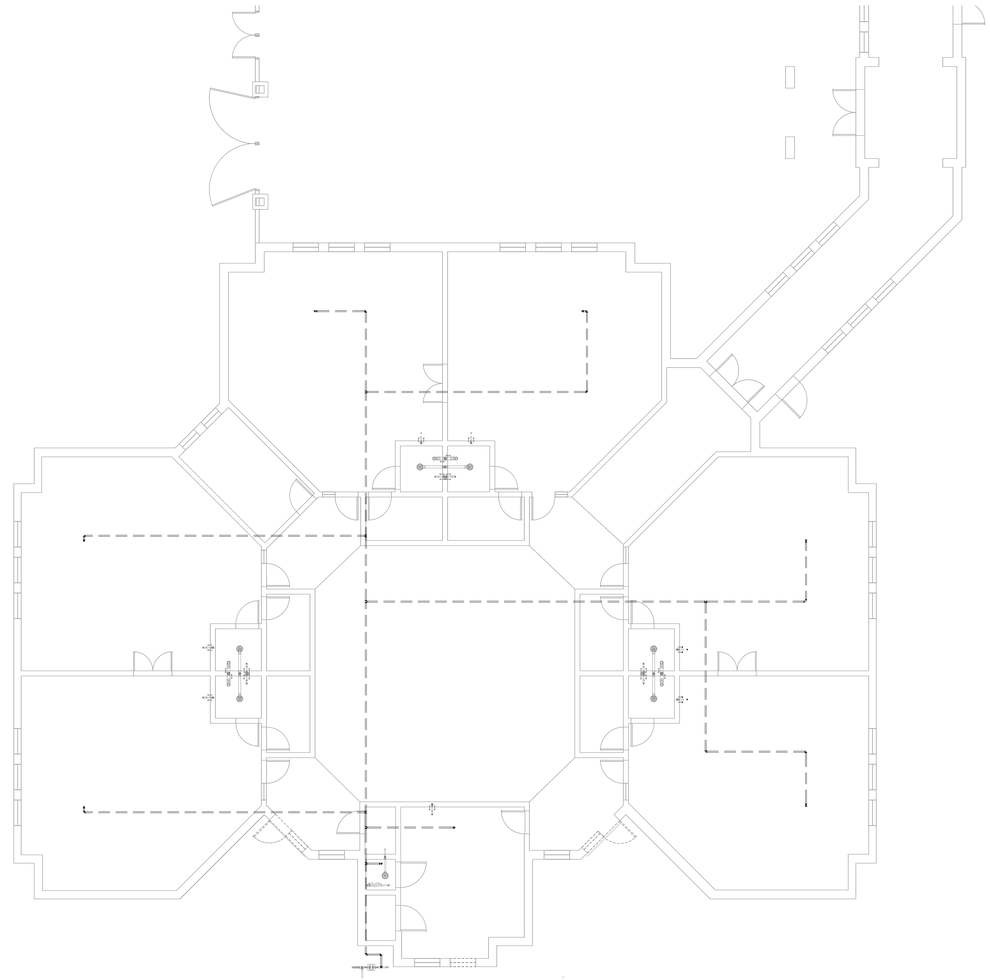

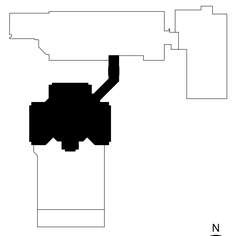

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1 PLUMBING DEMOLITION PLAN - LEVEL 1 - 90S ADDITION
1/8" = 1'-0"

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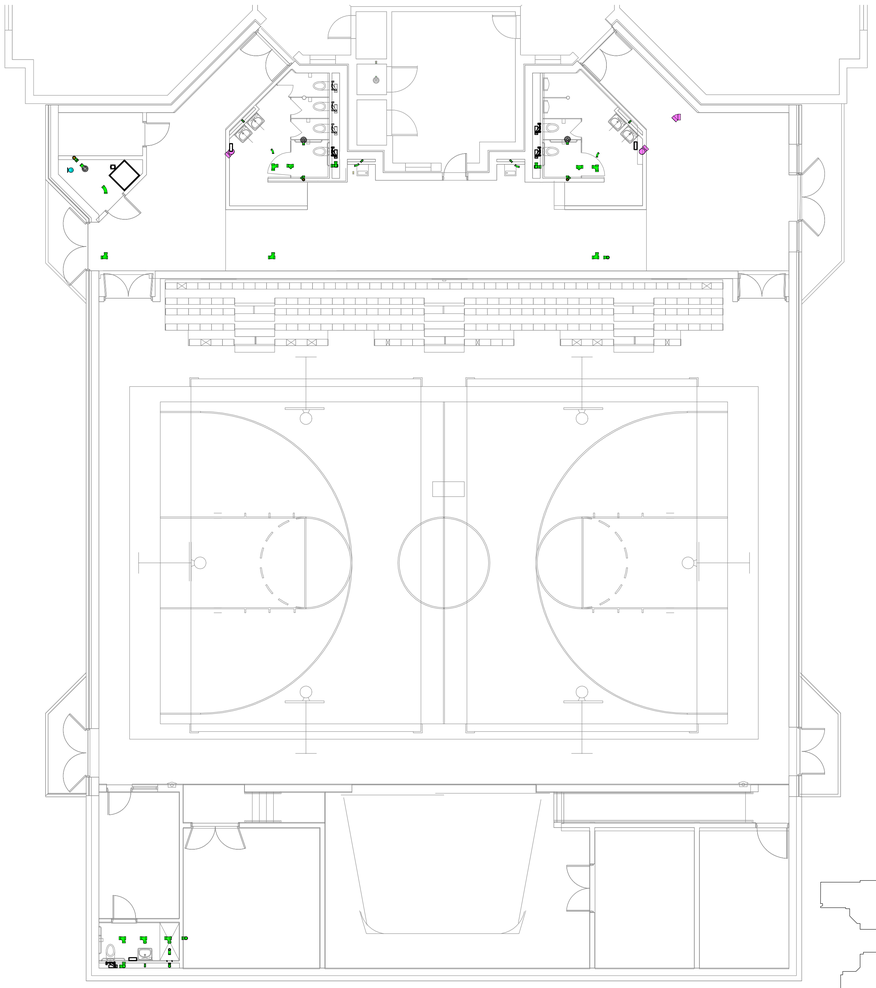

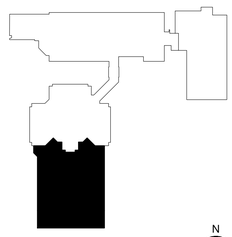

1 PLUMBING UNDERGROUND PIPING PLAN - LEVEL 1 - NEW GYM
1/8" = 1'-0"

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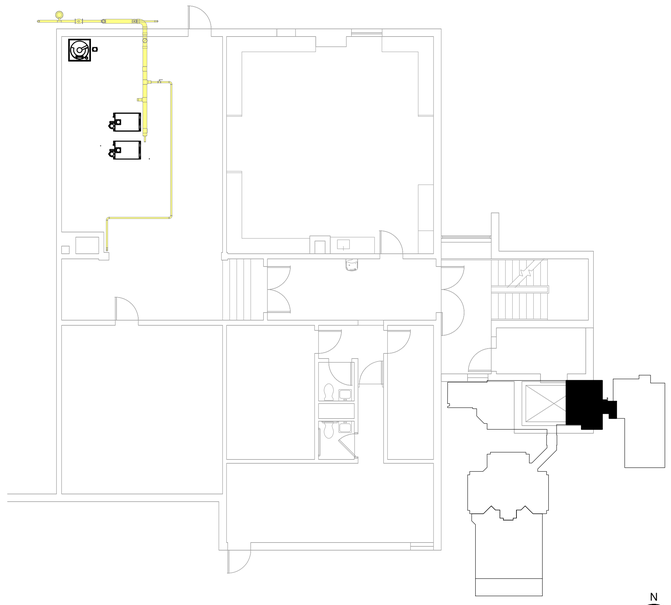

1 PLUMBING ABOVE GROUND PIPING PLAN - LEVEL B - LEVEL B
1/8" = 1'-0"

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

ADDENDA

SHEET TITLE
PLUMBING ABOVE GROUND LEVEL B PLAN LEVEL B
DWN: DMR CHK: RAL

BG #
24-059

REH #
372-922

DATE
12-13-2023

P3-102
KLH PROJECT #
24599

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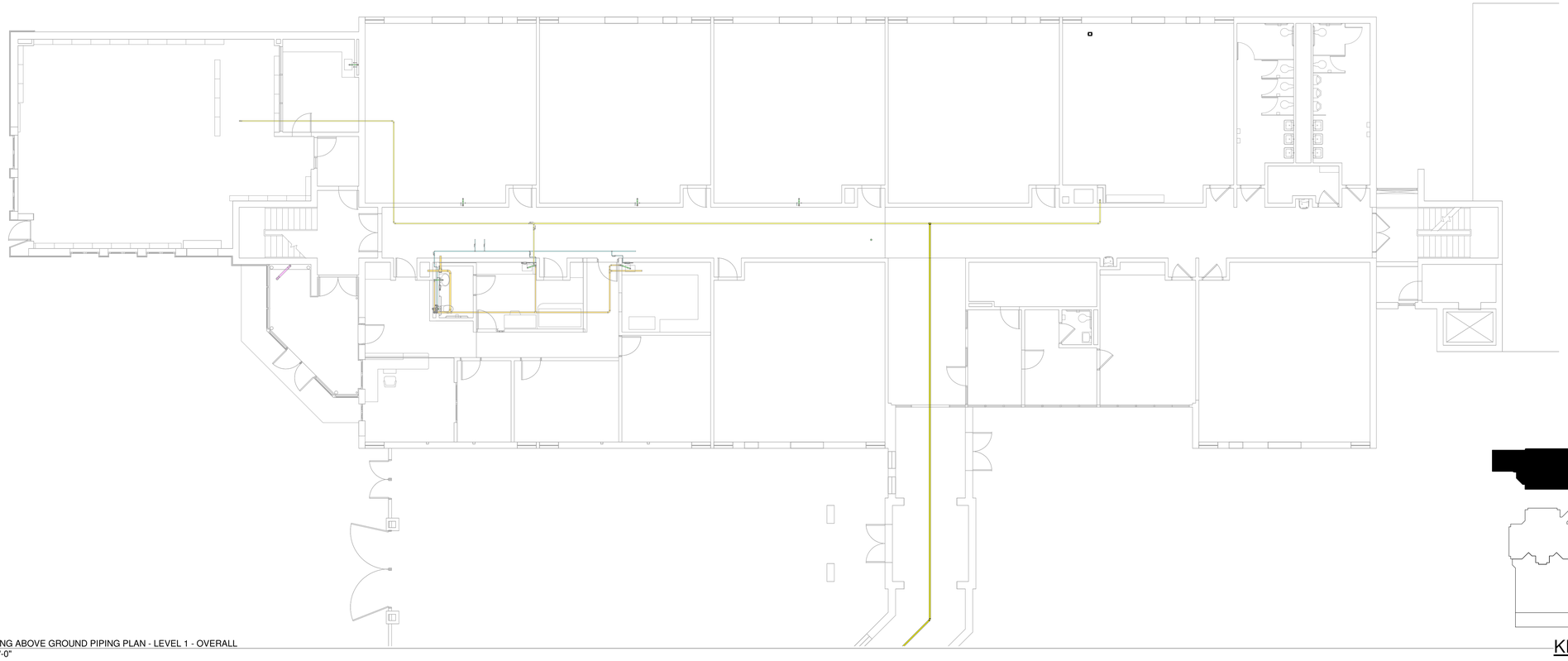
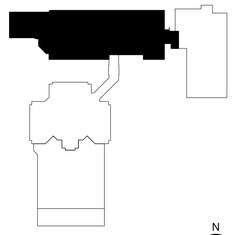
KEYED NOTES



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



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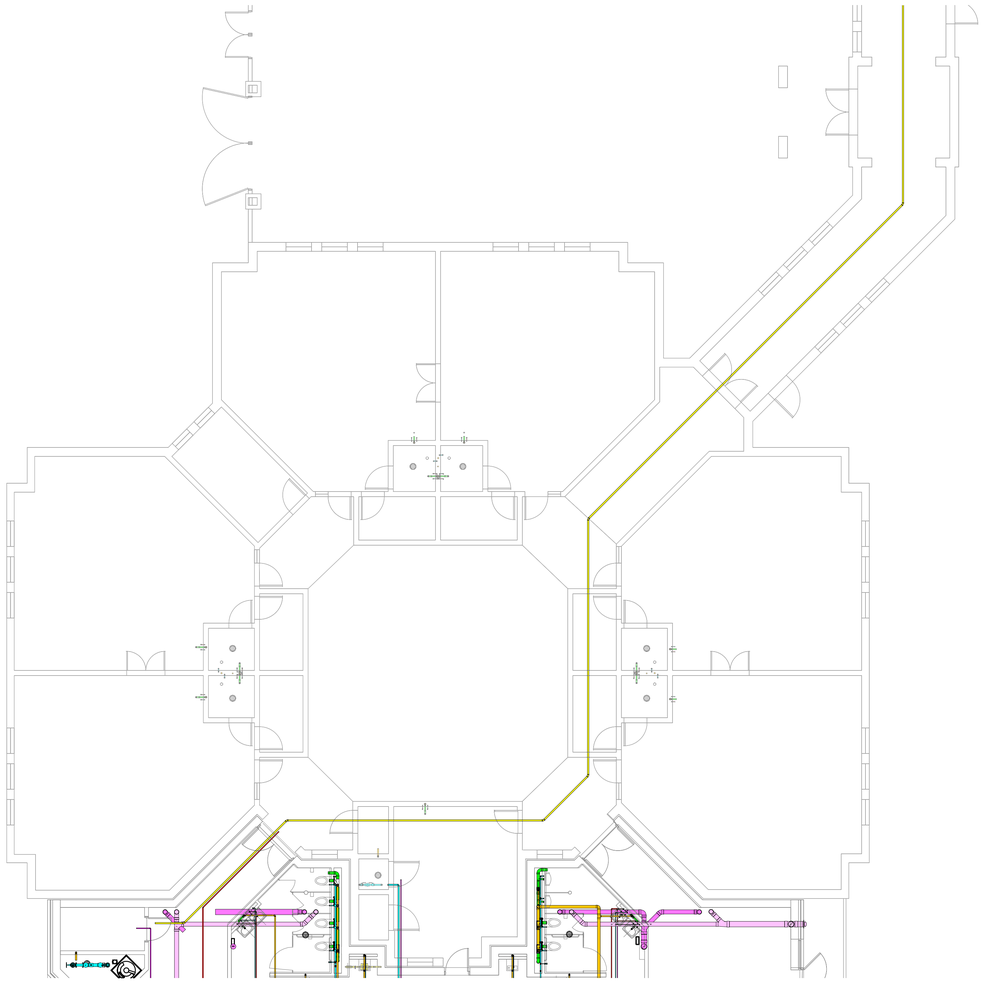
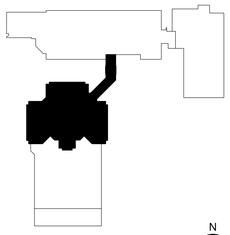


1 PLUMBING ABOVE GROUND PIPING PLAN - LEVEL 1 - 90S ADDITION
1/8" = 1'-0"



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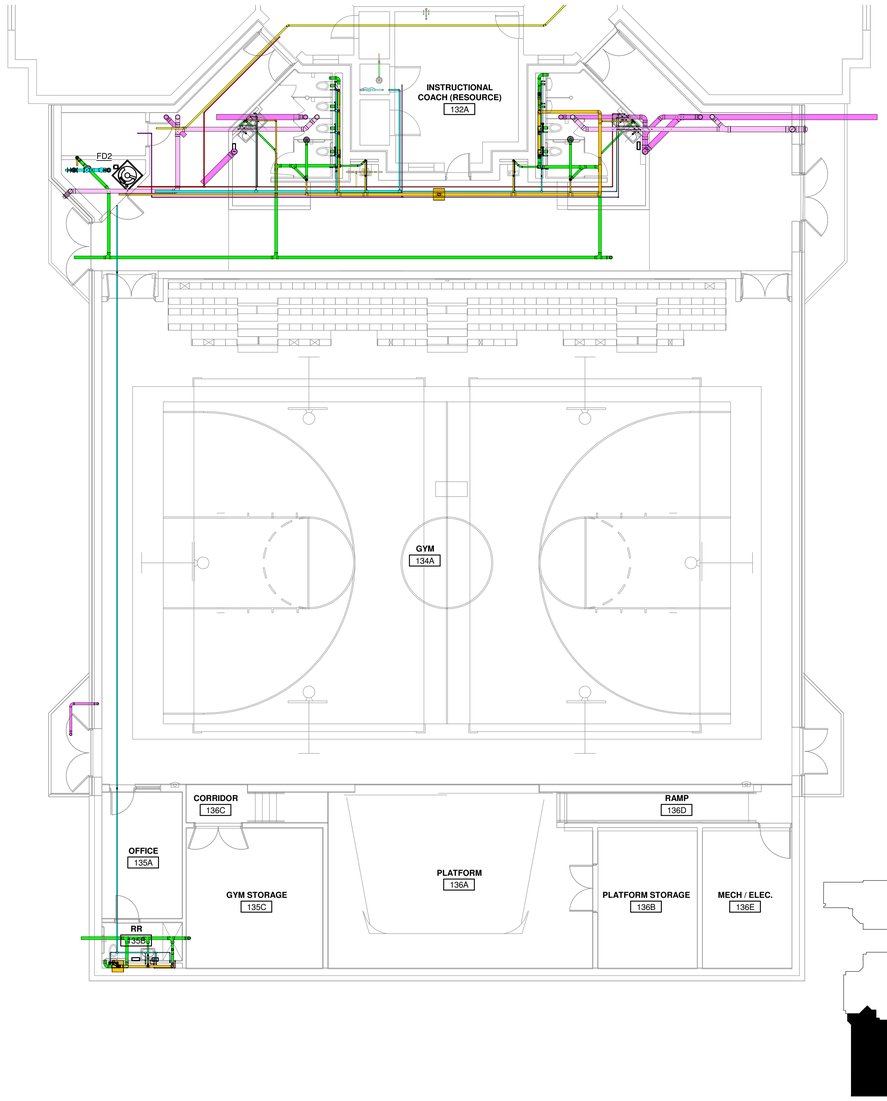
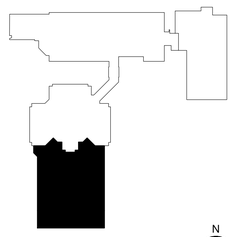


1 PLUMBING ABOVE GROUND PIPING PLAN - LEVEL 1 - NEW GYM
1/8" = 1'-0"

KEYPLAN



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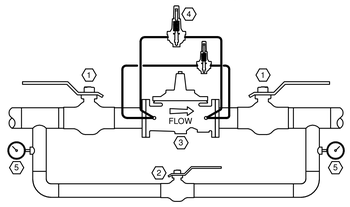
KEYED NOTES:

1. SHUT-OFF VALVE. OPEN DURING NORMAL OPERATION.
2. BYPASS VALVE. CLOSED DURING NORMAL OPERATION. BYPASS PIPING TO BE NO LESS THAN ONE HALF THE NOMINAL PIPE SIZE OF THE MAIN PIPE SIZE.
3. MAIN PRESSURE REGULATING CONTROL VALVE.
4. LOW-FLOW BYPASS PRESSURE REGULATING VALVE.
5. PRESSURE GAUGE. PROVIDE GAUGE SNUBBER.

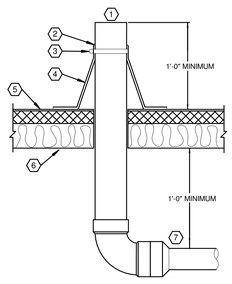


220523.00-01 - PRESSURE REGULATING CONTROL VALVE

SCALE: NONE

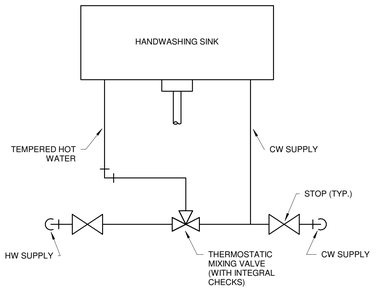
KEYED NOTES:

1. 3" MINIMUM VENT TEMINAL TO BE A MINIMUM OF 1'-0" OR 6" ABOVE LOCAL SNOW LEVELS. CONSULT LOCAL CODES IF THEY VARY FROM THIS STANDARD.
2. PIPE SEALANT. COORDINATE SEALANT TYPE WITH ROOFING CONTRACTOR.
3. STAINLESS STEEL PIPE CLAMP.
4. VENT FLASHING. COORDINATE FLASHING MATERIAL AND INSTALLATION WITH ROOFING CONTRACTOR.
5. ROOFING SYSTEM.
6. THERMAL ENVOLOPE INSULATION.
7. ANY CHANGE IN VENT SIZE SHALL BE MADE NOT LESS THAN 1'-0" INSIDE THE THERMAL ENVELOPE.



221313.00-06 - VENT THRU ROOF

SCALE: NONE



223001.00-01 - THERMOSTATIC MIXING VALVE TMV DETAIL

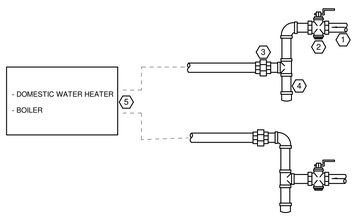
SCALE: NONE

GENERAL NOTES:

A. PIPING ARRANGEMENTS SHOWN ARE SCHEMATIC. ADJUST TO SUIT ACTUAL CONDITIONS. MAKE FINAL CONNECTION TO EQUIPMENT AS RECOMMENDED BY MANUFACTURER

KEYED NOTES:

1. GAS SUPPLY.
2. APPROVED GAS SHUT OFF VALVE.
3. APPROVED UNION WITHIN 6'-0" OF APPLIANCE OR EQUIPMENT SERVED.
4. MINIMUM 6" LONG SEDIMENT TRAP WITH THREADED CAP. INSTALL CAP WITH PROPER CLEARANCE TO PROVIDE SERVICABILITY.
5. TO UNIT INLET CONNECTION.

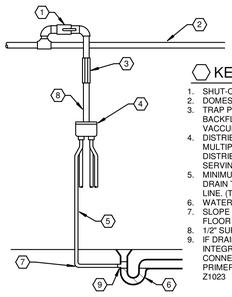


221613.00-11 - TYPICAL GAS CONNECTIONS TO EQUIPMENT

SCALE: NONE

KEYED NOTES:

1. SHUT-OFF VALVE.
2. DOMESTIC COLD WATER LINE.
3. TRAP PRIMER VALVE WITH BACKFLOW PREVENTER AND VACUUM BREAK.
4. DISTRIBUTION UNIT FOR MULTIPLE FLOOR DRAINS. (OMIT DISTRIBUTION UNIT WHEN SERVING SINGLE DRAIN.)
5. MINIMUM 1/2" COPPER FLOOR DRAIN TRAP MAKE-UP WATER LINE. (TYPICAL)
6. WATER SEAL.
7. SLOPE PIPING BELOW SLAB TO FLOOR DRAIN.
8. 1/2" SUPPLY SIZE.
9. IF DRAIN DOES NOT HAVE INTEGRAL TRAP PRIMER CONNECTION, PROVIDE TRAP PRIMER FITTING EQUAL TO ZURN Z1023



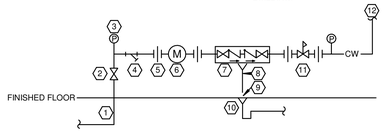
NOTE: TRAP PRIMER LINE SHALL NOT EXCEED 20 FT.

221119.00-07 - TRAP PRIMER DETAIL

SCALE: NONE

KEYED NOTES:

1. INCOMING WATER SERVICE UP THROUGH FINISHED FLOOR.
2. MAIN BUILDING SHUT-OFF
3. PRESSURE GAUGE AND SNUBBER(TYPICAL). **CRITICAL TO INSTALLATION.**
4. STRAINER.
5. UNION (TYPICAL)
6. WATER METER AND METER SPREAD TO CONFORM TO WATER PURVEYOR REQUIREMENTS.
7. REDUCED PRESSURE ZONE BACKFLOW PREVENTER (BPFI). ASSE 1013 APPROVED (TYPICAL).
8. FUNNEL WITH AIR GAP. ROUTE PIPING TO FLOOR DRAIN.
9. PROVIDE AIR GAP.
10. FLOOR DRAIN.
11. PRESSURE REGULATING VALVE. AS REQUIRED IF UPSTREAM PRESSURE IS ABOVE 80 PSI.
12. DOMESTIC COLD WATER SUPPLY TO BUILDING.

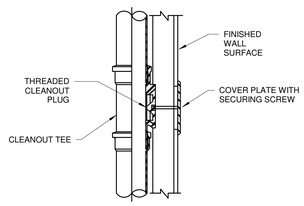


221123.00-02 - BACKFLOW PREVENTER DETAIL (GYM)

SCALE: NONE

223300.00-05 - GAS WATER HEATER DETAIL (MECH ROOM)

SCALE: NONE



221319.00-05 - WALL CLEANOUT DETAIL

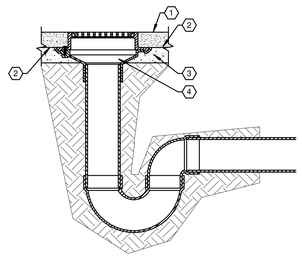
SCALE: NONE

GENERAL NOTES:

A. SLOPE FLOOR TO DRAIN TO FLOOR DRAIN.

KEYED NOTES:

1. FINISH FLOOR SLAB - SLOPE TO DRAIN.
2. WATER PROOFING MEMBRANE. FLASHING FLANGE (IF APPLICABLE).
3. STRUCTURAL SLAB
4. FLOOR DRAIN BODY.



221316.00-01 - FLOOR DRAIN DETAIL

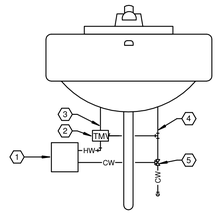
SCALE: NONE

KEYED NOTES:

1. INSTANTANEOUS WATER HEATER
2. ASSE 1070 APPROVED THERMOSTATIC MIXING VALVE.
3. 1/2" TEMPERED HW.
4. 1/2" CW.
5. 1/2" 3-WAY ANGLE STOP VALVE.

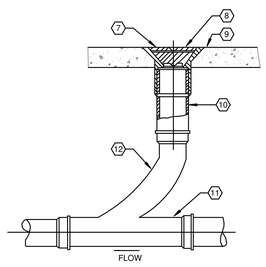
GENERAL NOTES:

A. MOUNTS DIRECTLY BENEATH THE BASIN USING ONLY ONE PIPE



223300.00-07 - INSTANTANEOUS ELECTRIC WATER HEATER

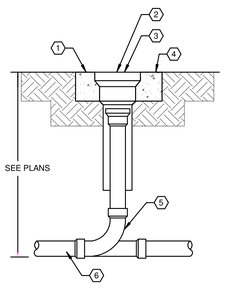
SCALE: NONE



INTERIOR FLOOR CLEANOUT

KEYED NOTES:

1. 6" THICK BY 18" SQUARE CONCRETE PAD.
2. "CO" TO BE CAST IN COVER.
3. CAST IRON CLEANOUT WITH COVER FOR DUTY REQUIRED.
4. GRADE FOR PAVING.
5. CAST IRON LONG SWEEP 1/4 BEND OR CAST IRON COMB," Y 1/8" "& BEND. (USE REDUCING TYPE WHERE REQUIRED).
6. BUILDING DRAIN OR SEWER MATERIAL AND SIZE SPECIFIED.
7. CLEANOUT RATED FOR EXPECTED WHEEL LOADING REFER TO SPECIFICATIONS AND PLANS FOR TYPE AND LOCATIONS.
8. TOP FLUSH WITH FINISHED FLOOR.
9. FINISHED FLOOR LEVEL.
10. FULL PIPE SIZE EXTENSION UP TO 6" LENGTH AS REQUIRED, PROVIDE SAME SIZE AS LINE SERVED UP TO 6".
11. COMBINATION WYE AND 1/8" BEND OR AS CODE REQUIRED.
12. LONG SWEEP 1/4" BEND.



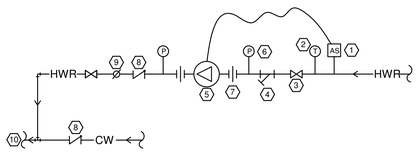
EXTERIOR CLEANOUT

221313.00-01 - FLOOR CLEANOUTS

SCALE: NONE

KEYED NOTES:

1. AQUASTAT WIRED TO START CIRCULATING PUMP WHEN LINE WATER TEMPERATURE DROPS 10°F BELOW DESIRED HOTWATER LOOP TEMPERATURE. AQUASTAT/THERMAL WELL SHALL HAVE ADJUSTABLE TEMPERATURE RANGE OF 50°F-160°F.
2. TEMPERATURE GAUGE AND SNUBBER. **CRITICAL TO INSTALLATION**.
3. BALL VALVE (TYPICAL).
4. WYE STRAINER
5. HOT WATER RECIRCULATION PUMP.
6. PRESSURE GAUGE AND SNUBBER (TYPICAL) **CRITICAL TO INSTALLATION**.
7. UNION (TYPICAL).
8. CHECK VALVE.
9. BALANCING VALVE.
10. RETURN LINE TO HOT WATER SUPPLY SYSTEM.



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

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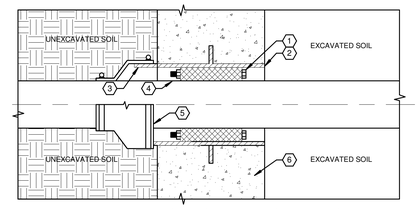
GENERAL NOTES:

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 PIPES 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.



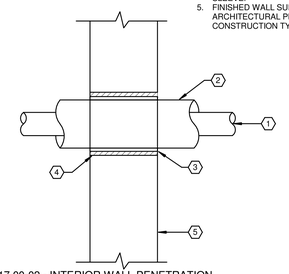
PIPE PENETRATION FROM AN UNEXCAVATED TO EXCAVATED SOIL CONDITION

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.

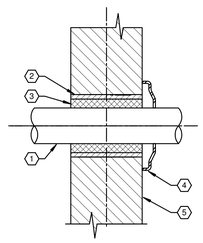


220517.00-02 - INTERIOR WALL PENETRATION

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.

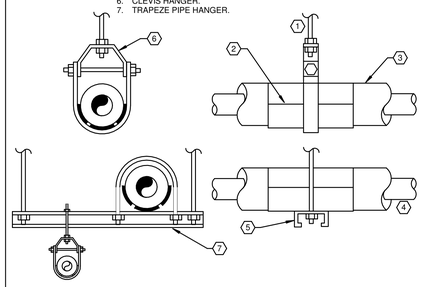


220517.00-03 - PIPE PENETRATION WITHOUT INSULATION

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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Grandview Elementary - Gym Addition & HVAC Renovation

500 Grandview Avenue, Bellevue, Kentucky 41073

Bellevue Independent Schools Board of Education

Misty Middleton - Superintendent

ADDENDA

SHEET TITLE

PLUMBING DETAILS

DWN: DMR CHK: RAL

BG # 24-059

REH # 372-922

DATE 12-13-2023

P5-502

KLH PROJECT # 24599

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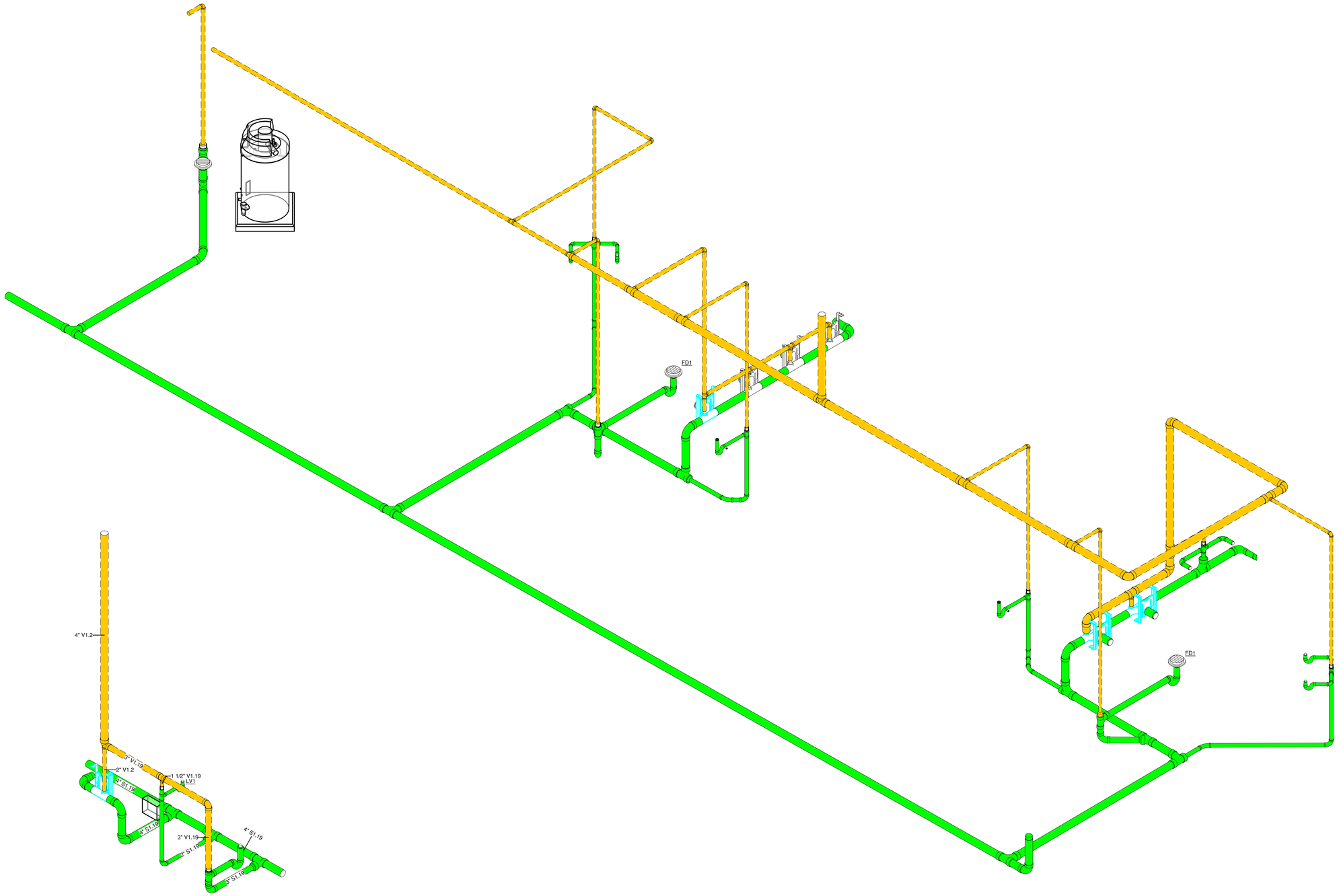

2 PLUMBING - SANITARY ISOMETRIC - GYM RESTROOM ALTERNATE

1 PLUMBING - SANITARY ISOMETRIC - GYM RESTROOMS

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ADDENDA

SHEET TITLE
PLUMBING
SANITARY
ISOMETRIC

DWN: DMR CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

P7-901
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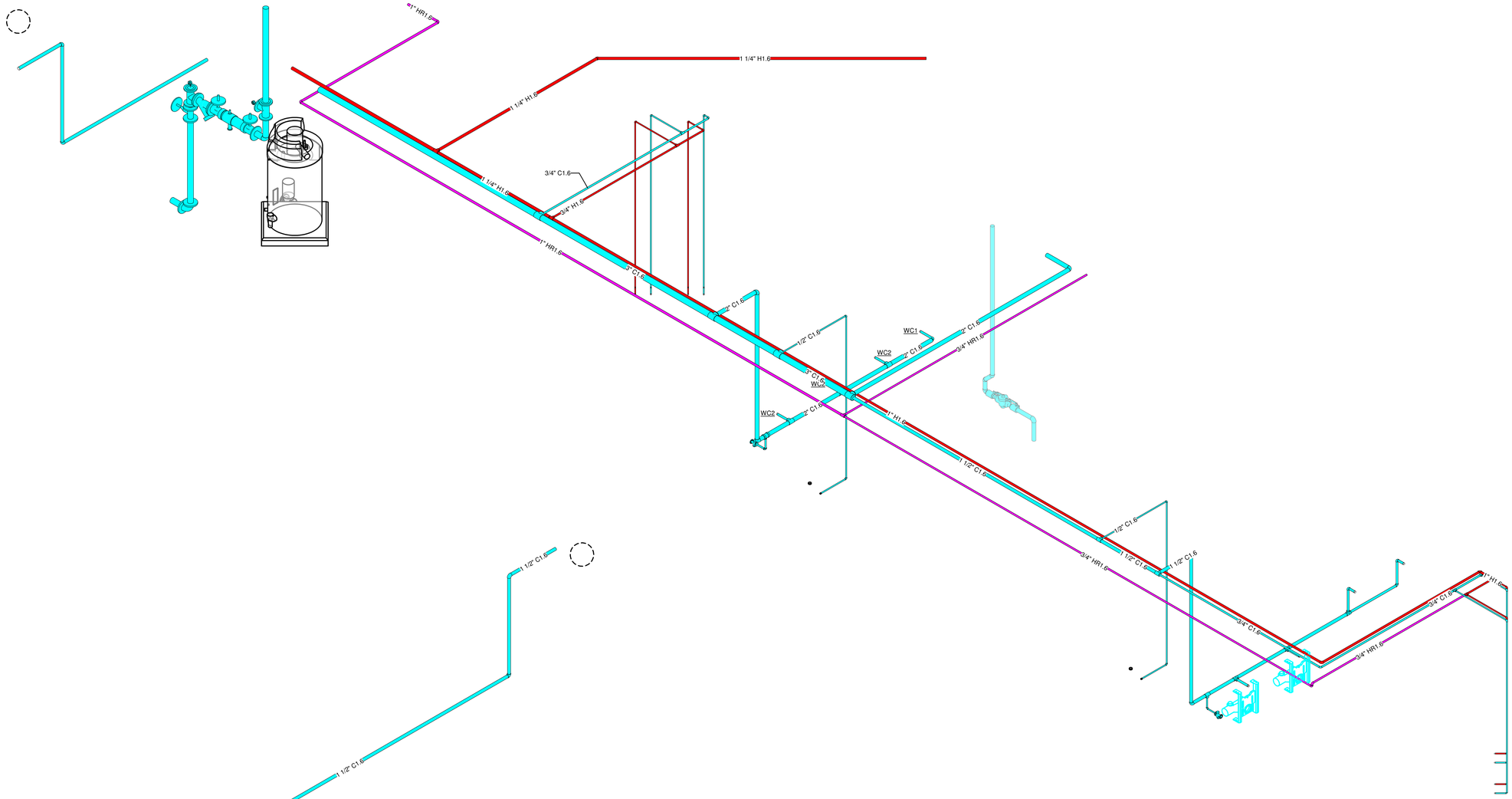
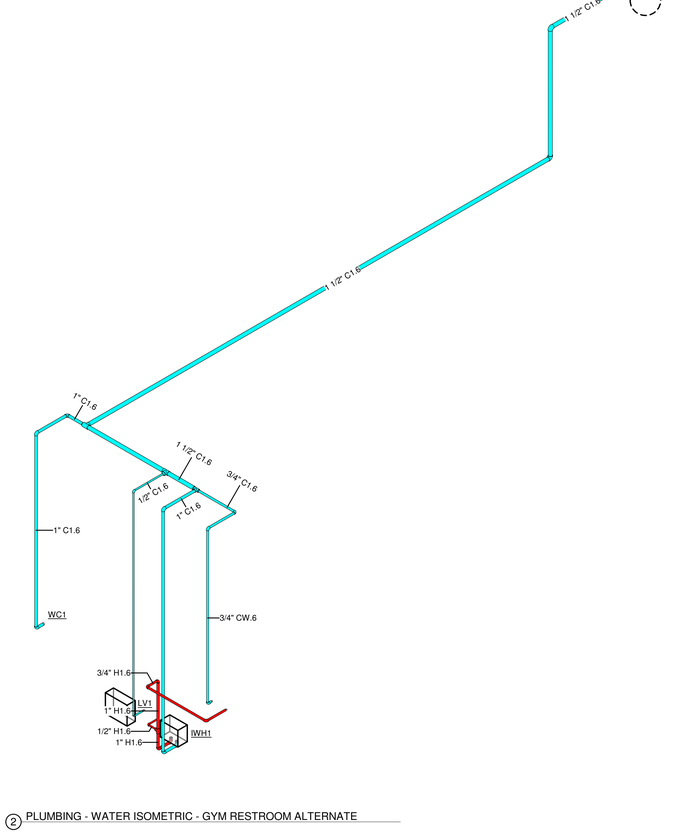


1 PLUMBING - WATER ISOMETRIC - GYM RESTROOMS



2 PLUMBING - WATER ISOMETRIC - GYM RESTROOM ALTERNATE

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PLUMBING
WATER
ISOMETRIC
DWN: DMR CHK: RAL

BG # 24-059
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SHEET TITLE
PLUMBING GAS ISOMETRIC

DWN: DMR CHK: RAL

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REH # 372-922
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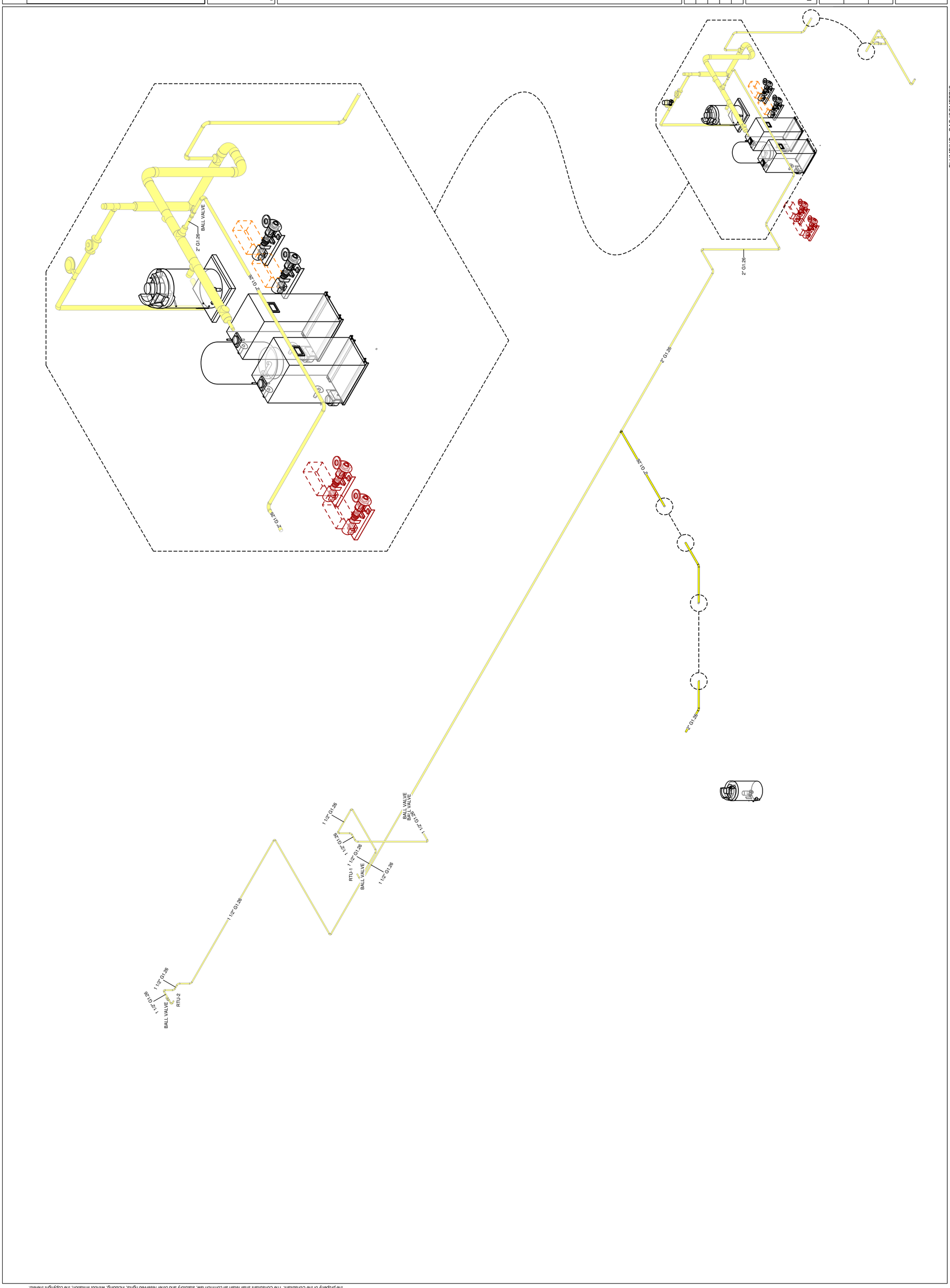

1 PLUMBING - GAS ISOMETRIC

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MECHANICAL LEGEND

SYMBOL	DESCRIPTION
PLAN-VIEW LINE TYPES	
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK
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". WWW.KLHENGRS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).	
PIPING LINE TYPES	
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
CD	CONDENSATE DRAIN
	SUPPLY MAIN OR BRANCH
	RETURN MAIN OR BRANCH
MECHANICAL PIPING ACCESSORIES	
	MANUAL ISOLATION VALVE
	CHECK VALVE (DIRECTION OF FLOW INDICATED)
	PRESSURE RELIEF VALVE
	PRESSURE REGULATING VALVE
	AUTOMATIC BALANCING VALVE
MBV	MANUAL BALANCING VALVE
HT	HEAT TRACING
	UNION
	TEMPERATURE & PRESSURE TEST PORT
	FLOW DIRECTION
	FLEX PIPING CONNECTOR
	THERMOMETER
	PRESSURE GAUGE
	SOLENOID VALVE
M	WATER METER
	Y-STRAINER
	STRAINER WITH BLOW OFF
	DRAIN VALVE (3/4" UNLESS OTHERWISE NOTED)
	MANUAL AIR VENT
	2 WAY CONTROL VALVE (2 POSITION)
MECHANICAL AIR DEVICES	
SR	SUPPLY REGISTER
RR	RETURN REGISTER
ER	EXHAUST REGISTER
RG	RETURN GRILLE
CD	CEILING DIFFUSER
CD-10"Ø	2'x2' SQUARE CEILING DIFFUSER WITH 10" NECK

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
MECHANICAL DUCTWORK	
UP	SUPPLY DUCT WITH ELBOW TURNED UP
DN	SUPPLY DUCT WITH ELBOW TURNED DOWN
UP	RETURN DUCT WITH ELBOW TURNED UP
DN	RETURN DUCT WITH ELBOW TURNED DOWN
UP	EXHAUST DUCT WITH ELBOW TURNED UP
DN	EXHAUST DUCT WITH ELBOW TURNED DOWN
24X12 SA	SUPPLY DUCT
24X12 RA	RETURN DUCT
24X12 EA	EXHAUST DUCT
24X12 OA	OUTSIDE AIR DUCT
	1" LINED DUCTWORK
	DUCT FLEX CONNECTOR
	FLEXIBLE DUCTWORK CONNECTION
	BRANCH TAKEOFF
	REDUCER, CONCENTRIC
	REDUCER, NONCONCENTRIC
MECHANICAL DUCTWORK ACCESSORIES	
	DUCT WITH MANUAL VOLUME DAMPER
	ROUND ELBOW WITH TURNING VANES
	ELBOW WITH TURNING VANES
M	MOTOR OPERATED DAMPER - LOW VOLTAGE
S	DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) FURNISHED BY E.C., INSTALLED BY M.C.
FD 1.5 HR	FIRE DAMPER - 1.5 HR
MECHANICAL STATS & SENSORS	
TS	TEMPERATURE SENSOR
T	LOW VOLTAGE THERMOSTAT
T	LOW VOLTAGE THERMOSTAT WITH LOCKABLE GUARD
CO	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
MECHANICAL MISCELLANOUS	
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
I	HARD WIRE INTERLOCK
ECP	ENVIRONMENTAL CONTROL PANEL
	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)
UC 0'-1"	1" DOOR UNDERCUT

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

A. 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.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS AND GRILLES.

C. DO NOT SCALE DRAWINGS; REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS OF WALLS, DOORS, WINDOWS, AND CABINETRY.

D. COORDINATE WORK AND SPACE REQUIREMENTS IN CEILING SPACES WITH OTHER TRADES PRIOR TO INSTALLATION.

E. COORDINATE LOCATIONS AND ORIENTATION OF ROOF MOUNTED EQUIPMENT WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

F. COORDINATE WALL LOUVERS WITH ARCHITECTURAL ELEVATIONS AND DETAILS.

G. PROVIDE VOLUME DAMPERS AT ALL SUPPLY, RETURN, AND EXHAUST DUCT BRANCH TAKE-OFFS.

H. PROVIDE TURNING VANES IN ALL 90 DEGREE MITERED ELBOWS. OMIT TURNING VANES IN ACOUSTIC LINED RETURN DUCT ELBOWS.

I. 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.

J. SIZES OF ACOUSTIC LINED DUCTS ARE NET INSIDE DIMENSION. INCREASE SHEET METAL SIZE ACCORDINGLY.

K. RUNOUTS TO CEILING DIFFUSERS ARE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.

L. INSTALL ALL EQUIPMENT WITH CODE REQUIRED AND MANUFACTURER RECOMMENDED MINIMUM CLEARANCES FOR SERVICE, ACCESS, AND FIRE PROTECTION.

M. MAINTAIN A MINIMUM OF 10 FEET BETWEEN ALL OUTSIDE AIR INTAKES AND ALL EXHAUST, VENT, AND FLUE OUTLETS.

N. 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 ASTME E 84.

O. 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	HOA	HAND/OFF/AUTOMATIC	RPM	REVOLUTIONS PER MINUTE
AD	ACCESS DOOR	HP	HORSEPOWER	RS	REFRIGERANT SUCTION
AFF	ABOVE FINISHED FLOOR	HPR	HIGH PRESSURE RETURN (STEAM CONDENSATE)	SA	SUPPLY AIR
AMP	AMPERE			SAT	SUPPLY AIR TEMPERATURE
AP	ACCESS PANEL	HSTAT	HUMIDISTAT	SC	SHADING COEFFICIENT
APD	AIR PRESSURE DROP	HTG	HEATING	SCD	SMOKE CONTROL DAMPER
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE	HWR	HEATING HOT WATER RETURN	SD	SMOKE DETECTOR
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	HWS	HEATING HOT WATER SUPPLY	SENS	SENSIBLE HEAT
BAS	BUILDING AUTOMATION SYSTEM	HZ	HERTZ	SP	STATIC PRESSURE
BD	BACKDRAFT DAMPER	I/O	INPUT/OUTPUT	TAB	TESTING, ADJUSTING, BALANCE
BHP	BRAKE HORSEPOWER	IAQ	INDOOR AIR QUALITY	TDH	TOTAL DYNAMIC HEAD
BTU	BRITISH THERMAL UNIT	IN HG	INCHES OF MERCURY	TDS	TOTAL DISSOLVED SOLIDS
BTUH	BRITISH THERMAL UNIT PER HOUR	IN WC	INCH WATER COLUMN	TSP	TOTAL STATIC PRESSURE
CD	CEILING DIFFUSER	IN WG	INCH WATER GAUGE	TSTAT	THERMOSTAT
CFH	CUBIC FEET PER HOUR	IPLV	INTERGRATED PART LOAD VALUE	UL	UNDERWRITERS LABORATORY
CFM	CUBIC FEET PER MINUTE	INST	INSTALLED	VAV	VARIABLE AIR VOLUME
CHWR	CHILLED WATER RETURN	KW	KILOWATT	VFD	VARIABLE FREQUENCY DRIVE
CHWS	CHILLED WATER SUPPLY	KWH	KILOWATT HOUR	WB	WET-BULB (TEMPERATURE)
CI	CAST IRON	LAT	LEAVING AIR TEMPERATURE	WG	WATER GAGE
CLG	COOLING	LBS/HR	POUNDS PER HOUR	WPD	WATER SIDE PRESSURE DROP
CO	CARBON MONOXIDE	LF	LINEAR FOOT (FEET)	WIRE	WIRED
CO2	CARBON DIOXODE	LPR	LOW PRESSURE RETURN (STEAM CONDENSATE)		
COP	COEFFICIENT OF PERFORMANCE				
CV	CONSTANT VOLUME	LPS	LOW PRESSURE STEAM		
CWR	CONDENSER WATER RETURN	LWT	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	MPR	MEDIUM PRESSURE RETURN (STEAM CONDENSATE)		
DIW	DEIONIZED WATER				
DP	DEW POINT TEMPERATURE	MPS	MEDIUM PRESSURE STEAM		
DX	DIRECT EXPANSION	MRI	MAGNETIC RESONANCE IMAGING		
EA	EXHAUST AIR	MVD	MANUAL VOLUME DAMPER		
EAT	ENTERING AIR TEMPERATURE	NA	NOT APPLICABLE		
EER	ENERGY EFFICIENCY RATIO	NC	NOISE CRITERIA		
EG	EXHAUST GRILLE	NC	NORMALLY CLOSED		
EMERG	EMERGENCY POWER	NO	NORMALLY OPEN		
ESP	EXTERNAL STATIC PRESSURE	NTS	NOT TO SCALE		
EWT	ENTERING WATER TEMPERATURE	OA	OUTSIDE AIR		
EX.	EXISTING	OCP	OVER CURRENT PROTECTION		
F	FAHRENHEIT	PD	PRESSURE DROP		
F&T	FLOAT AND THERMOSTATIC	PPM	PARTS PER MILLION		
FA	FREE AREA	PRS	PRESSURE REGULATING (VALVE) STATION		
FD	FIRE DAMPER	PRV	PRESSURE REGULATING VALVE		
FLA	FULL LOAD AMPERES	PSI	POUNDS PER SQUARE INCH		
FPM	FEET PER MINUTE	PSIA	POUNDS PER SQUARE INCH – ABSOLUTE		
FPS	FEET PER SECOND	PSIG	POUNDS PER SQUARE INCH – GAGE		
FT	FEET	RA	RETURN AIR		
FURN	FURNISHED	RAT	RETURN AIR TEMPERATURE		
GA	GAUGE	RH	RELATIVE HUMIDITY		
GAL	GALLONS	RL	REFRIGERANT LIQUID LINE		
GPM	GALLONS PER MINUTE	RLA	RUN LOAD AMPERE		

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ADDENDA

SHEET TITLE
MECHANICAL COVER SHEET

DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

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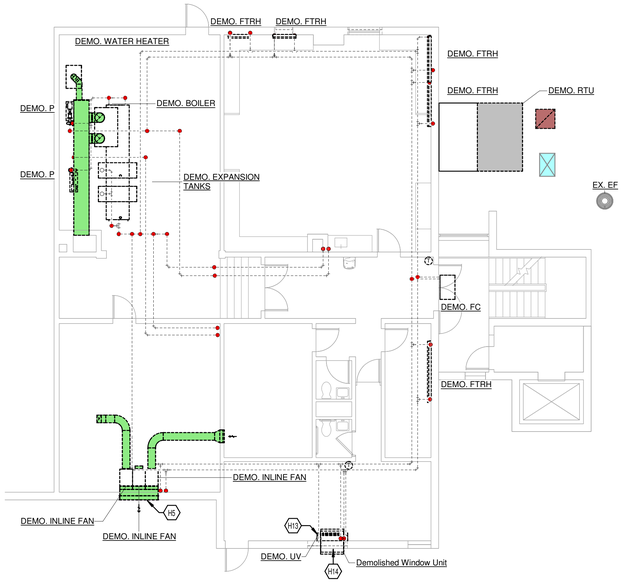
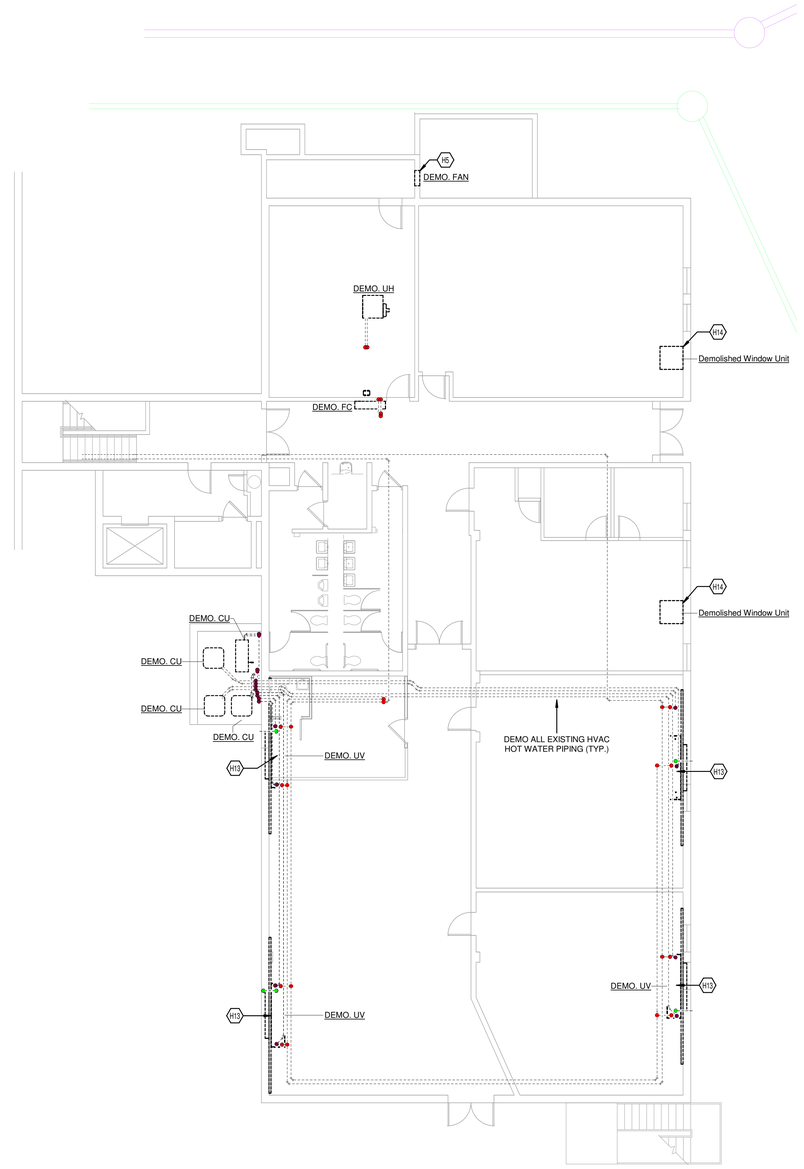
KEYED NOTES

H5	DEMOLISH EXISTING LOUVER AND PATCH WALL.
H13	SEE ARCH DRAWINGS FOR PATCHING OF UNIT VENTILATORS AND GRILLES/LOUVERS
H14	SEE ARCH DRAWINGS FOR PATCHING OF AC UNITS.



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

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



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

KEYPLAN

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ADDENDA

SHEET TITLE
MECHANICAL DEMOLITION LEVELS B, M, & C PLAN OVERALL

DWN: JJK CHK: RAL

BG # 24-059

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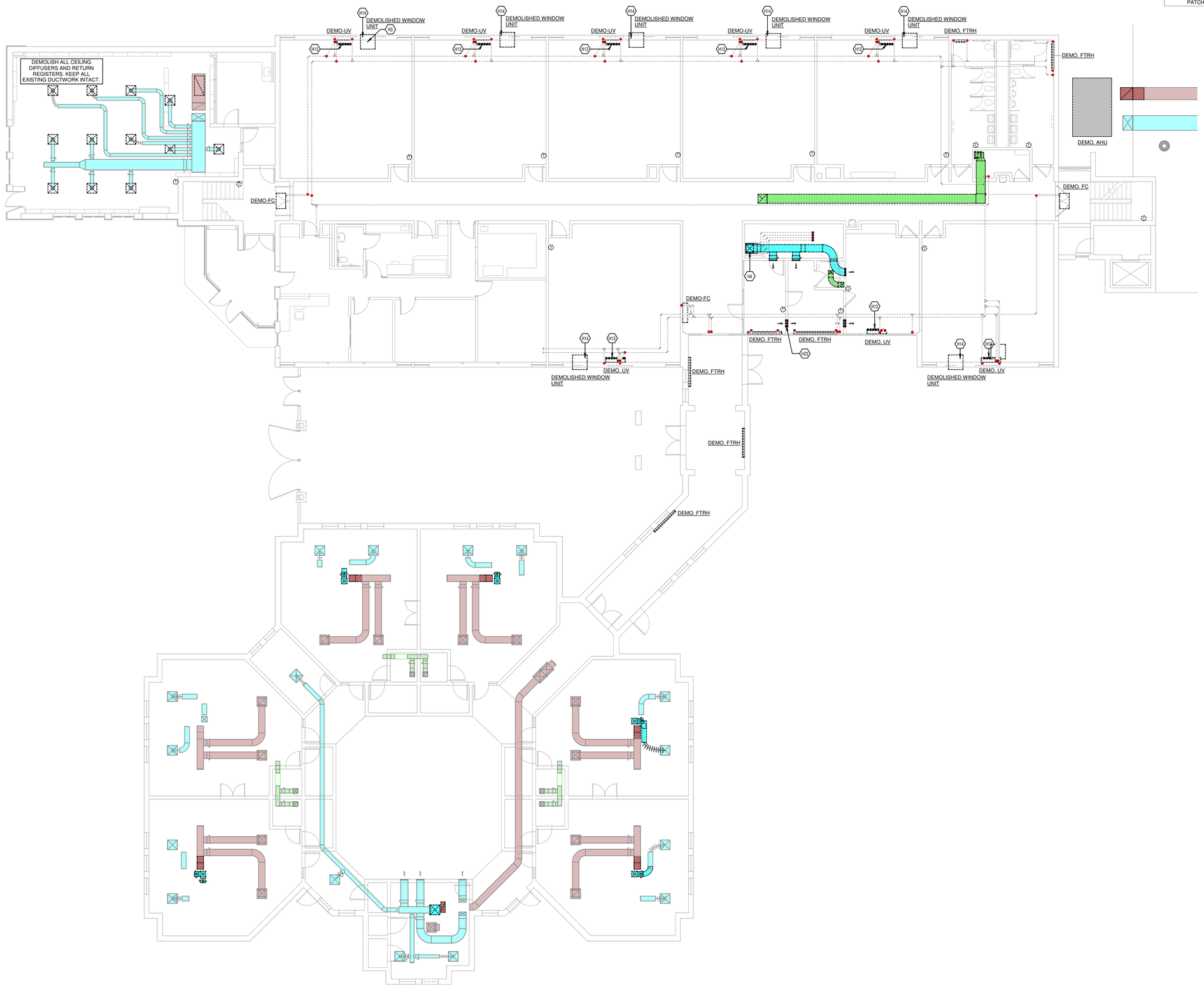
KEYED NOTES

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.
H13	SEE ARCH DRAWINGS FOR PATCHING OF UNIT VENTILATORS AND GRILLES/LOUVERS
H14	SEE ARCH DRAWINGS FOR PATCHING OF AC UNITS.
H23	DEMOLISH ALL TRANSFER GRILLES. COORDINATE WITH ARCHITECT FOR PATCHING OF WALLS. TYPICAL ALL.



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

KEYPLAN

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MECHANICAL DEMOLITION LEVEL 1 PLAN OVERALL
DWN: JJK CHK: RAL

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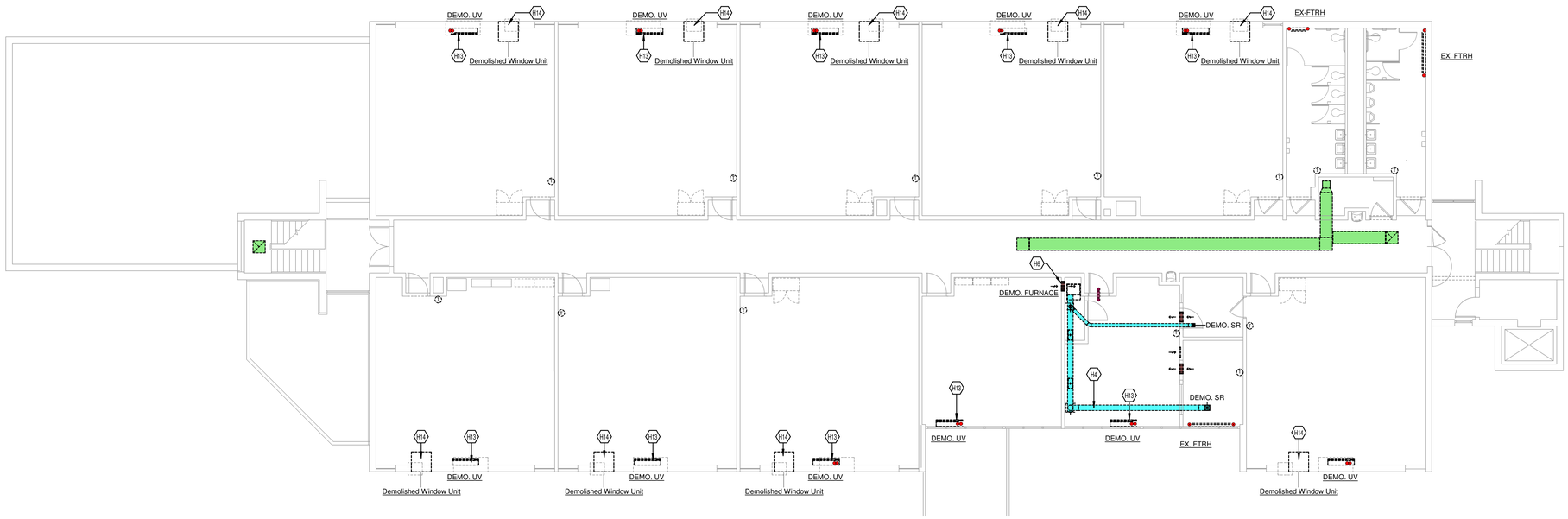
KEYED NOTES

H4	DEMOLISH EXISTING FANCOIL, DUCTWORK, AIR DEVICES, AND CONTROLS.
H6	DEMOLISH EXISTING REGISTERS AND PATCH WALL.
H13	SEE ARCH DRAWINGS FOR PATCHING OF UNIT VENTILATORS AND GRILLES/LOUVERS
H14	SEE ARCH DRAWINGS FOR PATCHING OF AC UNITS.



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

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Misty Middleton - Superintendent

ADDENDA

SHEET TITLE
MECHANICAL DEMOLITION LEVEL 2 PLAN OVERALL
DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

M1-102
KLH PROJECT # 24599

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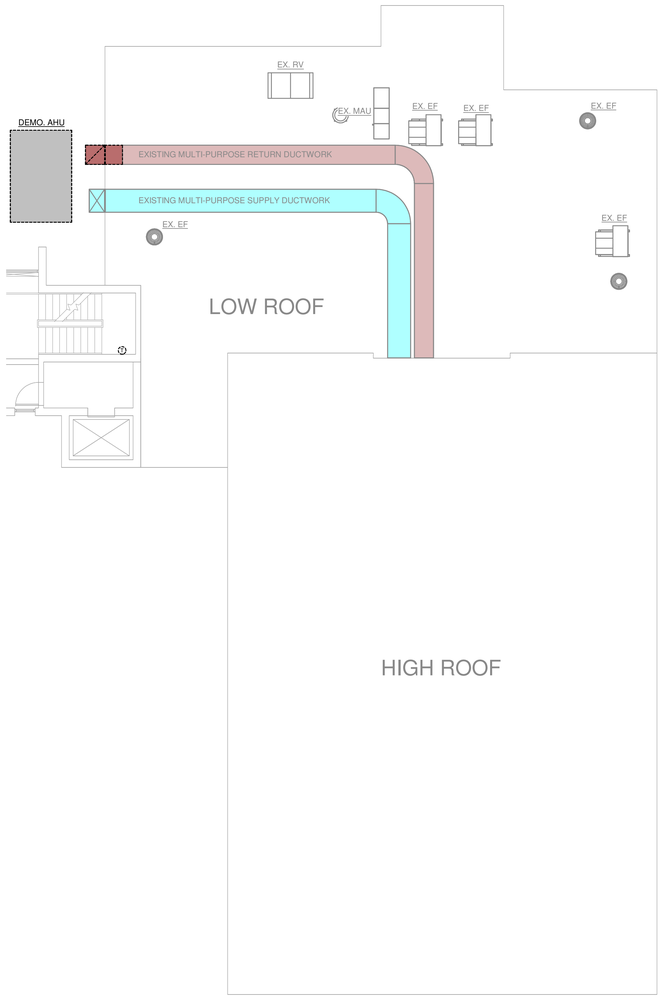
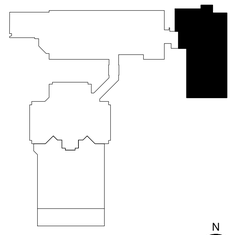


1 MECHANICAL DEMOLITION PLAN - LOW ROOF - LEVEL M
1/8" = 1'-0"



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ADDENDA

SHEET TITLE
MECHANICAL DEMOLITION LOW ROOF PLAN LEVEL M

DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

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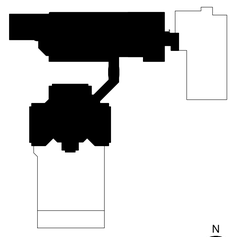
KEYED NOTES

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



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ADDENDA

SHEET TITLE
MECHANICAL DEMOLITION ROOF PLAN OVERALL

DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
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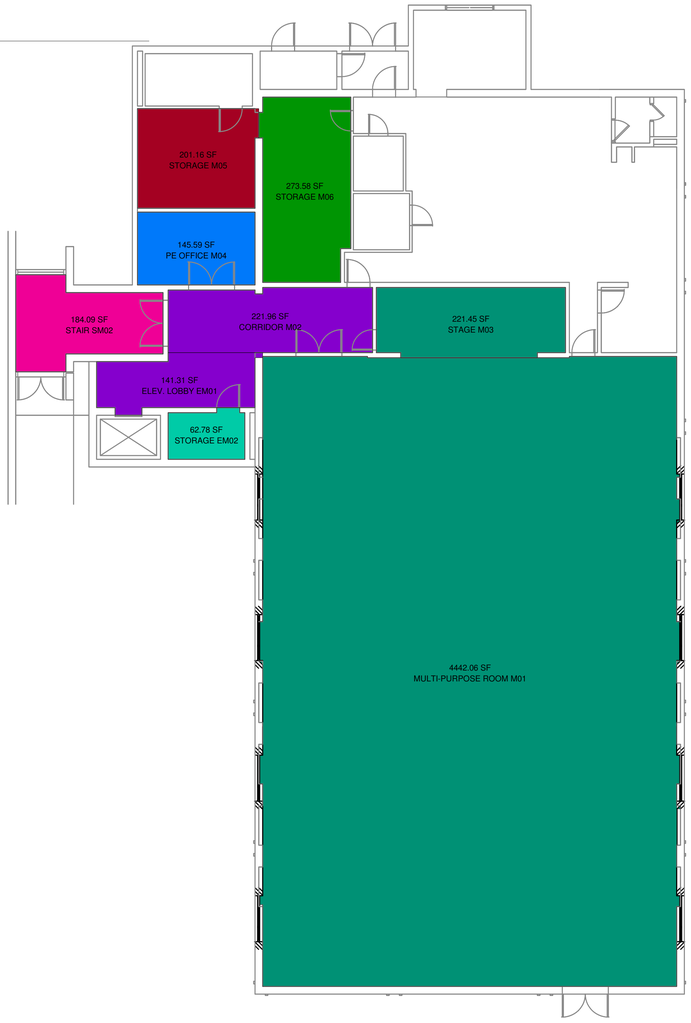
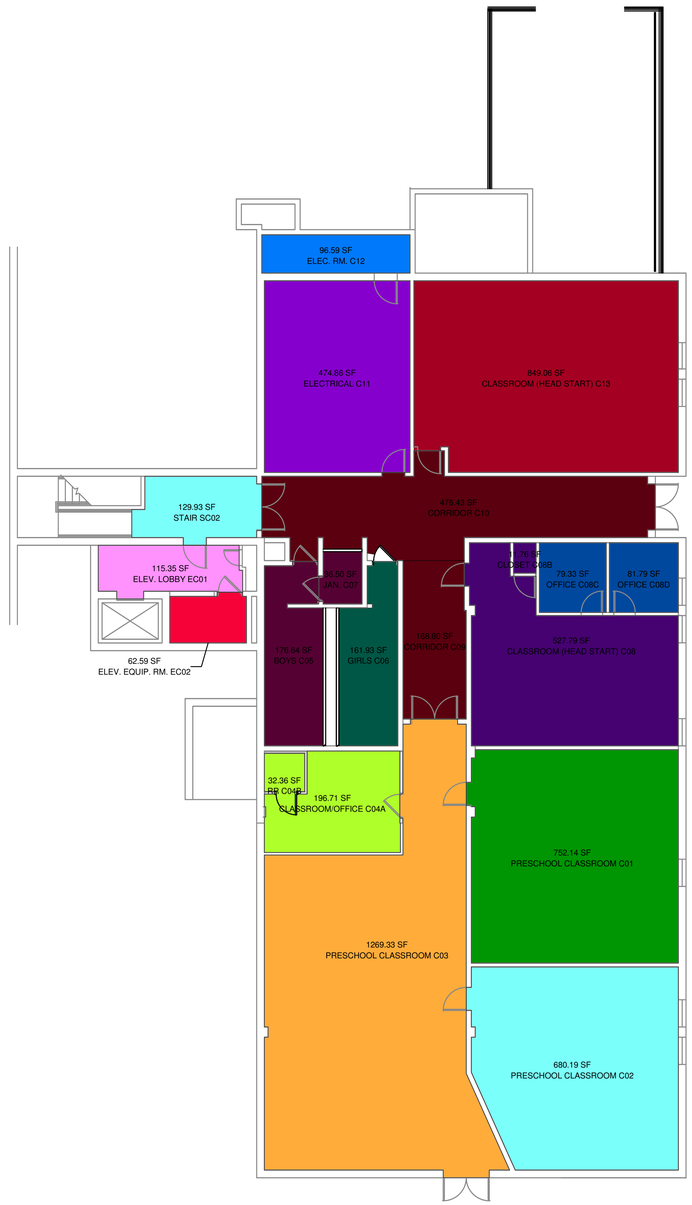
3 MECHANICAL SYSTEM ZONES PLAN - LEVEL B - OVERALL
1/8" = 1'-0"



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



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

KEYED NOTES

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SHEET TITLE
MECHANICAL ZONING LEVELS B, M, & C PLAN OVERALL
DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

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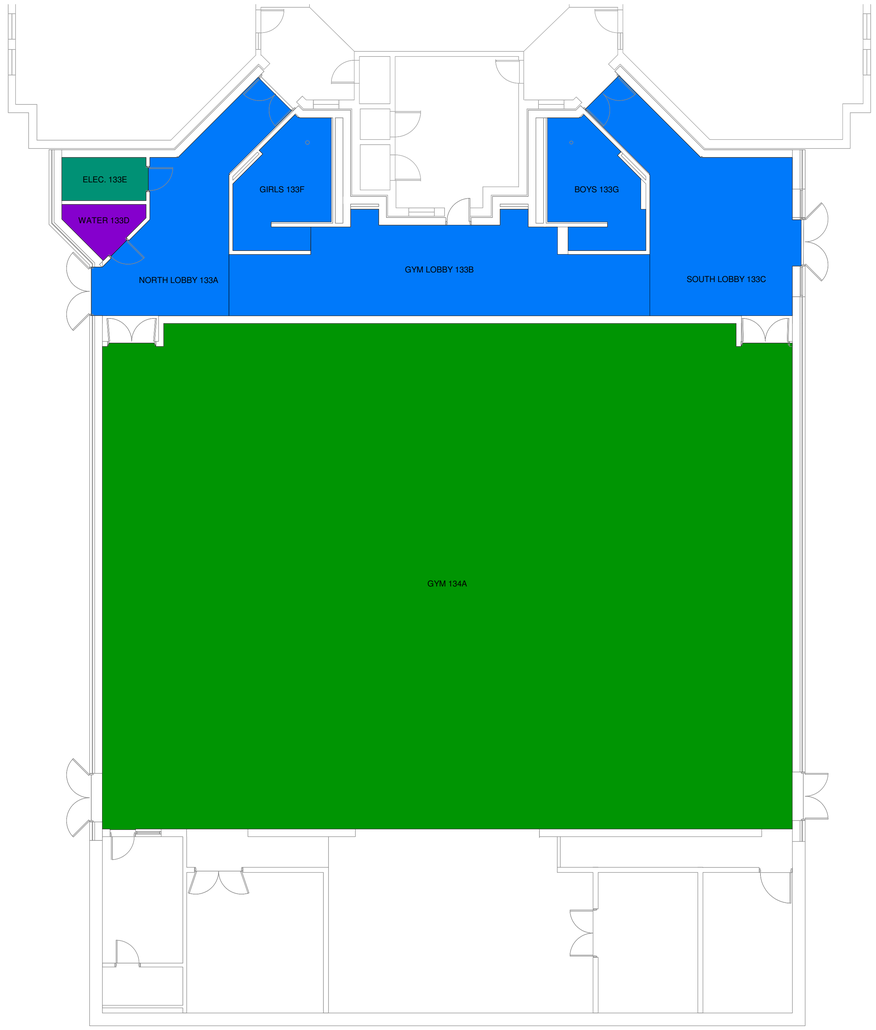
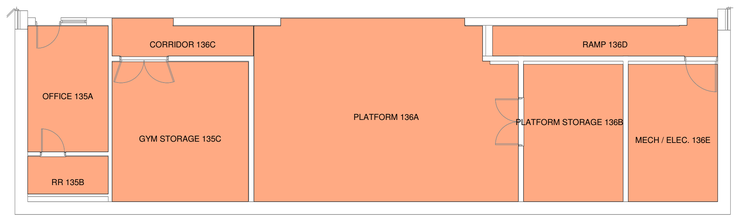
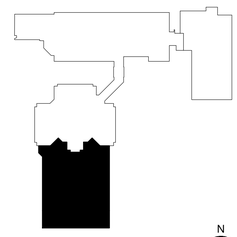


2 MECHANICAL ZONING PLAN - LEVEL 1 - GYM
1/8" = 1'-0"



3 MECHANICAL ZONING PLAN - LEVEL 1 - ALTERNATE BID GYM PLATFORM
1/8" = 1'-0"



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SHEET TITLE
MECHANICAL ZONING GYM PLAN OVERALL
DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

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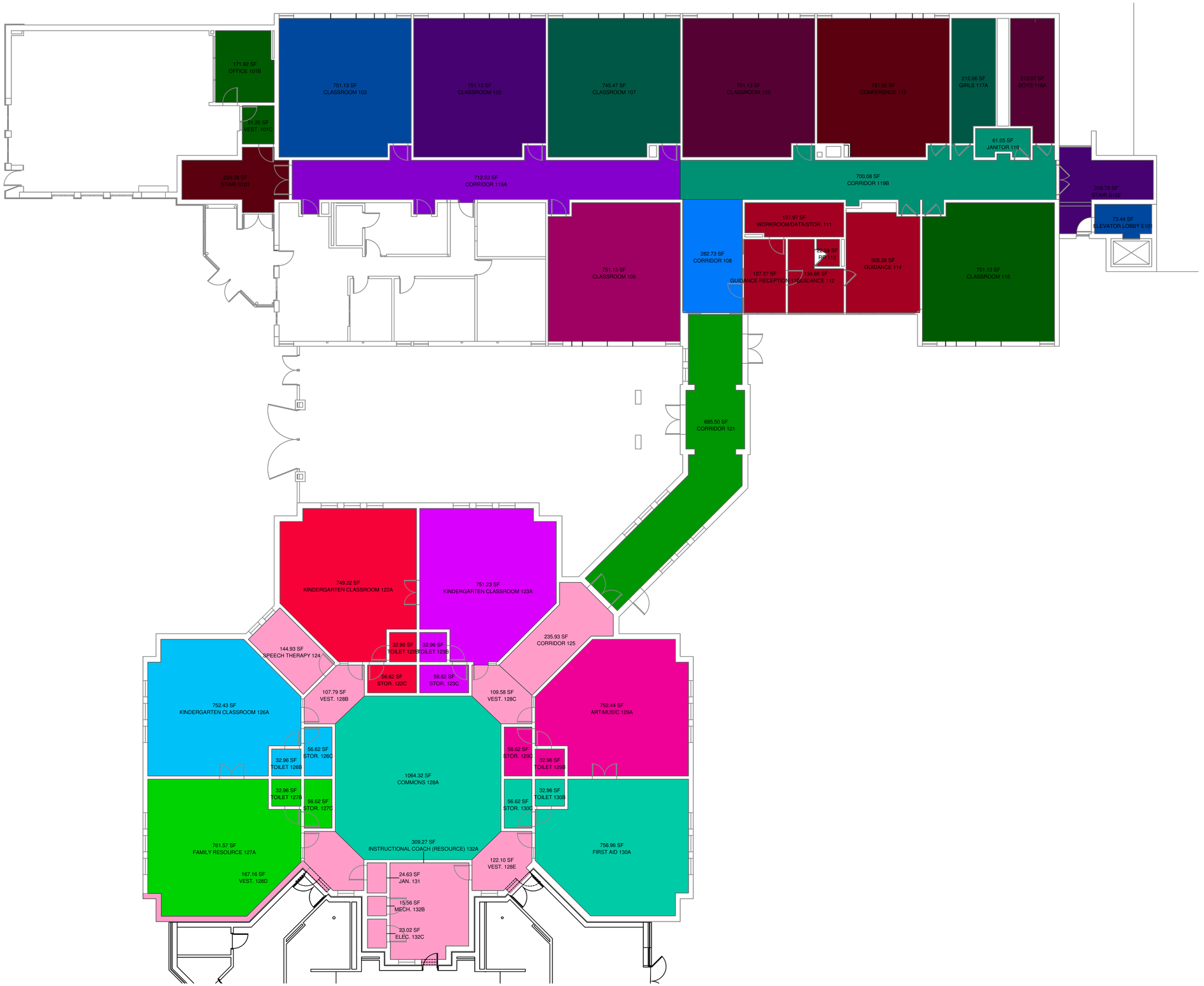
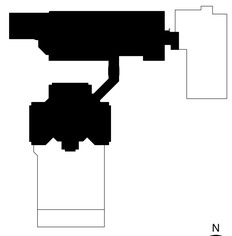


1 MECHANICAL SYSTEM ZONES PLAN - LEVEL 1 - OVERALL
1/8" = 1'-0"



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SHEET TITLE
MECHANICAL ZONING LEVEL 1 PLAN OVERALL

DWN: JJK CHK: RAL

BG # 24-059

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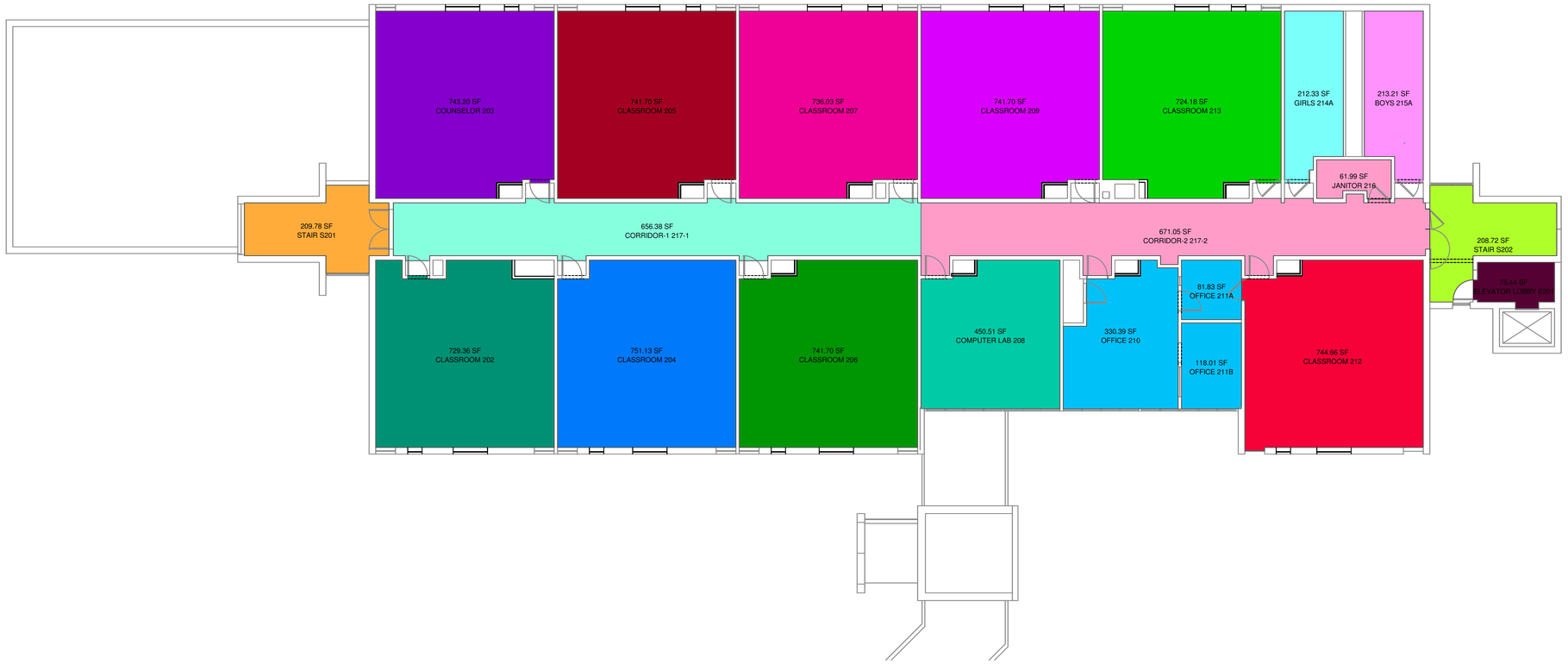
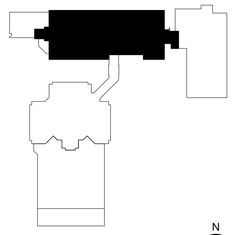


1 MECHANICAL SYSTEM ZONES PLAN - LEVEL 2 - OVERALL
1/8" = 1'-0"

KEYPLAN



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SHEET TITLE
MECHANICAL ZONING LEVEL 2 PLAN OVERALL
DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
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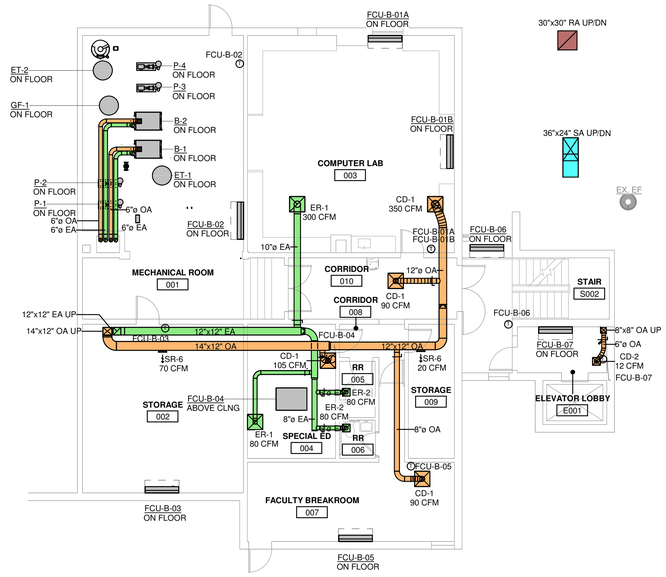
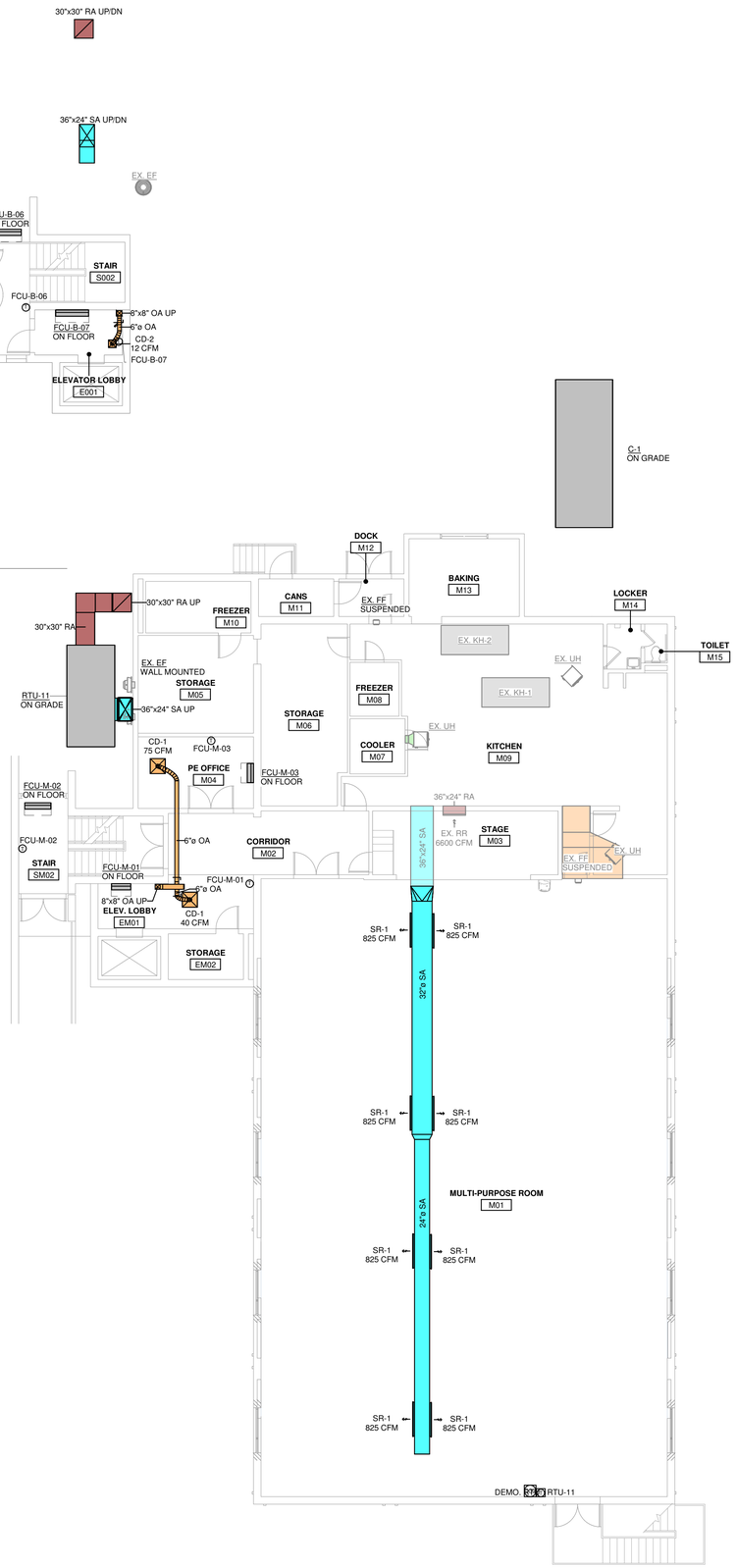
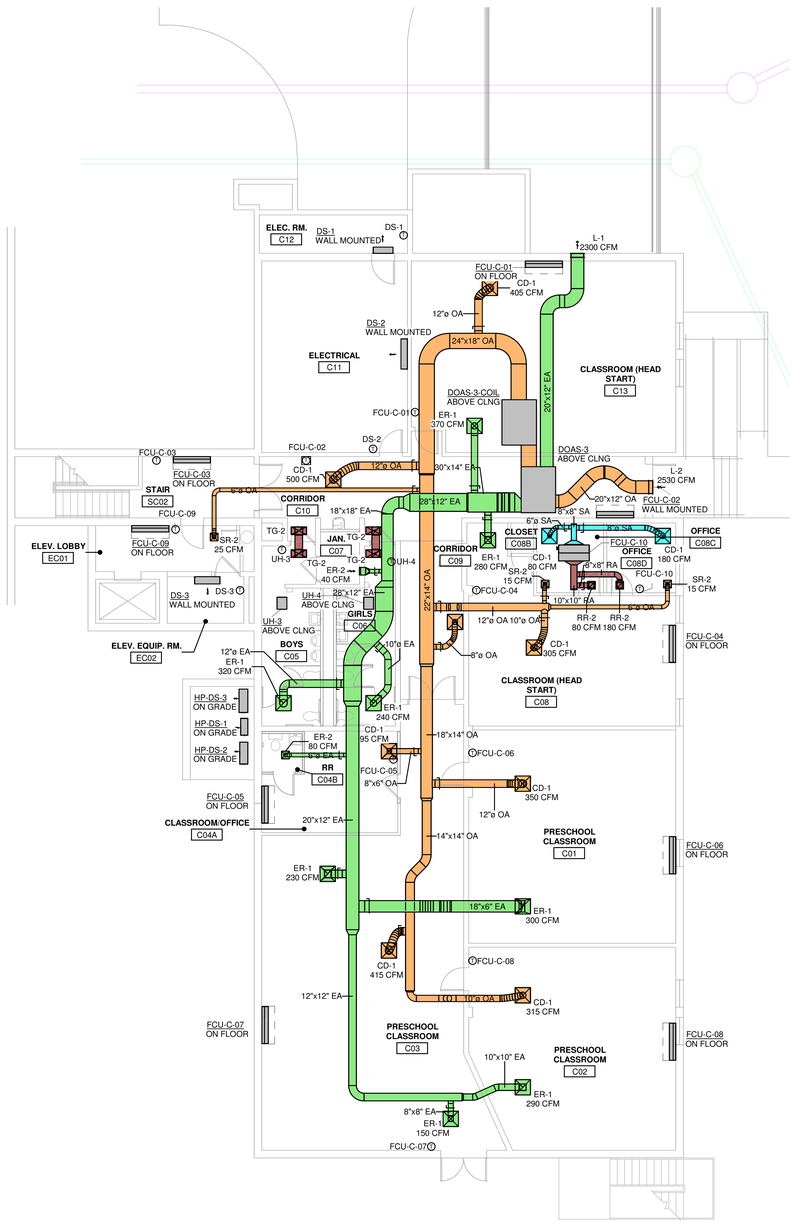


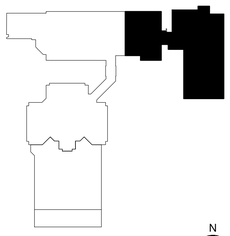
3 MECHANICAL PLAN - LEVEL B - OVERALL
1/8" = 1'-0"



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



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



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ADDENDA

SHEET TITLE
MECHANICAL DUCTWORK LEVELS B, M, & C PLAN OVERALL
DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

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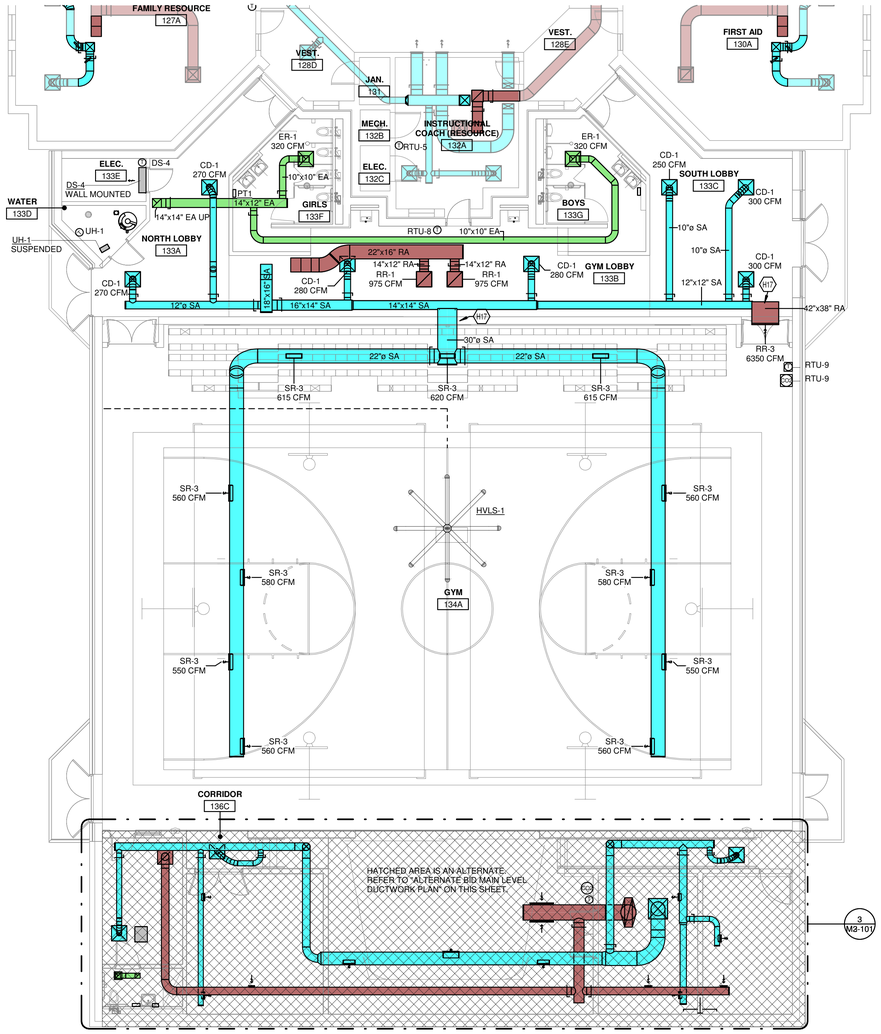
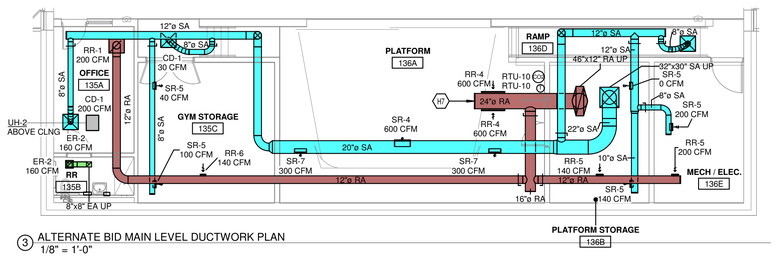
KEYED NOTES

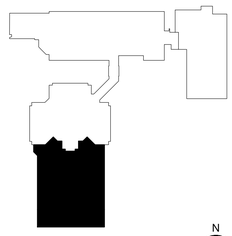
H7	DUCTWORK TO BE ACOUSTICALLY LINED BACK TO ROOF PENETRATION.
H17	REFER TO SHEET M3-106 FOR CONTINUATION



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



3 ALTERNATE BID MAIN LEVEL DUCTWORK PLAN
1/8" = 1'-0"



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ADDENDA

SHEET TITLE
MECHANICAL DUCTWORK GYM PLAN OVERALL

DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

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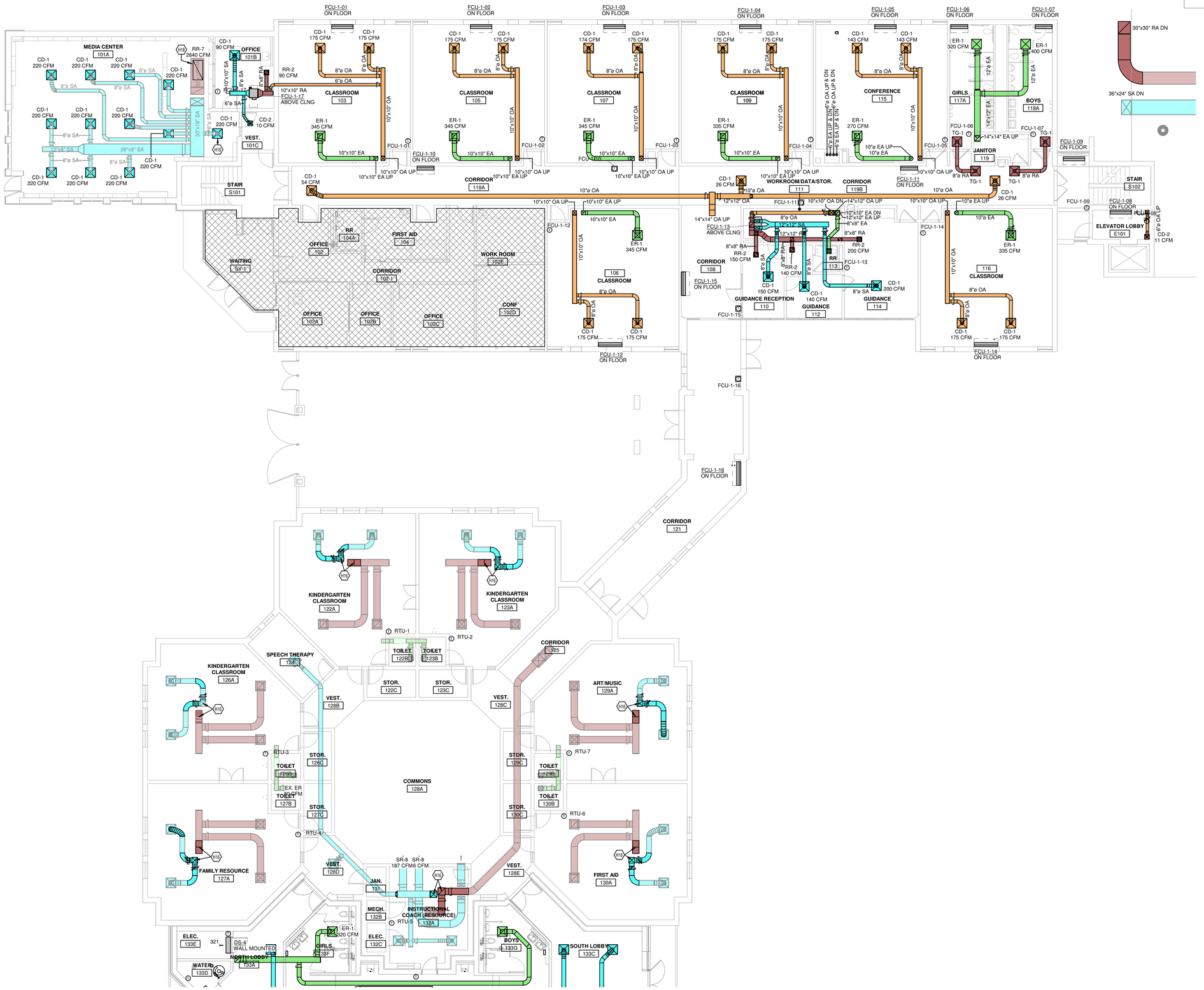
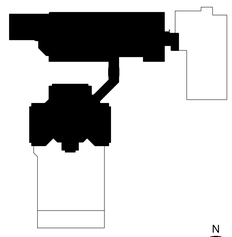
KEYED NOTES

H16 FIELD MODIFY DUCTWORK TO CONNECT TO NEW RTU DROPS
H18 CONNECT NEW DIFFUSERS TO EXISTING DUCTWORK. MODIFY AND EXTEND AS NECESSARY. BALANCE EXISTING ROOFTOP UNIT TO CFM SHOWN ON PLAN. TYPICAL ALL AIR DEVICES IN MEDIA CENTER.



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



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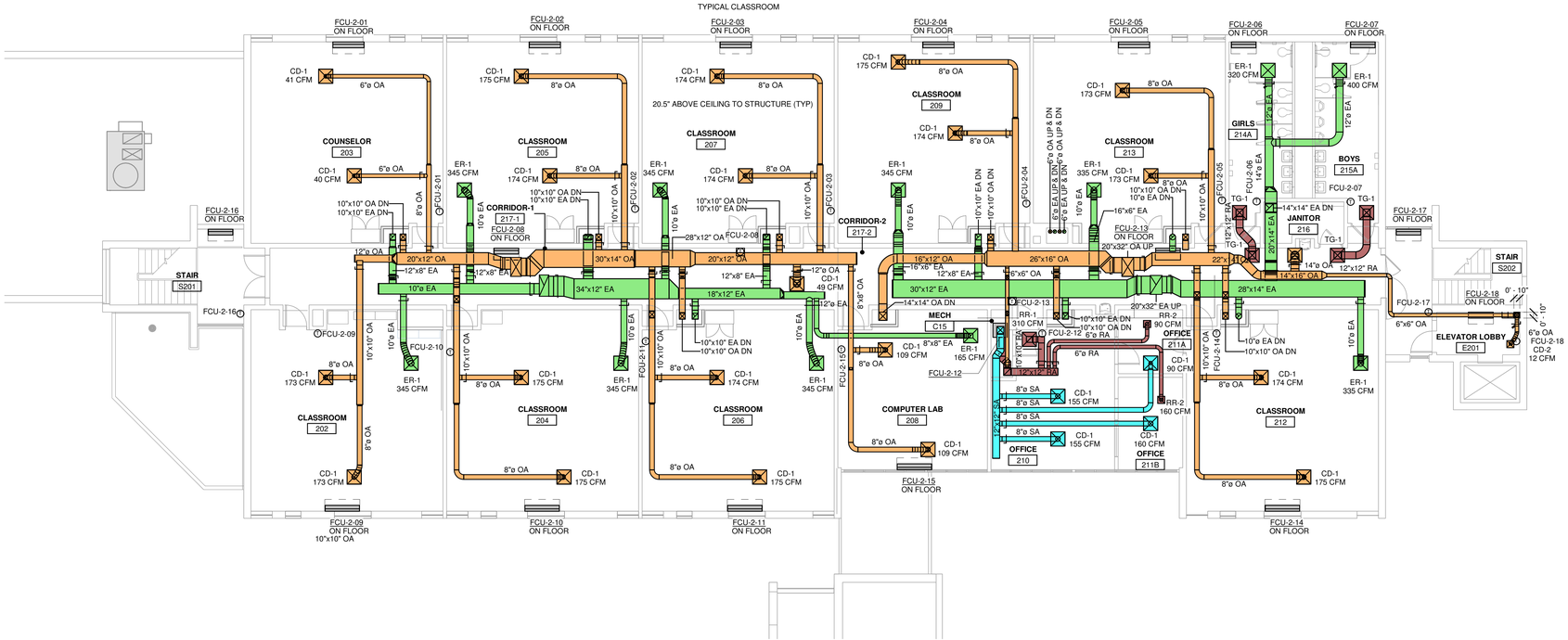

1 MECHANICAL PLAN - LEVEL 2 - OVERALL
1/8" = 1'-0"

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Misty Middleton - Superintendent

ADDENDA

SHEET TITLE
MECHANICAL DUCTWORK LEVEL 2 PLAN OVERALL
DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

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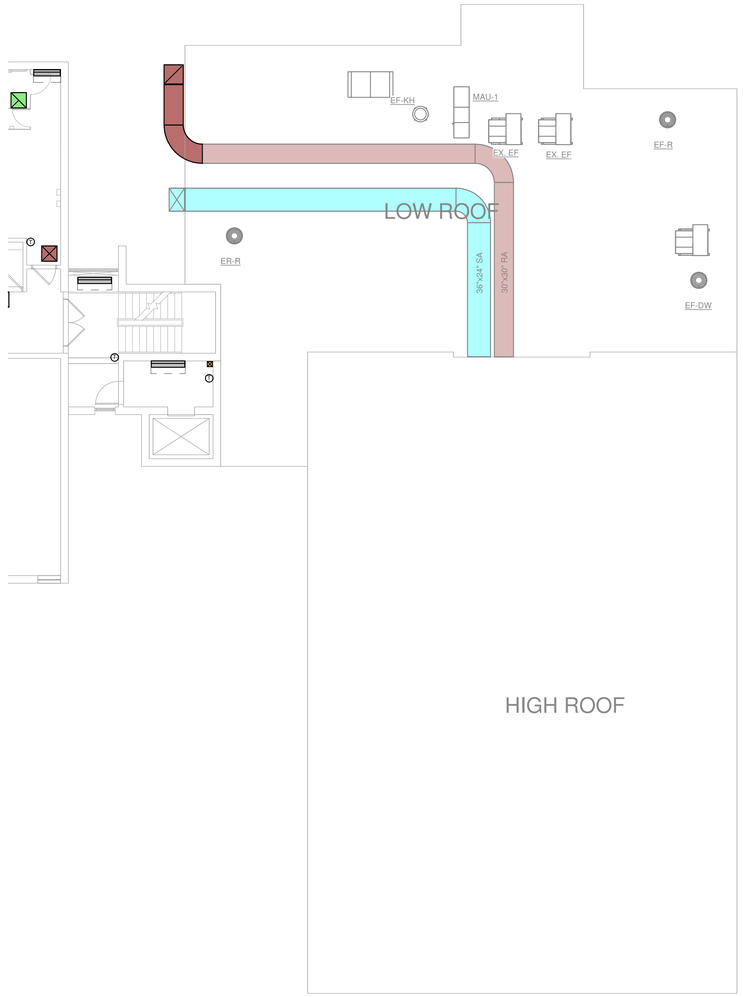
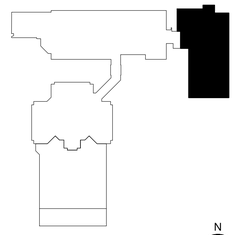


1 MECHANICAL PLAN - LOW ROOF - LEVEL M
1/8" = 1'-0"



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SHEET TITLE
MECHANICAL
DUCTWORK
LOW ROOF
PLAN LEVEL M

DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
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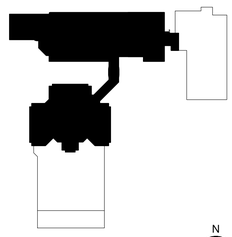
KEYED NOTES

H8	PROVIDE EXHAUST VENT CAPS FOR ENDS OF DUCTWORK.
H9	PROVIDE INTAKE VENT CAPS FOR ENDS OF DUCTWORK.
H20	ROUTE EXHAUST DUCTWORK ON ROOF. ENSURE PROPER PROTECTION TO PREVENT ACCIDENTAL BURNS.

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



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ADDENDA

SHEET TITLE
MECHANICAL
DUCTWORK
ROOF PLAN
OVERALL

DWN: JJK CHK: RAL

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DATE 12-13-2023

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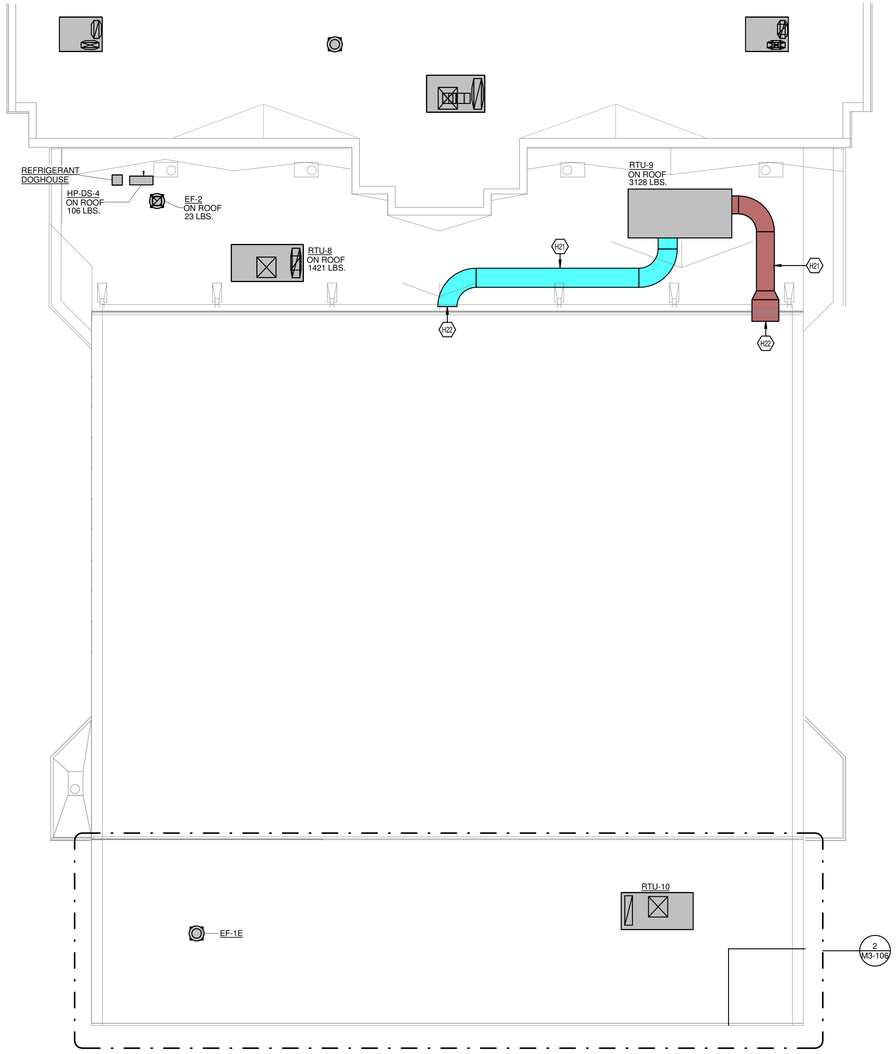
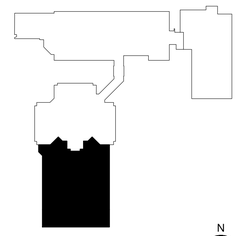


1 MECHANICAL DUCTWORK GYM ROOF PLAN
1/8" = 1'-0"

2 ALTERNATE BID ROOF DUCTWORK PLAN
1/8" = 1'-0"

KEYED NOTES

H21	ROUTE DUCTWORK ON ROOF.
H22	CUT NEW OPENINGS IN WALL AND SEAL DUCTWORK PENETRATIONS



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SHEET TITLE
MECHANICAL DUCTWORK GYM ROOF PLAN
DWN: JJK CHK: RAL

BG # 24-059
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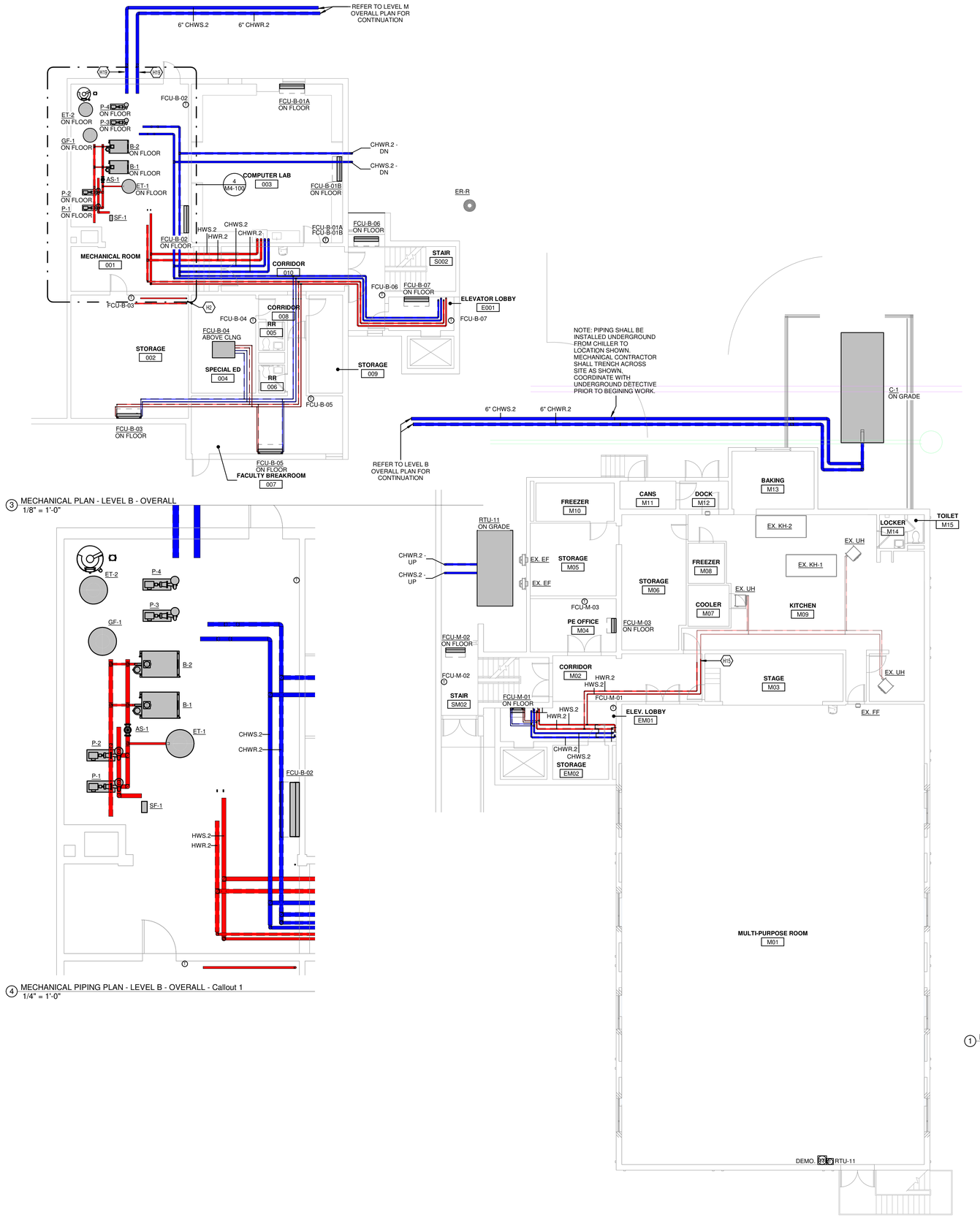
KEYED NOTES

H2	HW PIPING SUPPLYING PRESCHOOL, DROP BELOW GRADE AND TRAVEL DOWN STAIRWELL FOLLOWING EXISTING PIPING PATHWAYS
H11	TERMINATE CONDENSATE INTO SUMP BASIN
H12	TERMINATE CONDENSATE INTO MOP SINK
H15	CONNECT TO EXISTING KITCHEN HOT WATER PIPING
H19	CHILLED WATER PIPING TO BREAK GROUND HERE AND PENETRATE INTO BUILDING ABOVE GAS PIPING. ENSURE PLENTY OF SPACE FOR GAS PIPING ACCESS.



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

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

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

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

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SHEET TITLE
MECHANICAL PIPING LEVELS B, M, & C PLAN OVERALL
DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
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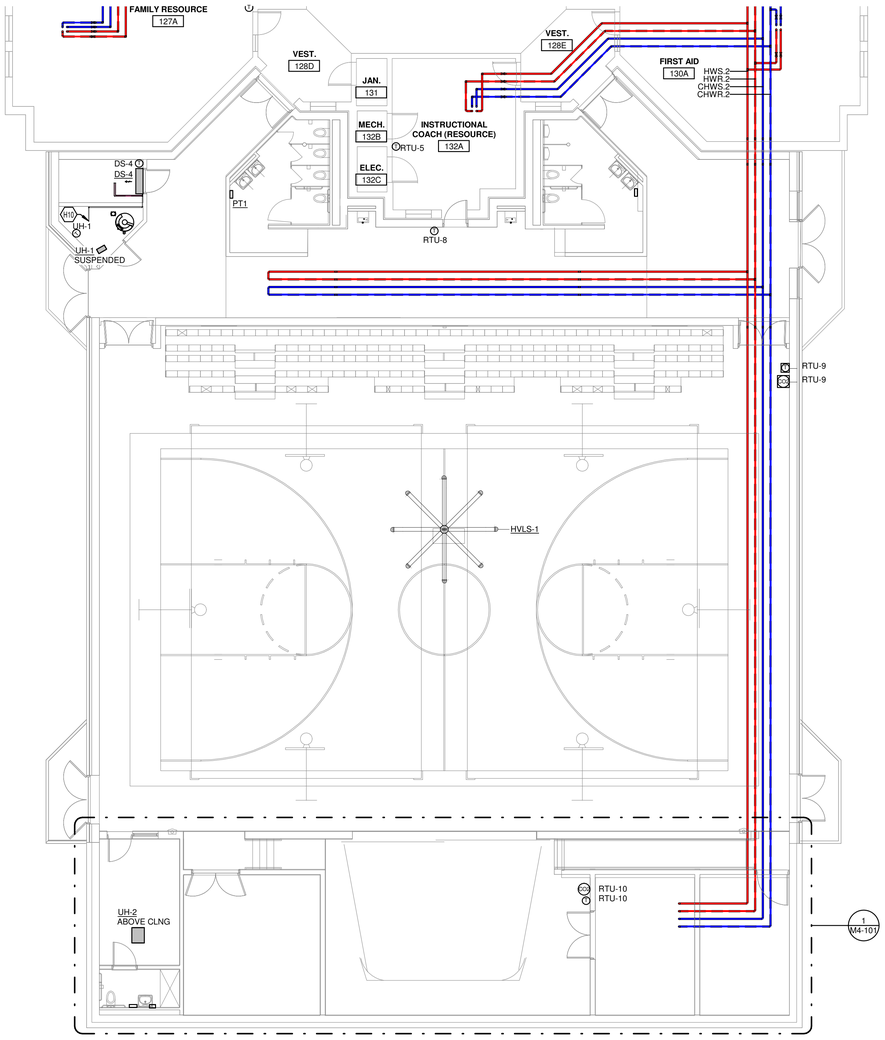
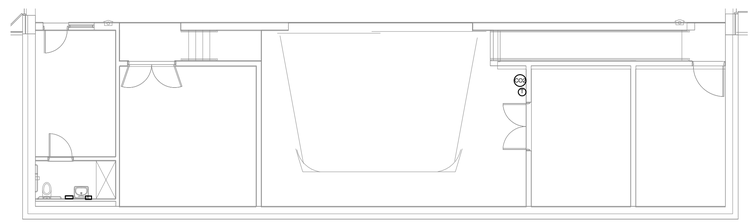
KEYED NOTES

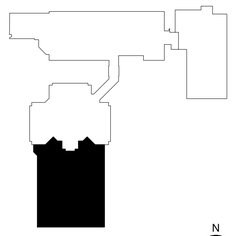
H10 TERMINATE CONDENSATE INTO FLOOR DRAIN.



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



1 ALTERNATE BID MAIN LEVEL PIPING PLAN
1/8" = 1'-0"



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SHEET TITLE
MECHANICAL PIPING GYM PLAN OVERALL
DWN: JJK CHK: RAL

BG # 24-059
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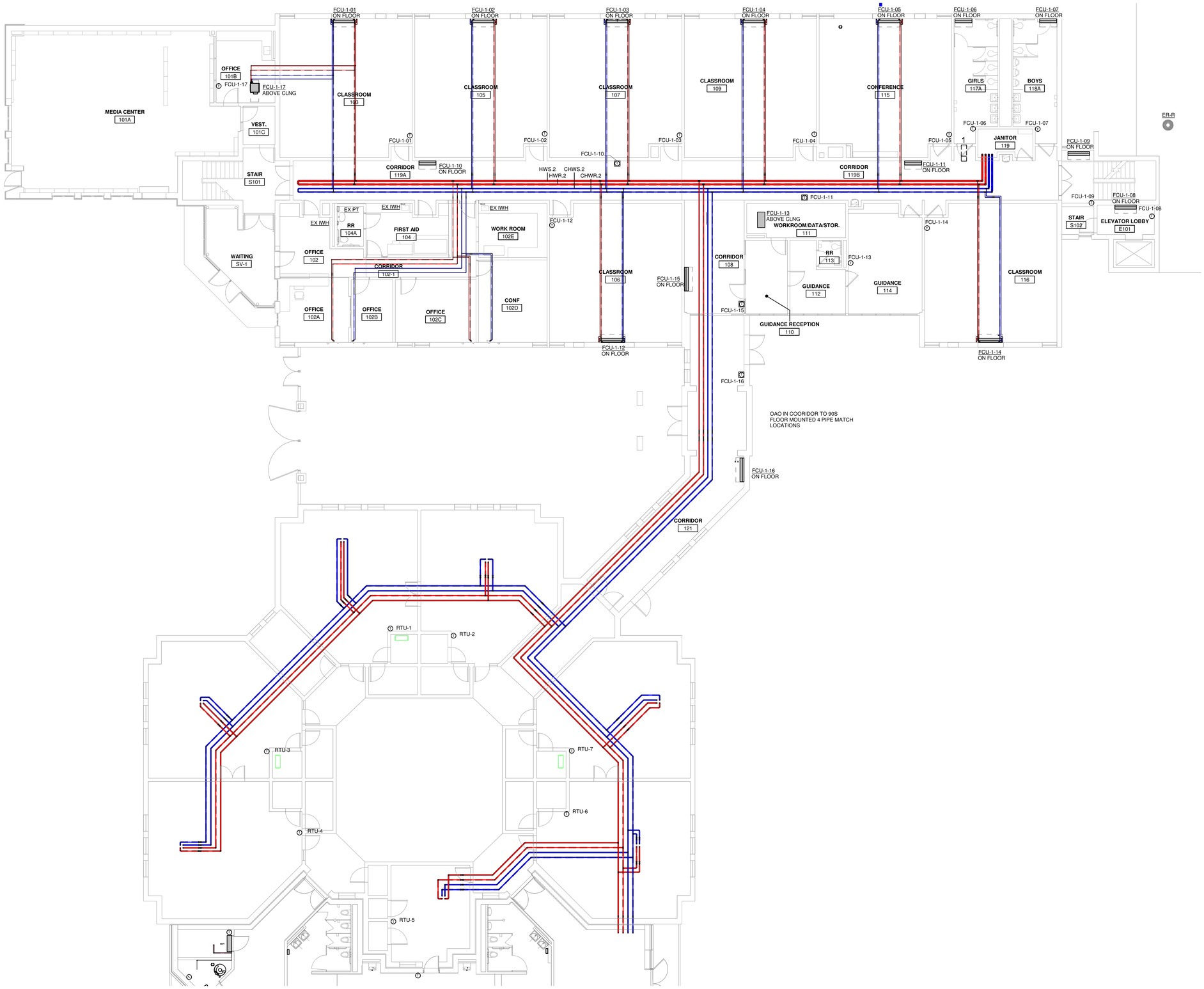

1 MECHANICAL PIPING PLAN - LEVEL 1 - OVERALL
1/8" = 1'-0"

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ALL FANCOIL COLD WATER AND HOT WATER PIPING IS FED BELOW FROM THE FIRST FLOOR.

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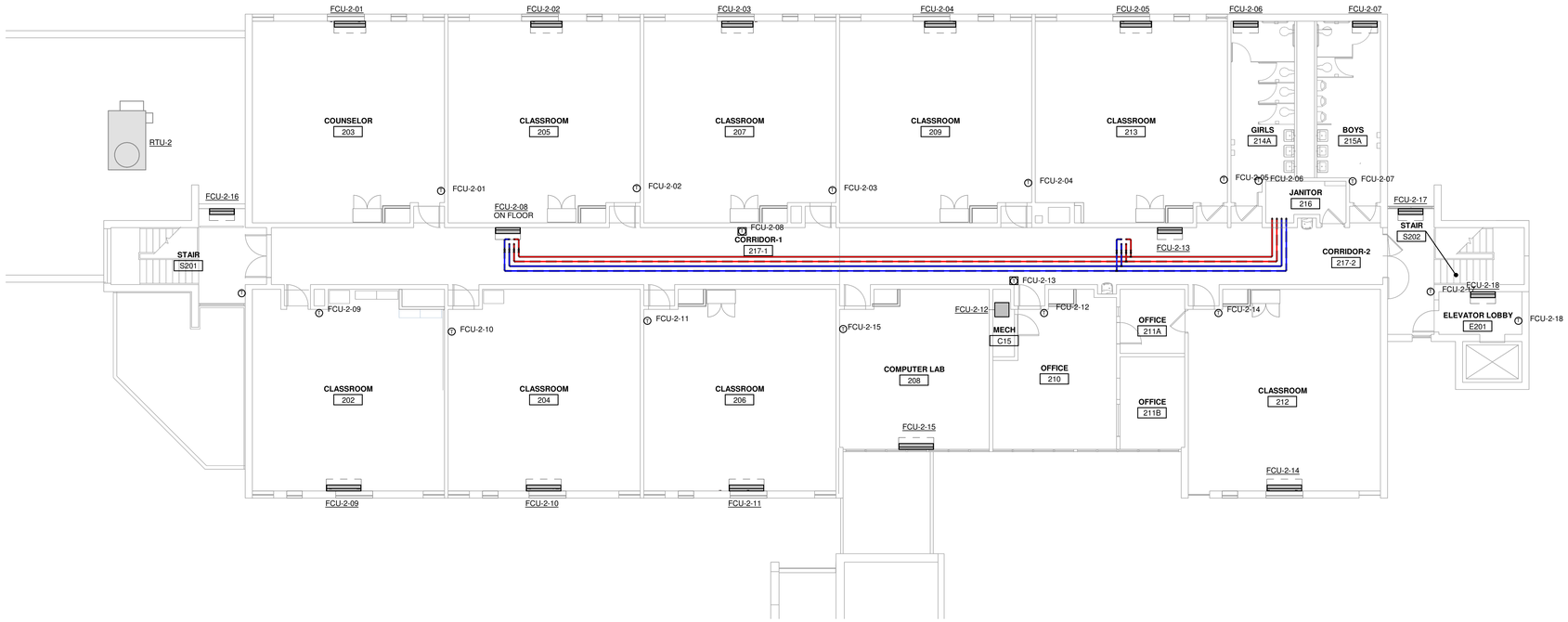

1 MECHANICAL PLAN - LEVEL 2 - OVERALL
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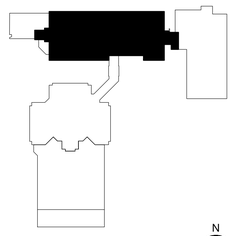

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MECHANICAL PIPING LEVEL 2 PLAN OVERALL
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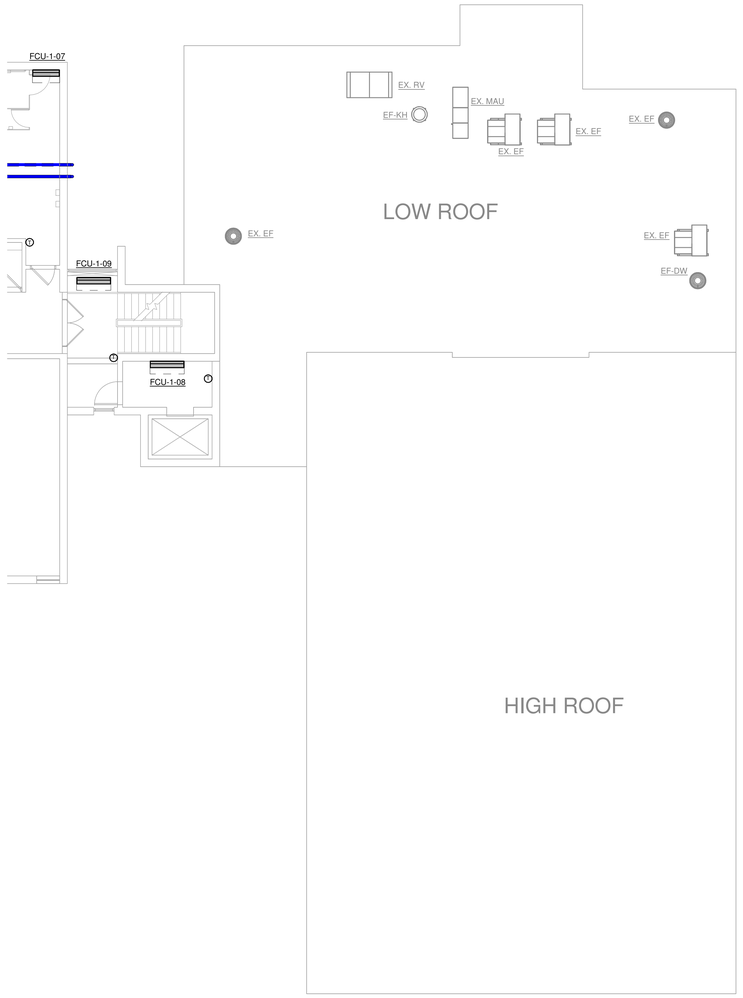
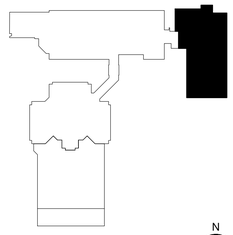


1 MECHANICAL PIPING PLAN - LOW ROOF - LEVEL M
1/8" = 1'-0"



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MECHANICAL PIPING LOW ROOF PLAN LEVEL M

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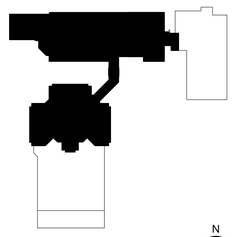

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MECHANICAL PIPING ROOF PLAN OVERALL

DWN: JJK CHK: RAL

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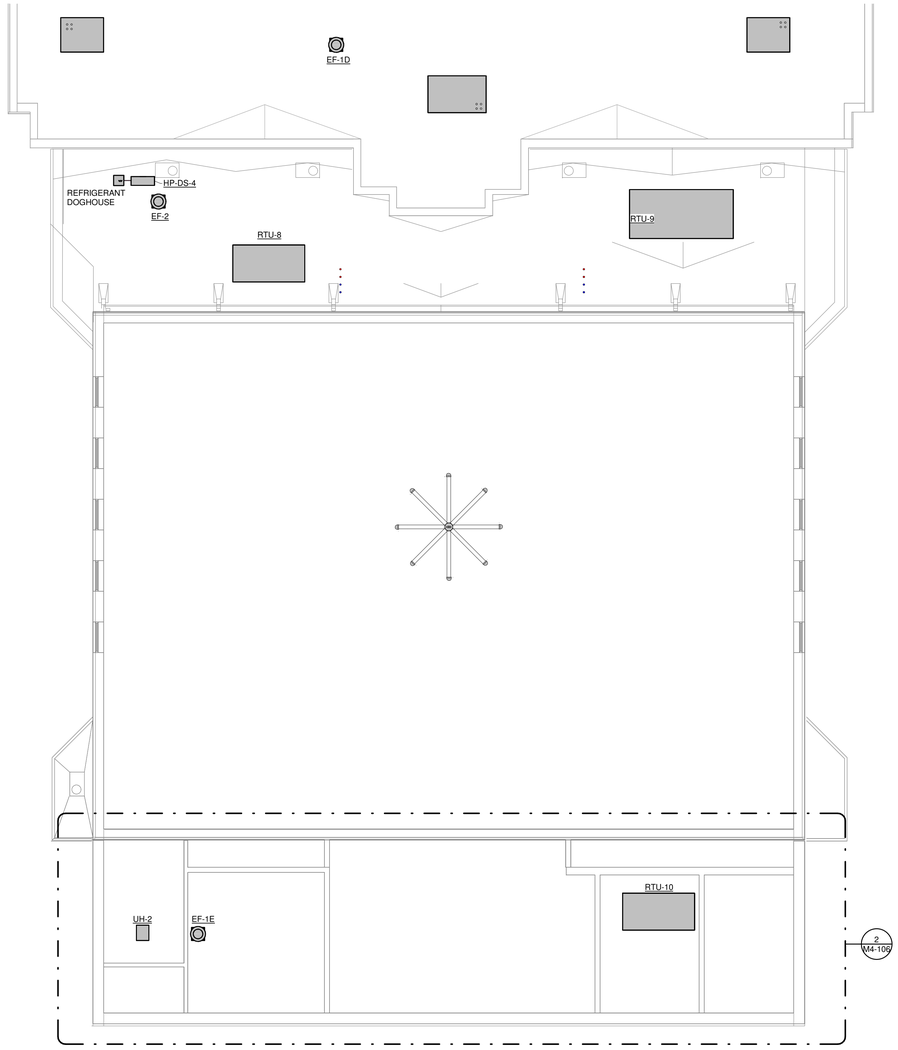
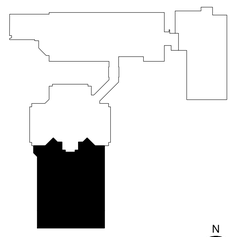


1 MECHANICAL PIPING GYM ROOF PLAN
1/8" = 1'-0"

2 ALTERNATE BID ROOF PIPING PLAN
1/8" = 1'-0"



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Robert Ehmet Hayes & Associates, PLLC

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

ADDENDA

SHEET TITLE
MECHANICAL PIPING GYM ROOF PLAN

DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

M4-106
KLH PROJECT # 24599

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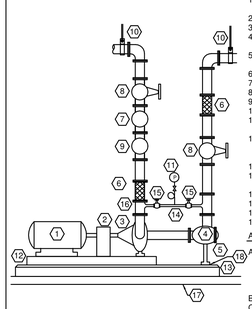


KEYED NOTES:

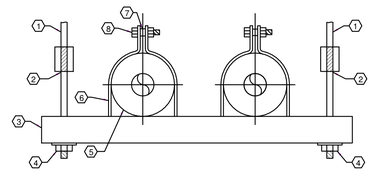
1. PUMP MOTOR WITH SHAFT GROUNDING BRUSHES
2. COUPLING GUARD.
3. END SUCTION PUMP
4. SUCTION DIFFUSER WITH INTEGRALSTRAINER
5. PIPE SUPPORT WITH ADJUSTMENT SCREW
6. BRAIDED FLEXIBLE CONNECTION
7. BALANCING VALVE
8. SHUT-OFF VALVE
9. CHECK VALVE
10. CLEVIS HANGER (DOUBLE NUT)
11. PRESSURE GAGE (4" FACE) WITH PETCOCK
12. INERTIA BASE WITH SPRING VIBRATION ISOLATORS. FILL BASE WITH GROUT.
13. 4" HOUSE-KEEPING PAD
14. 1/4" TUBING FOR PRESSURE TESTING ONLY
15. BALL VALVE
16. REDUCER
17. ELEVATED SLAB
18. PIPE STAND

GENERAL NOTES:

A. PROVIDE FLANGED FITTINGS FOR PIPE 2-1/2" AND ABOVE. SMALLER PIPE DIAMETERS TO HAVE SCREWED FITTINGS WITH UNIONS ON INLET AND OUTLET OF PUMP.
B. INSULATE PIPING
C. INSULATE CHILLED WATER PUMP IMPELLER AND SUCTION DIFFUSER.
D. BALANCE VALVE IS NOT REQUIRED WHERE PUMP IS CONTROLLED BY A VARIABLE FREQUENCY DRIVE.
E. TRIPLE DUTY VALVE IS PERMISSABLE IN LIEU OF NOTES 7,8,9 IN NON-VFD APPLICATIONS.
F. OMIT NEOPRENE FOR SLAB ON GRADE APPLICATIONS.

232123.16-01 - BASE MOUNTED PUMP

SCALE: NONE

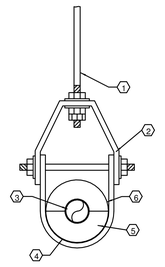


KEYED NOTES:

1. CONNECT TO STRUCTURE (TYPICAL).
2. GALVANIZED THREADED HANGER RODS (TYPICAL). SEE SPECIFICATIONS.
3. UNISTRUT.
4. PLATED NUT & WASHER (TYPICAL).
5. CONTINUOUS INSULATION AS SPECIFIED, (TYPICAL).
6. CHANNEL MOUNTED CLAMPING SYSTEM (TYPICAL).
7. SPACER SIZED TO PREVENT COMPRESSION OF INSULATION.
8. PLATED DOUBLE NUT AND WASHER.

230529.00-02 - REFRIGERANT PIPING SUPPORT

SCALE: NONE



KEYED NOTES:

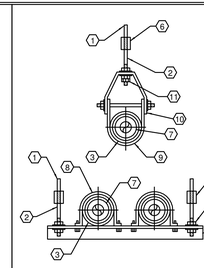
1. HANGER ROD TO STRUCTURE.
2. INSULATION OD MUST BE LESS THAN U-STRAP ID.
3. PIPE CARRYING LOW TEMPERATURE FLUID.
4. INSULATION PROTECTIVE SADDLE AND CALCIUM SILICATE INSERT FOR GLASS FIBER PIPE INSULATION OR INSULATION PROTECTION SHIELD FOR CELLULAR GLASS PIPE INSULATION.
5. PIPEINSULATION. SEAL ALL JOINTS AND SEAMS WITH INSULATION MANUFACTURER RECOMMENDED ADHESIVE APPLIED AT 100% COVERAGE. FIRMLY BUTT PIPE SECTIONS TOGETHER AFTER APPLY ADHESIVE TO MATING SURFACES AND WRAP PIPE WITH TAPE OR STRAPS WITH OVERLAPPING ENDS TO FIRMLY HOLD INSULATION TOGETHER.
6. CONTINUOUS VAPOR BARRIER JACKET ON OUTER SURFACE OF INSULATION. SEAL ALL JOINTS AND SEAMS OF VAPOR BARRIER WITH MANUFACTURER RECOMMENDED TAPE OR MASTIC.

GENERAL NOTES:

A. IMPERATIVE THAT INSULATION DOES NOT HAVE GAPS OR CRACKS THAT ALLOW AMBIENT AIR TO REACH PIPE SURFACE.
B. IMPERATIVE THAT VAPOR BARRIER IS CONTINUOUS AND UNBROKEN. ALL DAMAGED VAPOR BARRIER

232113.23-13 - PIPE HANGER AND PIPE INSULATION

SCALE: NONE



KEYED NOTES:

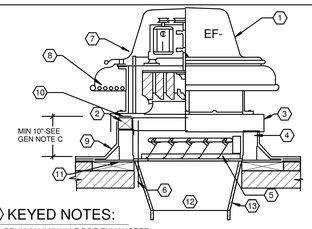
1. CONNECT TO STRUCTURE TYP.
2. GALVANIZED THREADED HANGER RODS, TYP. SEE SPECS.
3. INSULATION PROTECTIVE SADDLE, TYP.
4. 1-1/2" x 1-1/2" x 1/4" STEEL ANGLE HANGER PRIME PAINTED.
5. PLATED BUT & WASHER TOP & BOTTOM.
6. TYP. VIBRATION ISOLATORS IN MECH. ROOMS, TYP.
7. INSULATION AS SPECIFIED, TYP.
8. REFER TO SPECS FOR CLAMP SPACING, TYP.
9. SADDLE
10. CLEVIS TYPE HANGER (PRIME PAINTED)
11. PLATED DOUBLE NUT AND WASHER

GENERAL NOTES:

A. IF HOT WATER PIPING IS ON THE SAME RACK AS OTHER PIPING, THE HOT WATER SHALL BE ON ROLLER SUPPORTS.
B. REGARDLESS OF WHAT IS INDICATED ON ANY FLOOR PLANS OR OTHER DETAILS THE ACTUAL INSTALLATION OF ANY HYDRONIC PIPING SHALL CONFORM TO WHAT IS SHOWN BELOW

232113.23-14 - PIPE HANGERS TYPICAL

SCALE: NONE



KEYED NOTES:

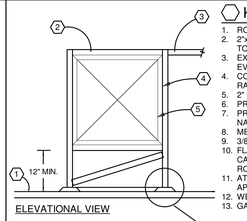
1. SPUN ALUMINUM ROOF EXHAUSTER
2. WOOD NAILER
3. ANCHOR ALL FOUR SIDES OF CURB CAP INTO NAILER SCREWS AT 12" O.C.
4. PREFABRICATED, INSULATED ALUMINUM CURB
5. MOTOR OPERATED DAMPER WIRED TO INTERFACE WITH EXHAUST FAN START/STOP
6. CONDUIT THROUGH HOLE IN DAMPER SHELF
7. POWER DISCONNECT
8. ALUMINUM BIRD SCREEN
9. CURB TYPE AND FLASHING PER ROOFING MANUFACTURER'S REQUIREMENTS.
10. RUBBER GASKET APPLIED TO TOP OF CURB
11. ANCHOR TO ROOF DECK AS REQUIRED
12. CENTER TRANSITION TO DUCTWORK FROM DAMPER OR CURB. PROVIDE 3x DIAMETER STRAIGHT RUN MINIMUM.

GENERAL NOTES:

A. DELETE CANT FOR SINGLE MEMBRANE ROOFS.
B. TOP OF CURB MUST BE LEVEL. FABRICATE PITCH IN CURB OR SHIM AS NECESSARY.
C. TOP OF CURB SHALL BE A MINIMUM OF 10" ABOVE FINISHED ROOF SURFACE. CONTRACTOR HAS THE OPTION TO EITHER FURNISH A CURB WITH SUFFICIENT HEIGHT TO ACCOMMODATE ROOF INSULATION THICKNESS OR TO ADD PRESSURE TREATED WOOD BLOCKING, SECURED TO THE ROOF DECK, BELOW THE CURB
D. LOCATE FAN A MINIMUM OF 10'-0" FROM EDGE OF ROOF, INTAKES, AND ROOF HATCH.
E. INSTALL ROOF MEMBRANE UP UNDER FLASHING, FLASH PER ROOFING MFGR. RQMTS.

23423.00-10 - ROOF EXHAUSTER A

SCALE: NONE

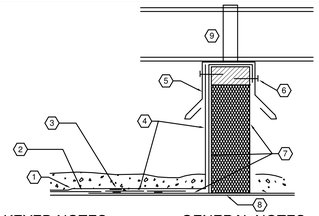


KEYED NOTES:

1. ROOF MEMBRANE
2. 2"x2"X1/4" GALVANIZED ANGLE FRAME. PITCH TOP OF DUCT TO SHED RAINWATER
3. EXTEND TOP ANGLE OF FRAME TO WALL EVER 12"-0" (WHERE APPLICABLE)
4. COMPLETELY WEATHERPRROFED & RAINTIGHT DUCT ON ROOF
5. 2" LINING
6. PREFAB ROOF CURB
7. PRESSURE TREATED 2x6 SUPPORT WOOD NAILOR.
8. METAL DECKING
9. 3/8" Ø x2" LAG SCREW, COVER WITH SEALANT
10. FLASHING TO EXTEND UP TO BELOW CURB CAP. CURB TYPE AND FLASHING PER ROOFING MANUFACTURER'S REQUIREMENTS.
11. ATTACH SUPPORT RAIL TO ROOF DECK, APPLY SEALANT AROUND PERIMETER
12. WELD ANGLE TO 3"x3"x1/4" PL.
13. GALVANIZED SHEET METAL CAP

233113.00-07 - ROOF DUCT SUPPORT B

SCALE: NONE



KEYED NOTES:

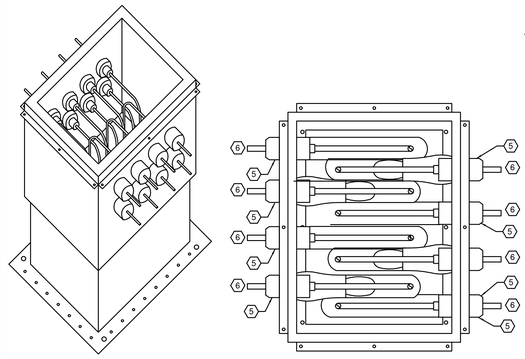
1. ROOFING MEMBRANE AND BALLAST
2. SUPSHEET (SEE ROOFING SPECS)
3. SOLVENT WELD (SEE ROOFING SPECS)
4. FLASHING TO EXTEND UP AND UNDER CURB CAP
5. SHEET METAL CURB COVER AND COUNTER FLASHING
6. FASTENER WITH ONE 1/4" Ø NEOPRENE WASHER
7. PREFABRICATED ROOF CURB - TYPE AND FLASHING PER ROOFING MANUFACTURER'S REQUIREMENTS.
8. SECURE TO DECK
9. HEAVY GAUGE STRAP - SECURE TO DUCT AND CURB AND SEAL WATERTIGHT

GENERAL NOTES:

1. ALLOW FOR SUFFICIENT HEIGHT FOR CURB TO EXTEND FROM ROOF STRUCTURE, THROUGH ROOF INSULATION (IF ANY - V.I.F.) TOA HEIGHT OF 18" ABOVE FINISHED ROOF SURFACE
2. PROVIDE 2" LINED DUCTOWRK OR 2" WEATHERWRAP INSULATION
3. PITCH TOP OF DUCT TO SHED RAINWATER
4. PROVIDE CURBS EVER 10 FEET AND AT CHANGES IN DIRECTION

233113.00-04 - DUCTWORK ON ROOF CURB

SCALE: NONE

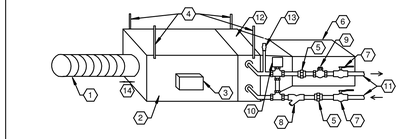


KEYED NOTES:

1. ALUMINUM MOUNTING FLANGE ANCHORED TO DECK
2. WELDED POWER-COATED ALUMINUM HOUSING WITH ELASTOMETRIC INSULATION.
3. WELDED POWERE-COATED ALUMINUM CAP
4. OPENING THRU ROOF. SIZE BASED ON PIPING INSTALLATION REQUIREMENTS
5. PIPE EXIT SEAL MADE OF HIGH UV PROTECTED PVC PLASTIC WITH LIQUID TIGHT SEAL ON EITHER SIDE OF THE THREADED FITTING
6. INSULATED LIQUID AND SUCTION LINE STUB OUTS
7. INSULATION AT ROOF LINE. INSULATION SHALL BE EQUAL IN R-VALUE TO TOTAL ROOFING R-VALUE.

232313.00-01 - PRE-FABRICATED DOG HOUSE FOR REFRIGERANT PIPING

SCALE: NONE



KEYED NOTES:

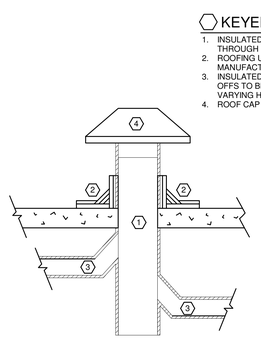
1. INSULATED FLEXIBLE INLET DUCT WITH MAXIMUM LENGTH OF 24". PROVIDE TIE-WRAPS ON INNER & OUTER JACKET OF FLEXIBLE DUCT MATERIAL IN ADDITION TO SHEETMETAL SCREWS & FENDER WASHERS ON EACH SIDE OF DUCT CONNECTION.
2. VAV BOX
3. DAMPER ACTUATOR - PROVIDE 3' CLEARANCE. LOCATE ABOVE ACCESSIBLE CEILING OR PROVIDE ACCESS PANEL.
4. GALVANIZED THREADED ROD (CONNECT TO STRUCTURE)
5. UNION
6. OUTLET CONNECTION, PROVIDE SUFFICIENT STRAIGHT LENGTH TO ASSURE EVEN AIR FLOW OVER HEATING COIL.
7. ISOLATION VALVE WITH HANDLE EXTENSION - PROVIDE DI-ELECTRIC UNION IF DISSIMILAR PIPING MATERIAL USED.
8. STRAINER
9. AUTOMATIC BALANCING VALVE WITH PRESSURE TEST PORT AND MEMORY STOP
10. CONTROL VALVE (2 WAY OR 3 WAY W/ BYPASS, SEE TEMPERATURE CONTROL SPECIFICATION)
11. SUPPLY AND RETURN LINES, COPPER WITH INSULATION
12. REHEAT COIL SECTION
13. MANUAL AIR BLEEDER VALVE AT HIGHEST POINT OF PIPING TO BOX. INCLUDE 1/2" SOFT COPPER TUBING FROM BLEEDER VALVE IN A U SHAPE WITH THE DISCHARGE DIRECTED DOWNWARD.
14. STRAIGHT SHEET METAL DUCT INTO VAV BOX. MINIMUM LENGTH OF 3 TIME INLET DUCT DIAMETER.

GENERAL NOTES:

A. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

233613.00-05 - VAV BOX W HOT WATER HEAT

SCALE: NONE

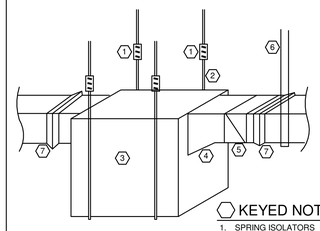


KEYED NOTES:

1. INSULATED MAIN EXHAUST DUCT THROUGH ROOF.
2. ROOFING UP UNDER, PER ROOFING MANUFACTURER REQUIREMENTS
3. INSULATED EXHAUST BRANCH TAKE OFFS TO BE AT 45° ANGLES AT VARYING HEIGHTS.
4. ROOF CAP

233400.00-02 - EXHAUST RISER DETAIL

SCALE: NONE

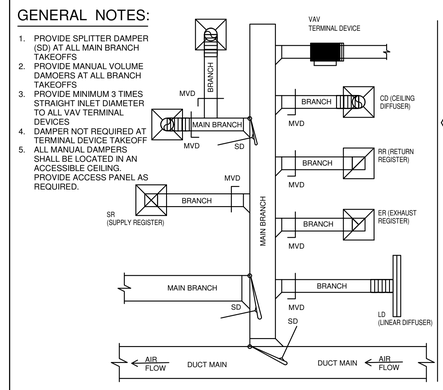


KEYED NOTES:

1. SPRING ISOLATORS
2. GALVANIZED ALL THREAD ROD SUSPEND FROM BUILDING STRUCTURE AND FROM FAN MOUNTING FLANGES. USE CHANNELS UNDER FAN AS AN ALTERNATIVE SUPPORT
3. INLINE FAN
4. OUTLET FLANGE
5. BACKDRAFT OR MOTOR OPERATED DAMPER (SEE SCHEDULE SPECS)
6. METAL HANGER, SECURE TO STRUCTURE AND TO DUCTWORK
7. FLEXIBLE CONNECTION

233423.00-03 - CABINET INLINE FAN

SCALE: NONE

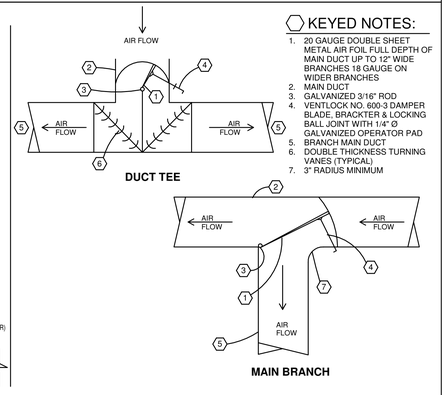


GENERAL NOTES:

1. PROVIDE SPLITTER DAMPER (SD) AT ALL MAIN BRANCH TAKEOFFS
2. PROVIDE MANUAL VOLUME DAMOERS AT ALL BRANCH TAKEOFFS
3. PROVIDE MINIMUM 3 TIMES STRAIGHT INLET DIAMETER TO ALL VAV TERMINAL DEVICES
4. DAMPER NOT REQUIRED AT TERMINAL DEVICE TAKEOFF
5. ALL MANUAL DAMPERS SHALL BE LOCATED IN AN ACCESSIBLE CEILING. PROVIDE ACCESS PANEL AS REQUIRED.

233300.00-01 - MANUAL DAMPER DETAIL

SCALE: NONE

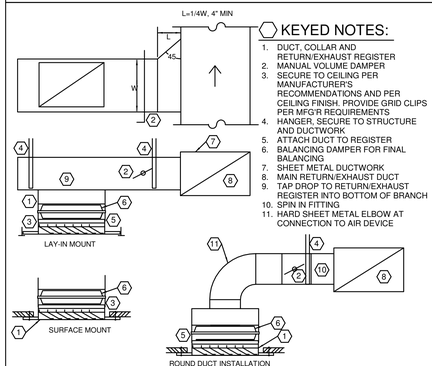


KEYED NOTES:

1. 20 GAUGE DOUBLE SHEET METAL AIR FOIL FULL DEPTH OF MAIN DUCT UP TO 12" WIDE BRANCHES 18 GAUGE ON WIDER BRANCHES
2. MAIN DUCT
3. GALVANIZED 3/16" ROD
4. VENTLOCK NO. 600-3 DAMPER BLADE, BRACKTER & LOCKING BALL JOINT WITH 1/4" Ø GALVANIZED OPERATOR PAD
5. BRANCH MAIN DUCT
6. DOUBLE THICKNESS TURNING VANES (TYPICAL)
7. 3" RADIUS MINIMUM

233300.00-01 - MANUAL DAMPER DETAIL

SCALE: NONE

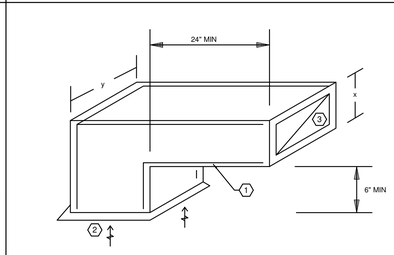


KEYED NOTES:

1. DUCT, COLLAR AND RETURN/EXHAUST REGISTER
2. MANUAL VOLUME DAMPER
3. SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG'R REQUIREMENTS
4. HANGER, SECURE TO STRUCTURE AND DUCTWORK
5. ATTACH DUCT TO REGISTER
6. BALANCING DAMPER FOR FINAL BALANCING
7. SHEET METAL DUCTWORK
8. MAIN RETURN/EXHAUST DUCT
9. TAP DROP TO RETURN/EXHAUST REGISTER INTO BOTTOM OF BRANCH
10. SPIN IN FITTING
11. HARD SHEET METAL ELBOW AT CONNECTION TO AIR DEVICE

233713.00-21 - RETURN/EXHAUST REGISTER INSTALLATION

SCALE: NONE



GENERAL NOTES

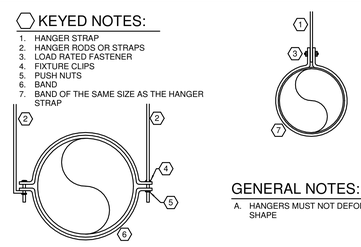
A. OPENING SIZE:
12x12 RR = 12x12 DUCT
12x24 RR = 12x18 DUCT
24x23 RR = 24x18 DUCT

KEYED NOTES:

1. 1/2" ACOUSTIC LINING
2. 12x12 RR OT 24x24 RR (UNLESS OTHERWISE NOTED)
3. OPENING SAME SIZE AS RR NECK

233713.00-13 - PLENUM RETURN GRILLE

SCALE: NONE



KEYED NOTES:

1. HANGER STRAP
2. HANGER RODS OR STRAPS
3. LOAD RATED FASTENER
4. FIXTURE CLIPS
5. PUSH NUTS
6. BAND
7. BAND OF THE SAME SIZE AS THE HANGER STRAP

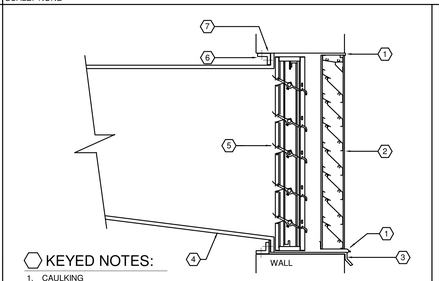
GENERAL NOTES:

A. HANGERS MUST NOT DEFORM DUCT SHAPE

HANGER SIZES FOR ROUND DUCT					
DUCT DIAMETER	ROUND HANGERS	STRAP SIZE	MAXIMUM SPACING	HANGER ROD	NUMBER OF HANGERS
UP THRU 10"	12 GAUGE WIRE	1"x22 GAUGE	10'-0"	1/4"	1
11" THRU 18"	8 GAUGE WIRE	1"x22 GAUGE	10'-0"	1/4"	1
19" THRU 24"	———————	1"x22 GAUGE	10'-0"	1/4"	1
25" THRU 36"	———————	1"x20 GAUGE	10'-0"	3/8"	1
37" THRU 50"	———————	2"x20 GAUGE	10'-0"	3/8"	2
51" THRU 84"	———————	2"x16 GAUGE	10'-0"	3/8"	2

233113.00-09 - ROUND DUCT HANGERS

SCALE: NONE



KEYED NOTES:

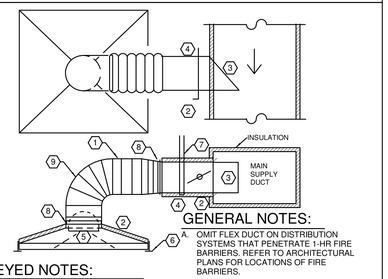
1. CAULKING
2. EXTERIOR WALL MOUNTED LOUVER
3. EXTENDED SILL
4. PITCH INSULATED DUCT 10 DEGREES TOWARD LOUVER AND SEAL WATERTIGHT
5. MOTOR OPER. DAMPER
6. CLIP ANGLE
7. ANCHOR TO WALL AT 12" O.C.

GENERAL NOTES:

A. WALL LOUVERS ARE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR. REFER TO ARCHITECTURAL DRAWINGS FOR SIZES AND LOCATIONS, UNLESS SPECIFIED IN SECTION 23 37 13.00.

233713.00-07 - EXHAUST LOUVER DETAIL

SCALE: NONE



KEYED NOTES:

1. MAXIMUM LENGTH OF INSUL. FLEX DUCT EQUALS 5 FEET. FLEX NOT PERMITTED IN INACCESSIBLE CEILINGS
2. INSULATED DUCT, COLLAR AND DIFFUSER BY HVAC CONTRACTOR
3. SCOOP
4. SPIN IN FITTING WITH MANUAL VOLUME DAMPER
5. INTERNAL BUTTERFLY DAMPER FOR DRYWALL APPLICATIONS ONLY. (PROVIDE KEY FOR ADJUSTMENT)
6. SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG'R REQUIREMENTS. PROVIDE FRAMING FOR DRYWALL INSTALLATION.
7. HANGER, SECURE TO STRUCTURE AND DUCTWORK
8. PEEL BACK INSULATION AND PROVIDE STRAPPING AND SHEET METAL SCREWS AT FLEX CONNECTION TO DUCT. THEN PROVIDE STRAPPING AROUND INSULATION.
9. SUPPORT FLEX TO PREVENT COLLAPSING

GENERAL NOTES:

A. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

233713.00-04 - DIFFUSER INSTALLATION TYPICAL

SCALE: NONE

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Robert Ehmet Hayes & Associates, PLLC

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

ADDENDA

SHEET TITLE
MECHANICAL - DETAILS
DWN: JJK CHK: RAL

BG # 24-059
REH # 372-922
DATE 12-13-2023

M6-500
KLH PROJECT # 24599

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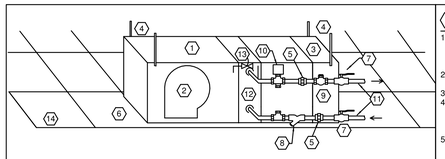


KEYED NOTES:

1. HOT WATER CABINET HEATER, RECESSED IN CEILING
2. FAN
3. 1" FILTER WITH ACCESSORIES
4. GALVANIZED HANGERS (CONNECT TO STRUCTURE)
5. UNION
6. ADJUSTABLE FLANGE AT PERIMETER OF UNIT FOR RECESSES APPLICATION
7. ISOLATION VALVE WITH HANDLE EXTENSION - PROVIDE DI-ELECTRIC UNION IF DISSIMILAR PIPING MATERIAL USED.
8. STRAINER
9. AUTOMATIC BALANCING VALVE WITH PRESSURE TEST PORT AND MEMORY STOP
10. CONTROL VALVE (2 WAY OR 3 WAY WITH BYPASS, SEE TEMPERATURE CONTROL SPECIFICATION)
11. SUPPLY AND RETURN LINES WITH INSULATION
12. HEATING COIL SECTION
13. MANUAL AIR BLEEDER AT HIGHEST POINT IN PIPING TO BOX
14. CEILING SYSTEM

238239.19-02 - CEILING RECESSED CABINET HEATER

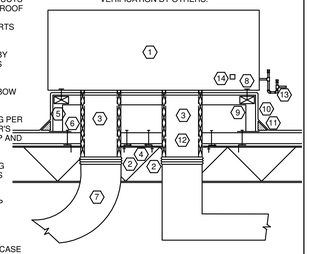
SCALE: NONE

KEYED NOTES:

1. ROOFTOP AIR CONDITIONING UNIT LOCATE A MINIMUM OF 10'-0" FROM EDGE OF ROOF AND ROOF HATCH
2. CANVAS FLEXIBLE CONNECTION
3. 1" ACOUSTICALLY LINED DUCTS
4. 4x4 ANGLE FASTENED TO ROOF DECK AND STRUCTURAL SYSTEM PROVIDE SUPPORTS AS REQUIRED
5. FACTORY FABRICATED, INSULATED ROOF CURB (BY SAME MANUFACTURER AS UNIT)
6. FASTEN CURB TO DECK
7. INSULATED RADIUSED ELBOW
8. SECURE TO CURB
9. WOOD NAILER
10. CURB TYPE AND FLASHING PER ROOFING MANUFACTURERS REQUIREMENTS FLASH UP AND OVER NAILOR
11. CANT STRIP
12. ROOF DECK, CUT OPENING FOR DUCT PENETRATIONS ONLY
13. CONDENSATE TRAP - SEE CONDENSATE DRAIN TRAP DETAIL
14. HIGH WATER ALARM IN CONDENSATE DRAIN PAN. WIRE TO BREAK 24 VOLT CONTROL POWER IN THE CASE OF A HIGH WATER EVENT.

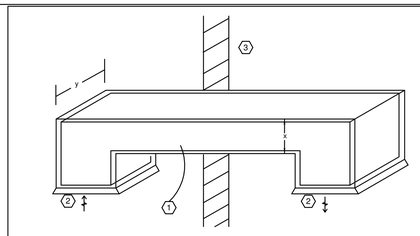
GENERAL NOTES:

A. CONTRACTOR SHALL PROVIDE CURB TO MAINTAIN 10" MINIMUM ABOVE FINISHED ROOFING SYSTEM. PROVIDE ADDITIONAL BLOCKING AS REQUIRED TO ACCOMMODATE ROOF INSULATION THICKNESS.
B. FINAL LOCATION AND STRUCTURAL VERIFICATION BY OTHERS.



237433.00-05 - ROOF CURB & MOUNTING D

SCALE: NONE



GENERAL NOTES:

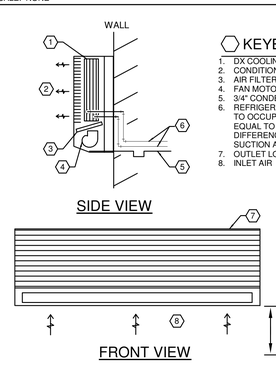
A. SEE NEW WORK PLAN FOR DUCT SIZE
B. x + y DIMENSIONS SHALL BE DETERMINED FROM FLOOR PLANS

KEYED NOTES:

1. 1/2" ACOUSTIC LINING, SEAL AROUND ALL WALL PENETRATIONS
2. SEE NEW WORK PLAN FOR REGISTER
3. INTERIOR WALL/PARTITION

233713.00-19 - TRANSFER GRILLE

SCALE: NONE

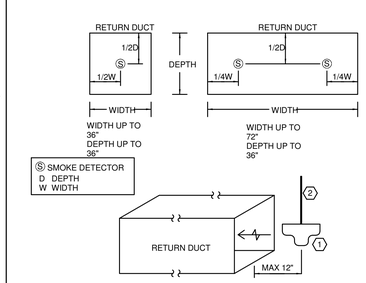


KEYED NOTES:

1. DX COOLING COIL
2. CONDITIONED OUTLET AIR
3. AIR FILTER
4. FAN MOTOR
5. 3/4" CONDENSATE DRAIN WITH TRAP
6. REFRIGERANT LINES (NOT TO BE EXPOSED TO OCCUPANT), MAXIMUM PIPING LENGTH EQUAL TO 100FT. MAXIMUM ELEVATION DIFFERENCE EQUAL TO 50 FT. INSULATE SUCTION AND LIQUID LINES.
7. OUTLET LOUVER
8. INLET AIR

238126.00-06 - DUCTLESS AIR CONDITION UNIT WALL

SCALE: NONE

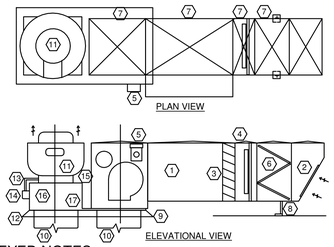


KEYED NOTES:

1. SMOKE DETECTOR FURNISHED AND WIRED BY E.C. INSTALL DETECTOR WITHIN 12" OF THE OPENING OF RETURN DUCT. INSTALL DETECTOR IN ACCORDANCE WITH OPENING DIMENSIONS SHOWN ABOVE. PROVIDE AN ADDITIONAL DETECTOR AS REQUIRED.
2. MOUNT DETECTOR FROM THREADED ROD SUSPENDED FROM STRUCTURE. PROVIDE HORIZONTAL BRACING FOR THREADED ROD AS REQUIRED TO PREVENT SWAYING.

238146.00-07 - SMOKE DETECTOR DETAIL

SCALE: NONE

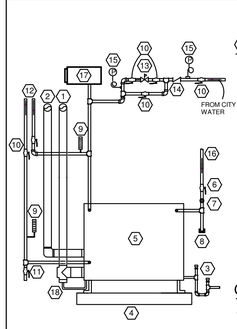


KEYED NOTES:

1. TEMPERED SUPPLY MAKE-UP AIR UNIT WITH WEATHERPROOFING
2. WEATHERHOOD WITH REMOVEABLE HEAVY DUTY METAL BIRDSCREEN
3. HEATER MODULE (EITHER DIRECT FIRED GAS, ELECTRIC, STEAM, OR HOT WATER)
4. MOTORIZED SUPPLY DAMPER
5. PREWIRED FAN PACKAGE CONTROL CENTER
6. REMOVABLE 2" FILTERS
7. ACCESS DOORS
8. HEAVY GUAGE GALVANIZED STEEL ADJUSTABLE LEGS WITH WOODEN NAILER
9. PREFABRICATED ROOF CURB (FOR BOTH EXHAUST AND MAKE-UP AIR UNITS) LINED WITH FIBERGLASS INSULATION
10. DUCT ADAPTER
11. CENTRIFUGAL UPBLAST ROOF EXHAUSTER
12. FLASH PER ROOFING MANUFACTURERS REQUIREMENTS, FLASH UP BELOW CAP.
13. DRAIN CONNECTION
14. GREASE TRAP
15. HINGED BASE FOR ACCESS
16. VENTED CURB EXTENSION FOR 40" MINIMUM DISCHARGE HEIGHT ABOVE ROOF
17. RUBBER GASKET APPLIED TO TOP OF CURB

237423.13-01 - KITCHEN MAKE-UP AIR & EXHAUST

SCALE: NONE



KEYED NOTES:

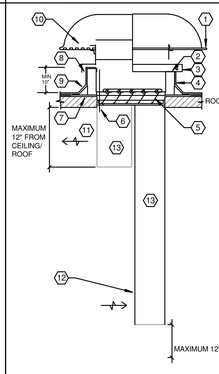
1. CPVC VENT WITH TERMINATION KIT
2. CPVC COMBUSTION INTAKE WITH TERMINATION KIT
3. CPVC CONDENSATE DRAIN, PIPE TO FLOOR DRAIN
4. 4" CONCRETE HOUSE KEEPING PAD
5. HIGH EFFICIENCY BOILER, PROVIDE MUFFLERS, OUTDOOR AIR RESET, PRESSURE RELIEF VALVE
6. GAS COCK
7. UNION
8. DRIP LEG
9. THERMOMETER
10. BALL VALVE WITH VALVE TAGS
11. 3/4" DRAIN VALVE, PIPE TO FLOOR DRAIN
12. HOT WATER PIPES WITH INSULATION
13. 3/4" PRESSURE REDUCING VALVE
14. BACKFLOW PREVENTER
15. PRESSURE GAUGE
16. GAS SUPPLY, BLACK STEEL PIPE
17. ASME 20 GALLON EXPANSION TANK WITH SIGHT GLASS
18. VENT STARTER TEE AND CONDENSATE TRAP HOUSE

GENERAL NOTES:

A. INSTALL ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
B. INSTALL ACCORDING TO NFPA, STATE AND LOCAL CODE REQUIREMENTS.

235200.00-03 - HIGH EFFICIENCY GAS BOILER

SCALE: NONE



KEYED NOTES:

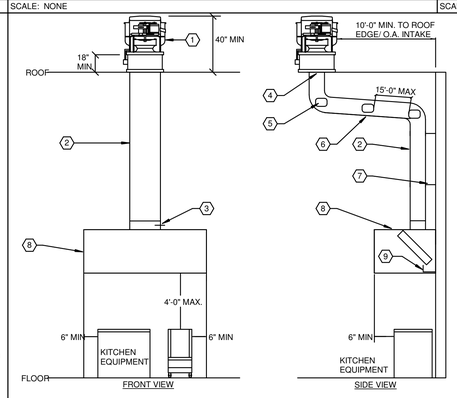
1. GRAVITY ROOF VENTILATOR.
2. WOOD NAILER.
3. ANCHOR ALL FOUR SIDES WITH SCREWS 12" O.C..
4. PREFABRICATED INSULATED CURB.
5. MOTOR OPERATED DAMPER INTERFACED WITH CONTROL CIRCUIT OF GAS-FIRED EQUIPMENT.
6. CONDUIT HOLE.
7. ANCHOR TO AS REQUIRED.
8. RUBBER GASKET APPLIED TO TOP OF CURB.
9. FLASH PER ROOFING MANUFACTURER REQUIREMENTS. FLASH UP AND OVER NAILER.
10. BIRD SCREEN.
11. GRILLE (OR FREE OPENING) IN THE SIDE OF DUCT TO BE INSTALLED NEAR CEILING.
12. EGGCRATE GRILLE (OR FREE OPENING) IN THE SIDE OF DUCT TO BE INSTALLED NEAR BOTTOM OF DUCT.
13. REFER TO FLOORPLAN DRAWINGS FOR DUCT SIZES.

GENERAL NOTES:

A. DELETE CANT FOR SINGLE MEMBRANE ROOFS.
B. TOP OF CURB MUST BE LEVEL. FABRICATE PITCH IN CURB IF NECESSARY.
C. LOCATE A MINIMUM OF 10'-0" FROM EDGE OF ROOF AND ROOF HATCH.
D. CONTRACTOR HAS THE OPTION TO INCREASE THE HEIGHT OF THE CURB OR ADD BLOCKING TO THE CURB. THE ADDITIONAL HEIGHT REQUIRED SHALL EQUAL THE ROOF ASSEMBLY THICKNESS. THE CURB INTAKE OPENING SHALL BE AT A MINIMUM 12" ABOVE FINISHED ROOF.

235119.00-01 - COMBUSTION AIR W INTAKE HOOD

SCALE: NONE



KEYED NOTES:

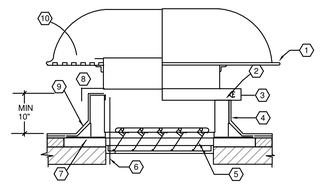
1. KITCHEN EXHAUST FAN U.L. LISTED FOR GREASE (SEE KITCHEN EXHAUSTER DETAIL). FAN MOTOR SHALL BE OUT OF AIRSTREAM. PROVIDE GREASE CUP AND DRAIN.
2. 16 GAUGE INSULATED WELDED BLACK IRON OR 18 GAUGE INSULATED WELDED STAINLESS STEEL. DUCTWORK WRAPPED WITH 2 LAYERS OF ZERO CLEARANCE DUCT WRAP (TYPICAL).
3. HEAT SENSOR IN EACH COLLAR INTERLOCKED TO VENTILATION SYSTEM.
4. FLANGED & GASKETED DUCT TO EXHAUST FAN CONNECTION.
5. CLEANOUT DOOR/LATCH (12"X12" MIN.) MADE OF 16 GAUGE WELDED BLACK IRON OR 18 GAUGE WELDED STAINLESS STEEL (TYPICAL).
6. MINIMUM 2% SLOPE TOWARD HOOD WITH CLEANOUTS A MINIMUM OF EVERY 15 FEET AND CHANGE IN DIRECTION.
7. GREASE DUCT SUPPORT IS TO BE SIZED, SPACED, AND INSTALLED BY CODE.
8. HOOD WITH ANSUL SYSTEM.
9. MAINTAIN 18" CLEARANCE TO COMBUSTIBLES.
10. GREASE DRIP TRAY.

GENERAL NOTES:

A. TYPE I HOOD SHALL BE STAINLESS STEEL, 18 GAUGE, WITH WELDED SEAMS AND UL 710 LISTED.
B. EXHAUST DUCT SHALL BE 16 GA. BLACK IRON OR 18 GA. STAINLESS STEEL, FINISH # 3, WITH CONTINUOUS LIQUID TIGHT WELDED JOINTS AND SEAMS.
C. AIR VELOCITY SHALL BE PER CODE AND AHJ.
D. PROVIDE INSULATION WRAP EQUAL TO 3M "FIRE MASTER DUCT WRAP" WITH UL LISTINGS OF 723, 1978, AND 1479.
E. INSULATION SHALL BE A LIGHTWEIGHT, NON-ASBESTOS, HIGH TEMPERATURE, INORGANIC, CERAMIC FIBER BLANKET TOTALLY ENCAPSULATED IN FOIL/SCRIM HAVING A SERVICE TEMPERATURE RANGE UP TO 2300 DEGREE F.
F. INSULATION SHALL BE A 2-HOUR FIRE RESISTIVE RATED GREASE AIR DUCT ENCLOSURE AS A SHAFT ALTERNATIVE AND A METHOD FOR PROVIDING ZERO INCH CLEARANCE AROUND COMMERCIAL KITCHEN GREASE DUCT EXHAUST SYSTEMS TO COMBUSTIBLE MATERIALS.
G. ALUMINUM GREASE FILTER WITH TROUGH, SHALL BE INSTALLED IN THE HOOD IN COMPLIANCE WITH CODE. FILTERS SHALL BE MOUNTED AT AN ANGLE OF 45 DEGREES MINIMUM.
H. PROVIDE STAINLESS STEEL ENCLOSURE PANEL BETWEEN TOP OF KITCHEN HOOD AND CEILING. PER LOCAL CODE REQUIREMENTS.

233813.00-04 - KITCHEN HOOD DETAIL UP BLAST

SCALE: NONE



KEYED NOTES:

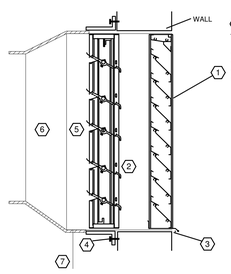
1. GRAVITY ROOF VENTILATOR
2. WOOD NAILER
3. ANCHOR ALL FOUR SIDES WITH SCREWS 12" O.C.
4. PREFABRICATED INSULATED CURB
5. MOTOR OPER. DAMPER INTERFACED WITH CONTROL CIRCUIT ON EXHAUST FANS
6. CONDUIT HOLE
7. ANCHOR TO ROOF DECK AS REQUIRED
8. RUBBER GASKET APPLIED TO TOP OF CURB
9. ROOFING TO UP AND OVER NAILER, FLASH OVER ROOFING AND PER ROOFING MFG'R RECOMMENDATIONS
10. BIRD SCREEN

GENERAL NOTES:

A. DELETE CANT FOR SINGLE MEMBRANE ROOFS.
B. TOP OF CURB MUST BE LEVEL. FABRICATE PITCH IN CURB IF NECESSARY
C. CONTRACTOR HAS THE OPTION TO INCREASE THE HEIGHT OF THE CURB OR ADD BLOCKING TO THE CURB. THE ADDITIONAL HEIGHT REQUIRED SHALL EQUAL THE ROOF ASSEMBLY THICKNESS. THE CURB INTAKE OPENING SHALL BE AT A MINIMUM 12" ABOVE FINISHED ROOF.
D. LOCATE A MINIMUM OF 10'-0" FROM EDGE OF ROOF AND ROOF HATCH.

233723.00-01 - HOODED GRAVITY VENTILATOR DETAIL

SCALE: NONE



KEYED NOTES:

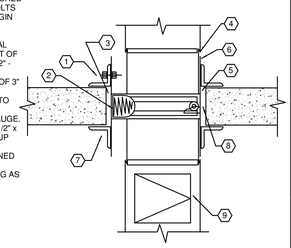
1. EXTERIOR WALL MOUNTED LOUVER
2. MOTOR OPER. DAMPER
3. CAULKING
4. ANCHOR TO WALL AT 12" O/C
5. PROVIDE INSULATED SHEET METAL PLENUM, FULL SIZE OF LOUVER, (MIN 12" DEEP)
6. TRANSITION INSULATED DUCT CONNECTION WITH ANGLED FITTING TO PLENUM FOR UNIFORM AIR FLOW
7. 3/4" PIPING TO FLOOR DRAIN

GENERAL NOTES:

A. REFER TO ARCHITECTURAL DRAWINGS FOR SIZES AND LOCATIONS.

233713.00-11 - INTAKE LOUVER

SCALE: NONE

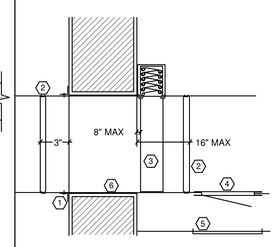


KEYED NOTES:

1. RETAINING ANGLES ATTACHED TO SLEEVES WITH 1/4" BOLTS OR 1/2" WELDS 6" O.C. BEGIN 2" FROM CORNERS
2. FIRE DAMPER BLADES
3. CLEARANCE FOR THERMAL EXPANSION: 1/8" PER FOOT OF DUCT DIMENSION. MAX 1/2" - HALF FOR EACH SIDE
4. SLEEVE TO EXTEND MIN. OF 3" BEYOND FLOOR LINE
5. BOLT OR WELD DAMPER TO SLEEVE (TYP).
6. STEEL SLEEVE MIN. 14 GAUGE.
7. RETAINIG ANGLES MIN 1-1/2" x 1-1/2" 12 GA. FOR DUCTS UP TO 48"
8. INTERIOR OF OPENING LINED W/ U.L. LISTED MATERIAL HAVING SAME FIRE RATING AS FLOOR.
9. ACCESS DOOR

233313.00-15 - FIRE DAMPER FLOOR PENETRATION

SCALE: NONE



KEYED NOTES:

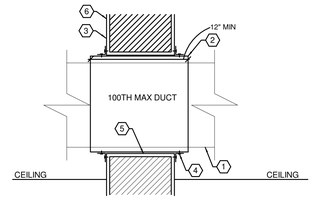
1. 1.5"x1.5" ANGLE (18 GA.) FASTEN TO ALL FOUR SIDES OF FIRE DAMPER (6" O.C.). DO NOT FASTEN TO WALLS
2. "SLIP BREAK AWAY" CONNECTIONS. DO NOT USE "C" DRIVES, SCREWS, OR RIVETS
3. FIRE DAMPER WITH WALL SLEEVE, (GAUGE PER MANUFACTURER) INTEGRAL WITH DAMPER OR FURNISHED SEPARATELY, FASTEN DAMPER TO SLEEVE
4. ACCESS DOOR IN DUCT
5. PROVIDE ARCHITECTURAL ACCESS PANEL IN NON-ACCESSIBLE WALLS OR CEILINGS
6. FASTENERS, 4 SIDES, 6" O.C. AT STUD & DRYWALL USE #10 SCREWS, PENETRATE STUD 1/2" MIN. AT MASONRY, USE #10 SELF-TAPPING CONCRETE SCREWS, PENETRATE WALL 1-1/2" MIN.

GENERAL NOTES:

A. INSTALLATION TO CONFORM TO NFPA 90A AND INSTRUCTIONS
B. FLOOR INSTALLATION IS SIMILAR TO THAT SHOWN
C. FIRE DAMPERS TO BEAR THE UL LABEL

233313.00-12 - FIRE DAMPER TYPE A

SCALE: NONE



KEYED NOTES:

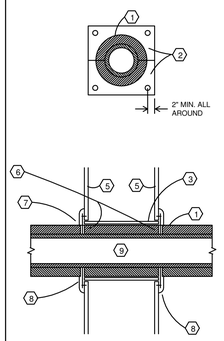
1. STEEL DUCTWORK THROUGH FIRE PARTITION, MINIMUM 0.0217 INCH THICKNESS
2. STEEL SLEEVE, MINIMUM 0.060 INCH THICKNESS, CENTERED IN OPENING
3. SECURE SLEEVE TO WALL WITH STEEL RETAINING ANGLES, MINIMUM SIZE 1-1/2" x 1-1/2" x 0.060" (BOTH SIDES OF WALL, AND ALL SIDES OF SCREW)
4. NO. 10 SCREWS
5. FILL ANNULAR SPACE BETWEEN SLEEVE AND WALL WITH MINERAL WOOD
6. FIRE PARTITION

GENERAL NOTES:

A. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF RATED WALLS
B. DUCTWORK LARGER THAN 1296 SWARE INCHES REQUIRES A FIRE DAMPER - SEE FIRE DAMPER DETAIL(S).
C. THE DUCT SHALL BE INSTALLED ABOVE A CEILING.
D. THE DUCT SHALL NOT HAVE OPENINGS THAT COMMUNICATE THE CORRIDORS WITH ADJACENT SPACES OR ROOMS.
E. THE DUCT SHALL NOT TERMINATE AT A WALL REGISTER N THE FIRE-REISTANCE RATED WALL.

233113.00-11 - DUCT PENETRATION AT FIRE PARTITION

SCALE: NONE



KEYED NOTES:

1. INSULATION
2. FIRESTOP MADE IN TWO SECTIONS
3. PIPE SLEEVE CUT FLUSH WITH OUTSIDE PARTITION SURFACES.
4. COORDINATE OPENING WITH OTHERS
5. CUT INSULATION FLUSH WITH PARTITION
6. 20 GA. GALV. STEEL FIRESTOP- EACH SIDE OF PART. SCREW TO PART. FIRESTOP SHALL BE EQUAL TO NELSON FIRESTOP CAULK.
7. SEAL ENDS OF INSULATION WITH WHITE VAPOR BARRIER COATING
8. VAPOR BARRIER COATING
9. PIPE

GENERAL NOTES

A. COVER FIRESTOP WITH TWO COATS OF WHITE VAPOR BARRIER COATING
B. FIRESTOP SHALL FIT TIGHT AROUND PIPE

232113.23-07 - INSULATED PIPE PENETRATION WITH FIRESTOPPING

SCALE: NONE

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DWN: JJK CHK: RAL

BG # 24-059

REH # 372-922

DATE 12-13-2023

M6-501

KLH PROJECT # 24599

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HVAC FAN COIL UNITS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	WEIGHT (lbs)	MANUFACTURER	MODEL	Volts	Phase	CFM (cfm)	ESP (in WC)	FAN RPM (rpm)	NOMINAL TONS	MAT CLG DB (Deg F)	MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)	LAT CLG DB (Deg F)	LAT CLG WB (Deg F)	CHW EWT (Deg F)	CHW LWT (Deg F)	CW GPM (gpm)	MAT HTG (Deg F)	HTG MBH (mbh)	LAT HTG (Deg F)	HW EWT (Deg F)	HW LWT (Deg F)	HW GPM (gpm)	FLA	MCA	OCP	AVAILABLE FAULT CURRENT
FCU-1-01	FANCOIL UNIT	108	DAIKIN	FCVS104	277	1	560	0.5	0	1.5	76	65	16	12	55	54	0	0	3.2	70	2	77	0	0	0.2	2.3	2.9	15	1341
FCU-1-02	FANCOIL UNIT	108	DAIKIN	FCVS104	277	1	560	0.5	0	1.5	76	65	16	12	55	54	0	0	3.2	70	2	77	0	0	0.2	2.3	2.9	15	1718
FCU-1-03	FANCOIL UNIT	108	DAIKIN	FCVS104	277	1	560	0.5	0	1.5	76	65	16	12	55	54	0	0	3.2	70	2	77	0	0	0.2	2.3	2.9	15	2244
FCU-1-04	FANCOIL UNIT	108	DAIKIN	FCVS104	277	1	560	0.5	0	1.5	76	65	16	12	55	54	0	0	3.2	70	2	77	0	0	0.2	2.3	2.9	15	2761
FCU-1-05	FANCOIL UNIT	131	DAIKIN	FCVS106	277	1	780	0.5	0	2	76	65	24	16	55	54	0	0	4.8	70	1	75	0	0	0.1	2.3	2.9	15	2624
FCU-1-06	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	50	0.5	0	0.5	76	65	1	1	55	54	0	0	0.2	70	0	74	0	0	0	2.3	2.9	15	2336
FCU-1-07	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	50	0.5	0	0.5	76	65	1	1	55	54	0	0	0.2	70	0	74	0	0	0	2.3	2.9	15	1992
FCU-1-08	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	30	0.5	0	0.5	76	65	1	1	55	54	0	0	0.2		0	74	0	0	0	2.3	2.9	15	1987
FCU-1-09	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	230	0.5	0	0.5	76	65	5	5	55	54	0	0	1		1	78	0	0	0.1	2.3	2.9	15	2179
FCU-1-10	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	180	0.5	0	0.5	76	65	4	4	55	54	0	0	0.8	70	0	74	0	0	0	2.3	2.9	15	
FCU-1-11	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	200	0.5	0	0.5	76	65	4	4	55	54	0	0	0.8	70	0	74	0	0	0	2.3	2.9	15	4145
FCU-1-12	FANCOIL UNIT	131	DAIKIN	FCVS106	277	1	640	0.5	0	1.75	76	65	17	13	55	54	0	0	3.4	70	2	77	0	0	0.2	2.3	2.9	15	2895
FCU-1-13	FANCOIL UNIT	233	DAIKIN	BCAD0161	277	1	540	0.5	0	1	76	65	12	11	55	54	0	0	2.4	70	15	100	0	0	1.5		7.8	15	7870
FCU-1-14	FANCOIL UNIT	131	DAIKIN	FCVS106	277	1	620	0.5	0	1.75	76	65	17	13	55	54	0	0	3.4	70	1	76	0	0	0.1	2.3	2.9	15	2929
FCU-1-15	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	70	0.5	0	0.5	76	65	1	1	55	54	0	0	0.2	70	0	74	0	0	0	2.3	2.9	15	4428
FCU-1-16	FANCOIL UNIT	204	DAIKIN	FCVS112	277	1	1280	0.5	0	2.5	76	65	27	27	55	54	0	0	5.4	70	57	116	0	0	5.7	4.6	5.8	15	2561
FCU-1-17	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	100	0.5	0	0.5	76	65	2	2	55	54	0	0	0.4	70	0	74	0	0	0	2.3	2.9	15	1203
FCU-2-01	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	830	0.5	0	1.75	76	65	18	17	55	54	0	0	3.6	70	29	107	0	0	2.9	4.6	5.8	15	1336
FCU-2-02	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	880	0.5	0	2	76	65	22	18	55	54	0	0	4.4	70	19	94	0	0	1.9	4.6	5.8	15	1699
FCU-2-03	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	880	0.5	0	2	76	65	22	18	55	54	0	0	4.4	70	19	94	0	0	1.9	4.6	5.8	15	2195
FCU-2-04	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	880	0.5	0	2	76	65	22	18	55	54	0	0	4.4	70	19	94	0	0	1.9	4.6	5.8	15	2696
FCU-2-05	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	870	0.5	0	2	76	65	22	18	55	54	0	0	4.4	70	19	95	0	0	1.9	4.6	5.8	15	2570
FCU-2-06	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	150	0.5	0	0.5	76	65	3	3	55	54	0	0	0.6	70	6	112	0	0	0.6	2.3	2.9	15	2296
FCU-2-07	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	270	0.5	0	0.5	76	65	6	6	55	54	0	0	1.2	70	15	127	0	0	1.5	2.3	2.9	15	1958
FCU-2-08	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	350	0.5	0	0.75	76	65	7	7	55	54	0	0	1.4	70	8	96	0	0	0.8	2.3	2.9	15	
FCU-2-09	FANCOIL UNIT	178	DAIKIN		277	1	1070	0.5	0	2.5	76	65	26	22	55	54	0	0	5.2	70	29	100	0	0	2.9	2.3	2.9	15	1427
FCU-2-10	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	950	0.5	0	2	76	65	24	20	55	54	0	0	4.8	70	19	93	0	0	1.9	4.6	5.8	15	1925
FCU-2-11	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	950	0.5	0	2	76	65	23	20	55	54	0	0	4.6	70	19	93	0	0	1.9	4.6	5.8	15	2895
FCU-2-12	FANCOIL UNIT	233	DAIKIN	BCAD0161	277	1	560	0.5	0	1	76	65	12	12	55	54	0	0	2.4	70	20	108	0	0	2		7.8	15	7017
FCU-2-13	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	380	0.5	0	0.75	76	65	8	8	55	54	0	0	1.6	70	8	94	0	0	0.8	2.3	2.9	15	3947
FCU-2-14	FANCOIL UNIT	178	DAIKIN		277	1	1070	0.5	0	2.5	76	65	26	22	55	54	0	0	5.2	70	29	100	0	0	2.9	2.3	2.9	15	2751
FCU-2-15	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	900	0.5	0	1.75	76	65	21	19	55	54	0	0	4.2	70	16	91	0	0	1.6	4.6	5.8	15	4894
FCU-2-16	FANCOIL UNIT	108	DAIKIN	FCVS104	277	1	560	0.5	0	1	76	65	12	12	55	54	0	0	2.4		25	116	0	0	2.5	2.3	2.9	15	1225
FCU-2-17	FANCOIL UNIT	83	DAIKIN	FCVS104	277	1	510	0.5	0	1	76	65	11	11	55	54	0	0	2.2		18	107	0	0	1.8	2.3	2.9	15	2172
FCU-2-18	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	140	0.5	0	0.5	76	65	3	3	55	54	0	0	0.6		8	128	0	0	0.8	2.3	2.9	15	1958
FCU-B-01A	FANCOIL UNIT	131	DAIKIN	FCVS106	277	1	670	0.5	0	1.5	76	65	16	14	55	54	0	0	3.2	70	10	88	0	0	1	2.3	2.9	15	2633
FCU-B-01B	FANCOIL UNIT	131	DAIKIN	FCVS106	277	1	670	0.5	0	1.5	76	65	16	14	55	54	0	0	3.2		10	88	0	0	1	2.3	2.9	15	3373
FCU-B-02	FANCOIL UNIT	83	DAIKIN	FCVS104	277	1	440	0.5	0	0.75	76	65	9	9	55	54	0	0	1.8	70	21	119	0	0	2.1	2.3	2.9	15	2150
FCU-B-03	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	290	0.5	0	0.5	76	65	6	6	55	54	0	0	1.2	70	15	123	0	0	1.5	2.3	2.9	15	1718
FCU-B-04	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	160	0.5	0	0.5	76	65	5	3	55	54	0	0	1	70	0	74	0	0	0	2.3	2.9	15	
FCU-B-05	FANCOIL UNIT	108	DAIKIN	FCVS104	277	1	540	0.5	0	1.25	76	65	13	11	55	54	0	0	2.6	70	16	102	0	0	1.6	2.3	2.9	15	2231
FCU-B-06	FANCOIL UNIT	131	DAIKIN	FCVS106	277	1	660	0.5	0	1.5	76	65	14	14	55	54	0	0	2.8	70	24	108	0	0	2.4	2.3	2.9	15	3765
FCU-B-07	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	110	0.5	0	0.5	76	65	3	2	55	54	0	0	0.6		7	134	0	0	0.7	2.3	2.9	15	4143
FCU-C-01	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	940	0.5	0	2	76	65	24	19	55	54	0	0	4.8	70	24	98	0	0	2.4	4.6	5.8	15	3165
FCU-C-02	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	210	0.5	0	0.5	76	65	4	4	55	54	0	0	0.8	70	4	92	0	0	0.4	2.3	2.9	15	2850
FCU-C-03	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	290	0.5	0	0.5	76	65	6	6	55	54	0	0	1.2	70	20	139	0	0	2	2.3	2.9	15	11254
FCU-C-04	FANCOIL UNIT	83	DAIKIN	FCVS104	277	1	510	0.5	0	1.25	76	65	14	11	55	54	0	0	2.8	70	6	85	0	0	0.6	2.3	2.9	15	2307
FCU-C-05	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	250	0.5	0	0.5	76	65	6	5	55	54	0	0	1.2	70	7	101	0	0	0.7	2.3	2.9	15	2750
FCU-C-06	FANCOIL UNIT	131	DAIKIN	FCVS106	277	1	700	0.5	0	1.75	76	65	19	15	55	54	0	0	0	70	11	89	0	0	0	2.3	2.9	15	1823
FCU-C-07	FANCOIL UNIT	153	DAIKIN	FCVS108	277	1	910	0.5	0	2	76	65	23	19	55	54	0	0	4.6	70	27	102	0	0	2.7	4.6	5.8	15	1797
FCU-C-08	FANCOIL UNIT	131	DAIKIN	FCVS106	277	1	770	0.5	0	1.75	76	65	19	16	55	54	0	0	3.8	70	20	99	0	0	2	2.3	2.9	15	1476
FCU-C-09	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	80	0.5	0	0.5	76	65	2	2	55	54	0	0	0.4	70	2	98	0	0	0.2	2.3	2.9	15	6068
FCU-C-10	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	260	0.5	0	0.5	76	65	6	5	55	54	0	0	1.2	70	4	89	0	0	0.4	2.3	2.9	15	3017
FCU-M-01	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	250	0.5	0	0.5	76	65	6	5	55	54	0	0	1.2	70	7	101	0	0	0.7	2.3	2.9	15	5075
FCU-M-02	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	290	0.5	0	0.5	76	65	6	6	55	54	0	0	1.2	70	11	110	0	0	1.1	2.3	2.9	15	4178
FCU-M-03	FANCOIL UNIT	83	DAIKIN	FCVS102	277	1	210	0.5	0	0.5	76	65	5	4	55	54	0	0	1		6	101	0	0	0.6	2.3	2.3	2.3	13026

HVAC ACCESSORIES

ACCESSORIES:

1. MOTOR DAMPER
2. ECONOMIZER
3. ROOF CURB
4. HAIL GUARDS
5. INTAKE HOOD
6. VIBRATION ISOLATION
7. FLAT FILTER
8. FILTER/MIXING BOX
9. ACCESS DOOR
10. FLEX CONNECTIONS
11. MOUNTING COLLAR
12. HOT GAS BYPASS
13. FACE/BYPASS DAMPER
14. CONDENSATE PUMP
15. MOTOR GUARD
16. GREASE TRAP
17. DUCT FLANGES
18. BASE RAIL
19. HUMIDIFIER
20. CO2 SENSORS
21. ECON POWERED EXHAUST
22. ECON BAROMETRIC RELIEF
23. HOT GAS REHEAT COIL
24. SHAFT GROUNDING BRUSHES

HVAC AIR HANDLER SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	WEIGHT (lbs)	MANUFACTURER	MODEL	Volts	Phase	CFM (cfm)	ESP (in WC)	OACFM (cfm)	NOMINAL TONS	OA EAT WB (Deg F)	MAT CLG DB (Deg F)	MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)	LAT DB (Deg F)	LAT CLG WB (Deg F)	MAT HTG (Deg F)	HTG MBH (mbh)	FLA	MCA	OCP	AVAILABLE FAULT CURRENT	ACCESSORIES
RTU-1	PACKAGED OUTDOOR ROOFTOP UNIT	843	DAIKIN	DAHA05A	480	3	1005	0.5	0	4		76	65	25	21	55	54		28	7.6	8.6	15	1109	
RTU-2	PACKAGED OUTDOOR ROOFTOP UNIT	843	DAIKIN	DAHA05A	480	3	995	0.5	0	3.5		76	65	24	21	55	54		27	7.6	8.6	15	950	
RTU-3	PACKAGED OUTDOOR ROOFTOP UNIT	843	DAIKIN	DAHA05A	480	3	1020	0.5	0	3.5		76	65	25	21	55	54		28	7.6	8.6	15	1887	
RTU-4	PACKAGED OUTDOOR ROOFTOP UNIT	843	DAIKIN	DAHA05A	480	3	965	0.5	0	3.5		76	65	24	20	55	54		22	7.6	8.6	15	2783	
RTU-5	PACKAGED OUTDOOR ROOFTOP UNIT	1448	DAIKIN	DAHA09A	480	3	1800	0.5	0	5		76	65	40	37	55	54		40	8.0	9.1	15	1729	
RTU-6	PACKAGED OUTDOOR ROOFTOP UNIT	843	DAIKIN	DAHA05A	480	3	1000	0.5	0	3.5		76	65	25	21	55	54		24	7.6	8.6	15	1147	
RTU-7	PACKAGED OUTDOOR ROOFTOP UNIT	843	DAIKIN	DAHA05A	480	3	995	0.5	0	3.5		76	65	24	21	55	54		27	7.6	8.6	15	933	
RTU-8	PACKAGED OUTDOOR ROOFTOP UNIT	1421	DAIKIN	DAHA07A	480	3	1960	0.5	0	7.5		76	65	53	40	55	54		26	8.0	9.1	15		
RTU-9	PACKAGED OUTDOOR ROOFTOP UNIT	3128	DAIKIN	DAHA15A	480	3	6350	0.5	0	25		76	65	177	132	55	54		75	13.7	16.1	25		
RTU-10	PACKAGED OUTDOOR ROOFTOP UNIT	1421	DAIKIN	DAHA07A	480	3	1980	0.5	0	7		76	65	47	41	55	54		31	8.0	9.1	15	844	
RTU-11	PACKAGED OUTDOOR ROOFTOP UNIT	843	DAIKIN	DAHA05A	480	3	6720	0.5	0	25		76	65	173	139	55	54		189	16.7	19.1	25	4178	

HVAC DOAS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	WEIGHT (lbs)	MANUFACTURER	MODEL	Volts	Phase	ESP (in WC)	OACFM (cfm)	EA CFM (cfm)	NOMINAL TONS	OA EAT WB (Deg F)	MAT CLG DB (Deg F)	MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)	LAT DB (Deg F)	LAT CLG WB (Deg F)	MAT HTG (Deg F)	HTG MBH (mbh)	FLA	MCA	OCP	AVAILABLE FAULT CURRENT	ACCESSORIES
DOAS-1	ENERGY RECOVERY VENTILATOR	3200	Daikin	DAHA11A	480	3	1	3705	3270	16	75	0	0	181	165	0	0	47.3	172		10.4	15	747	
DOAS-2	ENERGY RECOVERY VENTILATOR	3200	Daikin	DAHA11A	480	3	1	4560	4230	16	75	0	0	187	181	0	0	45	181		10.4	15	1357	
DOAS-3	ENERGY RECOVERY VENTILATOR	709	Oxygen8	C24IN	208	1	0.7	2530	2300	10	74	0	0	112	108	0	0	49.1	89	17.53	19.68	25		

HVAC DUCTLESS SPLIT SYSTEMS (INDOOR UNITS) SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	LOCATION	FED FROM	WEIGHT (lbs)	MANUFACTURER	MODEL	VOLTS	PHASE	CFM (cfm)	ESP (in WC)	NOMINAL TONS	MAT CLG DB (Deg F)	MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)	LAT CLG DB (Deg F)	LAT CLG WB (Deg F)	MAT HTG (Deg F)	HTG MBH (mbh)	LAT HTG (Deg F)	FLA (amps)	MCA (amps)	OCP (amps)	AVAILABLE FAULT CURRENT
DS-1	DUCTLESS SPLIT HIGH WALL UNIT	ELEC. RM. C12	HP-DS-1	57	DAIKIN	FTX09A	208	1	200	0.5	0.75	76	65	4	4	55	54		12	131	0.3			
DS-2	DUCTLESS SPLIT HIGH WALL UNIT		HP-DS-2	38	DAIKIN	FTX36W	208	1	240	0.5	3	76	65	5	5	55	54		10	113	0.8			
DS-3	DUCTLESS SPLIT HIGH WALL UNIT	ELEV. EQUIP. RM. EC02	HP-DS-3	31	DAIKIN	FTX18A	208	1	60	0.5	1.5	76	65	1	1	55	54		4	137	0.50			
DS-4	DUCTLESS SPLIT HIGH WALL UNIT	ELEC. 133E	HP-DS-4	31	DAIKIN	FTX18AXVJU	208	1	1080	0.5	2	76	65	22	22	55	54		3	77	.5			

HVAC DUCTLESS SPLIT SYSTEMS (OUTDOOR UNITS) SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	LOCATION	STATUS	FED FROM	WEIGHT (lbs)	MANUFACTURER	MODEL	EMERGENCY	VOLTS	PHASE	MIN EER	MIN COP	NOMINAL TONS	CLG MBH (mbh)	CLG SENS (mbh)	HTG MBH (mbh)	FLA (amps)	MCA (amps)	OCP (amps)	AVAILABLE FAULT CURRENT	SHEET NUMBER
HP-DS-1	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT				57	DAIKIN	RX09A		208	1	12.5	4.06	0.75	4	4	12		8.7	15		
HP-DS-2	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT				133	DAIKIN	RX36W		208	1	9.5	2.74	3	5	5	10		18.6	20		
HP-DS-3	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT				101	DAIKIN	RX18A		208	1	12.5	3.6	1.5	1	1	4		16.4	20		
HP-DS-4	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT				106	DAIKIN	RX24A		208	1	12.2	3.45	2	22	22	3		16.4	20	2697	

HVAC DIFFUSERS AND REGISTERS SCHEDULE

TAG	MANUFACTURER	MODEL	FACE	MOUNTING	MATERIAL	FINISH	DAMPER TYPE	BORDER STYLE
CD-1	TITUS	OMNI	24"x24"	CEILING	STEEL	STANDARD WHITE	BUTTERFLY	LAY IN MOUNTING
CD-2	TITUS	OMNI	12"x12"	CEILING	STEEL	STANDARD WHITE	BUTTERFLY	LAY IN MOUNTING
ER-1	TITUS	50F	24"x24"	CEILING	ALUMINUM	STANDARD WHITE	BUTTERFLY	LAY IN MOUNTING
ER-2	TITUS	50F	12"x12"	CEILING	ALUMINUM	STANDARD WHITE	BUTTERFLY	LAY IN MOUNTING
RR-1	TITUS	350RL	24"x24"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	LAY IN MOUNTING
RR-2	TITUS	350RL	12"x12"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	LAY IN MOUNTING
RR-3	TITUS	350RL	42"x38"	SIDEWALL	STEEL	BLACK FINISH G.C. TO FIELD PAINT TO MATCH CEILING OR WALLS	OPPOSED BLADE	SURFACE MOUNT
RR-4	TITUS	350RL	36"x12"	DUCT	STEEL	STANDARD WHITE	OPPOSED BLADE	SURFACE MOUNT
RR-5	TITUS	350RL	10"x6"	DUCT	STEEL	STANDARD WHITE	OPPOSED BLADE	SURFACE MOUNT
RR-6	TITUS	350RL	8"x6"	DUCT	STEEL	STANDARD WHITE	OPPOSED BLADE	SURFACE MOUNT
RR-7	TITUS	350RL	48"x24"	CEILING	STEEL	STANDARD WHITE	OPPOSED BLADE	LAY IN MOUNTING
SR-1	TITUS	US-DL	54"x6"	DUCT	STEEL	BLACK FINISH G.C. TO FIELD PAINT TO MATCH CEILING OR WALLS	(none)	SURFACE MOUNT
SR-2	TITUS	US-DL	12"x12"	DUCT	STEEL	BLACK FINISH G.C. TO FIELD PAINT TO MATCH CEILING OR WALLS	(none)	SURFACE MOUNT
SR-3	TITUS	US-DL	24"x6"	DUCT	ALUMINUM	STANDARD WHITE	SCOOP DAMPER	SURFACE MOUNT
SR-4	TITUS	US-DL	24"x10"	DUCT	ALUMINUM	STANDARD WHITE	SCOOP DAMPER	SURFACE MOUNT
SR-5	TITUS	300F	10"x4"	DUCT	ALUMINUM	STANDARD WHITE	SCOOP DAMPER	SURFACE MOUNT
SR-6	TITUS	300F	12"x8"	DUCT	ALUMINUM	STANDARD WHITE	SCOOP DAMPER	SURFACE MOUNT
SR-7	TITUS	US-DL	18"x6"	DUCT	ALUMINUM	STANDARD WHITE	SCOOP DAMPER	SURFACE MOUNT
TG-1	TITUS	50F	24"x24"	CEILING	ALUMINUM	STANDARD WHITE	(none)	LAY IN MOUNTING
TG-2	TITUS	50F	24"x12"	CEILING	ALUMINUM	STANDARD WHITE	(none)	LAY IN MOUNTING

HVAC BOILERS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	WEIGHT (lbs)	MANUFACTURER	MODEL	VOLTS	PHASE	HTG MBH (mbh)	HW EWT (Deg F)	HW LWT (Deg F)	HTG GPM (gpm)	MIN HTG AFUE	GAS HTG IN (mbh)	GAS HTG OUT (mbh)	MAX GAS PRESSURE (in WC)	MIN GAS PRESSURE (in WC)	FLA (amps)	MCA (amps)	OCP (amps)	AVAILABLE FAULT CURRENT	SHEET NUMBER
B-1	CONDENSING BOILER	2858	CleaverBrooks	CFC-E 2000	120	1	0	0	0	0	95.30 %	2000	1760	14	7		13.5	20		
B-1 CONTROL	CONDENSING BOILER CONTROLLER		CleaverBrooks		120	1	0	0	0	0		0	0				2	20		
B-2	CONDENSING BOILER	2858	CleaverBrooks	CFC-E 2000	120	1	0	0	0	0	95.30 %	2000	1760	14	7		13.5	20		
B-2 CONTROL	CONDENSING BOILER CONTROLLER		CleaverBrooks		120	1	0	0	0	0		0	0				2	20		

HVAC PIPING SPECIALITIES - EXPANSION TANK SCHEDULE

EQUIPMENT MARK	DESCRIPTION	MANUFACTURER	MODEL	ACCEPTANCE VOLUME(Gal)
ET-1	EXPANSION TANK	Armstrong	A400-L	0
ET-2	EXPANSION TANK	Armstrong	A400-L	0

HVAC PIPING SPECIALITIES - AIR SOLID SEPARATOR SCHEDULE

EQUIPMENT MARK	DESCRIPTION	MANUFACTURER	MODEL
AS-1	AIR/SOLIDS SEPERATOR	BELL & GOSSETT	ROLAIRTROL RL-4F

HVAC CHILLERS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	WEIGHT (lbs)	MANUFACTURER	MODEL	IPLV	VOLTS	PHASE	NOMINAL TONS	ECWT CLG (Deg F)	LCWT CLG (Deg F)	COND GPM (gpm)	MIN EER (EER)	CLG MBH (mbh)	CHW EWT (Deg F)	CHW LWT (Deg F)	CHW GPM (gpm)	FLA (amps)	MCA (amps)	OCP (amps)	AVAILABLE FAULT CURRENT
C-1	Air Cooled Chiller	12200	Smardt	AE065.2E.F2HCJA		480	3	200			0		2400	0	0	511	302	359	500	41345

HVAC CHEMICAL FEEDER SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	MANUFACTURER	MODEL	VOLTS	PHASE	FLA (amps)	MCA (amps)	OCP (amps)	AVAILABLE FAULT CURRENT	STORAGE (Gal)
SF-1	CHECMICAL FEEDER	NEPTUNE	DBF-5HP	0						

HVAC LOUVER SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	FACE SIZE	FREE AREA	AIRFLOW	MAX PRESSURE DROP (in. w.g.)	MATERIAL	FINISH	ELEVATION (TOP OF LOUVER)	ACCESSORIES	REMARKS	FURNISHED BY	INSTALLED BY	SHEET NUMBER
L-1	EXHAUST LOUVER			20"x12"		2300 CFM		(none)	(none)						
L-2	INTAKE LOUVER			20"x12"		2530 CFM	0	(none)	(none)						

HVAC HYDRONIC PUMPS SCHEDULE

Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.

EQUIPMENT MARK	DESCRIPTION	WEIGHT (lbs)	MANUFACTURER	MODEL	VOLTS	PHASE	HEAD (ft)	FLOW (gpm)	PUMP (rpm)	BHP (hp)	HP (hp)	AVAILABLE FAULT CURRENT	SHEET NUMBER
GF-1	WET ROTOR PUMP		Neptune	G-50-2A	120	1	0	3	0		1/3		
P-1	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	58.94	Armstrong	SG-425	480	3	100	200	3769	6.64	7.5	1514	
P-2	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	58.94	Armstrong	SG-425	480	3	100	200	3769	6.64	7.5	1475	
P-3	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	107.45	Armstrong	SG-63	480	3	100	400	2943	12.75	15	3307	
P-4	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	107.45	Armstrong	SG-63	480	3	100	400	2943	12.75	15	3239	

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

ADDENDA

SHEET TITLE

MECHANICAL - SCHEDULES

DWN: JJK CHK: RAL

BG #
24-059

REH #
372-922

DATE
12-13-2023

M6-601
KLH PROJECT #
24599

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HVAC ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS	
DC	LOCAL DISCONNECT
MC	MOTOR CONTROL (POWER)
SD	DUCT SMOKE DETECTOR
CN	CONTROLS
TS	TOGGLE SWITCH
CB	H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD
FUSE	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)
FLA	OPERATING FULL LOAD AMPS
MCA	MINIMUM CIRCUIT AMPACITY
CP	CORD AND PLUG CONNECTION
[BLANK]	HARD WIRED (WHEN INDICATED FOR DC TYPE)

CONTRACTOR TYPE	
EC	ELECTRICAL CONTRACTOR
EX	EXISTING
FC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
HC	HVAC CONTRACTOR
MFR	MANUFACTURER
PC	PLUMBING CONTRACTOR
OR	OWNER OR OTHERS

MOTOR CONTROL TYPE	
CS	COMBINATION STARTER
MCC	MOTOR CONTROL STARTER
MG	MAGNETIC STARTER OR CONTACT
MS	MANUAL STARTER
VFD	VARIABLE FREQUENCY DRIVE
MSR	MANUAL STARTER W/ CONTROL RELAY
OV	OVERCURRENT PROTECTION

CONTROL TYPE	
TC	TIMECLOCK
CPT	CONTROL POWER TRANSFORMER
BAS	BUILDING AUTOMATION SYSTEM
LOW	LOW VOLTAGE CONTROLS
LINE	LINE VOLTAGE CONTROLS
RLINE	REVERSE ACTING LINE VOLTAGE THERMOSTAT
MAN	MANUAL
FA	FIRE ALARM
CO	CARBON MONOXIDE SENSOR
INT	INTEGRAL TO EQUIPMENT
ASD	AREA SMOKE DETECTOR
DSD	DUCT SMOKE DETECTOR

SHORT CIRCUIT RATING
WHERE SHORT CIRCUIT RATING CODE REQUIRED VALUE INDICATES "YES" APPLICABLE EQUIPMENT'S SHORT CIRCUIT RATING SHALL EXCEED THE AVAILABLE FAULT CURRENT VALUE INDICATED.

EQUIPMENT MARK	DESCRIPTION	VOLTS (V)	PHASE	EMERGENCY	BHP (HP)	HP (HP)	HTG (kW)	WATTS	FLA (A)	MCA (A)	OCP (A)	FED FROM	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	FA SHUTDOWN	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT (A)	HVACTYPE
B-1	CONDENSING BOILER	120	1							13.5	20		EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	HC				23 52 16.00.00
B-1 CONTROL	CONDENSING BOILER CONTROLLER	120	1							2	20		EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	HC				23 52 16.00.00
B-2	CONDENSING BOILER	120	1							13.5	20		EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	HC				23 52 16.00.00
B-2 CONTROL	CONDENSING BOILER CONTROLLER	120	1							2	20		EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	HC				23 52 16.00.00
C-1	Air Cooled Chiller	480	3					213600	302	359	500		EC	EC	EC	---	---	---	---	BAS	HC	HC	HC			41345	23 64 23.00.00
DOAS-1	ENERGY RECOVERY VENTILATOR	480	3							10.4	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			747	23 74 33.00.00
DOAS-2	ENERGY RECOVERY VENTILATOR	480	3							10.4	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1357	23 74 33.00.00
DOAS-3	ENERGY RECOVERY VENTILATOR	208	1						17.53	19.68	25		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 74 33.00.00
DOAS-3-COIL	ENERGY RECOVERY VENTILATOR	208	1						17.53	19.68	25		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 74 33.00.00
DS-1	DUCTLESS SPLIT HIGH WALL UNIT	208	1						0.3			HP-DS-1	EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR				23 81 29.00.01
DS-2	DUCTLESS SPLIT HIGH WALL UNIT	208	1						0.8			HP-DS-2	EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.01
DS-3	DUCTLESS SPLIT HIGH WALL UNIT	208	1						0.50			HP-DS-3	EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.01
DS-4	DUCTLESS SPLIT HIGH WALL UNIT	208	1						.5			HP-DS-4	EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.01
EF-1A	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			1667	23 34 23.00.00
EF-1B	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			2782	23 34 23.00.00
EF-1C	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			1563	23 34 23.00.00
EF-1D	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			2787	23 34 23.00.00
EF-1E	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			1169	23 34 23.00.00
EF-2	CENTRIFUGAL ROOF VENTILATOR	277	1			.172			1.9		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			4326	23 34 23.00.00
FCU-1-01	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1341	23 82 19.00.00
FCU-1-02	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1718	23 82 19.00.00
FCU-1-03	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2244	23 82 19.00.00
FCU-1-04	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2761	23 82 19.00.00
FCU-1-05	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2624	23 82 19.00.00
FCU-1-06	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2336	23 82 19.00.00
FCU-1-07	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1992	23 82 19.00.00
FCU-1-08	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1987	23 82 19.00.00
FCU-1-09	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2179	23 82 19.00.00
FCU-1-10	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 82 19.00.00
FCU-1-11	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4145	23 82 19.00.00
FCU-1-12	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2895	23 82 19.00.00
FCU-1-13	FANCOIL UNIT	277	1							7.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			7870	23 82 19.00.00
FCU-1-14	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2929	23 82 19.00.00
FCU-1-15	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4428	23 82 19.00.00
FCU-1-16	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2561	23 82 19.00.00
FCU-1-17	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1203	23 82 19.00.00
FCU-2-01	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1336	23 82 19.00.00
FCU-2-02	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1699	23 82 19.00.00
FCU-2-03	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2195	23 82 19.00.00
FCU-2-04	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2696	23 82 19.00.00
FCU-2-05	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2570	23 82 19.00.00
FCU-2-06	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2296	23 82 19.00.00
FCU-2-07	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1958	23 82 19.00.00
FCU-2-08	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 82 19.00.00
FCU-2-09	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1427	23 82 19.00.00
FCU-2-10	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1925	23 82 19.00.00
FCU-2-11	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2895	23 82 19.00.00
FCU-2-12	FANCOIL UNIT	277	1							7.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			7017	23 82 19.00.00
FCU-2-13	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3947	23 82 19.00.00
FCU-2-14	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2751	23 82 19.00.00
FCU-2-15	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4894	23 82 19.00.00
FCU-2-16	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1225	23 82 19.00.00
FCU-2-17	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2172	23 82 19.00.00
FCU-2-18	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1958	23 82 19.00.00
FCU-B-01A	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2633	23 82 19.00.00
FCU-B-01B	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3373	23 82 19.00.00
FCU-B-02	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2150	23 82 19.00.00
FCU-B-03	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1718	23 82 19.00.00
FCU-B-04	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 82 19.00.00
FCU-B-05	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2231	23 82 19.00.00
FCU-B-06	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3765	23 82 19.00.00
FCU-B-07	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4143	23 82 19.00.00
FCU-C-01	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3165	23 82 19.00.00
FCU-C-02	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2850	23 82 19.00.00
FCU-C-03	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			11254	23 82 19.00.00
FCU-C-04	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2307	23 82 19.00.00
FCU-C-05	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2750	23 82 19.00.00
FCU-C-06	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1823	23 82 19.00.00
FCU-C-07	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1797	23 82 19.00.00
FCU-C-08	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1476	23 82 19.00.00
FCU-C-09	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			6068	23 82 19.00.00
FCU-C-10	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3017	23 82 19.00.00
FCU-M-01	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			5075	23 82 19.00.00
FCU-M-02	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4178	23 82 19.00.00
FCU-M-03	FANCOIL UNIT	277	1						2.3	2.3	2.3		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			13026	23 82 19.00.00
GF-1	WET ROTOR PUMP	120	1			1/3							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR				23 21 23.00.06
HP-DS-1	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1							8.7	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.00
HP-DS-2	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1							18.6	20		EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.00
HP-DS-3	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1							16.4	20		EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.00
HP-DS-4	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1							16.4	20		EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR			2697	23 81 29.00.00
HVLS-1	HIGH VOLUME LOW SPEED FAN	120	1						6	10	15		EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR				23 34 33.00.00
P-1	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	480	3		6.64	7.5							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR			1514	23 21 23.00.02
P-2	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	480	3		6.64	7.5							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR			1475	23 21 23.00.02
P-3	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	480	3		12.75	15							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR			3307	23 21 23.00.02
P-4	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	480	3		12.75	15							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR			3239	23 21 23.00.02
RTU-1	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1109	23 74 33.00.00
RTU-2	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			950	23 74 33.00.00
RTU-3	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1887	23 74 33.00.00
RTU-4	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2783	23 74 33.00.00
RTU-5	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						8.0	9.1	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1729	23 74 33.00.00
RTU-6	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1147	23 74 33.00.00
RTU-7	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			933	23 74 33.00.00
RTU-8	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						8.0	9.1	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 74 33.00.00
RTU-9	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						13.7	16.1	25		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 74 33.00.00
RTU-10	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						8.0	9.1	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			844	23 74 33.00.00
RTU-11	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						16.7	19.1	25		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4178	23 74 33.00.00
UH-1	CABINET UNIT HEATER	277	1			1/100	3	3000		11	15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC			11770	23 82 39.00.00
UH-2	CABINET UNIT HEATER	277	1			1/100	3	3000		11	15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC				23 82 39.00.00
UH-3	CABINET UNIT HEATER	277	1				3	3000		10.8	20		EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC			8670	23 82 39.00.00
UH-4	CABINET UNIT HEATER	277	1				1.5	1500		6.2	20		EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC			4097	23 82 39.00.00

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

ADDENDA

SHEET TITLE

MECHANICAL - SCHEDULES

DWN: JJK CHK: RAL

BG #
24-059

REH #
372-922

DATE
12-13-2023

M6-602
KLH PROJECT # 24599

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HVAC LOAD SCHEDULE

THE HEATING AND COOLING LOAD CALCULATIONS ARE BASED ON THE RTS (RADIANT TIME SERIES) METHOD. ASSUMPTIONS AND EXECUTION OF THESE METHODS ARE PER ASHRAE 183-2007...

HVAC LOADS	COOLING LOAD BREAKDOWN				HEATING LOAD BREAKDOWN	
	CROOF	SENSIBLE HEAT GAIN FROM ROOF	CSSENS	TOTAL SENSIBLE HEAT GAIN TO SPACE	HROOF	HEAT LOSS FROM ROOF
	CWALL	SENSIBLE HEAT GAIN FROM EXTERIOR WALLS	CFAN	SENSIBLE HEAT GAIN FROM AIR HANDLER FAN	HWALL	HEAT LOSS FROM EXTERIOR WALLS
	CPART	SENSIBLE HEAT GAIN FROM PARITIONS	COAS	SENSIBLE HEAT GAIN FROM OUTDOOR VENTILATION AIR	HPART	HEAT LOSS FROM PARTITIONS
	CGLASS	SENSIBLE HEAT GAIN FROM GLAZING	CTSENS	TOTAL SENSIBLE HEAT GAIN	HGLASS	HEAT LOSS FROM GLAZING
	CSOLAR	SENSIBLE HEAT GAIN FROM SOLAR GAIN THROGH GLAZING	CPLAT	LATENT HEAT GAIN FROM PEOPLE	HSLAB	HEAT LOSS FROM SLAB
	CLIGHTS	SENSIBLE HEAT GAIN FROM INTERIOR LIGHTING	COAL	LATENT HEAT GAIN FROM OUTDOOR VENTILATION AIR	HSPACE	TOTAL HEAT LOSS FROM SPACE
	CEQUIP	SENSIBLE HEAT GAIN FROM PLUG LOADS, COMPUTERS, ETC.	CTLAT	TOTAL LATENT HEAT GAIN	HOA	HEAT LOSS FROM OUTDOOR VENTILATION AIR
	CPSENS	SENSIBLE HEAT GAIN FROM PEOPLE	CTOT	TOTAL HEAT GAIN (SENSIBLE + LATENT)	HTOT	TOTAL HEAT LOSS

EQUIPMENT MARK	CROOF	CWALL	CPART	CGLASS	CSOLAR	CLIGHTS	CEQUIP	CPSENS	CSSENS	CFAN	COAS	CTSENS	CPLAT	COAL	CTLAT	CTOT	HROOF	HWALL	HPART	HGLASS	HSLAB	HSPACE	HOA	HTOT
DS-1	0	2.7	0	0.1	0.6	0.4	0	0	4	0.1	0	4.1	0	0	0	4.1	0	9.3	0	0.7	1.5	11.6	0	11.6
DS-2	0	2.4	0	0	0	2.4	0	0	4.8	0.1	0	5	0	0	0	5	0	8.3	0	0	1.6	9.9	0	9.9
DS-3	0	0.8	0	0	0	0.3	0	0	1.2	0	0	1.2	0	0	0	1.2	0	3	0	0	0.5	3.5	0	3.5
DS-4	0.3	0.5	0	0	0	0.3	20.4	0	21.7	0.7	0	22.4	0	0	0	22.4	0.7	1.9	0	0	0.3	3	0	3
FCU-1-01	0	-0.5	0	0.5	2	3.8	0.6	4.6	11.2	0.3	0	11.6	3.8	0	3.8	15.4	0	-1.8	0	2.5	0.7	1.5	0	1.5
FCU-1-02	0	-0.5	0	0.5	2	3.8	0.6	4.6	11.2	0.3	0	11.6	3.8	0	3.8	15.4	0	-1.8	0	2.5	0.7	1.5	0	1.5
FCU-1-03	0	-0.5	0	0.5	2	3.8	0.6	4.6	11.2	0.3	0	11.6	3.8	0	3.8	15.4	0	-1.8	0	2.5	0.7	1.5	0	1.5
FCU-1-04	0	-0.5	0	0.5	2	3.8	0.6	4.6	11.2	0.3	0	11.6	3.8	0	3.8	15.4	0	-1.8	0	2.5	0.7	1.5	0	1.5
FCU-1-05	0	-0.5	0	0.5	2	3.7	0.6	9	15.5	0.5	0	16.1	7.5	0	7.5	23.6	0	-1.8	0	2.5	0	0.7	0	0.7
FCU-1-06	0	0	0	0	0	1	0	0	1	0	0	1.1	0	0	0	1.1	0	0	0	0	0	0	0	0
FCU-1-07	0	0	0	0	0	1	0	0	1	0	0	1.1	0	0	0	1.1	0	0	0	0	0	0	0	0
FCU-1-08	0	0	0	0	0	0.3	0	0.2	0.6	0	0	0.6	0.2	0	0.2	0.8	0	0	0	0	0	0	0	0
FCU-1-09	0	-0.7	0	0.8	3.4	1	0	0	4.5	0.1	0	4.6	0	0	0	4.6	0	-2.6	0	3.7	0	1.1	0	1.1
FCU-1-10	0	0	0	0	0	3.6	0	0	3.6	0.1	0	3.7	0	0	0	3.7	0	0	0	0	0	0	0	0
FCU-1-11	0	0	0	0	0	3.8	0	0	3.8	0.1	0	4	0	0	0	4	0	0	0	0	0	0	0	0
FCU-1-12	0	-0.5	0	0.5	3.5	3.8	0.6	4.6	12.7	0.4	0	13.1	3.8	0	3.8	16.9	0	-1.9	0	2.7	0.7	1.5	0	1.5
FCU-1-13	0	0.1	0	3	0	3.7	2	1.7	10.6	0.3	0	11	1.4	0	1.4	12.4	0	0.6	0	14	0.4	15	0	15
FCU-1-14	0	-0.5	0	0.5	3.3	3.8	0.6	4.6	12.5	0.4	0	12.9	3.8	0	3.8	16.7	0	-1.8	0	2.5	0	0.7	0	0.7
FCU-1-15	0	0	0	0	0	1.4	0	0	1.4	0	0	1.4	0	0	0	1.4	0	0	0	0	0.2	0.2	0	0.2
FCU-1-16	4.2	10.2	0	1.3	6.2	3.5	0	0	25.6	0.8	0	26.5	0	0	0	26.5	8.9	34.8	0	6.2	6.8	56.9	0	56.9
FCU-1-17	0	0	0	0	0	1.1	0.6	0.2	2	0	0	2.1	0.2	0	0.2	2.3	0	0	0	0	0.2	0.2	0	0.2
FCU-2-01	4	4.4	0	0.5	2	3.8	0.6	0.9	16.5	0.5	0	17.1	0.8	0	0.8	17.9	8.5	14.9	0	2.5	2.6	28.7	0	28.7
FCU-2-02	4	1.8	0	0.5	2	3.8	0.6	4.6	17.7	0.5	0	18.3	3.8	0	3.8	22.1	8.5	6.3	0	2.5	1.2	18.7	0	18.7
FCU-2-03	4	1.8	0	0.5	2	3.7	0.6	4.6	17.6	0.5	0	18.2	3.8	0	3.8	22	8.5	6.3	0	2.5	1.2	18.7	0	18.7
FCU-2-04	4	1.8	0	0.5	2	3.8	0.6	4.6	17.7	0.5	0	18.3	3.8	0	3.8	22.1	8.5	6.3	0	2.5	1.2	18.7	0	18.7
FCU-2-05	3.9	1.8	0	0.5	2	3.7	0.6	4.6	17.5	0.5	0	18.1	3.8	0	3.8	21.9	8.3	6.3	0	2.5	1.2	18.5	0	18.5
FCU-2-06	1.1	0.8	0	0	0	1	0	0	3	0.1	0	3.1	0	0	0	3.1	2.4	2.7	0	0	0.4	5.5	0	5.5
FCU-2-07	1.1	3.1	0	0	0	1	0	0	5.3	0.1	0	5.5	0	0	0	5.5	2.4	10.6	0	0	1.6	14.6	0	14.6
FCU-2-08	3.5	0	0	0	0	3.3	0	0	6.9	0.2	0	7.1	0	0	0	7.1	7.5	0	0	0	0	7.5	0	7.5
FCU-2-09	3.9	4.4	0	0.5	3.3	3.7	0.6	4.6	21.3	0.7	0	22.1	3.8	0	3.8	25.9	8.4	15	0	2.5	2.6	28.6	0	28.6
FCU-2-10	4.1	1.8	0	0.5	3.3	3.8	0.6	4.6	19	0.6	0	19.6	3.8	0	3.8	23.4	8.6	6.3	0	2.5	1.2	18.8	0	18.8
FCU-2-11	4	1.8	0	0.5	3.3	3.8	0.6	4.6	18.9	0.6	0	19.6	3.8	0	3.8	23.4	8.5	6.3	0	2.5	1.2	18.7	0	18.7
FCU-2-12	2.8	0.1	0	2.5	0	2.7	2	0.9	11.2	0.3	0	11.6	0.8	0	0.8	12.4	6.1	0.4	0	11.7	1.4	19.7	0	19.7
FCU-2-13	4	0	0	0	0	3.7	0	0	7.7	0.2	0	8	0	0	0	8	8.4	0	0	0	0	8.4	0	8.4
FCU-2-14	4	4.4	0	0.5	3.1	3.8	0.6	4.6	21.3	0.7	0	22	3.8	0	3.8	25.8	8.6	15.1	0	2.5	2.6	28.9	0	28.9
FCU-2-15	2.4	0	0	2	0	2.3	8.1	2.9	17.9	0.6	0	18.5	2.4	0	2.4	20.9	5.2	0.1	0	9.4	1.2	16	0	16
FCU-2-16	1.1	5	0	0.5	3.3	1	0	0	11.1	0.3	0	11.5	0	0	0	11.5	2.4	16.9	0	2.5	2.7	24.7	0	24.7
FCU-2-17	1.1	2.6	0	1	4.4	1	0	0	10.2	0.3	0	10.5	0	0	0	10.5	2.4	8.8	0	4.6	1.8	17.8	0	17.8
FCU-2-18	0.4	1.8	0	0	0	0.3	0	0.2	2.8	0	0	2.9	0.2	0	0.2	3.1	0.8	6.1	0	0	1	7.9	0	7.9
FCU-B-01A	0	0	2.2	0	0	1.9	6.8	2.4	13.4	0.4	0	13.8	2	0	2	15.8	0	0	8.4	0	1.6	10	0	10
FCU-B-01B	0	0	2.2	0	0	1.9	6.8	2.4	13.4	0.4	0	13.9	2	0	2	15.9	0	0	8.4	0	1.6	10	0	10
FCU-B-02	0	0	4.6	0	0	4.1	0	0	8.7	0.2	0	9	0	0	0	9	0	0	17.1	0	3.4	20.6	0	20.6
FCU-B-03	0	0	3.4	0	0	2.3	0	0	5.8	0.1	0	6	0	0	0	6	0	0	12.8	0	2.4	15.3	0	15.3
FCU-B-04	0	0	0	0	0	1	0.6	1.4	3.1	0.1	0	3.3	1.2	0	1.2	4.5	0	0	0	0	0.2	0.2	0	0.2
FCU-B-05	0	0	3.7	0	0	1.7	3.4	1.9	10.8	0.3	0	11.1	1.6	0	1.6	12.7	0	0	13.9	0	2.5	16.4	0	16.4
FCU-B-06	0	1.1	3	1.3	6.6	1	0	0	13.2	0.4	0	13.6	0	0	0	13.6	0	3.9	11.2	6.4	2.3	23.9	0	23.9
FCU-B-07	0	0	1.6	0	0	0.3	0	0.2	2.2	0	0	2.3	0.2	0	0.2	2.5	0	0	6.1	0	1	7.2	0	7.2
FCU-C-01	0	5.2	0	0.5	2.5	4.3	0.6	5.3	18.8	0.6	0	19.4	4.5	0	4.5	23.9	0	17.8	0	2.5	3.6	23.9	0	23.9
FCU-C-02	0	0.9	0	0	0	3.3	0	0	4.2	0.1	0	4.4	0	0	0	4.4	0	3.3	0	0	1.1	4.4	0	4.4
FCU-C-03	0	5.2	0	0	0	0.6	0	0	5.8	0.1	0	6	0	0	0	6	0	17.6	0	0	2.8	20.4	0	20.4
FCU-C-04	0	1	0	0.2	1.1	2.7	0.6	4.4	10.2	0.3	0	10.6	3.6	0	3.6	14.2	0	3.4	0	0.9	1.8	6.2	0	6.2
FCU-C-05	0	1.8	0	0	0	1.1	0.6	1.2	4.8	0.1	0	5	1	0	1	6	0	6	0	0	1.1	7.2	0	7.2
FCU-C-06	0	2.1	0	0.4	2.3	3.8	0.6	4.6	14.1	0.4	0	14.6	3.8	0	3.8	18.4	0	7.3	0	1.9	1.9	11.2	0	11.2
FCU-C-07	0	6.6	0	0	0	6.5	0.6	4.4	18.2	0.6	0	18.8	3.6	0	3.6	22.4	0	22.6	0	0	4.4	27.1	0	27.1
FCU-C-08	0	4.3	0	0.4	2.3	3.4	0.6	4.1	15.4	0.5	0	15.9	3.4	0	3.4	19.3	0	14.6	0	1.9	2.9	19.5	0	19.5
FCU-C-09	0	0.5	0	0	0	0.5	0	0.4	1.6	0	0	1.6	0.4	0	0.4	2	0	1.8	0	0	0.3	2.2	0	2.2
FCU-C-10	0	0.7	0	0.2	1.1	0.8	1.7	0.4	5.1	0.1	0	5.2	0.4	0	0.4	5.6	0	2.3	0	0.9	0.1	3.5	0	3.5
FCU-M-01	1.9	0.6	0	0	0	1.8	0	0.4	4.9	0.1	0	5.1	0.4	0	0.4	5.5	4.2	2.1	0	0	0.2	6.6	0	6.6
FCU-M-02	0	1.9	0	0.6	2.3	0.9	0	0	5.8	0.1	0	6	0	0	0	6	0	6.5	0	2.8	1.3	10.7	0	10.7
FCU-M-03	0.7	1	0	0	0	0.7	0.6	0.9	4.2	0.1	0	4.3	0.8	0	0.8	5.1	1.6	3.4	0	0	0.4	5.5	0	5.5
RTU-1	4.5	3.8	0	0.3	1.4	4.2	0.6	4.6	19.9	0.6	0	20.8	3.8	0	3.8	24.6	9.7	13.1	0	1.7	3	27.7	0	27.7
RTU-2	4.5	3.5	0	0.3	1.4	4.3	0.6	4.6	19.5	0.6	0	20.5	3.8	0	3.8	24.3	9.7	11.8	0	1.7	2.9	26.2	0	26.2
RTU-3	4.5	3.9	0	0.3	1.6	4.3	0.6	4.6	20.2	0.6	0	21.1	3.8	0	3.8	24.9	9.7	13.2	0	1.7	3	27.8	0	27.8
RTU-4	4.6	2.4	0	0.3	1.6	4.3	0.6	4.9	19	0.6	0	20	4.1	0	4.1	24.1	9.8	8.1	0	1.7	2.3	22	0	22
RTU-5	12.4	1.4	0	1	5	11.9	1.3	2.4	35.6	1.2	0	37.4	2	0	2	39.4	26.3	5	0	4.6	3.6	39.6	0	39.6
RTU-6	4.6	2.7	0	0.3	2.1	4.3	0.6	4.6	19.5	0.6	0	20.6	3.8	0	3.8	24.4	9.8	9.4	0	1.7	2.5	23.5	0	23.5
RTU-7	4.5	3.5	0	0.3	2.1	4.3	0.6	3.9	19.5	0.6	0	20.5	3.2	0	3.2	23.7	9.7	11.9	0	1.7	2.9	26.3	0	26.3
RTU-8	5.7	1.5	0	1.1	5.9	8.9	1	14.7	39	1.3	0	40.3	12.3	0	12.3	52.6	12.1	5.2	0	5.1	2.9	25.5	0	25.5
RTU-9	7.9	9.3	0	2.1	21.7	30.1	2	53.9	127.2	4.3	0	131.5	45.1	0	45.1	176.6	16.7	31.4	0	9.8	16.4	74.5	0	74.5
RTU-10	2.6	4.2	0	0	0	10.1	11.6	7.1	35.7	1.3	0	40.6	5.9	0	5.9	46.5	5.5	14.4	0	0	8.1	28	0	28
RTU-11	25.4	35	0	1.4	7.4	23.8	0.6	40.4	134.4	4.5	0	139.1	33.8	0	33.8	172.9	53.8	118.6	0	6.8	9.5	188.9	0	188.9

HVAC VENTILATION SCHEDULE

NUMBER	NAME	AREA	LEVEL	PEOPLE	OA PER PERSON	OA PER SQ FT.	REQ SUP	ACT SUP	REQ OA	ACT OA	ACT RET	ACT EXH	CRIT OA	PRESSURE
001	MECHANICAL ROOM	805 SF	Level B	0	0	0	0	440	0	0	440	0	0	E
002	STORAGE	464 SF	Level B	0	0	0.12	0	290	70	70	290	0	0.2413	E
003	COMPUTER LAB	753 SF	Level B	19	10	0.12	0	1340	364	0	1340	0	0.5417	----
004	SPECIAL ED	203 SF	Level B	6	10	0.12	0	160	105	105	160	0	0.6562	E
005	RR	23 SF	Level B	0	0	0	0	10	0	0	0	80	0	N
006	RR	20 SF	Level B	0	0	0	0	0	0	0	0	80	0	N
007	FACULTY BREAKROOM	318 SF	Level B	8	5	0.06	0	540	74	74	540	0	0.137	E
008	CORRIDOR	51 SF	Level B	0	0	0.06	0	10	4	4	10	0	0.4	E
009	STORAGE	105 SF	Level B	0	0	0.12	0	100	16	16	100	0	0.16	E
010	CORRIDOR	182 SF	Level B	0	0	0.06	0	50	14	14	50	0	0.28	E
101B	OFFICE	172 SF	Level 1	1	5	0.06	0	90	19	19	90	0	0.2111	E
101C	VEST.	51 SF	Level 1	0	0	0.06	0	10	4	4	10	0	0.4	E
103	CLASSROOM	751 SF	Level 1	19	10	0.12	0	560	350	350	560	345	0.625	E
105	CLASSROOM	751 SF	Level 1	19	10	0.12	0	560	350	350	560	345	0.625	E
106	CLASSROOM	751 SF	Level 1	19	10	0.12	0	640	350	350	640	345	0.5468	E
107	CLASSROOM	745 SF	Level 1	19	10	0.12	0	560	349	349	560	345	0.6232	E
108	CORRIDOR	283 SF	Level 1	0	0	0.06	0	70	21	21	70	0	0.3	E
109	CLASSROOM	751 SF	Level 1	19	10	0.12	0	560	350	350	560	0	0.625	E
110	GUIDANCE RECEPTION	127 SF	Level 1	4	5	0.06	0	150	35	35	150	0	0.2333	E
111	WORKROOM/DATA/STOR.	138 SF	Level 1	0	0	0.12	0	40	21	21	40	0	0.525	E
112	GUIDANCE	135 SF	Level 1	1	5	0.06	0	140	16	16	140	0	0.1142	E
113	RR	22 SF	Level 1	0	0	0	0	10	0	0	0	80	0	N
114	GUIDANCE	305 SF	Level 1	2	5	0.06	0	200	35	35	200	0	0.175	E
115	CONFERENCE	732 SF	Level 1	37	5	0.06	0	780	286	286	780	0	0.3666	E
116	CLASSROOM	751 SF	Level 1	19	10	0.12	0	620	350	350	620	0	0.5645	E
117A	GIRLS	212 SF	Level 1	0	0	0	0	50	0	0	0	320	0	N
118A	BOYS	213 SF	Level 1	0	0	0	0	50	0	0	0	400	0	N
119	JANITOR	61 SF	Level 1	0	0	0	0	20	0	0	20	61	0	N
119A	CORRIDOR	712 SF	Level 1	0	0	0.06	0	180	54	54	180	0	0.3	E
119B	CORRIDOR	700 SF	Level 1	0	0	0.06	0	180	52	52	180	0	0.2888	E
121	CORRIDOR	685 SF	Level 1	0	0	0.06	0	1280	51	51	1280	0	0.0398	E
122A	KINDERGARTEN CLASSROOM	749 SF	Level 1	19	10	0.12	0	940	350	350	940	0	0.3723	E
122B	TOILET	33 SF	Level 1	0	0	0	0	20	0	0	0	80	0	N
122C	STOR.	57 SF	Level 1	0	0	0.12	0	45	9	9	45	0	0.2	E
123A	KINDERGARTEN CLASSROOM	751 SF	Level 1	19	10	0.12	0	930	350	350	930	0	0.3763	E
123B	TOILET	33 SF	Level 1	0	0	0	0	20	0	0	0	80	0	N
123C	STOR.	57 SF	Level 1	0	0	0.12	0	45	9	9	45	0	0.2	E
124	SPEECH THERAPY	145 SF	Level 1	2	5	0.06	0	200	24	24	200	0	0.12	E
125	CORRIDOR	236 SF	Level 1	0	0	0.06	0	160	18	18	160	0	0.1125	E
126A	KINDERGARTEN CLASSROOM	752 SF	Level 1	19	10	0.12	0	960	350	350	960	0	0.3645	E
126B	TOILET	33 SF	Level 1	0	0	0	0	20	0	0	0	80	0	N
126C	STOR.	57 SF	Level 1	0	0	0.12	0	40	9	9	40	0	0.225	E
127A	FAMILY RESOURCE	762 SF	Level 1	20	10	0.12	0	900	364	364	900	0	0.4044	E
127B	TOILET	33 SF	Level 1	0	0	0	0	20	0	0	0	80	0	N
127C	STOR.	57 SF	Level 1	0	0	0.12	0	45	9	9	45	0	0.2	E
128A	COMMONS	1064 SF	Level 1	0	0	0.06	0	560	80	80	560	0	0.1428	E
128B	VEST.	108 SF	Level 1	0	0	0.06	0	60	8	8	60	0	0.1333	E
128C	VEST.	109 SF	Level 1	0	0	0.06	0	60	9	9	60	0	0.15	E
128D	VEST.	167 SF	Level 1	0	0	0.06	0	190	12	12	190	0	0.0631	E
128E	VEST.	122 SF	Level 1	0	0	0.06	0	140	9	9	140	0	0.0642	E
129A	ART/MUSIC	752 SF	Level 1	16	10	0.18	0	930	369	369	930	0	0.3967	E
129B	TOILET	33 SF	Level 1	0	0	0	0	20	0	0	0	80	0	N
129C	STOR.	57 SF	Level 1	0	0	0.12	0	45	9	9	45	0	0.2	E
130A	FIRST AID	757 SF	Level 1	19	10	0.12	0	930	351	351	930	0	0.3774	E
130B	TOILET	33 SF	Level 1	0	0	0	0	20	0	0	0	80	0	N
130C	STOR.	57 SF	Level 1	0	0	0.12	0	50	9	9	50	0	0.18	E
131	JAN.	25 SF	Level 1	0	0	0	0	10	0	0	10	25	0	N
132A	INSTRUCTIONAL COACH (RESOURCE)	309 SF	Level 1	8	10	0.12	0	370	146	146	370	0	0.3945	E
132B	MECH.	16 SF	Level 1	0	0	0.12	0	25	2	2	25	0	0.08	E
132C	ELEC.	23 SF	Level 1	0	0	0.12	0	25	4	4	25	0	0.16	E
133A	NORTH LOBBY	357 SF	Level 1	20	7.5	0.06	0	540	214	214	540	0	0.3962	E
133B	GYM LOBBY	575 SF	Level 1	20	7.5	0.06	0	450	230	230	450	0	0.5111	E
133C	SOUTH LOBBY	468 SF	Level 1	20	7.5	0.06	0	850	222	222	850	0	0.2611	E
133D	WATER	51 SF	Level 1	0	0	0	0	120	0	0	120	0	0	E
133E	ELEC.	63 SF	Level 1	0	0	0	0	1080	0	0	1080	0	0	E
133F	GIRLS	176 SF	Level 1	0	0	0	0	60	0	0	0	320	0	N
133G	BOYS	174 SF	Level 1	0	0	0	0	60	0	0	0	320	0	N
134A	GYM	5894 SF	Level 1	220	7.5	0.06	0	6350	2505	2505	6350	0	0.3944	E
135A	OFFICE	172 SF	Level 1	1	5	0.06	0	200	19	19	200	0	0.095	E
135B	RR	51 SF	Level 1	0	0	0	0	30	0	0	0	160	0	N
135C	GYM STORAGE	324 SF	Level 1	0	0	0.12	0	140	49	49	140	0	0.35	E
136A	PLATFORM	791 SF	Level 1	28	10	0.06	0	1200	409	409	1200	0	0.3408	E
136B	PLATFORM STORAGE	233 SF	Level 1	0	0	0.12	0	140	35	35	140	0	0.25	E
136C	CORRIDOR	81 SF	Level 1	0	0	0.06	0	30	6	6	30	0	0.2	E
136D	RAMP	119 SF	Level 1	0	0	0.06	0	40	9	9	40	0	0.225	E
136E	MECH / ELEC.	209 SF	Level 1	0	0	0	0	200	0	0	200	0	0	E
202	CLASSROOM	729 SF	Level 2	19	10	0.12	0	1070	346	346	1070	345	0.3233	E
203	COUNSELOR	743 SF	Level 2	4	5	0.06	0	830	81	81	830	0	0.0975	E
204	CLASSROOM	751 SF	Level 2	19	10	0.12	0	950	350	350	950	345	0.3684	E
205	CLASSROOM	742 SF	Level 2	19	10	0.12	0	880	349	349	880	345	0.3965	E
206	CLASSROOM	742 SF	Level 2	19	10	0.12	0	950	349	349	950	345	0.3673	E
207	CLASSROOM	736 SF	Level 2	19	10	0.12	0	880	348	348	880	345	0.3954	E
208	COMPUTER LAB	451 SF	Level 2	12	10	0.12	0	900	218	218	900	165	0.2422	E
209	CLASSROOM	742 SF	Level 2	19	10	0.12	0	880	349	349	880	345	0.3965	E
210	OFFICE	330 SF	Level 2	2	5	0.06	0	310	38	38	310	0	0.1225	E
211A	OFFICE	82 SF	Level 2	1	5	0.06	0	90	12	12	90	0	0.1333	E
211B	OFFICE	118 SF	Level 2	1	5	0.06	0	160	15	15	160	0	0.0937	E
212	CLASSROOM	745 SF	Level 2	19	10	0.12	0	1070	349	349	1070	335	0.3261	E
213	CLASSROOM	724 SF	Level 2	19	10	0.12	0	870	346	346	870	335	0.3977	E
214A	GIRLS	212 SF	Level 2	0	0	0	0	150	0	0	0	320	0	N
215A	BOYS	213 SF	Level 2	0	0	0	0	270	0	0	0	400	0	N
216	JANITOR	62 SF	Level 2	0	0	0	0	30	0	0	30	62	0	N
217-1	CORRIDOR-1	656 SF	Level 2	0	0	0.06	0	350	49	49	350	0	0.14	E
217-2	CORRIDOR-2	671 SF	Level 2	0	0	0.06	0	350	50	50	350	0	0.1428	E
C01	PRESCHOOL CLASSROOM	752 SF	Level C	19	10	0.12	0	700	350	0	700	0	0.5	E
C02	PRESCHOOL CLASSROOM	680 SF	Level C	17	10	0.12	0	770	315	315	770	0	0.409	E
C03	PRESCHOOL CLASSROOM	1269 SF	Level C	18	10	0.12	0	910	415	415	910	0	0.456	E
C04A	CLASSROOM/OFFICE	197 SF	Level C	5	10	0.12	0	220	92	92	220	0	0.4181	E
C04B	RR	32 SF	Level C	0	0	0	0	30	0	0	0	80	0	N
C05	BOYS	177 SF	Level C	0	0	0	0	160	0	0	0	320	0	N
C06	GIRLS	162 SF	Level C	0	0	0	0	40	0	0	0	240	0	N
C07	JAN.	37 SF	Level C	0	0	0	0	10	0	0	10	40	0	N
C08	CLASSROOM (HEAD START)	528 SF	Level C	18	10	0.12	0	510	304	304	510	0	0.596	E
C08B	CLOSET	12 SF	Level C	0	0	0	0	0	0	0	0	0	0	E
C08C	OFFICE	79 SF	Level C	1	5	0.06	0	80	12	12	80	0	0.15	E
C08D	OFFICE	82 SF	Level C	1	5	0.06	0	180	12	12	180	0	0.0666	E
C09	CORRIDOR	169 SF	Level C	0	0	0.06	0	40	12	12	40	0	0.3	E
C10	CORRIDOR	477 SF	Level C	0	0	0.06	0	170	36	36	170	0	0.2117	E
C11	ELECTRICAL	475 SF	Level C	0	0	0.12	0	240	71	71	240	0	0.2958	E
C12	ELEC. RM.	97 SF	Level C	0	0	0	0	200	0	0	200	0	0	E
C13	CLASSROOM (HEAD START)	849 SF	Level C	22	10	0.12	0	940	402	402	940	0	0.4276	E
E001	ELEVATOR LOBBY	75 SF	Level B	1	5	0.06	0	110	12	12	110	0	0.109	E
E101	ELEVATOR LOBBY	73 SF	Level 1	1	5	0.06	0	30	11	11	30	0	0.3666	E
E201	ELEVATOR LOBBY	75 SF	Level 2	1	5	0.06	0	140	12	12	140	0	0.0857	E
EC01	ELEV. LOBBY	115 SF	Level C	2	5	0.06	0	80	21	21	80	0	0.2625	E
EC02	ELEV. EQUIP. RM.	63 SF	Level C	0	0	0	0	60	0	0	60	0	0	E
EM01	ELEV. LOBBY	141 SF	Level M	2	5	0.06	0	130	22	22	130	0	0.1692	E
EM02	STORAGE	63 SF	Level M	0	0	0.12	0	100	10	10	100	0	0.1	E
M01	MULTI-PURPOSE ROOM	4442 SF	Level M	165	7.5	0.06	0	6600	1880	1880	6600	0	0.2848	E
M02	CORRIDOR	222 SF	Level M	0	0	0.06	0	120	16	16	120	0	0.1333	E
M03	STAGE	221 SF	Level M	0	0	0.12	0	120	34	34	120	0	0.2833	E
M04	PE OFFICE	146 SF	Level M	4	10	0.12	0	210	72	72	210	0	0.3428	E
M05	STORAGE	201 SF	Level M	0	0	0.12	0	170	30	30	170	0	0.1764	E
M06	STORAGE	274 SF	Level M	0	0	0.12	0	140	41	41	140	0	0.2928	E
S002	STAIR	199 SF	Level B	0	0	0	0	660	0	0	660	0	0	E
S101	STAIR	210 SF	Level 1	0	0	0	0	50	0	0	50	0	0	E
S102	STAIR	209 SF	Level 1	0	0	0	0	230	0	0	230	0	0	E
S201	STAIR	210 SF	Level 2	0	0	0	0	560	0	0	560	0	0	E
S202	STAIR	209 SF	Level 2	0	0	0	0	510	0	0	510	0	0	E
SC02	STAIR	130 SF	Level C	0	0	0	0	290	0	0	290	0	0	E
SM02	STAIR	184 SF	Level M	0	0	0	0	290	0	0	290	0	0	E
TOTAL		52084 SF												

DESIGN DEVELOPMENT SET

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

ADDENDA

SHEET TITLE

MECHANICAL - SCHEDULES

DWN: JJK CHK: RAL

BG #
24-059

REH #
372-922

DATE
12-13-2023

M6-603
KLH PROJECT #
24599

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D. EXISTING POWER DISTRIBUTION EQUIPMENT: WHERE MODIFICATIONS ARE MADE TO EXISTING POWER DISTRIBUTION EQUIPMENT, COMPLETELY RE-TYPE PANELBOARD DIRECTORIES USING ACCURATE "AS-BUILT" INFORMATION. WHEN ADDING COMPONENTS TO EXISTING POWER DISTRIBUTION EQUIPMENT, PROVIDE FULL SIZE (NO SPLIT OR TANDEM DEVICES) OVERCURRENT PROTECTION DEVICES (OCPs) TO MATCH THOSE ALREADY IN PLACE, INCLUDING MANUFACTURER, MODEL/SERIES, SHORT CIRCUIT CURRENT (SCCR/AIC) RATINGS. PROVIDE COMMON TRIPS (NO FIELD-INSTALLED HANDLE TIES) IN THE SAME GUTTER FOR MULTI-POLE DEVICES. PROVIDE SWITCHING DUTY (SWD), HACR AND HID RATINGS WHERE APPLICABLE FOR LOADS. PROVIDE HANDLE LOCK-ON DEVICES FOR EMERGENCY AND CRITICAL LOADS.
E. EXISTING BRANCH CIRCUITS: MAINTAIN, AND RECONNECT IF REQUIRED, BRANCH CIRCUITS THAT ARE EXISTING TO REMAIN. UNLESS NOTED OTHERWISE, ALL CIRCUIT DESIGNATIONS SHOWN ON THE DRAWINGS INDICATE NEW CIRCUIT ASSIGNMENTS, NOT EXISTING. WHERE COLOR CODING OF BRANCH CIRCUIT CONDUCTORS DOES NOT COMPLY WITH NFPA 70 OR IS NOT CONSISTENT WITH EXISTING CONDITIONS, MODIFY TO COMPLY.
F. ADDED LOADS TO EXISTING CIRCUITS: IN CASES WHERE NEW LOADS ARE INDICATED TO BE CONNECTED TO EXISTING CIRCUITS WITH EXISTING LOADS, METER THE EXISTING CIRCUIT IN ADVANCE AND ENSURE THE EXISTING PLUS ADDED LOAD DOES NOT EXCEED 80 PERCENT OF THE SOURCE CIRCUIT BREAKER AMPERE RATING. IF THAT LOAD IS EXCEEDED, NOTIFY DESIGN PROFESSIONAL.
G. REASSIGNMENT OF EXISTING CIRCUITS: IN CASES WHERE EXISTING CIRCUITS ARE REUSED (BASED ON INFORMATION SHOWN ON DRAWINGS OR BASED ON FIELD CONDITIONS) BUT MUST BE CONNECTED TO BREAKERS OTHER THAN THEIR ORIGINAL BREAKER, MODIFY COLOR-CODING AS REQUIRED IF THE NEW BREAKER ASSIGNMENT IS CONNECTED TO A DIFFERENT LINE/PHASE THAN THE ORIGINAL ONE. USE MEANS AND METHODS COMPLIANT WITH NFPA 70 AND WITH AUTHORITIES HAVING JURISDICTION.
H. ELECTRICAL WORK TO REMAIN OR BE RELOCATED: IF REQUIRED TO ACCOMMODATE CONSTRUCTION RELATED ACTIVITIES OR WHERE SPECIFICALLY SHOWN ON THE DRAWINGS, TEMPORARILY REMOVE, STORE IN PROTECTED LOCATION ON SITE, AND REINSTALL CONFLICTING ELECTRICAL EQUIPMENT, LUMINAIRES, OR DEVICES THAT ARE TO REMAIN OR TO BE RELOCATED.
I. PROTECTIVE BARRIERS: PROVIDE AND MAINTAIN TEMPORARY PARTITIONS AND DUST BARRIERS ADEQUATE TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT FINISHED AREAS AND OTHER SYSTEM COMPONENTS. PROTECT ADJACENT INSTALLATIONS DURING CUTTING AND PATCHING OPERATIONS. REMOVE PROTECTION AND BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE. PREVENT AIRBORNE DUST AND PARTICULATE MATTER RESULTING FROM ELECTRICAL WORK FROM ENTERING OCCUPIED SPACES, AND FROM ENTERING AIR INTAKES TO OPERATING HVAC SYSTEMS. MEET WITH OWNER AND HVAC INSTALLER TO DETERMINE SPECIAL INDOOR AIR QUALITY (IAQ) REQUIREMENTS RELATED TO ELECTRICAL THAT MAY APPLY TO THIS PROJECT. COOPERATE FULLY WITH HVAC IAQ REQUIREMENTS THAT AFFECT ELECTRICAL WORK AND ARE AFFECTED BY ELECTRICAL WORK.
J. PENETRATIONS: MAKE REQUIRED ELECTRICAL OPENINGS THROUGH WALLS, FLOORS, ETC. IMMEDIATELY PRIOR TO INSTALLATION OF WORK. PROPERLY AND PERMANENTLY SEAL ELECTRICAL OPENINGS IMMEDIATELY AFTER INSTALLATION OF WORK. PROVIDE TEMPORARY SEALS FOR APPLICATIONS WHERE PENETRATIONS ARE MADE BUT CANNOT BE PERMANENTLY SEALED WITHIN FOUR HOURS.
K. PRE-EXISTING CODE VIOLATIONS: INSPECT EXISTING ELECTRICAL WORK IN AREAS ACCESSED UNDER THIS PROJECT AND BRING INTO COMPLIANCE WITH NFPA 70. THIS APPLIES ONLY TO THE EXTENT THAT SUCH WORK IS UNCOVERED IN THE IMMEDIATE PROJECT AREAS AFFECTED BY CONSTRUCTION ACTIVITIES, AND ONLY TO THE LIMITED EXTENT THAT IT APPLIES TO PRE-EXISTING GENERAL INSTALLATION METHODS SUCH AS MISSING JUNCTION BOX PLATE, OPEN JUNCTION BOX KNOCKOUT, MINOR CONDUIT RE-ANCHORING AND MINOR EXPOSED WIRING/CONNECTIONS. IF MORE EXTENSIVE CODE OR SAFETY VIOLATIONS ARE DISCOVERED, IMMEDIATELY BRING THEM TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE (DETAILED IN WRITING) ALONG WITH PROPOSED COST FOR CORRECTIONS AND IMPACT (IF ANY) ON THE CONSTRUCTION SCHEDULE.
L. INTERIM LIFE-SAFETY PROVISIONS: PROVIDE INTERIM FIRE ALARM AND CODE MINIMUM LIGHTING IN DEMOLITION AND CONSTRUCTION AREAS. PROVIDE TEMPORARY PLASTIC COVERS, OBTAINED FROM SMOKE DETECTOR MANUFACTURER OR OBTAINED FROM A THIRD PARTY AND SPECIFICALLY APPROVED FOR SUCH USE BY SMOKE DETECTOR MANUFACTURER, OVER EXISTING SMOKE DETECTORS WITHIN PROJECT AREA, AND IN ADJACENT AREAS THAT ARE EXPOSED TO CONSTRUCTION-RELATED DUST OR AIRBORNE PARTICULATES. REMOVE ALL TEMPORARY LIFE SAFETY WORK WHEN NO LONGER NEEDED.
M. INTERIM EGRESS PATH PROVISIONS: PROVIDE TEMPORARY UL 924 COMPLIANT EXIT AND/OR EGRESS LIGHTING ALONG EGRESS ROUTES THAT MUST REMAIN ACCESSIBLE DURING CONSTRUCTION. PROVIDE TEMPORARY FIRE ALARM SYSTEM PULL STATIONS AND AUDIO/VISUAL ALARM NOTIFICATION DEVICES ALONG ALL AFFECTED EGRESS ROUTES. REMOVE THIS SCOPE WHEN NO LONGER NEEDED.

EXISTING CONDITIONS - POWER CONTINUITY NOTES

THE FOLLOWING NOTES BROADLY DEFINE SOME OF THE SPECIALTY BASE BID SCOPE OF WORK REQUIRED TO PROVIDE SPECIAL TEMPORARY POWER FOR NEW AND EXISTING FACILITIES TO ACCOMMODATE UTILITY POWER INTERRUPTIONS. FIELD VERIFY ALL SPECIFICS AND PROVIDE MATERIALS, NORMAL TIME LABOR, PREMIUM TIME LABOR, SERVICES, ETC. FOR ALL WORK UNDER BASE BID, INCLUDING BUT NOT LIMITED TO THE FOLLOWING.

A. INVESTIGATION OF EXISTING CONDITIONS: LOCATE, IDENTIFY, AND PROTECT ELECTRICAL SERVICES PASSING THROUGH DEMOLITION AREAS AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED, PROVIDE TEMPORARY SERVICES FOR AFFECTED AREAS. IT IS RECOGNIZED THAT THERE MAY BE SOME CONDUIT SYSTEMS RENDERED INACTIVE BY DEMOLITION, CAUSING DISCONNECTION OF "DOWNSTREAM" OUTLETS, ETC. INVESTIGATE THESE TYPES OF CONDITIONS (FOR ALL SYSTEMS) PRIOR TO DEMOLITION. PROVIDE NECESSARY CORRECTIVE ELECTRICAL WORK PRIOR TO DEMOLITION TO ENSURE THAT SUCH "DOWNSTREAM" DEVICES REMAIN PERMANENTLY ACTIVE THROUGHOUT DEMOLITION, DURING NEW CONSTRUCTION, AND AFTER PROJECT COMPLETION. PROTECT EXISTING ELECTRICAL WORK SERVING EXISTING SPACES AND EQUIPMENT THAT MUST REMAIN OPERATIONAL DURING PART OR ALL OF THE CONSTRUCTION PERIOD, AND ENSURE POWER CONTINUITY IS MAINTAINED FOR SAME THROUGHOUT DURATION OF CONSTRUCTION ACTIVITIES.
B. COORDINATION WITH OWNER: CAREFULLY COORDINATE WORK AND SYSTEM SHUTDOWNS IN ADVANCE WITH OWNER'S REPRESENTATIVE, AND WITH AFFECTED TRADES SO THAT NORMAL BUILDING ACTIVITIES AND OTHER CONSTRUCTION TRADES ARE MINIMALLY AFFECTED. DO NOT INTERRUPT ELECTRICAL UTILITY SERVICE(S) TO THE FACILITY, OR ANY PART THEREOF, UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS, AND THEN ONLY AFTER PROVIDING TEMPORARY ELECTRICAL SERVICE(S)/FEEDS: NOTIFY OWNER NO FEWER THAN FOURTEEN DAYS IN ADVANCE OF EACH PROPOSED INTERRUPTION OF AN ELECTRICAL SERVICE; DO NOT PROCEED WITH INTERRUPTION OF AN ELECTRICAL SERVICE WITHOUT OWNER'S WRITTEN PERMISSION; DO NOT ENERGIZE ANY NEW WORK WITHOUT NOTIFICATION TO, AND SUBSEQUENT PERMISSION FROM, THE OWNER AND ALL AFFECTED PARTIES.
C. TEMPORARY ARRANGEMENTS: COMPLY WITH NFPA 70 (INCLUDING ARTICLE 590), NFPA 70E AND ALL OTHER PREVAILING CODES. DURING CONSTRUCTION RELATED ELECTRICAL OUTAGES, PROVIDE ALL TEMPORARY ELECTRICAL WORK REQUIRED TO MAINTAIN POWER TO OCCUPIED AREAS OF THE BUILDING. COORDINATE WITH, AND OBTAIN APPROVAL FROM, OWNER AND DESIGN PROFESSIONALS FOR ALL MEANS AND METHODS. COMPLY WITH NFPA 70E. SCHEDULE ALL OUTAGES IN ADVANCE WITH OWNER, AT DAYS OF WEEK AND TIMES OF DAY OR NIGHT AS DIRECTED BY OWNER.

EXISTING CONDITIONS - DEMOLITION NOTES

A. DEFINITION OF DEMOLITION: WHERE THE TERM "DEMOLITION" IS USED IN ELECTRICAL DOCUMENTS, INTERPRET IT TO MEAN "DEMOLITION" OR "SELECTIVE DEMOLITION" AS APPLICABLE FOR THE RESPECTIVE SCOPE OF WORK. WHERE THE TERM "DEMOLISH", "REMOVE" OR SIMILAR TERMS ARE USED IN ELECTRICAL DOCUMENTS, INTERPRET TO MEAN "DISCONNECT, REMOVE, DISPOSE OF, AND REMOVE ALL RELATED ELECTRICAL CONDUIT, RACEWAYS, WIRING, CABLES, BOXES, SUPPORTS, ETC.".
B. GENERAL ACCOMMODATIONS: PROVIDE ELECTRICAL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT DEMOLITION AND AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION. DISCONNECT AND REMOVE WORK TO BE ABANDONED, AND AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES, IN AREAS AFFECTED BY THIS PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE. COORDINATE PHASING OF WORK CAREFULLY WITH OWNER PRIOR TO BEGINNING ELECTRICAL DEMOLITION WORK.
C. REMOVAL OF ABANDONED WORK: REMOVE ACCESSIBLE ABANDONED, INACTIVE AND OBSOLETE RACEWAY SYSTEMS, EQUIPMENT, LUMINAIRES, DEVICES, CONDUIT, WIRING, CABLES, BOXES, SUPPORTS, CONTROLS, ETC. ABANDONED RACEWAYS EMBEDDED IN FLOORS, WALLS, AND CEILINGS MAY REMAIN IF SUCH MATERIALS DO NOT INTERFERE WITH NEW INSTALLATIONS. THIS APPLIES FOR ALL ELECTRICAL WORK, AND ALL COMMUNICATIONS AND INFORMATION TECHNOLOGY TYPE WORK, INCLUDING ALL SUCH WORK ABOVE CEILINGS, ETC. REMOVE RELATED ABANDONED UNUSED RACEWAY BACK TO THE NEAREST RESPECTIVE "UPSTREAM" JUNCTION BOX THAT REMAINS ACTIVE EVEN IF OUTSIDE OF THE CONFINES OF THE PROJECT AREA. REMOVE ABANDONED UNUSED WIRING AND CABLES BACK TO RESPECTIVE SOURCES SOURCE EVEN IF SOURCES ARE OUTSIDE THE CONFINES OF THE PROJECT AREA.
D. RE-USE OF EXISTING CONDUIT: EXISTING BRANCH CIRCUIT AND SYSTEMS CONDUIT, NOT CONFLICTING WITH NEW CONSTRUCTION AND NOT CONFLICTING WITH OVERHEAD OR CEILING CAVITY REQUIREMENTS, MAY BE RE-USED AT THE DISCRETION OF THE ELECTRICAL INSTALLER IF IT COMPLIES WITH THESE CONTRACT DOCUMENTS AFTER ALL ABANDONED CONDUCTORS AND CABLES HAVE BEEN REMOVED FROM THEM. DO NOT EXCEED NFPA 70 REQUIRED CONDUIT FILL AND DO NOT INSTALL WIRING FED FROM DIFFERENT SOURCES IN COMMON CONDUIT.
E. MODIFICATIONS TO ACCOMMODATE NEW WORK: REMOVE AND RELOCATE EQUIPMENT, LUMINAIRES, DEVICES, CONDUIT, RACEWAYS, WIRING, CABLES, BOXES, SUPPORTS, ETC. THAT CONFLICT WITH CONSTRUCTION RELATED WORK OF ALL TRADES AS NECESSARY TO ACCOMMODATE NEW WORK OF RESPECTIVE TRADES. REWORK AND EXTEND RACEWAY AND WIRING AS REQUIRED TO ACCOMMODATE NEW OR RELOCATED ELECTRICAL WORK. MAINTAIN (OR RECONNECT IF APPLICABLE) REMAINING WIRING. PROVIDE ELECTRICAL DISCONNECTIONS, AND RECONNECTIONS WHERE APPLICABLE, FOR EQUIPMENT TO BE REMOVED (OR RELOCATED) BY OTHER TRADES.
F. CUTTING AND PATCHING: PERFORM CUTTING AND PATCHING REQUIRED FOR DEMOLITION, RESTORED TO MATCH SURROUNDING REMAINING SURFACES, INCLUDING FIRE/SMOKE RATINGS.
G. LUMINAIRES: FOR ALL EXISTING LUMINAIRES WHICH ARE SCHEDULED FOR REUSE, REMOVE FROM EXISTING CEILINGS DURING DEMOLITION; PROTECT DURING CONSTRUCTION; CLEAN, SERVICE (IF REQUIRED), RE-LAMP (WITH LAMPS TO MATCH BUILDING STANDARD) AND REINSTALL AT LOCATIONS INDICATED. FOR ALL EXISTING LUMINAIRES WHICH ARE SCHEDULED TO BE REMOVED AND TURNED OVER TO OWNER, THE LUMINAIRES SHALL BE DISCONNECTED, CAREFULLY REMOVED AND TURNED OVER TO OWNER. TRANSFER SUCH LUMINAIRES TO STORAGE AREA AS DIRECTED IN FIELD.
H. DISPOSAL OF MATERIALS: REFER TO OWNER'S REPRESENTATIVE FOR DISPOSAL INSTRUCTIONS FOR ABANDONED ELECTRICAL MATERIALS REMOVED DURING DEMOLITION AND THEREAFTER. NEATLY STORE ELECTRICAL MATERIALS THAT THE OWNER ELECTS TO RETAIN AT THE SITE AS DESIGNATED BY THE OWNER'S REPRESENTATIVE. LEGALLY DISPOSE OF MATERIALS THAT THE OWNER ELECTS NOT TO RETAIN. DISCONNECT AND REMOVE ELECTRICAL MATERIALS DESIGNATED FOR SALVAGE (REMOVAL AND REUSE, OR FOR TURNING OVER TO OWNER) UNDAMAGED. DISCONNECT AND REMOVE WIRING AND "WHIPS" FROM EQUIPMENT TERMINAL POINTS. CAREFULLY TRANSPORT SALVAGED ELECTRICAL MATERIALS TO A PROTECTED ON-SITE STORAGE LOCATION AS DIRECTED IN FIELD AND NEATLY STORE THEM GROUPED BY SYSTEM TYPE.
I. CLEANING OF REUSED COMPONENTS: CLEAN COMPONENTS TO BE REUSED INSIDE AND OUT, AND REINSTALL WHERE INDICATED ON DRAWINGS. MODIFY AND EXTEND RELATED EXISTING WIRING IN CONDUIT ACCORDINGLY.

GENERAL ELECTRICAL INSTALLATION NOTES

A. CODE COMPLIANCE: PROVIDE ALL ELECTRICAL WORK COMPLIANT WITH ALL PREVAILING CODES.
B. LISTINGS: PROVIDE MATERIALS, COMPONENTS AND ASSEMBLED COMPONENTS WITH LISTINGS AND LABELS FROM A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), MANUFACTURED, LISTED AND LABELED FOR THEIR INTENDED USE.
C. RATED BUILDING SURFACES: SEPARATE DEVICE BOXES BY A MINIMUM OF 6 INCHES WHERE INSTALLED BACK-TO-BACK WITHIN DEMISING WALLS TO MAINTAIN REQUIRED FIRE AND SOUND RATING (TYPICAL OF ALL DEVICE BOXES INSTALLED ON DEMISING WALLS). PROVIDE LISTED FIRE-RATED WRAPS AROUND ALL RECESSED OUTLET, DEVICE AND EQUIPMENT BOXES IN FIRE/SMOKE RATED WALLS, CEILINGS AND FLOORS TO MEET OR EXCEED THE RESPECTIVE FIRE/SMOKE RATING OF THE SURFACE.
D. RATED PENETRATIONS: SEAL ALL PENETRATIONS THROUGH FIRE-RATED AND/OR SMOKE-RATED MEMBRANES (FLOORS, WALLS, CEILINGS, ETC.) USING SEALANT PRODUCTS THAT MEET OR EXCEED THE RATING OF THE RESPECTIVE MEMBRANE.
E. GANGED DEVICES: INSTALL WIRING DEVICES GANGED WHEREVER POSSIBLE FOR INSTANCES WHERE THEY ARE SHOWN TOGETHER. THIS INCLUDES LOCATIONS ABOVE COUNTERS AND WORK SURFACES WHERE APPLICABLE.
F. OUTLET BOXES NEAR CORNERS: INSTALL WALL-MOUNTED SWITCHES, CONTROLS, RECEPTACLES, OUTLETS, ETC. AT LEAST 6 INCHES FROM WALL CORNERS.
G. CONCEALMENTS: CONCEAL ALL CONDUIT DROPS AND RISES WITHIN WALLS, AND PROVIDE FLUSH-MOUNTED WALL OUTLET BOXES UNLESS OTHERWISE INDICATED.
H. DOCUMENTS OF OTHER TRADES: REVIEW DOCUMENTS OF OTHER TRADES, INCLUDING ARCHITECTURAL, PRIOR TO SUBMITTING A BID. PROVIDE ELECTRICAL WORK FOR EQUIPMENT, DEVICES, ETC. OF OTHER TRADES AS REQUIRED TO RENDER THEM FULLY OPERATIONAL. REFER TO ARCHITECTURAL ELEVATIONS FOR INTENDED LOCATIONS AND MOUNTING HEIGHTS FOR EQUIPMENT AND OUTLETS, ETC. PRIOR TO COMMENCING WITH ANY RELATED ROUGH-IN WORK.
I. SCHEMATIC REPRESENTATIONS: CIRCUITING WORK SHOWN ON DRAWINGS IS FOR SCHEMATIC GENERAL GRAPHIC REPRESENTATION ONLY. DETERMINE SPECIFICS IN FIELD (POINT-TO-POINT ROUTING, HOME-RUN LOCATIONS, METHODS OF CONCEALMENT, ETC.). LOCATIONS AND ROUTING INDICATED ON PLANS ARE SCHEMATIC AND DIAGRAMMATIC IN NATURE. LAYOUT AND INSTALL ALL ELECTRICAL WORK IN STRICT COMPLIANCE WITH CHAPTER 1, PART II, ARTICLE 110.26 OF THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70).
J. HOME-RUN DESIGNATIONS: HOME-RUN DESIGNATIONS INDICATED ON PLANS ARE SCHEMATIC DESIGNATIONS ONLY. DETERMINE EXACT CIRCUIT ASSIGNMENTS IN FIELD BASED ON FIELD CONDITIONS. PROVIDE COLOR-CODED CONDUCTOR INSULATION ACCORDINGLY, CODED PROPERLY DEPENDING ON SYSTEM, PHASE, NEUTRAL, ETC. PROVIDE EQUIPMENT AND PANELBOARD SCHEDULES THAT ACCURATELY INDICATE INSTALLED CONDITIONS.
K. LOCAL DISCONNECTS AND CONTROLS AT EQUIPMENT: LOCAL DISCONNECTS AND LOCAL CONTROLS SHOWN AT OR ON EQUIPMENT IN PLAN-VIEW ARE SHOWN FOR SCHEMATIC ASSOCIATIONS ONLY. AVOID INSTALLING DISCONNECTS OR CONTROLS ON EQUIPMENT ENCLOSURES. INSTALL ON ADJACENT WALLS OR BUILDING STRUCTURE, OR PROVIDE FIELD-FABRICATED UNISTRUT OR EQUIVALENT ASSEMBLIES AS NEEDED. PROVIDE FIELD COORDINATION WITH SITE CONDITIONS AND OTHER TRADES, AND PROVIDE ALL RELATED WORK IN STRICT COMPLIANCE WITH NFPA 70, INCLUDING ARTICLE 110.26. PROVIDE A PERMANENT LABEL ON LOCAL DISCONNECTS NOTING THE EQUIPMENT IT SERVES AND THE PANEL AND CIRCUIT NUMBER FEEDING THE EQUIPMENT PER NFPA 70, ARTICLE 110.22(A).
L. EQUIPMENT & LOAD COORDINATION: REFER TO AND COORDINATE WITH POWER FLOOR PLANS, EQUIPMENT SCHEDULES (INCLUDING EQUIPMENT COORDINATION SCHEDULES), DRAWINGS OF ALL TRADES, ALL DIVISIONS AND SECTIONS OF SPECIFICATIONS AND INSTALLERS OF ALL TRADES. BASED ON ACTUAL EQUIPMENT BEING PROVIDED, DETERMINE AND PROVIDE APPROPRIATE BREAKERS, FUSES, CONDUCTORS, CONTROLS, POWER DISTRIBUTION EQUIPMENT, ETC. PERFORM THESE SERVICES PRIOR TO FURNISHING POWER DISTRIBUTION EQUIPMENT SUBMITTALS.
M. EXTERIOR ELECTRICAL WORK AND WORK SUBJECT TO MOISTURE: EXTERIOR ELECTRICAL WORK SHALL BE WEATHERPROOF AND WATER-TIGHT, AND SHALL BE RUST-RESISTANT. PROVIDE XHHW-2 CONDUCTORS FOR ALL APPLICATIONS THAT ARE BELOW GRADE OR SUBJECT TO MOISTURE. PROVIDE MINIMUM NEMA 3R ENCLOSURES FOR ALL OUTDOOR EQUIPMENT AND ALL INDOOR EQUIPMENT THAT IS SUBJECT TO MOISTURE. PROVIDE NEMA 1 ENCLOSURES FOR ALL OTHER INDOOR EQUIPMENT.
N. EQUIPMENT GROUNDING CONDUCTORS: PROVIDE EQUIPMENT GROUNDING CONDUCTORS IN STRICT COMPLIANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70), INCLUDING ARTICLE 250 AND TABLE 250.122. THESE CONDUCTORS MAY OR MAY NOT BE INDICATED ON SINGLE-LINE DIAGRAMS OR ELSEWHERE, BUT SHALL BE PROVIDED UNDER BASE BID NEVERTHELESS.
O. OVERHEAD WORK: HOLD ALL NEW OVERHEAD ELECTRICAL WORK AS TIGHTLY AS POSSIBLE TO THE BOTTOM OF THE OVERHEAD STRUCTURE. DO NOT INSTALL ANY ELECTRICAL WORK WITHIN SIX INCHES OF ROOF DECKING.
P. COORDINATION DRAWINGS: LAYOUT ALL PROPOSED RACEWAY ROUTING, ELEVATIONS, INSTALLATION METHODS, ETC. ON COORDINATION DRAWINGS AND COORDINATE ALL PROPOSED RACEWAY ROUTING WITH ALL AFFECTED TRADES PRIOR TO COMMENCING WITH WORK. IN ADDITION, REVIEW THE INFORMATION WITH ARCHITECT, ENGINEER AND OWNER FOR ALL AREAS WHERE THE RACEWAYS WILL BE VISIBLE AFTER COMPLETION OF CONSTRUCTION.
Q. JUNCTION AND PULL BOXES: LOCATE JUNCTION AND PULL BOXES SO THAT THEY REMAIN ACCESSIBLE AFTER ALL CONSTRUCTION WORK IS COMPLETE. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO COMMENCEMENT OF THE WORK. LOCATE BOXES IN A MANNER THAT AVOIDS HAVING TO USE ACCESS PANELS. IF ACCESS PANELS ARE INEVITABLE, PROVIDE THEM RATED TO MEET OR EXCEED THE FIRE AND/OR SMOKE RATINGS OF THE RESPECTIVE CEILING OR WALL, AND OBTAIN APPROVAL OF DESIGN PROFESSIONALS FOR EACH LOCATION..
R. CONDUCTOR TERMINATIONS: IN CASES WHERE CONDUCTOR SIZES ARE TOO LARGE TO FIT INTO LUGS/TERMINALS, PROVIDE APPROPRIATE FACTORY LUG KITS FOR AFFECTED EQUIPMENT IF AVAILABLE. ELSEWHERE, PROVIDE INSULATED BUTT-SPLICES OR EQUIVALENT METHOD, WITH TAILS SIZED TO FIT LUGS/TERMINALS. PROVIDE SPLICES IN SEPARATE BOXES IF REQUIRED BASED ON FIELD CONDITIONS, BOX SIZE LIMITATIONS, ETC. CONCEAL BOXES IN ACCESSIBLE OVERHEAD JOIST SPACES IN FINISHED REGULARLY OCCUPIED AREAS.
S. TYPE MC, AC, NM, SE CABLE: WHERE MORE THAN TWO TYPE MC, AC, NM, OR SE CABLES CONTAINING TWO OR MORE CURRENT CARRYING CONDUCTORS IN EACH CABLE ARE INSTALLED IN CONTACT WITH THERMAL INSULATION, CAULK, OR SEALING FOAM MAINTAIN SPACING BETWEEN CABLES.

UTILITY COORDINATION

COORDINATE UTILITY SERVICE WORK CONTAINED WITHIN THIS DRAWING SET WITH RESPECTIVE LOCAL UTILITY COMPANY. KLH HAS STARTED THIS COORDINATION PROCESS WITH UTILITY COMPANY REPRESENTATIVE LISTED BELOW AS PART OF THE DESIGN PHASE. CONTINUE THIS COORDINATION PROCESS PRIOR TO STARTING ANY WORK AND CONTINUE THROUGHOUT CONSTRUCTION PHASE.

OBTAIN AND COMPLY WITH UTILITY INSTALLATION DETAILS AND STANDARDS.

CONTACT 811 "CALL BEFORE YOU DIG" SERVICE PRIOR TO COMMENCING ANY UNDERGROUND WORK.

ELECTRIC SERVICE	
UTILITY COMPANY	DUKE ENERGY
UTILITY CONTACT	DANIELLE JONES
PHONE NUMBER	513-817-7110
EMAIL ADDRESS	Danielle.Jones@duke-energy.com
DATE(S) CONTACTED	10/24/2023
KLH CONTACT	DOUG JOHANSING

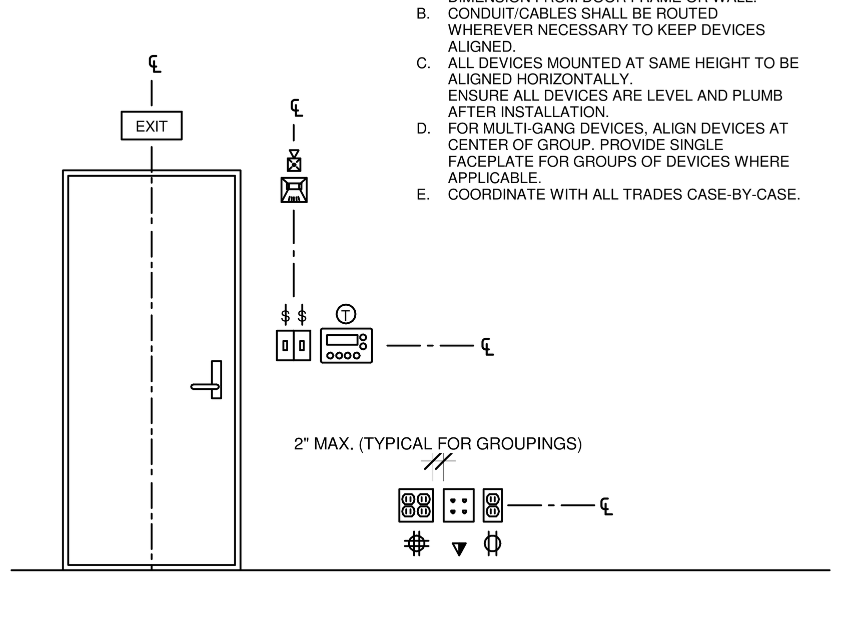
ELECTRICAL SECONDARY SERVICE (OWNER-PURCHASED SECONDARY)

TRANSFORMERS	
OWNERSHIP	UTILITY
NEW OR EXISTING	NEW
SECONDARY VOLTAGE (V)	480V
MAX NUMBER OF CONDUITS IN SECONDARY COMPARTMENT	8
TRANSFORMER CLEARANCES	
MINIMUM DISTANCE FROM BUILDING	N/A, TRANSFORMER REPLACING OLD AT EXISTING LOCATION
MINIMUM DISTANCE FROM EMERGENCY GENERATOR	N/A, TRANSFORMER REPLACING OLD AT EXISTING LOCATION
MAXIMUM DISTANCE FROM DRIVABLE SURFACE	N/A, TRANSFORMER REPLACING OLD AT EXISTING LOCATION
WORKING CLEARANCE	
FRONT	10 FT.
SIDE	3 FT.
REAR	3 FT.
METERING	
CURRENT TRANSFORMER (CT) LOCATION	TRANSFORMER NORTH & SOUTH GYM ENTRANCE

RESPONSIBILITY MATRIX (X = FURNISH AND INSTALL)	UTILITY	DIVISION 26 CONTRACTOR
TRANSFORMER	X	
TRANSFORMER PAD		X
PRIMARY CONDUIT		X
PRIMARY CABLE	X	
TERMINATE PRIMARY CABLE	X	
SECONDARY CONDUIT		X
SECONDARY CONDUCTORS		X
TERMINATE SECONDARY CONDUCTORS		X
METER SOCKET		X
CT CABINET		X

GENERAL NOTES:

A. ALIGN ALL DEVICES SHOWN ON PLANS AT SAME DIMENSION FROM DOOR FRAME OR WALL.
B. CONDUIT/CABLES SHALL BE ROUTED WHEREVER NECESSARY TO KEEP DEVICES ALIGNED.
C. ALL DEVICES MOUNTED AT SAME HEIGHT TO BE ALIGNED HORIZONTALLY. ENSURE ALL DEVICES ARE LEVEL AND PLUMB AFTER INSTALLATION.
D. FOR MULTI-GANG DEVICES, ALIGN DEVICES AT CENTER OF GROUP. PROVIDE SINGLE FACEPLATE FOR GROUPS OF DEVICES WHERE APPLICABLE.
E. COORDINATE WITH ALL TRADES CASE-BY-CASE.



260502.00-01 - DEVICE ALIGNMENT DETAIL

SCALE: NONE

ELECTRIC DESIGN CRITERIA

APPLICABLE BUILDING CODES

2018 KENTUCKY BUILDING CODE (BASED ON THE 2015 INTERNATIONAL BUILDING CODE)
2017 NFPA 70 - NATIONAL ELECTRICAL CODE (NEC)
2013 NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE
2012 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

CONSTRUCTION TYPE & OCCUPANCY

TYPE A CONSTRUCTION

OCCUPANCY CLASSIFICATION (USE GROUP) WITH OCCUPANT LOAD:
CLASSIFICATION
OCCUPANT LOAD
CLASSIFICATION
OCCUPANT LOAD

TESTING/COMMISSIONING FOR LIGHTING CONTROLS

LIGHTING CONTROL DEVICES AND SYSTEMS SHALL BE TESTED TO ENSURE THE HARDWARE AND SOFTWARE IS CALIBRATED, PROGRAMMED, AND IN PROPER WORKING ORDER. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED INSTALLATION CERTIFICATES AND SHALL PROVIDE MANUALS FOR LIGHTING CONTROL DEVICES TO OWNER PRIOR TO PROJECT CLOSE-OUT. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR CONTRACTING WITH APPROPRIATE PARTIES TO ARRANGE FOR TESTING/COMMISSIONING OF THE LIGHTING CONTROL SYSTEMS AND SHALL BE RESPONSIBLE FOR ENSURING ALL REQUIRED FUNCTIONAL TESTING FORMS ARE COMPLETED AND SUBMITTED TO THE OWNER AND LOCAL AHJ PRIOR TO PROJECT CLOSE-OUT.

ELECTRIC DRAWING INDEX

SHEET NUMBER	SHEET NAME	CURRENT REVISION ISSUED	CURRENT REVISION DATE	CURRENT REVISION DESCRIPTION
E0-001	ELECTRIC COVER SHEET	No		
E0-002	ELECTRIC SITE DEMO PLAN	No		
E0-003	ELECTRIC SITE PLAN	No		
E1-100	ELECTRIC DEMOLITION LEVELS B, M, & C PLAN	No		
E1-101	ELECTRIC DEMOLITION LEVEL 1 OVERALL	No		
E1-102	ELECTRIC DEMOLITION LEVEL 2 PLAN OVERALL	No		
E1-103	ELECTRIC DEMOLITION ROOF PLAN	No		
E3-100	ELECTRIC LIGHTING LEVELS B, M, & C	No		
E3-101	ELECTRIC LIGHTING LEVEL 1 OVERALL	No		
E3-102	ELECTRIC LIGHTING LEVEL 2 OVERALL	No		
E3-103	ELECTRIC LIGHTING GYM PLAN	No		
E3-104	ELECTRIC LIGHTING - DETAILS	No		
E4-100	ELECTRIC POWER LEVELS B, M, & C	No		
E4-101	ELECTRIC POWER LEVEL 1 OVERALL	No		
E4-102	ELECTRIC POWER LEVEL 2 OVERALL	No		
E4-103	ELECTRIC POWER GYM PLAN	No		
E4-104	ELECTRIC POWER ROOF PLAN	No		
E4-105	ELECTRIC POWER GYM ROOF PLAN	No		
EP501	ELECTRIC POWER - DETAILS	No		
EP601	ELECTRIC POWER - SINGLE LINE DIAGRAM	No		
EP602	ELECTRIC POWER - SCHEDULES	No		
EP603	ELECTRIC POWER - PANEL SCHEDULES	No		

ELECTRIC CONDUIT AND WIRE MATERIAL SCHEDULE

MC - METAL CLAD CABLE
MI - MINERAL INSULATED CABLE
HMC - HEALTHCARE METAL CLAD CABLE
USE - UNDERGROUND SERVICE ENTRANCE CABLE
SE - SERVICE ENTRANCE CABLE
UF - UNDERGROUND FEEDER
NM - NON-METALLIC SHEATHED CABLE
RMC - RIGID METAL CONDUIT
RNC - RIGID NON-METALLIC CONDUIT
RTRC - REINFORCED THERMOSETTING RESIN CONDUIT
LIM - LINE ISOLATION MONITOR

ARC - ALUMINUM RIGID CONDUIT
EMT - ELECTRIC METALLIC TUBING
ENT - ELECTRIC NON-METALLIC TUBING
FMC - FLEXIBLE METALLIC CONDUIT
GRC - GALVANIZED RIGID STEEL CONDUIT
HDPE - HIGH DENSITY POLYETHYLENE CONDUIT
IMC - INTERMEDIATE METAL CONDUIT
LFMC - LIQUID-TIGHT FLEXIBILE METALLIC CONDUIT
LFNC - LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT
SCH 40 PVC - SCHEDULE 40 POLYVINYL CHLORIDE CONDUIT
SCH 80 PVC - SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT

CONDUIT APPLICATION	CONDUCTOR TYPE	RACEWAY TYPE	RACEWAY AND CONDUCTOR NOTES
---FIRE ALARM---			
EXISTING HOLLOW PARTITIONS	NON-PLENUM RATED	EMT	
CONCEALED	NON-PLENUM RATED	EMT	
EXPOSED	NON-PLENUM RATED	EMT	
CONCEALED, ABOVE ACCESSIBLE CEILINGS	PLENUM RATED	J-HOOKS	
CONCEALED, ABOVE INACCESSIBLE CEILINGS	NON-PLENUM RATED	EMT	
EMBEDDED IN CONCRETE SLAB	NON-PLENUM RATED	RNC (SCH 40 PVC)	
---POWER - INDOOR---			
EXISTING HOLLOW PARTITIONS	THHN	EMT	
CONCEALED	THHN	EMT	
CONCEALED, DAMP LOCATIONS	XHHW-2	EMT	
CONCEALED, MASONRY	THHN	RNC (SCH 40 PVC)	
VERTICAL RISERS FROM BELOW GRADE INCLUDING ELBOW	XHHW-2	RMC (GRC)	
CONNECTION TO SYSTEMS FURNITURE	THHN	LFMC	
EMBEDDED IN CONCRETE SLAB	THHN	RNC (SCH 40 PVC)	
LUMINAIRE WHIPS IN ACCESSIBLE CEILING, 72" MAX	THHN	MC	
CONNECTION TO VIBRATING EQUIPMENT, 72" MAX	THHN	LFMC	
EXPOSED	THHN	EMT	
CORROSIVE ENVIRONMENT	THHN	RMC (GRC)	
UNDERGROUND	XHHW-2	RNC (SCH 40 PVC)	
EMBEDDED IN CONCRETE WALL	THHN	RNC (SCH 40 PVC)	
---POWER - OUTDOOR---			
EXPOSED	XHHW-2	RMC (GRC)	
CONCEALED	XHHW-2	EMT	
CONCEALED, DAMP LOCATIONS	XHHW-2	IMC	
UNDERGROUND	XHHW-2	RNC (SCH 40 PVC)	
CONNECTION TO VIBRATING EQUIPMENT, 72" MAX	XHHW-2	LFMC	
EXPOSED TO DIRECT SUNLIGHT, ROOF	XHHW-2	RMC (GRC)	
CORROSIVE ENVIRONMENT	XHHW-2	RMC (GRC)	
---TECHNOLOGY---			
EXISTING HOLLOW PARTITIONS	NON-PLENUM RATED	EMT	
CONCEALED, ABOVE INACCESSIBLE CEILINGS	NON-PLENUM RATED	EMT	
CONCEALED, ABOVE ACCESSIBLE CEILINGS	PLENUM RATED	J-HOOKS	

ELECTRIC LEGEND

LIGHTING AND LIGHTING CONTROLS

SYMBOL	DESCRIPTION
	LUMINAIRE (REFER TO THE LUMINAIRE SCHEDULE) NOTE THAT OTHER SHAPES MAY ALSO BE USED TO REPRESENT LUMINAIRES
	SHADED LUMINAIRES DENOTE THOSE CONNECTED TO EMERGENCY OR STANDBY POWER AS APPLICABLE (UNSWITCHED LUMINAIRES ARE EGRESS LIGHTS AND/OR NIGHT-LIGHTS THAT OPERATE 24/7)
WALL MOUNT	SINGLE / DOUBLE SIDED EXIT SIGN CONNECT AHEAD OF SWITCHING & CONFIGURE ARROWS TO INDICATE DIRECTION OF EGRESS TRAVEL
	EMERGENCY LIGHTING UNIT WITH 90-MINUTE BATTERY BACKUP AND ASSOCIATED REMOTE HEADS WHERE APPLICABLE. CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING
	OUTDOOR AREA SITE LIGHTING STANDARD NUMBER OF LUMINAIRE HEADS AS INDICATED ON DRAWINGS.
A, a, NL, EL	A = LUMINAIRE TYPE, NL = NIGHT-LIGHT (UNSWITCHED), a = SWITCHING DESIGNATION, EL = EGRESS LUMINAIRE (ILLUMINATES PATH OF EGRESS, UNSWITCHED UNLESS OTHERWISE NOTED)
$	LIGHTING SWITCH (KEYS: 2 = 2-POLE, 3 = 3-WAY, 4 = 4-WAY, D=DIMMER, K=KEYED, T = TIMER SWITCH, M = MOMENTARY-CONTACT, P = SWITCH W/PILOT LIGHT)
TYPE	CEILING-MOUNTED OCCUPANCY SENSOR. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR" = INFRARED, TYPE "US" = ULTRASONIC, TYPE "HB" = HIGH BAY
TYPE#	WALL-MOUNTED OCCUPANCY SENSOR SWITCH. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR"=INFRARED, TYPE "US"=ULTRASONIC, "V"=VACANCY SENSOR, "#" = CONTROLLED CIRCUITS.
TYPE	WALL-MOUNTED OCCUPANCY SENSOR. INFRARED TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "US" = ULTRASONIC, TYPE "DT" = DUAL TECHNOLOGY
KEY	LIGHTING CONTROL DIGITAL SWITCH OR CONTROL INTERFACE. "KEY" DENOTES SWITCH DESIGNATION DETAILED ON DRAWINGS

RECEPTACLES AND MISCELLANEOUS OUTLETS

SYMBOL	DESCRIPTION
	SINGLE ("SIMPLEX"), DUPLEX, AND DOUBLE DUPLEX ("QUAD") RECEPTACLE RESPECTIVELY
	GFI / GFCI RECEPTACLES
H, C, T 42", W, SW, L	RECEPTACLE ATTRIBUTES 42" = MOUNT RECEPTACLE AT THIS HEIGHT ABOVE GRADE / FINISHED FLOOR C = INSTALL ABOVE COUNTER AND BACKSPLASH H = INSTALL RECEPTACLE HORIZONTALLY L = LIT (PROVIDE ILLUMINATED FACE OR INDICATOR LIGHT TO INDICATE THERE IS POWER TO RECEPTACLE) SW = SPLIT WIRED T = TAMPER-RESISTANT W = WEATHER PROOF WHILE IN USE COVER AND WEATHER RESISTANT RECEPTACLE

MISCELLANEOUS

SYMBOL	DESCRIPTION
T, TS	LOW VOLTAGE THERMOSTAT (LEFT) AND TEMPERATURE SENSOR (RIGHT)
	INDICATES DIRECT CONNECTION TO EQUIPMENT
$ $MS $MSR	MOTOR RATED TOGGLE SWITCH, MANUAL STARTER WITH PILOT LIGHT, AND MANUAL STARTER WITH PILOT LIGHT WITH EXTERNAL RELAY FOR CONTROL OR MONITORING RESPECTIVELY - ALL MAY BE KEYED "K"
	HEAVY DUTY DISCONNECT SWITCH (NON-FUSED) (LEFT) HEAVY DUTY DISCONNECT SWITCH (FUSED) (RIGHT)
	EMERGENCY-POWER-OFF (EPO) PUSHBUTTON STATION WITH DESCRIPTIVE ENGRAVED PLATE AND MEANS TO PREVENT ACCIDENTAL ACTIVATION
	CONTROL STATION WITH DESCRIPTIVE ENGRAVED PLATE
FRONT	ELECTRICAL SWITCHBOARD OR SWITCHGEAR (DIMENSIONS MAY VARY)
	ELECTRICAL PANELBOARD OR DISTRIBUTION BOARD (DIMENSIONS MAY VARY / FLUSH OR SURFACE MOUNTED AS INDICATED)
FRONT	DRY TYPE TRANSFORMER - FLOOR MOUNTED ON CONCRETE PAD (LEFT), SUSPENDED FROM CEILING OR WALL (RIGHT)
PAD, POLE	OIL FILLED TRANSFORMER
	CONCRETE FILLED STEEL BOLLARD

ELECTRIC LEGEND

SINGLE LINE DIAGRAM

SYMBOL	DESCRIPTION
M	ELECTRIC UTILITY COMPANY METER AND ASSOCIATED CURRENT TRANSFORMERS
HD M	CUSTOMER ELECTRIC METER AND ASSOCIATED CURRENT TRANSFORMERS HD = HIGH DENSITY METERING CABINET/BANK MOUNTED TO TIGHTLY GROUP ALL METERS TOGETHER
	GROUNDING ELECTRODE PER NFPA 70 ARTICLE 250 MINIMUM
	HEAVY DUTY DISCONNECT SWITCH (NON-FUSED)(LEFT) (FUSED)(RIGHT) SIZES MAY BE SHOWN ONLY IN SCHEDULE
PANEL NAME	ELECTRICAL PANELBOARD OR DISTRIBUTION BOARD
	ELECTRICAL SWITCHBOARD OR SWITCHGEAR
	SURGE PROTECTIVE DEVICE

WIRE / CABLE / RACEWAY

SYMBOL	DESCRIPTION
LPA-1,3	BRANCH CIRCUIT HOME RUN WITH PANEL NAME AND CIRCUIT NUMBER(S)
	CABLING / RACEWAY INSTALLED CONCEALED IN WALLS OR ABOVE CEILING
	CABLING / RACEWAY INSTALLED BELOW FLOOR OR GRADE
Ø	UTILITY POLE
UP DN	CONDUIT UP OR DOWN

ABBREVIATIONS

42"	DISTANCE ABOVE FINISHED FLOOR / GRADE / PAVEMENT
AF	AMP FRAME OF FUSED SWITCH OR CIRCUIT BREAKER
AFCI	ARC-FAULT CIRCUIT INTERRUPTER
AT	AMP TRIP OF FUSED SWITCH OR CIRCUIT BREAKER
ATS	AUTOMATIC TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM
C.T.C.	WORK UNDER DIVISION 27 OR 28 AS APPLICABLE
C/B	CIRCUIT BREAKER
C / CH	COUNTER HEIGHT OR SPECIAL HEIGHT DEVICE
DW	DISHWASHER
E	EMERGENCY
E.C.	WORK UNDER DIVISION 26
EMS	ENERGY MANAGEMENT SYSTEM
EPO	EMERGENCY POWER OFF
ER	EQUIPMENT ROOM
ERM	ENERGY REDUCTION MAINTENANCE SWITCH
ESP	EMERGENCY STANDBY RATING
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EX.	EXISTING
FBO	FURNISHED BY OTHERS - INSTALLED AND WIRED BY E.C.
FIBO	FURNISHED AND INSTALLED BY OTHERS - WIRED BY E.C.
FP	RECEPTACLE TO BE USED FOR A FLAT PANEL DISPLAY.
FWE	FURNISHED WITH EQUIPMENT BY OTHERS - INSTALLED AND WIRED BY E.C.
GD	GARBAGE DISPOSAL
GFEP	GROUND FAULT EQUIPMENT PROTECTION
GFI / GFCI	GROUND FAULT CIRCUIT INTERRUPTER DEVICE
GND	GROUND
H.C.	WORK UNDER DIVISION 23
H.O.A.	"HAND - OFF - AUTO" SWITCH
IG	ISOLATED GROUND
Isc	SHORT CIRCUIT CURRENT
LR	LEGALLY REQUIRED STANDBY
LI	LONG - INSTANTANEOUS
LSI	LONG - SHORT - INSTANTANEOUS
LSIG	LONG - SHORT - INSTANTANEOUS - GROUND FAULT
MCB	MAIN CIRCUIT BREAKER
MFR	MANUFACTURER
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE OVEN
NIC	NOT IN CONTRACT (SHOWN FOR REFERENCE ONLY)
NTS	NOT TO SCALE
OFE	OWNER-FURNISHED EQUIPMENT - INSTALLED AND WIRED BY E.C.
OS	OPTIONAL STANDBY
P.C.	WORK UNDER DIVISION 22
(R)	RELOCATE
S.C.	WORK UNDER DIVISION 21
SCCR	SHORT CIRCUIT CURRENT RATING
SPD	SURGE PROTECTIVE DEVICE
ST	SHUNT TRIP
TAAC	TO ABOVE ACCESSIBLE CEILING
TR	TAMPER RESISTANT
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UCR	UNDER COUNTER REFRIGERATOR
UL	UNDERWRITER'S LABORATORY
U.L.S.E.	LISTED FOR SERVICE ENTRANCE
UNO	UNLESS NOTED OR INDICATED OTHERWISE ON DRAWINGS OR IN SPECIFICATIONS
VFD / VSD	VARIABLE FREQUENCY / SPEED DRIVE
VIF	VERIFY IN FIELD
VM	VENDING MACHINE
VP	VANDAL PROOF
W / WP	WEATHERPROOF
WG	WIRE GUARD
WR	WEATHER RESISTANT
X	RATED FOR CLASSIFIED LOCATION

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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ADDENDA

SHEET TITLE
ELECTRIC COVER SHEET

DWN: GMN CHK: DTJ

BG # 24-059

REH # 372-922

DATE 12-13-2023

E0-001

KLH PROJECT # 24599

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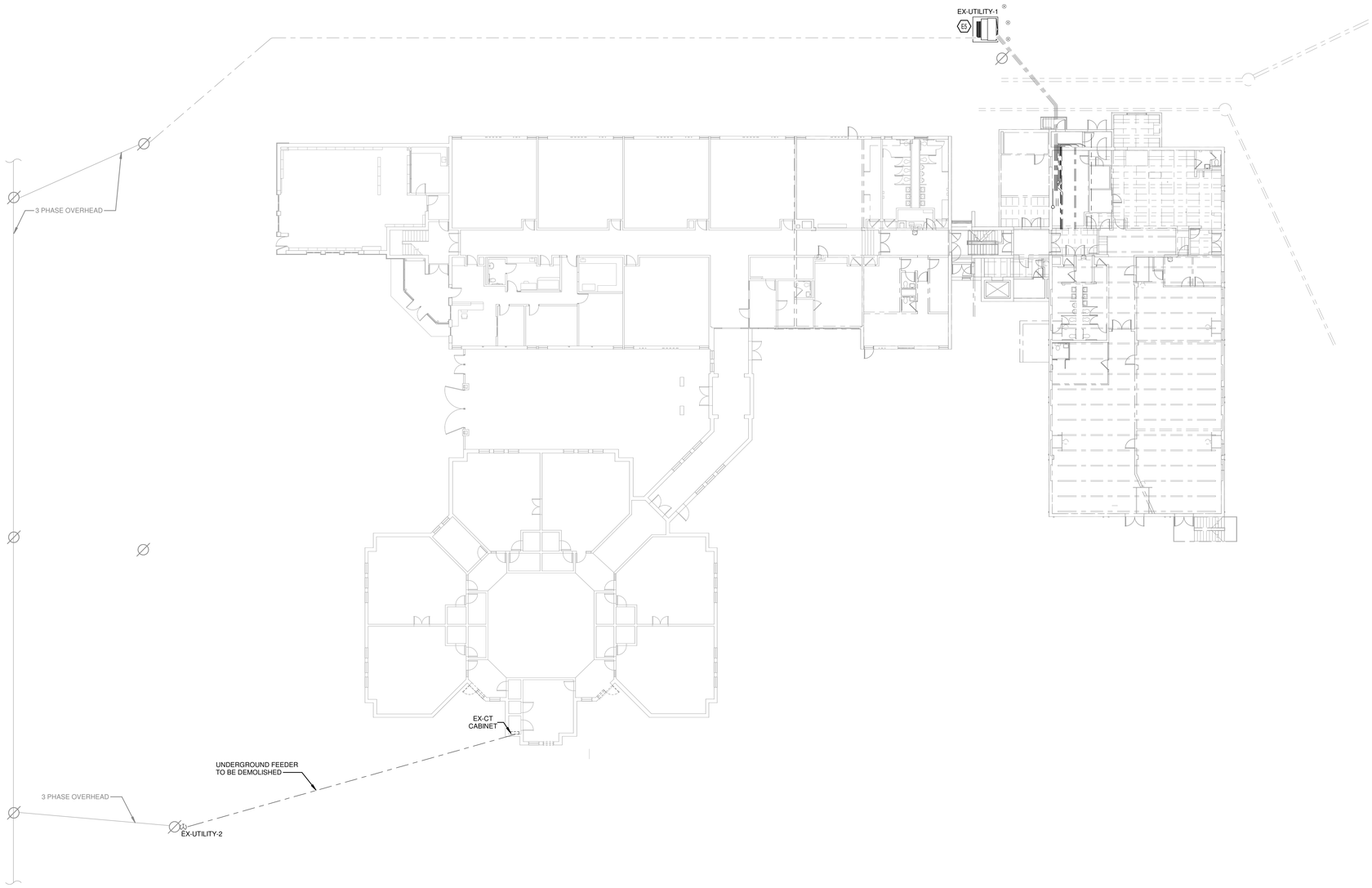
KEYED NOTES

E5 NEW UTILITY TRANSFORMER AND METER. EXISTING TRANSFORMER PAD, CONDUIT, AND BOLLARDS TO REMAIN.



1 ELECTRIC SITE DEMO PLAN
1/16" = 1'-0"

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SHEET TITLE
ELECTRIC SITE DEMO PLAN
DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
DATE 12-13-2023

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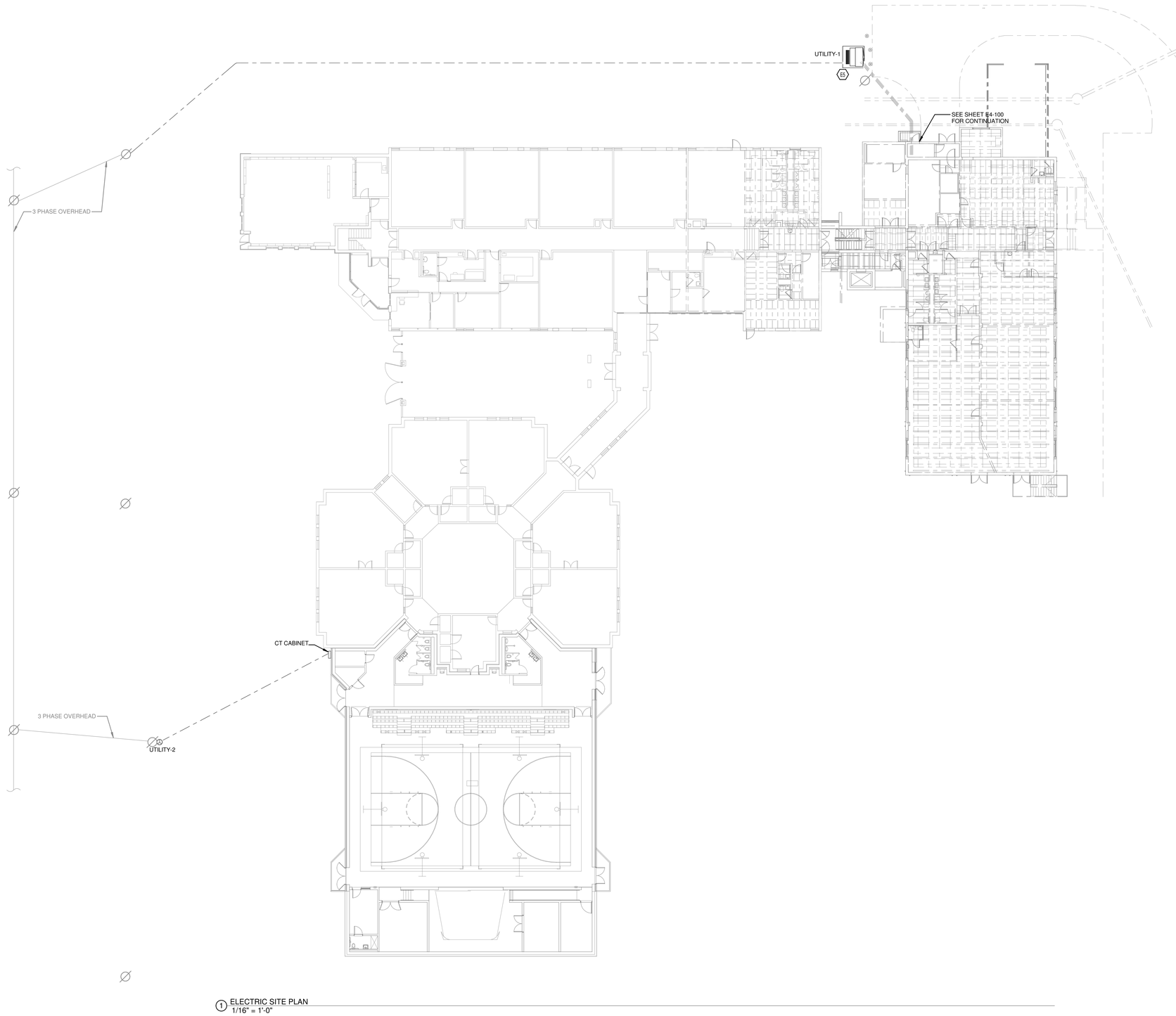

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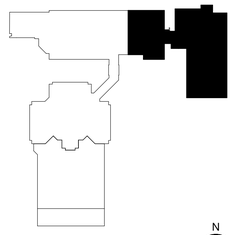
KEYED NOTES

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. PROVIDE NEW CONDUIT AND CONDUCTORS TO EXTEND AS NEEDED.
E7	OUTDOOR CONDUIT TO BE RELOCATED FOR THE INSTALLATION OF NEW WINDOWS. VERIFY CONDUIT AND WIRE SIZING AND COORDINATE EXACT PATHING WITH NEW WINDOW LOCATION IN FIELD.

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

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

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



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SHEET TITLE
ELECTRIC DEMOLITION LEVELS B, M, & C PLAN

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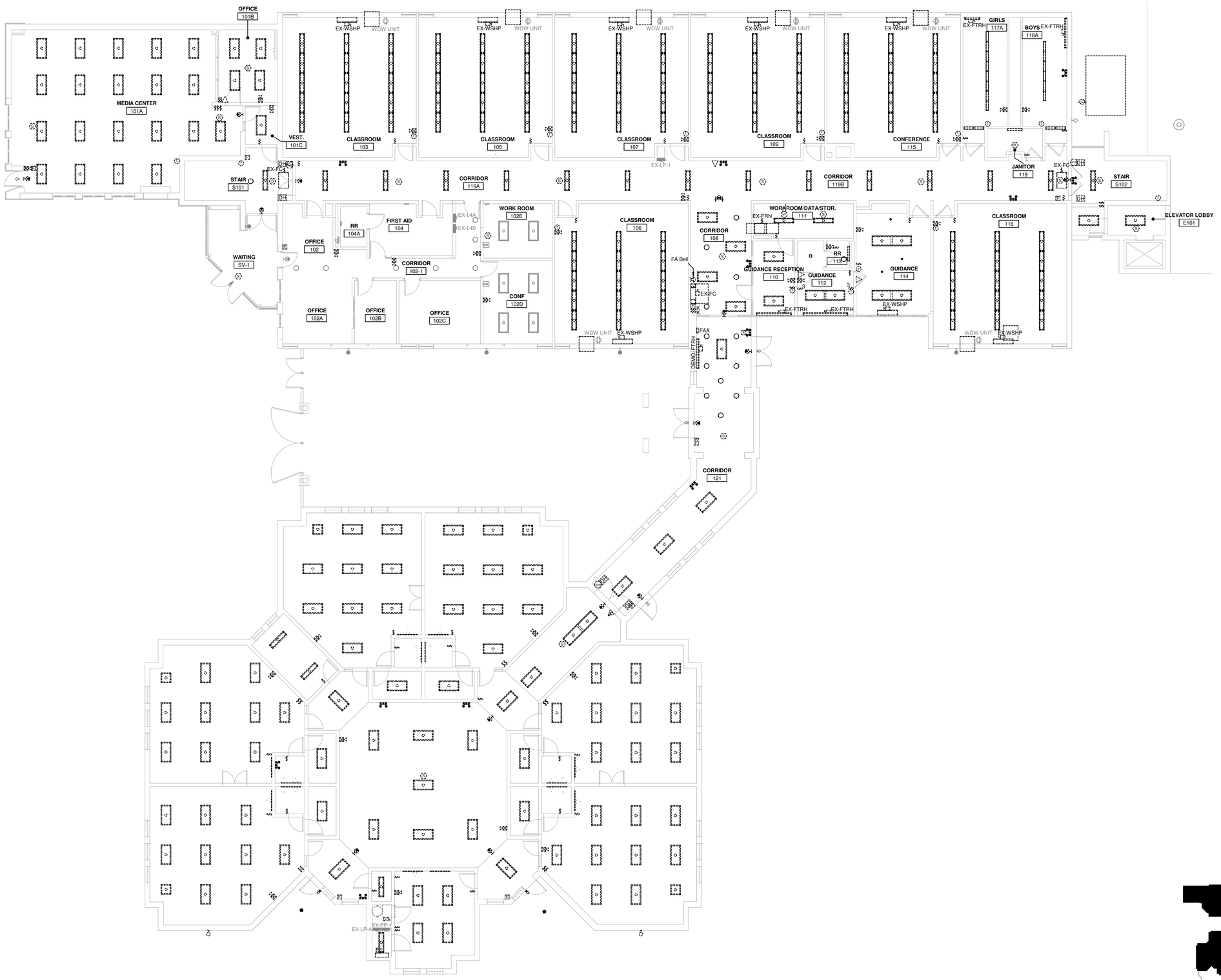

② ELECTRIC DEMOLITION PLAN - LEVEL 1 - OVERALL
1/8" = 1'-0"

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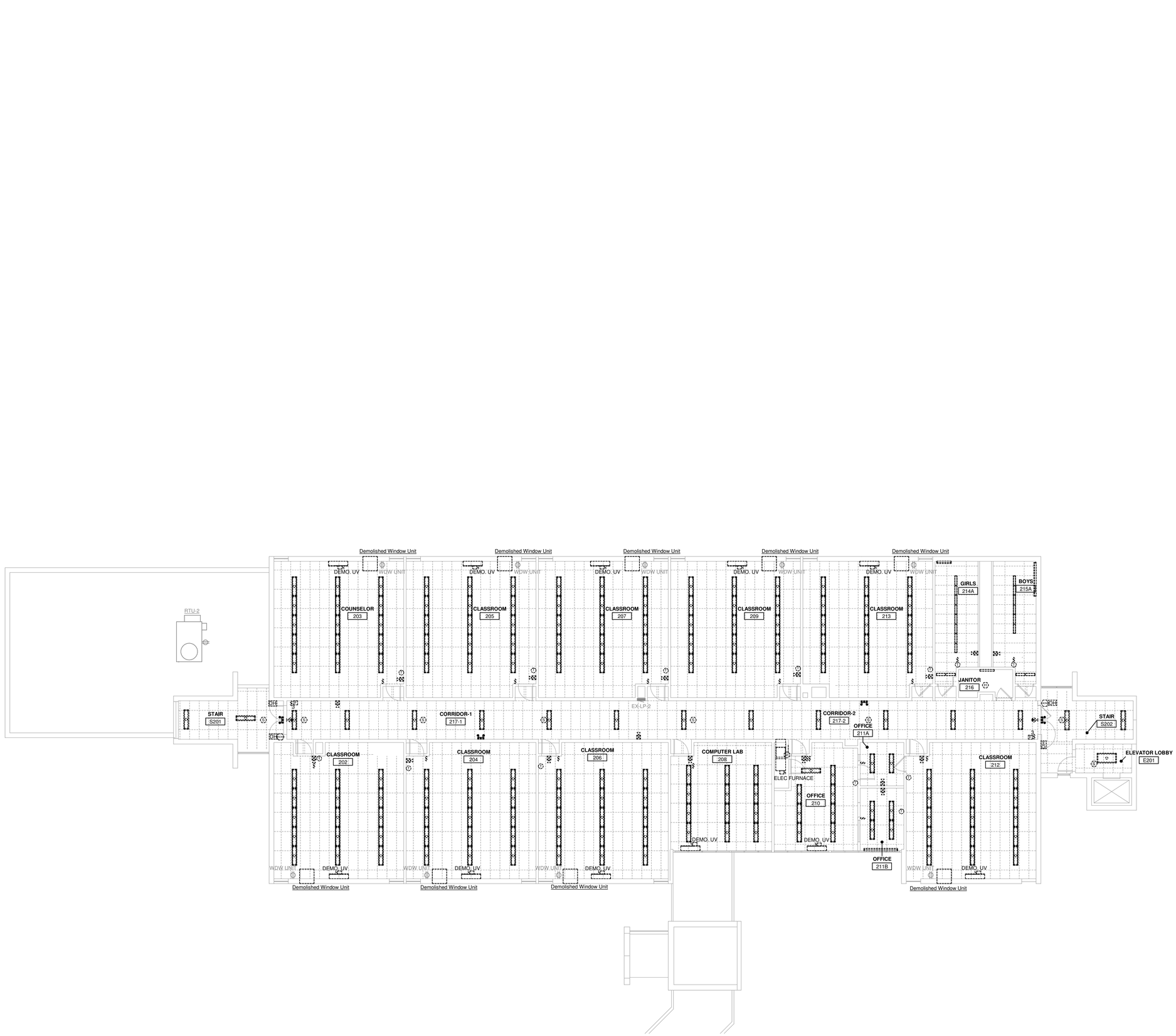

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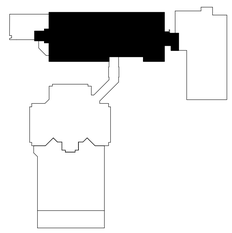

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KEYED NOTES

E9 MAINTENANCE RECEPTACLE FOR ROOF EQUIPMENT. DETERMINE EXACT LOCATION AND COUNT IN FIELD. DEMOLISH IF NECESSARY FOR REMOVAL OF MECHANICAL EQUIPMENT.

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ELECTRIC DEMOLITION ROOF PLAN
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KEYPLAN

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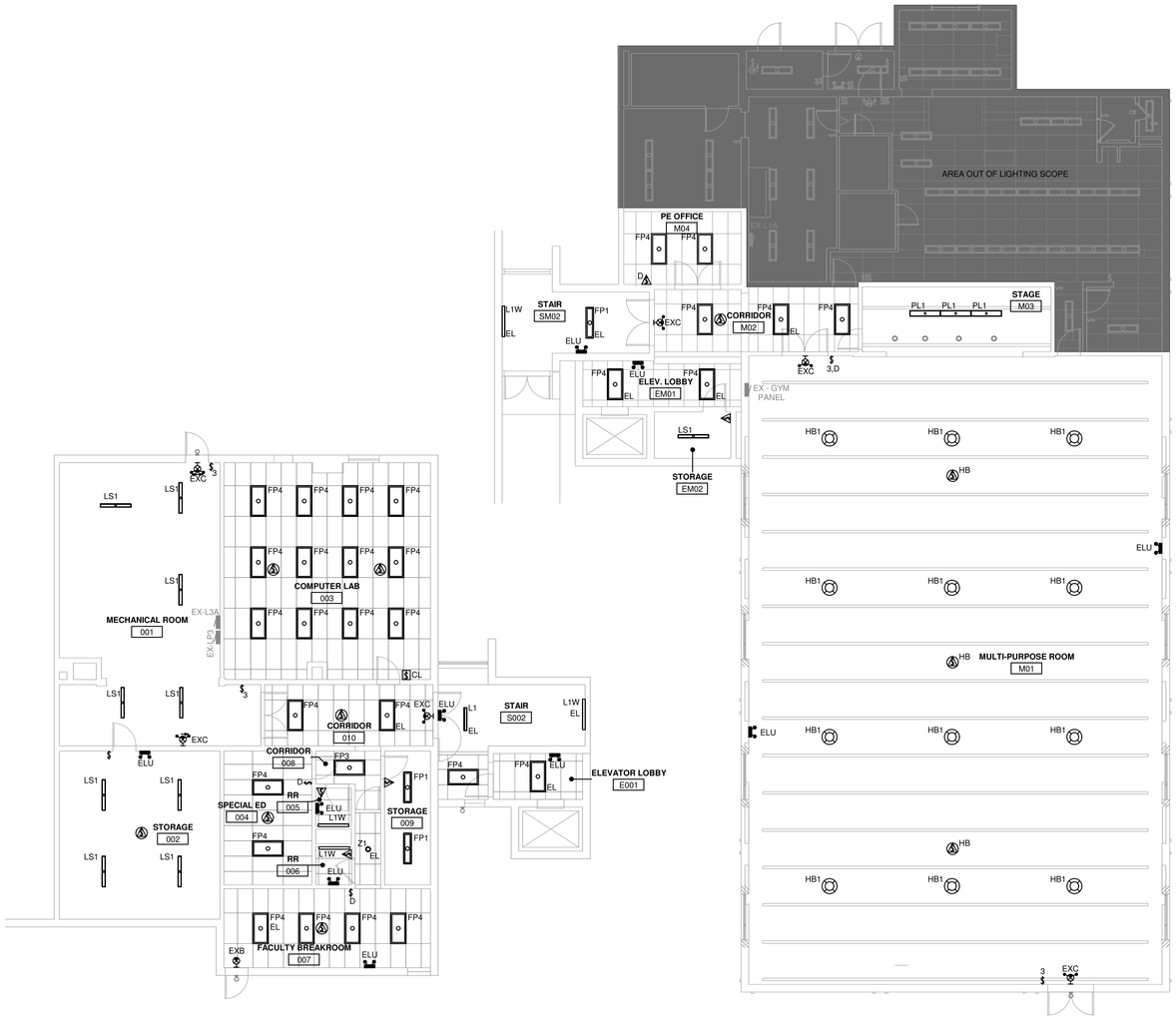
GENERAL LIGHTING PLAN NOTES

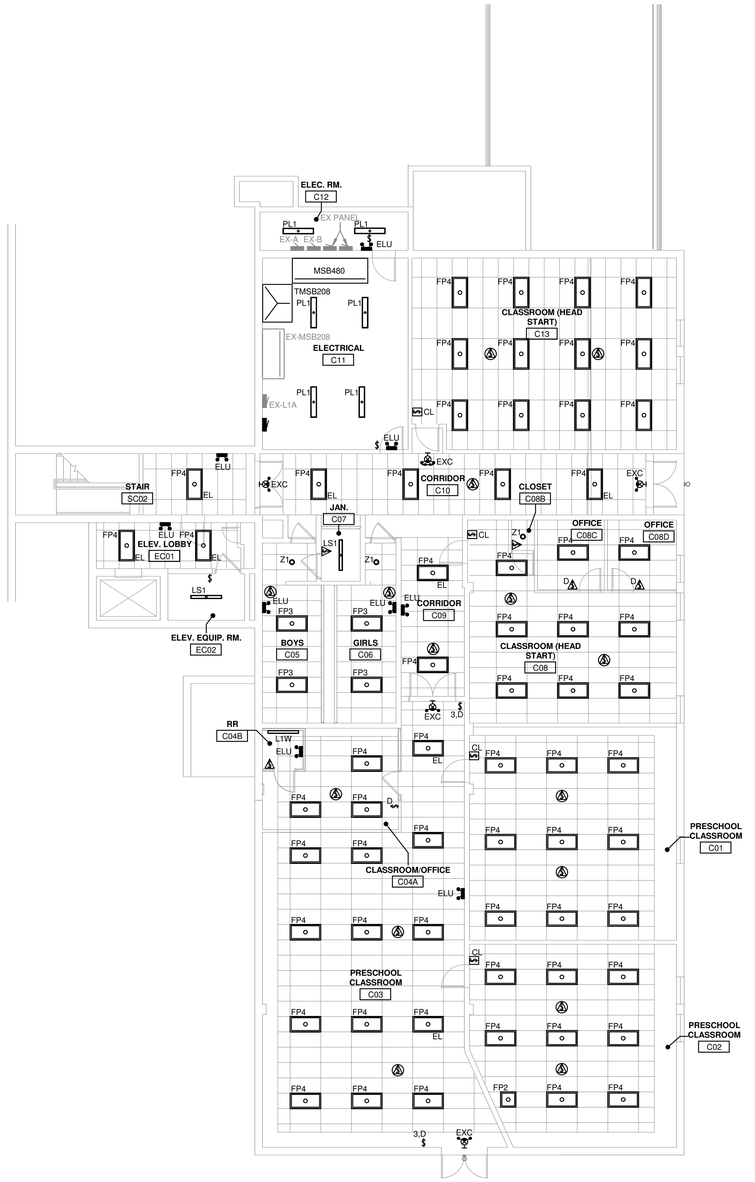
A. EXIT SIGN CONNECTIONS: CONNECT ALL EXIT SIGNAGE AHEAD OF ANY SWITCHING.
B. INDOOR EGRESS LIGHTING: CONNECT ALL INDOOR EGRESS LIGHTING, DESIGNATED "EL", AHEAD OF ANY SWITCHING. UNLESS CONTROL METHODS ARE INDICATED OTHERWISE FOR A GIVEN AREA.
C. BATTERY BACKUP DEVICES: WHERE INDICATED IN DOCUMENTS, PROVIDE UL 924 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.
D. LIGHTING BRANCH CIRCUITS: ALL NEW LIGHTING INTENDED TO REPLACE EXISTING FIXTURES. REUSE CONDUIT AND WIRING FOR NEW FIXTURES; REWORK AND EXTEND WHERE NECESSARY. REWORK EXISTING CIRCUITRY TO FUNCTION WITH NEW CONTROLS. ALL NEW LIGHTING LOADS ARE LOWER THAN DEMOLISHED.

KEYED NOTES

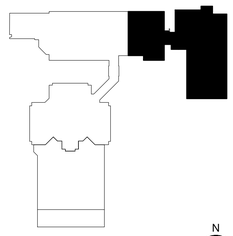


3 ELECTRIC LIGHTING PLAN - LEVEL B - OVERALL
1/8" = 1'-0"

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



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



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Misty Middleton - Superintendent

ADDENDA

SHEET TITLE
ELECTRIC LIGHTING LEVELS B, M, & C

DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
DATE 12-13-2023

E3-100
KLH PROJECT # 24599

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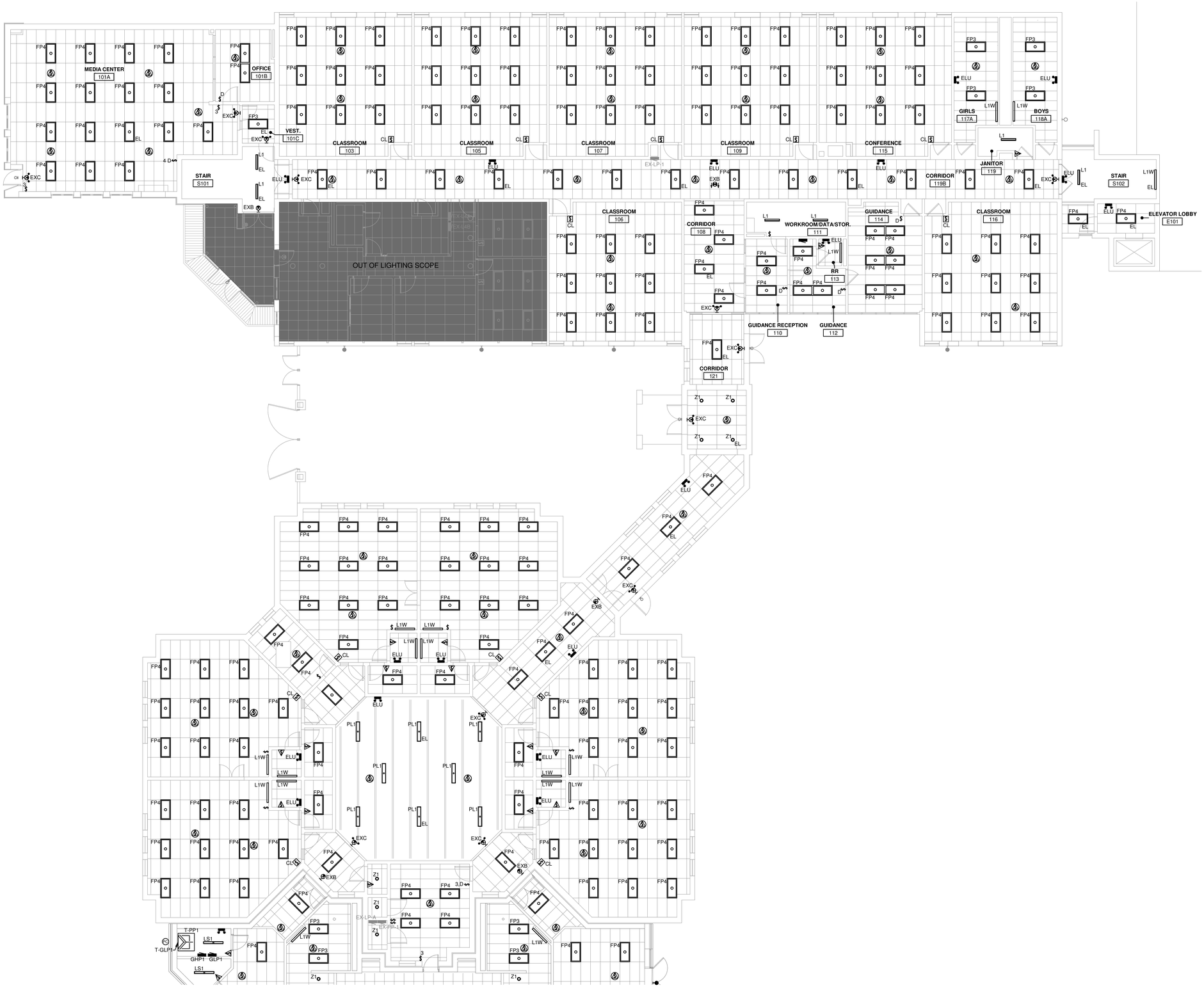
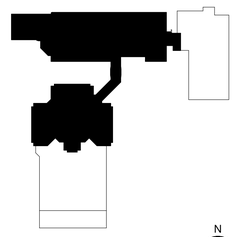


2 ELECTRIC LIGHTING PLAN - LEVEL 1 - OVERALL
1/8" = 1'-0"



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SHEET TITLE
ELECTRIC LIGHTING LEVEL 1 OVERALL
DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
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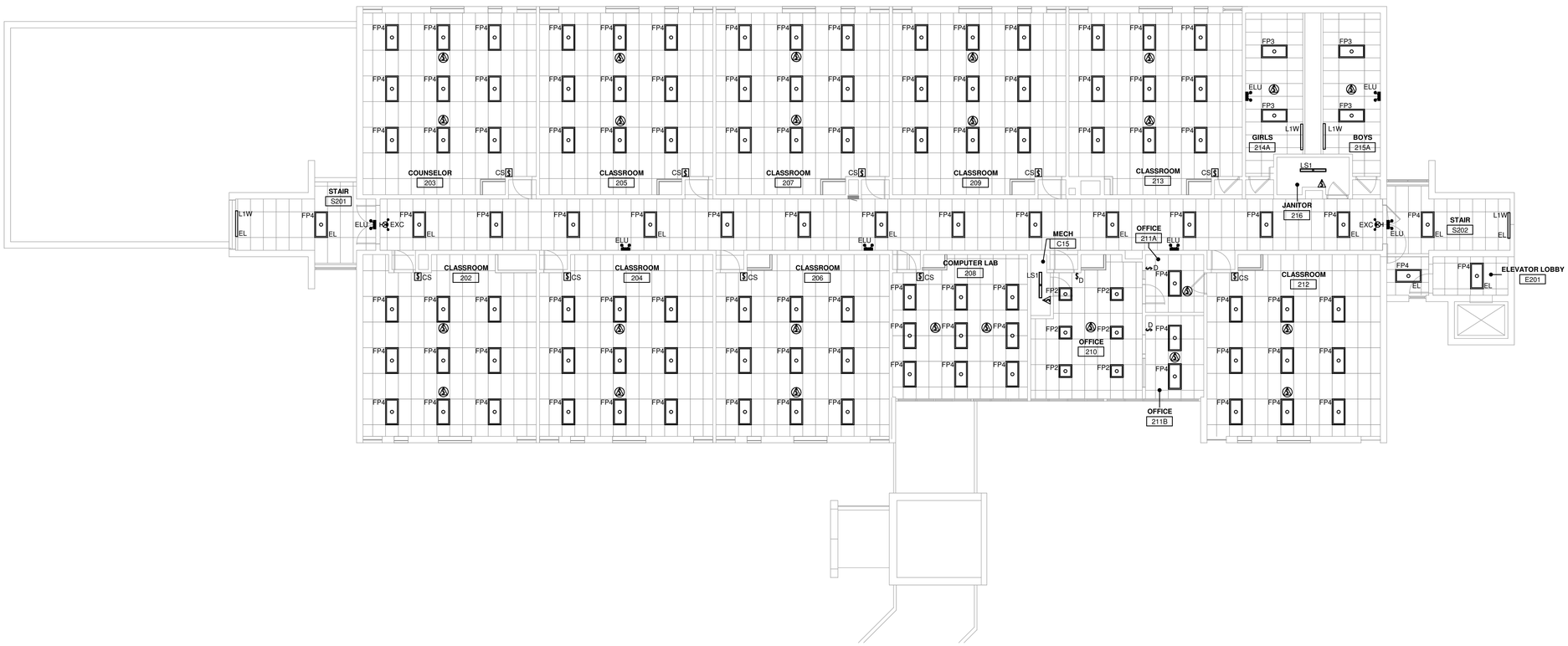

1 ELECTRIC LIGHTING PLAN - LEVEL 2 - OVERALL
1/8" = 1'-0"

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SHEET TITLE
ELECTRIC LIGHTING LEVEL 2 OVERALL

DWN: GMN CHK: DTJ

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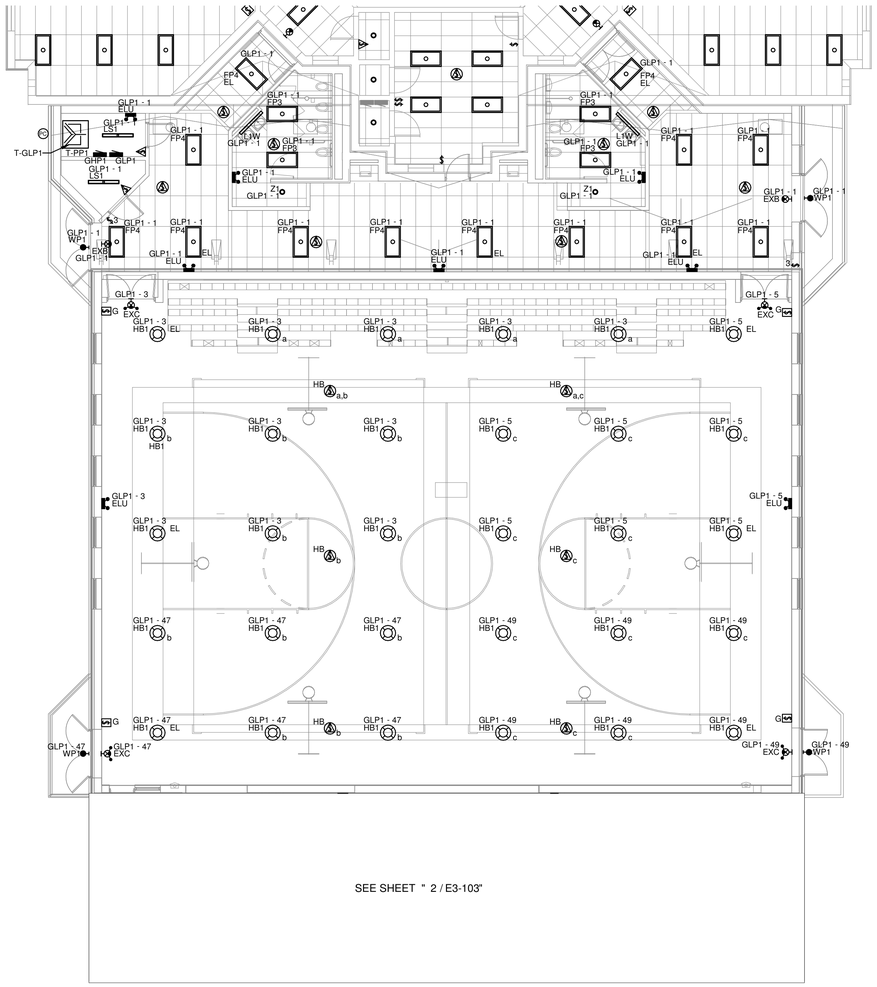
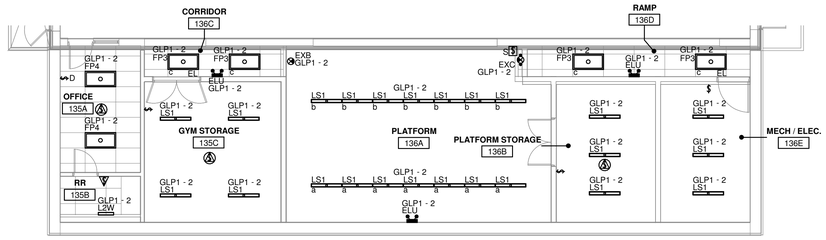


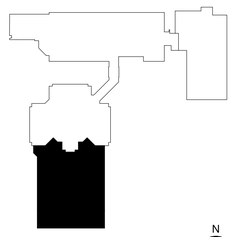
SEE SHEET " 2 / E3-103"

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



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

KEYED NOTES



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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 DUE 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
ELU	EMERGENCY LIGHTING UNIT	LITHONIA	EV	DUAL-LITE-EV, EMERGI-LITE-ELZLED	9" X 3" X 5"	WALL	THERMOPLASTIC		LED	2		3500	80	250	ELECTRONIC	1	No	REMOTE-90 MINUTE-SELF-DIAGNOSTIC	NONE	WHITE		4 VA	120 V	
EXB	EXIT SIGN - BATTERY - THERMOPLASTIC	CHLORIDE	CLX	DUAL-LITE-EVE, LITHONIA-EXRG, SURE-LITES-LPX7	13" X 2" X 9"	UNIVERSAL	THERMOPLASTIC		LED	1		3500	80	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-ECRG, SURE-LITES-APC	14" X 3" X 9"	UNIVERSAL	THERMOPLASTIC		LED	1		3500	80	0	ELECTRONIC	1	Yes	INTEGRAL-90 MINUTES-SELF-DIAGNOSTIC	NONE	WHITE HOUSING, RED LETTERS		4 VA	120 V	
FP1	FLAT PANEL	COLUMBIA LIGHTING	CFP14	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		31 VA	120 V	
FP2	FLAT PANEL	COLUMBIA LIGHTING	CFP22	LITHONIA-EPANL, METALUX-22FP	24" X 24" X 2"	RECESSED GRID	ALUMINUM	SATIN WHITE FLAT LUMINOUS ACRYLIC LENS	LED	1		3500	80	3300	ELECTRONIC	1	No	NONE	0-10V	WHITE		26 VA	120 V	
FP3	FLAT PANEL	COLUMBIA LIGHTING	CFP24	LITHONIA-EPANL, METALUX-24FP	48" X 24" X 2"	RECESSED GRID	ALUMINUM	SATIN WHITE FLAT LUMINOUS ACRYLIC LENS	LED	1		3500	80	3400	ELECTRONIC	1	No	NONE	0-10V	WHITE		30 VA	120 V	
FP4	FLAT PANEL	COLUMBIA LIGHTING	CFP24	LITHONIA-EPANL, METALUX-24FP	48" X 24" X 2"	RECESSED GRID	ALUMINUM	SATIN WHITE FLAT LUMINOUS ACRYLIC LENS	LED	1		3500	80	4100	ELECTRONIC	1	No	NONE	0-10V	WHITE		39 VA	120 V	
HB1	HIGH BAY - ROUND	ILP	RB4	LITHONIA JHBL, HOLOPHANE PETROLUX PXHW	13"DIA X 5"	SUSPENDED	STEEL	WIDE	LED	1		5000	80	24000	ELECTRONIC	1	No	NONE	0-10V	WHITE	PROVIDE LUMINAIRE SAFETY CABLE	185 VA	120 V	
L1	LINEAR	LITHONIA	BLWP4	COLUMBIA LIGHTING-MPS, WILLIAMS-SL	36" X 6" X 4"	SURFACE	ALUMINUM	CRESCENT SHAPED LINEAR FACETED LENS	LED	1		3500	80	4000	ELECTRONIC	1	No	NONE	0-10V	WHITE		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	BLWP2	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-WL4, METALUX-SNLED	48" X 5" X 4"	SURFACE	STEEL	ACRYLIC PRISMATIC DIFFUSER	LED	1		3500	80	4000	ELECTRONIC	1	No	NONE	0-10V	WHITE		36 VA	120 V	
PL1	PENDANT - LINEAR	FINELITE	S12 LED ID	AXIS LIGHTING-BEAM 2, MARK ARCHITECTURAL LIGHTING -S2LD	96" X 9" X 3"	PENDANT	ALUMINUM	MATTE WHITE DIFFUSE LENS	LED	1		3500	80	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	Yes	INTEGRAL-90 MINUTE	NONE	BLACK	DUAL DRIVERS	50 VA	120 V	
Z1	ROUND DOWNLIGHT	HALO	HC6	LITHONIA-LDN6, PRESCOLITE-LBRP-6RD	6"DIA X 4"	RECESSED	STEEL	MEDIUM BEAM	LED	1		3500	82	1000	ELECTRONIC	1	No	NONE	0-10V	SEMI-SPECULAR, CLEAR		11 VA	120 V	

5 BUTTON PRESET/DIM KEYPAD LAYOUT

ALL ON
STAGE
FRONT
BACK
ALL OFF
△ ▽

PROVIDE MANUAL DIMMING CONTROLS

STAGE CONTROL

S
SYMBOL ON DRAWINGS

ALL ON	
ZONE	LEVEL
a, b, c	100% ON

FRONT	
ZONE	LEVEL
b	100% ON
a, c	OFF

BACK	
ZONE	LEVEL
a	100% ON
b, c	OFF

MANUAL DIMMING SHALL AFFECT ONLY FIXTURES NOT LABELED 'OFF' IN CURRENT SEQUENCE.

GENERAL NOTES:

A. PROVIDE FIELD PROGRAMMING TO MAINTAIN RESPECTIVE MINIMUM FOOTCANDLE LEVELS IN EACH LIGHTING ZONE.
B. PROVIDE PROTECTIVE COVER FOR LIGHTING CONTROL SWITCHES.
C. SELECT AND LOCATE SENSORS SO THAT CONTROLLED LIGHTS AUTOMATICALLY TURN ON IMMEDIATELY UPON ENTERING THE ROOM OR SPACE.
D. 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).
E. SELECT AND LOCATE SENSORS SO THAT FULL COVERAGE FOR THE RESPECTIVE ROOM/AREA IS PROVIDED.

5 BUTTON LINKED PRESET/DIM KEYPAD LAYOUT

ALL ON
COURT
EAST
WEST
ALL OFF
△ ▽

PROVIDE MANUAL DIMMING CONTROLS

GYM CONTROL

MANUAL DIMMING SHALL AFFECT ONLY FIXTURES NOT LABELED 'OFF' IN CURRENT SEQUENCE.

G
SYMBOL ON DRAWINGS

ALL ON	
ZONE	LEVEL
a, b, c	100% ON

EAST	
ZONE	LEVEL
c	100% ON
a, b	OFF

WEST	
ZONE	LEVEL
b	100% ON
a, c	OFF

COURT	
ZONE	LEVEL
b	100% ON
a, c	OFF

4 BUTTON PRESET/DIM KEYPAD LAYOUT

ALL ON
A/V
BOARD
ALL OFF
△ ▽

PROVIDE MANUAL DIMMING CONTROLS

CLASSROOM CONTROL

CL
SYMBOL ON DRAWINGS

ALL ON	
ZONE	LEVEL
a, b	100% ON

A/V	
ZONE	LEVEL
b	50% ON
a	OFF

BOARD	
ZONE	LEVEL
a	100% ON
b	OFF

ZONE 'b' SHALL BE THE ROW OF LUMINAIRES CLOSEST TO THE TEACHING AREA. ZONE 'a' SHALL BE THE REST OF THE LUMINAIRES IN THE SPACE.

MANUAL DIMMING SHALL AFFECT ONLY FIXTURES NOT LABELED 'OFF' IN CURRENT SEQUENCE.

265100.00-10 - LOCAL LIGHTING CONTROL DETAILS

SCALE: NONE

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DWN: GMN CHK: DTJ

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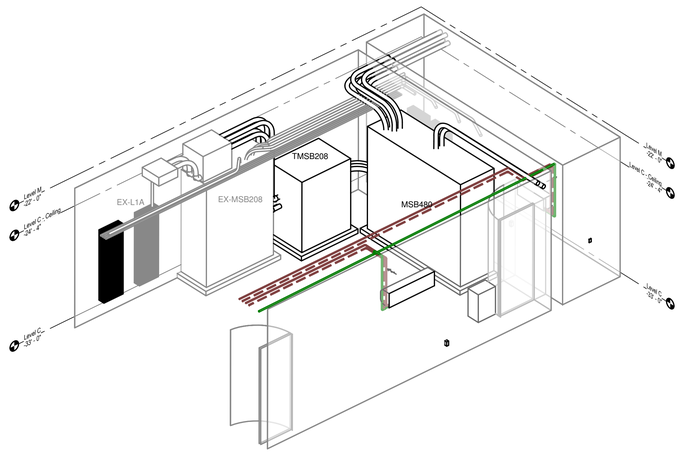


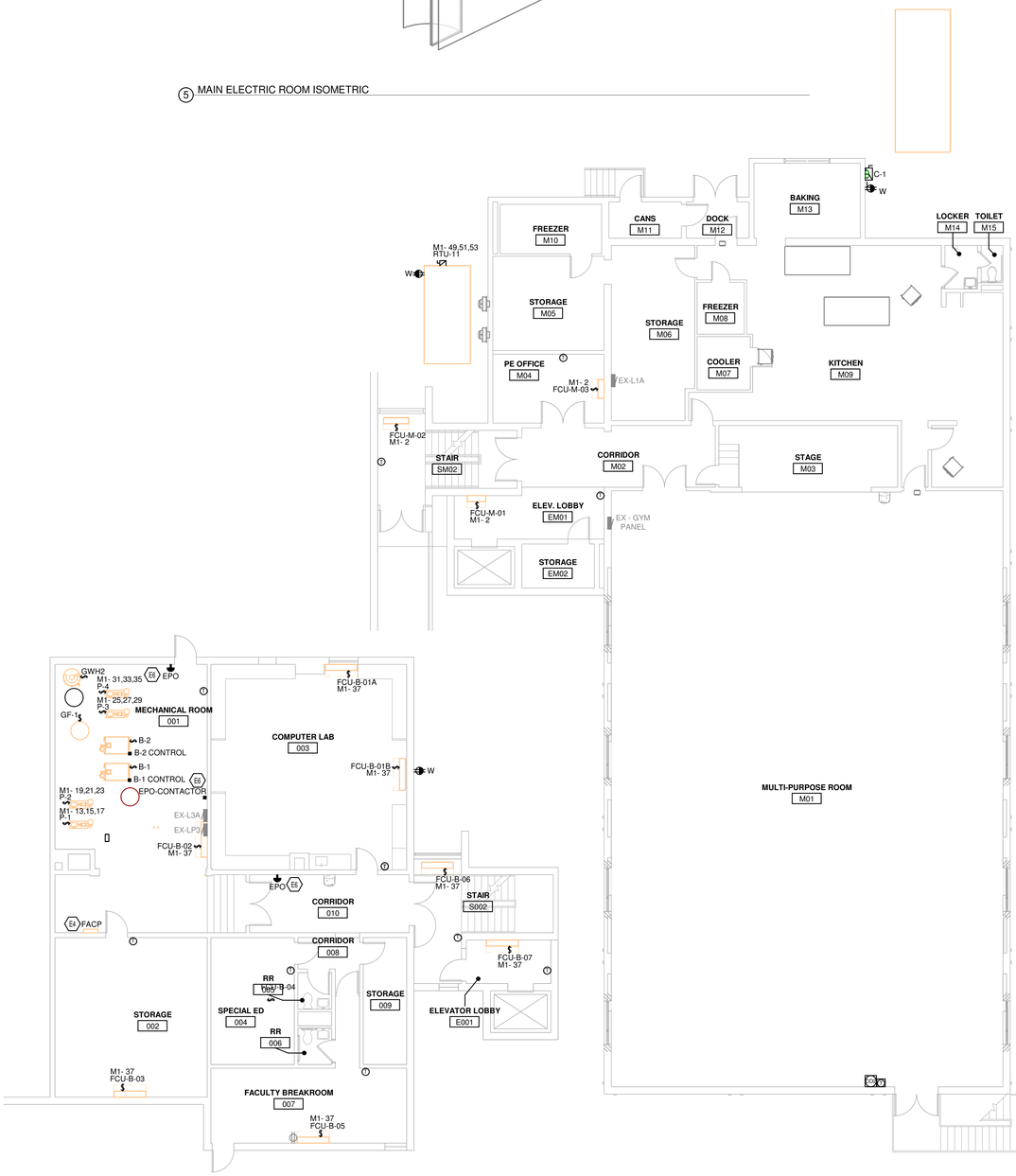
5 MAIN ELECTRIC ROOM ISOMETRIC

GENERAL POWER PLAN NOTES

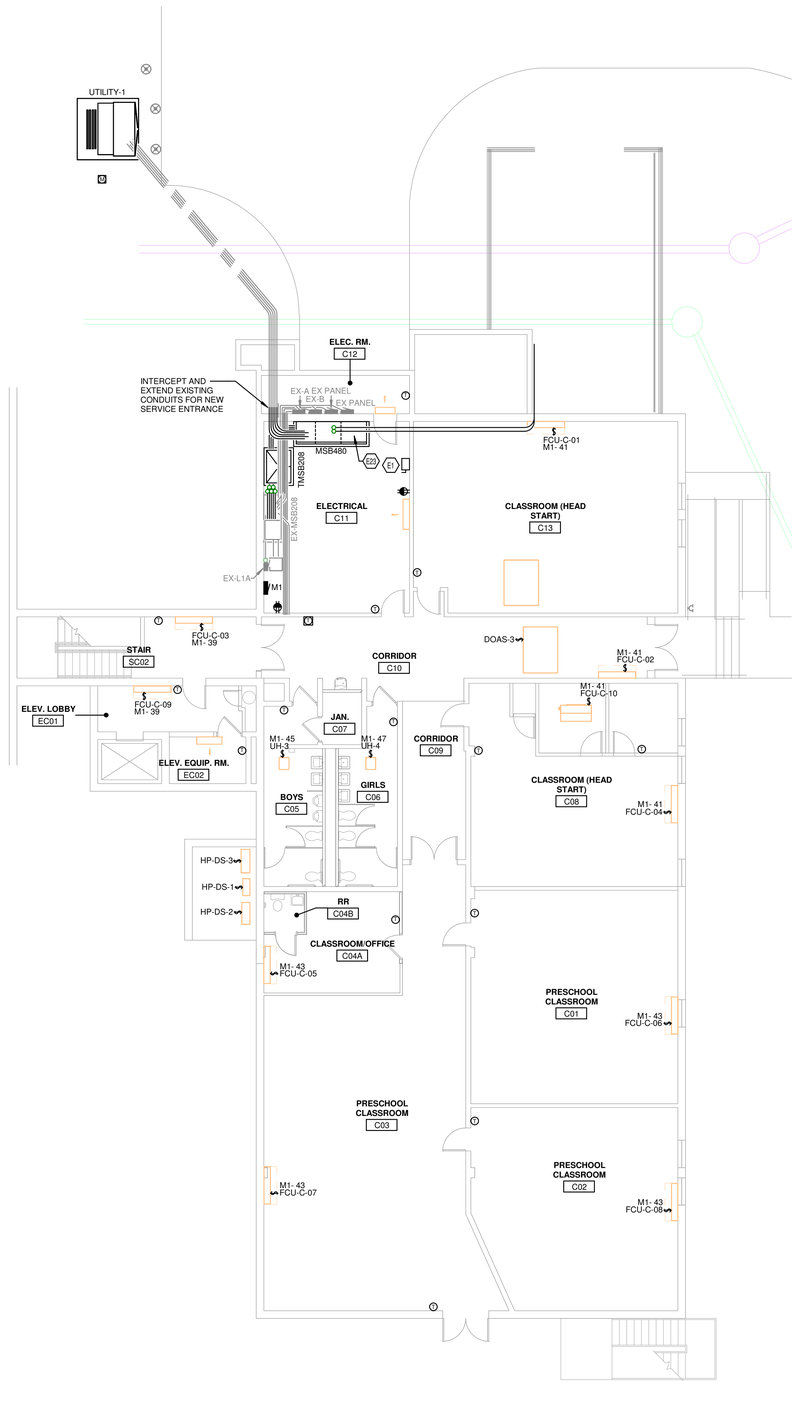
A. EQUIPMENT COORDINATION SCHEDULES: REFER TO EQUIPMENT COORDINATION SCHEDULES FOR REQUIREMENTS ASSOCIATED WITH EQUIPMENT CIRCUITING, CONNECTIONS, ANCILLARY DEVICES AND EQUIPMENT, ETC. COORDINATE LOCATIONS AND REQUIREMENTS FOR ALL EQUIPMENT WITH RESPECTIVE EQUIPMENT SUPPLIERS AND INSTALLERS PRIOR TO 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. PROVIDE NEW CONDUIT AND CONDUCTORS TO EXTEND AS NEEDED.
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).
E23	PROVIDE CONCRETE PAD AND BUSSING EXTENSION FOR FUTURE DISTRIBUTION SYSTEM SECTION.



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



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

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

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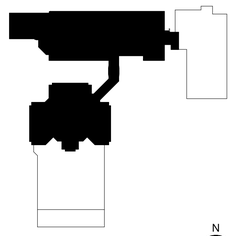
KEYED NOTES

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

KEYPLAN



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ADDENDA

SHEET TITLE

ELECTRIC
POWER LEVEL
1 OVERALL

DWN: GMN CHK: DTJ

BG #
24-059

REH #
372-922

DATE
12-13-2023

E4-101

KLH PROJECT #
24599

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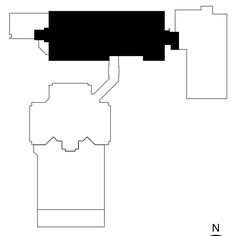
1 ELECTRIC POWER PLAN - LEVEL 2 - OVERALL
1/8" = 1'-0"



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ADDENDA

SHEET TITLE
ELECTRIC POWER LEVEL 2 OVERALL
DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
DATE 12-13-2023

E4-102
KLH PROJECT # 24599

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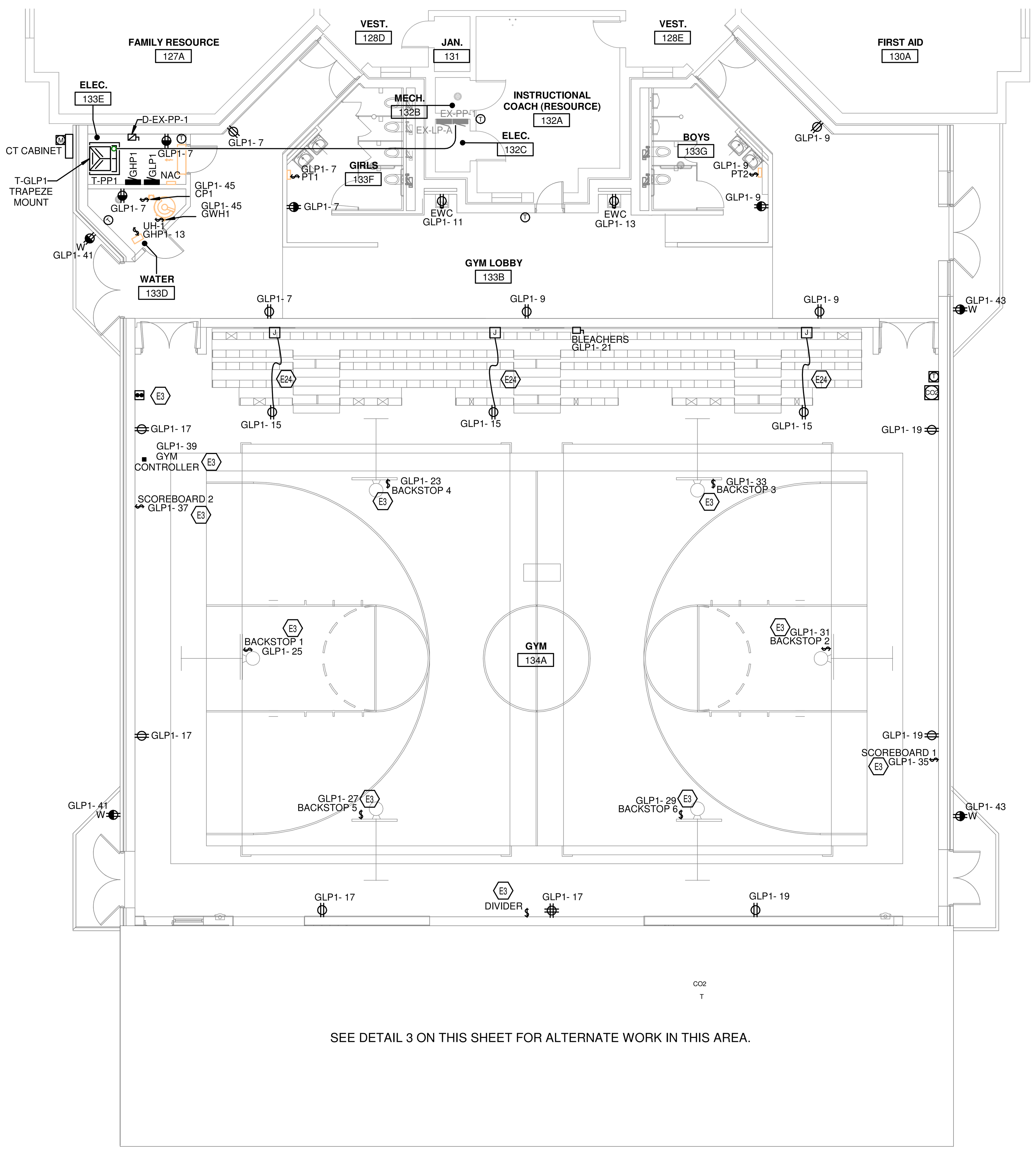
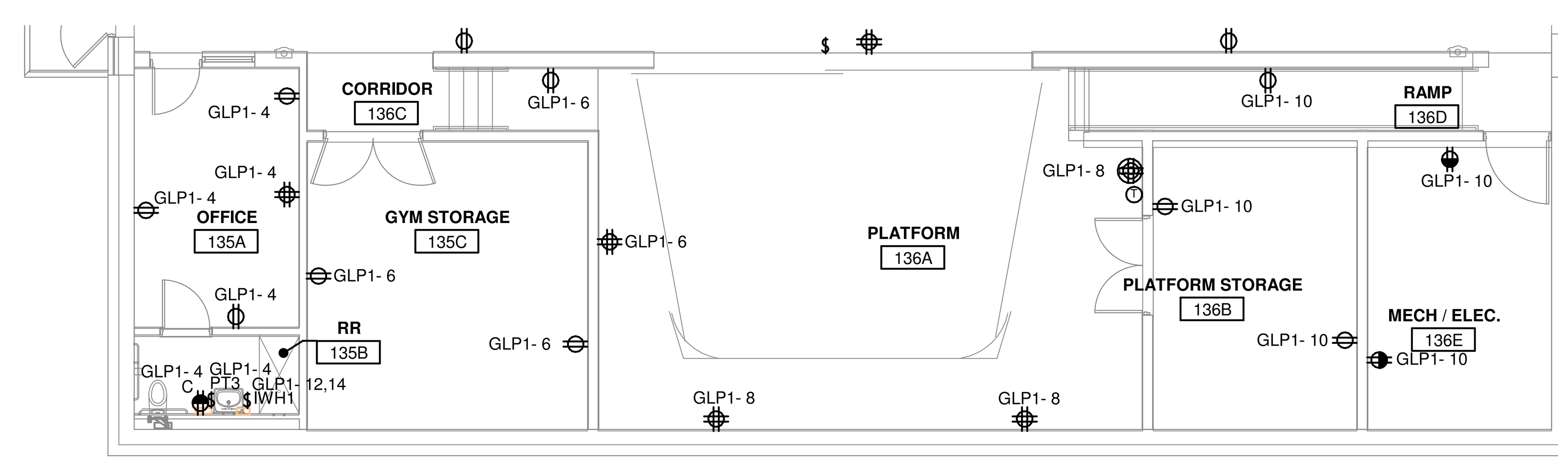
KEYED NOTES

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 (EP501).

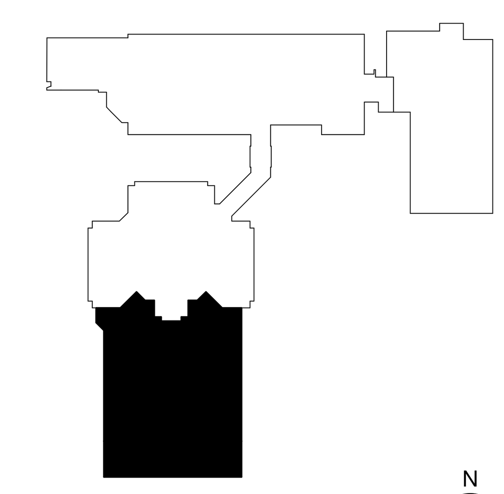
E24 REFER TO BLEACHER FESTOON CABLING DETAIL FOR INSTALLATION INFORMATION REGARDING BLEACHER RECEPTACLE AND RELATED CONTROL/COMMUNICATION CABLING. REFER TO DETAILS 260590.00-06 (EP501).



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



① ELECTRIC POWER PLAN - ALTERNATE
1/8" = 1'-0"



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Misty Middleton - Superintendent

ADDENDA

SHEET TITLE

ELECTRIC POWER GYM PLAN

DWN: GMN CHK: DTJ

BG #	24-059
REH #	372-922
DATE	12-13-2023

E4-103
KLH PROJECT # 24599

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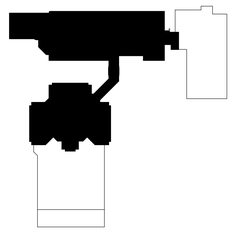
KEYED NOTES

1 ELECTRIC POWER PLAN - ROOF EXISTING BUILDING
1/8" = 1'-0"



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ADDENDA

SHEET TITLE
ELECTRIC POWER ROOF PLAN
DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
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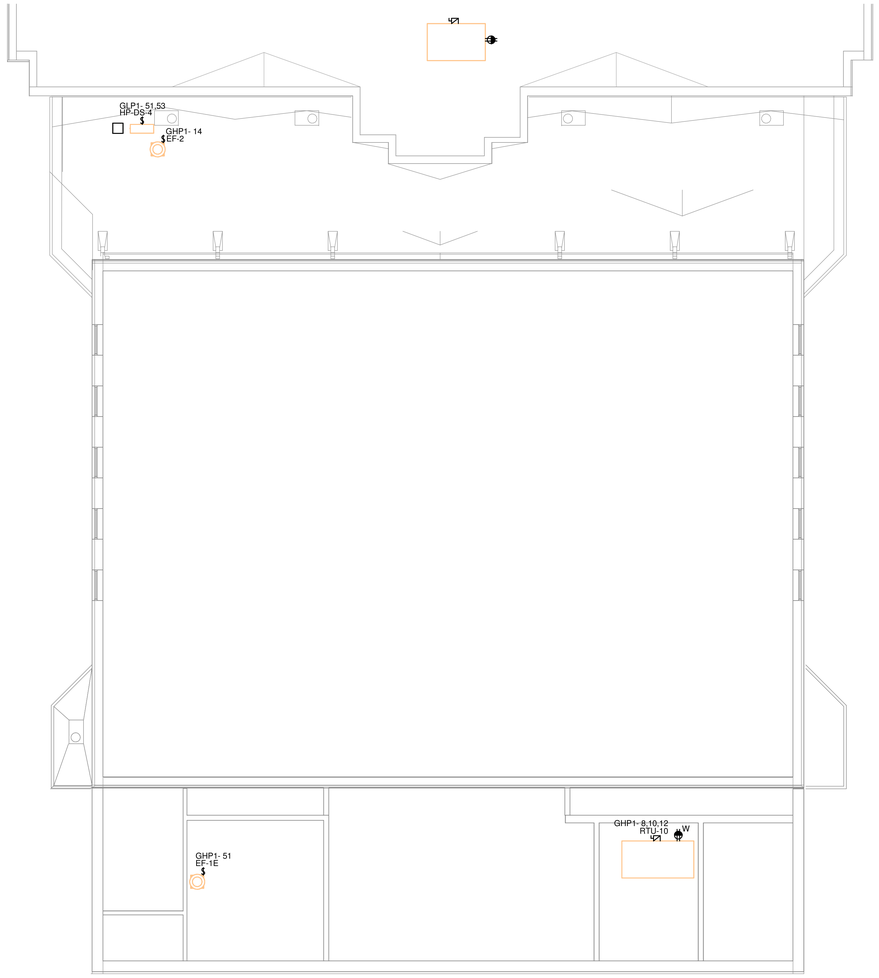
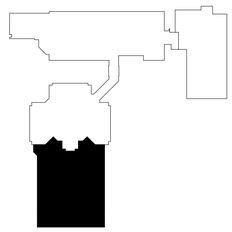
KEYED NOTES



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



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ELECTRIC POWER GYM ROOF PLAN
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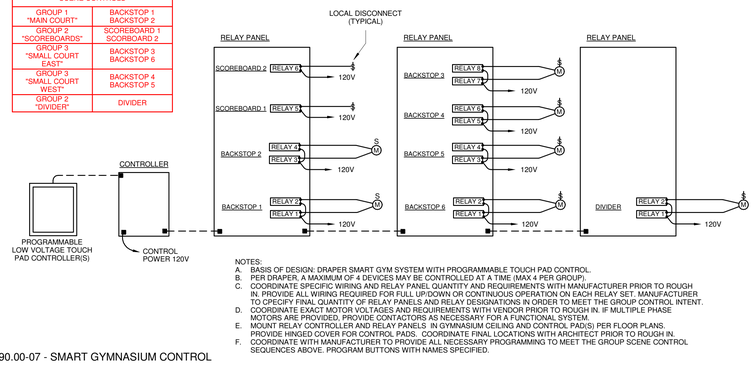
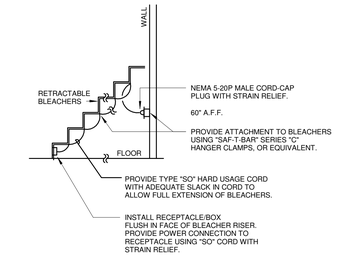
PROGRAMMED GROUP SCENE CONTROLS	
GROUP 1 "MAIN COURT"	BACKSTOP 1 BACKSTOP 2
GROUP 2 "SCOREBOARDS"	SCOREBOARD 1 SCORBOARD 2
GROUP 3 "SMALL COURT EAST"	BACKSTOP 3 BACKSTOP 6
GROUP 3 "SMALL COURT WEST"	BACKSTOP 4 BACKSTOP 5
GROUP 2 "DIVIDER"	DIVIDER



NOTES:
A. BASIS OF DESIGN: DRAPER SMART GYM SYSTEM WITH PROGRAMMABLE TOUCH PAD CONTROL.
B. PER DRAPER, A MAXIMUM OF 4 DEVICES MAY BE CONTROLLED AT A TIME (MAX 4 PER GROUP).
C. COORDINATE SPECIFIC WIRING AND RELAY PANEL QUANTITY AND REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH IN. PROVIDE ALL WIRING REQUIRED FOR FULL UP/DOWN OR CONTINUOUS OPERATION ON EACH RELAY SET. MANUFACTURER TO CPECIFY FINAL QUANTITY OF RELAY PANELS AND RELAY DESIGNATIONS IN ORDER TO MEET THE GROUP CONTROL INTENT.
D. COORDINATE EXACT MOTOR VOLTAGES AND REQUIREMENTS WITH VENDOR PRIOR TO ROUGH IN. IF MULTIPLE PHASE MOTORS ARE PROVIDED, PROVIDE CONTACTORS AS NECESSARY FOR A FUNCTIONAL SYSTEM.
E. MOUNT RELAY CONTROLLER AND RELAY PANELS IN GYMNASIUM CEILING AND CONTROL PAD(S) PER FLOOR PLANS. PROVIDE HINGED COVER FOR CONTROL PADS. COORDINATE FINAL LOCATIONS WITH ARCHITECT PRIOR TO ROUGH IN.
F. COORDINATE WITH MANUFACTURER TO PROVIDE ALL NECESSARY PROGRAMMING TO MEET THE GROUP SCENE CONTROL SEQUENCES ABOVE. PROGRAM BUTTONS WITH NAMES SPECIFIED.

260590.00-07 - SMART GYMNASIUM CONTROL

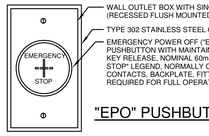
SCALE: NONE



THIS DETAIL IS SCHEMATICALLY TYPICAL FOR SCOREBOARD CONTROL WIRING AND P.A./MICROPHONE WIRING.

260590.00-06 - BLEACHER FESTOON CABLING DETAIL

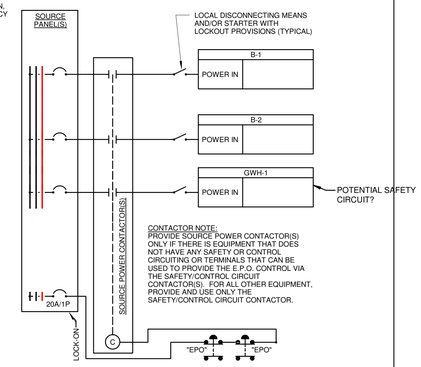
SCALE: NONE



"EPO" PUSHBUTTON DETAIL

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 MULTIPLEVOLTAGES 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.



CONTACTOR NOTE:
PROVIDE SOURCE POWER CONTACTOR(S) ONLY IF THERE IS EQUIPMENT THAT DOES NOT HAVE ANY SAFETY OR CONTROL CIRCUITING OR TERMINALS THAT CAN BE USED TO PROVIDE THE E.P.O. CONTROL VIA THE SAFETY/CONTROL CIRCUIT CONTACTOR(S). FOR ALL OTHER EQUIPMENT, PROVIDE AND USE ONLY THE SAFETY/CONTROL CIRCUIT CONTACTOR.

260580.00-07 - BOILER EPO

SCALE: NONE

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ADDENDA

SHEET TITLE
ELECTRIC POWER - DETAILS
DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
DATE 12-13-2023

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ELECTRIC PANELBOARD AND SWITCHBOARD 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

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-MSB208	Existing	C11	ELECTRICAL	TMSB208	NORMAL	Switchboard	208	3	4	151600 VA	421 A	1600	1600	THERMAL MAGNETIC	COPPER	PAD	(5) SETS OF (4) #400 KCMIL CU, (1) #1/0 AWG CU GND. IN 3" CONDUIT EACH 75C RATED		Yes			NEMA 1	18259	EXISTING	EXISTING GE SPECTRA SERIES SWITCHBOARD
EX-PP-1	Existing	132C	ELEC.	D-EX-PP-1	NORMAL	Branch Panelboard	208	3	4	37400 VA	104 A	400	400	THERMAL MAGNETIC	COPPER	SURFACE	(2) SETS OF (4) #250 KCMIL AL, (1) #1 AWG AL GND. IN 3" CONDUIT EACH 75C RATED					NEMA 1	7908	EXISTING	EXISTING SQUARE D NQOD
GHP1	New Construction	133E	ELEC.	CT CABINET	NORMAL	Branch Panelboard	480	3	4	134486 VA	162 A	400	400	100% ELECTRONIC LSIG ERM WITH DEMAND METERING	COPPER OR ALUMINUM	SURFACE	(2) SETS OF (4) #250 KCMIL AL IN 2-1/2" CONDUIT EACH 75C RATED		Yes	Yes	Yes	NEMA 1	16171	25000	
GLP1	New Construction	133E	ELEC.	T-GLP1	NORMAL	Branch Panelboard	208	3	4	37798 VA	105 A	250	250	THERMAL MAGNETIC	COPPER OR ALUMINUM	SURFACE	(4) #350 KCMIL AL, (1) #1/0 AWG AL GND. IN 3" CONDUIT 75C RATED	FEED-THROUGH	Yes			NEMA 1	6063	10000	
M1	New Construction	C11	ELECTRICAL	MSB480	NORMAL	Branch Panelboard	480	3	4	138768 VA	167 A	250	250	MAIN LUGS ONLY	COPPER OR ALUMINUM	SURFACE	(4) #350 KCMIL AL, (1) #2 AWG AL GND. IN 3" CONDUIT 75C RATED	FEED-THROUGH				NEMA 1	38907	42000	
M2	New Construction	112	GUIDANCE	M1		Branch Panelboard	480	3	4	29856 VA	36 A	250	250	MAIN LUGS ONLY		SURFACE	(4) #350 KCMIL AL, (1) #2 AWG AL GND. IN 3" CONDUIT 75C RATED						17285	25000	
MSB480	New Construction	C11	ELECTRICAL	UTILITY-1	NORMAL	Switchboard	480	3	4	533076 VA	641 A	2000	2000	100% ELECTRONIC LSIG ERM WITH DEMAND METERING	COPPER OR ALUMINUM	PAD	(5) SETS OF (4) #600 KCMIL CU IN 4" CONDUIT EACH 75C RATED		Yes	Yes	Yes	NEMA 1	55611	65000	

ELECTRIC ENCLOSED SWITCH AND CIRCUIT BREAKER SCHEDULE

NOTE: THIS SCHEDULE IS FOR SINGLE-LINE DIAGRAM ENCLOSED SWITCHES AND CIRCUITS 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)	OCP 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	500	500	FUSED	(2) SETS OF (4) #350 KCMIL AL, (1) #1/0 AWG AL GND. IN 3" CONDUIT EACH 75C RATED			NEMA 3R	41345	50000	
D-EX-PP-1	New Construction	133E	ELEC.	T-PP1	NORMAL	Fused Switch	208	3	4	37400 VA	104 A	400	400	FUSED	(2) SETS OF (4) #250 KCMIL AL, (1) #2 AWG AL GND. IN 3" CONDUIT EACH 75C RATED			NEMA 1	8859	22000	

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:
* - 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 GROUNDED ("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
UTILITY-1								
-- MSB480	UTILITY-1	C-U2100-4C	(5) SETS OF (4) #600 KCMIL CU IN 4" CONDUIT EACH 75C RATED			641 A	0.082	
---- C-1	MSB480	500-4A	(2) SETS OF (4) #350 KCMIL AL, (1) #1/0 AWG AL GND. IN 3" CONDUIT EACH 75C RATED			302 A	0.311	
---- M1	MSB480	250-4A	(4) #350 KCMIL AL, (1) #2 AWG AL GND. IN 3" CONDUIT 75C RATED			167 A	0.091	
------ M2	M1	250-4A	(4) #350 KCMIL AL, (1) #2 AWG AL GND. IN 3" CONDUIT 75C RATED			36 A	0.091	
---- TMSB208	MSB480	855-4C	(3) SETS OF (4) #300 KCMIL CU, (1) #1/0 AWG CU GND. IN 3" CONDUIT EACH 75C RATED			182 A	0.1	
------ EX-MSB208	TMSB208	T1675-4C	(5) SETS OF (4) #400 KCMIL CU, (1) #1/0 AWG CU GND. IN 3" CONDUIT EACH 75C RATED			421 A	0.126	EXISTING GE SPECTRA SERIES SWITCHBOARD
UTILITY-2								
-- CT CABINET	UTILITY-2	U410-4A	(2) SETS OF (4) #250 KCMIL AL IN 2-1/2" CONDUIT EACH 75C RATED			162 A	0.125	
---- GHP1	CT CABINET	U410-4A	(2) SETS OF (4) #250 KCMIL AL IN 2-1/2" CONDUIT EACH 75C RATED			162 A	0.141	
------ T-GLP1	GHP1	135-3A	(3) #2/0 AWG AL, (1) #4 AWG AL GND. IN 2" CONDUIT 75C RATED			45 A	0.163	TRAPEZE MOUNT
-------- GLP1	T-GLP1	T250-4A	(4) #350 KCMIL AL, (1) #1/0 AWG AL GND. IN 3" CONDUIT 75C RATED			105 A	0.226	
------ T-PP1	GHP1	180-4A	(4) #4/0 AWG AL, (1) #4 AWG AL GND. IN 2-1/2" CONDUIT 75C RATED			45 A	0.163	
-------- D-EX-PP-1	T-PP1	T410-4A	(2) SETS OF (4) #250 KCMIL AL, (1) #2 AWG AL GND. IN 3" CONDUIT EACH 75C RATED			104 A	0.213	
---------- EX-PP-1	D-EX-PP-1	410-4A	(2) SETS OF (4) #250 KCMIL AL, (1) #1 AWG AL GND. IN 3" CONDUIT EACH 75C RATED			104 A	0.386	EXISTING SQUARE D NQOD

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	133E	ELEC.	GHP1	Dry Type Transformers	75.0 kVA	37.8 kVA	480 V	3	208	4	COPPER OR ALUMINUM	NEMA 1		OVERHEAD	TRAPEZE MOUNT
T-PP1	New Construction	133E	ELEC.	GHP1	Dry Type Transformers	112.5 kVA	37.4 kVA	480 V	4	208	4	COPPER OR ALUMINUM	NEMA 1		PAD	
TMSB208	New Construction	C11	ELECTRICAL	MSB480	Dry Type Transformers	500.0 kVA	151.6 kVA	480 V	4	208	4	COPPER OR ALUMINUM	NEMA 1		PAD	

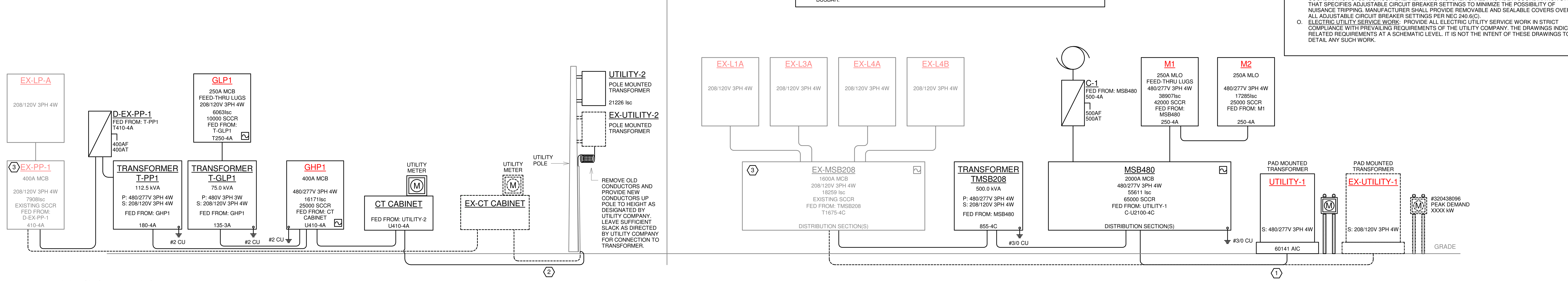
GENERAL ELECTRICAL POWER DISTRIBUTION NOTES

A. PARALLEL CONDUCTOR SETS: CUT PARALLEL SERVICE/FEEDER CONDUCTORS TO EXACTLY THE SAME LENGTHS AND USE CONDUCTORS FROM THE SAME FACTORY RUN. TORQUE ALL CONNECTIONS FOR PARALLEL SERVICE/FEEDER CONDUCTORS TO IDENTICAL VALUES.
B. OVERCURRENT PROTECTION RATINGS: UNLESS INDICATED OTHERWISE, PROVIDE FULLY-RATED OR SERIES-RATED OVERCURRENT PROTECTION (OCP) AS REQUIRED TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF NFPA 70. PROVIDE EQUIPMENT AND OCP RATED TO MEET OR EXCEED THE AVAILABLE SERIES-RATED FAULT CURRENT AT THE RESPECTIVE NODE IN THE POWER DISTRIBUTION SYSTEM. SERIES-RATED BREAKERS/SYSTEMS ARE NOT PERMITTED WHERE PROHIBITED BY PREVAILING CODES AND STANDARDS, INCLUDING APPLICATIONS INVOLVING MOTOR CONTRIBUTION AS ADDRESSED IN ARTICLE 240.86(C) OF NFPA 70. FURNISH ELECTRONIC COPIES OF THE ELECTRICAL DOCUMENTS TO THE MANUFACTURER'S REPRESENTATIVE AND/OR EQUIPMENT SUPPLIER SO THAT PROPERLY RATED AND BRACED EQUIPMENT IS PROVIDED UNDER BASE BID.
C. GROUNDING ELECTRODE CONDUCTOR SYSTEM: PROVIDE GROUNDING ELECTRODE CONDUCTOR SYSTEM IN STRICT COMPLIANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70), INCLUDING ARTICLE 250 AND TABLE 250.66. THESE CONDUCTORS MAY OR MAY NOT BE INDICATED ON SINGLE-LINE DIAGRAMS, BUT SHALL BE PROVIDED UNDER BASE BID NEVERTHELESS.
D. DERIVED SYSTEM GROUNDING ELECTRODES: REFER TO SINGLE LINE DIAGRAM FOR DERIVED SYSTEM GROUNDING ELECTRODE CONDUCTOR SIZES. CONNECT TO BUILDING OR STRUCTURE GROUNDING ELECTRODE SYSTEM.
E. FLUSH MOUNTED EQUIPMENT: PROVIDE FLUSH MOUNTED POWER DISTRIBUTION AND RELATED EQUIPMENT FOR APPLICATIONS IN FINISHED AREAS AND COORDINATE THESE LOCATIONS AND INSTALLATIONS WITH ARCHITECT, OWNER AND AFFECTED TRADES. ELSEWHERE PROVIDE SURFACE MOUNTED EQUIPMENT UNLESS FLUSH MOUNTED EQUIPMENT IS SHOWN ON DRAWINGS OR UNLESS NEEDED TO ACCOMMODATE UNUSUAL CONDITIONS.
F. POWER DISTRIBUTION EQUIPMENT LABELS: IN ADDITION TO LABELS REQUIRED WITHIN THE SPECIFICATIONS, INCLUDE CORRESPONDING MAXIMUM AIC (AVAILABLE INRUSH CURRENT) AND SHORT-CIRCUIT CURRENT RATING (SCCR) FOR EACH PIECE OF POWER DISTRIBUTION EQUIPMENT, ALONG WITH ARC FLASH LABELS COMPLIANT WITH ARTICLE 110.16 OF NFPA 70. ALSO INCLUDE CONDUCTOR COLOR CODING FOR THE BUILDING AND PHASE ROTATION AS APPLICABLE.
G. CONDUCTOR TERMINATIONS: IN CASES WHERE CONDUCTOR SIZES ARE TOO LARGE TO FIT INTO LUGS/TERMINALS, PROVIDE APPROPRIATE FACTORY LUG KITS FOR AFFECTED EQUIPMENT IF AVAILABLE. ELSEWHERE, PROVIDE INSULATED BUTT-SPLICES OR EQUIVALENT METHOD, WITH TAILS SIZED TO FIT LUGS/TERMINALS. PROVIDE SPLICES IN SEPARATE BOXES IF REQUIRED BASED ON FIELD CONDITIONS, BOX SIZE LIMITATIONS, ETC. CONCEAL BOXES IN ACCESSIBLE OVERHEAD JOIST SPACES IN FINISHED REGULARLY OCCUPIED AREAS.
H. ALUMINUM CONDUCTORS: PROVIDE THE FOLLOWING SUPPLEMENTAL WORK FOR ALUMINUM-CONDUCTOR ELECTRICAL EQUIPMENT CONNECTIONS, REGARDLESS OF WHO FURNISHES THE EQUIPMENT: REVIEW EQUIPMENT SUBMITTALS, INSTALLATION DOCUMENTS AND NAMEPLATES TO DETERMINE IF THERE ARE ANY WARRANTY OR UL LIMITATIONS REGARDING COPPER VERSUS ALUMINUM WIRING CONNECTIONS AT EQUIPMENT; IF THERE ARE ANY LIMITATIONS, PROVIDE LOCAL DISCONNECT AT OR NEAR EQUIPMENT (EXTERNAL TO THE EQUIPMENT) AND TERMINATE ALUMINUM CONDUCTORS TO THE LINE-SIDE LUGS/TERMINALS OF THE DISCONNECT SWITCH; PROVIDE COPPER CONDUCTORS FROM LOAD-SIDE LUGS/TERMINALS OF THE DISCONNECT SWITCH TO THE RESPECTIVE EQUIPMENT FACTORY DISCONNECT OR LUG/TERMINALS AS APPLICABLE; COORDINATE ALL RELATED WORK WITH ALL AFFECTED INSTALLERS.
I. TRANSFORMER PRIMARY DISCONNECTS: UNLESS LOCATED IN THE SAME ROOM WITHIN 25 FEET OF THE SOURCE OF PRIMARY POWER AND WITHIN SIGHT OF SAME, PROVIDE LOCAL PRIMARY DISCONNECT SWITCH FOR EACH TRANSFORMER. PROVIDE FUSED DISCONNECT SWITCH FOR APPLICATIONS WHERE A TAP RULE IS BEING APPLIED, OTHERWISE THE DISCONNECT SWITCH MAY BE NON-FUSED. IN CASES WHERE IT IS PHYSICALLY IMPOSSIBLE TO INSTALL A PRIMARY DISCONNECT SWITCH CLOSE TO THE RESPECTIVE TRANSFORMER IN A CODE-COMPLIANT MANNER, PROVIDE PERMANENTLY INSTALLED LOCK-OUT/TAG-OUT PROVISIONS AT THE UPSTREAM OVERCURRENT PROTECTION DEVICE AND RELATED INFORMATIONAL SIGNAGE AT THE TRANSFORMER.
J. FEEDER TAPS: PERFORM FEEDER TAPS IN ACCORDANCE WITH NFPA 70. PERFORM FEEDER TAPS TO PARALLELED-SET FEEDERS BY RESPECTIVELY TAPPING ALL PHASE, GROUNDED AND GROUNDING CONDUCTORS TO ENSURE UNIFORM CURRENT FLOW IN ALL SETS.
K. BREAKER FRAME SIZES: AMPERE RATINGS INDICATED ON DRAWINGS FOR CIRCUIT BREAKERS ARE SHOWN TO DEFINE OVERCURRENT REQUIREMENTS/TRIP RATINGS. PROVIDE BREAKER FRAMES IN SIZES AND TYPES GREATER THAN THE DESIGNATED OVERCURRENT TRIP RATINGS WHERE NECESSARY TO ACHIEVE THE REQUIRED SELECTIVE COORDINATION, AND/OR AS NECESSARY FOR OTHER APPLICABLE REASONS.
L. HOUSEKEEPING PADS: SEE SPECIFICATION SECTION 260529.00 FOR REQUIREMENTS ASSOCIATED WITH CONCRETE HOUSEKEEPING PADS.
M. PLYWOOD EQUIPMENT BOARDS: SEE SPECIFICATION SECTION 260529.00 FOR REQUIREMENTS ASSOCIATED WITH PLYWOOD EQUIPMENT BOARDS.
N. CIRCUIT BREAKER ADJUSTABLE SETTINGS: SET FIELD-ADJUSTABLE CIRCUIT BREAKER SETTINGS AS INDICATED ON DRAWINGS, OR AS DEFINED IN SELECTIVE COORDINATION STUDY IF REQUIRED ELSEWHERE ON DRAWINGS. FOR SETTINGS NOT INDICATED ON DRAWINGS OR IN SELECTIVE COORDINATION STUDY, CIRCUIT BREAKER MANUFACTURER SHALL PROVIDE A COORDINATION STUDY THAT SPECIFIES ADJUSTABLE CIRCUIT BREAKER SETTINGS TO MINIMIZE THE POSSIBILITY OF NUISANCE TRIPPING. MANUFACTURER SHALL PROVIDE REMOVABLE AND SEALABLE COVERS OVER ALL ADJUSTABLE CIRCUIT BREAKER SETTINGS PER NEC 240.6(C).
O. ELECTRIC UTILITY SERVICE WORK: PROVIDE ALL ELECTRIC UTILITY SERVICE WORK IN STRICT COMPLIANCE WITH PREVAILING REQUIREMENTS OF THE UTILITY COMPANY. THE DRAWINGS INDICATE RELATED REQUIREMENTS AT A SCHEMATIC LEVEL. IT IS NOT THE INTENT OF THESE DRAWINGS TO DETAIL ANY SUCH WORK.

KEYED SINGLE-LINE DIAGRAM NOTES

1. EXISTING SERVICE ENTRY 65' BUILDING: REUSE EXISTING CONDUIT TO FEED NEW MAIN SWITCHBOARD FROM UTILITY TRANSFORMER. EXTEND CONDUIT ON EITHER END AS NECESSARY FOR NEW WORK.
2. EXISTING SERVICE ENTRY 90'S WING: NEW 480/277V 3P 4W POLE MOUNTED TRANSFORMER. OLD CONDUIT AND WIRING TO BE DEMOLISHED. NEW SERVICE ENTRY IN NEW GYM TO BACKFEED EXISTING 90s WING PANELS.
3. GROUNDING BUSBAR(S): REMOVE EXISTING SERVICE ENTRY BONDING JUMPER AND GROUNDING BUSBAR.

'90S WING & NEW GYM | '65 BUILDING



1 26T-008 - PARTIAL SINGLE LINE DIAGRAM
NOT TO SCALE

DESIGN DEVELOPMENT SET

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

ADDENDA

SHEET TITLE
ELECTRIC POWER - SINGLE LINE DIAGRAM
DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
DATE 12-13-2023

EP601
KLH PROJECT # 24599

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ELECTRIC EQUIPMENT SUPPLY SCHEDULE

EQUIPMENT MARK	SUPPLY FROM	CKT	EMERG.	LOAD (kVA)	AVAILABLE FAULT CURRENT	VOLTS	POLE	HTG KW	WATT	HP	FLA (A)	MCA (A)	RQD OCP (A)	BREAKER RATING (A)
B-1				1.46		120 V	1					13.5	20	
B-1 CONTROL				0.22		120 V	1					2	20	
B-2				1.46		120 V	1					13.5	20	
B-2 CONTROL				0.22		120 V	1					2	20	
C-1	MSB480	2		251.07	41345	480 V	3		213600		302	359	500	500
CP1	GLP1	45		0.24	4346	120 V	1			0.17	2			20
CP2				0.24		120 V	1			0.17	2			
DOAS-1	M1	1,3,5		7.78	747	480 V	3					10.4	15	15
DOAS-2	M1	7,9,11		7.78	1357	480 V	3					10.4	15	15
DOAS-3				3.65		208 V	2				17.53	19.68	25	
EF-1A	GHP1	53		0.31	1667	277 V	1			0.075	1.1		15	15
EF-1B	GHP1	53		0.31	2782	277 V	1			0.075	1.1		15	15
EF-1C	GHP1	53		0.31	1563	277 V	1			0.075	1.1		15	15
EF-1D	GHP1	53		0.31	2787	277 V	1			0.075	1.1		15	15
EF-1E	GHP1	51		0.31	1169	277 V	1			0.075	1.1		15	15
EF-2	GHP1	14		0.53	4326	277 V	1			.172	1.9		15	15
FCU-1-01	M2	1		0.64	1341	277 V	1				2.3	2.9	15	15
FCU-1-02	M2	1		0.64	1718	277 V	1				2.3	2.9	15	15
FCU-1-03	M2	9		0.64	2244	277 V	1				2.3	2.9	15	15
FCU-1-04	M2	9		0.64	2761	277 V	1				2.3	2.9	15	15
FCU-1-05	M2	9		0.64	2624	277 V	1				2.3	2.9	15	15
FCU-1-06	M2	7		0.64	2336	277 V	1				2.3	2.9	15	15
FCU-1-07	M2	7		0.64	1992	277 V	1				2.3	2.9	15	15
FCU-1-08	M2	7		0.64	1987	277 V	1				2.3	2.9	15	15
FCU-1-09	M2	7		0.64	2179	277 V	1				2.3	2.9	15	15
FCU-1-10				0.64		277 V	1				2.3	2.9	15	
FCU-1-11	M2	7		0.64	4145	277 V	1				2.3	2.9	15	15
FCU-1-12	M2	3		0.64	2895	277 V	1				2.3	2.9	15	15
FCU-1-13	M2	5		1.95	7870	277 V	1					7.8	15	15
FCU-1-14	M2	7		0.64	2929	277 V	1				2.3	2.9	15	15
FCU-1-15	M2	5		0.64	4428	277 V	1				2.3	2.9	15	15
FCU-1-16	M2	3		1.27	2561	277 V	1				4.6	5.8	15	15
FCU-1-17	M2	1		0.64	1203	277 V	1				2.3	2.9	15	15
FCU-2-01	M2	11		1.27	1336	277 V	1				4.6	5.8	15	15
FCU-2-02	M2	11		1.27	1699	277 V	1				4.6	5.8	15	15
FCU-2-03	M2	13		1.27	2195	277 V	1				4.6	5.8	15	15
FCU-2-04	M2	13		1.27	2696	277 V	1				4.6	5.8	15	15
FCU-2-05	M2	13		1.27	2570	277 V	1				4.6	5.8	15	15
FCU-2-06	M2	21		0.64	2296	277 V	1				2.3	2.9	15	15
FCU-2-07	M2	21		0.64	1958	277 V	1				2.3	2.9	15	15
FCU-2-08				0.64		277 V	1				2.3	2.9	15	
FCU-2-09	M2	19		0.64	1427	277 V	1				2.3	2.9	15	15
FCU-2-10	M2	19		1.27	1925	277 V	1				4.6	5.8	15	15
FCU-2-11	M2	19		1.27	2895	277 V	1				4.6	5.8	15	15
FCU-2-12	M2	17		1.95	7017	277 V	1					7.8	15	15
FCU-2-13	M2	15		0.64	3947	277 V	1				2.3	2.9	15	15
FCU-2-14	M2	15		0.64	2751	277 V	1				2.3	2.9	15	15
FCU-2-15	M2	17		1.27	4894	277 V	1				4.6	5.8	15	15
FCU-2-16	M2	11		0.64	1225	277 V	1				2.3	2.9	15	15
FCU-2-17	M2	15		0.64	2172	277 V	1				2.3	2.9	15	15
FCU-2-18	M2	15		0.64	1958	277 V	1				2.3	2.9	15	15
FCU-B-01A	M1	37		0.64	2633	277 V	1				2.3	2.9	15	15
FCU-B-01B	M1	37		0.64	3373	277 V	1				2.3	2.9	15	15
FCU-B-02	M1	37		0.64	2150	277 V	1				2.3	2.9	15	15
FCU-B-03	M1	37		0.64	1718	277 V	1				2.3	2.9	15	15
FCU-B-04				0.64		277 V	1				2.3	2.9	15	
FCU-B-05	M1	37		0.64	2231	277 V	1				2.3	2.9	15	15
FCU-B-06	M1	37		0.64	3765	277 V	1				2.3	2.9	15	15
FCU-B-07	M1	37		0.64	4143	277 V	1				2.3	2.9	15	15
FCU-C-01	M1	41		1.27	3165	277 V	1				4.6	5.8	15	15
FCU-C-02	M1	41		0.64	2850	277 V	1				2.3	2.9	15	15
FCU-C-03	M1	39		0.64	11254	277 V	1				2.3	2.9	15	15
FCU-C-04	M1	41		0.64	2307	277 V	1				2.3	2.9	15	15
FCU-C-05	M1	43		0.64	2750	277 V	1				2.3	2.9	15	15
FCU-C-06	M1	43		0.64	1823	277 V	1				2.3	2.9	15	15
FCU-C-07	M1	43		1.27	1797	277 V	1				4.6	5.8	15	15
FCU-C-08	M1	43		0.64	1476	277 V	1				2.3	2.9	15	15
FCU-C-09	M1	39		0.64	6068	277 V	1				2.3	2.9	15	15
FCU-C-10	M1	41		0.64	3017	277 V	1				2.3	2.9	15	15
FCU-M-01	M1	2		0.64	5075	277 V	1				2.3	2.9	15	15
FCU-M-02	M1	2		0.64	4178	277 V	1				2.3	2.9	15	15
FCU-M-03	M1	2		0.64	13026	277 V	1				2.3	2.3	2.3	15
GF-1				0.86		120 V	1			1/3				
GWH1	GLP1	45		0.60	3947	120 V	1				5			20
GWH2				0.60		120 V	1				5			
HP-DS-1				1.63		208 V	2					8.7	15	
HP-DS-2				3.48		208 V	2					18.6	20	
HP-DS-3				3.07		208 V	2					16.4	20	
HP-DS-4	GLP1	51,53		3.07	2697	208 V	2					16.4	20	20
IWH1	GLP1	12,14		6.24	1893	208 V	2		6240					40
P-1	M1	13,15,17		9.15	1514	480 V	3			7.5				20
P-2	M1	19,21,23		9.15	1475	480 V	3			7.5				20
P-3	M1	25,27,29		17.46	3307	480 V	3			15				40
P-4	M1	31,33,35		17.46	3239	480 V	3			15				40
PT1	GLP1	7		0.10	2421	120 V	1		100					20
PT2	GLP1	9		0.10	820	120 V	1		100					20
PT3	GLP1	4		0.10	559	120 V	1		100					20
RTU-1	GHP1	15,17,19		6.32	1109	480 V	3				7.6	8.6	15	15
RTU-2	GHP1	21,23,25		6.32	950	480 V	3				7.6	8.6	15	15
RTU-3	GHP1	2,4,6		6.32	1887	480 V	3				7.6	8.6	15	15
RTU-4	GHP1	45,47,49		6.32	2783	480 V	3				7.6	8.6	15	15
RTU-5	GHP1	39,41,43		6.65	1729	480 V	3				8.0	9.1	15	15
RTU-6	GHP1	33,35,37		6.32	1147	480 V	3				7.6	8.6	15	15
RTU-7	GHP1	27,29,31		6.32	933	480 V	3				7.6	8.6	15	15
RTU-10	GHP1	8,10,12		6.65	844	480 V	3				8.0	9.1	15	15
RTU-11	M1	49,51,53		13.88	4178	480 V	3				16.7	19.1	25	25
UH-1	GHP1	13		6.03	11770	277 V	1	3	3000	1/100		11	15	15
UH-3	M1	45		6.00	8670	277 V	1	3	3000			10.8	20	20
UH-4	M1	47		3.00	4097	277 V	1	1.5	1500			6.2	20	20

TECHNOLOGY EQUIPMENT RACK / ENCLOSURE SCHEDULE

EQUIPMENT RACK	TYPE NAME	SPACE NAME	SPACE NUMBER	DESCRIPTION	VOLTAGE	POLES	POWER	NEMA CONFIGURATION	HEAT GAIN	MANUFACTURER	MODEL

HVAC ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS
DC LOCAL DISCONNECT
MC MOTOR CONTROL (POWER)
SD DUCT SMOKE DETECTOR
CN CONTROLS
TS TOGGLE SWITCH
C/B H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD
FUSE FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)
FLA OPERATING FULL LOAD AMPS
MCA MINIMUM CIRCUIT AMPACITY
CP CORD AND PLUG CONNECTION
[BLANK] HARD WIRED (WHEN INDICATED FOR DC TYPE)

CONTRACTOR TYPE
EC ELECTRICAL CONTRACTOR
EX EXISTING
FC FIRE PROTECTION CONTRACTOR
GC GENERAL CONTRACTOR
HC HVAC CONTRACTOR
MFR MANUFACTURER
PC PLUMBING CONTRACTOR
OR OWNER OR OTHERS

MOTOR CONTROL TYPE
CS COMBINATION STARTER
MCC MOTOR CONTROL STARTER
MG MAGNETIC STARTER OR CONTACT
MS MANUAL STARTER
VFD VARIABLE FREQUENCY DRIVE
MSR MANUAL STARTER W/ CONTROL RELAY
OV OVERCURRENT PROTECTION

CONTROL TYPE
TC TIMECLOCK
CPT CONTROL POWER TRANSFORMER
BAS BUILDING AUTOMATION SYSTEM
LOW LOW VOLTAGE CONTROLS
LINE LINE VOLTAGE CONTROLS
RLINE REVERSE ACTING LINE VOLTAGE THERMOSTAT
MAN MANUAL
FA FIRE ALARM
CO CARBON MONOXIDE SENSOR
INT INTEGRAL TO EQUIPMENT
ASD AREA SMOKE DETECTOR
DSD DUCT SMOKE DETECTOR

SHORT CIRCUIT RATING
WHERE SHORT CIRCUIT RATING CODE REQUIRED VALUE INDICATES "YES" APPLICABLE EQUIPMENT'S SHORT CIRCUIT RATING SHALL EXCEED THE AVAILABLE FAULT CURRENT VALUE INDICATED.

EQUIPMENT MARK	DESCRIPTION	VOLTS (V)	PHASE	EMERGENCY	BHP (HP)	HP (HP)	HTG (kW)	WATTS	FLA (A)	MCA (A)	OCP (A)	FED FROM	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	FA SHUTDOWN	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT (A)	HVACTYPE
B-1	CONDENSING BOILER	120	1							13.5	20		EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	HC				23 52 16.00.00
B-1 CONTROL	CONDENSING BOILER CONTROLLER	120	1							2	20		EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	HC				23 52 16.00.00
B-2	CONDENSING BOILER	120	1							13.5	20		EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	HC				23 52 16.00.00
B-2 CONTROL	CONDENSING BOILER CONTROLLER	120	1							2	20		EC	EC	EC	MG	MFR	MFR	MFR	BAS	HC	HC	HC				23 52 16.00.00
C-1	Air Cooled Chiller	480	3					213600	302	359	500		EC	EC	EC	---	---	---	---	BAS	HC	HC	HC			41345	23 64 23.00.00
DOAS-1	ENERGY RECOVERY VENTILATOR	480	3							10.4	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			747	23 74 33.00.00
DOAS-2	ENERGY RECOVERY VENTILATOR	480	3							10.4	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1357	23 74 33.00.00
DOAS-3	ENERGY RECOVERY VENTILATOR	208	1						17.53	19.68	25		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 74 33.00.00
DOAS-3-COIL	ENERGY RECOVERY VENTILATOR	208	1						17.53	19.68	25		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 74 33.00.00
DS-1	DUCTLESS SPLIT HIGH WALL UNIT	208	1						0.3			HP-DS-1	EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.01
DS-2	DUCTLESS SPLIT HIGH WALL UNIT	208	1						0.8			HP-DS-2	EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.01
DS-3	DUCTLESS SPLIT HIGH WALL UNIT	208	1						0.50			HP-DS-3	EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.01
DS-4	DUCTLESS SPLIT HIGH WALL UNIT	208	1						.5			HP-DS-4	EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.01
EF-1A	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			1667	23 34 23.00.00
EF-1B	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			2782	23 34 23.00.00
EF-1C	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			1563	23 34 23.00.00
EF-1D	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			2787	23 34 23.00.00
EF-1E	CENTRIFUGAL ROOF VENTILATOR	277	1			0.075			1.1		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			1169	23 34 23.00.00
EF-2	CENTRIFUGAL ROOF VENTILATOR	277	1			.172			1.9		15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	EC	EC	EC			4326	23 34 23.00.00
FCU-1-01	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1341	23 82 19.00.00
FCU-1-02	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1718	23 82 19.00.00
FCU-1-03	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2244	23 82 19.00.00
FCU-1-04	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2761	23 82 19.00.00
FCU-1-05	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2624	23 82 19.00.00
FCU-1-06	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2336	23 82 19.00.00
FCU-1-07	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1992	23 82 19.00.00
FCU-1-08	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1987	23 82 19.00.00
FCU-1-09	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2179	23 82 19.00.00
FCU-1-10	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 82 19.00.00
FCU-1-11	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4145	23 82 19.00.00
FCU-1-12	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2895	23 82 19.00.00
FCU-1-13	FANCOIL UNIT	277	1							7.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			7870	23 82 19.00.00
FCU-1-14	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2929	23 82 19.00.00
FCU-1-15	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4428	23 82 19.00.00
FCU-1-16	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2561	23 82 19.00.00
FCU-1-17	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1203	23 82 19.00.00
FCU-2-01	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1336	23 82 19.00.00
FCU-2-02	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1699	23 82 19.00.00
FCU-2-03	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2195	23 82 19.00.00
FCU-2-04	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2696	23 82 19.00.00
FCU-2-05	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2570	23 82 19.00.00
FCU-2-06	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2296	23 82 19.00.00
FCU-2-07	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1958	23 82 19.00.00
FCU-2-08	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 82 19.00.00
FCU-2-09	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1427	23 82 19.00.00
FCU-2-10	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1925	23 82 19.00.00
FCU-2-11	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2895	23 82 19.00.00
FCU-2-12	FANCOIL UNIT	277	1							7.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			7017	23 82 19.00.00
FCU-2-13	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3947	23 82 19.00.00
FCU-2-14	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2751	23 82 19.00.00
FCU-2-15	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4894	23 82 19.00.00
FCU-2-16	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1225	23 82 19.00.00
FCU-2-17	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2172	23 82 19.00.00
FCU-2-18	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1958	23 82 19.00.00
FCU-B-01A	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2633	23 82 19.00.00
FCU-B-01B	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3373	23 82 19.00.00
FCU-B-02	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2150	23 82 19.00.00
FCU-B-03	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1718	23 82 19.00.00
FCU-B-04	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 82 19.00.00
FCU-B-05	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2231	23 82 19.00.00
FCU-B-06	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3765	23 82 19.00.00
FCU-B-07	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4143	23 82 19.00.00
FCU-C-01	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3165	23 82 19.00.00
FCU-C-02	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2850	23 82 19.00.00
FCU-C-03	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			11254	23 82 19.00.00
FCU-C-04	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2307	23 82 19.00.00
FCU-C-05	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2750	23 82 19.00.00
FCU-C-06	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1823	23 82 19.00.00
FCU-C-07	FANCOIL UNIT	277	1						4.6	5.8	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1797	23 82 19.00.00
FCU-C-08	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1476	23 82 19.00.00
FCU-C-09	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			6068	23 82 19.00.00
FCU-C-10	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			3017	23 82 19.00.00
FCU-M-01	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			5075	23 82 19.00.00
FCU-M-02	FANCOIL UNIT	277	1						2.3	2.9	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4178	23 82 19.00.00
FCU-M-03	FANCOIL UNIT	277	1						2.3	2.3	2.3		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			13026	23 82 19.00.00
GF-1	WET ROTOR PUMP	120	1			1/3							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR				23 21 23.00.06
HP-DS-1	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1							8.7	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.00
HP-DS-2	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1							18.6	20		EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.00
HP-DS-3	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1							16.4	20		EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR				23 81 29.00.00
HP-DS-4	DUCTLESS SPLIT OUTDOOR CONDENSING UNIT	208	1							16.4	20		EC	EC	EC	MG	MFR	MFR	MFR	LOW	MFR	MFR	MFR			2697	23 81 29.00.00
HVLS-1	HIGH VOLUME LOW SPEED FAN	120	1						6	10	15		EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR				23 34 33.00.00
P-1	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	480	3		6.64	7.5							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR			1514	23 21 23.00.02
P-2	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	480	3		6.64	7.5							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR			1475	23 21 23.00.02
P-3	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	480	3		12.75	15							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR			3307	23 21 23.00.02
P-4	SEPARATELY COUPLED BASE MOUNTED END SUCTION CENTRIGUAL PUMP	480	3		12.75	15							EC	EC	EC	MG	MFR	MFR	MFR	INT	MFR	MFR	MFR			3239	23 21 23.00.02
RTU-1	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1109	23 74 33.00.00
RTU-2	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			950	23 74 33.00.00
RTU-3	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1887	23 74 33.00.00
RTU-4	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			2783	23 74 33.00.00
RTU-5	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						8.0	9.1	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1729	23 74 33.00.00
RTU-6	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			1147	23 74 33.00.00
RTU-7	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						7.6	8.6	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			933	23 74 33.00.00
RTU-8	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						8.0	9.1	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 74 33.00.00
RTU-9	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						13.7	16.1	25		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC				23 74 33.00.00
RTU-10	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						8.0	9.1	15		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			844	23 74 33.00.00
RTU-11	PACKAGED OUTDOOR ROOFTOP UNIT	480	3						16.7	19.1	25		EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC			4178	23 74 33.00.00
UH-1	CABINET UNIT HEATER	277	1			1/100	3	3000		11	15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC			11770	23 82 39.00.00
UH-2	CABINET UNIT HEATER	277	1			1/100	3	3000		11	15		EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC				23 82 39.00.00
UH-3	CABINET UNIT HEATER	277	1				3	3000		10.8	20		EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC			8670	23 82 39.00.00
UH-4	CABINET UNIT HEATER	277	1				1.5	1500		6.2	20		EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC			4097	23 82 39.00.00

PLUMBING ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS
DC LOCAL DISCONNECT
MC MOTOR CONTROL (POWER)
SD DUCT SMOKE DETECTOR
CN CONTROLS
TS TOGGLE SWITCH
C/B H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD
FUSE FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)
FLA OPERATING FULL LOAD AMPS
MCA MINIMUM CIRCUIT AMPACITY
CP CORD AND PLUG CONNECTION
[BLANK] HARD WIRED (WHEN INDICATED FOR DC TYPE)

CONTRACTOR TYPE
EC ELECTRICAL CONTRACTOR
EX EXISTING
FC FIRE PROTECTION CONTRACTOR
GC GENERAL CONTRACTOR
HC HVAC CONTRACTOR
MFR MANUFACTURER
PC PLUMBING CONTRACTOR
OR OWNER OR OTHERS

MOTOR CONTROL TYPE
CS COMBINATION STARTER
MCC MOTOR CONTROL STARTER
MG MAGNETIC STARTER OR CONTACT
MS MANUAL STARTER
VFD VARIABLE FREQUENCY DRIVE
MSR MANUAL STARTER W/ CONTROL RELAY
OV OVERCURRENT PROTECTION

CONTROL TYPE
TC TIMECLOCK
CPT CONTROL POWER TRANSFORMER
BAS BUILDING AUTOMATION SYSTEM
LOW LOW VOLTAGE CONTROLS
LINE LINE VOLTAGE CONTROLS
RLINE REVERSE ACTING LINE VOLTAGE THERMOSTAT
MAN MANUAL
FA FIRE ALARM
CO CARBON MONOXIDE SENSOR
INT INTEGRAL TO EQUIPMENT
ASD AREA SMOKE DETECTOR
DSD DUCT SMOKE DETECTOR

SHORT CIRCUIT RATING
WHERE SHORT CIRCUIT RATING CODE REQUIRED VALUE INDICATES "YES" APPLICABLE EQUIPMENT'S SHORT CIRCUIT RATING SHALL EXCEED THE AVAILABLE FAULT CURRENT VALUE INDICATED.

EQUIPMENT MARK	DESCRIPTION	VOLTAGE	PHASE	EMERGENCY	HP	WATTS	HTG KW	FLA	MCA	OCP	FED FROM	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	FA SHUTDOWN	SHORT CIRCUIT RATING CODE REQUIRED?	AVAILABLE FAULT CURRENT
PT2	PLUMBING FIXTURE TRANSFORMER	120 V	1			100						EC	EC	EC	--	--	--	--	LOW	PC	PC	PC		No	820
PT1	PLUMBING FIXTURE TRANSFORMER	120 V	1			100						EC	EC	EC	--	--	--	--	LOW	PC	PC	PC		No	2421
IWH1	INSTANTANEOUS ELECTRIC WATER HEATER	208 V	1			6240						EC	EC	EC	--	--	--	--	INT	MFR	MFR	MFR		No	1893
CP1	DOMESTIC HOT WATER CIRCULATION PUMP	120 V	1		0.17			2				EC	EC	EC	MG	MFR	MFR	MFR	LINE	PC	PC	EC		No	4346
GWH1	TANK TYPE GAS FIRED WATER HEATER	120 V	1					5				EC	EC	EC	--	--	--	--	INT	MFR	MFR	MFR		No	3947
CP2	DOMESTIC HOT WATER CIRCULATION PUMP	120 V	1		0.17			2				EC	EC	EC	MG	MFR	MFR	MFR	LINE	PC	PC	EC		No	
GWH2	TANK TYPE GAS FIRED WATER HEATER	120 V	1					5				EC	EC	EC	--	--	--	--	INT	MFR	MFR	MFR		No	
PT3	PLUMBING FIXTURE TRANSFORMER	120 V	1			100						EC	EC	EC	--	--	--	--	LOW	PC	PC	PC		No	559

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

ADDENDA

SHEET TITLE
ELECTRIC POWER - SCHEDULES

DWN: GMN CHK: DTJ

BG #
24-059

REH #
372-922

DATE
12-13-2023

EP602
KLH PROJECT #
24599

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PANEL NAME: GLP1

SUPPLY FROM: T-GLP1 | **LOCATION:** ELEC. 133E | **DISTRIBUTION SYSTEM:** 208/120V 3PH 4W | **FEEDER:** (4) #350 KCMIL AL, (1) #1/0 AWG AL GND. IN 3" CONDUIT 75C RATED

BUSSING: COPPER OR ALUMINUM | **MAINS RATING (A):** 250 | **MAINS TYPE:** THERMAL MAGNETIC | **FEEDER ID:** T250-4A

MOUNTING: SURFACE | **FAULT CURRENT (A):** 6063 | **SHORT CIRCUIT RATING (A):** 10000 | **LUGS TYPE:** FEED-THROUGH | **ENCLOSURE TYPE:** NEMA 1

PHASE: New Construction | **SURGE SUPRESSION:** Yes | **ULSE:** | **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	LTG 133A,133B,133C,133F,133G,133E,133D	0.196	#12	#12	20 A	20 A	1	0.93 1.12			1	20 A	20 A	#10	#10	2.001	LTG 135A,135C,136B,136E,136C,136D,136A,135B ALT.	2
3	LTG GYM 134A	0.864	#10	#10	25 A	25 A	1		2.04 1.18		1	20 A	20 A	#12	#12	3.218	PT3 | RCPT 135A,135B ALTERNATE	4
5	LTG GYM 134A	2.363	#10	#10	20 A	20 A	1			1.30 0.90	1	20 A	20 A	#12	#12	2.857	RCPT 135C,136A ALTERNATE	6
7	PT1 | RCPT 133A,133F,133E,133D	0.178	#12	#12	20 A	20 A	1	1.00 1.08			1	20 A	20 A	#10	#10	2.858	RCPT PLATFORM 136A ALTERNATE	8
9	PT2 | RCPT 133C,133A,133B,133G	1.386	#12	#12	20 A	20 A	1		0.82 0.90		1	20 A	20 A	#12	#12	3.985	RCPT 136B,136D,136E ALTERNATE	10
11	(G) EWC | NON-CONT. GYM LOBBY 133B	0.41	#12	#12	20 A	20 A	1			0.40 3.12	2	40 A	40 A	#10	#8	2.665	IWH1 | NON-CONT. RR 135B ALTERNATE	12
13	(G) EWC | NON-CONT. GYM LOBBY 133B	0.63	#12	#12	20 A	20 A	1	0.40 3.12										14
15	RCPT GYM 134A	0.648	#12	#12	20 A	20 A	1		0.54									16
17	RCPT GYM 134A	0.814	#12	#12	20 A	20 A	1			0.90								18
19	RCPT GYM 134A	1.813	#12	#12	20 A	20 A	1	0.54										20
21	BLEACHERS | MOTOR GYM 134A	2.171	#12	#12	20 A	20 A	1		1.20									22
23	BACKSTOP 4 | MOTOR GYM 134A	1.799	#12	#12	20 A	20 A	1			1.00								24
25	BACKSTOP 1 | MOTOR GYM 134A	1.882	#12	#12	20 A	20 A	1	1.00										26
27	BACKSTOP 5 | MOTOR GYM 134A	2.797	#12	#12	20 A	20 A	1		1.00									28
29	BACKSTOP 6 | MOTOR GYM 134A	2.303	#10	#10	20 A	20 A	1			1.00								30
31	BACKSTOP 2 | MOTOR GYM 134A	2.263	#10	#10	20 A	20 A	1	1.00										32
33	BACKSTOP 3 | MOTOR GYM 134A	2.836	#12	#12	20 A	20 A	1		1.00									34
35	SCOREBOARD 1 | MOTOR GYM 134A	0	#12	#12	20 A	20 A	1			0.00								36
37	SCOREBOARD 2 | MOTOR GYM 134A	0	#12	#12	20 A	20 A	1	0.00										38
39	GYM CONTROLLER | NON-CONT. GYM 134A	0.508	#12	#12	20 A	20 A	1		0.50									40
41	RCPT OUTDOOR WEST	0.147	#12	#12	20 A	20 A	1			0.36								42
43	RCPT OUTDOOR EAST	1.088	#12	#12	20 A	20 A	1	0.36										44
45	CP1 GWH1 | MOTOR, CONTINUOUS WATER 133D	0.139	#12	#12	20 A	20 A	1		0.84									46
47	LTG GYM 134A	2.864	#12	#12	20 A	20 A	1			1.16								48
49	LTG GYM 134A	2.63	#10	#10	20 A	20 A	1	1.16										50
51	HP-OS-4 | MOTOR	0.74	#12	#12	20 A	20 A	2		1.54									52
53										1.54								54
	TOTAL CONNECTED LOAD:							11.7 kVA	11.6 kVA	11.7 kVA								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND
Continuous	600 VA	125.00%	750 VA
Lighting	7720 VA	125.00%	9650 VA
Motor	10510 VA	107.30%	11278 VA
Non-Continuous	7840 VA	100.00%	7840 VA
Receptacle	8280 VA	100.00%	8280 VA

NOTES:

BREAKER QUANTITIES (NEW ONLY)
(27) 20A / 1P, (2) 20A / 1P(G), (1) 20A / 2P, (1) 25A / 1P, (1) 40A / 2P

PANEL TOTALS	
TOTAL CONNECTED LOAD:	35.0 kVA
DEMAND CALCULATION NOTES:	
TOTAL DEMAND:	37.8 kVA
TOTAL DEMAND AMPS:	**105 A**

PANEL NAME: M1

SUPPLY FROM: MSB480 | **LOCATION:** ELECTRICAL C11 | **DISTRIBUTION SYSTEM:** 480/277V 3PH 4W | **FEEDER:** (4) #350 KCMIL AL, (1) #2 AWG AL GND. IN 3" CONDUIT 75C RATED

BUSSING: COPPER OR ALUMINUM | **MAINS RATING (A):** 250 | **MAINS TYPE:** MAIN LUGS ONLY | **FEEDER ID:** 250-4A

MOUNTING: SURFACE | **FAULT CURRENT (A):** 38907 | **SHORT CIRCUIT RATING (A):** 42000 | **LUGS TYPE:** FEED-THROUGH | **ENCLOSURE TYPE:** NEMA 1

PHASE: New Construction | **SURGE SUPRESSION:** | **ULSE:** | **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								2.59 1.91		1	15 A	15 A	#12	#12	0.111	FCU-M-01,02,03 | MOTOR EM01,SM02,M04		2
3	DOAS-1 | HVAC	1.502	#12	#12	15 A	15 A	3		2.59									4
5										2.59								6
7								2.59										8
9	DOAS-2 | HVAC	0.814	#12	#12	15 A	15 A	3		2.59										10
11										2.59								12
13								3.05										14
15	P-1 | MOTOR MECHANICAL ROOM 001	0.853	#12	#12	20 A	20 A	3		3.05									16
17										3.05								18
19								3.05										20
21	P-2 | MOTOR MECHANICAL ROOM 001	0.877	#12	#12	20 A	20 A	3		3.05									22
23										3.05								24
25								5.82										26
27	P-3 | MOTOR MECHANICAL ROOM 001	0.71	#8	#10	40 A	40 A	3		5.82									28
29										5.82								30
31								5.82										32
33	P-4 | MOTOR MECHANICAL ROOM 001	0.726	#8	#10	40 A	40 A	3		5.82									34
35										5.82								36
37	FCU-B-01A,01B,02,03,05,06,07 | MOTOR...	1.302	#12	#12	15 A	15 A	1	4.46										38
39	FCU-C-03,09 | MOTOR SC02,EC01	0.087	#12	#12	15 A	15 A	1		1.27									40
41	FCU-C-01,02,04,10 | MOTOR C13,C10,C08,C08C	0.998	#12	#12	15 A	15 A	1			3.19								42
43	FCU-C-05,06,07,08 | MOTOR C04A,C01,C03,C02	0.868	#12	#12	15 A	15 A	1	3.19										44
45	UH-3 | HEATING BOYS C05	0.476	#10	#12	20 A	20 A	1		6.00									46
47	UH-4 | HEATING GIRLS C06	0.578	#12	#12	20 A	20 A	1			3.00								48
49								4.63										50
51	RTU-11 | HVAC	0.437	#10	#10	25 A	25 A	3		4.63									52
53										4.63								54
	TOTAL CONNECTED LOAD:							49.8 kVA	42.5 kVA	42.7 kVA								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND
Cooling	637 VA	100.00%	637 VA
Heating	9000 VA	100.00%	9000 VA
Motor	96955 VA	104.55%	100320 VA
HVAC	29448 VA	100.00%	29448 VA

NOTES:

BREAKER QUANTITIES (NEW ONLY)
(5) 15A / 1P, (2) 15A / 3P, (2) 20A / 1P, (2) 20A / 3P, (1) 25A / 3P, (2) 40A / 3P

PANEL TOTALS	
TOTAL CONNECTED LOAD:	138.0 kVA
DEMAND CALCULATION NOTES:	ESTIMATED DEMAND 139.4 KVA, TAKE 100% HEATING, TAKE 0% COOLING
TOTAL DEMAND:	138.8 KVA
TOTAL DEMAND AMPS:	**167 A**

PANEL NAME: GHP1

SUPPLY FROM: CT CABINET | **LOCATION:** ELEC. 133E | **DISTRIBUTION SYSTEM:** 480/277V 3PH 4W | **FEEDER:** (2) SETS OF (4) #250 KCMIL AL IN 2-1/2" CONDUIT EACH 75C RATED

MAINS RATING (A): 400 | **MAINS TYPE:** 100% ELECTRONIC LSIG ER... | **FEEDER ID:** U410-4A

FAULT CURRENT (A): 16171 | **SHORT CIRCUIT RATING (A):** 25000 | **LUGS TYPE:** | **ENCLOSURE TYPE:** NEMA 1

PHASE: New Construction | **SURGE SUPRESSION:** Yes | **ULSE:** Yes | **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								0.00 2.11										2
3	T-PP1	SL	SL	SL	175 A	175 A	3		0.00 2.11		3	15 A	15 A	#12	#12	0.434	RTU-3 | HVAC	4
5										0.00 2.11								6
7								11.71 2.22										8
9	T-GLP1	SL	SL	SL	125 A	125 A	3		11.56 2.22		3	15 A	15 A	#12	#12	1.099	RTU-10 | HVAC	10
11										11.68 2.22								12
13	UH-1 | HEATING WATER 133D	0.122	#10	#12	15 A	15 A	1	6.03 0.53			1	15 A	15 A	#12	#12	0.079	EF-2 | MOTOR	14
15									2.11									16
17	RTU-1 | HVAC	0.78	#12	#12	15 A	15 A	3			2.11								18
19								2.11										20
21									2.11									22
23	RTU-2 | HVAC	0.921	#12	#12	15 A	15 A	3			2.11								24
25								2.11										26
27									2.11									28
29	RTU-7 | HVAC	0.938	#12	#12	15 A	15 A	3			2.11								30
31								2.11										32
33									2.11									34
35	RTU-6 | HVAC	0.752	#12	#12	15 A	15 A	3			2.11								36
37								2.11										38
39									2.22									40
41	RTU-5 | HVAC	0.504	#12	#12	15 A	15 A	3			2.22								42
43								2.22										44
45									2.11									46
47	RTU-4 | HVAC	0.276	#12	#12	15 A	15 A	3			2.11								48
49								2.11										50
51	EF-1E | MOTOR	0.214	#12	#12	15 A	15 A	1		0.31									52
53	EF-1A,1B,1C,1D | MOTOR	0.49	#12	#12	15 A	15 A	1			1.22								54
	TOTAL CONNECTED LOAD:							35.3 kVA	28.9 kVA	30.0 kVA								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND
Continuous	600 VA	125.00%	750 VA
Cooling	0 VA	0.00%	0 VA
Elevator	0 VA	0.00%	0 VA
Heating	6027 VA	100.00%	6027 VA
Kitchen Equipment	0 VA	0.00%	0 VA
Lighting	7720 VA	125.00%	9650 VA
Motor	12561 VA	106.11%	13329 VA
Non-Continuous	7840 VA	100.00%	7840 VA
Receptacle	8280 VA	100.00%	8280 VA

PANEL TOTALS	
METERED PEAK DEMAND (PER NEC 220.87):	29920.0 VA
ADDED CONNECTED LOAD:	94238 VA
DEMAND CALCULATION NOTES:	ESTIMATED DEMAND 97.09 KVA, ADD 125% EXISTING METERED DEMAND
TOTAL DEMAND:	134485.5 VA
TOTAL DEMAND AMPS:	**162 A**

NOTES:

BREAKER QUANTITIES (NEW ONLY)
(4) 15A / 1P, (8) 15A / 3P, (1) 125A / 3P, (1) 175A / 3P

SWITCHBOARD: MSB480

SUPPLY FROM: UTILITY-1 | **LOCATION:** ELECTRICAL C11 | **DISTRIBUTION SYSTEM:** 480/277V 3PH 4W | **MAINS RATING (A):** 2000 | **MAINS TYPE:** 100% ELECTRONIC LSIG ERM WITH DEMAND METERING | **200% NEUTRAL:** | **FEEDER ID:** C-U2100-4C | **FEEDER:** (5) SETS OF (4) #600 KCMIL CU IN 4" CONDUIT EACH 75C RATED | **NOTES:**

FAULT CURRENT (A): 55611 | **SHORT CIRCUIT RATING (A):** 65000 | **ENCLOSURE TYPE:** NEMA 1 | **SURGE SUPRESSION:** Yes | **ULSE:** Yes | **ISOLATED GROUND:** | **PHASE:** New Construction

CKT	TRIP	FRAME	POLES	VD%	AWG	GND	CIRCUIT DESCRIPTION	LOAD
1	800 A	800 A	3	SL	SL	SL	TMSB208	0.00 kVA
2	500 A	500 A	3	SL	SL	SL	C-1 | COOLING	251.07 kVA
3	250 A	250 A	3	SL	SL	SL	M1	135.04 kVA
4	400 A	400 A	3	--	--	--	SPARE	0.00 kVA
5	400 A	400 A	3	--	--	--	SPARE	0.00 kVA
6	200 A	200 A	3	--	--	--	SPARE	0.00 kVA
7	200 A	200 A	3	--	--	--	SPARE	0.00 kVA
8	100 A	100 A	3	--	--	--	SPARE	0.00 kVA
9	100 A	100 A	3	--	--	--	SPARE	0.00 kVA
10	--	--	1	--	--	--	SPACE	--
11	--	--	1	--	--	--	SPACE	--
12	--	--	1	--	--	--	SPACE	--
13	--	--	1	--	--	--	SPACE	--
14	--	--	1	--	--	--	SPACE	--
15	--	--	1	--	--	--	SPACE	--
16	--	--	1	--	--	--	SPACE	--
17	--	--	1	--	--	--	SPACE	--
18	--	--	1	--	--	--	SPACE	--
19	--	--	1	--	--	--	SPACE	--
20	--	--	1	--	--	--	SPACE	--

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	BREAKER QUANTITIES (NEW ONLY)
Continuous	0 VA	0.00%	0 VA	(2) 100A / 3P, (2) 200A / 3P, (1) 250A / 3P, (2) 400A / 3P, (1) 500A / 3P, (1) 800A / 3P
Cooling	251708 VA	100.00%	251708 VA	
Elevator	0 VA	0.00%	0 VA	
Heating	9000 VA	100.00%	9000 VA	
Kitchen Equipment	0 VA	0.00%	0 VA	
Lighting	0 VA	0.00%	0 VA	
Motor	96955 VA	104.55%	100320 VA	
Non-Continuous	0 VA	0.00%	0 VA	
Receptacle	0 VA	0.00%	0 VA	

PANEL TOTALS	
METERED PEAK DEMAND (PER NEC 220.87):	121280.0 VA
ADDED CONNECTED LOAD:	386111 VA
DEMAND CALCULATION NOTES	ESTIMATED DEMAND 390.48 KVA, ADD 125% EXISTING METERED DEMAND, TAKE 100% COOLING, TAKE 0% HEATING
TOTAL DEMAND:	533075.7 VA
TOTAL DEMAND AMPS:	**641 A**

PANEL SCHEDULE LEGEND

*	=	WIRE SIZED TO COMPENSATE FOR VOLTAGE DROP	(EX)	=	EXISTING CIRCUIT TO REMAIN
**	=	REFER TO DRAWINGS FOR SPECIFICATIONS	(G)	=	PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER
(#)	=	NEW CIRCUIT TO EXISTING CIRCUIT BREAKER	(GE)	=	PROVIDE GROUND-FAULT EQUIPMENT PROTECTION (GFEP) 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.	(H)	=	PROVIDE HANDLE TIE
			(L)	=	PROVIDE LOCK-ON DEVICE
			(LI)	=	PROVIDE ELECTRONIC LONG AND INSTANTANEOUS ADJUSTABILITY
			(LSI)	=	PROVIDE ELECTRONIC LONG, SHORT, AND INSTANTANEOUS ADJUSTABILITY
			(LSIA)	=	PROVIDE ELECTRONIC LONG, SHORT, INSTANTANEOUS, AND GROUND-FAULT ALARM ADJUSTABILITY
(A)	=	PROVIDE ARC FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKER			
(AG)	=	PROVIDE COMBINATION ARC FAULT (AFCI) / GROUND FAULT (GFCI) CIRCUIT INTERRUPTER CIRCUIT BREAKER	(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
(ERM)	=	PROVIDE ENERGY REDUCTION MAINTENANCE (REDUCED ENERGY) CIRCUIT BREAKER	(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 SCHEDULE LEGEND

	GLP1	
M1	GHP1	MSB480

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

ADDENDA

SHEET TITLE
ELECTRIC POWER - PANEL SCHEDULES
DWN: GMN CHK: DTJ

BG #
24-059

REH #
372-922

DATE
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EP603
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24599

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FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
FIRE ALARM DEVICES	
F	FIRE ALARM SYSTEM MANUAL PULL STATION
DH	FIRE ALARM SYSTEM ELECTROMAGNETIC DOOR HOLDER
D	FIRE ALARM DUCT SMOKE DETECTOR AND SAMPLING TUBE
S	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED - PHOTOELECTRIC
S	FIRE ALARM SMOKE DETECTOR - WALL MOUNTED - PHOTOELECTRIC
H	FIRE ALARM HEAT DETECTOR - CEILING MOUNTED - COMBINATION FIXED-TEMPERATURE AND RATE-OF-RISE
CO	CARBON MONOXIDE DETECTOR
cd	FIRE ALARM SYSTEM STROBE-ONLY DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
cd	FIRE ALARM SYSTEM HORN / STROBE DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
cd C	FIRE ALARM SYSTEM CEILING / OVERHEAD MOUNTED HORN / STROBE DEVICE (PROVIDE CANDELA (cd) RATING FOR STROBE AS INDICATED ON DRAWINGS)
H	FIRE ALARM SYSTEM HORN DEVICE
cd	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
AOM AIM	FIRE ALARM SYSTEM ADDRESSABLE OUTPUT MODULE (LEFT) FIRE ALARM SYSTEM ADDRESSABLE INPUT MODULE (RIGHT)
XXXX XXXX	FIRE ALARM PANELS (DIMENSIONS MAY VARY, FLUSH OR SURFACE MOUNTED AS INDICATED) **FACP** - FIRE ALARM CONTROL PANEL **NAC** - NOTIFICATION BOOSTER PANEL **EVAC** - VOICE EVACUATION PANEL **SCP** - SMOKE CONTROL PANEL **SAP** - SPRINKLER MONITOR PANEL **FAA** - FIRE ALARM REMOTE ANNUNCIATOR **PRE** - PRE-ACTION SYSTEM CONTROL PANEL **FATC** - 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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Misty Middleton - Superintendent

ADDENDA

SHEET TITLE
FIRE ALARM
COVER SHEET
DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
DATE 12-13-2023

FA001
KLH PROJECT # 24599

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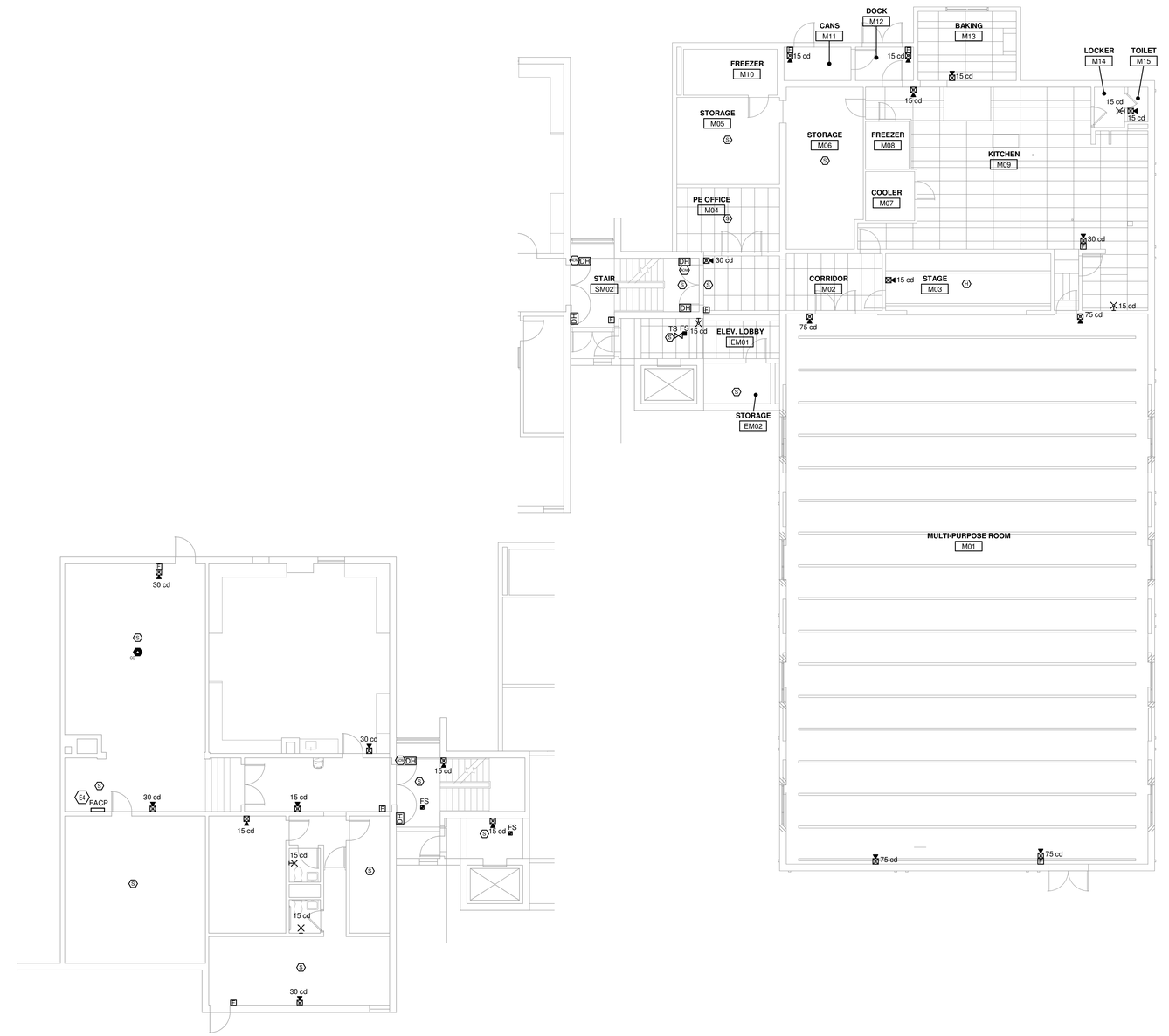
KEYED NOTES

E4 REUSE EXISTING CIRCUIT, CONDUIT, AND WIRING FOR POWERING NEW FACP.

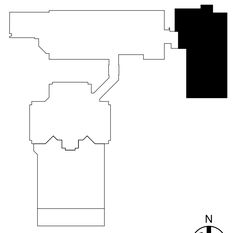


3 FIRE ALARM PLAN - LEVEL B - (NEW CONSTRUCTION)
1/8" = 1'-0"

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

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

KEYPLAN



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ADDENDA

SHEET TITLE
FIRE ALARM PLAN LEVEL B, M, & C

DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
DATE 12-13-2023

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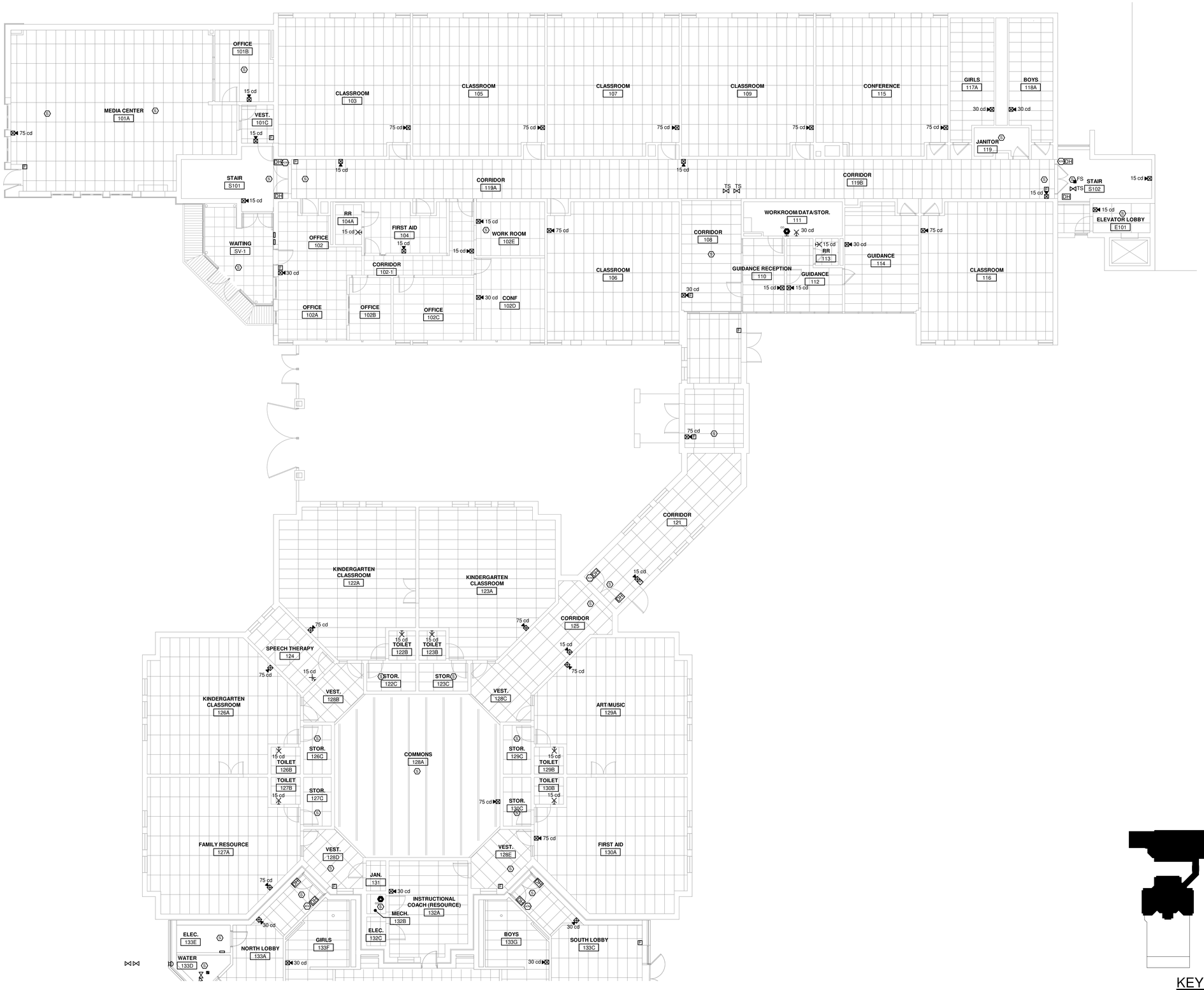
KEYED NOTES



1 FIRE ALARM PLAN - LEVEL 1 90s ADDITION
1/8" = 1'-0"

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ADDENDA

SHEET TITLE

FIRE ALARM
LEVEL 1

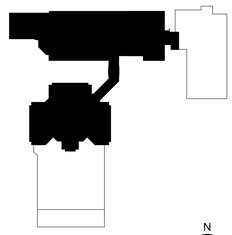
DWN: GMN CHK: DTJ

BG # 24-059

REH # 372-922

DATE 12-13-2023

KEYPLAN



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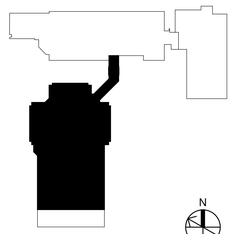
KEYED NOTES

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.

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



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ADDENDA

SHEET TITLE

FIRE ALARM
LEVEL 2

DWN: GMN CHK: DTJ

BG # 24-059

REH # 372-922

DATE 12-13-2023

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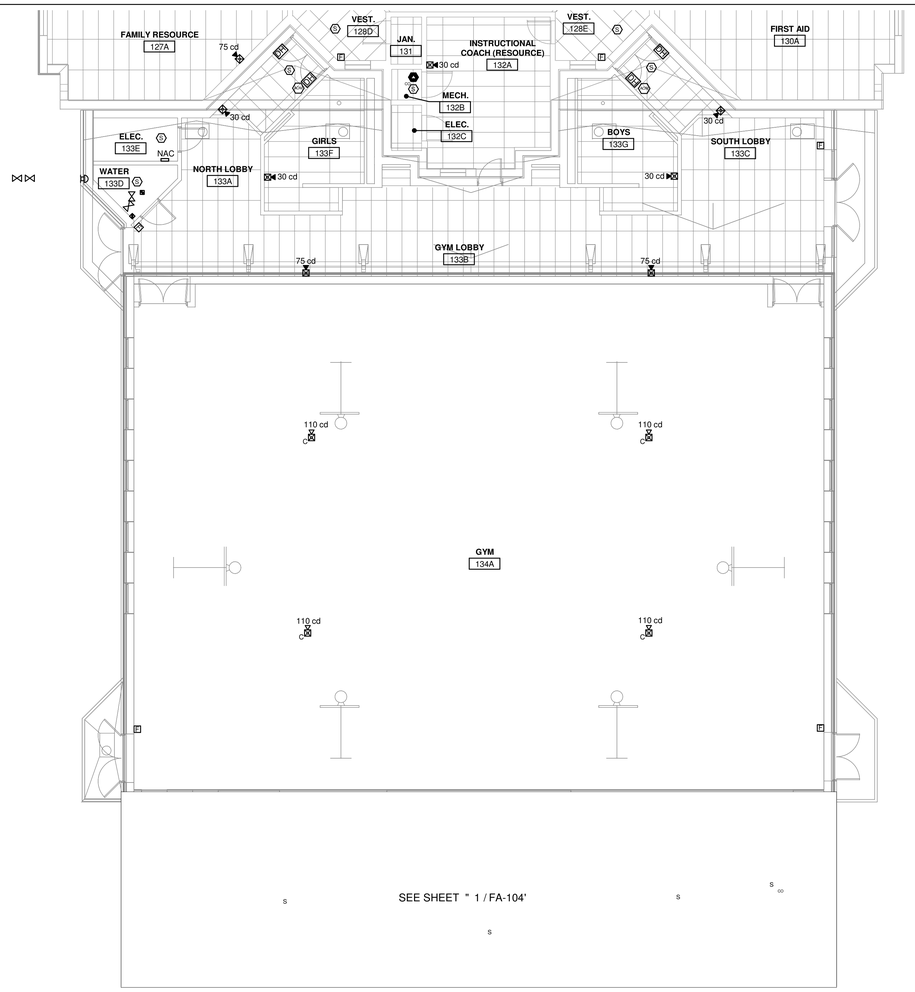
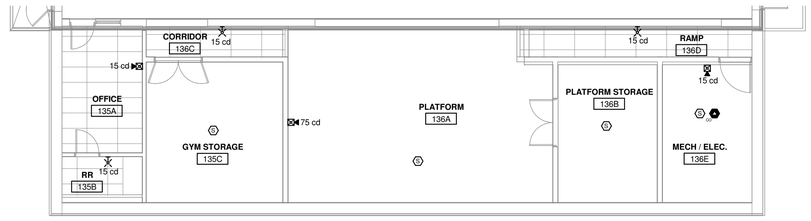
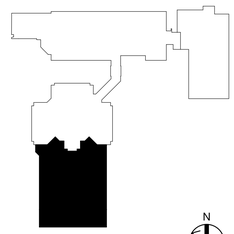


2 FIRE ALARM PLAN - LEVEL 1 NEW GYM
1/8" = 1'-0"



1 FIRE ALARM PLAN - ALTERNATE
1/8" = 1'-0"

KEYED NOTES



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SHEET TITLE
FIRE ALARM
GYM PLAN
DWN: GMN CHK: DTJ

BG # 24-059
REH # 372-922
DATE 12-13-2023

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