Special Education District of Lake County

18160 West Gages Lake Road
Gages Lake, Illinois 60030

HVAC Replacement Project

Administration Building

GENERAL DEMOLITION NOTES

1. REMOVE EXISTING CONSTRUCTION AS REQUIRED FOR INSTALLATION OF NEW CONSTRUCTION. REFER TO ALL CONTRACT DOCUMENTS FOR EXTENT OF DEMOLITION AND NEW WORK.
2. WHERE DEMOLITION WORK HAS BEEN DONE, THE FINISH QUALITY OF THE ADJACENT SURFACES SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION WITH NO VISIBLE SIGN THAT WORK HAS BEEN DONE.
3. ALL CONTRACTORS ARE RESPONSIBLE FOR UNDERSTANDING THEIR SCOPE OF WORK RELATIVE TO THE ENTIRE SET OF CONTRACT DOCUMENTS.
4. ALL WALL-MOUNTED ACCESSORIES THAT ARE REMOVED SHALL BE TURNED OVER TO OWNER AND MOVED TO A LOCATION ON SITE DETERMINED BY OWNER.
5. WHERE MASONRY WALLS HAVE BEEN REMOVED, GRIND FLOOR SLAB & PATCH FLOOR SMOOTH TO ACCEPT FLOOR FINISH.
6. WHERE MASONRY WALLS HAVE BEEN REMOVED, REMOVE THE EXISTING EXPOSED WALL ANCHORS TO BEYOND FACE OF EXISTING TO REMAIN. PATCH HOLE(S) OR REPLACE MASONRY TO MATCH EXISTING CONDITIONS.
7. BROOM SWEEP ALL AREAS DAILY AND AT COMPLETION OF DEMOLITION.
8. DEMOLISH EXISTING ELECTRICAL DEVICES INCLUDING BACKBOXES AND RACEWAY BACK TO FIRST DEVICE NOT AFFECTED BY WORK. WHERE EXISTING ELECTRICAL DEVICE IS WITHIN MASONRY WALL, REMOVE WIRE AND BACKBOX.
9. PROVIDE NEW SOAPED MASONRY, SIZE TO MATCH EXISTING, AT ELECTRICAL BACKBOXES REMOVED. MASON CONTRACTOR TO COORDINATE WITH ELECTRICAL DEMO DRAWINGS.
10. INDIVIDUAL CMU/BRICK TO REMAIN WITH OPENINGS TOTALING LESS THAN 3/4" DIA. MAY BE PATCHED. UNITS WITH OPENINGS EQUAL TO OR GREATER THAN 3/4" DIA. SHALL BE REPLACED.
11. EXISTING MARKER BOARD AND TACK BOARD TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION OR REMOVED AND STORED IN A DESIGNATED AREA SELECTED BY OWNER, AND REINSTALLED PRIOR TO SUBSTANTIAL COMPLETION.
12. NAILS, SCREWS AND OTHER HANGERS IN WALLS SHALL BE REMOVED, WALLS SHALL BE PATCHED AND PAINTED TO MATCH ADJACENT WALL TO REMAIN.
13. CONTRACTOR TO REVIEW EXISTING CONDITIONS AND CONTRACT DOCUMENTS AND INCLUDE ALL WORK, MATERIALS AND LABOR REQUIRED TO PROVIDE COMPLETE SCOPE.

GENERAL NOTES

1. VERIFY ALL EXISTING CONDITIONS & DIMENSIONS IN THE FIELD.
2. COORDINATE ALL WORK SHOWN ON FLOOR AND CEILING PLANS WITH ALL OTHER TRADES PRIOR TO THE START OF WORK.
3. SEE PLAN FOR ALL DOOR AND BORROWED LIGHT OPENINGS AND PROVIDE LINTEL IN ACCORDANCE WITH PROJECT NOTES.
4. ALL INTERIOR PARTITIONS SHALL BE FULL HEIGHT TO UNDERSIDE OF ROOF, U.N.O..
5. ALL INTERIOR GYPSUM WALLS SHALL BE 5" UNLESS NOTED OTHERWISE.
6. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISHED WALL.
7. PAINT EXPOSED SURFACES NOT FACTORY FINISHED INCLUDING - EXISTING TO REMAIN, NEW, MECHANICAL, ELECTRICAL, AND PLUMBING TO MATCH ROOM FINISH.
8. WHERE WORK HAS BEEN DONE ADJACENT TO EXISTING TO REMAIN, THE FINISH QUALITY OF WORK SHALL BE SUCH THAT THERE IS NO VISIBLE SIGN THAT WORK HAS BEEN DONE.
9. PATCH, PAINT EXISTING H.M. FRAMES AND H.M. DOORS IN AREAS OF WORK BEING PAINTED AND FRAMES AND DOORS AFFECTED BY WORK.
10. COORDINATE WITH MEP FOR PENETRATIONS.
11. BROOM SWEEP ALL AREAS DAILY.
12. MAINTAIN SITE FREE FROM CONSTRUCTION MATERIALS, INCLUDING LANDSCAPING, DIRT AND DEBRIS.
13. REFER TO ALL DRAWINGS FOR ADDITIONAL GENERAL NOTES APPLICABLE TO ALL CONTRACTORS.

BUILDING INFORMATION

CLASSIFICATIONS

USE:	B	BUSINESS
CONSTRUCTION TYPE:	VB	
FIRE SUPRESSION:	FULLY SPRINKLERED W/DRY PIPE SYSTEM IN ATTIC	
FIRE ALARM & DETECTION:	PER N.F.P.A. 72A, and N.F.P.A. 72E	

TOTAL GROSS BUILDING AREA (EXISTING):

FIRST FLOOR	29,655 SF
MEZZANINE	1,774 SF
TOTAL AREA	31,429 SF

BUILDING CODES

PRINCIPAL BUILDING CODES:

1. 23 ILLINOIS ADMINISTRATIVE CODE 180, 2016
2. INTERNATIONAL BUILDING CODE - 2015
3. INTERNATIONAL ENERGY CONSERVATION CODE (IECC) - 2015
4. INTERNATIONAL FIRE CODE (IFC) - 2015
5. INTERNATIONAL FUEL GAS CODE (IFGC) - 2015
6. INTERNATIONAL MECHANICAL CODE (IMC) - 2015
7. INTERNATIONAL ELECTRICAL CODE (IEC) - 2015
8. INTERNATIONAL PROPERTY MAINTENANCE CODE (IPMC) - 2015
9. NATIONAL ELECTRIC CODE - N.F.P.A. 72 - 2005
10. ILLINOIS PLUMBING CODE -2014
11. ILLINOIS ENERGY CONSERVATION CODE - 2018
12. ILLINOIS ACCESSIBILITY CODE - 2018
13. AMERICANS WITH DISABILITIES ACT - 2010
14. ILLINOIS STATE FIRE MARSHAL'S RULES - BOILER AND PRESSURE VESSEL SAFETY CODE, 2013

ALTERNATES

ALTERNATE #1:	FINNED TUBE RADIATION REMOVAL
ALTERNATE #2:	ACOUSTICAL TILE CEILING REPLACEMENT
ALTERNATE #3:	ACOUSTICAL TILE CEILING REPLACEMENT
ALTERNATE #4:	FIRE SUPPRESSION REPLACEMENT
ALTERNATE #5:	RADIANT CEILING PANEL REMOVAL
ALTERNATE #6:	BAS CONTRACTOR

DRAWING INDEX

CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS AND SPECIFICATIONS FOR SPECIAL EDUCATION DISTRICT OF LAKE COUNTY 925, LOCATED IN GAGES LAKE, ILLINOIS, WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST OF MY KNOWLEDGE, COMPLY WITH ISBE 23 ILLINOIS ADMINISTRATIVE CODE 180 AND ALL APPLICABLE CODES AND ORDINANCES OF LAKE COUNTY, IL.

ARCHITECT: GRAVESDESIGNGROUP		MEPFP ENGINEER: 20/10 ENGINEERING GROUP, LLC	
Date	License Number	Date	License Number
Signature of Architect	Date of Expiration	Signature of Engineer	Date of Expiration

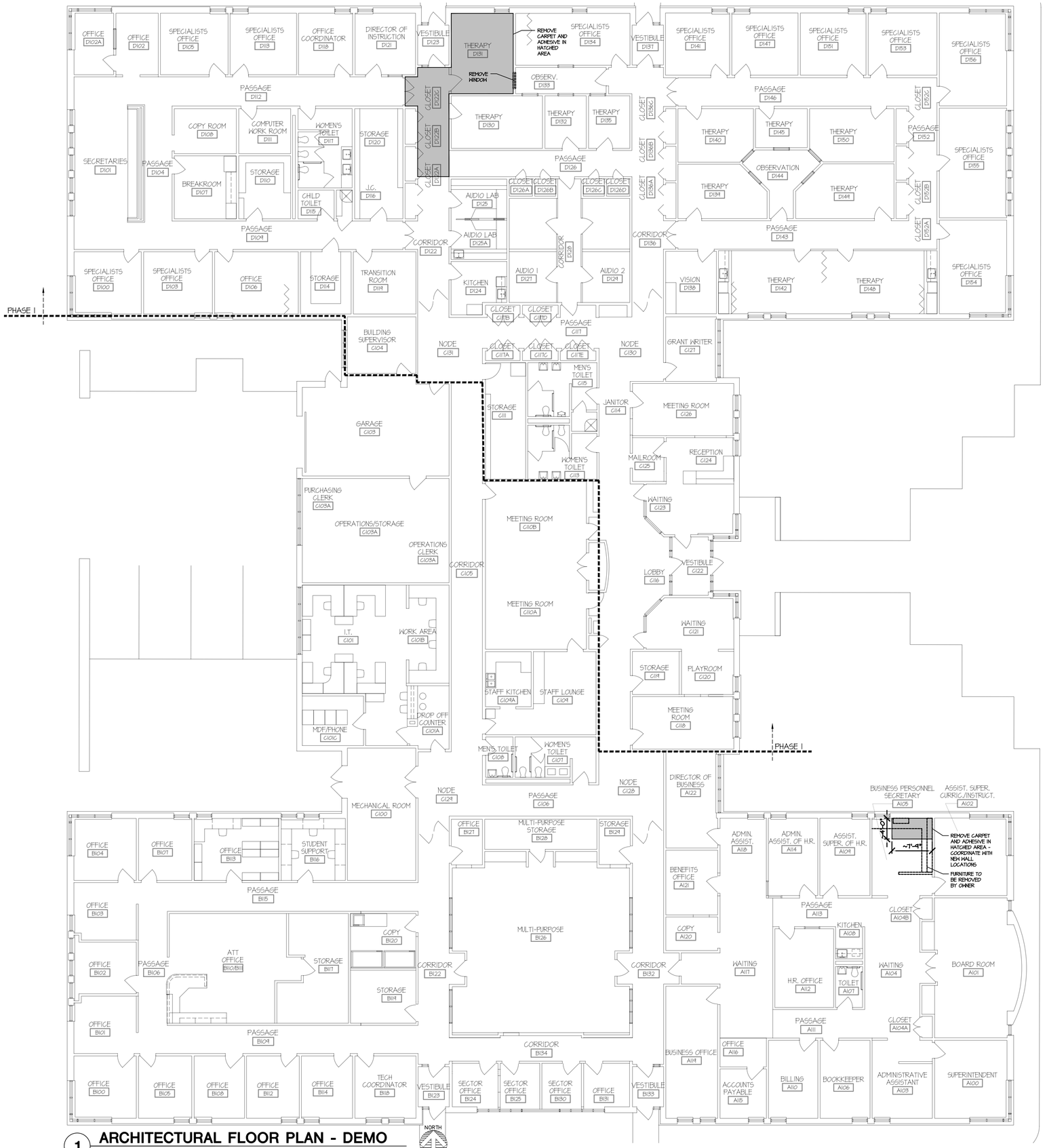
GravesDesignGroup
2231 Trailside Lane, Wauconda, Illinois 60084

HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

NO.	DESCRIPTION	DATE
	Issued For Bid	12-22-2023

PREPARED BY: GDG
APPROVED BY: GDG
JOB NO.: 23.825.004
DATE: 12-22-2023

SHEET
COVER SHEET
CS



1 ARCHITECTURAL FLOOR PLAN - DEMO

1/8" = 1'-0"

2 MEZZANINE FLOOR PLAN - DEMO

1/8" = 1'-0"

REFER TO COVER SHEET DRAWING 'GS' FOR ADDITIONAL GENERAL NOTES.

CONTRACTORS SHALL REVIEW ALL DRAWINGS TO VERIFY THE EXTENT OF THEIR WORK.

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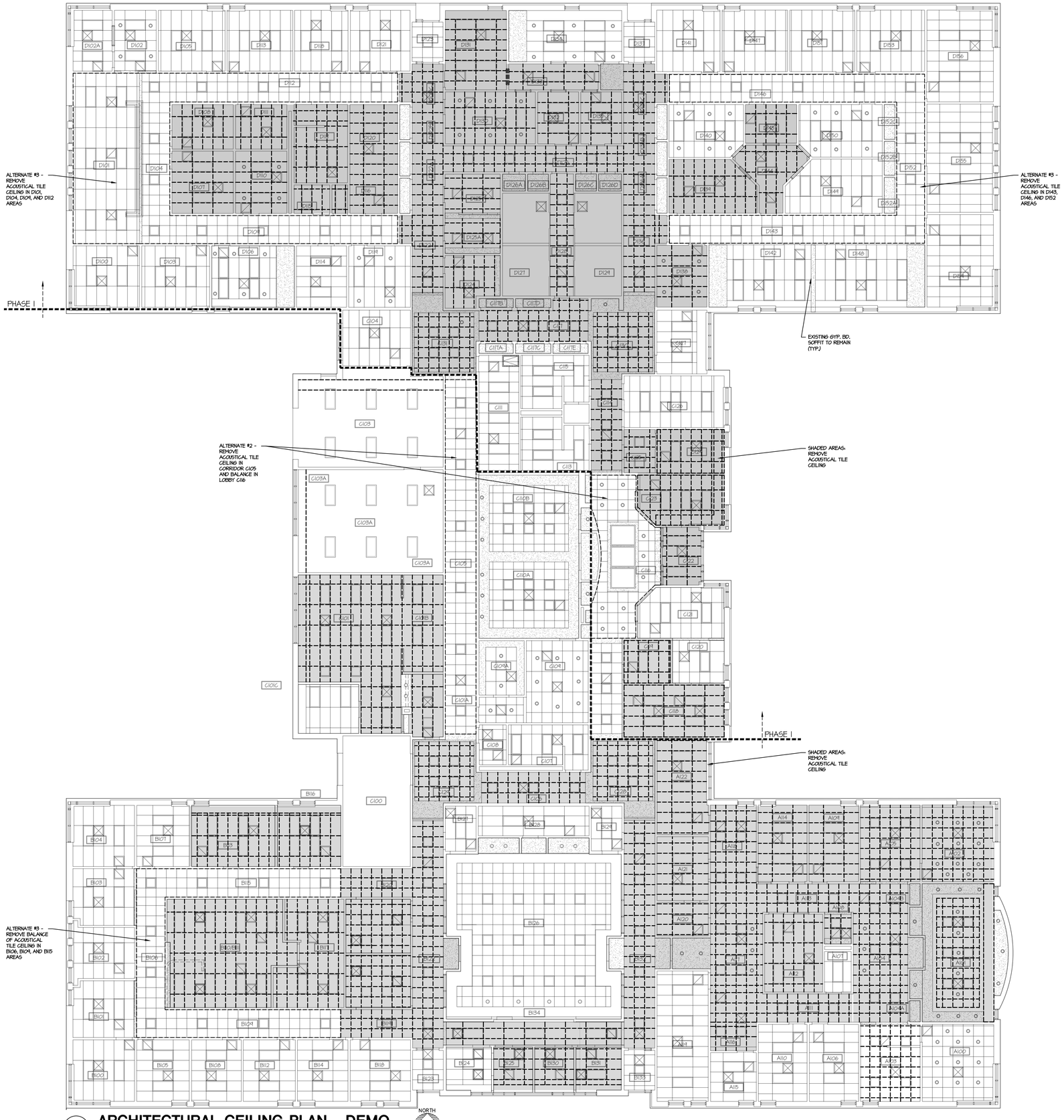
SHEET
Architectural
Floor Plans - Demo

AD1.0



1 ARCHITECTURAL CEILING PLAN - DEMO

1/8" = 1'-0"

REFER TO COVER SHEET DRAWING 'G5' FOR ADDITIONAL GENERAL NOTES.

CONTRACTORS SHALL REFER TO ALL DRAWINGS TO VERIFY THE EXTENT OF THEIR WORK.

ALL CEILING MOUNTED DEVICES ARE NOT SHOWN. FIELD VERIFY CEILING MOUNTED DEVICES.

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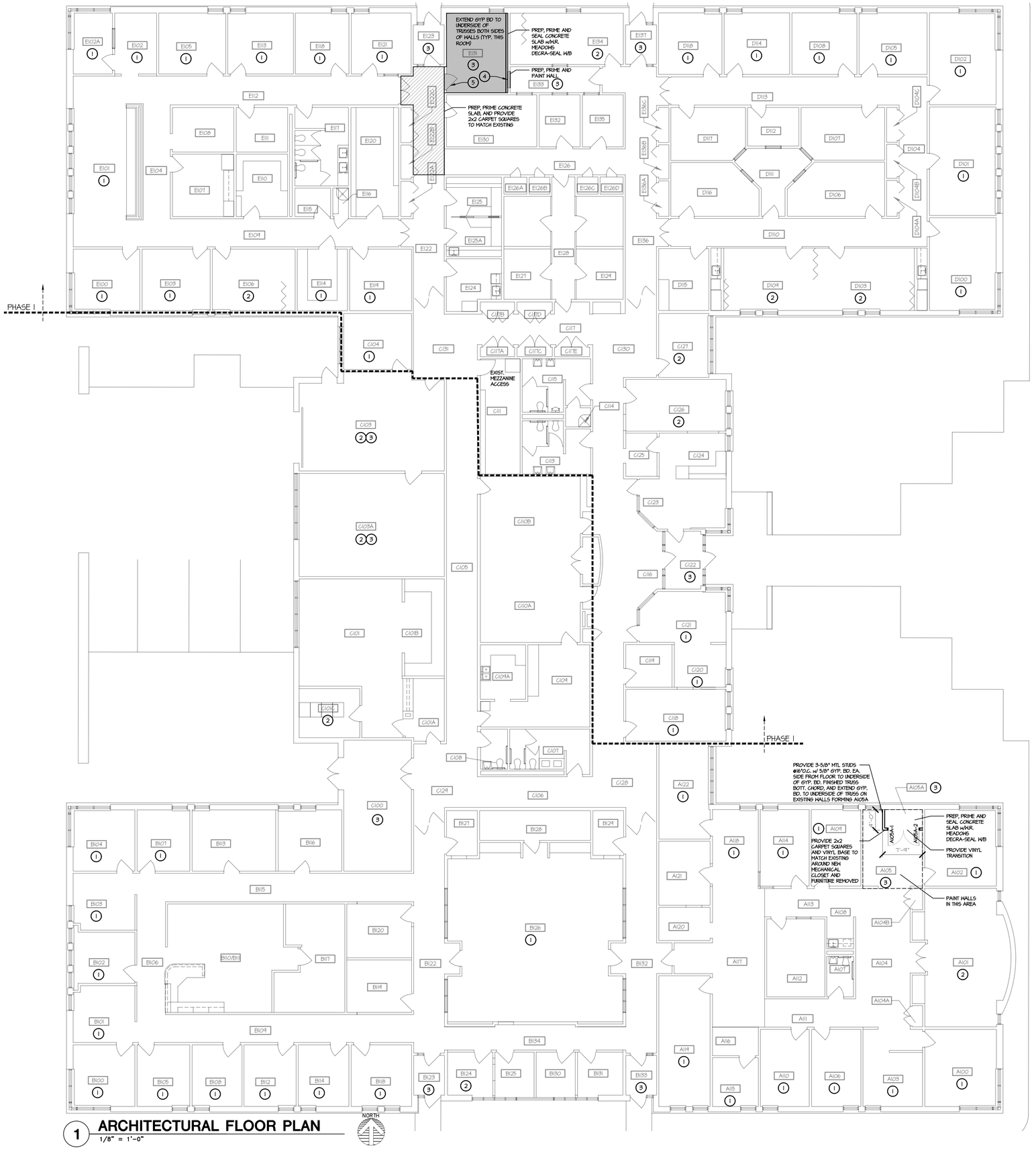
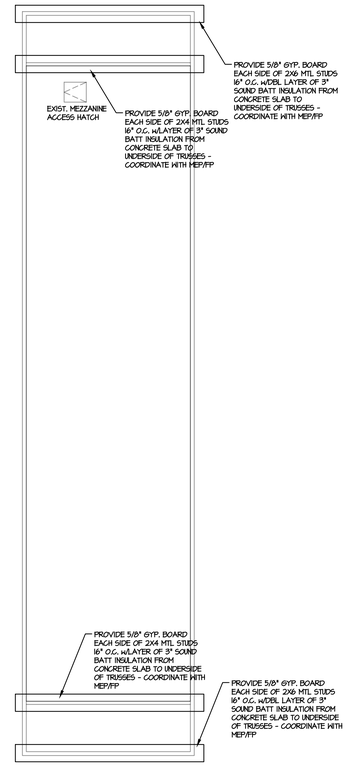
SHEET
Architectural Ceiling Plan - Demo

AD1.1



1 ARCHITECTURAL FLOOR PLAN
1/8" = 1'-0"



2 MEZZANINE FLOOR PLAN
1/8" = 1'-0"

DOOR SCHEDULE*

A105A-1:
3'-0" x 6'-8" SOLID CORE HD DOOR, VENEER AND FINISH TO MATCH EXISTING

A105A-2:
3'-0" X 6'-8" SOLID CORE HD DOOR, VENEER AND FINISH TO MATCH EXISTING

*PROVIDE FULLY WELDED 2" METAL FRAME. FACTORY PRIMED FRAME AND FINISHED DOORS PREP FRAME AND DOORS FOR HARDWARE. FRAME AND DOORS TO BE FROM SAME SUPPLIER.

DOOR HARDWARE**

A105A-1/A105-2:
6 EA HINGE 5BBI 4.5x4.5 NRP
1 EA MANUAL FLUSH BOLT FB458
1 EA DUST PROOF STRIKE DP2
1 EA STOREROOM LOCK
1 EA MORTISE CYLINDER
2 EA FLUSH PULL
2 EA OH STOP & HOLDER
2 EA KICK PLATE
1 EA WALL STOP
2 EA SILENCER

**MANUFACTURE AND FINISHES TO MATCH BUILDING STANDARD

KEYED NOTES

1. AS PART OF ALTERNATE #1 FINNED TUBE RADIATION REMOVAL - WHERE EQUIPMENT, PIPE, DEVICES ARE REMOVED PATCH, PRIME, AND PAINT WALL.
2. AS PART OF ALTERNATE #5 RADIANT PANEL REMOVAL - WHERE EQUIPMENT, PIPE, DEVICES ARE REMOVED PATCH, PRIME, AND PAINT WALL.
3. PATCH, PRIME, AND PAINT GYPSUM WALLBOARD.
4. INFILL WINDOW OPENING WITH FRAMING AND ONE LAYER 5/8" GYP. BD. EA SIDE FILLED WITH BATT INSULATION. PROVIDE 3-5/8" MTL STUDS 16" O.C. w/ 1 LAYER OF 5/8" GYP. BD. ON ROOM E131 SIDE FILLED WITH 3 1/2" BATT INSULATION FROM SLAB TO UNDERSIDE OF TRUSS. PRE, PRIME AND PAINT.
5. PROVIDE OPAQUE WINDOW FILM EA. SIDE OF DOOR VISION PANEL.

REFER TO COVER SHEET DRAWING 'GS' FOR ADDITIONAL GENERAL NOTES.

CONTRACTORS SHALL REFER TO ALL DRAWINGS TO VERIFY THE EXTENT OF THEIR WORK.

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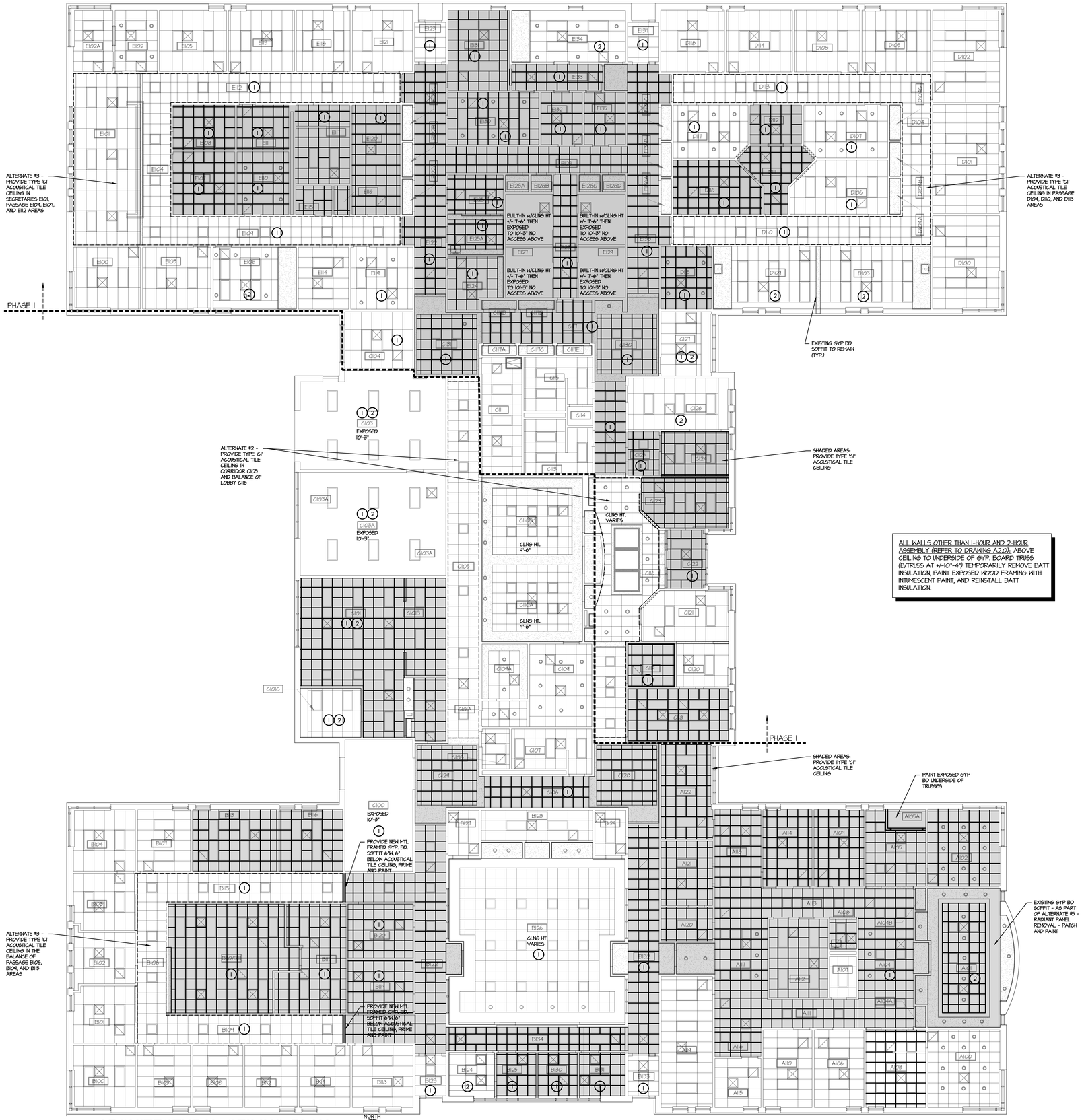
SHEET
Architectural Floor Plan

A1.0



1 ARCHITECTURAL CEILING PLAN

1/8" = 1'-0"

ALL WALLS OTHER THAN 1-HOUR AND 2-HOUR ASSEMBLY (REFER TO DRAWING A2.0): ABOVE CEILING TO UNDERSIDE OF GYP. BOARD TRUSS (B/TRUSS AT +/-10'-4") TEMPORARILY REMOVE BATT INSULATION, PAINT EXPOSED WOOD FRAMING WITH INTUMESCENT PAINT, AND REINSTALL BATT INSULATION.

KEYED NOTES

1. PATCH GYPSUM WALLBOARD ABOVE CEILING WHERE EQUIPMENT, PIPE, DEVICES ARE REMOVED OR INSTALLED.
2. AS PART OF ALTERNATE #5 RADIANT PANEL REMOVAL - PATCH CEILING GRID AND PROVIDE CEILING TILES.

REFER TO COVER SHEET DRAWING 'G.S' FOR ADDITIONAL GENERAL NOTES.

CONTRACTORS SHALL REFER TO ALL DRAWINGS TO VERIFY THE EXTENT OF THEIR WORK.

ALL EXISTING AND NEW CEILING MOUNTED DEVICES TO BE REMOVED, REMAIN, BE REINSTALLED, PROVIDED ARE NOT INDICATED. FIELD VERIFY CEILING MOUNTED DEVICES. REFER TO HV/MEP/FP DRAWINGS FOR NEW DEVICES.

ADJUST EXISTING ACOUSTICAL TILE CEILING TO REMAIN FOR NEW WORK.

ACOUSTICAL TILE CEILING +/- 8'-0", U.N.O.

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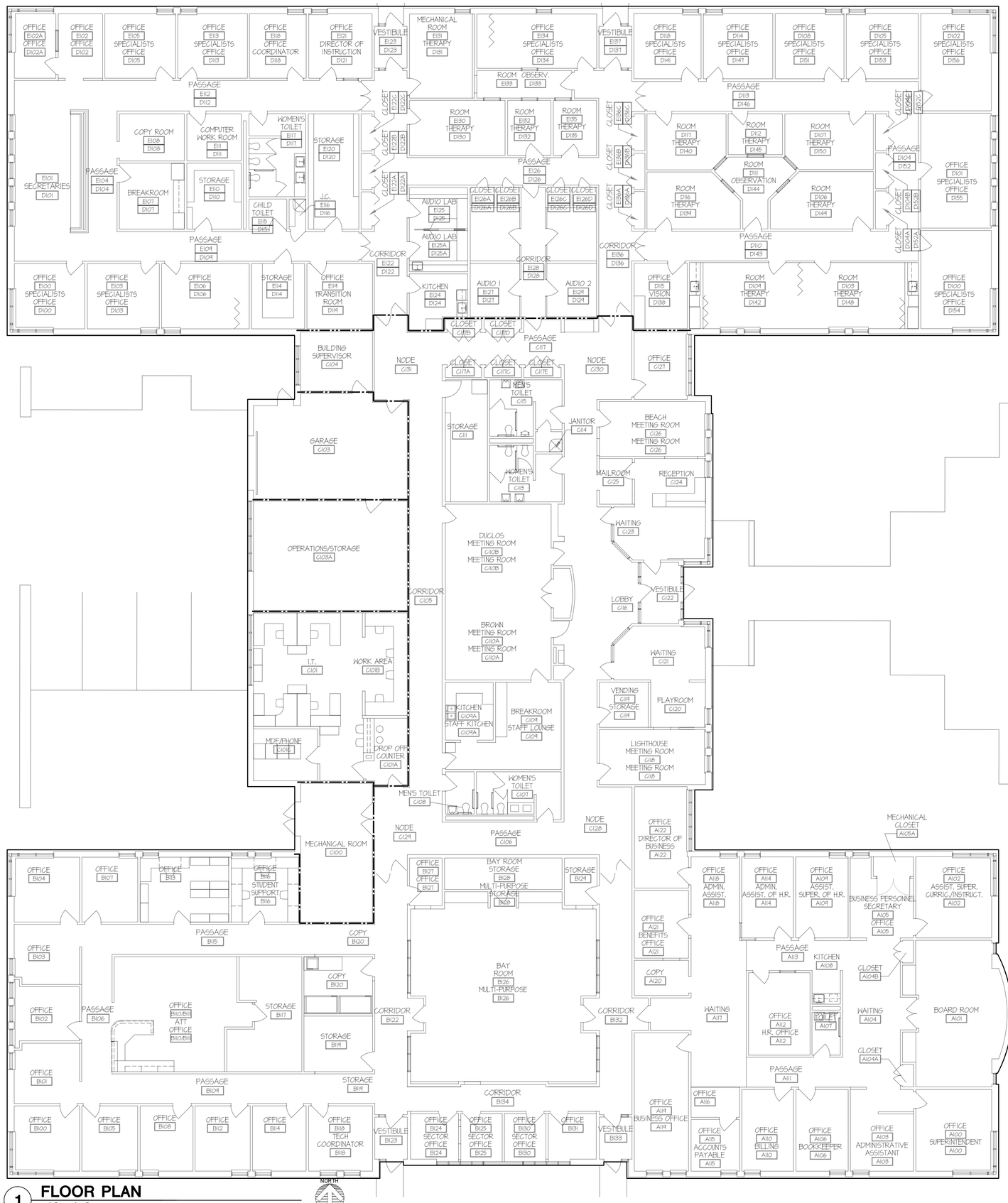
SHEET
Architectural
Ceiling Plan

A1.1



1 FLOOR PLAN
1/8" = 1'-0"

2 MEZZANINE FLOOR PLAN
1/8" = 1'-0"

NORTH

WALL LEGEND

- ONE-HOUR RATED FIRE SEPARATION ASSEMBLY
- TWO-HOUR RATED FIRE SEPARATION ASSEMBLY
- WALLS THAT ARE NOT ONE-HOUR OR TWO- HOUR ARE EITHER GYP. BD. TO 6" ABOVE ACOUSTICAL TILE CEILING OR GYP. BD. 6" ABOVE ACOUSTICAL TILE CEILING WITH ONE EXTENDED TO BOTTOM CHORD OF TRUSS

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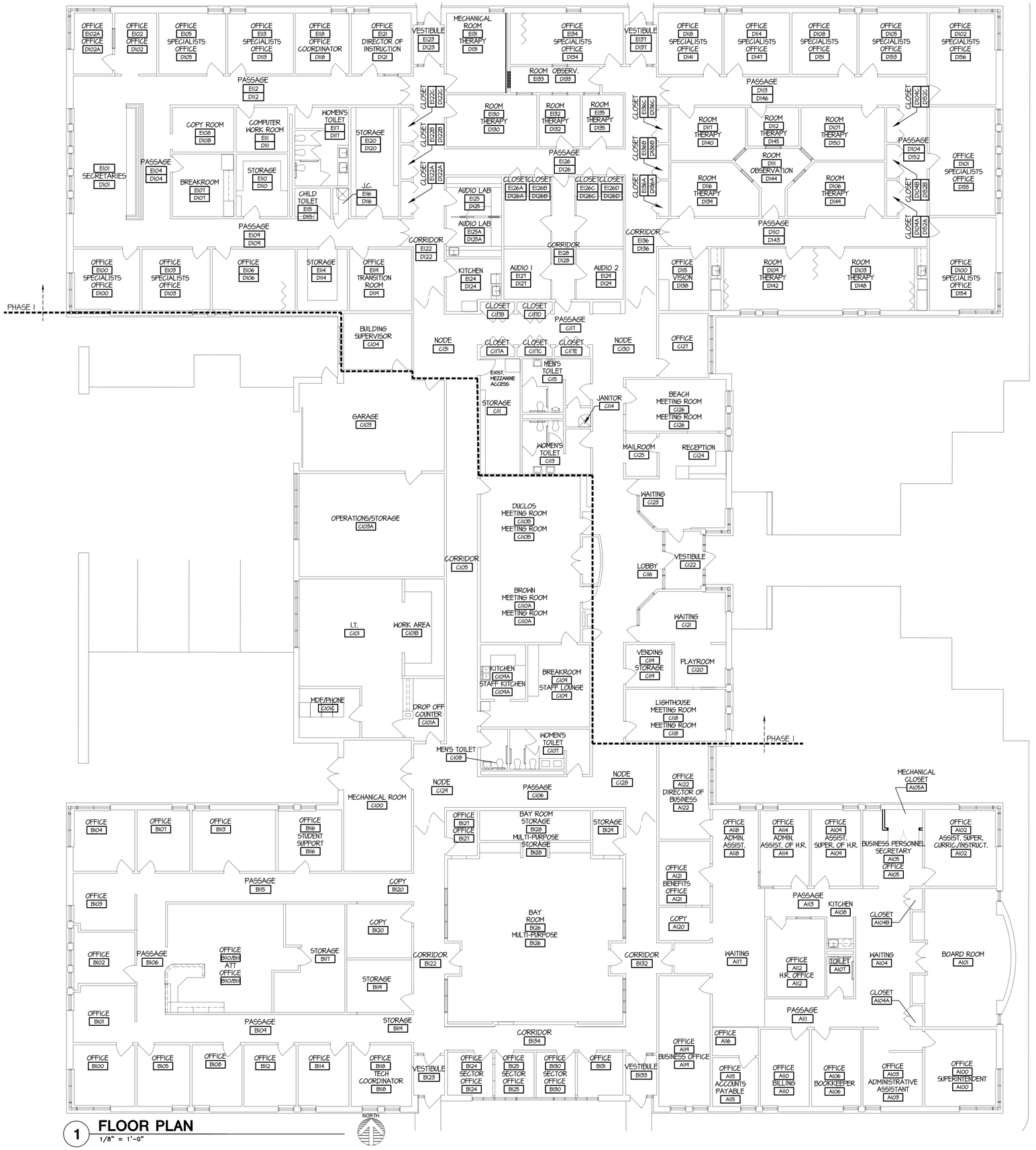
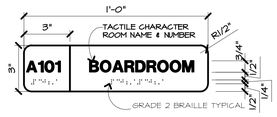
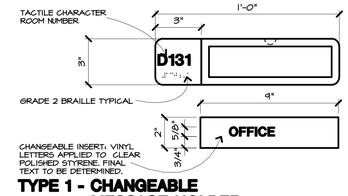
SHEET
Fire Separation Plans - For Reference
A2.0



1 **FLOOR PLAN**
1/8" = 1'-0"



TYPE 2 - ROOM IDENTIFICATION



TYPE 1 - CHANGEABLE MESSAGE HOLDER

A **SIGNAGE**
3" = 1'-0"

PROVIDE NEW SIGNAGE AT LOCATIONS WITH NEW NUMBERING - SEE ROOMS BEGINNING WITH 'D' & 'E'

DO NOT INCLUDE VESTIBULES, PASSAGES, CORRIDORS, TOILETS, OR CLOSETS

COLOR TO MATCH EXISTING

LEGEND

NEW NAME
A102
OLD NAME
A102
NEW NAME AND NUMBER
OLD NAME AND NUMBER

NEW NAME AND NUMBER ON TOP, OLD NAME AND NUMBER BELOW.

WHERE ONLY ONE IS SHOWN - THERE IS NO CHANGE.

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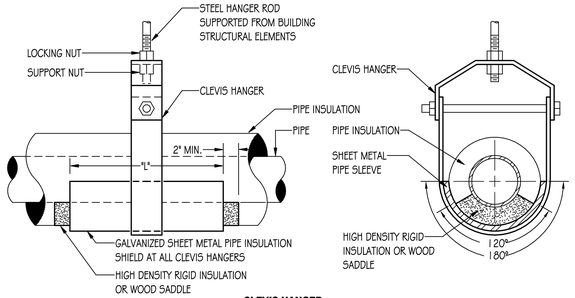
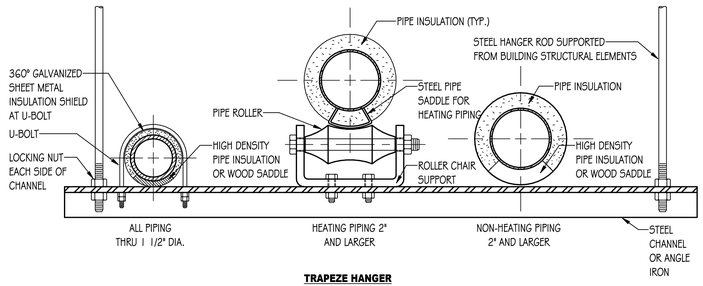
SHEET
Room Names & Numbers Plan
A3.0



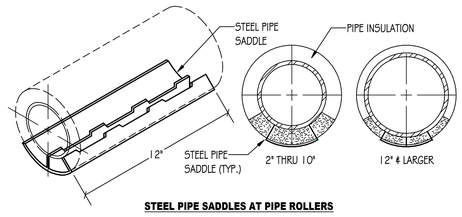
CLEVIS HANGER

PIPE INSULATION SHIELD SCHEDULE		
PIPE SIZE	LENGTH	GAUGE
UP TO 3/4"	6"	20 GA.
1" - 2"	12"	18 GA.
2 1/2" - 4"	12"	16 GA.
5" & 6"	18"	16 GA.
8" & UP	24"	14 GA.

NOTE: 1. CONFER WITH ARCHITECT AND REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON ACCEPTABLE METHODS AND LOCATIONS FOR HANGER SUPPORTS



TRAPEZE HANGER



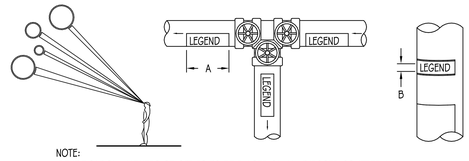
STEEL PIPE SADDLES AT PIPE ROLLERS

TYPICAL PIPE HANGER DETAILS

NO SCALE

GENERAL REMODELING NOTES - ALL CONTRACTORS

1. ALL WORK SHOWN ON DRAWINGS SHALL BE CONSIDERED NEW AND IN CONTRACT UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, DUCTWORK, CONDUITS, RACEWAYS, ETC. AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
3. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION.
4. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED ARE CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY OWNER/ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK.
5. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, CONDUIT, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
6. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTORS SHALL VERIFY EXACT LOCATIONS OF ALL DEVICES AND EQUIPMENT WITH FIELD CONDITIONS, SHOP DRAWINGS, AND WORK OF OTHER TRADES PRIOR TO ROUGH-IN. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
7. CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS AS SHOWN ON THE DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ARCHITECT BEFORE CONTRACTOR CUTS ANY STRUCTURAL BUILDING MEMBER.
8. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ARCHITECT/ENGINEER AND OWNERS STIPULATION AS DIRECTED.
9. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTOR'S WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.
10. CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING AND REMOVAL/REPLACEMENT OF NEW OR EXISTING BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OR REMOVAL OF THEIR WORK. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK OR REMOVAL OF EXISTING WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE ARCHITECT AND OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT. (NOTE: CONTRACTOR SHALL VERIFY EXISTING BUILDING'S ROOF WARRANTY AND EMPLOY OTHER SUBCONTRACTOR(S) AS REQUIRED BY ROOF MANUFACTURER'S REPRESENTATIVE SO AS NOT TO VOID OWNER'S ROOF WARRANTY.)
11. SOME OF THE EXISTING ITEMS AND EQUIPMENT SCHEDULED TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER. ANY ITEMS THAT THE OWNER WANTS TO RETAIN SHALL BE REMOVED CAREFULLY SO AS NOT TO DAMAGE THEM. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEAN-UP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEAN-UP, THE ARCHITECT/ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ARCHITECT/ENGINEER.
13. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR PIPING, DUCTWORK, CONDUIT, TANKS, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
14. IT IS MANDATORY THAT THE COMPLETE EXISTING BUILDING REMAIN IN CONTINUOUS AND NON-INTERRUPTED OPERATION DURING REMODELING/ALTERING OF SAID EXISTING BUILDING. THE SPECIFIC AREA(S) BEING REMODELED/ALTERED AT ANY SCHEDULED TIME ARE OBVIOUSLY EXCLUSIVE OF THIS STATEMENT. SERVICES TO EXISTING BUILDING SHALL BE KEPT IN CONTINUOUS OPERATION INCLUDING POWER, SIGNAL SYSTEMS, LIGHTING, TELEPHONE, HEATING, COOLING, VENTILATING, TEMPERATURE CONTROL, SEWERS AND HOT AND COLD WATER. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH CONTRACT WORK SHALL BE ARRANGED WITH THE OWNER A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE. SUCH INTERRUPTIONS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AS FAR AS TIME INTERVAL IS INVOLVED AND TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED BY THE CONTRACTOR ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.
15. UNLESS INDICATED OTHERWISE, THE ARCHITECT/ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED, THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ARCHITECT/ENGINEER IMMEDIATELY.
16. WHERE WORK CALLED FOR ON THE DRAWINGS OR IN THE SPECIFICATIONS INVOLVES THE REMOVAL OR RELOCATION OF PIPING OR EQUIPMENT CONTAINING REFRIGERANT, ALL REFRIGERANT SHALL BE RECOVERED BY APPROVED METHODS PER EPA REGULATIONS.
17. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 6 X 6 PLANKS AND/OR WOOD PALLETS. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED OUTSIDE THE BUILDING ON THE SITE UNLESS IT IS SUPPORTED OFF THE GROUND AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS.
18. THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL DESIGN. IF THE CONTRACTOR PURCHASES EQUIPMENT FROM A SPECIFIED ACCEPTABLE MANUFACTURER, BUT NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. WHEN EQUIPMENT SUBMITTED FOR REVIEW DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONTRACTOR SHALL PAY FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED.
19. CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT SUBMITTED FOR REVIEW MEETS THE CAPACITY AND DUTY SPECIFIED. WHEN EQUIPMENT SUBMITTED FOR REVIEW REQUIRES MODIFICATIONS TO THE WORK OF OTHER CONTRACTORS, SUBMITTING CONTRACTOR SHALL PAY FOR ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT FUNCTION SAFELY AND PROPERLY.
20. CONTRACTOR SHALL FIELD VERIFY THE SIZE OF EXISTING OPENINGS, WINDOWS, DOORS, CORRIDORS, ROOMS, ETC. FOR ACCESS OF THE NEW EQUIPMENT INTO OR REMOVAL OF EXISTING EQUIPMENT FROM THE BUILDING. IF OPENINGS ARE TOO SMALL FOR ACCESS THEN CONTRACTOR SHALL, AT THEIR OWN EXPENSE, PROVIDE NEW OR ENLARGED OPENINGS AND RESTORE SAME TO ORIGINAL SIZE AND CONDITION. CONTRACTOR MAY ELECT TO ORDER THE EQUIPMENT DISASSEMBLED AND/OR WITH SPLIT HOUSING FOR ENTRANCE INTO THE EXISTING SPACE OR BUILDING. CONTRACTOR SHALL REASSEMBLE EQUIPMENT AFTER IT IS IN THE SPACE AT THEIR OWN EXPENSE.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THEIR ASSOCIATED FEES.



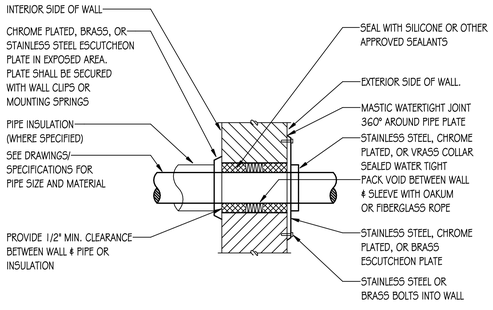
NOTE:
IDENTIFICATION MARKERS OR STRIPS TO BE PLACED ON ALL EXPOSED COVERED AND UNCOVERED PIPES AT 50'-0" INTERVALS, ADJACENT TO ALL VALVES OR BRANCHES, AND AT BOTH SIDES OF WALL/FLOOR PENETRATIONS. ARROWS OF SAME COLOR AS IDENTIFICATION MARKERS SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING DIRECTION OF FLOW.

SIZE OF LEGEND LETTERS		
OUTSIDE DIAMETER OF PIPE OR COVERING	LENGTH OF COLOR FIELD A	SIZE OF LETTERS B
3/4" TO 1 1/4"	8"	1/2"
1 1/2" TO 2"	8"	3/4"
2 1/2" TO 6"	12"	1 1/4"
8" TO 10"	24"	2 1/2"
OVER 10"	32"	3 1/2"

SERVICE	BACKGROUND OR COLOR BAND	LETTER COLOR
CONDENSATE	SAFETY GREEN	WHITE
NATURAL GAS	SAFETY YELLOW	BLACK
NATURAL GAS VENT	SAFETY YELLOW	BLACK
SANITARY DRAIN	SAFETY GREEN	WHITE
PLUMBING VENT	SAFETY GREEN	WHITE
STORM WATER	SAFETY GREEN	WHITE
CITY WATER	SAFETY GREEN	WHITE
DOMESTIC COLD WATER	SAFETY GREEN	WHITE
DOMESTIC HOT WATER	SAFETY GREEN	WHITE
DOMESTIC HOT WATER CIRC.	SAFETY GREEN	WHITE
FIRE PROTECTION (SPRINKLER)	SAFETY RED	WHITE

TYPICAL PIPE IDENTIFICATION MARKERS

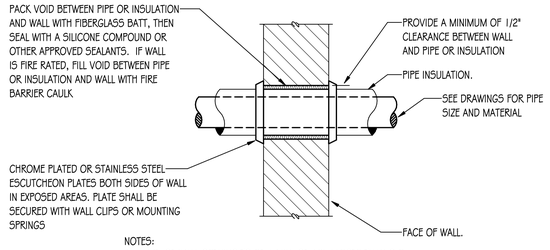
NO SCALE



NOTES:
1. CONTRACTOR SHALL ISOLATE ALL PIPES WHICH VIBRATE FROM CONSTRUCTION IN ORDER TO AVOID TRANSMISSION TO STRUCTURE.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THEIR WALL OPENINGS WITH OTHER TRADES AND/OR CONTRACTORS.

PIPE PENETRATION OF EXTERIOR WALL ABOVE GRADE

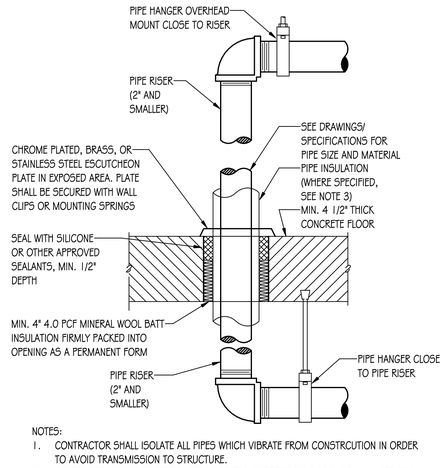
NO SCALE



NOTES:
1. I.D. OF WALL OPENING TO BE A MIN. OF 1/2" LARGER THAN O.D. OF PIPE OR INSULATION PASSING THROUGH WALL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THEIR WALL OPENINGS WITH OTHER TRADES AND/OR CONTRACTORS.
3. PIPE PENETRATIONS OF SMOKE OR FIRE WALLS SHALL BE IN COMPLIANCE WITH NFPA-90A.

PIPE PENETRATION OF INTERIOR WALL DETAIL

NO SCALE



NOTES:
1. CONTRACTOR SHALL ISOLATE ALL PIPES WHICH VIBRATE FROM CONSTRUCTION IN ORDER TO AVOID TRANSMISSION TO STRUCTURE.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THEIR WALL OPENING WITH OTHER TRADES AND/OR CONTRACTORS.
3. WHERE INSULATED: 1" THICK 3.5 PCF GLASS FIBER INSULATION WITH ALL SERVICE JACKET SHALL BE UTILIZED AND SEALED WITH METAL FASTENERS OR SELF SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTNERS OR WITH BUTT TAPE SUPPLIED WITH PRODUCT.

PIPE PENETRATION OF FLOOR ASSEMBLY

NO SCALE

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HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

NO.	DESCRIPTION	DATE
-	Issued For Bid	12-22-2023

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2010	2010
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23.825.004	12-22-2023

SHEET
MECHANICAL/ ELECTRICAL NOTES AND DETAILS

ME1.0

DRAWING NOTES

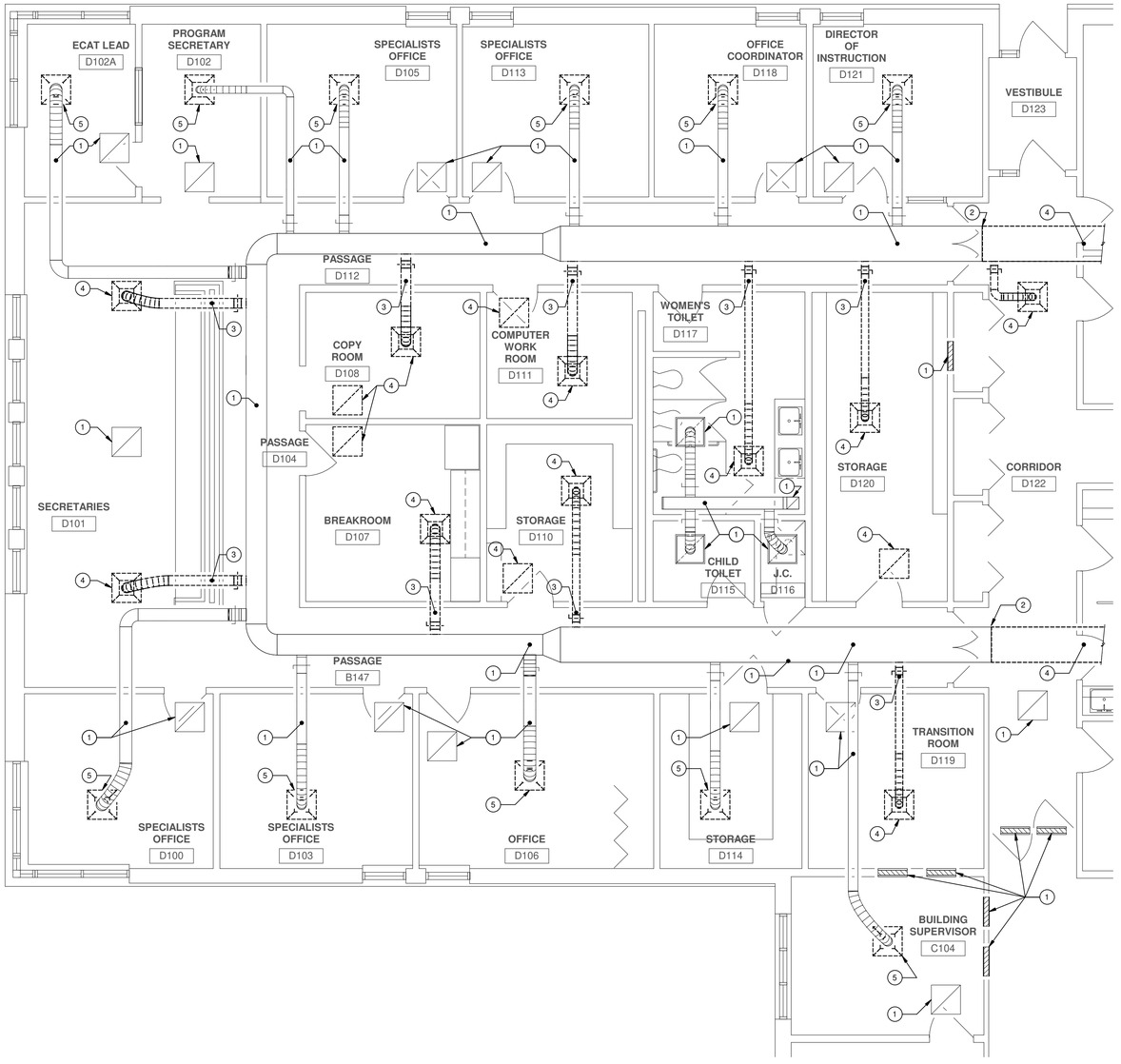
1 EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.

2 NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.

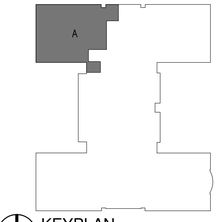
3 REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED AND CAP AT MAIN.

4 REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.

5 REMOVE DIFFUSER/GRILLE.



1 VENTILATION DEMOLITION PLAN - AREA A - PHASE I
1/4" = 1'-0"



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SHEET
VENTILATION DEMOLITION PLAN - AREA A - PHASE I

DHV1.1

DRAWING NOTES

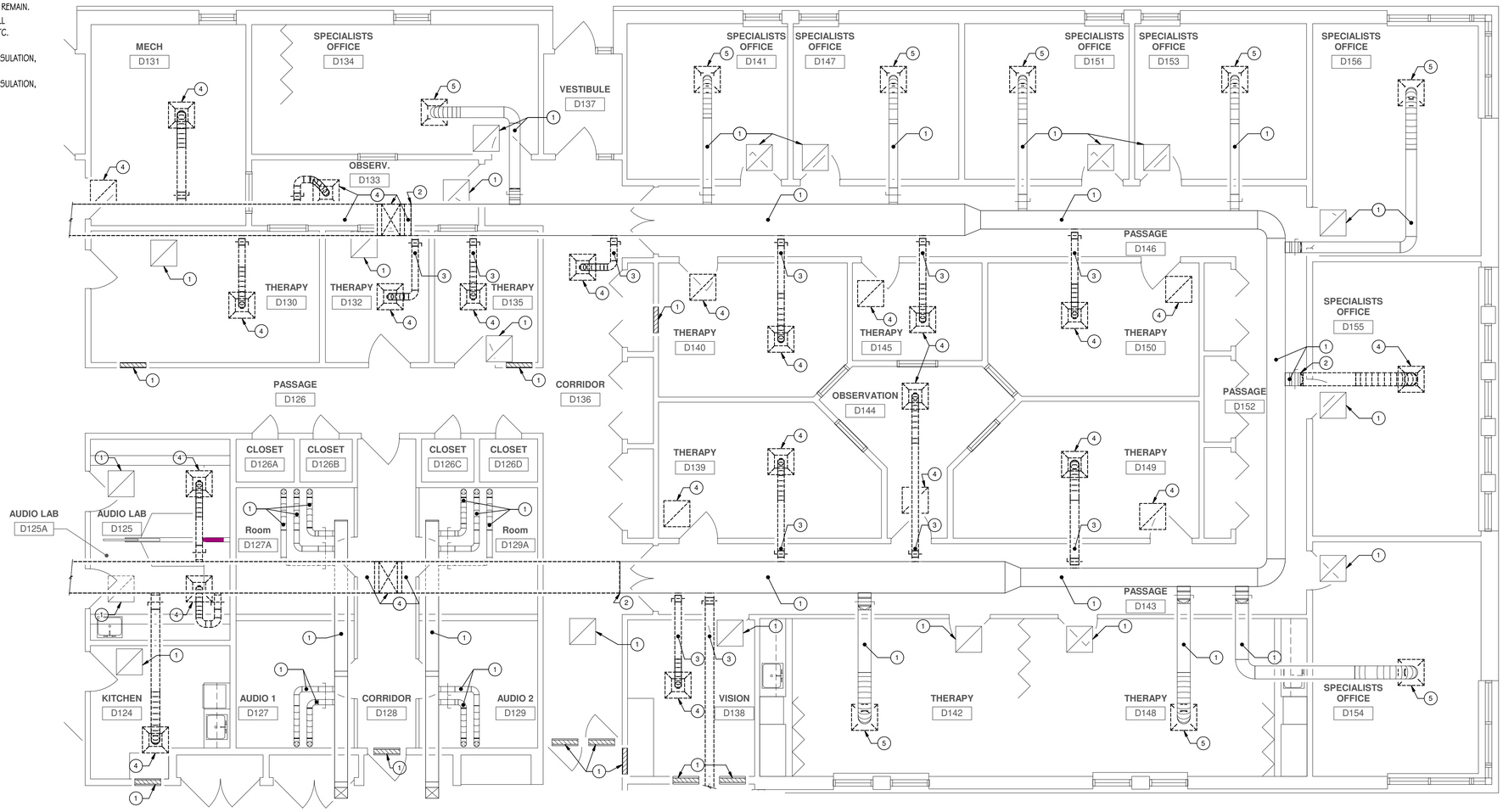
1 EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.

2 NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.

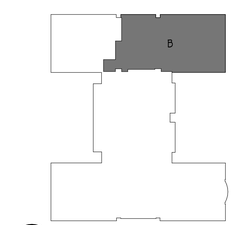
3 REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED AND CAP AT MAIN.

4 REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.

5 REMOVE DIFFUSER/GRILLE.



1 VENTILATION DEMOLITION PLAN - AREA B - PHASE I
1/4" = 1'-0"



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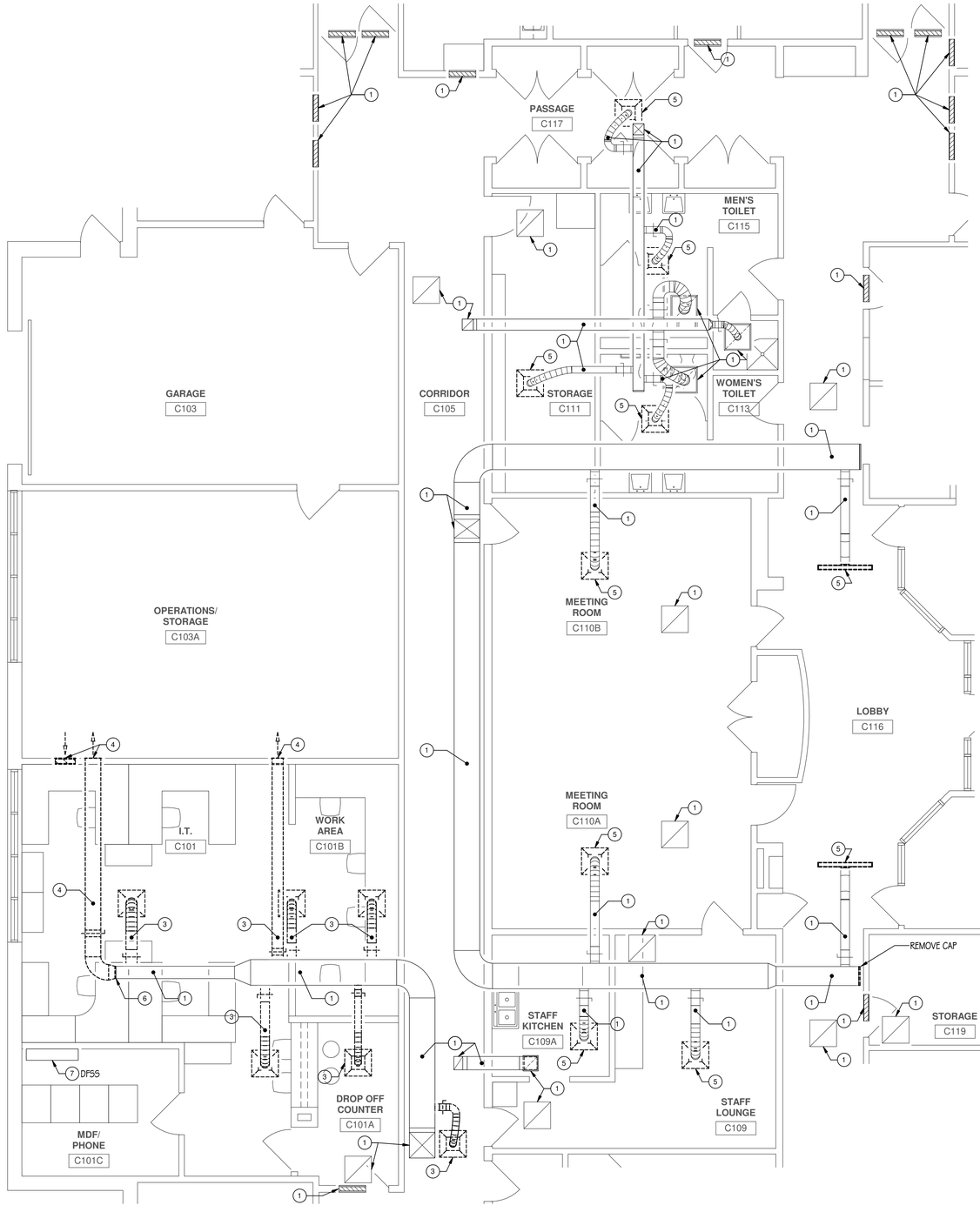
VENTILATION DEMOLITION PLAN - AREA B - PHASE I

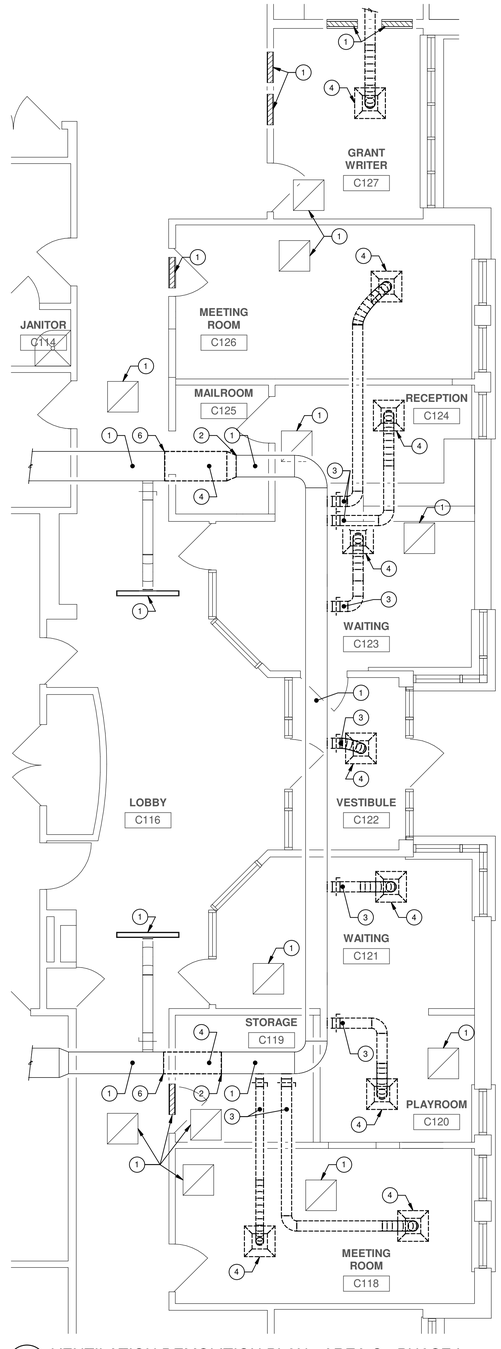
DHV1.2

DRAWING NOTES

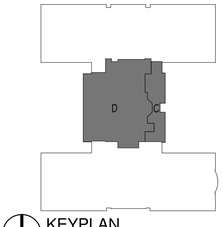
1. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
2. NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
3. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED AND CAP AT MAIN.
4. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.
5. REMOVE DIFFUSER/GRILLE.
6. CAP EXISTING DUCT AT LOCATION SHOWN AND REMOVE ALL DUCTWORK, REGISTERS, DIFFUSERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
7. EXISTING HVAC EQUIPMENT TO REMAIN.



1 VENTILATION DEMOLITION PLAN - AREA D - PHASE II
1/4" = 1'-0"



2 VENTILATION DEMOLITION PLAN - AREA C - PHASE I
1/4" = 1'-0"



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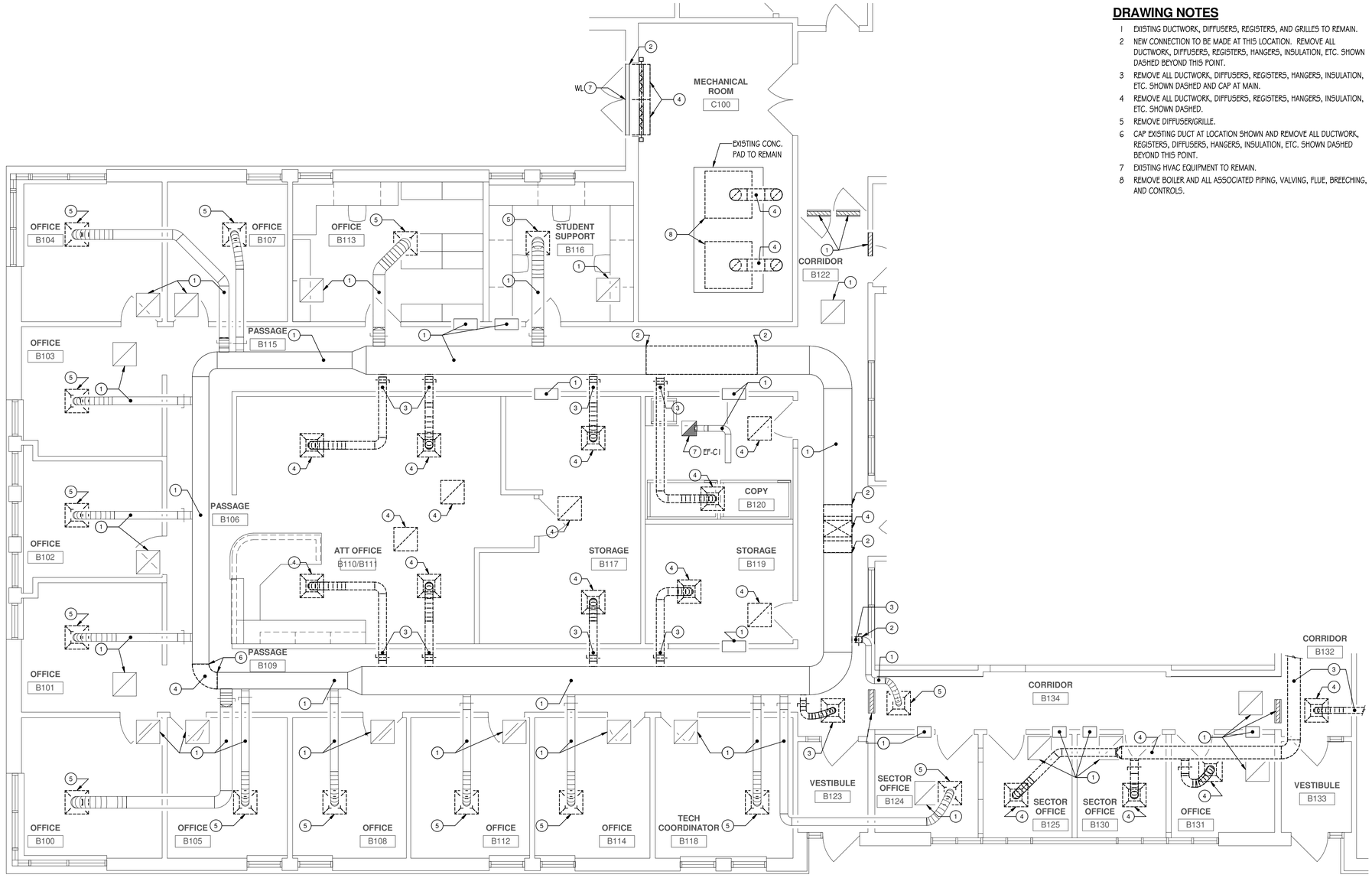
VENTILATION DEMOLITION PLAN - AREA C AND D - PHASE I AND II

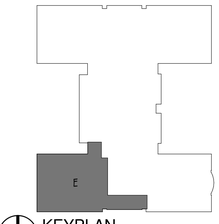
DHV1.3

DRAWING NOTES

1. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
2. NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
3. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED AND CAP AT MAIN.
4. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.
5. REMOVE DIFFUSER/GRILLE.
6. CAP EXISTING DUCT AT LOCATION SHOWN AND REMOVE ALL DUCTWORK, REGISTERS, DIFFUSERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
7. EXISTING HVAC EQUIPMENT TO REMAIN.
8. REMOVE BOILER AND ALL ASSOCIATED PIPING, VALVING, FLUE, BREECHING, AND CONTROLS.



1 VENTILATION DEMOLITION PLAN - AREA E - PHASE II
1/4" = 1'-0"



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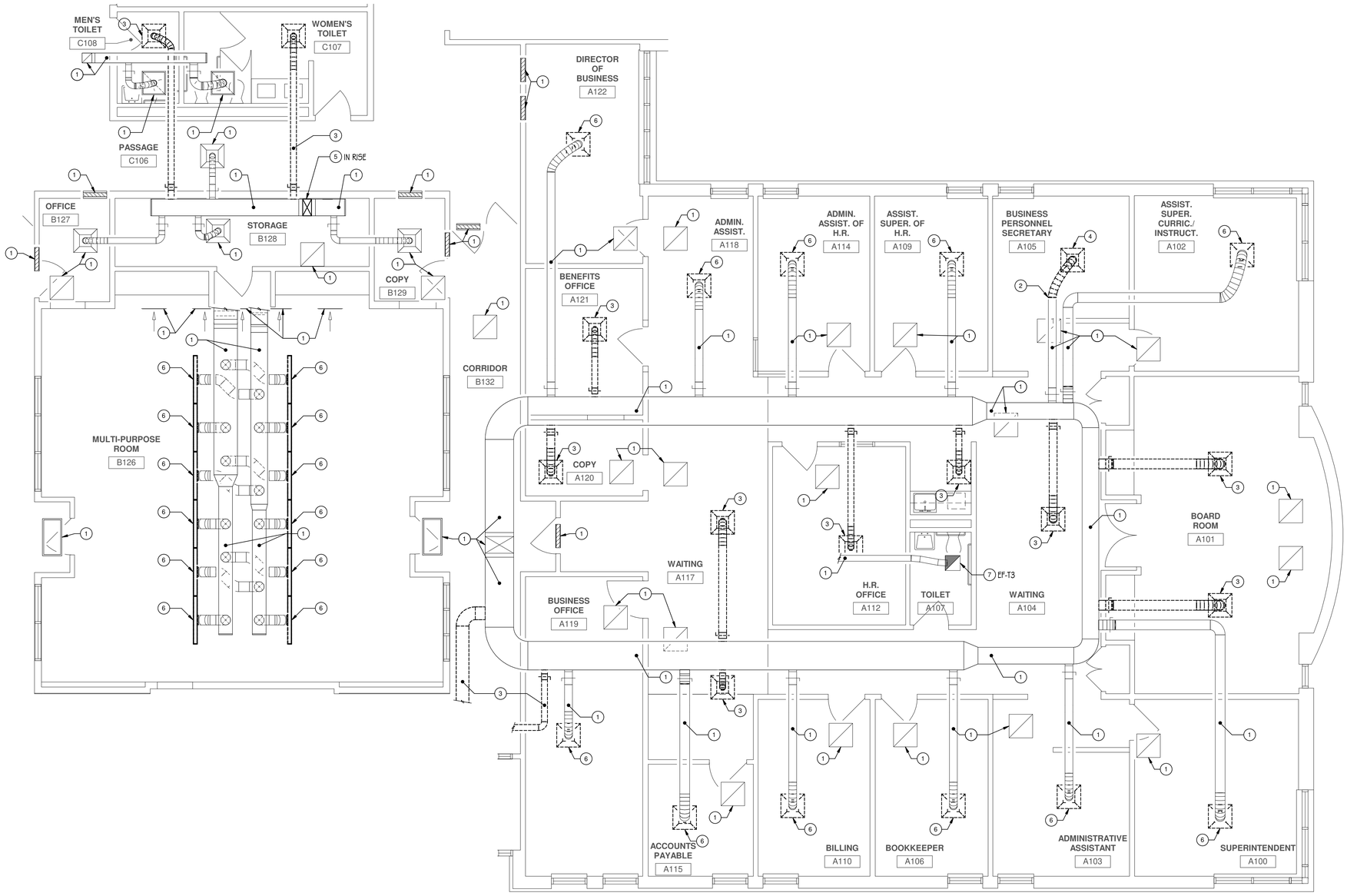
VENTILATION DEMOLITION PLAN - AREA E - PHASE II

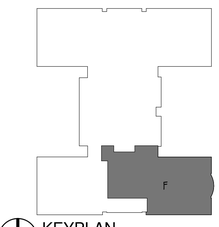
DHV1.4

DRAWING NOTES

1. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
2. NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
3. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED AND CAP AT MAIN.
4. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.
5. CAP EXISTING DUCT AT LOCATION SHOWN AND REMOVE ALL DUCTWORK, REGISTERS, DIFFUSERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
6. REMOVE DIFFUSER/GRILLE.
7. EXISTING HVAC EQUIPMENT TO REMAIN.



1 VENTILATION DEMOLITION PLAN - AREA F - PHASE II
1/4" = 1'-0"



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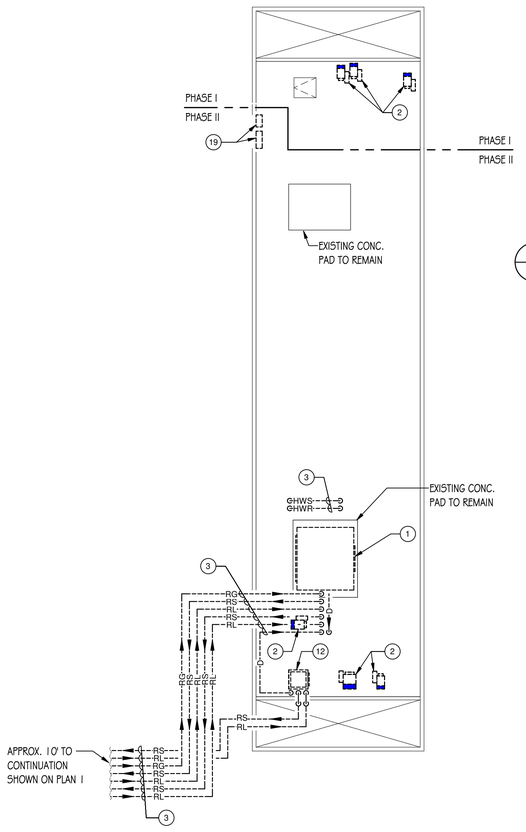
SHEET
VENTILATION DEMOLITION PLAN - AREA F - PHASE II

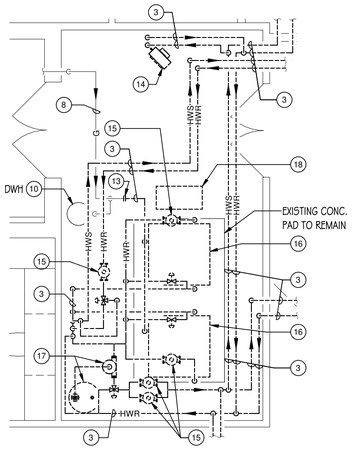
DHV1.5

DRAWING NOTES

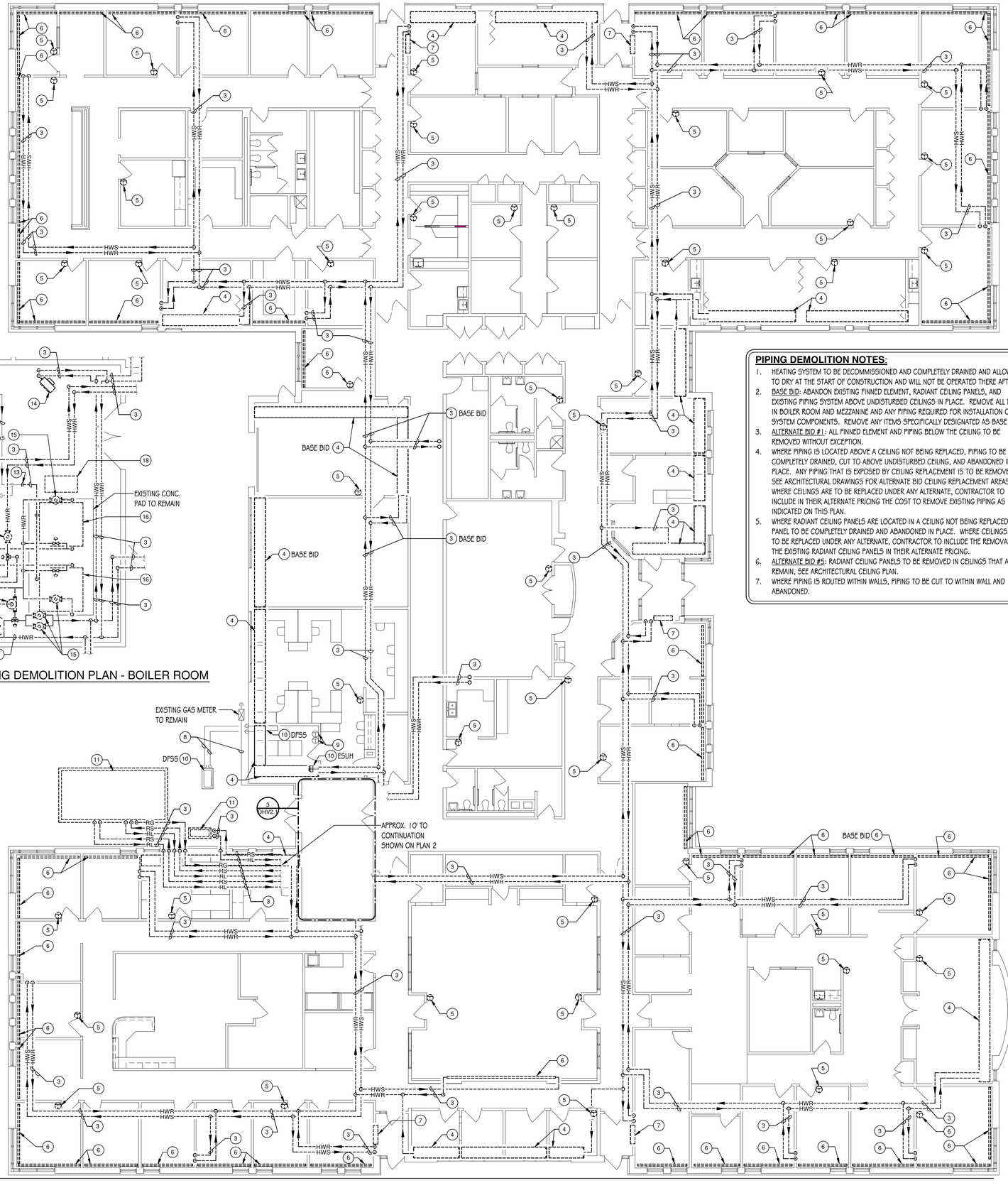
1 REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED DUCTWORK, DAMPERS, PIPING, VALVING, CONTROLS, HANGERS, SUPPORTS, INSULATION, ETC.
2 REMOVE EXISTING VAV BOX AND ASSOCIATED DUCTWORK, HANGERS, SUPPORTS, BRANCH PIPING, VALVING, CONTROLS, ETC.
3 REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED.
4 REMOVE RADIANT CEILING PANEL AND ALL ASSOCIATED PIPING, VALVING AND CONTROLS.
5 REMOVE EXISTING THERMOSTAT INCLUDING ALL ASSOCIATED CONDUIT, WIRING, PNEUMATIC TUBING, ETC. LOCATED ABOVE ANY ACCESSIBLE CEILING BETWEEN THERMOSTAT AND THE UNIT IT CONTROLS. PROVIDE BLANK COVER PLATE OVER ALL ABANDONED JUNCTION BOXES IN WALLS THAT ARE TO REMAIN.
6 REMOVE FINNED TUBE RADIATION ENCLOSURE, FINNED ELEMENT, AND ALL ASSOCIATED PIPING, VALVING AND CONTROLS.
7 REMOVE CABINET UNIT HEATER AND ALL ASSOCIATED PIPING, VALVING AND CONTROLS.
8 EXISTING PIPING AND VALVING TO REMAIN.
9 EXISTING THERMOSTAT TO REMAIN.
10 EXISTING HVAC EQUIPMENT TO REMAIN.
11 REMOVE AIR COOLED CONDENSING UNIT, CONCRETE PAD, AND ALL ASSOCIATED PIPING, VALVING, AND CONTROLS.
12 REMOVE EXISTING VARIABLE REFRIGERANT FLOW UNIT AND ALL ASSOCIATED PIPING, VALVING.
13 NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
14 REMOVE SUSPENDED UNIT HEATER AND ALL ASSOCIATED HANGERS, PIPING, VALVING AND CONTROLS.
15 REMOVE INLINE PUMP AND ALL ASSOCIATED PIPING, VALVING, INSULATION, HANGERS, SUPPORTS, ETC.
16 REMOVE BOILER AND ALL ASSOCIATED PIPING, VALVING, FLUE, BREECHING, AND CONTROLS.
17 REMOVE EXISTING AIR SEPARATOR AND EXPANSION TANK INCLUDING ANY ASSOCIATED PIPING, VALVING, INSULATION, HANGERS. ETC.
18 REMOVE TEMPERATURE CONTROL AIR COMPRESSOR, CONCRETE PAD, REFRIGERATED AIR DRYER, AND ALL ASSOCIATED PNEUMATIC PIPING, VALVING, AND CONTROLS.
19 REMOVE VARIABLE FREQUENCY DRIVES AND ALL ASSOCIATED CONTROLS, CONDUIT, WIRING, ETC.



2 MEZZANINE PIPING DEMOLITION PLAN
1/8" = 1'-0"



3 ENLARGED PIPING DEMOLITION PLAN - BOILER ROOM
1/4" = 1'-0"



1 PIPING DEMOLITION PLAN
1/8" = 1'-0"

PIPING DEMOLITION NOTES:

1. HEATING SYSTEM TO BE DECOMMISSIONED AND COMPLETELY DRAINED AND ALLOWED TO DRY AT THE START OF CONSTRUCTION AND WILL NOT BE OPERATED THERE AFTER.
2. BASE BID: ABANDON EXISTING FINNED ELEMENT, RADIANT CEILING PANELS, AND EXISTING PIPING SYSTEM ABOVE UNDISTURBED CEILINGS IN PLACE. REMOVE ALL PIPING IN BOILER ROOM AND MEZZANINE AND ANY PIPING REQUIRED FOR INSTALLATION OF NEW SYSTEM COMPONENTS. REMOVE ANY ITEMS SPECIFICALLY DESIGNATED AS BASE BID.
3. ALTERNATE BID #1: ALL FINNED ELEMENT AND PIPING BELOW THE CEILING TO BE REMOVED WITHOUT EXCEPTION.
4. WHERE PIPING IS LOCATED ABOVE A CEILING NOT BEING REPLACED, PIPING TO BE COMPLETELY DRAINED, CUT TO ABOVE UNDISTURBED CEILING, AND ABANDONED IN PLACE. ANY PIPING THAT IS EXPOSED BY CEILING REPLACEMENT IS TO BE REMOVED, SEE ARCHITECTURAL DRAWINGS FOR ALTERNATE BID CEILING REPLACEMENT AREAS. WHERE CEILINGS ARE TO BE REPLACED UNDER ANY ALTERNATE, CONTRACTOR TO INCLUDE IN THEIR ALTERNATE PRICING THE COST TO REMOVE EXISTING PIPING AS INDICATED ON THIS PLAN.
5. WHERE RADIANT CEILING PANELS ARE LOCATED IN A CEILING NOT BEING REPLACED, PANEL TO BE COMPLETELY DRAINED AND ABANDONED IN PLACE. WHERE CEILINGS ARE TO BE REPLACED UNDER ANY ALTERNATE, CONTRACTOR TO INCLUDE THE REMOVAL OF THE EXISTING RADIANT CEILING PANELS IN THEIR ALTERNATE PRICING.
6. ALTERNATE BID #5: RADIANT CEILING PANELS TO BE REMOVED IN CEILINGS THAT ARE TO REMAIN, SEE ARCHITECTURAL CEILING PLAN.
7. WHERE PIPING IS ROUTED WITHIN WALLS, PIPING TO BE CUT TO WITHIN WALL AND ABANDONED.

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HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

NO.	DESCRIPTION	DATE
-	Issued For Bid	12-22-2023

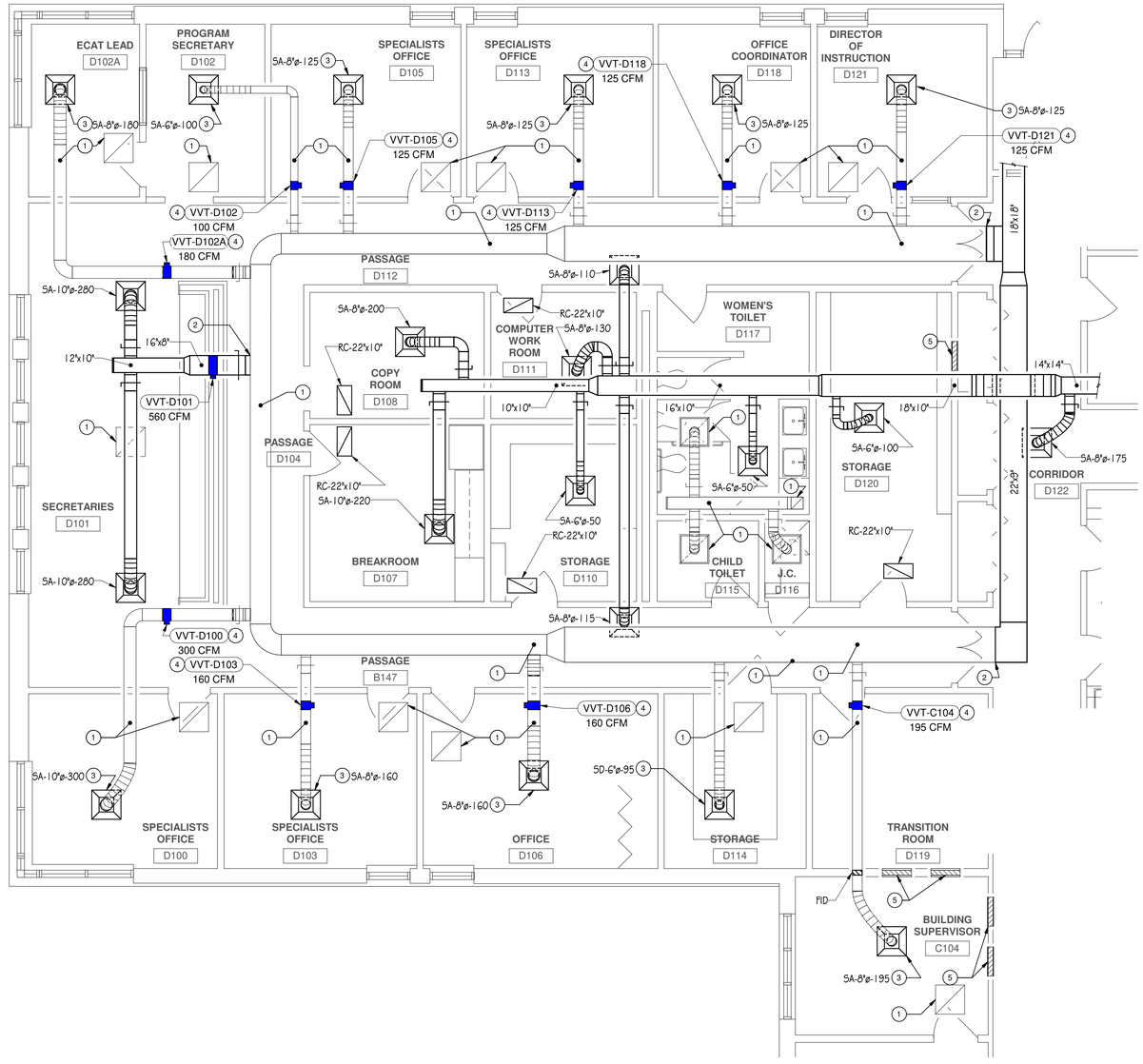
PREPARED BY	APPROVED BY
2010	2010
JOB NO.	DATE
23.625.004	12-22-2023

SHEET
HVAC PIPING DEMOLITION PLAN - PHASE I AND II

DHV2.1

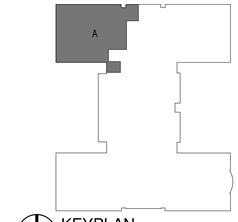
DRAWING NOTES

1. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
2. MAKE NEW CONNECTION TO EXISTING DUCTWORK AT THIS LOCATION.
3. MODIFY/EXTEND EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW DIFFUSER/GRILLE IN EXISTING CEILING SYSTEM.
4. MODIFY EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW CONTROL DAMPER IN EXISTING DUCTWORK. VERIFY EXISTING DUCTWORK SIZES.
5. EXISTING FIRE DAMPER TO REMAIN. REPLACE LINKAGE AND VERIFY OPERATION.



1 VENTILATION PLAN - AREA A - PHASE I
1/4" = 1'-0"

BIDDING NOTE:
SEE ARCHITECTURAL DRAWINGS FOR ALTERNATE BID CEILING REPLACEMENT AREAS. WHERE CEILINGS ARE TO BE REPLACED UNDER ANY ALTERNATE, CONTRACTOR TO INCLUDE IN THEIR ALTERNATE PRICING TO REMOVE EXISTING RETURN GRILLE, CLEAN, AND RE-INSTALL IN NEW CEILING GRID.



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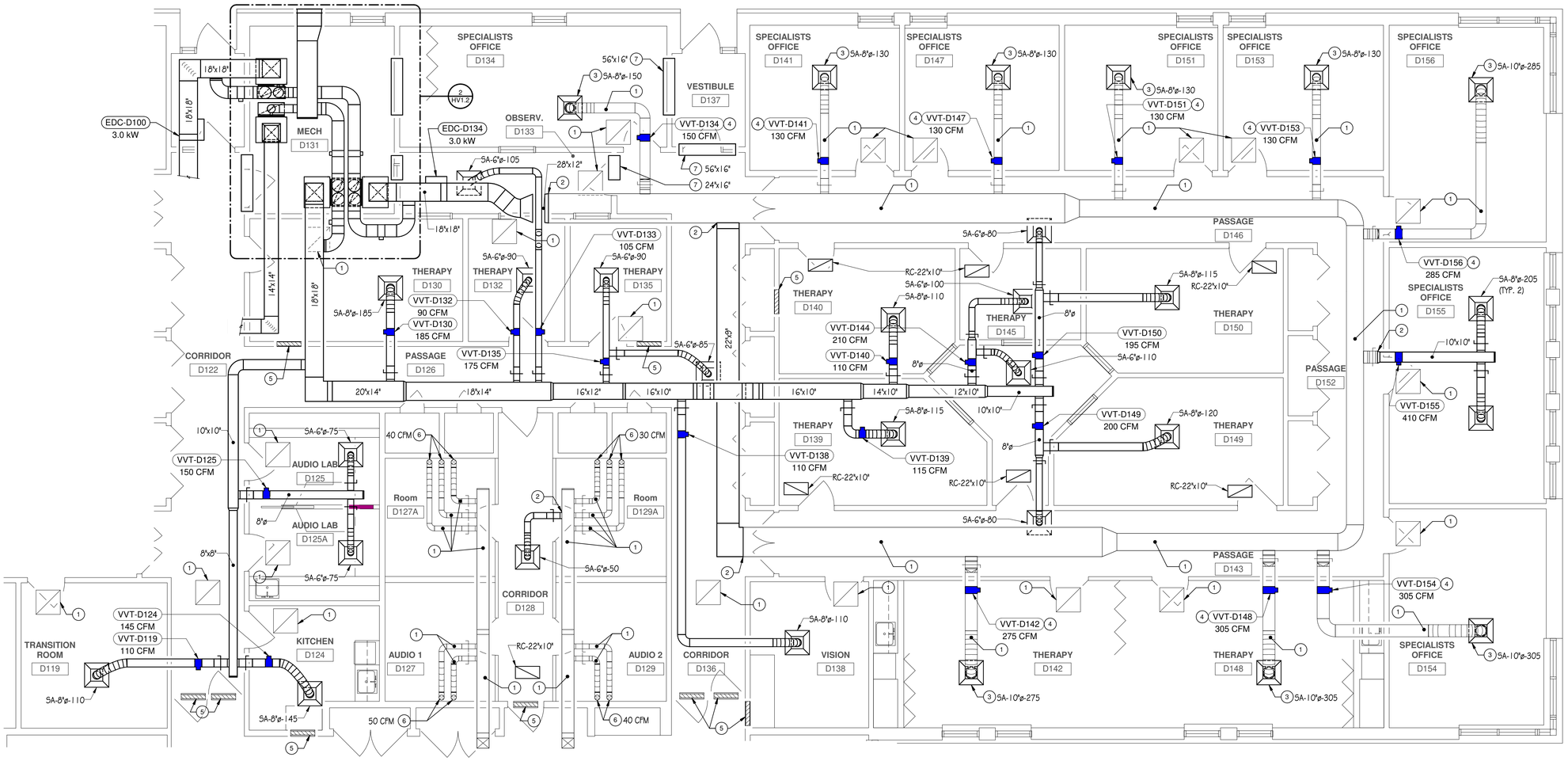
SHEET
VENTILATION PLAN - AREA A - PHASE I

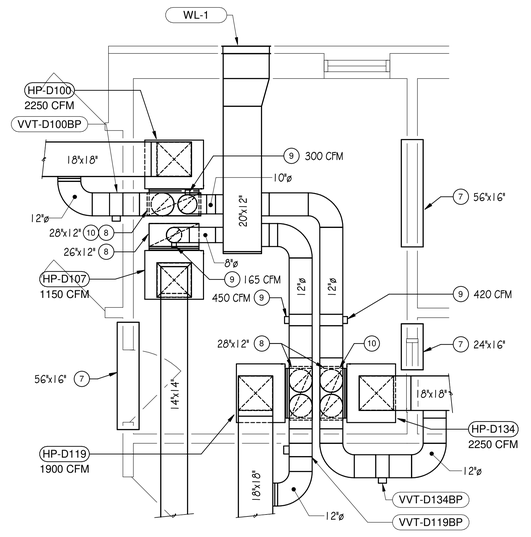
HV1.1



1 VENTILATION PLAN - AREA B - PHASE I
1/4" = 1'-0"

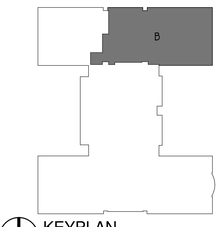
DRAWING NOTES

1. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
2. MAKE NEW CONNECTION TO EXISTING DUCTWORK AT THIS LOCATION.
3. MODIFY/EXTEND EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW DIFFUSER/GRILLE IN EXISTING CEILING SYSTEM.
4. MODIFY EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW CONTROL DAMPER IN EXISTING DUCTWORK. VERIFY EXISTING DUCTWORK SIZES.
5. EXISTING FIRE DAMPER TO REMAIN. REPLACE LINKAGE AND VERIFY OPERATION.
6. BALANCE EXISTING DIFFUSER TO AIRFLOW RATE INDICATED.
7. TRANSFER OPENING OF SIZE INDICATED IN WALL ABOVE CEILING.
8. DUCT OF SIZE INDICATED TO TERMINATE MIN. 6" A.F.F. WITH MANUAL BALANCING DAMPER AND BIRDSCREEN.
9. BALANCE OPEN POSITION OF MODULATING CONTROL DAMPER TO AIRFLOW RATE INDICATED.
10. PROVIDE DUCT SMOKE DETECTOR AT RETURN OPENING, COORDINATE EXACT LOCATION WITH ELECTRICIAN.



2 ENLARGED VENTILATION PLAN - MECH D131
3/8" = 1'-0"

BIDDING NOTE:
SEE ARCHITECTURAL DRAWINGS FOR ALTERNATE BID CEILING REPLACEMENT AREAS. WHERE CEILINGS ARE TO BE REPLACED UNDER ANY ALTERNATE, CONTRACTOR TO INCLUDE IN THEIR ALTERNATE PRICING TO REMOVE EXISTING RETURN GRILLE, CLEAN, AND RE-INSTALL IN NEW CEILING GRID.



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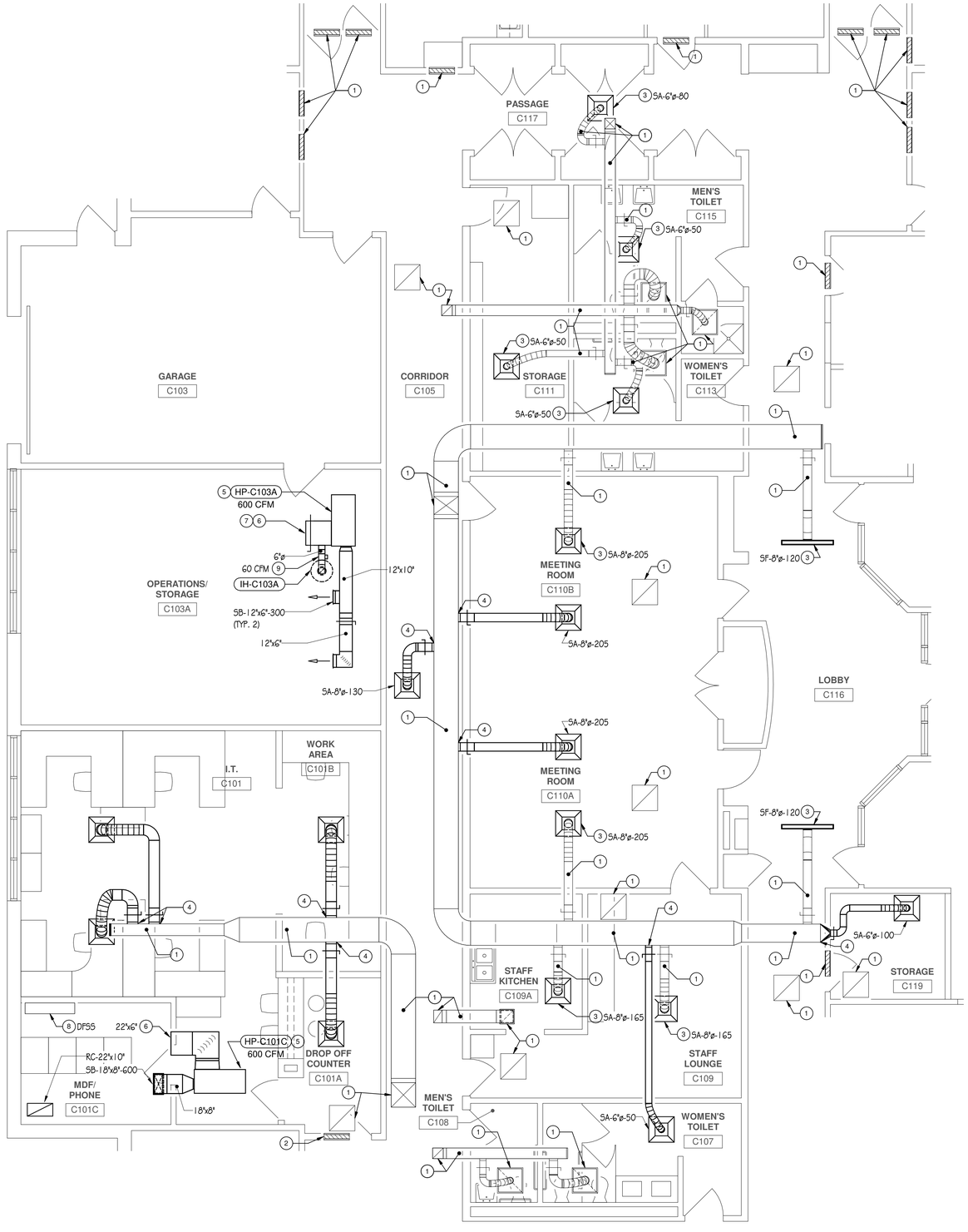
SHEET
VENTILATION PLAN - AREA B - PHASE I

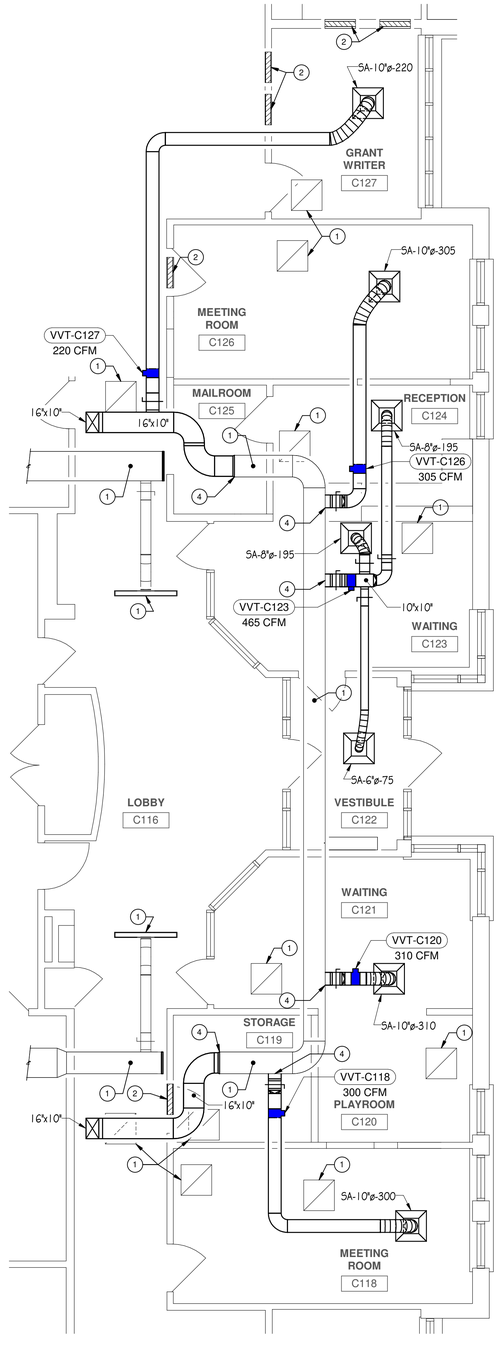
HV1.2

DRAWING NOTES

1. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
2. EXISTING FIRE DAMPER TO REMAIN. REPLACE LINKAGE AND VERIFY OPERATION.
3. MODIFY/EXTEND EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW DIFFUSER/GRILLE IN EXISTING CEILING SYSTEM.
4. MAKE NEW CONNECTION TO EXISTING DUCTWORK AT THIS LOCATION.
5. STEEL ROD SUSPEND FROM STRUCTURE ABOVE WITH NEOPRENE VIBRATION ISOLATORS.
6. PROVIDE BIRDSCREEN AT OPENING OF SIZE INDICATED.
7. FULL SIZE OF UNIT CONNECTION.
8. EXISTING HVAC EQUIPMENT TO REMAIN.
9. BALANCE OPEN POSITION OF MODULATING CONTROL DAMPER TO AIRFLOW RATE INDICATED.

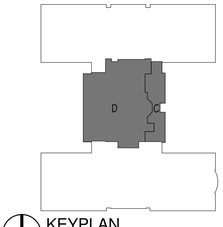


4 VENTILATION PLAN - AREA D - PHASE II
1/4" = 1'-0"



2 VENTILATION PLAN - AREA C - PHASE I
1/4" = 1'-0"

BIDDING NOTE:
SEE ARCHITECTURAL DRAWINGS FOR ALTERNATE BID CEILING REPLACEMENT AREAS. WHERE CEILINGS ARE TO BE REPLACED UNDER ANY ALTERNATE, CONTRACTOR TO INCLUDE IN THEIR ALTERNATE PRICING TO REMOVE EXISTING RETURN GRILLE, CLEAN, AND RE-INSTALL IN NEW CEILING GRID.



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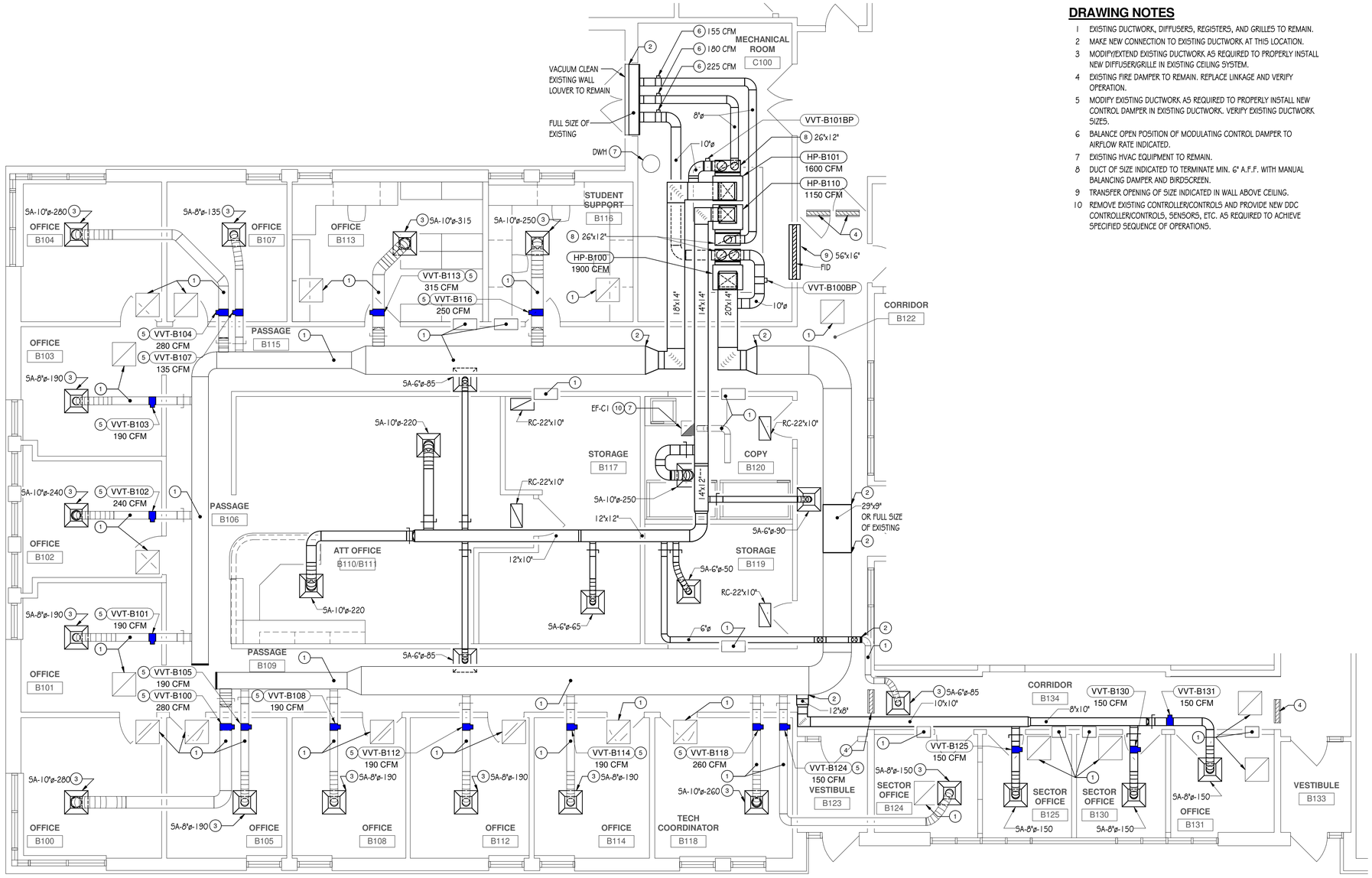
SHEET
VENTILATION PLAN - AREA C AND D - PHASE I AND II

HV1.3

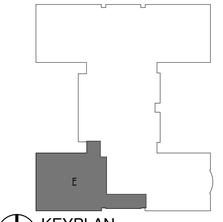


1 VENTILATION PLAN - AREA E - PHASE II
1/4" = 1'-0"

DRAWING NOTES

1. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
2. MAKE NEW CONNECTION TO EXISTING DUCTWORK AT THIS LOCATION.
3. MODIFY/EXTEND EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW DIFFUSER/GRILLE IN EXISTING CEILING SYSTEM.
4. EXISTING FIRE DAMPER TO REMAIN. REPLACE LINKAGE AND VERIFY OPERATION.
5. MODIFY EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW CONTROL DAMPER IN EXISTING DUCTWORK. VERIFY EXISTING DUCTWORK SIZES.
6. BALANCE OPEN POSITION OF MODULATING CONTROL DAMPER TO AIRFLOW RATE INDICATED.
7. EXISTING HVAC EQUIPMENT TO REMAIN.
8. DUCT OF SIZE INDICATED TO TERMINATE MIN. 6" A.F.F. WITH MANUAL BALANCING DAMPER AND BIRDSCREEN.
9. TRANSFER OPENING OF SIZE INDICATED IN WALL ABOVE CEILING.
10. REMOVE EXISTING CONTROLLER/CONTROLS AND PROVIDE NEW DDC CONTROLLER/CONTROLS, SENSORS, ETC. AS REQUIRED TO ACHIEVE SPECIFIED SEQUENCE OF OPERATIONS.

BIDDING NOTE:
SEE ARCHITECTURAL DRAWINGS FOR ALTERNATE BID CEILING REPLACEMENT AREAS. WHERE CEILINGS ARE TO BE REPLACED UNDER ANY ALTERNATE, CONTRACTOR TO INCLUDE IN THEIR ALTERNATE PRICING TO REMOVE EXISTING RETURN GRILLE, CLEAN, AND RE-INSTALL IN NEW CEILING GRID.



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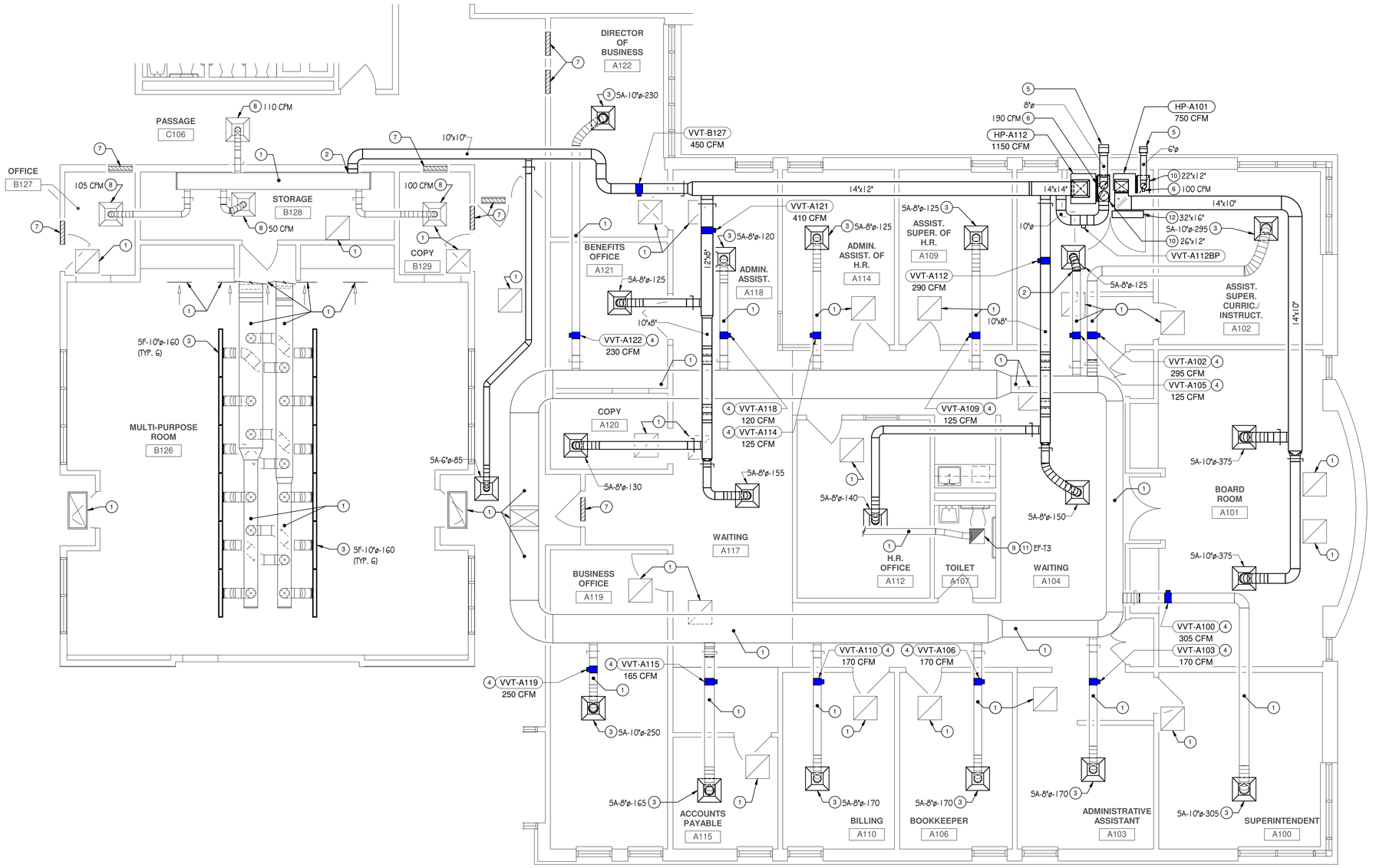
SHEET
VENTILATION PLAN - AREA E - PHASE II

HV1.4

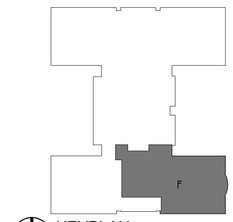
DRAWING NOTES

1. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
2. MAKE NEW CONNECTION TO EXISTING DUCTWORK AT THIS LOCATION.
3. MODIFY/EXTEND EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW DIFFUSER/GRILLE IN EXISTING CEILING SYSTEM.
4. MODIFY EXISTING DUCTWORK AS REQUIRED TO PROPERLY INSTALL NEW CONTROL DAMPER IN EXISTING DUCTWORK. VERIFY EXISTING DUCTWORK SIZES.
5. WALL HOOD WITH BIRDSCREEN AND WITHOUT BACKDRAFT DAMPER WITH NECK SIZE TO MATCH CONNECTED DUCTWORK. PROVIDE FACTORY KYNAR FINISH OF COLOR SELECTED BY ARCHITECT.
6. BALANCE OPEN POSITION OF MODULATING CONTROL DAMPER TO AIRFLOW RATE INDICATED.
7. EXISTING FIRE DAMPER TO REMAIN. REPLACE LINKAGE AND VERIFY OPERATION.
8. BALANCE EXISTING DIFFUSER TO AIRFLOW RATE INDICATED.
9. EXISTING HVAC EQUIPMENT TO REMAIN.
10. DUCT OF SIZE INDICATED TO TERMINATE MIN. 6" A.F.F. WITH MANUAL BALANCING DAMPER AND BIRDSCREEN.
11. REMOVE EXISTING CONTROLLER/CONTROLS AND PROVIDE NEW DDC CONTROLLER/CONTROLS, SENSORS, ETC. AS REQUIRED TO ACHIEVE SPECIFIED SEQUENCE OF OPERATIONS.
12. TRANSFER OPENING OF SIZE INDICATED IN WALL ABOVE CEILING.



2 VENTILATION PLAN - AREA F - PHASE II
1/4" = 1'-0"

BIDDING NOTE:
SEE ARCHITECTURAL DRAWINGS FOR ALTERNATE BID CEILING REPLACEMENT AREAS. WHERE CEILINGS ARE TO BE REPLACED UNDER ANY ALTERNATE, CONTRACTOR TO INCLUDE IN THEIR ALTERNATE PRICING TO REMOVE EXISTING RETURN GRILLE, CLEAN, AND RE-INSTALL IN NEW CEILING GRID.



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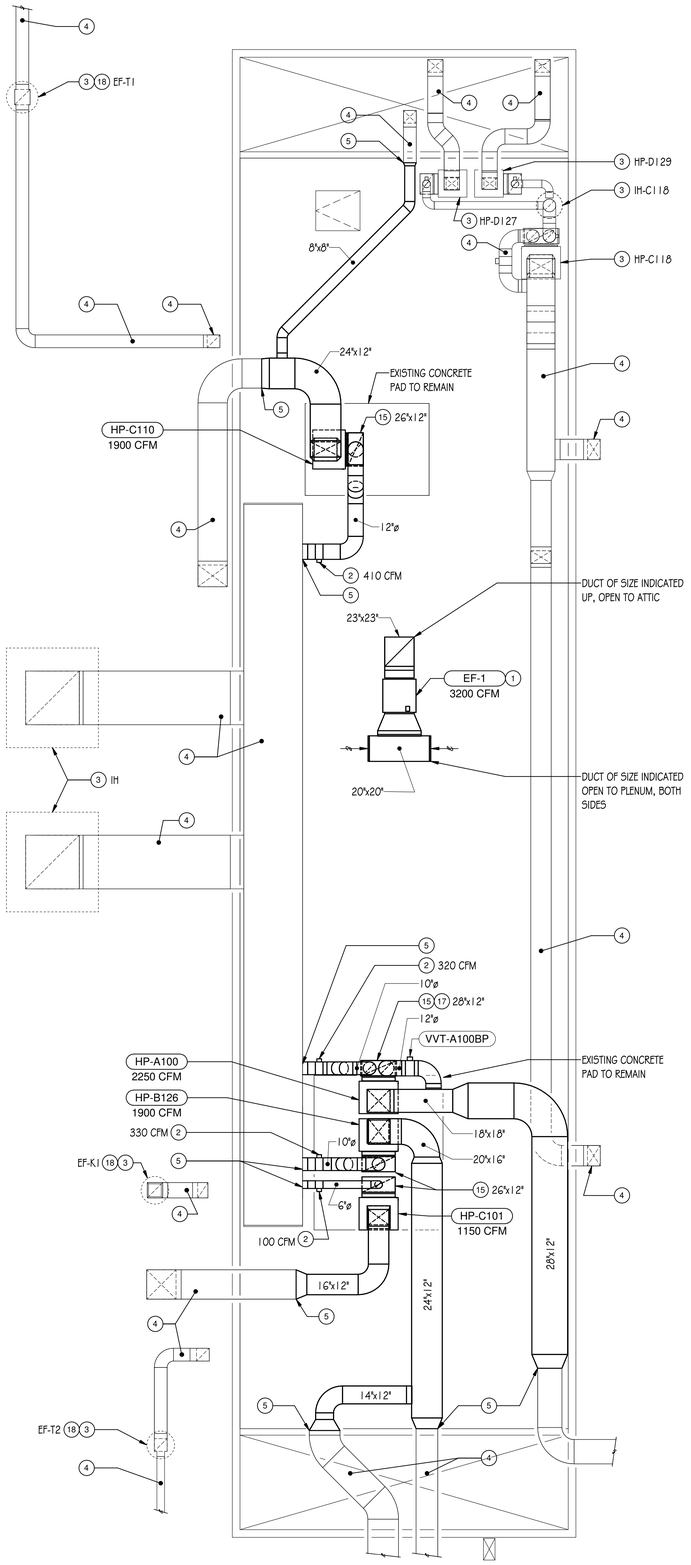
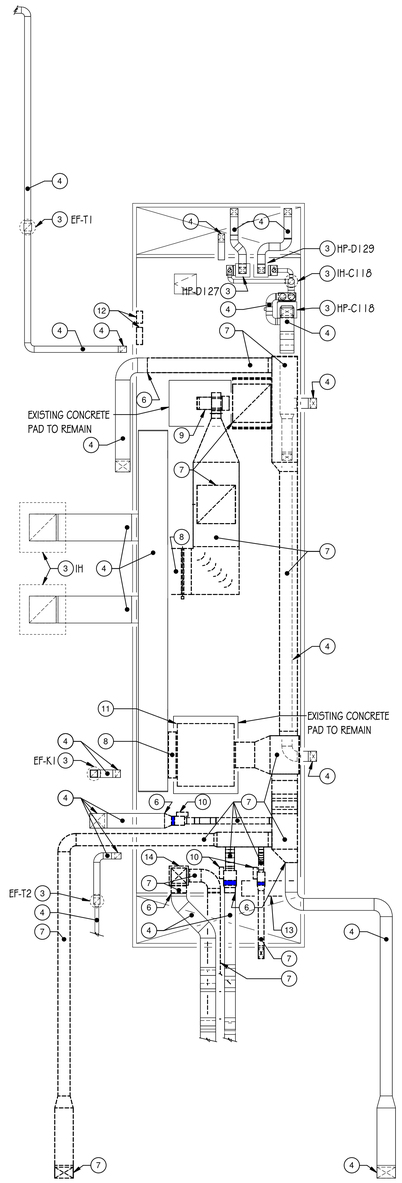
SHEET
VENTILATION PLAN - AREA F - PHASE II

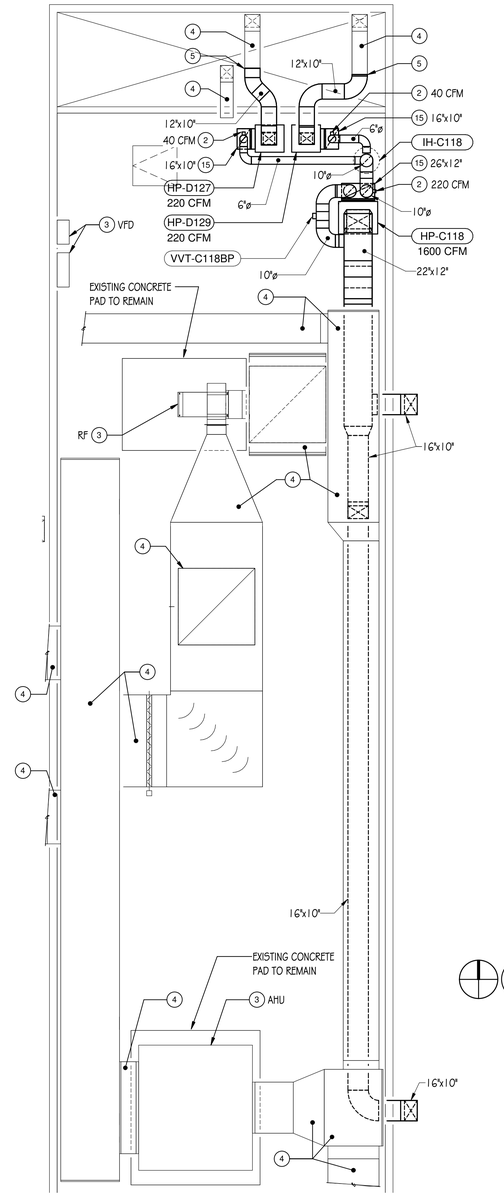
HV1.5



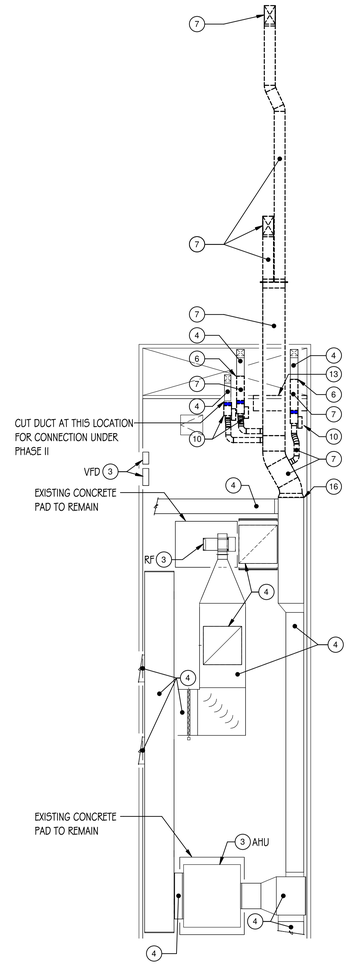
4 MEZZANINE VENTILATION PLAN - PHASE II
1/4" = 1'-0"



3 MEZZANINE VENTILATION DEMOLITION PLAN - PHASE II
1/8" = 1'-0"



2 MEZZANINE VENTILATION PLAN - PHASE I
1/4" = 1'-0"



1 MEZZANINE VENTILATION DEMOLITION PLAN - PHASE I
1/8" = 1'-0"

DRAWING NOTES

1. STEEL ROD SUSPEND FROM STRUCTURE ABOVE WITH NEOPRENE VIBRATION ISOLATORS.
2. BALANCE OPEN POSITION OF MODULATING CONTROL DAMPER TO AIRFLOW RATE INDICATED.
3. EXISTING HVAC EQUIPMENT TO REMAIN.
4. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
5. MAKE NEW CONNECTION TO EXISTING DUCTWORK AT THIS LOCATION.
6. NEW CONNECTION TO BE MADE AT THIS LOCATION. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
7. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.
8. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED AND CAP AT MAIN.
9. REMOVE EXISTING RETURN FAN AND ALL ASSOCIATED DUCTWORK, GRILLES, REGISTERS, DAMPERS, INSULATION, CONTROLS, ETC.
10. REMOVE EXISTING VAV BOX AND ASSOCIATED DUCTWORK, HANGERS, SUPPORTS, BRANCH PIPING, VALVING, CONTROLS, ETC.
11. REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED DUCTWORK, DAMPERS, PIPING, VALVING, CONTROLS, HANGERS, SUPPORTS, INSULATION, ETC.
12. REMOVE VARIABLE FREQUENCY DRIVES AND ALL ASSOCIATED CONTROLS, CONDUIT, WIRING, ETC.
13. REMOVE EXISTING DUCT SILENCER THROUGH WALL.
14. REMOVE EXISTING VARIABLE REFRIGERANT FLOW UNIT AND ALL ASSOCIATED PIPING, VALVING.
15. DUCT OF SIZE INDICATED TO TERMINATE MIN. 6" A.F.F. WITH MANUAL BALANCING DAMPER AND BIRDSCREEN.
16. CAP EXISTING DUCT AT LOCATION SHOWN AND REMOVE ALL DUCTWORK, REGISTERS, DIFFUSERS, HANGERS, INSULATION, ETC. SHOWN DASHED BEYOND THIS POINT.
17. PROVIDE DUCT SMOKE DETECTOR AT RETURN OPENING, COORDINATE EXACT LOCATION WITH ELECTRICIAN.
18. REMOVE EXISTING CONTROLLER/CONTROLS AND PROVIDE NEW DDC CONTROLLER/CONTROLS, SENSORS, ETC. AS REQUIRED TO ACHIEVE SPECIFIED SEQUENCE OF OPERATIONS.

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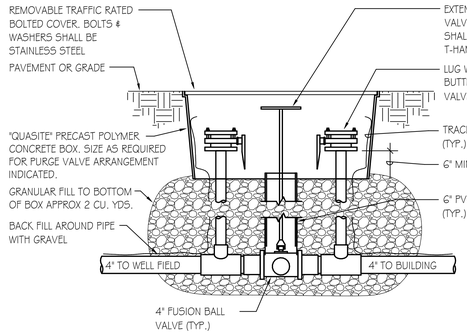
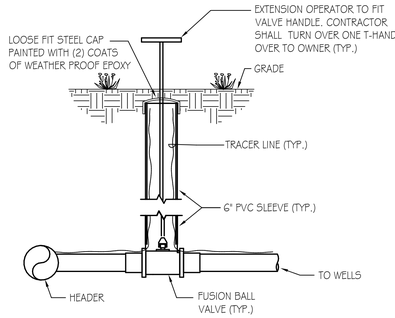
SHEET
MEZZANINE VENTILATION PLANS

HV1.6



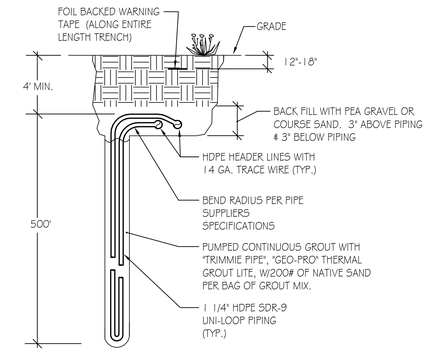
PURGE/ISOLATION VALVE PIT DETAIL

NO SCALE



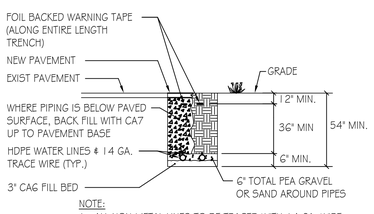
CIRCUIT ISOLATION VALVE DETAIL

NO SCALE



BORE DETAIL

NO SCALE



NOTE:
1. ALL NON-METAL LINES TO BE TRACED WITH 14 GA. WIRE (TYPICAL). TERMINATE WIRE AT ACCESSIBLE VALVE PIT.
2. SEE ARCHITECTURAL DRAWINGS FOR PAVING DETAILS.

2 HVAC TRENCH SECTION

AIR PURGE NOTE:

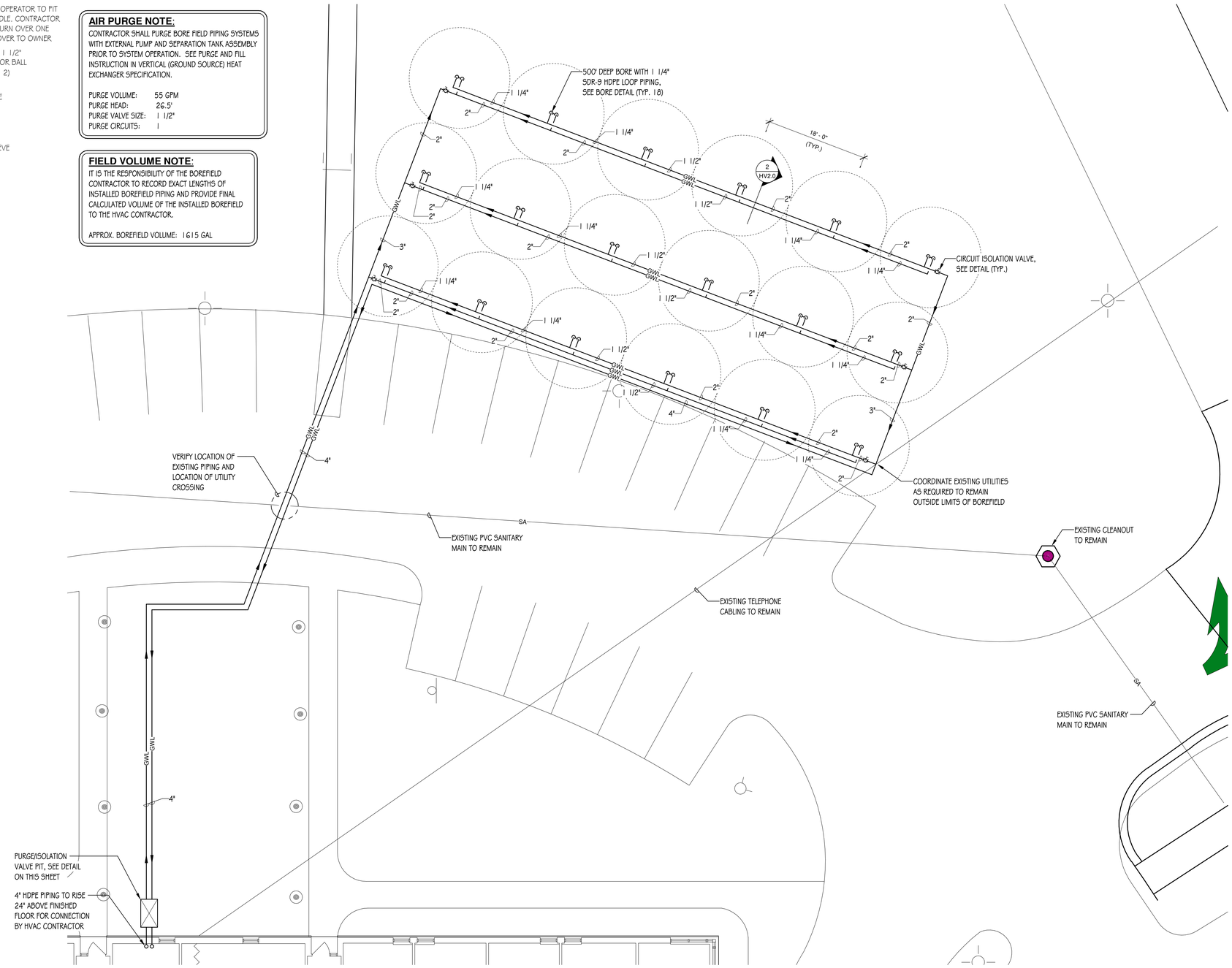
CONTRACTOR SHALL PURGE BORE FIELD PIPING SYSTEMS WITH EXTERNAL PUMP AND SEPARATION TANK ASSEMBLY PRIOR TO SYSTEM OPERATION. SEE PURGE AND FILL INSTRUCTION IN VERTICAL (GROUND SOURCE) HEAT EXCHANGER SPECIFICATION.

PURGE VOLUME: 55 GPM
PURGE HEAD: 26.5'
PURGE VALVE SIZE: 1 1/2"
PURGE CIRCUITS: 1

FIELD VOLUME NOTE:

IT IS THE RESPONSIBILITY OF THE BOREFIELD CONTRACTOR TO RECORD EXACT LENGTHS OF INSTALLED BOREFIELD PIPING AND PROVIDE FINAL CALCULATED VOLUME OF THE INSTALLED BOREFIELD TO THE HVAC CONTRACTOR.

APPROX. BOREFIELD VOLUME: 1615 GAL



1 HVAC SITE PLAN

1/8" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL RESTORE AREAS DISTURBED BY THE WORK. PREP AND PROVIDE 1) TOPSOIL, SEED, AND BLANKET AT LAWN AREAS, 2) ASPHALT PAVING AND BASE MATERIALS AT PARKING LOT, 3) CONCRETE, DOWLING AND BASE MATERIALS AT SIDEWALKS, CONCRETE PAVED, AND FLOOR SLAB AREAS, AND 4) MASONRY MATERIALS TO MATCH EXISTING UNDISTURBED TO REMAIN. WORK SHALL BE PERFORMED BY A CONTRACTOR REGULARLY PERFORMING THE WORK USING SKILLED LABOR.
2. MAINTAIN PARKING LOT AND ROAD IN CONDITIONS FREE FROM CONSTRUCTION MATERIALS, DIRT, AND DEBRIS FROM START OF CONSTRUCTION THROUGH FINAL COMPLETION.

GENERAL SYSTEM NOTES:

1. PIPE FLUSHING PROCEDURE BY BORE FIELD AND INTERIOR CONTRACTORS: THE CLOSED LOOP SYSTEM WATER PIPING MUST BE THOROUGHLY CLEANED AND FLUSHED TO REMOVE DIRT, CHIPS, AND OTHER FOREIGN MATERIALS PRIOR TO CONNECTING THE BUILDING PIPING SYSTEM TO THE BOREFIELD PIPING SYSTEM. BORE FIELD CONTRACTOR TO COORDINATE WITH INTERIOR CONTRACTOR FOR INDEPENDENT FLUSHING OF EACH SYSTEM PIPING THRU THE PURGE PIT. FLUSH EACH SYSTEM FOR A MINIMUM OF TWO HOURS MONITORING SYSTEM BLOW DOWN UNTIL WATER RUNS CLEAR. ONCE CLEAN, STOP THE PUMP AND CLEAN ALL SYSTEM STRAINERS.
2. SYSTEM CLEANING PROCEDURE BY INTERIOR CONTRACTOR: AFTER BOREFIELD AND BUILDING HAVE EACH BEEN PURGED OF AIR AND DEBRIS WITH HIGH VELOCITY WATER AND RESULTS RECORDED BY THE RESPECTIVE INSTALLING CONTRACTOR, THE PURGE PIT VALVES SHALL BE OPENED TO ALLOW FOR CHEMICAL CLEANING OF THE ENTIRE SYSTEM BY THE INTERIOR SYSTEM CONTRACTOR PER SPECIFICATION SECTION 23 25 00 - CHEMICAL TREATMENT.
3. ANTI-FREEZE AND INHIBITOR SOLUTION BY INTERIOR BUILDING CONTRACTOR (FOR INTERIOR & EXTERIOR PIPING): AFTER COMPLETION OF THE PIPE FLUSHING AND CLEANING PROCEDURES SPECIFIED ABOVE, SYSTEM SHALL BE FILLED WITH A SOLUTION OF 25% PROPYLENE GLYCOL AND 75% WATER BY VOLUME WITH INHIBITORS AS SPECIFIED IN SECTION 23 25 00 - CHEMICAL TREATMENT.

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HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

NO.	DESCRIPTION	DATE
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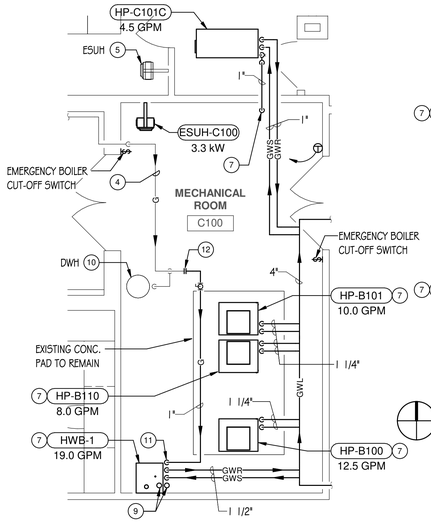
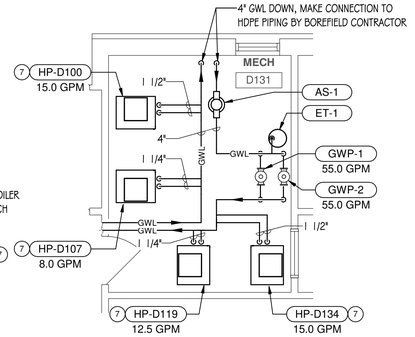
SHEET
HVAC SITE PLAN

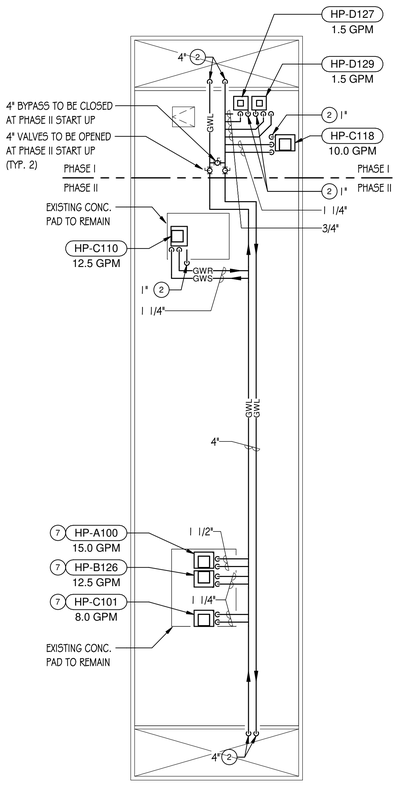
HV2.0



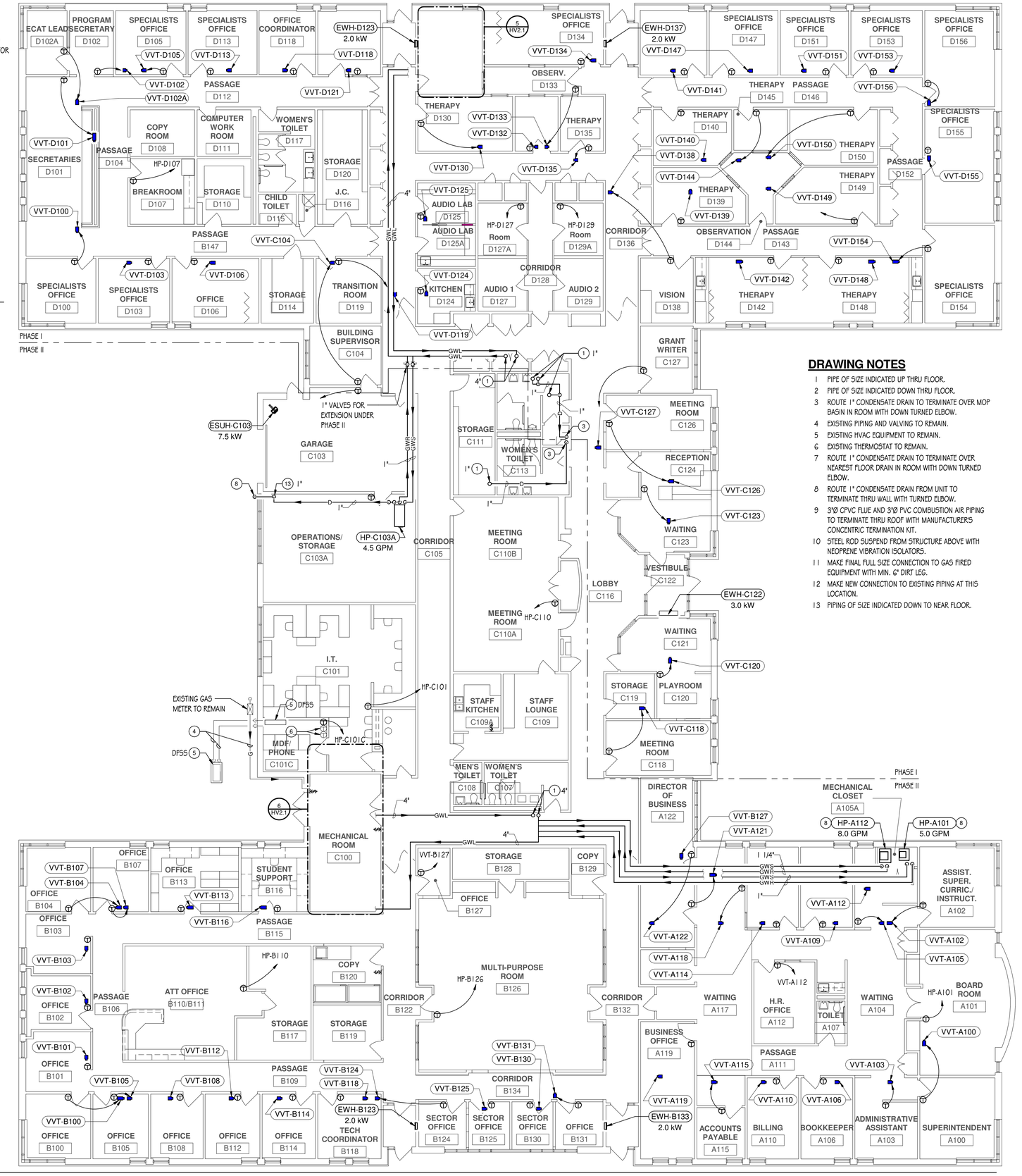
6 ENLARGED PIPING PLAN - MECH C100
1/4" = 1'-0"



5 ENLARGED PIPING PLAN - MECH D131
1/4" = 1'-0"



2 MEZZANINE PIPING PLAN
1/8" = 1'-0"



1 PIPING PLAN
1/8" = 1'-0"

DRAWING NOTES

1 PIPE OF SIZE INDICATED UP THRU FLOOR.
2 PIPE OF SIZE INDICATED DOWN THRU FLOOR.
3 ROUTE 1" CONDENSATE DRAIN TO TERMINATE OVER MOP BASIN IN ROOM WITH DOWN TURNED ELBOW.
4 EXISTING PIPING AND VALVING TO REMAIN.
5 EXISTING HVAC EQUIPMENT TO REMAIN.
6 EXISTING THERMOSTAT TO REMAIN.
7 ROUTE 1" CONDENSATE DRAIN TO TERMINATE OVER NEAREST FLOOR DRAIN IN ROOM WITH DOWN TURNED ELBOW.
8 ROUTE 1" CONDENSATE DRAIN FROM UNIT TO TERMINATE THRU WALL WITH TURNED ELBOW.
9 3"Ø CPVC FLUE AND 3"Ø PVC COMBUSTION AIR PIPING TO TERMINATE THRU ROOF WITH MANUFACTURER'S CONCENTRIC TERMINATION KIT.
10 STEEL ROD SUSPEND FROM STRUCTURE ABOVE WITH NEOPRENE VIBRATION ISOLATORS.
11 MAKE FINAL FULL SIZE CONNECTION TO GAS FIRED EQUIPMENT WITH MIN. 6" DIRT LEG.
12 MAKE NEW CONNECTION TO EXISTING PIPING AT THIS LOCATION.
13 PIPING OF SIZE INDICATED DOWN TO NEAR FLOOR.

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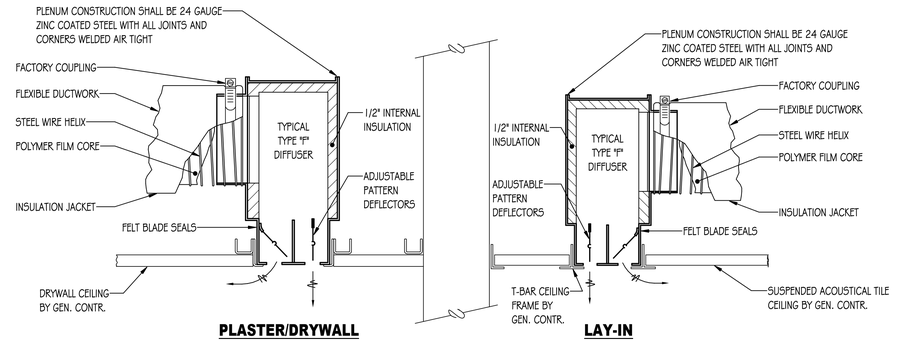
SHEET
HVAC PIPING PLAN - PHASE I AND II

HV2.1

HVAC SYMBOLS AND ABBREVIATIONS

AHU	AIR HANDLING UNIT	HP	HORSEPOWER	HWS	HOT WATER SUPPLY
AS	AIR SEPARATOR	HPU	HEAT PUMP UNIT	HWR	HOT WATER RETURN
BAS	BUILDING AUTOMATION SYSTEM	HWB	HOT WATER BOILER	G	NATURAL GAS
BHP	BRAKE HORSEPOWER	HWP	HOT WATER CIRCULATING PUMP	RS	REFRIGERANT SUCTION
BTU	BRITISH THERMAL UNIT	HWR	HOT WATER RETURN	RL	REFRIGERANT LIQUID
BTUH	BRITISH THERMAL UNIT PER HOUR	HWS	HOT WATER SUPPLY	HG	REFRIGERANT HOT GAS
CFM	CUBIC FEET PER MINUTE	IH	INTAKE HOOD	D	DRAIN LINE
CH	CHILLER	LAT	LEAVING AIR TEMPERATURE	GWS	GEOTHERMAL WATER SUPPLY
CUH	CABINET UNIT HEATER	LWT	LEAVING WATER TEMPERATURE	GWR	GEOTHERMAL WATER RETURN
D	DRAIN LINE	MCA	MINIMUM CIRCUIT AMPS	GWL	GEOTHERMAL WATER LOOP
DB	DRY BULB	MOCP	MAXIMUM OVERCURRENT PROTECTION		CHECK VALVE
DFSS	DUCT FREE SPLIT SYSTEM	MOD	MOTOR OPERATED DAMPER		BALL VALVE (2" & SMALLER) BUTTERFLY VALVE (2 1/2" & LARGER)
EAT	ENTERING AIR TEMPERATURE	NC	NEW CONNECTION		3 WAY CONTROL VALVE
EDC	ELECTRIC DUCT COIL	NK	NECK		2 WAY CONTROL VALVE
EF	EXHAUST FAN	PD	PRESSURE DROP		CIRCUIT BALANCING VALVE W/BALANCING PORTS (8" AND UNDER) CIRCUIT FLOW INDICATOR W/BALANCING PORTS AND MEMORY STOP BUTTERFLY VALVE FOR BALANCING (10" AND ABOVE)
ESP	EXTERNAL STATIC PRESSURE	PE	PIPE ENCLOSURE		PRESSURE RELIEF VALVE (PIPE TO FLOOR DRAIN)
ESUH	ELECTRIC SUSPENDED UNIT HEATER	PH	PHASE		DRAIN VALVE WITH HOSE THREADED OUTLET
ET	EXPANSION TANK	PSI	POUNDS PER SQUARE INCH		PIPE FLEXIBLE CONNECTION
EUH	ELECTRIC UNIT HEATER	RF	RETURN FAN		PIPE UNION (OR FLANGES IF 2 1/2" OR LARGER PIPE)
EWH	ELECTRIC WALL HEATER	RPM	REVOLUTIONS PER MINUTE		PRESSURE GAUGE AND NEEDLE VALVE
EWT	ENTERING WATER TEMPERATURE	SP	STATIC PRESSURE	FS	FLOW SWITCH (WITH THREAD OR WELD-O-LET)
F	FAHRENHEIT	SUH	SUSPENDED UNIT HEATER		THERMOMETER (WITH PIPE WELL)
F & T	FLOAT & THERMOSTATIC	TYP.	TYPICAL		PRESSURE/TEMPERATURE PLUG WITH CAP
FD	FLOOR DRAIN	VAV	VARIABLE AIR VOLUME BOX		STRAINER
FID	FIRE DAMPER	VFD	VARIABLE FREQUENCY DRIVE		STRAINER WITH BLOWDOWN VALVE
FTR	FINNED TUBE RADIATION	VRF	VARIABLE REFRIGERANT FLOW		DIRECTION OF FLOW
G	GAS PIPING	VVT	VARIABLE VOLUME AND TEMPERATURE BOX	PITCH	PITCH OF PIPE (DOWN)
GPM	GALLONS PER MINUTE	WB	WET BULB		PIPE ELBOW (TURNED UP)
GWP	GEOTHERMAL WATER PUMP	W.C.	WATER COLUMN		PIPE ELBOW (TURNED DOWN)
GWR	GEOTHERMAL WATER RETURN	WG	WATER GAUGE		PIPE TEE DOWN (DROP)
GWS	GEOTHERMAL WATER SUPPLY	WL	WALL LOUVER		PIPE TEE UP
GWL	GEOTHERMAL WATER LOOP				PIPE TEE UP OR ANGLE
					PIPE TEE DOWN OR ANGLE
				NC	NEW CONNECTION
				R	GAS PRESSURE REGULATOR

	FLEXIBLE DUCT CONNECTION
	MANUAL SINGLE BLADE OR OPPOSED BLADE DAMPER
	MOTOR OPERATED DAMPER
FID	VERTICAL FIRE DAMPER WITH ACCESS DOOR
	AIR FLOW
12x24	DUCT SIZE FREE AREA (1ST FIGURE, SIDE OF DUCT SHOWN)
	CROSS-SECTION OF SUPPLY OR OUTSIDE AIR INTAKE DUCT
	CROSS-SECTION OF RETURN OR EXHAUST DUCT
R / D	INCLINED RISE (R) OR DROP (D)
	90° ELBOW WITH TURNING VANES
	90° BRANCH TAKE-OFF W/45 DEGREE ENTRY
	ROUND FLEXIBLE DUCT
	SQUARE OR RECTANGLE DUCT TRANSITION
	SQUARE OR RECTANGLE TO ROUND DUCT TRANSITION
	DUCT UP TO ROOF MOUNTED EXHAUST FAN OR VENTILATOR
XXX-1	EQUIPMENT TAG
	WALL THERMOSTAT OR TEMPERATURE SENSOR
G	WALL THERMOSTAT OR TEMPERATURE SENSOR WITH GUARD
ø	ROUND
	PIPING, DUCTWORK, OR EQUIPMENT TO BE REMOVED
DSD	DUCT SMOKE DETECTOR
CO_2	DUCT CARBON DIOXIDE SENSOR



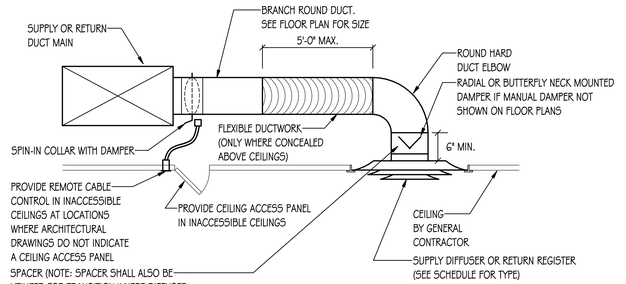
PLASTER/DRYWALL **LAY-IN**

NOTE:
WHERE PATTERN DEFLECTOR ADJUSTMENT IS NOT SPECIFIED ON THE DRAWINGS, ADJUST AS FOLLOWS:

1. FOR DIFFUSERS CENTERED IN ROOM, ADJUST SO EQUAL NUMBER OF PATTERN DEFLECTORS DIRECT AIR ACCROSS CEILING IN OPPOSITE DIRECTIONS.
2. FOR DIFFUSERS LOCATED NEAR AN INTERIOR WALL, ADJUST ALL PATTERN DEFLECTORS TO DIRECT AIR ACROSS CEILING AWAY FROM PARTITION.
3. FOR DIFFUSERS LOCATED NEAR AN OUTSIDE WALL, ADJUST SO EQUAL NUMBER OF PATTERN DEFLECTORS DIRECT AIR TOWARD FLOOR AND ACCROSS CEILING AWAY FROM WALL.

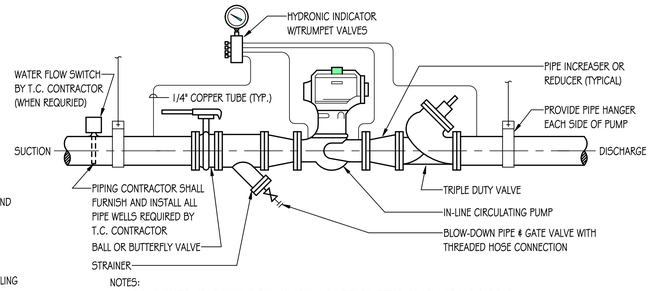
LINEAR BOOT TYPE DIFFUSER DETAIL

NO SCALE



DIFFUSER/REGISTER INSTALLATION DETAIL

NO SCALE

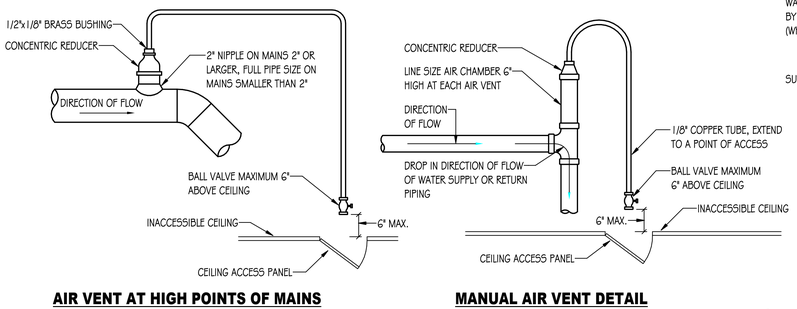


NOTES:

1. PIPING CONTRACTOR SHALL FURNISH/INSTALL WELL FOR TEMPERATURE SENSOR AND TAP FOR SWITCH AS SHOWN FOR FUTURE USE EVEN IF SENSOR OR FLOW SWITCH ARE NOT PROVIDED UNDER THIS PROJECT.
2. FOR PUMPS 1/2 HP OR SMALLER, CONTRACTOR MAY PROVIDE INDIVIDUAL PRESSURE/TEMPERATURE PLUGS IN LIEU OF HYDRONIC INDICATOR AND TUBING SHOWN.

IN-LINE PUMP DETAIL

NO SCALE



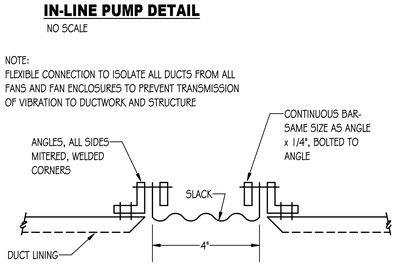
AIR VENT AT HIGH POINTS OF MAINS

NO SCALE

MANUAL AIR VENT DETAIL

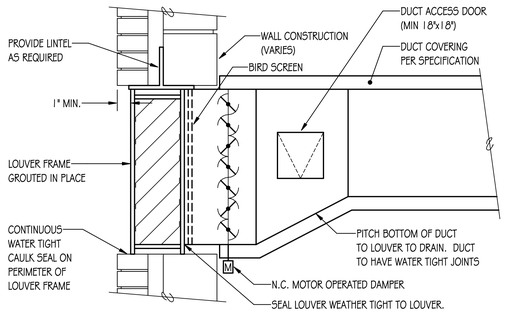
NO SCALE

NOTE:
FLEXIBLE CONNECTION TO ISOLATE ALL DUCTS FROM ALL FANS AND FAN ENCLOSURES TO PREVENT TRANSMISSION OF VIBRATION TO DUCTWORK AND STRUCTURE



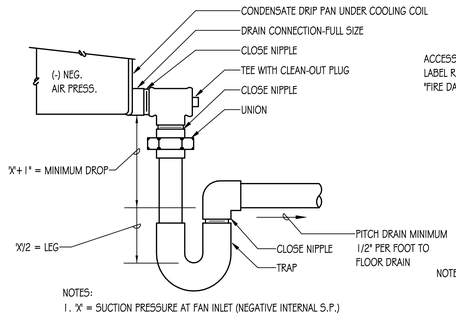
FLEXIBLE CONNECTION

NO SCALE



DUCT CONNECTION TO WALL LOUVER DETAIL

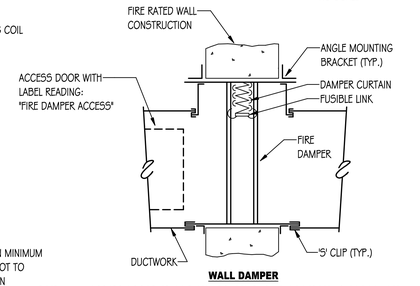
NO SCALE



NOTES:
1. 'X' = SUCTION PRESSURE AT FAN INLET (NEGATIVE INTERNAL S.P.)

DRAW-THRU COOLING COIL DRIP PAN DRAIN DETAIL

NO SCALE

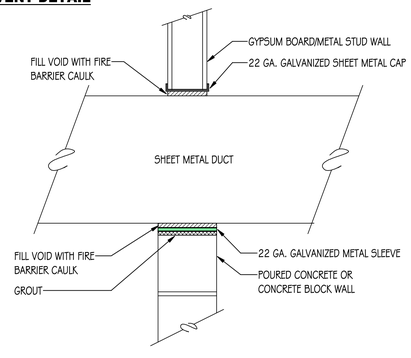


WALL DAMPER

NOTES:
1. ACCESS DOORS TO BE SIZED/LOCATED SUCH THAT RESETTING FIRE DAMPER LINK CAN BE ACCOMPLISHED VIA ACCESS DOOR.
2. MINIMUM SIZE IS 12"x12". PROVIDE MULTIPLE ACCESS DOORS AT WIDE DUCTS.
3. COORDINATE GENERAL CONTRACTOR FURNISHED/INSTALLED WALL OR CEILING ACCESS PANELS REQUIRED AT OTHERWISE INACCESSIBLE LOCATIONS.

FIRE DAMPER DETAIL (FID)

NO SCALE



DUCT SLEEVE THRU INTERIOR WALL DETAIL

NO SCALE

BIDDING NOTE:
SEE DRAWINGS ME1.0 FOR GENERAL NOTES AND ADDITIONAL DETAILS APPLICABLE TO THIS TRADE'S WORK.

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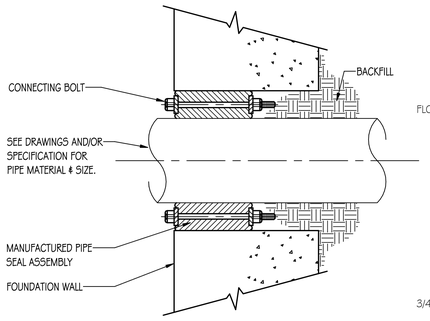
HVAC LEGEND, NOTES, AND DETAILS

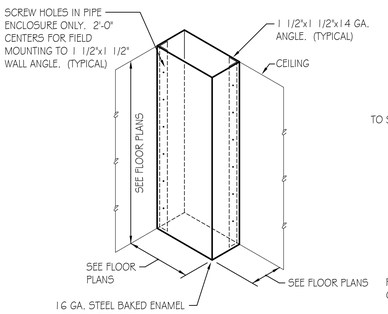
HV4.0



NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THEIR CORE LOCATIONS WITH OTHER TRADES AND ARCHITECT.

UNDERGROUND PIPING THROUGH FOUNDATION WALL

NO SCALE



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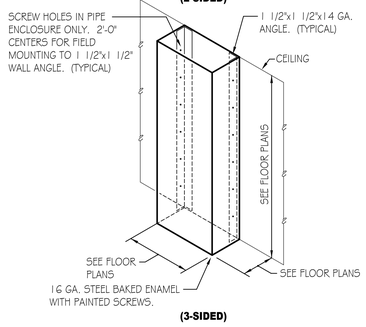
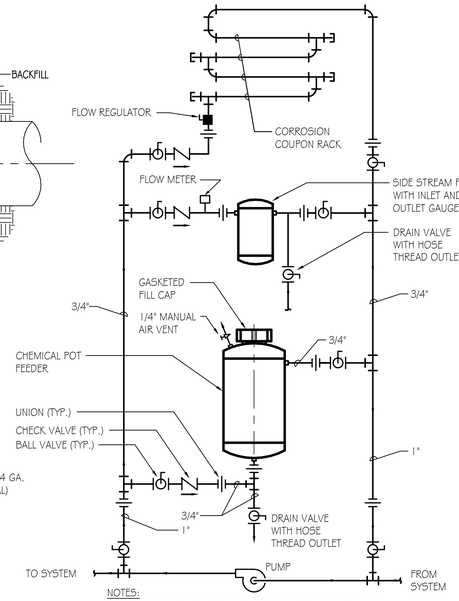


(3-SIDED)

PIPE ENCLOSURE

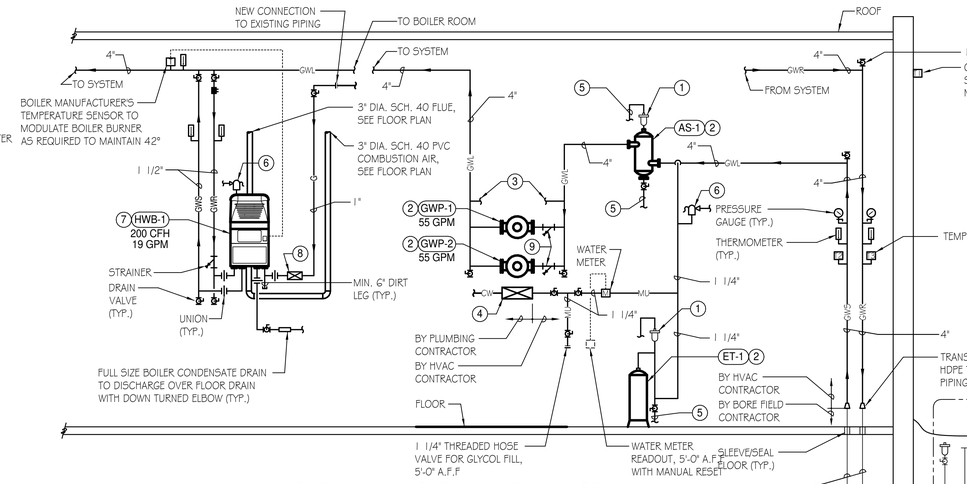
NO SCALE



NOTES:
1. INSTALL FEEDER ACROSS POINTS OF ADEQUATE PRESSURE DIFFERENTIAL TO OBTAIN FLOW THRU FEEDER.
2. MOUNT CHEMICAL POT FEEDER AND SIDE STREAM FILTER ON UNISTRUT STAND NEAR PUMP.

SIDE STREAM FILTER AND BY-PASS CHEMICAL FEEDER DETAIL

NO SCALE

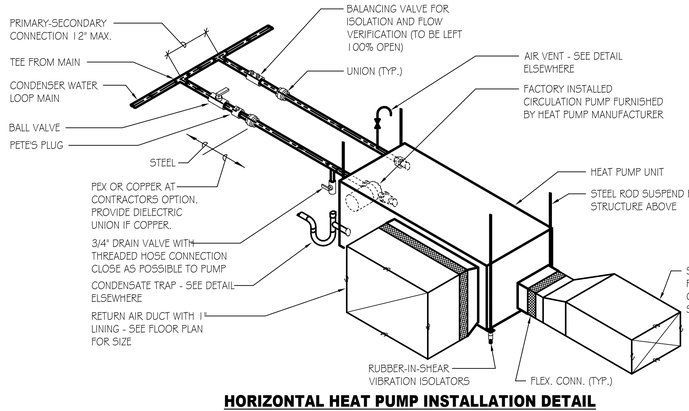


GEOTHERMAL SYSTEM RISER DIAGRAM

NO SCALE

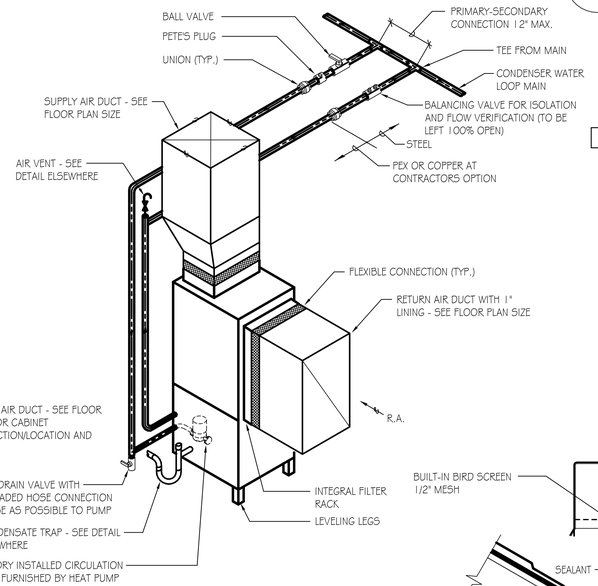
DRAWING NOTES: (TYPICAL FOR THIS DRAWING ONLY)

1. AUTOMATIC AIR VENT.
2. SEE DETAIL ELSEWHERE.
3. 1" TO CHEMICAL TREATMENT SYSTEM POT FEEDER SIDE STEAM FILTER.
4. MAKE-UP WATER ASSEMBLY. SEE DETAIL ELSEWHERE.
5. PIPE TO OVER NEAREST FLOOR DRAIN.
6. 60 PSI PRESSURE RELIEF VALVE. PIPE DISCHARGE TO NEAREST FLOOR DRAIN.
7. BALANCE INTEGRAL PUMP TO WATER FLOW RATE INDICATED.
8. C5D-1 GAS TRAIN FURNISHED BY MANUFACTURER, INSTALLED BY HVAC CONTRACTOR.
9. STRAINER AT INLET OF PUMP WITH SIZE 30 MESH OR LESS. REMOVE REMOVE STRAINER MEDIA AFTER ONE MONTH OF OPERATION.



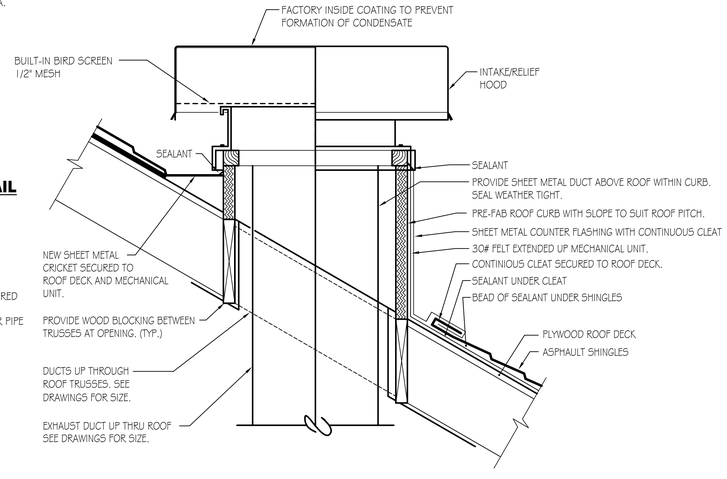
HORIZONTAL HEAT PUMP INSTALLATION DETAIL

NO SCALE



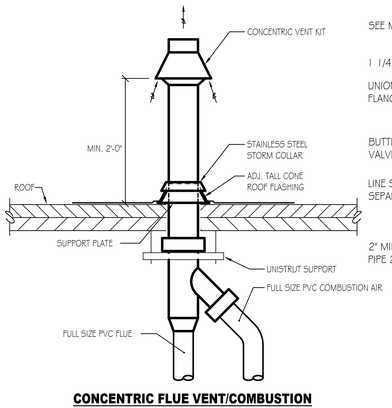
VERTICAL HEAT PUMP INSTALLATION DETAIL

NO SCALE



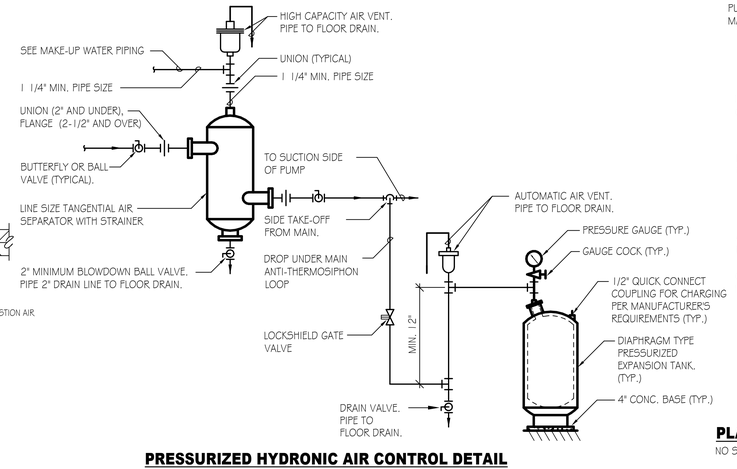
INTAKE/RELIEF HOOD INSTALLATION DETAIL

NO SCALE



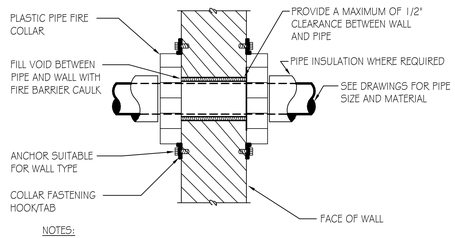
CONCENTRIC FLUE VENT/COMBUSTION AIR STACK THRU ROOF DETAIL

NO SCALE



PRESSURIZED HYDRONIC AIR CONTROL DETAIL

NO SCALE



NOTES:
1. I.D. OF WALL OPENING TO BE A MIN. OF 1/2" LARGER THAN O.D. OF PIPE OR INSULATION PASSING THROUGH WALL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THEIR WALL OPENINGS WITH OTHER TRADES AND/OR CONTRACTORS.
3. PIPE PENETRATIONS OF SMOKE OR FIRE WALLS SHALL BE IN COMPLIANCE WITH ASTM E 814 AND UL 1479.

PLASTIC PIPE PENETRATION OF FIRE RATED WALL DETAIL

NO SCALE

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SHEET
HVAC DETAILS

HV4.1

GROUND SOURCE HEAT PUMP UNIT SCHEDULE

EQUIP TAG	LOCATION	AREA SERVED	MANUF.	MODEL	AIRFLOW (CFM)	MAX. CONTROL O.A. (MIN. CODE)	ESP (IN.)	TYPE	CABINET (IN.)			AIR INLET	AIR DISCHARGE	GROUND LOOP COIL												GPM	PRESSURE DROP (FT.)	COIL PUMP	CHECK VALVE REQ'D	ELECTRICAL CHARACTERISTICS						FILTER TYPE	NOTES
									L	W	H			HEATING					COOLING												ACTUAL POWER (W)	ACTUAL AMP (A)	MCA	MOCP	PH	VOLT		
														EAT (°F)	LAT (°F)	EWT (°F)	CAPACITY (BTUH)	ISO COP	OPER. COP	EAT (DB °F)	EAT (WB °F)	LAT (DB °F)	LAT (WB° F)	EWT (°F)	SENS. CAPACITY (BTUH)	TOTAL CAPACITY (BTUH)	ISO EER	OPER. EER									
HP-A100	MECHANICAL MEZZANINE 200	SE PERIMETER	CLIMATEMASTER	TEV-072	2,250	320	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	58 1/2"	SIDE	DUCTED	58.6	86.0	45.0	66,400	3.7	4	80.0	67.0	58.4	53.2	85.0	70,600	52,600	16.9	13.6	15.0	10.10	INTEGRAL	--	4834	13.4	30.0	45	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8,9
HP-A101	MECHANICAL CLOSET A105A	BOARD ROOM A101	CLIMATEMASTER	TEV-026	750	100	0.5	VERTICAL CABINET	25 5/8"	22 3/8"	48 1/2"	SIDE	DUCTED	59.3	96.6	45.0	30,200	4.1	4.2	80.0	67.0	59.9	54.8	85.0	16,300	25,000	19.9	16.2	5.0	3.20	INTEGRAL	--	1929	5.4	12.8	15	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8
HP-A112	MECHANICAL CLOSET A105A	SE INTERIOR	CLIMATEMASTER	TEV-038	1,150	190	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	50 1/2"	SIDE	DUCTED	56.8	85.8	45.0	36,000	4.4	5.5	80.0	67.0	59.8	54.7	85.0	25,100	38,500	20.3	17	8.0	6.90	INTEGRAL	--	2831	7.9	19.2	30	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8,9
HP-B100	MECHANICAL ROOM C100	S PERIMETER	CLIMATEMASTER	TEV-064	1,900	225	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	58 1/2"	SIDE	DUCTED	60.5	90.9	45.0	62,300	3.9	5.5	80.0	67.0	56.7	51.4	85.0	47,700	63,800	18.8	15.4	12.5	6.70	INTEGRAL	--	5178	14.4	28.6	45	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8,9
HP-B101	MECHANICAL ROOM C100	SW PERIMETER	CLIMATEMASTER	TEV-049	1,600	180	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	54 1/2"	SIDE	DUCTED	61.0	87.5	45.0	45,700	4	5.3	80.0	67.0	60.1	55.0	85.0	34,500	49,100	19.9	15.5	10.0	6.20	INTEGRAL	--	3960	11.0	25.2	35	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8,9
HP-B110	MECHANICAL ROOM C100	SW INTERIOR	CLIMATEMASTER	TEV-038	1,150	155	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	50 1/2"	SIDE	DUCTED	59.2	88.2	45.0	36,000	4.4	5.5	80.0	67.0	59.8	54.7	85.0	25,100	38,500	20.3	17	8.0	6.90	INTEGRAL	--	2831	7.9	19.2	30	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8
HP-B126	MECHANICAL MEZZANINE 200	MULTI-PURPOSE ROOM B126	CLIMATEMASTER	TEV-064	1,900	330	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	58 1/2"	SIDE	DUCTED	56.1	86.5	45.0	62,300	3.9	5.5	80.0	67.0	56.7	51.4	85.0	47,700	63,800	18.8	15.4	12.5	6.70	INTEGRAL	--	5178	14.4	28.6	45	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8
HP-C101	MECHANICAL MEZZANINE 200	I.T. C101	CLIMATEMASTER	TEV-038	1,150	100	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	50 1/2"	SIDE	DUCTED	63.0	92.0	45.0	36,000	4.4	5.5	80.0	67.0	59.8	54.7	85.0	25,100	38,500	20.3	17	8.0	6.90	INTEGRAL	--	2831	7.9	19.2	30	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8
HP-C101C	I.T. C101	OPERATIONS/ STORAGE C103A	CLIMATEMASTER	TRH-018	600	0	0.5	HORIZONTAL CABINET	48 1/4"	22 3/8"	17 1/2"	SIDE	DUCTED	70.0	95.2	45.0	16,300	3.4	3.9	80.0	67.0	56.2	55.6	85.0	12,200	17,200	16.3	13.4	4.5	13.38	INTEGRAL	--	1604	7.7	10.0	15	1	208	2" THROWAWAY	1,2,3,4,8
HP-C103A	OPERATIONS/ STORAGE C103A	OPERATIONS/ STORAGE C103A	CLIMATEMASTER	TRH-018	600	60	0.5	HORIZONTAL CABINET	48 1/4"	22 3/8"	17 1/2"	SIDE	DUCTED	62.0	87.2	45.0	16,300	3.4	3.9	80.0	67.0	56.2	55.6	85.0	12,200	17,200	16.3	13.4	4.5	13.38	INTEGRAL	--	1604	7.7	10.0	15	1	208	2" THROWAWAY	1,2,3,4,8
HP-C110	MECHANICAL MEZZANINE 200	MEETING ROOM C110A INTERIOR	CLIMATEMASTER	TEV-064	1,900	410	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	58 1/2"	SIDE	DUCTED	52.7	83.1	45.0	62,300	3.9	5.5	80.0	67.0	56.7	51.4	85.0	47,700	63,800	18.8	15.4	12.5	6.70	INTEGRAL	--	5178	14.4	28.6	45	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8
HP-C118	MECHANICAL MEZZANINE 200	E PERIMETER	CLIMATEMASTER	TEV-049	1,600	220	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	54 1/2"	SIDE	DUCTED	59.0	85.5	45.0	45,700	4	5.3	80.0	67.0	60.1	55.0	85.0	34,500	49,100	19.9	15.5	10.0	6.20	INTEGRAL	--	3960	11.0	25.2	35	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8,9
HP-D100	THERAPY D131	NW PERIMETER	CLIMATEMASTER	TEV-072	2,250	300	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	58 1/2"	SIDE	DUCTED	59.3	86.7	45.0	66,400	3.7	4	80.0	67.0	58.4	53.2	85.0	70,600	52,600	16.9	13.6	15.0	10.10	INTEGRAL	--	4834	13.4	30.0	45	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8,9
HP-D107	THERAPY D131	NW INTERIOR	CLIMATEMASTER	TEV-038	1,150	165	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	50 1/2"	SIDE	DUCTED	58.5	87.5	45.0	36,000	4.4	5.5	80.0	67.0	59.8	54.7	85.0	25,100	38,500	20.3	17	8.0	6.90	INTEGRAL	--	2831	7.9	19.2	30	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8
HP-D119	THERAPY D131	NE INTERIOR	CLIMATEMASTER	TEV-064	1,900	450	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	58 1/2"	SIDE	DUCTED	51.1	81.4	45.0	62,300	3.9	5.5	80.0	67.0	56.7	51.4	85.0	47,700	63,800	18.8	15.4	12.5	6.70	INTEGRAL	--	5178	14.4	28.6	45	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8,9
HP-D127	MECHANICAL MEZZANINE 200	E PERIMETER	CLIMATEMASTER	TRV-006	220	40	0.5	VERTICAL CABINET	21 1/4"	22 1/2"	22 1/2"	SIDE	DUCTED	55.5	80.7	45.0	6,000	3.4	3.7	80.0	67.0	58.5	56.4	85.0	3,900	5,800	15.4	12.3	1.5	3.00	INTEGRAL	--	589	2.8	4.5	15	1	208	2" THROWAWAY	1,2,3,4,8
HP-D129	MECHANICAL MEZZANINE 200	E PERIMETER	CLIMATEMASTER	TRV-006	220	40	0.5	VERTICAL CABINET	21 1/4"	22 1/2"	22 1/2"	SIDE	DUCTED	55.5	80.7	45.0	6,000	3.4	3.7	80.0	67.0	58.5	56.4	85.0	3,900	5,800	15.4	12.3	1.5	3.00	INTEGRAL	--	589	2.8	4.5	15	1	208	2" THROWAWAY	1,2,3,4,8
HP-D134	THERAPY D131	NE PERIMETER	CLIMATEMASTER	TEV-072	2,250	420	0.5	VERTICAL CABINET	30 5/8"	25 3/8"	58 1/2"	SIDE	DUCTED	55.1	82.4	45.0	66,400	3.7	4	80.0	67.0	58.4	53.2	85.0	70,600	52,600	16.9	13.6	15.0	10.10	INTEGRAL	--	4834	13.4	30.0	45	3	208	2" THROWAWAY	1,2,3,4,5,6,7,8,9

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. PROVIDE THE FOLLOWING FACTORY INSTALLED OPTIONS: COPPER WATER COIL, COMPRESSOR SOUND PACKAGE, EXTENDED RANGE INSULATION, DISCONNECT SWITCH, FACTORY INSTALLED SECONDARY PUMP, AND BACnet INTERFACE.
3. ALL RATINGS CORRECTED FOR 25% PROPYLENE GLYCOL.
4. PROVIDE THE FOLLOWING ADDITIONAL FACTORY INSTALLED OPTION: 2" FILTER RACK.
5. PROVIDE THE FOLLOWING ADDITIONAL FACTORY INSTALLED OPTION: ECM FAN MOTOR CONFIGURED FOR DESIGN AIRFLOW DURING VENT MODE.
6. PROVIDE THE FOLLOWING ADDITIONAL FACTORY INSTALLED OPTION: RE-HEAT COIL/DEHUMIDIFICATION SEQUENCE.
7. PROVIDE THE FOLLOWING ADDITIONAL FACTORY INSTALLED OPTION: PHASE LOSS PROTECTION.
8. MANUFACTURER OTHER THAN BASIS OF DESIGN: MANUFACTURER TO PROVIDE CIRCULATION PUMP FOR FIELD INSTALLATION.
9. PROVIDE CONTROL TERMINAL STRIP FOR FIELD INSTALLED CONTROLS IN LIEU OF BACnet INTERFACE.

HYDRONIC ACCESSORIES SCHEDULE

EQUIPMENT TAG	EQUIPMENT TYPE	LOCATION	AREA SERVED	MANUFACTURER	MODEL	TYPE	CAPACITY/SIZE					MAX. PRESSURE DROP (FT)	NOTES
							FLOW RATE	INLET	OUTLET	TANK VOLUME (GAL.)	TANK ACCEPT. (GAL.)		
AS-1	AIR SEPARATOR	THERAPY D131	GEOTHERMAL SYSTEM	BELL & GOSSETT	CRS-4	TANGENTIAL AIR & DIRT	110.0	4"	4"			0.2	1,2,3
ET-1	EXPANSION TANK	THERAPY D131	GEOTHERMAL SYSTEM	BELL & GOSSETT	B-50	VERTICAL, BLADDER				13	12		1,2

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. DATA CORRECTED FOR 25% GLYCOL/75% WATER SOLUTION.
3. REMOVABLE HEAD/STRAINER MEDIA..

PUMP SCHEDULE

EQUIP. TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	SIZE	TYPE	FLOW RATE (GPM)	HEAD (FT.)	IMPELLER DIA (IN.)	MIN. EFFICIENCY	TRIPLE DUTY VALVE			MOTOR					NOTES
											TYPE	SIZE	PD (FT.)	BHP	HP	RPM	PHASE	VOLT.	
GWP-1	THERAPY D131	GEOTHERMAL SYSTEM	BELL & GOSSETT	SERIES 90	1.5AB	INLINE	55.0	43.0	6 5/8"	62.3	STRAIGHT	2 1/2"	3.3	1.0	1.50	1725	3	208	1,2,3
GWP-2	THERAPY D131	GEOTHERMAL SYSTEM	BELL & GOSSETT	SERIES 90	1.5AB	INLINE	55.0	43.0	6 5/8"	62.3	STRAIGHT	2 1/2"	3.3	1.0	1.50	1725	3	208	1,2,3

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. DATA CORRECTED FOR 25% GLYCOL/75% WATER SOLUTION.
3. PUMPS TO OPERATE IN PARALLEL.

GWP GEOTHERMAL WATER PUMP

HOT WATER BOILER SCHEDULE

EQUIPMENT TAG	LOCATION	AREA SERVED	MANUFACTURER	MODEL	TYPE	OPERATING PRESSURE (PSI)	INPUT (MBH)	OUTPUT (MBH)	WATERSIDE				VENT DIA (IN.)	GAS VALVE ASSEMBLY				ELECTRICAL CHARACTERISTICS				NOTES
									EWT (°F)	LWT (°F)	GPM	MAX P.D. (FT)		ENT PRES (IN.)	RATING	MODULATION	FLA	MOCP	PHASE	VOLTAGE	
HWB-1	MECHANICAL ROOM C100	GEOTHERMAL SYSTEM	LOCHINVAR	WHB199N	STAINLESS STEEL FIRE TUBE	60	199	184	42.0	61.8	19	1.13	3	7	ASME (SD-1)	5-100% MOD	3.3	15	1	120	1,2,3,4

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. BURNER AND CONTROLS TO MEET CSD-1.
3. INLET GAS PRESSURE LISTED IS AT INLET OF GAS VALVE TRAIN. SIZE TRAIN ACCORDINGLY.
4. THE FOLLOWING SHALL BE FURNISHED BY THE BOILER MANUFACTURER: CONDENSATE NEUTRALIZING CARTRIDGE, PRESSURE RELIEF VALVE, LOW WATER CUT-OFF, FLOW SWITCH, AND FACTORY INSTALLED INTEGRAL PUMP AND BACnet COMPATIBLE COMMUNICATION GATEWAY.

ELECTRIC DUCT COIL SCHEDULE

EQUIP TAG	LOCATION	AREA SERVED	MANUF.	MODEL	AIRFLOW (CFM)	OVERALL SIZE			HEATING				ELECTRICAL		NOTES
						WIDTH	HEIGHT	LENGTH	STAGES	kW	CAPACITY (BTUH)	EAT (°F)	LAT (°F)	PH	VOLT	
EDC-D100	VESTIBULE D123	HEAT PUMP HP-D100	MARKEL	HF SERIES	2,250	18"	18"	6"	1	3.0	10,236	82.4	86.6	3	208	1,2
EDC-D134	OBSERV. D133	HEAT PUMP HP-D134	MARKEL	HF SERIES	2,250	18"	18"	6"	1	3.0	10,236	82.4	86.6	3	208	1,2

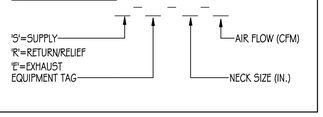
NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. PROVIDE DISCONNECT SWITCH, CONTROL TRANSFORMER, MAGNETIC CONTACTORS, AIRFLOW SWITCH, AND THERMAL CUTOUTS.

DIFFUSER, REGISTER, AND GRILLE SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	NOMINAL FACE SIZE	MATERIAL	MAX. N.C.	NOTES
A	TITUS	OMNI	SQUARE PANEL FACE	24"x24"	STEEL	30	1
B	TITUS	300R	DOUBLE DEFLECTION SUPPLY REGISTER	VARIES	STEEL	30	1,2,3
C	TITUS	50F	EGG CRATE	VARIES	ALUMINUM	30	1,4
D	ACUTHERM	TF/HC	HEATING/COOLING THERMAFUSER	24"x24"	STEEL	30	1
E	TITUS	350R	35 DEG. DEFLECTION GRILLE	VARIES	STEEL	30	1,2,3
F	TITUS	TBDI-80	LINEAR INSULATED BOOT	48 IN LONG	STEEL	30	1,5

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. FINISH AS SELECTED BY ARCHITECT.
3. OPPOSED BLADE DAMPER.
4. 1/2"x1/2"x1" OR 1/2"x1/2"x1/2" W/ 45 DEG. DEFLECTION GRID.
5. (2) 1" WIDE SLOTS.

FLOOR PLAN TAG LEGEND:



EXHAUST FAN SCHEDULE

EQUIP TAG	LOCATION	AREA SERVED	MANUF	MODEL	TYPE	DRIVE	CFM	SP (IN.)	MAX. SONES	MOTOR						CONTROL TYPE	NOTES
										FAN RPM	BHP	HP	RPM	PH	VOLT		
EF-1	MECHANICAL MEZZANINE 200	BUILDING RELIEF	GREENHECK	SQ-160-VG	SQUARE INLINE	DIRECT	3,200	0.375	13.9	1227	0.63	1.00	1300	1	120	BAS	1,2

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. GRAVITY BACKDRAFT DAMPER, DISCONNECT SWITCH, VIBRATION ISOLATORS, ECM MOTOR FOR CONTROL BY REMOTE SIGNAL, AND UL705 RATING.

INTAKE AND RELIEF HOOD SCHEDULE

EQUIP TAG	LOCATION	AREA SERVED	MANUF.	MODEL	TYPE	THROAT SIZE	CFM	STATIC PRESSURE (IN. W.G.)	HOOD FREE AREA (SQFT)	MAX. THROAT VELOCITY (FPM)	NOTES
						DIA					
IH-C103A	ROOF	HEAT PUMP C103A	GREENHECK	GR5I-08	INTAKE	8"	60	0.10	0.3	172	1,2
IH-C118	ROOF	HEAT PUMP HP-C118	GREENHECK	GR5I-10	INTAKE	10"	220	0.10	0.5	404	1,2

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. MANUFACTURERS SLOPED ROOF CURB TO MATCH ROOF PITCH.

WALL LOUVER SCHEDULE

EQUIP TAG	LOCATION	AREA SERVED	MANUF.	MODEL	TYPE	SIZE (IN.)			CFM	FREE AREA (SQFT)	FREE AREA VELOCITY (FPM)	P.D. (IN W.G.)	WATER PENETRATION VELOCITY (FPM)	NOTES
						W	H	D						
WL-1	THERAPY D131	HEAT PUMP O.A.	RUSKIN	ELF375DX	EXTRUDED ALUMINUM DRAINABLE	24	24	4	1,335	1.9	688	0.11	870	1,2,3,4

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. BIRDSCREEN.
3. COLOR AND FINISH TO BE SELECTED BY ARCHITECT.
4. WATER PENETRATION VELOCITY IS BASED ON 0.01 OZ/S.F. WITH A 48"x48" LOUVER AND A TEST PERIOD OF 15 MINS.

ELECTRIC WALL HEATER SCHEDULE

EQUIP TAG	LOCATION	TYPE	MANUF.	MODEL	FAN DATA		ELECTRICAL DATA				NOTES
					TYPE	CFM	HEATER kW	AMP	PH	VOLT	
EWH-B123	VESTIBULE B123	RECESSED WALL	MARKEL	3420 SERIES	PROP.	245	2.0	9.6	1	208	1,2,3
EWH-B133	VESTIBULE B133	RECESSED WALL	MARKEL	3420 SERIES	PROP.	245	2.0	9.6	1	208	1,2,3
EWH-C122	VESTIBULE C122	RECESSED WALL	MARKEL	3420 SERIES	PROP.	245	3.0	8.3	3	208	1,2,3
EWH-D123	VESTIBULE D123	RECESSED WALL	MARKEL	3420 SERIES	PROP.	245	2.0	9.6	1	208	1,2,3
EWH-D137	VESTIBULE D137	RECESSED WALL	MARKEL	3420 SERIES	PROP.	245	2.0	9.6	1	208	1,2,3

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. DISCONNECT SWITCH, FAN RELAY SWITCH, AND TAMPER-PROOF BUILT-IN THERMOSTAT.
3. MOUNTING KIT TO MATCH MOUNTING REQUIREMENTS.

ELECTRIC SUSPENDED UNIT HEATER SCHEDULE

EQUIP TAG	LOCATION	TYPE	MANUF.	MODEL	FAN DATA		ELECTRICAL DATA				NOTES
					TYPE	CFM	HEATER kW	AMP	PH	VOLT	
E5UH-C100	MECHANICAL ROOM C100	SUSPENDED HORIZONTAL	MARKEL	5100 SERIES	PROP.	400	3.3	9.2	3	208	1,2,3,4
E5UH-C103	GARAGE C103	SUSPENDED HORIZONTAL	MARKEL	5100 SERIES	PROP.	700	7.5	20.8	3	208	1,2,3,4

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. DISCONNECT SWITCH.
3. WALL BRACKET.
4. PROVIDE CONTROL RELAY AND TRANSFORMER.

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HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

NO.	DESCRIPTION	DATE
-	Issued For Bid	12-22-2023

PREPARED BY: 20/10
APPROVED BY: 20/10
JOB NO.: 23.825.004
DATE: 12-22-2023

SHEET: HVAC SCHEDULES

HV5.0

VVT DAMPER SCHEDULE

EQUIP TAG	LOCATION	AREA SERVED	MANUF.	MODEL	AIRFLOW (CFM)		APPROXIMATE DIMENSIONS (IN.)					NOTES
					MIN.	MAX	INLET DIA.	OUTLET DIA.	LENGTH	WIDTH	HEIGHT	
VVT-A100	BOARD ROOM A101	SUPERINTENDENT A100	RUSKIN	CDR25	31	305	10	10	7			1,2,3
VVT-A100BP	MECHANICAL MEZZANINE	SYSTEM BYPASS	RUSKIN	CDR25	0	1000	12	12	7	0	0	1,2,3
VVT-A102	BUSINESS PERSONNEL SECRETARY A105	ASSIST. SUPER. CURRIC./ INSTRUCT. A102	RUSKIN	CDR25	30	295	10	10	7			1,2,3
VVT-A103	ADMINISTRATIVE ASSISTANT A103	ADMINISTRATIVE ASSISTANT A103	RUSKIN	CDR25	17	170	8	8	7			1,2,3
VVT-A105	BUSINESS PERSONNEL SECRETARY A105	BUSINESS PERSONNEL SECRETARY A105	RUSKIN	CDR25	13	125	8	8	7			1,2,3
VVT-A106	BOOKKEEPER A106	BOOKKEEPER A106	RUSKIN	CDR25	17	170	8	8	7			1,2,3
VVT-A109	ASSIST. SUPER. OF H.R. A109	ASSIST. SUPER. OF H.R. A109	RUSKIN	CDR25	13	125	8	8	7			1,2,3
VVT-A110	BILLING A110	BILLING A110	RUSKIN	CDR25	17	170	8	8	7			1,2,3
VVT-A112	BUSINESS PERSONNEL SECRETARY A105	H.R. OFFICE A112, WAITING A104	RUSKIN	CD50	29	290			7	10	8	1,2,3
VVT-A112BP	BUSINESS PERSONNEL SECRETARY A105	SYSTEM BYPASS	RUSKIN	CDR25	0	800	10	10	7	0	0	1,2,3
VVT-A114	ADMIN. ASSIST. OF H.R. A114	ADMIN. ASSIST. OF H.R. A114	RUSKIN	CDR25	13	125	8	8	7			1,2,3
VVT-A115	OFFICE A116	ACCOUNTS PAYABLE A115	RUSKIN	CDR25	17	165	10	10	7			1,2,3
VVT-A118	ADMIN. ASSIST. A118	ADMIN. ASSIST. A118	RUSKIN	CDR25	12	120	8	8	7			1,2,3
VVT-A119	BUSINESS OFFICE A119	BUSINESS OFFICE A119	RUSKIN	CDR25	25	250	8	8	7			1,2,3
VVT-A121	ADMIN. ASSIST. A118	OFFICE A121, COPY A120, WAITING A117	RUSKIN	CD50	41	410			7	12	8	1,2,3
VVT-A122	BENEFITS OFFICE A121	DIRECTOR OF BUSINESS A122	RUSKIN	CDR25	23	230	8	8	7			1,2,3
VVT-B100	OFFICE B105	OFFICE B100	RUSKIN	CDR25	28	280	12	12	7			1,2,3
VVT-B100BP	MECHANICAL ROOM C100	SYSTEM BYPASS	RUSKIN	CDR25	0	800	10	10	7	0	0	1,2,3
VVT-B101	OFFICE B101	OFFICE B101	RUSKIN	CDR25	19	190	8	8	7			1,2,3
VVT-B101BP	MECHANICAL ROOM C100	SYSTEM BYPASS	RUSKIN	CDR25	0	800	10	10	7	0	0	1,2,3
VVT-B102	OFFICE B102	OFFICE B102	RUSKIN	CDR25	24	240	8	8	7			1,2,3
VVT-B103	OFFICE B103	OFFICE B103	RUSKIN	CDR25	19	190	8	8	7			1,2,3
VVT-B104	OFFICE B107	OFFICE B104	RUSKIN	CDR25	28	280	10	10	7			1,2,3
VVT-B105	OFFICE B105	OFFICE B105	RUSKIN	CDR25	19	190	8	8	7			1,2,3
VVT-B107	OFFICE B107	OFFICE B107	RUSKIN	CDR25	14	135	8	8	7			1,2,3
VVT-B108	OFFICE B108	OFFICE B108	RUSKIN	CDR25	19	190	8	8	7			1,2,3
VVT-B112	OFFICE B112	OFFICE B112	RUSKIN	CDR25	19	190	8	8	7			1,2,3
VVT-B113	OFFICE B113	OFFICE B113	RUSKIN	CDR25	32	315	12	12	7			1,2,3
VVT-B114	OFFICE B114	OFFICE B114	RUSKIN	CDR25	19	190	8	8	7			1,2,3
VVT-B116	STUDENT SUPPORT B116	STUDENT SUPPORT B116	RUSKIN	CDR25	25	250	12	12	7			1,2,3
VVT-B118	TECH COORDINATOR B118	TECH COORDINATOR B118	RUSKIN	CDR25	26	260	8	8	7			1,2,3
VVT-B124	TECH COORDINATOR B118	SECTOR OFFICE B124	RUSKIN	CDR25	15	150	8	8	7			1,2,3
VVT-B125	SECTOR OFFICE B125	SECTOR OFFICE B125	RUSKIN	CDR25	15	150	8	8	7			1,2,3
VVT-B127	ADMIN. ASSIST. A118	OFFICE B127, STORAGE B128, COPY B129	RUSKIN	CD50	45	450			7	10	10	1,2,3
VVT-B130	SECTOR OFFICE B130	SECTOR OFFICE B130	RUSKIN	CDR25	15	150	8	8	7			1,2,3
VVT-B131	CORRIDOR B134	SECTOR OFFICE B131	RUSKIN	CDR25	15	150	8	8	7			1,2,3
VVT-C104	TRANSITION ROOM D119	BUILDING SUPERVISOR C104	RUSKIN	CDR25	20	195	8	8	7			1,2,3
VVT-C118	STORAGE C119	MEETING ROOM C118	RUSKIN	CDR25	30	300	10	10	7			1,2,3

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. MAXIMUM REQUIRES STATIC PRESSURE DIFFERENTIAL ACROSS INLET TO OUTLET OF DAMPER ASSEMBLY SHALL NOT EXCEED 0.25" W.G.
3. CONTROL CONTRACTOR SHALL FUNISH AND INSTALL DAMPER ACTUATOR PRIOR TO INSTALLATION BY MECHANICAL CONTRACTOR.

VVT DAMPER SCHEDULE

EQUIP TAG	LOCATION	AREA SERVED	MANUF.	MODEL	AIRFLOW (CFM)		APPROXIMATE DIMENSIONS (IN.)					NOTES
					MIN.	MAX	INLET DIA.	OUTLET DIA.	LENGTH	WIDTH	HEIGHT	
VVT-C118BP	MECHANICAL MEZZANINE	SYSTEM BYPASS	RUSKIN	CDR25	0	800	10	10	7	0	0	1,2,3
VVT-C120	WAITING C121	PLAYROOM C120, WAITING C121	RUSKIN	CDR25	31	310	10	10	7			1,2,3
VVT-C123	WAITING C123	WAITING C123, RECEPTION C124	RUSKIN	CD50	47	465			7	10	10	1,2,3
VVT-C126	RECEPTION C124	MEETING ROOM C126	RUSKIN	CDR25	31	305	10	10	7			1,2,3
VVT-C127	LOBBY C116	GRANT WRITER C127	RUSKIN	CDR25	22	220	10	10	7			1,2,3
VVT-D100	SECRETARIES D101	SPECIALISTS OFFICE D100	RUSKIN	CDR25	30	300	10	10	7			1,2,3
VVT-D100BP	VESTIBULE D123	SYSTEM BYPASS	RUSKIN	CDR25	0	1000	12	12	7	0	0	1,2,3
VVT-D101	PASSAGE D104	SECRETARIES D101	RUSKIN	CD50	56	560			7	16	8	1,2,3
VVT-D102	SPECIALISTS OFFICE D105	PROGRAM SECRETARY D102	RUSKIN	CDR25	10	100	6	6	7			1,2,3
VVT-D102A	SECRETARIES D101	ECAT LEAD D102A	RUSKIN	CDR25	18	180	10	10	7			1,2,3
VVT-D103	SPECIALISTS OFFICE D103	SPECIALISTS OFFICE D103	RUSKIN	CDR25	16	160	8	8	7			1,2,3
VVT-D105	SPECIALISTS OFFICE D105	SPECIALISTS OFFICE D105	RUSKIN	CDR25	13	125	8	8	7			1,2,3
VVT-D106	OFFICE D106	OFFICE D106	RUSKIN	CDR25	16	160	10	10	7			1,2,3
VVT-D113	SPECIALISTS OFFICE D113	SPECIALISTS OFFICE D113	RUSKIN	CDR25	13	125	8	8	7			1,2,3
VVT-D118	OFFICE COORDINATOR D118	OFFICE COORDINATOR D118	RUSKIN	CDR25	13	125	8	8	7			1,2,3
VVT-D119	CORRIDOR D122	TRANSITION ROOM D119	RUSKIN	CDR25	11	110	8	8	7			1,2,3
VVT-D119BP	THERAPY D130	SYSTEM BYPASS	RUSKIN	CDR25	0	1000	12	12	7	0	0	1,2,3
VVT-D121	DIRECTOR OF INSTRUCTION D121	DIRECTOR OF INSTRUCTION D121	RUSKIN	CDR25	13	125	8	8	7			1,2,3
VVT-D124	KITCHEN D124	KITCHEN D124	RUSKIN	CDR25	15	145	8	8	7			1,2,3
VVT-D125	AUDIO LAB D125	AUDIO LAB D125, D125A	RUSKIN	CDR25	15	150	8	8	7			1,2,3
VVT-D130	THERAPY D130	THERAPY D130	RUSKIN	CDR25	19	185	8	8	7			1,2,3
VVT-D132	THERAPY D132	THERAPY D132	RUSKIN	CDR25	9	90	6	6	7			1,2,3
VVT-D133	THERAPY D132	OBSERV. D133	RUSKIN	CDR25	11	105	6	6	7			1,2,3
VVT-D134	SPECIALISTS OFFICE D134	SPECIALISTS OFFICE D134	RUSKIN	CDR25	15	150	10	10	7			1,2,3
VVT-D134BP	THERAPY D130	SYSTEM BYPASS	RUSKIN	CDR25	0	1000	12	12	7	0	0	1,2,3
VVT-D135	PASSAGE D126	THERAPY D135	RUSKIN	CDR25	18	175	6	6	7			1,2,3
VVT-D138	CORRIDOR D136	VISION D138	RUSKIN	CDR25	11	110	8	8	7			1,2,3
VVT-D139	THERAPY D139	THERAPY D139	RUSKIN	CDR25	12	115	8	8	7			1,2,3
VVT-D140	THERAPY D140	THERAPY D140	RUSKIN	CDR25	11	110	8	8	7			1,2,3
VVT-D141	SPECIALISTS OFFICE D141	SPECIALISTS OFFICE D141	RUSKIN	CDR25	13	130	8	8	7			1,2,3
VVT-D142	THERAPY D142	THERAPY D142	RUSKIN	CDR25	28	275	12	12	7			1,2,3
VVT-D144	OBSERVATION D144	BSERVATION D144, THERAPY D145O	RUSKIN	CDR25	21	210	8	8	7			1,2,3
VVT-D147	SPECIALISTS OFFICE D147	SPECIALISTS OFFICE D147	RUSKIN	CDR25	13	130	8	8	7			1,2,3
VVT-D148	THERAPY D148	THERAPY D148	RUSKIN	CDR25	31	305	12	12	7			1,2,3
VVT-D149	OBSERVATION D144	THERAPY D149, PASSAGE 146	RUSKIN	CDR25	20	200	8	8	7			1,2,3
VVT-D150	OBSERVATION D144	THERAPY D150, PASSAGE 146	RUSKIN	CDR25	20	195	8	8	7			1,2,3
VVT-D151	SPECIALISTS OFFICE D151	SPECIALISTS OFFICE D151	RUSKIN	CDR25	13	130	8	8	7			1,2,3
VVT-D153	SPECIALISTS OFFICE D153	SPECIALISTS OFFICE D153	RUSKIN	CDR25	13	130	8	8	7			1,2,3
VVT-D154	THERAPY D148	SPECIALISTS OFFICE D154	RUSKIN	CDR25	31	305	12	12	7			1,2,3
VVT-D155	SPECIALISTS OFFICE D155	SPECIALISTS OFFICE D155	RUSKIN	CD50	41	410			7	10	10	1,2,3
VVT-D156	SPECIALISTS OFFICE D156	SPECIALISTS OFFICE D156	RUSKIN	CDR25	29	285	10	10	7			1,2,3

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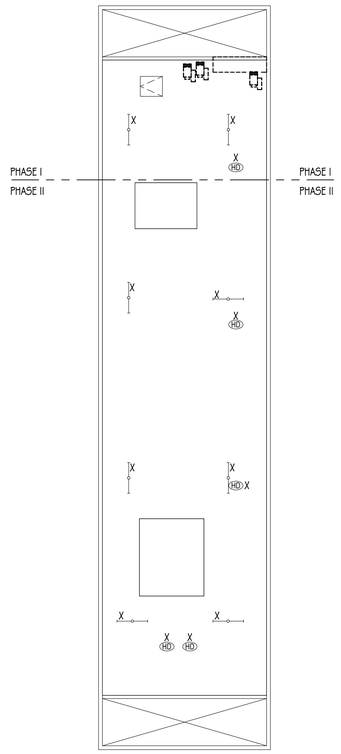
HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

NO.	DESCRIPTION	DATE
-	Issued For Bid	12-22-2023

PREPARED BY: 20/10
APPROVED BY: 20/10
JOB NO.: 23.825.004
DATE: 12-22-2023

SHEET
HVAC SCHEDULES

HV5.1



2 MEZZANINE ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

1 FIRST FLOOR ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

DRAWING NOTES

1 ALL CEILING WORK WITHIN THIS AREA SHALL ONLY BE PERFORMED IF ALTERNATE BID NO. 2 IS ACCEPTED.

2 ALL CEILING WORK WITHIN THIS AREA SHALL ONLY BE PERFORMED IF ALTERNATE BID NO. 3 IS ACCEPTED.

3 EXISTING FAN CONTROLS TO REMAIN. EXISTING LIGHT SWITCHES TO BE REPLACED.

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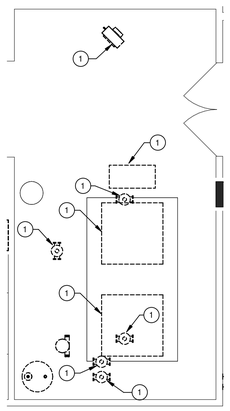
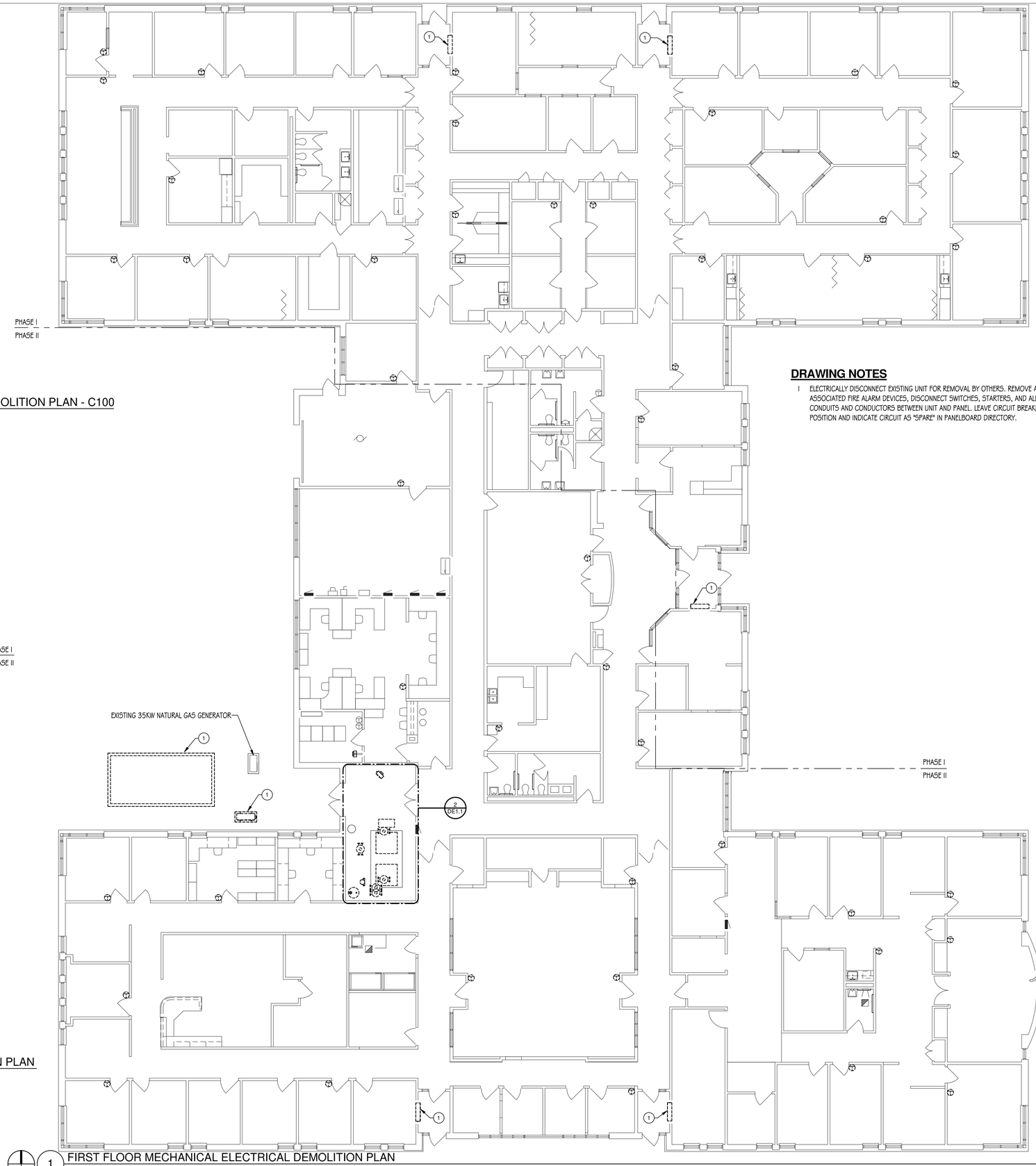
SHEET
ELECTRICAL
DEMOLITION PLANS

DE1.0



2 FIRST FLOOR MECHANICAL ELECTRICAL DEMOLITION PLAN - C100
1/4" = 1'-0"



1 FIRST FLOOR MECHANICAL ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

3 MEZZANINE MECHANICAL ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

DRAWING NOTES

1 ELECTRICALLY DISCONNECT EXISTING UNIT FOR REMOVAL BY OTHERS. REMOVE ANY ASSOCIATED FIRE ALARM DEVICES, DISCONNECT SWITCHES, STARTERS, AND ALL CONDUITS AND CONDUCTORS BETWEEN UNIT AND PANEL. LEAVE CIRCUIT BREAKER AT 'OFF' POSITION AND INDICATE CIRCUIT AS "SPARE" IN PANELBOARD DIRECTORY.

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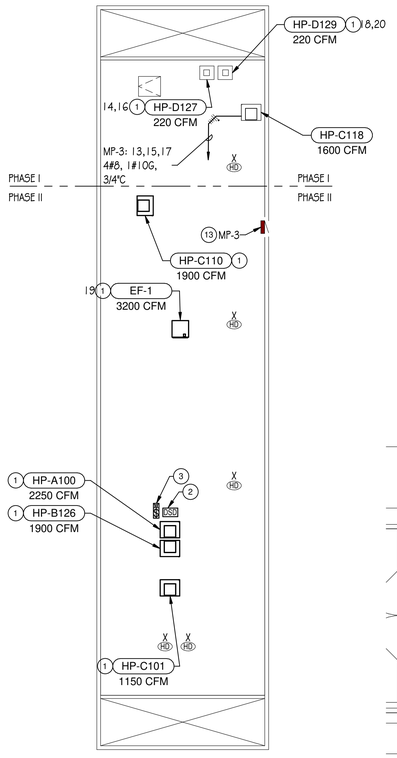
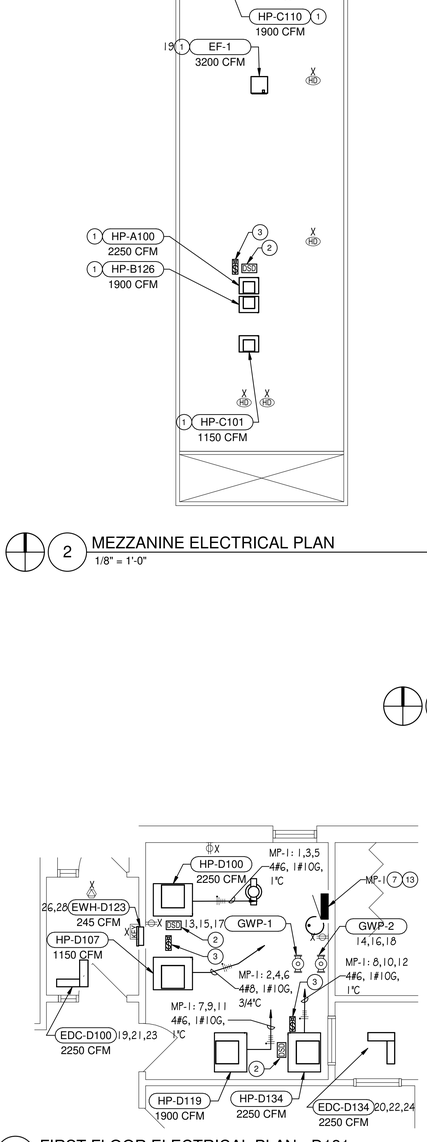
SHEET
ELECTRICAL
MECHANICAL
DEMOLITION PLANS

DE1.1

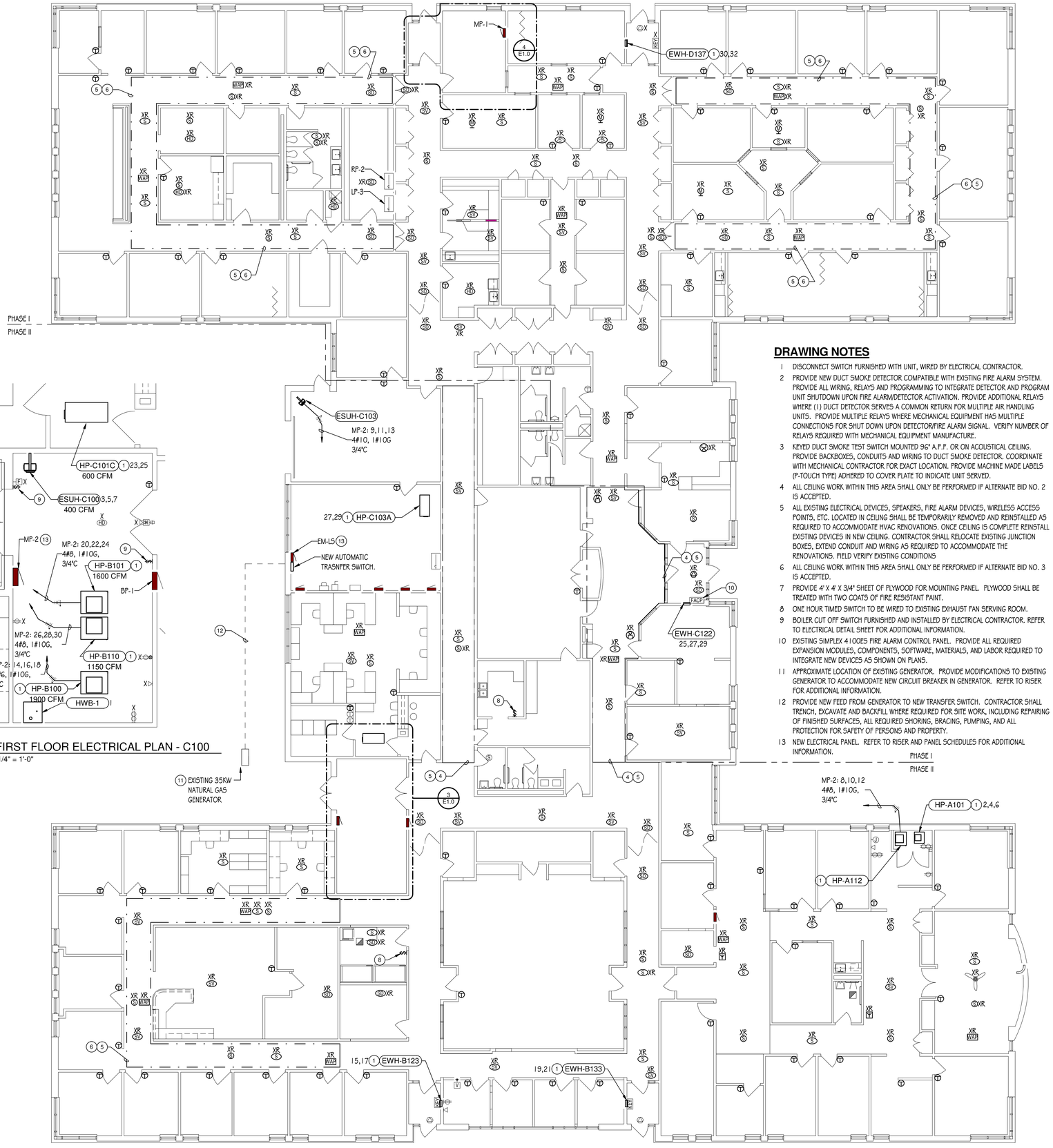


2 MEZZANINE ELECTRICAL PLAN
1/8" = 1'-0"

3 FIRST FLOOR ELECTRICAL PLAN - C100
1/4" = 1'-0"



4 FIRST FLOOR ELECTRICAL PLAN - D131
1/4" = 1'-0"



1 FIRST FLOOR ELECTRICAL PLAN
1/8" = 1'-0"

DRAWING NOTES

1 DISCONNECT SWITCH FURNISHED WITH UNIT, WIRED BY ELECTRICAL CONTRACTOR.

2 PROVIDE NEW DUCT SMOKE DETECTOR COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM. PROVIDE ALL WIRING, RELAYS AND PROGRAMMING TO INTEGRATE DETECTOR AND PROGRAM UNIT SHUTDOWN UPON FIRE ALARM/DETECTOR ACTIVATION. PROVIDE ADDITIONAL RELAYS WHERE (1) DUCT DETECTOR SERVES A COMMON RETURN FOR MULTIPLE AIR HANDLING UNITS. PROVIDE MULTIPLE RELAYS WHERE MECHANICAL EQUIPMENT HAS MULTIPLE CONNECTIONS FOR SHUT DOWN UPON DETECTOR/FIRE ALARM SIGNAL. VERIFY NUMBER OF RELAYS REQUIRED WITH MECHANICAL EQUIPMENT MANUFACTURE.

3 KEYED DUCT SMOKE TEST SWITCH MOUNTED 96" A.F.F. OR ON ACOUSTICAL CEILING. PROVIDE BACKBOXES, CONDUITS AND WIRING TO DUCT SMOKE DETECTOR. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION. PROVIDE MACHINE MADE LABELS (P-TOUCH TYPE) ADHERED TO COVER PLATE TO INDICATE UNIT SERVED.

4 ALL CEILING WORK WITHIN THIS AREA SHALL ONLY BE PERFORMED IF ALTERNATE BID NO. 2 IS ACCEPTED.

5 ALL EXISTING ELECTRICAL DEVICES, SPEAKERS, FIRE ALARM DEVICES, WIRELESS ACCESS POINTS, ETC. LOCATED IN CEILING SHALL BE TEMPORARILY REMOVED AND REINSTALLED AS REQUIRED TO ACCOMMODATE HVAC RENOVATIONS. ONCE CEILING IS COMPLETE REINSTALL EXISTING DEVICES IN NEW CEILING. CONTRACTOR SHALL RELOCATE EXISTING JUNCTION BOXES, EXTEND CONDUIT AND WIRING AS REQUIRED TO ACCOMMODATE THE RENOVATIONS. FIELD VERIFY EXISTING CONDITIONS

6 ALL CEILING WORK WITHIN THIS AREA SHALL ONLY BE PERFORMED IF ALTERNATE BID NO. 3 IS ACCEPTED.

7 PROVIDE 4' X 4' X 3/4" SHEET OF PLYWOOD FOR MOUNTING PANEL. PLYWOOD SHALL BE TREATED WITH TWO COATS OF FIRE RESISTANT PAINT.

8 ONE HOUR TIMED SWITCH TO BE WIRED TO EXISTING EXHAUST FAN SERVING ROOM.

9 BOILER CUT OFF SWITCH FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DETAIL SHEET FOR ADDITIONAL INFORMATION.

10 EXISTING SIMPLEX 4100ES FIRE ALARM CONTROL PANEL. PROVIDE ALL REQUIRED EXPANSION MODULES, COMPONENTS, SOFTWARE, MATERIALS, AND LABOR REQUIRED TO INTEGRATE NEW DEVICES AS SHOWN ON PLANS.

11 APPROXIMATE LOCATION OF EXISTING GENERATOR. PROVIDE MODIFICATIONS TO EXISTING GENERATOR TO ACCOMMODATE NEW CIRCUIT BREAKER IN GENERATOR. REFER TO RISER FOR ADDITIONAL INFORMATION.

12 PROVIDE NEW FEED FROM GENERATOR TO NEW TRANSFER SWITCH. CONTRACTOR SHALL TRENCH, EXCAVATE AND BACKFILL WHERE REQUIRED FOR SITE WORK, INCLUDING REPAIRING OF FINISHED SURFACES, ALL REQUIRED SHORING, BRACING, PUMPING, AND ALL PROTECTION FOR SAFETY OF PERSONS AND PROPERTY.

13 NEW ELECTRICAL PANEL. REFER TO RISER AND PANEL SCHEDULES FOR ADDITIONAL INFORMATION.

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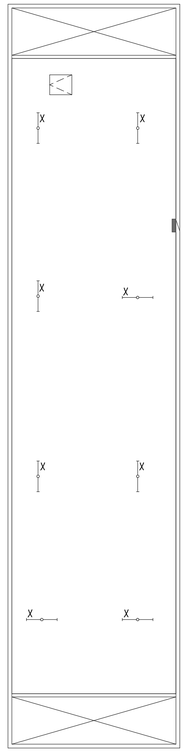
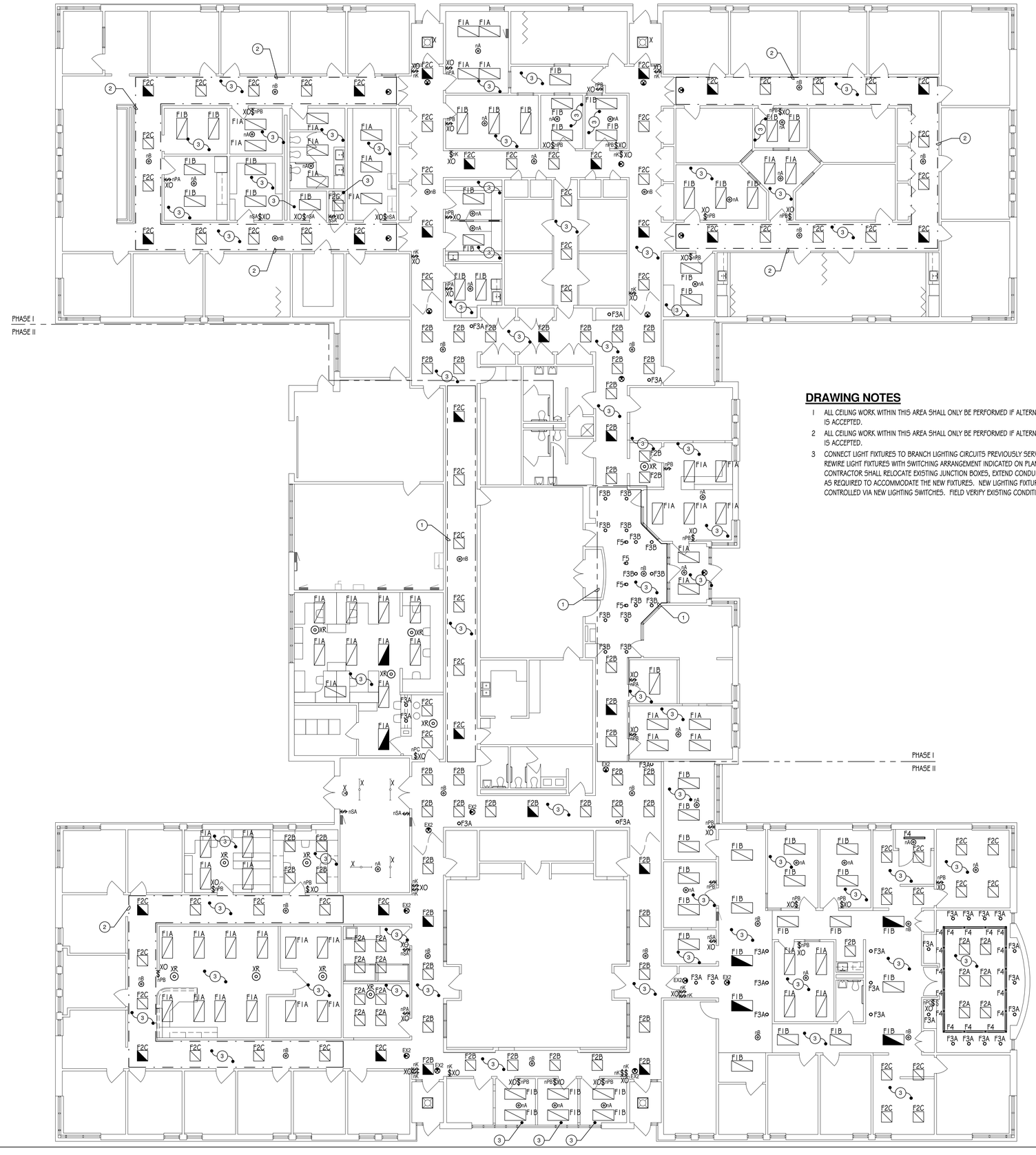
SHEET
ELECTRICAL PLANS

E1.0



2 MEZZANINE LIGHTING PLAN
1/8" = 1'-0"



1 FIRST FLOOR LIGHTING PLAN
1/8" = 1'-0"

DRAWING NOTES

1 ALL CEILING WORK WITHIN THIS AREA SHALL ONLY BE PERFORMED IF ALTERNATE BID NO. 2 IS ACCEPTED.

2 ALL CEILING WORK WITHIN THIS AREA SHALL ONLY BE PERFORMED IF ALTERNATE BID NO. 3 IS ACCEPTED.

3 CONNECT LIGHT FIXTURES TO BRANCH LIGHTING CIRCUITS PREVIOUSLY SERVING AREA. REWIRE LIGHT FIXTURES WITH SWITCHING ARRANGEMENT INDICATED ON PLAN. CONTRACTOR SHALL RELOCATE EXISTING JUNCTION BOXES, EXTEND CONDUIT AND WIRING AS REQUIRED TO ACCOMMODATE THE NEW FIXTURES. NEW LIGHTING FIXTURES SHALL BE CONTROLLED VIA NEW LIGHTING SWITCHES. FIELD VERIFY EXISTING CONDITIONS.

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SHEET
LIGHTING PLANS

E1.1

ELECTRICAL SYMBOL LIST (NOTE: NOT ALL SYMBOLS ARE USED IN THE PROJECT.)

- 2' X 4' LUMINAIRE, RECESSED OR SURFACE MOUNTED PER LUMINAIRE SCHEDULE.
- 1' X 4' LUMINAIRE, RECESSED OR SURFACE MOUNTED PER LUMINAIRE SCHEDULE.
- 2' X 2' LUMINAIRE, RECESSED OR SURFACE MOUNTED PER LUMINAIRE SCHEDULE.
- HALF SHADING DENOTES FIXTURE UNSWITCHED "NIGHTLIGHT".
- STRIP LUMINAIRE PER LUMINAIRE SCHEDULE.
- WALL MOUNTED LUMINAIRE PER LUMINAIRE SCHEDULE.
- RECESSED OR SURFACE CEILING MOUNTED LUMINAIRE PER LUMINAIRE SCHEDULE.
- (WG) ILLUMINATED EXIT OR STAIR SIGN, SURFACE CEILING MOUNTED, SINGLE OR DOUBLE FACE, WITH OR WITHOUT DIRECTIONAL ARROWS PER SCHEDULE.
  - "WG" DENOTES WIRE GUARD.
- (WG) ILLUMINATED EXIT OR STAIR SIGN, SURFACE WALL MOUNTED, SINGLE OR DOUBLE FACE, WITH OR WITHOUT DIRECTIONAL ARROWS PER SCHEDULE.
  - "WG" DENOTES WIRE GUARD.
- (WG) SELF-CONTAINED EMERGENCY LUMINAIRE, WITH BATTERY BACK-UP AND SOLID STATE CHARGER PER SCHEDULE.
  - "WG" DENOTES WIRE GUARD.
- (WG) SELF-CONTAINED EMERGENCY LUMINAIRE WITH DUAL WEATHERPROOF REMOTE HEADS, BATTERY BACK-UP AND SOLID STATE CHARGER PER SCHEDULE.
  - "WG" DENOTES WIRE GUARD.
- (K) SINGLE POLE 20 AMP 120-277 VOLT TOGGLE SWITCH INSTALLED 48" A.F.F.
  - "K" DENOTES KEYED SWITCH.
- (K) THREE-WAY 20 AMP 120-277 VOLT TOGGLE SWITCH INSTALLED 48" A.F.F.
  - "K" DENOTES KEYED SWITCH.
- (K) FOUR-WAY 20 AMP 120-277 VOLT TOGGLE SWITCH INSTALLED 48" A.F.F.
  - "K" DENOTES KEYED SWITCH.
- SLIDE DIMMER CONTROL. DECORA STYLE COMPATIBLE WITH LUMINAIRE AND DIMMING BALLAST/DRIVER TYPES INSTALLED 48" A.F.F.
- PL SINGLE POLE 20 AMP 120/277 VOLT TOGGLE SWITCH WITH PILOT LIGHT INSTALLED 48" A.F.F.
- OS WALL MOUNT COMBINATION OCCUPANCY SENSOR AND SWITCH AS SCHEDULED.
- A OCCUPANCY SENSOR, LETTER INDICATES MODEL AND TYPE PER SCHEDULE.
- ELECTRICAL DEVICE MOUNTED ON SURFACE RACEWAY, WIREMOLD V700 U.N.O.
- SURFACE MOUNTED (EXPOSED) CONDUIT, BACKBOX FOR DEVICE AS SHOWN.
- (GFI,WP) 20A. 2P, 3 WIRE, GROUNDING TYPE, 125V. SPECIFICATION-GRADE, TAMPER-RESISTANT TYPE DUPLEX RECEPTACLE NEMA 5-20R INSTALLED +16" A.F.F. UNLESS NOTED OTHERWISE.
  - "GFI" DENOTES RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
  - "WP" DENOTES WEATHER-RESISTANT RECEPTACLE WITH LOW-PROFILE WHILE-IN-USE WEATHERPROOF COVER.
- (GFI) 20A. 2P, 3 WIRE, GROUNDING TYPE, 125V. SPECIFICATION-GRADE, TAMPER-RESISTANT TYPE DUPLEX RECEPTACLE NEMA 5-20R INSTALLED 6" ABOVE COUNTER TOP OR +42" A.F.F. UNLESS NOTED OTHERWISE.
  - "GFI" DENOTES RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
- (GFI) TWO 20A. 2P, 3 WIRE, GROUNDING TYPE, SPECIFICATION-GRADE, TAMPER-RESISTANT TYPE DUPLEX RECEPTACLES NEMA 5-20R INSTALLED +16" A.F.F. UNLESS NOTED OTHERWISE.
  - "GFI" DENOTES RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
- SIMPLEX RECEPTACLE.
- SPECIAL RECEPTACLE, NEMA CONFIGURATION AS NOTED IN THE PLAN.
- POWER OUTLET, CEILING MOUNTED.
- COMBINATION POWER/INFORMATION OUTLET, CEILING MOUNTED.
- HIGH CAPACITY MULTISERVICE (WITH DIVIDER/PARTITIONS) FLUSH FLOOR BOX. REFER TO PLANS AND DETAILS FOR QUANTITIES AND CONFIGURATIONS.
- METER.
- CIRCUIT BREAKER PANELBOARD.
- T DRY TYPE TRANSFORMER WITH 4" CONCRETE HOUSEKEEPING PAD.
- DISTRIBUTION PANEL.
- NON-FUSED SAFETY DISCONNECT SWITCH, AMPERE RATING AND NUMBER OF POLES AS NOTED.
- FUSED DISCONNECT SWITCH, AMPERE RATING, NUMBER OF POLES AND FUSE SIZE AS NOTED.
- COMBINATION MOTOR STARTER WITH FUSED DISCONNECT, AMPERE RATING, NUMBER OF POLES, FUSE SIZE AND NEMA STARTER SIZE AS INDICATED.

- SWITCH FRAME SIZE.
- NUMBER OF FUSIBLE POLES.
- FUSE SIZE.
- NEMA ENCLOSURE RATING. (NEMA 1 STANDARD, 3R OUTDOORS AND WET LOCATIONS U.N.O.)
- 30/3/30/3R — FUSIBLE SWITCH RATING TAG.
- NEMA 00 — NEMA STARTER SIZE.
- ENCLOSED CIRCUIT BREAKER.
- MOTOR.
- MANUAL MOTOR STARTER, THERMAL OVERLOAD TOGGLE SWITCH.
- CEILING JUNCTION BOX.
- WALL MOUNTED JUNCTION BOX.
- JUNCTION BOX WITH FLEXIBLE CONDUIT FOR FINAL CONNECTION TO EQUIPMENT.
- THERMOSTAT, PROVIDE RECESSED JUNCTION BOX AND CONDUIT STUB-UP, REFER TO MECHANICAL FOR EXACT QUANTITY AND LOCATION.
- CO2 SENSOR, PROVIDE RECESSED JUNCTION BOX AND CONDUIT STUB-UP, REFER TO MECHANICAL FOR EXACT QUANTITY AND LOCATION.
- CONDUIT ROUTED CONCEALED IN WALLS AND CEILING. HASH MARKS DENOTE QUANTITY OF #12 MINIMUM AWG CONDUCTORS OR AS NOTED.
- CONDUIT ROUTED EXPOSED. INSTALL PARALLEL TO WALLS AND CEILINGS. HASH MARKS DENOTE QUANTITY OF #12 MINIMUM AWG CONDUCTORS OR AS NOTED.
- CONDUIT ROUTED BELOW GRADE. HASH MARK DENOTES QUANTITY OF #12 MINIMUM AWG CONDUCTORS OR AS NOTED.
- DENOTES CONDUIT HOMERUN, 3/4" MINIMUM, PANEL DESTINATION AND CIRCUIT NUMBER(S) AS INDICATED.
- SHORT TICK MARK DENOTES LINE (HOT) OR SWITCH LEG CONDUCTOR, #12 MINIMUM AWG.
- LONG TICK MARK DENOTES NEUTRAL CONDUCTOR, #10 AWG MINIMUM.
- DENOTES INSULATED GROUND WIRE, #12 AWG MINIMUM.
- CONDUIT END CAP.
- CONDUIT WALL SLEEVES FOR ROUTING OF LOW VOLTAGE CABLING. EACH PENETRATION IS TO PROVIDE A MINIMUM OF (1) 1 1/4" CONDUIT (DATA) & (1) 1" CONDUIT (FIRE ALARM/INTERCOM) U.N.O.
- DATA OUTLET LOCATION INSTALLED 16" A.F.F. U.N.O.
- TELEPHONE OUTLET LOCATION INSTALLED 16" A.F.F. U.N.O.
- DATA OUTLET LOCATION INSTALLED 42" A.F.F. U.N.O.
- TELEPHONE OUTLET LOCATION INSTALLED 42" A.F.F. U.N.O.
- DATA OUTLET LOCATION, CEILING MOUNTED.
- FLUSH CEILING SPEAKER, ROUND OR SQUARE.
- (AV) WEATHERPROOF PROJECTION TYPE WALL MOUNTED SPEAKER.
  - "AV" DENOTES PART OF AUDIO-VIDEO SYSTEM.
- (VR,WP) WALL MOUNTED SPEAKER.
  - "AV" DENOTES PART OF AUDIO-VIDEO SYSTEM.
- MICROPHONE OUTLET INSTALLED 16" A.F.F.
- WAP WIRELESS ACCESS POINT DATA OUTLET INSTALLED ABOVE SUSPENDED CEILING U.N.O.
- TELEVISION CONNECTION PLATE INSTALLED 96" A.F.F. U.N.O.
- AV AUDIO/VIDEO CONNECTION PLATE INSTALLED 16" A.F.F. U.N.O.
- AV AUDIO/VIDEO CONNECTION PLATE, CEILING MOUNTED.
- (VR) FIRE ALARM SYSTEM PULL STATION INSTALLED 48" A.F.F.
  - "VR" DENOTES VANDAL RESISTANT COVER.
- (WG) FIRE ALARM SYSTEM VISUAL NOTIFICATION INSTALLED 80" A.F.F.
  - "WG" DENOTES WIRE GUARD.
- (WG) FIRE ALARM SYSTEM AUDIO/VISUAL NOTIFICATION INSTALLED 80" A.F.F.
  - "WG" DENOTES WIRE GUARD.
- (WG) FIRE ALARM SYSTEM SPEAKER/STROBE NOTIFICATION INSTALLED 80" A.F.F.
  - "WG" DENOTES WIRE GUARD.

- SD (WG) FIRE ALARM SYSTEM CEILING SMOKE DETECTOR.
  - "WG" DENOTES WIRE GUARD.
- HD (FT,WG) FIRE ALARM SYSTEM CEILING HEAT DETECTOR.
  - "FT" DENOTES FIXED TEMPERATURE.
  - "WG" DENOTES WIRE GUARD.
- V (WG) FIRE ALARM SYSTEM CEILING VISUAL NOTIFICATION.
  - "WG" DENOTES WIRE GUARD.
- H (WG) FIRE ALARM SYSTEM CEILING AUDIO/VISUAL NOTIFICATION.
  - "WG" DENOTES WIRE GUARD.
- V (WG) FIRE ALARM SYSTEM CEILING SPEAKER/STROBE NOTIFICATION.
  - "WG" DENOTES WIRE GUARD.
- FACP FIRE ALARM CONTROL PANEL.
- FAAP FIRE ALARM ANNUNCIATOR PANEL.
- NAC FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT PANEL.
- DSS FIRE ALARM SYSTEM DUCT SMOKE DETECTOR.
- DCD FIRE ALARM SYSTEM DUCT CARBON MONOXIDE DETECTOR.
- VSS FIRE ALARM VALVE SUPERVISORY SWITCH.
- FS WATER FLOW SWITCH.
- TS TAMPER SWITCH.
- MH MAGNETIC DOOR HOLDER.
- (TA,FA) ALARM BELL.
  - "TA" DENOTES TORNADO ALARM.
  - "FA" DENOTES FIRE ALARM.
- K FIRE ALARM SYSTEM DUCT SMOKE DETECTOR KEY OPERATED TEST SWITCH WITH INDICATING LIGHT, WALL OR CEILING MOUNTED.
- SECURITY CAMERA. (WALL MOUNT)
- SECURITY CAMERA. (MOUNTED IN THE ACOUSTIC CEILING TILE)
- SECURITY SENSOR/INITIATOR.
- MAGNETIC POSITION SWITCH, DOOR OR WINDOW.
- ESS ELECTRONIC DOOR (LOCK) STRIKE.
- PAD POWER ASSISTED DOOR ACTUATOR.
- DSA DOOR SECURITY ANNUNCIATOR PANEL.
- SEC SECURITY SYSTEM CONTROL PANEL.
- K SECURITY SYSTEM KEY PAD.
- ACCESS CONTROL CREDENTIAL READER.

DEMOLITION SYMBOLS

SYMBOL	DESCRIPTION
R	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED.
X	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO REMAIN.
XC	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED AND JUNCTION BOX CAPPED OR REUSED AS REQUIRED.
XO	NEW ELECTRICAL EQUIPMENT INSTALLED OVER EXISTING OUTLET.
XRR	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE REMOVED, RELOCATED AND JUNCTION BOX REMOVED OR CAPPED AS REQUIRED.
XR	EXISTING ELECTRICAL EQUIPMENT OR OUTLET RELOCATED (NEW LOCATION).
XRT	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE TEMPORARILY REMOVED AND REINSTALLED IN SAME LOCATION.
XA	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE ABANDONED.
XM	EXISTING ELECTRICAL EQUIPMENT OR OUTLET TO BE MODIFIED.
XW	EXISTING ELECTRICAL EQUIPMENT TO BE REWIRED.

NOTE: NOT ALL SYMBOLS MAY BE USED.

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GravesDesignGroup
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HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

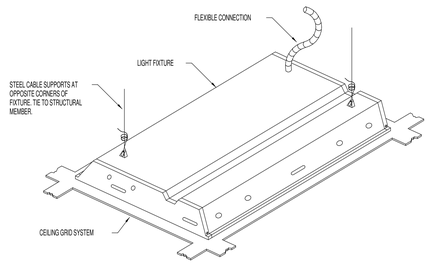
NO.	DESCRIPTION	DATE
-	Issued For Bid	12-22-2023

PREPARED BY: 20/10
APPROVED BY: 20/10
JOB NO.: 23.825.004
DATE: 12-22-2023

SHEET
ELECTRICAL SYMBOL LIST

E4.0

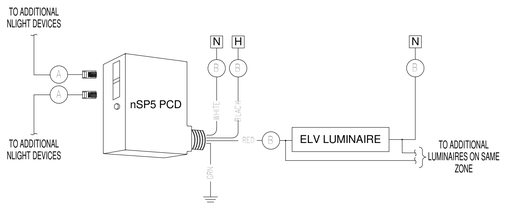
Preliminary – Not For Construction

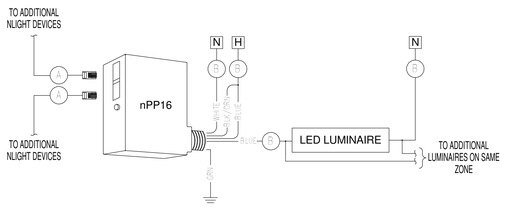


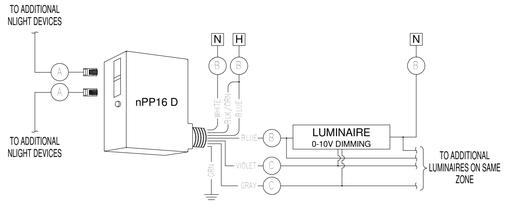
LIGHT FIXTURE SUPPORT DETAIL

NO SCALE

WIRE LEGEND	
A	PLENUM-RATED CAT 5e (CLASS 2)
B	LINE VOLTAGE
C	0-10 VDC







TYPICAL POWER PACK WIRING DIAGRAMS

NO SCALE

NOTES:

1. DETAIL FOR REFERENCE ONLY FOR BASIS OF DESIGN. REFER TO MANUFACTURER'S WIRING DIAGRAMS IF ALTERNATE MANUFACTURER IS USED.

DEMOLITION PLAN GENERAL NOTES

1. ALL INDICATED ELECTRICAL EQUIPMENT, FIXTURES, DEVICES, AND RELATED CONDUIT AND WIRING TO BE REMOVED UNLESS NOTED OTHERWISE.
2. ALL DEMOLITION OF THE ELECTRICAL SYSTEM AS NOTED ON THE DEMOLITION DRAWINGS SHALL BE COORDINATED WITH THE RENOVATION REQUIREMENTS TO DETERMINE THIS CONTRACTOR'S WORK.
3. IT IS THE INTENT OF THE ELECTRICAL DEMOLITION DRAWING(S) TO INDICATE AREAS IN WHICH ELECTRICAL EQUIPMENT, CONDUIT, LUMINAIRES, DEVICES, ETC. NEED TO BE REMOVED, RELOCATED, OR MODIFIED BY THIS CONTRACTOR TO ALLOW FOR THE RENOVATION PHASE OF CONSTRUCTION. THE ELECTRICAL DEMOLITION PLAN IS FOR REFERENCE PURPOSES ONLY AND IT IS NOT INTENDED TO BE THE SOLE SOURCE OF EXISTING CONDITIONS.
4. CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING THEIR BID, TO VERIFY THE EXISTING CONDITIONS WHICH WILL AFFECT THEIR WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ELECTRICAL DEMOLITION REQUIRED TO ACCOMMODATE THE RENOVATION. REMOVE AS REQUIRED ALL LUMINAIRES, CONNECTIONS TO MECHANICAL EQUIPMENT, DEVICES, ETC.. PULL OUT ALL UNUSED CONDUCTORS AND CABLES, AND REMOVE ALL ABANDONED CONDUIT. ELECTRICALLY DISCONNECT AIR HANDLING UNITS, PUMPS, BOILERS, AND OTHER SUCH EQUIPMENT FOR REMOVAL BY OTHERS. BACKFEED AS REQUIRED ALL DOWNSTREAM DEVICES WHICH REMAIN. (THE CONTRACTOR SHALL COORDINATE WITH THE OWNER WHICH ITEMS INDICATED TO BE REMOVED & DISCONNECTED SHALL BE SALVAGED AND PRESENTED TO THE OWNER PRIOR TO ANY DISPOSAL OF THESE ITEMS.)
6. ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE. WHERE WORK CALLED FOR ON THE DRAWINGS OR IN THE SPECIFICATIONS INVOLVES THE REMOVAL OF FLUORESCENT LAMPS CONTAINING MERCURY OR CLOTH INSULATED CONDUCTORS, THEY SHALL BE PROPERLY HANDLED AND REMOVED FROM SITE BY APPROVED METHODS PER EPA REGULATIONS.
7. ALL EXISTING RECEPTACLES/DATA OUTLETS/DEVICES/EQUIPMENT THAT ARE NOT PART OF DEMOLITION SHALL REMAIN AS IS UNLESS NOTED OTHERWISE. CONTRACTOR SHALL CHECK AND VERIFY FOR CONTINUING OPERATION OF THESE DEVICES PRIOR TO SUBSTANTIAL COMPLETION. IF ANY EXISTING CIRCUITS TO REMAIN ARE INTERRUPTED BY DEMOLITION OR NEW CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT/REMOVAL/REROUTING/MODIFICATION OF CONDUITS AND WIRES INCLUDING EXTENSION, AS REQUIRED TO MAINTAIN FUNCTIONALITY OF DOWNSTREAM RECEPTACLES/DATA OUTLETS/DEVICES/EQUIPMENT.
8. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT PHASING AND MAINTAIN EXISTING SYSTEMS ACTIVE IN AREAS WHICH REMAIN OCCUPIED.
9. EXISTING CEILING MOUNTED SPEAKERS, PROGRAM BELLS, FIRE ALARM DEVICES, AND SIMILAR ELECTRICAL EQUIPMENT AND DEVICES TO REMAIN SHALL BE EXTENDED AND REINSTALLED AS REQUIRED IN NEW CEILINGS. FIELD VERIFY EXACT QUANTITIES AND REQUIREMENTS.
10. SUPPORT ALL CABLING DRAPED OR LYING LOOSE ABOVE EXISTING CEILINGS WHICH ARE SCHEDULED TO BE REMOVED. TIE WRAP CABLING TO JOISTS OR OTHER STRUCTURAL MEMBERS AS REQUIRED. UPON THE COMPLETION OF THE PROJECT, NO WIRING SHALL BE LYING ON ACCESSIBLE CEILINGS.

LIGHTING PLAN GENERAL NOTES

1. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS SHALL BE 3/4". 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO LUMINAIRES WHERE APPLICABLE. ALL LIGHTING BRANCH CIRCUITS SHALL TERMINATE AT 20A/1-POLE CIRCUIT BREAKERS IN PANELBOARD INDICATED UNLESS NOTED OTHERWISE.
2. PROVIDE LOCK-ON CIRCUIT BREAKER DEVICES FOR ALL EMERGENCY LIGHTING & EXIT SIGN BRANCH CIRCUITS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LUMINAIRE LOCATIONS. REFER TO ARCHITECTURAL ELEVATIONS FOR LUMINAIRE SUSPENSION LENGTHS AND MOUNTING HEIGHTS.
4. ALL LUMINAIRES SHOWN HALF SHADED SHALL BE WIRED (NON-SWITCHED CIRCUIT) DIRECTLY TO THE EMERGENCY PANEL. PROVIDE DEDICATED NEUTRAL CONDUCTOR TO EACH BRANCH CIRCUIT TO THE EMERGENCY PANEL.
5. CIRCUIT NUMBER(S), WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
6. EMERGENCY BATTERY PACKS SHOWN ARE TO BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH UNLESS NOTED OTHERWISE.
7. ALL LAY-IN FIXTURES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS TO A STRUCTURAL MEMBER.
8. PROVIDE PULL BOX(ES) BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 344.26 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREE TOTAL) BETWEEN PULL POINTS.
9. ALL DIMMING SYSTEM CONTROL WIRING SHALL BE RATED AT 600V AND SHALL BE IN THE SAME CONDUIT AS THE CIRCUIT PROVIDING POWER TO THE LIGHT FIXTURE. CONDUIT SHALL BE 1/2" MINIMUM FOR DIMMING SYSTEM CONTROL WIRING WHERE RAN INDEPENDENT OF THE CIRCUIT SUPPLYING POWER TO THE FIXTURES.
10. PROVIDE SEPARATE NEUTRAL FOR ALL DIMMED CIRCUITS.
11. IN NEW WORK, CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE TIES ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
12. IN EXISTING WORK WHEN UTILIZING EXISTING SPACES OR SPARES, CONTRACTOR SHALL PROVIDE DEDICATED NEUTRAL FOR EACH BRANCH CIRCUIT UNLESS HANDLE TIES ARE UTILIZED TO MEET THE REQUIREMENTS OF ARTICLE 210.4(B).

GENERAL ELECTRICAL REMODELING NOTES

1. WORK SHOWN ON DRAWINGS SHALL BE CONSIDERED NEW AND IN CONTRACT UNLESS SPECIFICALLY INDICATED OTHERWISE.
2. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF CONDUITS, RACEWAYS, ETC., AS SHOWN ON DRAWINGS DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING, NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS, OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
3. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION.
4. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED ARE CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK.
5. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, CONDUIT, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES, AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
6. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTORS SHALL VERIFY EXACT LOCATIONS OF ALL DEVICES AND EQUIPMENT WITH FIELD CONDITIONS, SHOP DRAWINGS, AND WORK OF OTHER TRADES PRIOR TO ROUGH-IN. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
7. CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS, AND WALLS AS SHOWN ON THE DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ARCHITECT BEFORE CONTRACTOR CUTS ANY STRUCTURAL BUILDING MEMBER.
8. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH THE PROJECT REQUIREMENTS AND OWNER'S STIPULATION AS DIRECTED.
9. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTOR'S WORK, CEILING HEIGHTS, AND CLEARANCE FOR INSTALLING THEIR WORK.
10. UNLESS INDICATED ON ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT OF NEW OR EXISTING BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OR REMOVAL OF THEIR WORK. REMOVE, STORE, AND REINSTALL CEILING TILES AS REQUIRED TO INSTALL WORK ABOVE EXISTING REMOVABLE CEILINGS WHICH REMAIN; REPLACE TILES BROKEN OR DAMAGED DURING CONSTRUCTION. ALL PATCHING, REPAIRING, AND REFINISHING WORK TO OTHER FINISHES AND STRUCTURAL ELEMENTS SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE WHILE MAINTAINING EXISTING FIRE RATINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXISTING FIRE RATINGS OF CEILINGS AND PARTITIONS SYSTEMS. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK OR REMOVAL OF EXISTING WORK SHALL BE REPAIRED, REPLACED, AND PAID FOR BY THE INSTALLING CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT AND OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEAN-UP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEAN-UP, THE ARCHITECT/ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ARCHITECT/ENGINEER.
12. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR CONDUIT, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
13. IT IS MANDATORY THAT THE COMPLETE EXISTING BUILDING REMAIN IN CONTINUOUS AND NON-INTERRUPTED OPERATION DURING REMODELING/ALTERING OF SAID EXISTING BUILDING. THE SPECIFIC AREA(S) BEING REMODELED/ALTERED AT ANY SCHEDULED TIME ARE OBVIOUSLY EXCLUSIVE OF THIS STATEMENT. SERVICES TO EXISTING BUILDING SHALL BE KEPT IN CONTINUOUS OPERATION INCLUDING POWER, SIGNAL SYSTEMS, LIGHTING, TELEPHONE, HEATING, COOLING, VENTILATING, TEMPERATURE CONTROL. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH CONTRACT WORK SHALL BE ARRANGED WITH THE OWNER A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE. SUCH INTERRUPTIONS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AS FAR AS TIME INTERVAL IS INVOLVED AND TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED BY THE CONTRACTOR ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.
14. UNLESS INDICATED OTHERWISE, THE ARCHITECT/ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED, THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ARCHITECT/ENGINEER IMMEDIATELY.
15. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 6 X 6 PLANKS AND/OR WOOD PALLETS. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUEEN. ALL CONDUIT WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED ON THE SITE UNLESS IT IS SITTING ON WOOD PLANKS AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS.
16. THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL DESIGN. IF THE CONTRACTOR PURCHASES EQUIPMENT FROM A SPECIFIED ACCEPTABLE MANUFACTURER, BUT NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. WHEN EQUIPMENT SUBMITTED FOR REVIEW DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONTRACTOR SHALL PAY FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED.
17. CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT HE SUBMITS FOR REVIEW MEET THE CAPACITY AND DUTY SPECIFIED.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THEIR ASSOCIATED FEES.
19. CONTRACTOR SHALL PROVIDE WARRANTY FOR ALL MATERIAL AND GUARANTEE ALL WORKMANSHIP PROVIDED BY HIM FOR 1 (ONE) YEAR FROM SUBSTANTIAL COMPLETION OF WORK INVOLVED.

NOTE

INCLUDE COSTS IN BID PROPOSAL TO LOCATE AND MARK EXISTING UNDERGROUND UTILITIES WHERE NEW UNDERGROUND WORK IS INDICATED. PRIOR TO ANY CONSTRUCTION ACTIVITIES, FOR LOCATION OF UTILITIES, CALL J.U.L.I.E. AT 1-800-892-0123.

NOTE

LUGS AND TERMINATIONS ON ELECTRICAL EQUIPMENT SHALL BE SIZED TO ACCOMMODATE THE THE NUMBER OF PARALLEL SETS AND SIZE OF CONDUCTORS TO MAKE FULL SIZE TERMINATIONS WITHOUT INVALIDATING THE TESTING LABEL AND LISTING BY A NATIONALLY RECOGNIZED TESTING AGENCY (UNDERWRITERS LABORATORY OR EQUIVALENT). INSTALLATION OR MODIFICATION OF LUGS AND TERMINATIONS AT ELECTRICAL EQUIPMENT WILL NOT BE ACCEPTABLE UNLESS IN COMPLIANCE WITH THE ORIGINAL EQUIPMENT MANUFACTURE AND TESTING AGENCY.

NOTE

INCIDENTAL WORK MAY ALSO BE NECESSARY DUE TO CHANGES AFFECTING, SITE WORK, ELECTRICAL, OR OTHER SYSTEMS. SUCH INCIDENTAL WORK IS ALSO PART OF THIS CONTRACT. INSPECT THOSE AREAS, COORDINATE WITH OTHER TRADES, AND ASCERTAIN WORK NEEDED, AND DO THAT WORK IN ACCORD WITH THE CONTRACT REQUIREMENTS, AT NO ADDITIONAL COST. THE REMOVAL & REINSTALLATION OF EXISTING WORK TO ACCOMMODATE CHANGES TO EXISTING, OR INSTALLATION OF, ELECTRICAL, OTHER SYSTEMS IS ALSO PART OF THIS CONTRACT.

NOTE

BUS BAR TAPS AT ELECTRICAL EQUIPMENT WILL NOT BE ACCEPTABLE UNLESS TAPS ARE MADE AT UTILIZING LUGS AND HOLES IN BUS BARS SUPPLIED OR APPROVED BY THE ORIGINAL EQUIPMENT MANUFACTURE. NOR SHALL TAPS INVALIDATE THE TESTING LABEL AND LISTING BY A NATIONALLY RECOGNIZED TESTING AGENCY (UNDERWRITERS LABORATORY OR EQUIVALENT).

NOTE

EXISTING CONDITIONS WERE OBTAINED FROM EXISTING AS-BUILT DRAWINGS AND CURSORY FIELD OBSERVATION. THIS CONTRACTOR SHALL IDENTIFY ANY DISCREPANCIES IN THE FIELD AND REPORT THEM TO THE ENGINEER.

NOTE

SCHEDULE ELECTRIC SERVICE OUTAGE WITH UTILITY COMPANY AND NOTIFY OWNER, ARCHITECT AND LOCAL AUTHORITIES (10) DAYS IN ADVANCE. BUILDING SHALL BE UNOCCUPIED DURING OUTAGE UNLESS TEMPORARY POWER IS PROVIDED TO MAINTAIN LIFE SAFETY SYSTEMS THROUGH THE DURATION OF THE OUTAGE. RESET AND RESTART ALL SYSTEMS INCLUDING, BUT NOT LIMITED TO, FIRE ALARM, SECURITY AND TELECOMMUNICATIONS AFTER RESTORING BUILDING POWER.

NOTE

ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL SERVICE TO THE SITE. COORDINATE POWER REQUIREMENTS WITH COMED POWER COMPANY AND OTHER TRADES, FOR AMOUNT OF TEMPORARY POWER REQUIRED. PROVIDE DISTRIBUTION PANEL, RELATED WIRING, TEMPORARY OUTLETS AND WIRING, AND TEMPORARY LIGHTING AS REQUIRED FOR ALL TRADES. CONFORM TO O.S.H.A., N.E.C., AND ALL OTHER LOCAL CODE REQUIREMENTS.

BIDDING NOTE

SEE DRAWINGS ME1.0 FOR GENERAL NOTES AND ADDITIONAL DETAILS APPLICABLE TO THIS TRADE'S WORK.

Mechanical - Electrical Engineers
1216 Tower Road
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847.882.2010
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ENGINEERING GROUP LLC

GravesDesignGroup
plan . design . manage

HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

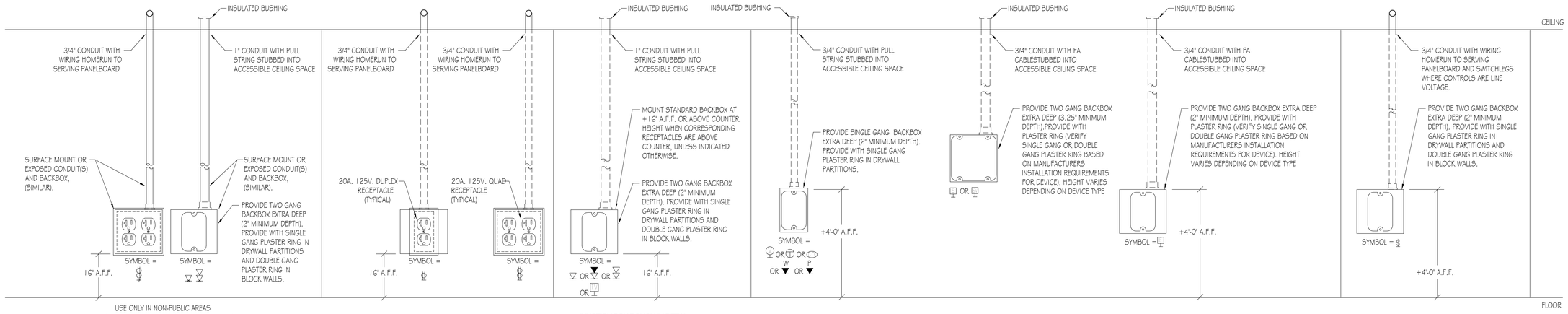
NO.	DESCRIPTION	DATE
-	Issued For Bid	12-22-2023

PREPARED BY	APPROVED BY
ZO/JO	ZO/JO
JOB NO.	DATE
23.825.004	12-22-2023

SHEET
ELECTRICAL NOTES AND DETAILS

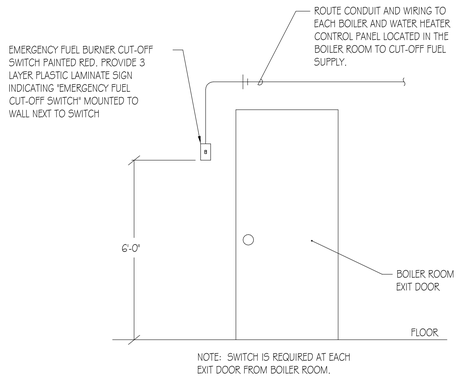
E4.1

Preliminary - Not For Construction

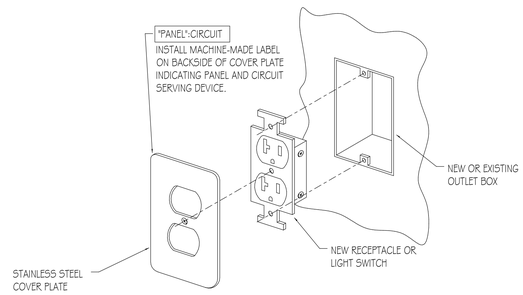


JUNCTION BOX ROUGH-IN DETAIL
NO SCALE

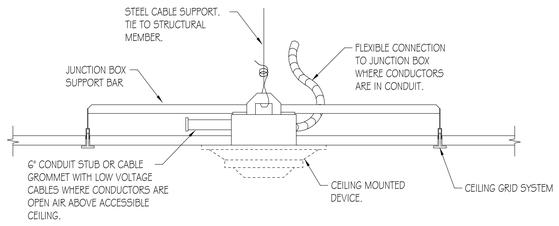
NOTES:
1. DETAILS ARE FOR REFERENCE ONLY.
2. NOT ALL DEVICES ARE REQUIRED FOR THIS PROJECT.
3. PROVIDE TWO GANG BACKBOXES (2" MINIMUM DEPTH) WITH ALL RECEPTACLE OUTLETS.
4. REFER TO TECHNOLOGY DRAWINGS FOR ADDITIONAL INFORMATION ON LOCATION AND REQUIREMENTS.



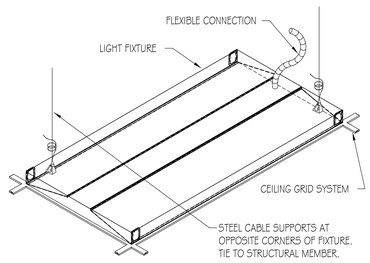
EMERGENCY FUEL BURNER CUT-OFF SWITCH DETAIL
NO SCALE



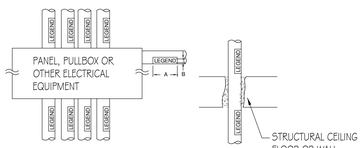
RECEPTACLE LABEL DETAIL
NO SCALE



CEILING MOUNTED DEVICE SUPPORT DETAIL
NO SCALE



LIGHT FIXTURE SUPPORT DETAIL
NO SCALE

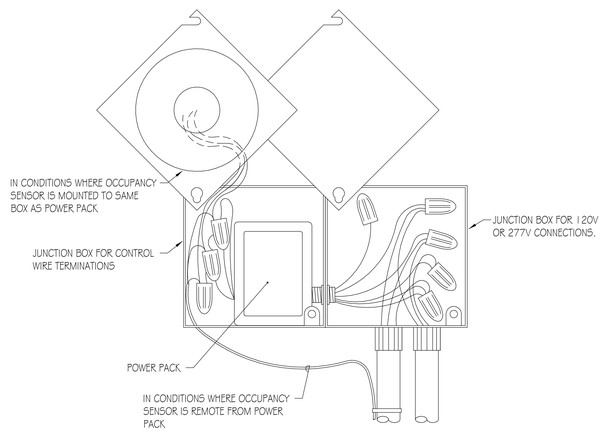


NOTE:
IDENTIFICATION MARKERS OR STRIPS TO BE PLACED ON ALL RACEWAYS CONTAINING BRANCH CIRCUITS OR FEEDERS OVER 60A AT 50'-0" INTERVALS, ADJACENT TO ALL PANELS, PULL BOXES, AND OTHER ELECTRICAL EQUIPMENT AND ENCLOSURES, AND AT BOTH SIDES OF WALL/FLOOR PENETRATIONS.

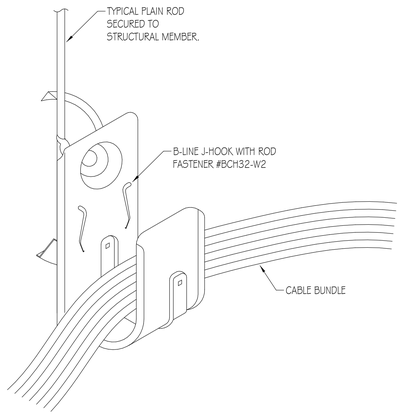
SIZE OF LEGEND LETTERS		
OUTSIDE DIAMETER OF CONDUIT	LENGTH OF COLOR FIELD A	SIZE OF LETTERS B
UP TO 1 1/4"	8"	1/2"
1 1/2" TO 2"	8"	3/4"
2" 1/2" TO 6"	12"	1 1/4"
8" TO 10"	24"	2 1/2"
OVER 10"	32"	3 1/2"

SERVICE	BACKGROUND OR COLOR BAND	LETTER COLOR
ELECTRICAL (NORMAL POWER)	SAFETY ORANGE	BLACK
ELECTRICAL (GENERATOR POWER)	SAFETY RED	WHITE

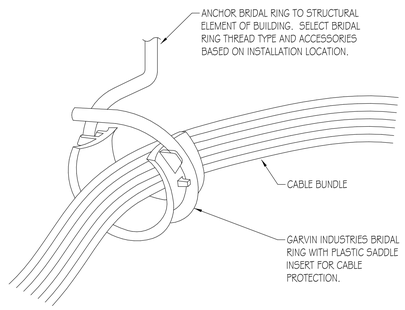
TYPICAL CONDUIT IDENTIFICATION MARKERS
NO SCALE



OPEN CEILING OCCUPANCY SENSOR POWER PACK DETAIL
NO SCALE



CABLE BUNDLE SUPPORT DETAIL
NO SCALE



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JOB NO.	DATE
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SHEET
ELECTRICAL DETAILS

E4.2

PANEL SCHEULE: MP-1

LOCATION: THERAPY D131 | C.B. RATING: 22 kAIC
VOLT: 208/120V, 3Ø, 4W | MAINS: 200 A MCB | MOUNTING: SURFACE | TYPE: BOLT-ON
REMARKS: NEW ELECTRICAL PANEL

USE AND/OR AREA SERVED	C/B	CIR. NO.	V.A. A	V.A. B	V.A. C	CIR. NO.	C/B	USE AND/OR AREA SERVED
M: HP-D100	45 A 3P	1	1611			--		
			944			2		
		3		1611				
				944		4	3P 30 A	M: HP-D107
		5			1611			
	--				944	6		
M: HP-D119	45 A 3P	7	1726			--		
			1611			8		
		9		1726				
				1611		10	3P 45 A	M: HP-D134
		11			1726			
	--				1611	12		
M: GWP-1	20 A 3P	13	829			--		
			829			14		
		15		829				
				829		16	3P 20 A	M: GWP-2
		17			829			
	--				829	18		
M: EDC-D100	20 A 3P	19	1000			--		
			1000			20		
		21		1000				
				1000		22	3P 20 A	M: EDC-D134
		23			1000			
	--				1000	24		
M: EWH-C122	20 A 3P	25	1000			--		
			1000			26		
		27		1000			2P 20 A	M: EWH-D123
				1000		28		
		29			1000		--	
	--				1000	30		
		31					2P 20 A	M: EWH-D137
	--		1000			32		
		33					--	
	--					34		
		35					--	
	--					36		
		37					--	
	--					38		
		39					--	
	--					40		
		41					--	
	--					42		
TOTAL CONNECTED LOAD PER PHASE:			12550	11550	11550	TOTAL =		35,650 VA
						98.95	AMPS	

PANEL SCHEULE: MP-2

LOCATION: MECHANICAL ROO... | C.B. RATING: 22 kAIC
VOLT: 208/120V, 3Ø, 4W | MAINS: 200 A MCB | MOUNTING: SURFACE | TYPE: BOLT-ON
REMARKS: NEW ELECTRICAL PANEL

USE AND/OR AREA SERVED	C/B	CIR. NO.	V.A. A	V.A. B	V.A. C	CIR. NO.	C/B	USE AND/OR AREA SERVED
M: HWB-1	15 A 1P	1	396			--		
	--		643			2		
M: ESUH-C100	20 A 3P	3		1100				
				643		4	3P 15 A	M: HP-A101
		5			1100			
					643	6		
		7	1100			--		
	--		944			8		
M: ESUH-C103	25 A 3P	9		2500				
				944		10	3P 30 A	M: HP-A112
		11			2500			
					944	12		
		13	2500			--		
	--		1726			14		
M: EWH-B123	20 A 2P	15		1000				
				1726		16	3P 45 A	M: HP-B100
		17			1000			
	--				1726	18		
M: EWH-B133	20 A 2P	19	1000			--		
			1320			20		
		21		1000				
	--			1320		22	3P 35 A	M: HP-B101
M: HP-C101	15 A 2P	23			802			
					1320	24		
		25	802			--		
	--		944			26		
M: HP-C103A	15 A 2P	27		802				
				944		28	3P 30 A	M: HP-B110
		29			802			
	--				944	30		
		31					--	
	--					32		
		33					--	
	--					34		
		35					--	
	--					36		
		37					--	
	--					38		
		39					--	
	--					40		
		41					--	
	--					42		
TOTAL CONNECTED LOAD PER PHASE:			11374	11978	11781	TOTAL =		35,133 VA
						97.52	AMPS	

PANEL SCHEULE: MP-3

LOCATION: MECHANICAL... | C.B. RATING: 22 kAIC
VOLT: 208/120V, 3Ø, 4W | MAINS: 200 A MCB | MOUNTING: SURFACE | TYPE: BOLT-ON
REMARKS: NEW ELECTRICAL PANEL

USE AND/OR AREA SERVED	C/B	CIR. NO.	V.A. A	V.A. B	V.A. C	CIR. NO.	C/B	USE AND/OR AREA SERVED
M: HP-A100	45 A 3P	1	1611			--		
			1726			2		
		3		1611				
				1726		4	3P 45 A	M: HP-B126
		5			1611			
	--				1726	6		
M: HP-C101	30 A 3P	7	944			--		
			1726			8		
		9		944				
				1726		10	3P 45 A	M: HP-C107
		11			944			
	--				1726	12		
M: HP-C118	35 A 3P	13	1320			--		
			295			14		
		15		1320			2P 15 A	M: HP-D127
				295		16		
		17			1320		--	
	--				295	18		
M: EF-1	20 A 1P	19	1920			2P 15 A		M: HP-D129
	--		295			20		
		21					--	
	--					22		
		23					--	
	--					24		
		25					--	
	--					26		
		27					--	
	--					28		
		29					--	
	--					30		
		31					--	
	--					32		
		33					--	
	--					34		
		35					--	
	--					36		
		37					--	
	--					38		
		39					--	
	--					40		
		41					--	
	--					42		
TOTAL CONNECTED LOAD PER PHASE:			9837	7622	7622	TOTAL =		25,080 VA
						69.62	AMPS	

INTERIOR LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	LAMPS	VOLTAGE	INPUT WATTS	MANUFACTURER & CATALOG NUMBER	ALTERNATE MANUFACTURER	NOTES
F1A	2X4' LED RECESSED VOLUMETRIC TROFFER, 4000 NOMINAL LUMENS	RECESSED	LED	120 V	30.5	LITHONIA 2BLT4-40L-ADP-LP835	HUBBELL, PHILIPS	-
F1B	2X4' LED RECESSED VOLUMETRIC TROFFER, 4800 NOMINAL LUMENS	RECESSED	LED	120 V	39.3	LITHONIA 2BLT4-48L-ADP-LP835	HUBBELL, PHILIPS	-
F2A	2X2' LED RECESSED VOLUMETRIC TROFFER, 2000 NOMINAL LUMENS	RECESSED	LED	120 V	16.4	LITHONIA 2BLT2-20L-ADP-LP835		
F2B	2X2' LED RECESSED VOLUMETRIC TROFFER, 3300 NOMINAL LUMENS	RECESSED	LED	120 V	26.5	LITHONIA 2BLT2-33L-ADP-LP835		
F2C	2X2' LED RECESSED VOLUMETRIC TROFFER, 4000 NOMINAL LUMENS	RECESSED	LED	120 V	31	LITHONIA 2BLT2-40L-ADP-LP835		
F3A	6 INCH LED DOWNLIGHT	RECESSED	LED	120 V	3.4	GOTHAM LIGHTING EVOG-35/02-AR-MD-LS	EATON, HE WILLIAMS, PHILIPS	-
F3B	6 INCH LED DOWNLIGHT	RECESSED	LED	120 V	10	GOTHAM LIGHTING EVOG-35/10-AR-MD-LS	EATON, HE WILLIAMS, PHILIPS	-
F4	4' LED STRIP LIGHT	SURFACE	LED	120 V	19.1	LITHONIA CLX-L48-3000LM-SEF-FDL-MVO LT-35K-80CRI		
F5	6 INCH LED WALL WASH DOWNLIGHT	SURFACE	LED	120 V	10	GOTHAM LIGHTING EVOG-35/10-AR-MD-LS		

NOTES:
1. CONTRACTOR TO PROVIDE ALL OPTIONS AND ACCESSORIES AS REQUIRED TO INSTALL FIXTURE IN VARYING CEILING TYPES OR WALLS AS SHOWN ON THE PLANS.
2. ALL LED SHALL BE 4000K, CRI 80, UNLESS NOTED OTHERWISE, AND FURNISHED AND INSTALLED BY THIS CONTRACTOR.

GENERAL NOTES:
a. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY MOUNTING HARDWARE AND LABOR FOR ALL FIXTURES.
b. ELECTRICAL CONTRACTOR TO PROVIDE ALL WIRING, CABLING, AND ACCESSORIES AS REQUIRED FOR PROPER FUNCTIONALITY OF FIXTURES UTILIZING OCCUPANCY CONTROL SYSTEM AND/OR DIMMING PER MANUFACTURER'S INSTRUCTIONS.
c. ALL LAY IN CEILING GRID FIXTURES SHALL BE FOR USE WITH STANDARD 15/16' GRID SYSTEM.
d. FINISH SHALL BE SELECTED BY THE ARCHITECT.

EXIT SIGN & EMERGENCY LIGHTING SCHEDULE

SYMBOL	TAG	DESCRIPTION	MOUNTING	LAMPS	VOLTAGE	MANUFACTURER & CATALOG NUMBER	ALTERNATIVE MANUFACTURER	NOTES
	EX1	SELF POWERED EMERGENCY EXIT SIGN, SINGLE FACE, DIE CAST ALUMINUM HOUSING WITH WHITE FINISH AND RED LETTERS, FIELD KNOCKOUT ARROWS AS REQUIRED	WALL	LED	UNV	LITHONIA LQC-W-R-ELN	HE WILLIAMS LCA, PHILIPS ER4GL	1
	EX2	SELF POWERED EMERGENCY EXIT SIGN, SINGLE FACE, DIE CAST ALUMINUM HOUSING WITH WHITE FINISH AND RED LETTERS, FIELD KNOCKOUT ARROWS AS REQUIRED	TOP OR END MOUNT	LED	UNV	LITHONIA LQC-W-R-ELN	HE WILLIAMS EXITICA, PHILIPS ER4GL	1

NOTES:
1. CONNECT ALL EXIT SIGNS TO LOCAL UNSWITCHED LIGHTING CIRCUIT.
2. CONNECT ALL BATTERY LIGHT FIXTURES TO LOCAL UNSWITCHED NORMAL LIGHTING CIRCUIT.

GENERAL NOTES:
a. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY MOUNTING HARDWARE AND LABOR FOR ALL FIXTURES.

OCCUPANCY SENSOR AND CONTROLS SCHEDULE

SYMBOL	TYPE	DESCRIPTION	MOUNTING	MANUFACTURER & CATALOG NUMBER	ACCEPTABLE MANUFACTURERS
	nA	STANDARD RANGE 360°, LOW VOLTAGE, PASSIVE INFRARED	CEILING	nLIGHT nCM-9-RJB	HUBBELL, WATTSTOPPER
	nB	EXTENDED RANGE 360°, LOW VOLTAGE, PASSIVE INFRARED	CEILING	nLIGHT nCM-10-RJB	HUBBELL, WATTSTOPPER
$	nK	ON/OFF/DIM KEY SWITCH CONTROL STATION	WALL	nLIGHT nPOD-KEY	HUBBELL, WATTSTOPPER
$	nPA	ON/OFF SINGLE ZONE PUSH-BUTTON CONTROL STATION	WALL	nLIGHT nPODM	HUBBELL, WATTSTOPPER
$	nPB	ON/OFF/DIM, SINGLE ZONE PUSH-BUTTON CONTROL STATION	WALL	nLIGHT nPODM-DX	HUBBELL, WATTSTOPPER
$	nPC	ON/OFF SINGLE ZONE PUSH-BUTTON CONTROL STATION	WALL	nLIGHT nPODM	HUBBELL, WATTSTOPPER
$	nSA	WALL SWITCH SENSOR, LOW VOLTAGE, DUAL TECHNOLOGY	WALL	nLIGHT nWSX-PDT-LV	HUBBELL, WATTSTOPPER

OCCUPANCY SENSOR NOTES:
a. CONTRACTOR IS RESPONSIBLE FOR ENGAGING A MANUFACTURER FOR STARTUP PROGRAMMING.
b. ALL SENSOR LOCATIONS ARE APPROXIMATE, REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
c. ULTRASONIC CEILING MOUNT SENSORS SHOULD BE LOCATED A MINIMUM OF SIX FEET FROM HVAC SUPPLY/RETURN VENTS.
d. CONTRACTOR IS RESPONSIBLE FOR: PROPER SENSITIVITY & TIME DELAY SETTINGS (FOR NON-ADAPTIVE PRODUCTS) RECOMMENDED PLACEMENT, AND FIELD VERIFICATION OF CIRCUITS WITH IN RESPECT TO POWER PLACEMENT.
e. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF REQUIRED NUMBER OF POWER PACKS:
   - ONE POWER PACK IS REQUIRED FOR EACH CIRCUIT TO BE CONTROLLED
   - ONE POWER PACK IS REQUIRED FOR EACH ZONE
   - IF MULTIPLE CIRCUITS ARE TO BE CONTROLLED BY A SENSOR, AN AUXILIARY RELAY CAN BE USED IN CONJUNCTION WITH THE POWER PACK.
   - THE MAXIMUM NUMBER OF SENSORS THAT CAN BE PUT ON A POWER PACK IS TO BE REDUCED BY ONE FOR EACH SLAVE PACK USED.
   - ROOM OCCUPANCY SENSORS TO PROVIDE SIGNAL FOR HVAC MANAGEMENT. OR ALL POWER PACKS SHALL HAVE AUX HVAC RELAY.
e. WHERE RETURN AIR PLENUM IS UTILIZED, MOUNT CONTROL UNITS WITHIN JUNCTION BOXES INSTALLED PER ALL CODE REQUIREMENTS.
f. CONTROL WIRING BETWEEN SENSORS AND CONTROLS UNITS SHALL BE CLASS II, 18-24 AWG, STRANDED UL CLASSIFIED. WHERE RETURN AIR PLENUM IS UTILIZED, ALL CONTROL WIRING SHALL BE PLENUM-RATED.
g. SENSORS MOUNTED OVER THE DOOR MUST BE PLACED ONE FOOT INSIDE THE THRESHOLD.
h. SENSOR PLACEMENT ON PLANS IS APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ENGAGING A MANUFACTURER TO PRODUCE A MOTION SENSOR LAYOUT THAT IS COMPLIANT WITH THE GOVERNING ENERGY CODE. CONTRACTOR IS RESPONSIBLE FOR ENSURING MOTION CONTROL OF ALL LOCATIONS SHOWN ON PLAN.
i. CONTRACTOR IS RESPONSIBLE FOR INSTALLING EQUIPMENT IN COMPLIANCE WITH LOCAL CODE.
j. ALL LINE VOLTAGE SENSORS AND ALL POWER PACKS SHALL HAVE AUXILIARY CONNECTIONS FOR FOR HVAC AUTOMATION.
k. PRODUCTS FROM SPECIFIED AND ACCEPTABLE MANUFACTURERS SHALL PROVIDE SAME LEVEL OF CONTROL AND SHALL PROVIDE AUXILIARY RELAY/CONTACTS FOR HVAC SYSTEM.

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HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
GAGES LAKE, ILLINOIS 60030

Preliminary – Not For Construction

NO.	DESCRIPTION	DATE
-	Issued For Bid	12-22-2023

PREPARED BY	APPROVED BY
ZD/JD	ZD/JD
JOB NO.	DATE
23.825.004	12-22-2023

SHEET
ELECTRICAL SCHEDULES

E5.1

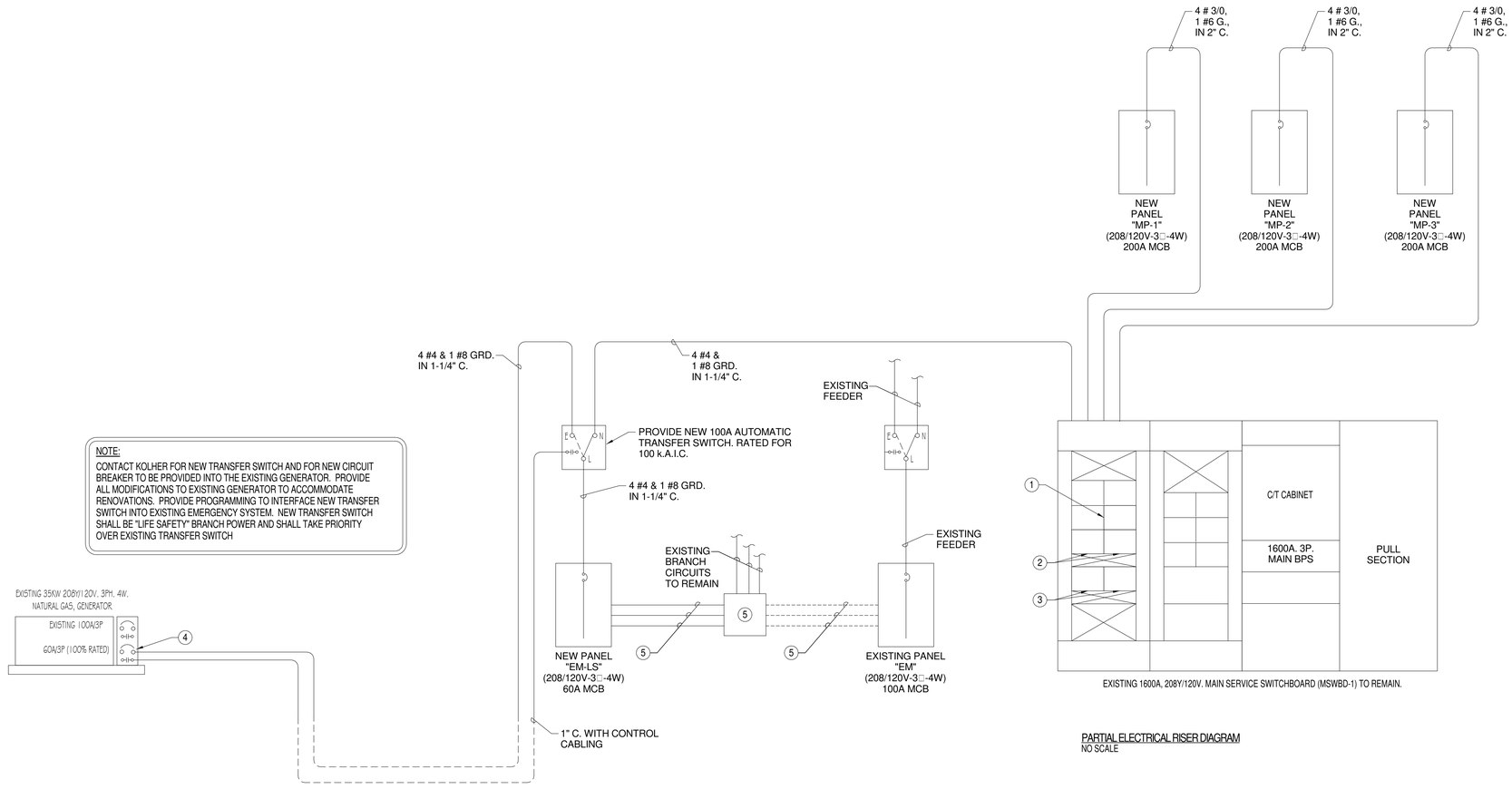
GENERAL NOTES:

1. WORK SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. VERIFY EXACT CODE REQUIREMENTS AND LOCAL AMENDMENTS WITH LOCAL INSPECTOR PRIOR TO ANY INSTALLATION.
2. RISER DIAGRAM IS DIAGRAMMATIC ONLY. COORDINATE EXACT ROUTING OF FEEDERS IN FIELD. PROVIDE PULLBOXES AS
3. REQUIRED PER NEC REQUIREMENTS.
4. REFER TO PANELBOARD SCHEDULESFOR ADDITIONAL INFORMATION.
5. ALL ELECTRICAL EQUIPMENT SHOWN IS NEW UNLESS NOTED OTHERWISE.

   PROVIDE 4" HOUSEKEEPING CONCRETE PAD FOR ALL FLOOR MOUNTED EQUIPMENT.

DRAWING NOTES: (TYPICAL FOR THIS DRAWING ONLY.)

1. UTILIZE EXISTING SPARE 200AS. PROVIDE NEW 200AF. TO SERVE NEW ELECTRICAL LOAD. ARRANGE FUSES SO RATING INFORMATION IS READABLE WITHOUT REMOVING FUSES. NEW FUSIBLE SWITCH TO SERVE NEW ELECTRICAL PANELBOARD.
2. PROVIDE NEW TWIN MOUNTED DUAL 200AS TO SERVE NEW ELECTRICAL LOADS. PROVIDE NEW 200AF. IN EACH FUSIBLE SWITCH TO SERVE NEW ELECTRICAL LOAD. PROVIDE MOUNTING BRACKETS, SUPPORTS, BUS DETAILS, FILLER PANELS AND ALL ACCESSORIES AS REQUIRED FOR OVERCURRENT PROTECTIVE DEVICE AND AMPERE RATING INDICATED. ARRANGE FUSES SO RATING INFORMATION IS READABLE WITHOUT REMOVING FUSES. NEW FUSIBLE SWITCH TO SERVE NEW ELECTRICAL PANELBOARD.
3. PROVIDE NEW TWIN MOUNTED DUAL 100AS TO SERVE NEW ELECTRICAL LOADS. PROVIDE NEW 60AF. IN ONE FUSIBLE SWITCH TO SERVE NEW ELECTRICAL LOAD AND SECONDFUSIBLE SWITHC TO BE "SPARE". PROVIDE MOUNTING BRACKETS, SUPPORTS, BUS DETAILS, FILLER PANELS AND ALL ACCESSORIES AS REQUIRED FOR OVERCURRENT PROTECTIVE DEVICE AND AMPERE RATING INDICATED. ARRANGE FUSES SO RATING INFORMATION IS READABLE WITHOUT REMOVING FUSES, NEW FUSIBLE SWITCH TO SERVE NEW ELECTRICAL PANELBOARD.
4. PROVIDE NEW 60A./3P CIRCUIT BREAKER IN EXISTING GENERATOR. PROVIDE MOUNTING BRACKETS, SUPPORTS, BUS DETAILS, FILLER PANELS AND ALL ACCESSORIES AS REQUIRED FOR OVERCURRENT PROTECTIVE DEVICE AND AMPERE RATING INDICATED.
5. EXISTING NIGHT LIGHT AND EXIT SIGN CIRCUITS SHALL BE INTERCEPTED AND RE-ROUTED TO NEW EMERGENCY "LIFE SAFETY" BRANCH PANEL. CONTRACTOR SHALL RELOCATE EXISTING JUNCTION BOXES, EXTEND CONDUIT AND WIRING AS REQUIRED TO ACCOMMODATE THE RENOVATIONS. FIELD VERIFY EXISTING CONDITIONS.



NOTE:
CONTACT KOLHER FOR NEW TRANSFER SWITCH AND FOR NEW CIRCUIT BREAKER TO BE PROVIDED INTO THE EXISTING GENERATOR. PROVIDE ALL MODIFICATIONS TO EXISTING GENERATOR TO ACCOMMODATE RENOVATIONS. PROVIDE PROGRAMMING TO INTERFACE NEW TRANSFER SWITCH INTO EXISTING EMERGENCY SYSTEM. NEW TRANSFER SWITCH SHALL BE "LIFE SAFETY" BRANCH POWER AND SHALL TAKE PRIORITY OVER EXISTING TRANSFER SWITCH

PARTIAL ELECTRICAL RISER DIAGRAM
NO SCALE

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SHEET
ELECTRICAL RISER DIAGRAM

E6.0

Preliminary – Not For Construction

DRAWING NOTES: (TYPICAL FOR THIS DRAWING ONLY.)

(1) REMOVE EXISTING DRY SPRINKLER MAIN LOCATED IN ATTIC SHOWN DASHED, SIZE AS INDICATED, AND REPLACE WITH NEW PIPING. NEW PIPING SHALL BE SCHEDULE (10) BLACK STEEL PIPING OF THE SAME SIZE UNLESS OTHERWISE NOTED. VERIFY NEW PIPING INSTALLED IS PROPERLY PITCHED TO DRAIN TO NEAREST DRAIN VALVE. ALL EXISTING GROOVED COUPLINGS ALONG THIS MAIN WITHIN THIS ZONE SHALL BE REPLACED WITH NEW VICTAULIC #009N OR GRUVLOK #7401 GROOVED COUPLINGS. REPLACE ALL ELBOWS AND TEE'S WITHIN THIS ZONE.

(2) BASE BID: EXISTING BRANCH PIPING AND ASSOCIATED HEADS TO REMAIN, ALTERNATE BID #4: REMOVE AND REPLACE ALL BRANCH PIPING AND HEADS.

(3) PROVIDE NEW MECHANICAL TEE FITTING WITH GROOVED OUTLET AT ALL VERTICAL RISERS AT MAIN TO RECONNECT RISER SERVING ATTIC HEADS ABOVE.

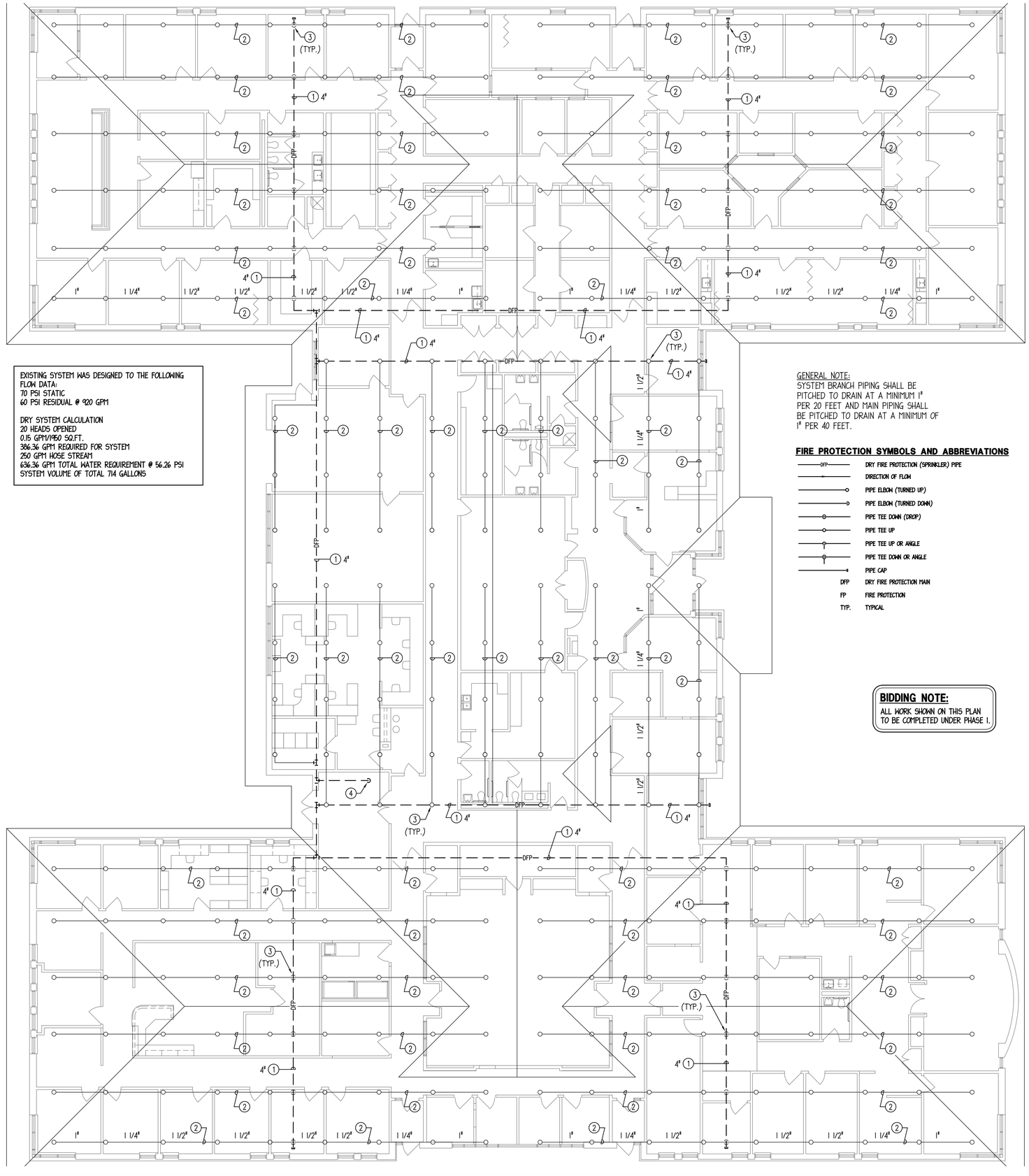
(4) 6" DRY RISER DOWN TO EXISTING DRY PIPE VALVE.

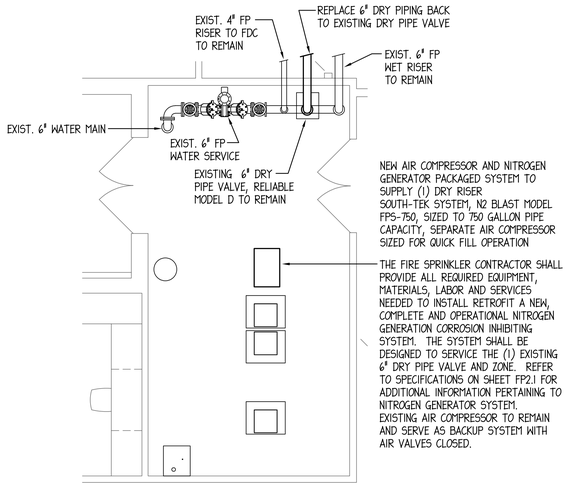
GENERAL BID NOTES:

DRY MAIN PIPE REPLACEMENT GENERAL NOTE:
REMOVE EXISTING DRY SPRINKLER MAIN WITHIN ATTIC SPACE AS SHOWN, AND REPLACE WITH NEW PIPING, SIZE AS INDICATED. NEW PIPING SHALL BE SCHEDULE (10) BLACK STEEL PIPING OF THE SAME SIZE UNLESS OTHERWISE NOTED. VERIFY NEW PIPING INSTALLED IS PROPERLY PITCHED TO DRAIN AND NEAREST DRAIN VALVE. ALL EXISTING GROOVED COUPLINGS ALONG THIS MAIN WITHIN THIS ZONE SHALL BE REPLACED WITH NEW VICTAULIC #009N OR GRUVLOK #7401 GROOVED COUPLINGS. REPLACE ALL ELBOWS AND TEE'S AT MAIN PIPING WITHIN THIS ZONE. PROVIDE NEW THREADED ROD AND SIDE ATTACHMENT TO TOP CHORD OF WOOD TRUSS THROUGHOUT ALL PIPING REPLACED.

DRAINING OF DRY PIPING - ALL NEW DRY SPRINKLER PIPING SHALL BE PITCHED PER THE RULES AND REGULATIONS OF NFPA-13, MINIMUM OF 1" PER 40 FEET, PIPING SHALL BE PITCHED TO THE NEAREST NEW DRAIN VALVE OR DRUM TRAP ASSEMBLY. CONTRACTOR SHALL PROVIDE ALL REQUIRED DRAIN VALVES AND DRUM TRAP ASSEMBLIES. LOCATIONS OF DRAINS/DRUM TRAPS SHALL BE INDICATED ON SHOP DRAWINGS. LOCATIONS THAT ARE EXPOSED, BELOW CEILINGS OR IN NON-MECHANICAL AREAS SHALL BE COORDINATED AND APPROVED BY OWNER PRIOR TO INSTALLATION. CONTRACTOR SHALL PROVIDE A MINIMUM OF (6) DRAINS/TRAPS PER ZONE. DRAIN PIPING SHALL BE DIRECTED TO NEAREST MOP SINK OR EXTERIOR WHERE POSSIBLE. LOCATION OF VALVES SHALL BE PLACED AT A PROPER DISTANCE FROM PIPING IN ATTIC TO PREVENT FREEZING AND PIPE/VALVE FAILURE DUE TO COLD CONVECTION FROM PIPING IN ATTIC.

CEILINGS - CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING AND REMOVAL/REPLACEMENT OF NEW OR EXISTING BUILDING CONSTRUCTION INCLUDING ALL CEILINGS REQUIRED TO ACCOMMODATE THE INSTALLATION OR REMOVAL OF THEIR WORK. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK OR REMOVAL OF EXISTING WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE ARCHITECT AND OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION, CEILING, CEILING HEIGHTS, ETC. THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT.





2 PARTIAL FIRE PROTECTION PLAN
1/4" = 1'-0"

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

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SHEET
FIRE PROTECTION PLAN

FP1.1

NAME: I:\266\E1 FP1.1.dwg BY: KDK DATE: DEC 15, 2023 TIME: 4:42 PM

GENERAL NOTES - FIRE PROTECTION:

GENERAL

1.1 SYSTEM TO PROVIDE COVERAGE FOR BUILDING AREAS NOTED. SYSTEMS SHALL CONFORM TO THE DESIGN CRITERIA REQUIRED BY NFPA-13 AND THE LOCAL AUTHORITY HAVING JURISDICTION. WORKING PLANS AND CALCULATIONS SHALL BE SUBMITTED TO LOCAL APPROVAL AGENCIES AND TO OWNERS FIRE PROTECTION CONSULTANT FOR APPROVAL.

1.2 ALL WORK SHALL BE INSTALLED AND ALL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF NFPA-13, 2010 EDITION AND ALL LOCAL AMENDMENTS.

1.3 CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THEIR ASSOCIATED FEES.

1.4 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE LOCAL AUTHORITY HAVING JURISDICTION.

1.5 DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.

1.6 ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING SPRINKLER SYSTEM COMPONENTS SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION.

1.7 THE CONTRACTOR SHALL BE RESPONSIBLE DURING THE INSTALLATION AND TESTING PERIODS OF THE FIRE SPRINKLER SYSTEM WORK, FOR ANY MATERIAL DAMAGE TO THE WORK OF THE OWNER OR OTHERS, AND TO THE PROPERTY AND MATERIALS OF THE OWNER OR OTHERS, INCLUDING CEILING SPRINKLER TILES, AND INCLUDING DAMAGE CAUSED BY GREASE, OIL, OR LEAKS IN SPRINKLER EQUIPMENT, FITTINGS, OR BY DISCONNECTED PIPES.

SHOP DRAWINGS, SUBMITTALS AND CLOSEOUT DOCUMENTS

2.1 SHOP DRAWINGS: PROVIDE A MINIMUM 1/8"-1'-0" SCALE LAYOUT IN ALL AREAS INDICATING SPRINKLER LOCATIONS COORDINATED WITH CEILING INSTALLATION. INDICATE HYDRAULIC CALCULATIONS REFERENCE POINTS, DETAILED PIPE LAYOUT INCLUDING PIPE SIZE, LENGTH, AND ELEVATION, HANGERS AND SUPPORTS, SPRINKLERS, COMPONENTS AND ACCESSORIES. INDICATE SYSTEM CONTROL VALVE, DRAIN VALVE, AUXILIARY DRAIN VALVE, AND INSPECTOR'S TEST LOCATIONS. INDICATE PIPE MATERIALS USED, JOINTING METHODS, SUPPORTS, FLOOR AND WALL PENETRATION SEALS AND REFERENCE ALL REQUIRED CODES. INDICATE SUPPORT DETAILS, REMOTE AREAS IDENTIFIED, SPRINKLER HEAD SUMMARY AND SITE PLAN OF WATER MAIN TO STREET CONNECTION. SUBMIT HYDRAULIC CALCULATIONS FOR EACH ZONE, OCCUPANCY TYPE, HAZARD TYPE, ETC.

2.2 PRODUCT DATA: SUBMIT DATA ON SPRINKLERS AND SPECIALTIES, INCLUDING HEADS, PIPING, VALVES, PIPE HANGERS, MANUFACTURERS CATALOG INFORMATION. SUBMIT PERFORMANCE RATINGS, ROUGH-IN DETAILS, SUPPORT REQUIREMENTS, AND PIPING CONNECTIONS.

2.3 PROJECT RECORD DOCUMENTS: PROVIDE UPDATED VERSION OF MINIMUM 1/8" = 1'-0" SCALE COORDINATION SHOP DRAWINGS INDICATING ACTUAL LOCATIONS OF VALVES, PIPING ABOVE AND BELOW GRADE, SPRINKLER HEADS, AUXILIARY DRAINS, FIRE DEPARTMENT CONNECTIONS, INSPECTORS TEST CONNECTIONS, PUMPS, BACKFLOW PREVENTERS, AND ALL OTHER EQUIPMENT INSTALLED BY THIS CONTRACTOR.

PIPE HANGERS AND SUPPORTS

3.1 ALL FIRE PROTECTION PIPING SHALL BE SUSPENDED WITH APPROVED/LISTED PIPE HANGERS IN COMPLIANCE WITH NFPA STANDARDS. CUTTING STRUCTURAL MEMBERS TO RUN PIPING, OR TO FACILITATE HANGER FASTENING IS NOT PERMITTED.

3.2 VERTICAL ATTACHMENT TO METAL DECK AND WOOD TRUSS'S SHALL NOT BE PERMITTED. HORIZONTAL ATTACHMENT TO WOOD TRUSS SHALL BE MADE BY HORIZONTAL SUPPORT TO BOTTOM CORD OF TRUSS.

SPRINKLER SYSTEM COMPONENTS AND ACCESSORIES

4.1 FIRE PROTECTION SYSTEM SHALL INCLUDE ALL ITEMS FOR A COMPLETE SYSTEM. SPECIFICALLY THIS IS TO INCLUDE BUT NOT LIMITED TO: PIPE SUPPORTS, VALVES, GAUGES, TRIM, ALARMS, SPECIALTY DEVICES, CONTROLS, AND ITEMS INCIDENTAL TO A COMPLETE SYSTEM.

4.2 EACH INSPECTOR'S TEST CONNECTION SHALL HAVE AN INSPECTOR'S TEST CONNECTION SIGN ATTACHED THERETO.

4.3 A FLOW DATA PLACARD SHALL BE PROVIDED FOR EACH HYDRAULICALLY CALCULATED REMOTE AREA. PLACARDS SHALL BE PROVIDED ON EACH SYSTEM RISER. FLOW DATA SHALL BE PROFESSIONALLY PRINTED WITH PERMANENT MEANS. HAND WRITTEN WITH PERMANENT MARKER ON LABEL SHALL NOT BE PERMITTED.

4.4 INSPECTORS TEST DRAIN AND MAIN DRAIN SHALL BE ROUTED THRU THE EXTERIOR WALL AND SPILL TO GRADE. IN CONDITIONS WHERE THIS IS NOT POSSIBLE, INSPECTORS TEST AND MAIN DRAIN SHALL BE ROUTED TO AN APPROVED INTERIOR OPEN SITE DRAIN AS APPROVED ARCHITECT AND ENGINEER.

4.5 AUXILIARY DRAINS AND SIGNS SHALL BE PROVIDED AT THE LOW POINT OF EACH TRAPPED SECTION OF PIPING AND IDENTIFYING SIGNS SHALL BE ATTACHED THERETO. INSTALL ALL AUXILIARY DRAIN VALVES IN ACCESSIBLE AREAS. FIELD COORDINATE LOCATIONS WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.

4.6 THE INTERCONNECTION OF THE ALARM SUPERVISORY SIGNALS MUST BE APPROVED BY THE PROPER ALARM REPRESENTATIVE, AND WORKING PLANS INDICATING THE LOCATIONS OF ALL ELECTRICAL COMPONENTS SHALL BE FURNISHED TO THE FIRE ALARM CONTRACTOR.

4.7 CONTRACTOR SHALL PROVIDE ALL MEANS TO SHUT-DOWN EXISTING PIPING SYSTEMS WHERE REQUIRED TO COMPLETE WORK UNDER THIS CONTRACT. CONTRACTOR SHALL PROVIDE ALL NECESSARY VALVES TO ISOLATE RENOVATED SECTIONS OF THE BUILDING WITHOUT DISTURBING SECTIONS OF THE BUILDING NOT UNDER RENOVATION.

4.8 PROVIDE ACCESS TO ALL VALVES AND SYSTEM COMPONENTS REQUIRING ACCESS. ALL PIPING ACCESSORIES AND EQUIPMENT SUCH AS VALVES SHALL BE INSTALLED AT A REASONABLE HEIGHT AND POSITION IN ORDER TO FACILITATE MAINTENANCE.

FIRE PROTECTION (SPRINKLER) PIPING

5.1 MINIMUM PIPE SIZE SHALL BE 1 INCH. ANY REDUCING OF SIZE SHALL OCCUR AT SPRINKLER HEAD CONNECTION.

5.2 SPRINKLER PIPING SHALL NOT BE INSTALLED DIRECTLY OVER ANY ELECTRICAL EQUIPMENT PANELS, TELEPHONE OR LOW VOLTAGE EQUIPMENT OR SIMILAR TYPE OF EQUIPMENT.

5.3 ALL PIPE AND FITTINGS SHALL BE INSTALLED IN RUST-FREE CONDITION.

5.4 THE USE OF THREADED BUSHINGS WILL NOT BE PERMITTED IN ANY AREA OF THIS INSTALLATION.

5.5 ALL PIPING AND COMPONENTS NECESSARY FOR INSTALLATION MAY BE PREFABRICATED. HOWEVER, THE CONTRACTOR MUST BE WILLING TO REWORK THE PREFABRICATED PIPE, FITTINGS, AND THE LIKE, AS NECESSARY TO CONSTITUTE A PROPER APPROVED INSTALLATION, EXISTING SITE CONDITIONS NOTWITHSTANDING, AT NO ADDITIONAL COST TO THE OWNER.

5.6 ALL PIPING SHALL BE HYDROSTATICALLY TESTED @ 200 PSI FOR NO LESS THAN 2 HOURS. THE FIRE DEPARTMENT SHALL BE NOTIFIED (NO LESS THAN 48 HOURS PRIOR) OF THE DATE AND TIME OF THE TEST AND MAY WITNESS IT IF SO DESIRED OR REQUIRED.

5.7 ALL PIPING PASSING THRU' FLOOR CONSTRUCTION SHALL HAVE A SCHEDULE 40 STEEL PIPE SLEEVE INSTALLED AROUND PIPE ONLY. ALL PIPE PASSING THRU WALLS SHALL HAVE A GALVANIZED SHEET METAL OR SCHEDULE 40 STEEL PIPE SLEEVE INSTALLED AROUND THE PIPE. ALL EXPOSED PIPE WHICH PASSES THROUGH A WALL OR CEILING SHALL BE EQUIPPED WITH AN ESCUTCHEON PLATE.

5.8 ALL PIPING SHALL BE INSTALLED TO ALLOW FOR PROPER DRAINING OF ENTIRE SYSTEM PER NFPA-13.

5.9 SCREWED UNIONS SHALL NOT BE PERMITTED ON PIPING LARGER THAN 1 INCHES.

5.10 ALL NEW CONNECTIONS MADE TO AN EXISTING SYSTEM MAIN SHALL BE ACCOMPLISHED WITH A CUT-IN OR TEE FITTING OF EQUAL SIZE TO THAT OF THE EXISTING MAIN.

5.11 FIRE PROTECTION PIPING SHALL BE AS FOLLOWS:

A. (1"-2") STEEL PIPE: ASTM A795; SCHEDULE 40, BLACK
STEEL FITTINGS: ASME B16.5, STEEL FLANGES AND FITTINGS.
CAST IRON FITTINGS: ASME 16.1, FLANGES AND FLANGED FITTINGS; OR ASME B16.4, THREADED FITTINGS.
MALLEABLE IRON FITTINGS: ASME B16.3, THREADED FITTINGS.

B. (2 1/2"-6") STEEL PIPE: ASTM A135, SCHEDULE 10, BLACK.
STEEL FITTINGS: ASME B16.5, STEEL FLANGES AND FITTINGS.
GROOVED END FITTINGS: ASTM A536 DUCTILE IRON HOUSING TO ENGAGE AND LOCK.
MECHANICAL GROOVED COUPLINGS: VICTAULIC #009N OR GRUVLOK #7401 GROOVED COUPLINGS - DUCTILE IRON HOUSING CLAMPS TO ENGAGE AND LOCK, "C" SHAPED ELASTOMERIC SEALING GASKET, STEEL BOLTS, NUTS, AND WASHERS.

C. DRY SYSTEM COUPLINGS - ALL GROOVED COUPLINGS IN DRY SPRINKLER SYSTEMS SHALL BE VICTAULIC #009N OR GRUVLOK #7401 GROOVED COUPLINGS WITH EPDM FLUSH SEAL GASKETS.

PIPE AND VALVE IDENTIFICATION

6.1 PROVIDE PIPE LABELING IDENTIFICATION PER ASME A13.1. SEE DETAIL FOR ADDITIONAL INFORMATION. PIPE LABELS SHALL BE WRAP AROUND TYPE. SELF ADHESIVE TYPE SHALL NOT BE PERMITTED.

FIRE STOP SYSTEMS

7.1 GENERAL PURPOSE FIRE STOPPING SEALANT SHALL BE DOW CORNING, NELSON OR 3M COMPANY; WATER BASED, NON SLUMPING, PREMIXED SEALANT WITH INTUMESCENT PROPERTIES, RATED FOR 3 HOURS PER ASTM E814, NFPA AND UL-1479. FILL ALL VOIDS AROUND ALL PIPING PENETRATIONS THROUGH WALLS AND CEILINGS WITH A MINIMUM 1 HOUR FIRE RATING. PROVIDE PVC COLLAR ASSEMBLY AT ALL PVC PIPING PENETRATIONS THROUGH FIRE WALLS, FLOORS OR CEILING WHERE REQUIRED BY LOCAL FIRE DISTRICT.

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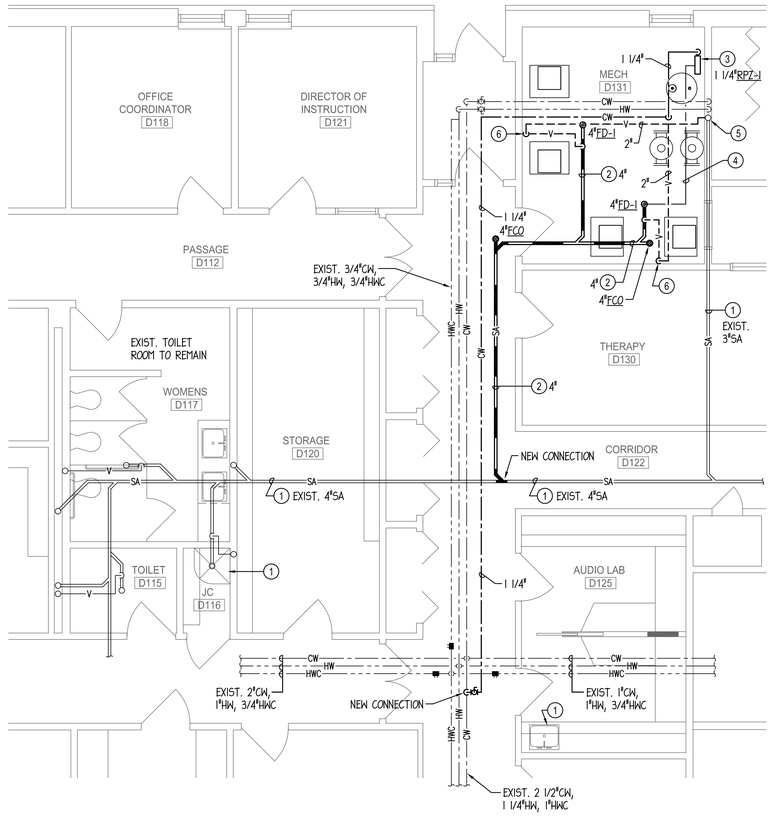
SHEET
FIRE PROTECTION GENERAL NOTES

FP2.1

NAME: I:\266\EI FP1.dwg BY:KDK DATE: DEC 15, 2023 TIME: 4:42 PM



1 PARTIAL PLUMBING PLAN - PHASE I
1/4" = 1'-0"

UNDERFLOOR PIPING AND FLOOR SAW CUTTING NOTES:

1. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FLOOR CUTTING AND PATCHING OF EXISTING FLOOR TO ACCOMMODATE DEMOLITION AND NEW UNDERGROUND PIPING SHOWN UNDER EXISTING FLOORS.

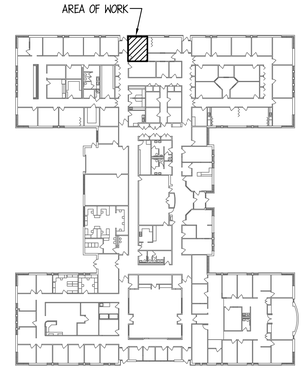
2. ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING UNDERGROUND SANITARY, VENT STORM PIPING ALL PIPE SIZES SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION. FOR UNDERGROUND PIPING, CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE LOCATIONS, CONNECTION LOCATION, SIZE, DIRECTION OF FLOW, AND DEPTH VIA PIPE LOCATING/TELEVISING EQUIPMENT PRIOR TO SAW CUTTING OF FLOOR OR BEGINNING WORK.

3. WHEN SAW CUTTING THE FLOOR, CONTRACTOR SHALL USE CAUTION TO PREVENT CUTTING OF ANY UNDERFLOOR UTILITIES. CONTRACTOR SHALL VERIFY ALL EXISTING UNDERFLOOR UTILITIES PRIOR TO CUTTING OF FLOOR VIA X-RAY FLOOR SCANNING EQUIPMENT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR ANY DAMAGES TO THE EXISTING UNDERFLOOR UTILITIES OCCURRED DURING CONSTRUCTION AT NO COST TO THE OWNER.

4. DRILL AND DOWEL EXISTING CONCRETE FOR #4 ROD AT 16" O.C.. #4 ROD TO BE 12" LONG WITH 6" PROJECTION INTO EXISTING CONCRETE. REPLACE WITH 5" FC 4,000 PSI AT 28 DAYS WITH BARRIER ONE ADMIXTURE CONCRETE SLAB INFILL WITH ONE LAYER 6X6-8/8 WWF 1" CLR TO TOP ON 30 MIL. VAPOR BARRIER OVER COMPACTED GRANULAR FILL - TYPICAL. (FIELD VERIFY EXISTING SLAB THICKNESS) EXERCISE CARE SO AS NOT TO UNDERMINE OR DISTURB BUILDING FOUNDATIONS OR REMAINING SLAB ON GRADE. SLOPE EXCAVATIONS AS REQUIRED TO GRADUALLY REACH THE ELEVATIONS.

DRAWING NOTES

1. EXISTING PLUMBING FIXTURE, PIPING, ETC. TO REMAIN.
2. SAW CUT AND PATCH EXISTING FLOOR AS REQUIRED TO ACCOMMODATE NEW UNDERGROUND PIPING AS SHOWN. REFER TO "UNDERFLOOR PIPING AND FLOOR SAW CUTTING NOTES" THIS SHEET FOR ADDITIONAL INFORMATION.
3. RPZ LOCATED WITHIN 5'-0" OF FLOOR, COORDINATE LOCATION WITH MECHANICAL EQUIPMENT, DUCTWORK AND MECH CONTR.
4. PIPE DRAIN FROM RPZ TO FLOOR DRAIN, SECURE PIPING TO FLOOR.
5. MAKE NEW CONNECTION TO EXISTING VENT RISER AND VTR.
6. 2"V UP ALONG WALL, COORDINATE LOCATION WITH MECHANICAL EQUIPMENT, DUCTWORK AND MECH CONTR.



K KEYPLAN
NO SCALE

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SHEET
PARTIAL PLUMBING PLAN

P1.1

NAME: I26kEI FP1.dwg BY:KDK DATE: DEC 15, 2023 TIME: 4:42 PM

PLUMBING SPECIFICATIONS

GENERAL

1.1 ALL WORK SHALL BE INSTALLED AND ALL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH ILLINOIS PLUMBING CODE 2014 EDITION, INTERNATIONAL PLUMBING CODE 2012 EDITION AND ALL LOCAL AMENDMENTS TO THE PLUMBING CODE.

1.2 IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH STATE PLUMBING INSPECTORS AND THE LOCAL PLUMBING INSPECTOR HAVING JURISDICTION.

1.3 EXACT LOCATION OF PLUMBING FIXTURES AND DEVICES SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS, ACTUAL BUILDING WALLS, FLOORS AND CEILING, CABINETRY AND EQUIPMENT SHOP DRAWINGS PRIOR TO STARTING ANY WORK.

1.4 DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.

1.5 ALL VENT AND WASTE PIPING SIZES ARE MINIMUM. ADDITIONAL VENTS SHALL BE ADDED AND/OR PIPE SIZE INCREASED AS REQUIRED BY APPLICABLE CODES, STATUTES AND REGULATIONS, ETC. WITHOUT ADDITIONAL COST TO THE OWNER.

1.6 PIPE SIZE SHALL BE MAINTAINED FULL SIZE UP TO "LOOK-OUT" AT FIXTURE CONNECTION.

1.7 STERILIZATION: ALL NEW, ALTERED OR REPAIRED POTABLE WATER PIPING SHALL BE DISINFECTED, STERILIZED AND FLUSHED PER THE REQUIREMENTS OF THE ILLINOIS STATE PLUMBING CODE 2014 EDITION, SECTIONS 890.1180(a) AND 890.1180(b)(3). CONTRACTOR SHALL STERILIZE AND FLUSH ALL WATER PIPING INCLUDING ALL DOMESTIC HOT WATER SUPPLY AND RETURN AND ALL DOMESTIC COLD WATER PIPING. CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY TAPPINGS, VALVE OPENINGS, DRAIN FITTINGS, ETC. AS REQUIRED TO STERILIZE AND FLUSH THE WATER SUPPLY PIPING. DISINFECTING SHALL NOT BE DEEMED COMPLETED UNTIL SATISFACTORY BACTERIOLOGICAL ANALYSIS REPORTS ARE RECEIVED FOR SAMPLES OF WATER COLLECTED AND TESTED FROM THE NEW WATER PIPING SYSTEM BY PLUMBING CONTRACTOR.

1.8 PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PVC PIPING WITH THE MECHANICAL SYSTEMS. PVC PIPING SHALL NOT BE USED IN PLENUM CEILINGS.

1.9 PROVIDER AIR CHAMBERS ON WATER SUPPLY PIPING AT EACH FIXTURE PER ILLINOIS PLUMBING CODE. OR PROVIDE WATER HAMMER ARRESTORS MIFAB MWH SERIES OR APPROVED EQUAL. WATER HAMMER ARRESTORS SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION FOR SERVICE AND EASY REPLACEMENT. LOCATIONS, SIZE AND QUANTITIES SHALL BE DETERMINED BY CONTRACTOR. LOCATIONS IN PLUMBING CHASE SHALL REQUIRE AN ACCESS PANEL AND ALL ACCESS PANEL LOCATIONS SHELL BE COORDINATED AND APPROVED BY ARCHITECT/OWNER.

1.10 ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING SANITARY/STORM LINES, WATER LINES, VENT LINES, VALVES AND ALL PIPE SIZES SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION.

1.11 PLUMBING CONTRACTOR SHALL PROVIDE STACK TEST ON ALL ROUGH AND UNDERGROUND PLUMBING PER ILLINOIS PLUMBING CODE.

1.12 PLUMBING CONTRACTOR SHALL PROVIDE PRESSURE TEST ON ALL ABOVE GROUND SANITARY AND VENT PIPING PER ILLINOIS PLUMBING CODE.

1.13 PLUMBING CONTRACTOR SHALL PROVIDE 100LB AIR TEST OR WATER PRESSURE TEST ON ALL WATER PIPING AT TIME OF ROUGH INSPECTION PER ILLINOIS PLUMBING CODE.

1.14 DEAD END PIPING BEYOND 24 INCHES IN WATER SUPPLY PIPING SHALL NOT BE PERMITTED. DEAD END PIPING BEYOND 10 FEET OF NEAREST VENTED SANITARY PIPING WILL NOT BE PERMITTED PER I.D.P.H. SECTION 890.1320.

1.15 THERMOSTATIC MIXING VALVES SERVING LAVATORIES AND SINKS USED FOR HAND WASHING SHALL BE SET TO A MAXIMUM 110 DEGREES.

1.16 ALL FLOOR DRAINS SHALL BE PROTECTED TO PREVENT THE LOSS OF THE TRAP SEAL BY EVAPORATION. APPROVED METHODS SHALL BE PER I.D.P.H. SECTION 890.420(f).

1.17 ALL BACKFLOW PREVENTERS SHALL BE LINE SIZED.

1.18 ALL REDUCED PRESSURE ZONE (RPZ) ASSEMBLY BACKFLOW PREVENTERS SHALL BE TESTED AND APPROVED BY A CROSS CONNECTION CONTROL DEVICE INSPECTOR (CCCDI) BEFORE INITIAL OPERATION AND TESTED ANNUALLY THEREAFTER. CERTIFICATION SHALL BE POSTED AT BACKFLOW PREVENTER IN A WEATHER PROOF SLEEVE.

PIPE INSULATION

2.1 ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER SUPPLY/RETURN PIPING SHALL BE INSULATED WITH ASTM C547 FIBERGLASS PIPE INSULATION WITH ASTM C136 VAPOR BARRIER JACKET COMPLETE WITH PVC FITTING COVERS. ALL COLD WATER PIPING SHALL BE INSULATED WITH 1" THICK INSULATION. ALL DOMESTIC HOT WATER AND RECIRC PIPING 1 1/4" AND SMALLER SHALL BE INSULATED WITH 1" INSULATION. ALL DOMESTIC HOT WATER AND RECIRC PIPING 1 1/2" AND LARGER SHALL BE INSULATED WITH 1 1/2" THICK INSULATION. INSULATE ALL DOMESTIC WATER SUPPLY PIPING TO THE FIXTURE CONNECTION. INSULATE ALL WATER SUPPLY PIPING IN CEILINGS, PLUMBING CHASES AND WALLS.

2.2 PATCH AND REFINISH ALL DAMAGED INSULATED SURFACES OF ALL EXISTING PLUMBING PIPING AND ASSOCIATED FITTINGS WHERE NEW CONNECTIONS ARE MADE. INCLUDING BUT NOT LIMITED DOMESTIC COLD WATER, HOT WATER SUPPLY/RETURN AND WASTE.

PIPE HANGERS AND SUPPORTS

3.1 ALL SANITARY, VENT, STORM, DOMESTIC SUPPLY AND RETURN PIPING SHALL BE SUSPENDED WITH CLEVIS AND/OR TRAPEZE PIPE HANGERS. ALL HORIZONTAL STORM, DOMESTIC SUPPLY AND RETURN PIPING SHALL BE INSULATED AND REST ON SHEET METAL INSULATION SHIELDS. SEE DETAIL ON MECHANICAL/ELECTRICAL COORDINATION DRAWINGS FOR ADDITIONAL INFORMATION. SHIVEL JOINT HANGERS MAY BE USED ONLY ON WASTE AND VENT PIPING WHEN PIPING IS NOT INSULATED. HANGER MATERIAL SHALL BE OF COMPATIBLE MATERIAL TO PIPING MATERIAL TO PREVENT CORROSION. HANGERS SHALL BE SUPPORTED FROM STRUCTURAL MEMBERS ONLY.

3.2 WHEN WATER SUPPLY PIPING IS INSTALLED IN PARALLEL AND SAME ELEVATION, PROVIDE TRAPEZE HANGERS. PIPING SHALL REST ON SHEET METAL SHIELD AT EACH TRAPEZE HANGER WITH ATTACHMENT TO STEEL CHANNEL EVERY 30 FEET UTILIZING A STRUT MOUNTED INSULATION COUPLING WITH STRUT CLAMP FOR USE WITH COPPER PIPING AND FIBERGLASS INSULATION.

3.3 VERTICAL ATTACHMENT TO METAL DECK AND WOOD TRUSS'S SHALL NOT BE PERMITTED. HORIZONTAL ATTACHMENT TO WOOD TRUSS SHALL BE MADE BY HORIZONTAL SUPPORT TO BOTTOM CORD OF TRUSS.

3.4 HANGER SPACING SHALL BE AS FOLLOWS.

PIPE MATERIAL	MAX HANGER SPACING	ROD DIAMETER
CAST IRON (ALL SIZES)	5 FEET	5/8"
CAST IRON (ALL SIZES) WITH 10 FOOT LENGTH OF PIPE	10 FEET	5/8"
COPPER TUBE, 1 INCH AND SMALLER	8 FEET	1/2"
COPPER TUBE, 1 1/4 INCH AND LARGER	10 FEET	1/2"

PIPE AND VALVE IDENTIFICATION

4.1 PROVIDE PIPE LABELING IDENTIFICATION PER ASME A13.1. SEE DETAIL FOR ADDITIONAL INFORMATION.

VALVES

5.1 PLUMBING CONTRACTOR SHALL PROVIDE ALL REQUIRED ISOLATION VALVES PER I.D.P.H. SECTION 890.1190. VALVES SHALL BE INSTALLED TO ISOLATE ONE ROOM WITHOUT AFFECTING WATER SUPPLY TO ANY OTHER ROOM. ONLY EXCEPTION SHALL BE DIRECT BACK-TO-BACK FIXTURES SERVING PUBLIC SPACES.

5.2 INSTALL BALL VALVES ON PIPING 3" AND SMALLER AND OS&Y GATE VALVES ON PIPING 4" AND LARGER IN EACH RISER OR BRANCH TAKEOFF FROM MAINS, RISERS AND AS INDICATED ON DRAWINGS.

5.3 BALL VALVES SHALL BE MILWAUKEE, NIBCO, STOCKHAM, APOLLO, KITZ, WATTS, OR JOMAR; LEAD FREE NSF-61 CERTIFIED, WITH BRONZE TWO PIECE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE, SOLDER ENDS, FULL PORT AND CONFORM TO MSS SP-110. WHEN PRESS FITTINGS ARE USED, VIEGA OR NIBCO SHALL BE AN ACCEPTABLE MANUFACTURER OF BALL VALVES.

5.4 CHECK VALVES SHALL BE MILWAUKEE, NIBCO, STOCKHAM, APOLLO, KITZ, WATTS, OR JOMAR; LEAD FREE NSF-61 CERTIFIED WITH BRONZE BODY, BRONZE HORIZONTAL SWING DISC AND CONFORM TO MSS SP-80.

5.5 STRAINERS SHALL BE WATTS, KECKLEY, LESLIE, WILKINS, KITZ, OR NIBCO; LEAD FREE NSF-61 CERTIFIED, BRONZE BODY, WITH 1/32 INCH STAINLESS STEEL PERFORATED SCREEN AND 3/4" BLOW DOWN VALVE.

5.6 CIRCUIT SETTER SHALL BE BELL & GOSSETT, NIBCO, WATTS, ARMSTRONG, ILLINOIS, HCI, NEXUS; LEAD FREE NSF-61 CERTIFIED, CALIBRATED BALL TYPE BALANCING VALVE WITH PRECISION MACHINED ORIFICE, READOUT VALVES EQUIPPED WITH INTEGRAL CHECK VALVES AND GASKETED CAPS, CALIBRATED, NAMEPLATE AND INDICATING POINTER.

5.7 INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.

5.8 INSTALL VALVES WITH CLEARANCE FOR INSTALLATION OF INSULATION AND ALLOWING ACCESS.

5.9 PROVIDE ACCESS TO ALL VALVES AND SYSTEM COMPONENTS REQUIRING ACCESS. ALL PIPING ACCESSORIES AND EQUIPMENT SUCH AS ISOLATION VALVES AND IN-LINE PUMPS SHALL BE INSTALLED AT A REASONABLE HEIGHT AND POSITION IN ORDER TO FACILITATE MAINTENANCE.

WATER SHUT-DOWN

6.1 CONTRACTOR SHALL PROVIDE ALL MEANS TO SHUT-DOWN EXISTING PIPING SYSTEMS WHERE REQUIRED TO COMPLETE WORK UNDER THIS CONTRACT. CONTRACTOR SHALL PROVIDE ALL NECESSARY VALVES TO ISOLATE RENOVATED SECTIONS OF THE BUILDING WITHOUT DISTURBING SECTIONS OF THE BUILDING NOT UNDER RENOVATION. CONTRACTOR SHALL PROVIDE ALL MEANS TO DRAIN WATER SUPPLY PIPING WHERE REQUIRED TO MODIFY PIPING CONFIGURATION OR MAKE NEW CONNECTIONS TO EXISTING PIPING. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WATER DAMAGE CAUSED BY DRAINING OF WATER SUPPLY PIPING. UPON REACTIVATION OF WATER IN PIPING, CONTRACTOR SHALL OPERATE ALL ASSOCIATED FAUCETS, FLUSH VALVES, HOSE VALVES, PLUMBING FIXTURES AND REMOVE ALL REMAINING AIR IN THE SYSTEM.

FIRE STOP SYSTEMS

7.1 PROVIDE FIRE RATED SEALANT AROUND ALL NEW PENETRATIONS FOR PIPING, CONDUIT, ETC. AT WALLS, FLOORS AND CEILINGS. GENERAL PURPOSE FIRE STOPPING SEALANT SHALL BE DOW CORNING, NELSON OR 3M COMPANY; WATER BASED, NON SLUMPING, PREMIXED SEALANT WITH INTUMESCENT PROPERTIES, RATED FOR 3 HOURS PER ASTM E814, NFPA AND UL-1479. FILL ALL VOIDS AROUND ALL PIPING PENETRATIONS THROUGH WALLS AND CEILINGS WITH A MINIMUM 1 HOUR FIRE RATING. PROVIDE PVC COLLAR ASSEMBLY AT ALL PVC PIPING PENETRATIONS THROUGH FIRE WALLS, FLOORS OR CEILING WHERE REQUIRED BY LOCAL FIRE DISTRICT.

PIPE ROUTING AND REPLACEMENT

8.1 PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR DISMANTLING THE EXISTING SUSPENDED ACOUSTICAL CEILING TILE SYSTEM AND REINSTALLING CEILING AS REQUIRED TO ACCOMMODATE THE INSTALLATION OF NEW PIPING.

8.2 PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED TO SUSPENDED CEILING MATERIALS BY THE DISMANTLING, STORAGE AND REINSTALLATION OF CEILING MATERIALS.

8.3 PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING THROUGH WALLS, PIPE HANGERS AND MODIFICATIONS TO STRUCTURE FOR THE INSTALLATION OF PIPE HANGERS.

8.4 PIPE SIZES INDICATED ON DRAWINGS ARE MINIMUMS. CONTRACTOR SHALL MATCH PIPE SIZE WHEN CONNECTING TO EXISTING PIPING LARGER THAN SIZED LISTED.

8.5 NEW PIPING SHALL NOT BE PERMITTED OVER ANY ELECTRICAL PANELS OR EQUIPMENT.

8.6 NEW PIPE ROUTING SHALL NOT INTERFERE WITH NORMAL MAINTENANCE OPERATION OF EXISTING EQUIPMENT, ACCESS PANELS, DUCTWORK ACCESS PANELS, DUCTWORK ACCESSORIES, AND ALL HVAC AND ELECTRICAL EQUIPMENT.

8.7 ALL PIPING, FITTINGS AND JOINTS SHALL COMPLY WITH THE STATE AND LOCAL AMENDMENTS AND THE AUTHORITY HAVING JURISDICTION. MATERIALS LISTED IN THE SPECIFICATION THAT DO NOT COMPLY WITH THESE AMENDMENTS SHALL NOT BE USED IN THE BIDDING PROCESS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE ADOPTED AMENDMENTS.

8.8 WATER SUPPLY PIPING SIZES SHOWN ON DRAWING ARE BASED ON COPPER PIPING. SANITARY, VENT AND STORM PIPING SIZES SHOWN ARE BASED ON CAST IRON PIPING. INNER DIAMETERS SHALL BE REVIEWED WITH IDPH STATE PLUMBING INSPECTOR PRIOR TO INSTALLATION AND SHALL BE OF SUFFICIENT SIZE TO PROVIDE ADEQUATE FLOW AT MINIMAL PRESSURE DROP TO INSURE PLUMBING FIXTURES OPERATE TO OWNER'S SATISFACTION.

SHOP DRAWINGS, SUBMITTALS AND CLOSE OUT DOCUMENTS

9.1 CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES IN PDF FORMAT SHOP DRAWINGS OF ALL PIPING, VALVES, PIPE HANGERS, PIPE INSULATION, MISC DEVICES, PUMPS, MIXING VALVES, PLUMBING FIXTURES, ACCESS PANELS, EQUIPMENT, TO ENGINEER FOR APPROVAL PRIOR TO ORDERING ANY ITEMS OR FABRICATING ANY DUCTWORK. SUBMITTALS SHALL BE RETURNED WITHIN TEN BUSINESS DAYS.

9.2 CONTRACTOR SHALL PROVIDE OWNER TRAINING ON ALL EQUIPMENT AND BUILDING SYSTEMS PROVIDED/ALTERED BY HIS WORK. TRAINING SHALL BE ACCOMPLISHED DURING TIME DEDICATED FOR THAT PURPOSE, NOT IN CONJUNCTION WITH SERVICE WORK.

9.3 AT COMPLETION OF PROJECT, CONTRACTOR SHALL SUBMIT PDF FORMAT OF OPERATION AND MAINTENANCE MANUALS FOR ALL WORK PROVIDED BY HIM ON PROJECT. MANUALS SHALL BE CLEARLY ORGANIZED AND CONTAIN COPIES OF APPROVED EQUIPMENT, COMPONENT BREAK-DOWN AND PARTS LISTS, MAINTENANCE/CLEANING AND TROUBLESHOOTING MANUALS, SERVICE CONTACTS, CONTRACTOR AND MANUFACTURER WARRANTEES, AND "AS BUILT" FLOOR PLANS INDICATING ALL APPROVED DEVIATIONS AND REVISIONS TO BIDDING DOCUMENTS.

PIPE SPECIFICATIONS

PLUMBING PIPING SHALL BE AS FOLLOWS:

SANITARY SEWER AND VENT PIPING, BURIED WITHIN 5 FEET OF BUILDING

A. CAST IRON PIPE: ASTM A74 SERVICE WEIGHT.
FITTINGS: CAST IRON.
JOINTS: HUB-AND-SPIGOT, CISPI HSN COMPRESSION TYPE WITH ASTM C564 NEOPRENE GASKETS OR LEAD AND OAKUM.

B. PLASTIC PIPE: ASTM D2665, POLYVINYL CHLORIDE (PVC) MATERIAL.
FITTINGS: PVC, ASTM D2665.
JOINTS: ASTM D2855 SOLVENT WELD WITH ASTM D2564 SOLVENT CEMENT.

SANITARY AND VENT PIPING, ABOVE GRADE

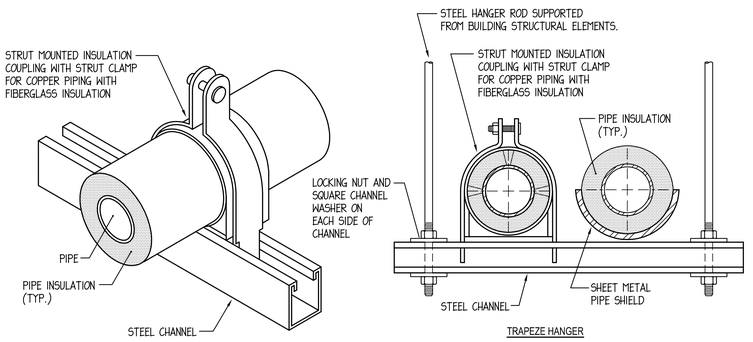
A. CAST IRON PIPE: CISPI 301, HUBLESS, SERVICE WEIGHT.
FITTINGS: CAST IRON.
JOINTS: CISPI 310, NEOPRENE GASKETS AND STAINLESS STEEL CLAMP AND SHIELD ASSEMBLIES.

B. PLASTIC PIPE: ASTM D2665, POLYVINYL CHLORIDE (PVC) MATERIAL.
FITTINGS: PVC, ASTM D2665.
JOINTS: ASTM D2855 SOLVENT WELD WITH ASTM D2564 SOLVENT CEMENT.

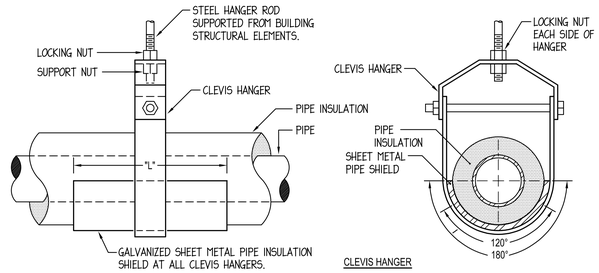
WATER PIPING, ABOVE GRADE

A. COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
FITTINGS: ASME B16.18, CAST COPPER ALLOY OR ASME B16.22, WROUGHT COPPER AND BRONZE.
JOINTS: ASTM B32, SOLDER, GRADE 95TA.

B. COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
COPPER PRESS-JOINT FITTINGS: VIEGA PROPRESS; ASME B16.18 CAST COPPER ALLOY, ASME B16.22 WROUGHT COPPER, ASME B16.51 COPPER PRESS-CONNECT PRESSURE FITTINGS, EPDM O-RING AND INTEGRAL LEAK DETECTION. FITTINGS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS. ONLY MANUFACTURERS COMPATIBLE PRESS TOOLS SHALL BE USED.
OTHER ACCEPTABLE MANUFACTURERS: NIBCO, MUELLER PRS STREAMLINE.



TRAPEZE HANGER



CLEVIS HANGER

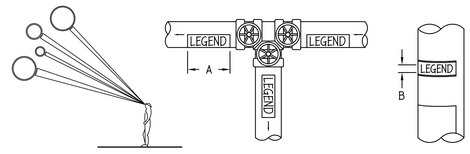
NOTES:

1. CONFER WITH ARCHITECT AND REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON ACCEPTABLE METHODS AND LOCATIONS FOR HANGER SUPPORTS.
2. WHEN WATER SUPPLY PIPING IS INSTALLED IN PARALLEL AND SAME ELEVATION, PROVIDE TRAPEZE HANGERS. PIPING SHALL REST ON SHEET METAL SHIELD AT EACH TRAPEZE HANGER WITH ATTACHMENT TO STEEL CHANNEL EVERY 30 FEET UTILIZING A STRUT MOUNTED INSULATION COUPLING WITH STRUT CLAMP FOR USE WITH COPPER PIPING AND FIBERGLASS INSULATION.

PIPE INSULATION SHIELD SCHEDULE		
PIPE SIZE	LENGTH	GAUGE
UP TO 3/4"	8"	20 GA.
1" - 2"	12"	18 GA.
2 1/2" - 4"	12"	16 GA.
5" & 6"	18"	16 GA.
8" & UP	24"	14 GA.

TYPICAL PIPE HANGER DETAILS

NO SCALE



NOTE:
IDENTIFICATION MARKERS OR STRIPS TO BE PLACED ON ALL EXPOSED COVERED AND UNCOVERED PIPES AT 50'-0" INTERVALS, ADJACENT TO ALL VALVES OR BRANCHES, AND AT BOTH SIDES OF WALL/FLOOR PENETRATIONS. ARROWS OF SAME COLOR AS IDENTIFICATION MARKERS SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING DIRECTION OF FLOW.

SIZE OF LEGEND LETTERS		
OUTSIDE DIAMETER OF PIPE OR COVERING	LENGTH OF COLOR FIELD A	SIZE OF LETTERS B
3/4" TO 1 1/4"	8"	1/2"
1 1/2" TO 2"	8"	3/4"
2" 1/2" TO 6"	12"	1 1/4"
8" TO 10"	24"	2 1/2"
OVER 10"	32"	3 1/2"

SERVICE	BACKGROUND OR COLOR BAND	IDENTIFICATION MARKER
SANITARY DRAIN	GREEN	WHITE ON GREEN
STORM WATER	GREEN	WHITE ON GREEN
PLUMBING VENT	GREEN	WHITE ON GREEN
DOMESTIC COLD WATER	GREEN	WHITE ON GREEN
DOMESTIC HOT WATER	GREEN	WHITE ON GREEN
DOMESTIC HOT WATER CIRC.	GREEN	WHITE ON GREEN

TYPICAL PIPE IDENTIFICATION MARKERS

NO SCALE

PLUMBING SYMBOLS AND ABBREVIATIONS

CW — DOMESTIC COLD WATER
HW — DOMESTIC HOT WATER
HWC — DOMESTIC HOT WATER CIRCULATING
SA — UNDERGROUND SANITARY SEWER
SA — EXISTING UNDERGROUND SANITARY SEWER
V — SUSPENDED VENT PIPING
V — SUSPENDED VENT PIPING (DEMOLITION DRAWING ONLY)
PIPING TO BE REMOVED (DEMOLITION DRAWING ONLY)
GATE VALVE
CHECK VALVE
BALL VALVE

CIRCUIT BALANCING VALVE W/BALANCING PORTS
DIRECTION OF FLOW
PIPE ELBOW (TURNED UP)
PIPE ELBOW (TURNED DOWN)
PIPE TEE DOWN (DROP)
PIPE TEE UP
PIPE TEE UP OR ANGLE
PIPE TEE DOWN OR ANGLE
NC — NEW CONNECTION
FCO — FLOOR CLEANOUT (ROUND)
FD — FLOOR DRAIN (ROUND)

AFF.	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BFP	BACK FLOW PREVENTER
CI	CAST IRON
CO	CLEANOUT
CW	COLD WATER
DWH	DOMESTIC WATER HEATER
DWP	DOMESTIC WATER PUMP
DWET	DOMESTIC WATER EXPANSION TANK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
HW	HOT WATER
HWC	HOT WATER CIRCULATING
L	LAVATORY
MB	MOP BASIN
NC	NEW CONNECTION
S	SINK
SA	SANITARY
ST	STORM
TMV	THERMOSTATIC MIXING VALVE
TYP.	TYPICAL
V	VENT
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT

PLUMBING FIXTURE SCHEDULE

PLUMBING FIXTURE TAG	TYPE	MANUFACTURER AND MODEL	DESCRIPTION	OTHER ACCEPTABLE MANUFACTURERS
FD-1	FLOOR DRAIN	MIFAB, MODEL F1000-C-6"	ANSI A112.21.1; LACQUERED CAST IRON BODY WITH DOUBLE DRAINAGE FLANGE, WEEPHOLES, AND ROUND ADJUSTABLE 6" STAINLESS STEEL STRAINER.	J.R. SMITH, WADE, JOSAM, WATTS, ZURN
FCO	FLOOR CLEANOUT	MIFAB, MODEL C1224	INTERIOR FINISHED FLOOR AREAS (FCO) LACQUERED CAST IRON BODY, ABS GASKETED PLUG AND ADJUSTABLE NICKEL BRONZE ROUND SCORIATED COVER.	J.R. SMITH, WADE, JOSAM, WATTS, ZURN
RPZ-1	BACKFLOW PREVENTER	ZURN WILKINS MODEL 975XL WATTS LF909 (S) SERIES	2" AND SMALLER - ASSE 1013; REDUCED PRESSURE ZONE BACKFLOW PREVENTER WITH STRAINER AND BALL VALVES, BFP SHALL BE LEAD FREE AND HAVE PRESSURE DIFFERENTIAL RELIEF VALVE LOCATED IN A ZONE BETWEEN TWO POSITIVE SEATING CHECK VALVES. SIZE AS INDICATED ON DRAWING.	APOLLO, WATTS, ZURN, FEBCO

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HVAC REPLACEMENT PROJECT
SPECIAL EDUCATION DISTRICT OF LAKE COUNTY
ADMINISTRATION BUILDING
18160 W. GAGES LAKE ROAD
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SHEET
PLUMBING GENERAL NOTES AND SCHEDULES

P2.1

NAME: I26&EI FP1.dwg BY:KDK DATE: DEC 15, 2023 TIME: 4:42 PM