

FLOW

RECEIVING AREAS AND SIMILAR AREAS. SPRINKLER SPACING NOT TO EXCEED 130 SQ.FT

ORDINARY HAZARD GROUP I OCCUPANCY FOR FOR MECHANICAL

DENSITY 0.30 GPM/SQ.FT. / 2500 SQ. FT.

MINIMUM 500 GPM OUTSIDE HOSE ALLOWANCE

STATIC PRESSURE RESIDUAL PRESSURE FLOW	56	PSI PSI GPM
BASED ON PUMP TEST PER	RFORME	D 06/24/2021

- DESIGN CRITERIA
- LIGHT HAZARD OCCUPANCY FOR OFFICE TYPE SPACES & SIMILAR
- DENSITY 0.10 GPM/SQ.FT. / 1500 SQ. FT. SPRINKLER SPACING NOT TO EXCEED 225 SQ.FT
- MINIMUM 100 GPM OUTSIDE HOSE ALLOWANCE ORDINARY HAZARD GROUP II OCCUPANCY FOR STORAGE AREAS,
- DENSITY 0.20 GPM/SQ.FT. / 1500 SQ. FT.
- MINIMUM 250 GPM OUTSIDE HOSE ALLOWANCE
- SPACES, KITCHEN TYPE SPACES AND SIMILAR AREAS.
- DENSITY 0.15 GPM/SQ.FT. / 1500 SQ. FT. SPRINKLER SPACING NOT TO EXCEED 130 SQ.FT
- MINIMUM 250 GPM OUTSIDE HOSE ALLOWANCE
- EXTRA HAZARD GROUP II OCCUPANCY FOR PAINT BOOTHS
- DENSITY 0.40 GPM/SQ.FT. / 2500 SQ. FT. SPRINKLER SPACING NOT TO EXCEED 100 SQ.FT
- MINIMUM 500 GPM OUTSIDE HOSE ALLOWANCE
- EXTRA HAZARD GROUP I OCCUPANCY FOR METAL FABRICATION
- SPRINKLER SPACING NOT TO EXCEED 100 SQ.FT

- GENERAL NOTES
- THE WORK TO BE DONE UNDER THESE SPECIFICATIONS AND THE DRAWINGS CONSISTS OF PROVIDING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES AND PERFORMING ALL OPERATIONS TO COMPLETE THE CONSTRUCTION WORK FOR THIS PROJECT. ANY WORK NOT SPECIFICALLY COVERED BY THESE SPECIFICATIONS OR INDICATED ON THE CONTRACT DRAWINGS, BUT NECESSARY TO COMPLETE OR PERFECT ANY PART OF THIS INSTALLATION IN A SUBSTANTIAL MANNER, SHALL BE PROVIDED WITHOUT EXTRA COST TO THE OWNER.
- THE WORK SHALL CONFORM TO THE MORE STRINGENT OF ALL APPLICABLE CODES & REGULATIONS, UL GUIDELINES, LEED REQUIREMENTS, MANUFACTURER'S LITERATURE AND RECOMMENDATIONS, AND TO THE REQUIREMENTS OF FEDERAL, STATE AND LOCAL REGULATORY AGENCIES AND AUTHORITIES HAVING JURISDICTION.
- THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE EXTENT, GENERAL CHARACTER, LOCATION AND ARRANGEMENT OF THE WORK UNDER THIS CONTRACT. WHERE JOB CONDITIONS REQUIRE MINOR CHANGES OR ADJUSTMENTS IN THE INDICATED LOCATIONS OR ARRANGEMENT OF THE WORK, SUCH CHANGES SHALL BE PROVIDED WITHOUT EXTRA COST. THE CONTRACTOR SHALL RE-INSTALL EQUIPMENT THAT HAS INADEQUATE OR UNSAFE ACCESSIBILITY.
- INSTALLATION OF WORK SHALL PROVIDE REASONABLE ACCESSIBILITY FOR OPERATION, INSPECTION AND MAINTENANCE OF EQUIPMENT AND ACCESSORIES. PROVIDE CLEARANCES REQUIRED BY MANUFACTURERS AND APPLICABLE CODES. ALL CEILING MOUNTED EQUIPMENT SHALL BE INSTALLED IN SUCH A MANNER THAT LIGHTS, PIPING, AND DUCTWORK DO NOT BLOCK ACCESS TO EQUIPMENT AND RELATED ACCESSORIES.
- 5. THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "MECHANICAL WORK", "ELECTRICAL WORK", "PLUMBING WORK", ETC. SHALL MEAN ALL LABOR, MATERIAL, EQUIPMENT, SCAFFOLDING, RIGGING, TOOLS, SUPERVISION, SERVICES AND OTHER INCIDENTALS NECESSARY FOR COMPLETE AND OPERABLE INSTALLATION.
- THE CM/GC SHALL MAKE SETS OF THE BID DOCUMENTS CONSISTING OF COMPLETE SETS OF DRAWINGS AND SPECIFICATIONS; AND ISSUE THEM TO EACH OF THE PRIME AND SUB-CONTRACTORS. EVERY PRIME AND SUB-CONTRACTOR ON EACH BIDDING TEAM SHALL RECEIVE COMPLETE SETS OF DRAWINGS AND SPECIFICATIONS. THERE ARE NOTES AND CROSS REFERENCES FOR VARIOUS TRADE CONTRACTORS IN MULTIPLE TRADE OR DISCIPLINE DRAWINGS AND SPECIFICATIONS, THUS, EACH CONTRACTOR IS TO RECEIVE COMPLETE SETS OF THE BID DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THESE DRAWINGS FROM CM/GC. EACH CONTRACTOR IS RESPONSIBLE FOR THEIR WORK, AS NOTED ON THE OTHER DISCIPLINE DOCUMENTS. BIDDERS ARE RESPONSIBLE FOR ALL COSTS FOR EACH SET OF BID DOCUMENTS REQUESTED.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULL COORDINATION EFFORT IN ORDER TO CREATE A FINALIZED COORDINATED LAYOUT OF ALL EQUIPMENT, SYSTEMS, DUCTWORK, PIPING AND ALL OTHER ITEMS WITHIN THEIR RESPECTIVE SCOPE. THE CONTRACTOR'S COORDINATION EFFORT SHALL INCLUDE COORDINATED INFORMATION FROM ALL OTHER TRADE CONTRACTOR'S INVOLVED IN THE PROJECT SCOPE IN ORDER TO PROVIDE COORDINATION BETWEEN TRADES AND ALL EXISTING CONDITIONS. ALL ERRORS MADE AS A RESULT OF A LACK OF COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND CORRECTED AT NO ADDITIONAL COST TO THE PROJECT. MINOR RELOCATIONS AND SHIFTS OF EQUIPMENT, DUCTWORK, AND PIPING WHICH DO NOT CHANGE THE DESIGN INTENT INDICATED ON THE CONTRACT DOCUMENTS, REQUIRED TO ACCOMMODATE FIELD
- CONDITIONS ARE AT THE CONTRACTORS DISCRETION AND DO NOT REQUIRE ENGINEER APPROVAL. 8. CONTRACTOR SHALL ARRANGE AND OBTAIN ALL PERMITS, INSPECTIONS AND APPROVALS, AND PAY ALL RELATED FEES. 7. THE DRAWINGS INDICATE APPROXIMATE LOCATIONS BASED UPON INFORMATION OBTAINED WITHOUT REMOVING
- CEILING TILES OR WALLS. THEREFORE, THE CONTRACTOR SHALL INCLUDE IN THEIR BID CONTINGENCY COSTS TO ADDRESS CONFLICTS BETWEEN DESIGN AND EXISTING CONDITIONS. ANY CHANGES AND/OR MODIFICATIONS MUST BE REVIEWED AND APPROVED BY THE ENGINEER AND/OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
- 10. FOR ANY DISCREPANCY BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL BASE THEIR BID UPON THE MOST STRINGENT REQUIREMENT (QUALITY, QUANTITY, SIZE, ETC.). THE CONTRACTOR SHALL IDENTIFY DISCREPANCIES AS PART OF THEIR BID.
- 11. THE CONTRACTOR SHALL EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION. PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED.
- 2. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK AND/OR PIPING, CAREFULLY COORDINATE SIZES AND LOCATIONS OF THE ELEMENTS BEFORE FABRICATION. COORDINATE WITH FINAL LOCATION OF BEAM PENETRATIONS AND SHEAR WALL PENETRATIONS.
- 13. CONTRACTOR SHALL COORDINATE LOCATION OF ALL WALL, FLOOR AND ROOF OPENINGS WITH STRUCTURAL AND OTHER TRADES. 14. PROVIDE CUTTING AND PATCHING AS REQUIRED AND WHERE NECESSARY TO ACCOMMODATE NEW WORK AND THE
- REPAIR OF EXISTING WORK. 15. WHEN WORK INVOLVES CONTACT WITH MATERIALS CONTAINING ASBESTOS, PCB, OR OTHER TOXIC MATERIALS,
- NOTIFY OWNER, WHO WILL ESTABLISH PROCEDURES FOR REMEDIATION AND REMOVAL. 16. CONTRACTOR SHALL SCHEDULE THE WORK UNDER THIS CONTRACT WITH WORK OF OTHER TRADES AS NOT TO
- DELAY THE OVERALL PROGRESS OF THE PROJECT. 17. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS PRIOR TO PURCHASING EQUIPMENT AND
- PRIOR TO CUTTING OPENINGS. 18. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS PER SPECIFICATIONS PRIOR TO PURCHASING OR INSTALLING EQUIPMENT AND SYSTEMS INDICATED ON CONTRACT DOCUMENTS. PRIOR TO SUBMITTAL, CONTRACTOR SHALL VERIFY THAT ADEQUATE SPACE EXISTS FOR THE SUBMITTED EQUIPMENT. SHOP DRAWINGS MUST BE REVIEWED
- BY ARCHITECT/ENGINEER. 19. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY OTHER TRADES DUE TO SUBSTITUTION OF OTHER THAN SCHEDULED EQUIPMENT. WHEN EQUIPMENT FURNISHED IS DIFFERENT THAN INDICATED, THE COST
- OF ADDITIONAL ELECTRICAL SERVICE, STRUCTURAL AND RELATED WORK SHALL BE PAID BY THIS CONTRACTOR. 20. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND SHALL BE DONE IN ACCORDANCE
- WITH GOOD TRADE PRACTICE AND IN CONFORMANCE WITH APPLICABLE MANUFACTURERS' RECOMMENDATIONS. 21. CONTRACTOR SHALL REMOVE ALL TRASH, DEBRIS AND DEMOLITION MATERIAL FROM PREMISES AT THE END OF EACH DAY.
- 22. RESTORE ALL SURFACES (WALLS, CEILINGS, FLOORS AND ROOFS) THAT ARE DAMAGED BY THE WORK OF THIS CONTRACT TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER.
- 23. PRIOR TO EQUIPMENT STARTUP, CONTRACTOR SHALL PERFORM THE SPECIFIED STARTUP AND COMMISSIONING PROCEDURES.

REUSE BY CONTRACTOR IS UNLAWFUL.

- 24. IN THE ABSENCE OF OTHER SPECIFIC INSTRUCTIONS, ALL WORK AND MATERIALS SUPPLIED SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THEIR ACCEPTANCE BY THE OWNER.
- 25. BALA CONSULTING ENGINEERS, INC. (BALA) WILL PROVIDE CONTRACTOR WITH ELECTRONIC CADD FILES OF THE ENGINEERING DESIGNS FOR THE SOLE USE IN EXPEDITING SHOP DRAWINGS. BALA'S FILES SHALL NOT BE DIRECTLY COPIED AND ISSUED AS SHOP DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD COORDINATION, DIMENSIONING AND ADHERENCE TO THE SHOP DRAWING REQUIREMENTS AS NOTED IN THE SPECIFICATIONS. SHOULD THE SHOP DRAWINGS SUBMITTED PROVE TO BE A DIRECT COPY OF OUR FILES WITHOUT THE NECESSARY FIELD COORDINATION, DIMENSIONING AND ADHERENCE TO THE SHOP DRAWING REQUIREMENTS AS NOTED IN THE SPECIFICATIONS, THESE SHOP DRAWINGS WILL BE RETURNED AS REJECTED.
- BALA'S ELECTRONIC FILES ARE SAVED IN VERSION REVIT 2021 AND ARE COMPATIBLE WITH ALL VERSIONS AFTER THAT. BALA MAKES NO REPRESENTATION AS TO THE COMPATIBILITY OF THESE FILES WITH THE CONTRACTOR'S HARDWARE OR THEIR SOFTWARE. DATA CONTAINED ON THESE ELECTRONIC FILES ARE PART OF BALA'S "INSTRUMENTS OF SERVICE" AND ARE COPYRIGHTED. CONTRACTOR'S USE OF FILES IS FOR THE SOLE PURPOSE AS A CONVENIENCE IN THE PREPARATION OF DRAWINGS FOR THE REFERENCED PROJECT. ANY OTHER USE OR

FIRE PROTECTION GENERAL NOTES	
WORK SHALL BE PERFORMED USING THE "METHOD B SHARED DESIGN" PROCESS, FROM A "FULLY ENGINEERED" "DESIGN" SET OF DOCUMENTS WHICH OUTLINES THE SYSTEM AND REQUIRES THE FIRE PROTECTION CONTRACTOR TO PROVIDE THE "INSTALLATION" SET OF DOCUMENTS, IN CONFORMANCE WITH THE DESIGN CRITERIA AS SET FORTH IN THE BID DOCUMENTS. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MASSACHUSETTS BUILDING CODE, NFPA, THE INSURER'S INTERPRETATIONS OF NFPA, AND THE LOCAL AUTHORITY. FIRE PROTECTION WORKING DRAWINGS STAMPED BY A REGISTERED PROFESSIONAL FIRE PROTECTION ENGINEER OR A NICET LEVEL IV TECHNICIAN, WITH HYDRAULIC CALCULATIONS, FULLY COORDINATED WITH ALL OTHER TRADES, SHALL BE DEVELOPED BY THE FIRE PROTECTION CONTRACTOR. UPON PROJECT COMPLETION, THESE DRAWINGS SHALL BECOME THE PROPERTY OF THE OWNER.	(E) (ED) (ER) (N) (RL) A AC
SEE ALL DRAWINGS AND SPECIFICATIONS FOR STANDPIPE AND SPRINKLER SYSTEM HYDRAULIC DESIGN CRITERIA. HYDRAULIC CALCULATION NODE POINTS FOR THE MOST DEMANDING SPRINKLER PROTECTION AREA(S) AND FIRE DEPARTMENT HOSE VALVE CONNECTION(S) ARE INDICATED ON THE PLANS FOR SYSTEM DESIGN INFORMATION ONLY. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE HYDRAULIC CALCULATIONS FOR EACH TYPE OF OCCUPANCY FOR EACH SPRINKLER ZONE AND SHALL PROVIDE HYDRAULIC CALCULATIONS FOR THE MOST REMOTE OR HYDRAULICALLY DEMANDING FIRE DEPARTMENT HOSE CONNECTION BASED ON THE MAXIMUM SYSTEM DEMAND AS REQUIRED PER APPLICABLE NFPA STANDARDS. WORKING DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE SUBMITTED AND APPROVED BY ALL PARTIES OUTLINED HEREIN PRIOR TO PROCUREMENT OF FIRE PROTECTION EQUIPMENT, FABRICATION AND INSTALLATION OF ANY FIRE PROTECTION SYSTEM.	AFF AFG AP BF BLDG BOP CA CB&V
CONTRACTOR SHALL PROVIDE FIRE WATER SERVICE RESTRAINTS AND THRUST BLOCKS AS REQUIRED.	CIP CLG
STANDPIPE SYSTEMS SHALL BE DESIGNED AND INSTALLED IN STRICT ACCORDANCE WITH NFPA-14, ALL APPLICABLE CODES AND THE AUTHORITY HAVING JURISDICTION. FIRE DEPARTMENT HOSE CONNECTION PATTERNS SHALL MEET THE REQUIREMENTS OF THE LOCAL FIRE MARSHALL AND THE AUTHORITY HAVING JURISDICTION.	CONN CONT D DIP
ALL DEDICATED WATER SUPPLY WORK ON SITE, INSIDE OF THE PROPERTY LINE, INCLUDING CONNECTION TO THE UTILITY IF APPLICABLE, SERVING THE FIRE PROTECTION SYSTEM (PIPE, FITTINGS, HYDRANTS, ETC.) SHALL BE INSTALLED UNDER THIS CONTRACT.	DN DP DR
ALL EXPOSED PIPING AND PIPING ABOVE THE CEILINGS SHALL BE INSTALLED AS CLOSE AS PRACTICAL TO THE UNDERSIDE OF STRUCTURAL MEMBERS OR TO WITHIN ONE FOOT OF THE FLOOR / ROOF DECK ABOVE WHEREVER POSSIBLE.	DSP DWG EA EC
PROVIDE 2" DRAIN FROM EACH SPRINKLER ZONE CONTROL VALVE ASSEMBLY AND EXTEND TO 2" OR 3" DRAIN RISER, AS APPLICABLE, DISCHARGING TO EXTERIOR GRADE, AN APPROVED DRAINAGE SPECIALTY SIZED TO ACCOMMODATE THE ANTICIPATED DEMAND OR AS SHOWN ON THE DRAWINGS.	EL EQUIP FCV
FINAL LOCATION OF EXTERIOR FIRE DEPARTMENT CONNECTIONS SHALL BE APPROVED BY THE LOCAL FIRE MARSHALL PRIOR TO INSTALLATION.	FD FDC
PROVIDE ALL NEW SPRINKLER SYSTEM COMPONENTS, REFURBISHING, TESTING, CERTIFICATION, AND ANY OTHER WORK REQUIRED TO ENSURE A COMPLETELY APPROVED AND OPERATIONAL SYSTEM. CONTRACTOR SHALL EXTEND FROM EXISTING PIPING OF ADEQUATE SIZE OR MAKE NEW PIPING CUT-INS AS REQUIRED TO SUIT NEW SPRINKLER LOCATIONS.	FH FHC FHR FHV FPC
FIELD COORDINATE ALL FIRE PROTECTION PIPING AND EQUIPMENT LOCATIONS AND/OR MODIFICATIONS WITH THE GENERAL, ELECTRICAL, AND MECHANICAL CONTRACTORS PRIOR TO COMMENCEMENT OF WORK TO ELIMINATE FIELD CONFLICTS. FINAL SPRINKLER LOCATIONS SHALL BE COORDINATED WITH LIGHTS, FIXTURES, DUCTWORK, DIFFUSERS, PIPING, EQUIPMENT, ETC.	FPTH FS FT GC
THE FIRE PROTECTION CONTRACTOR SHALL CONFIRM LIGHTING TO BE INSTALLED FOR COORDINATION OF LOCATIONS, SIZE, AND MOUNTING HEIGHTS. THE CONTRACTOR SHALL COORDINATE FINAL SPRINKLER HEAD LOCATIONS PER NFPA 13 OBSTRUCTION REQUIREMENTS AND COORDINATE WITH THE ELECTRICAL CONTRACTOR TO ENSURE ALL AREAS ARE COVERED IN ACCORDANCE WITH NFPA STANDARDS.	GP GPD GPH GPM
COORDINATE ALL LOCATIONS AND MOUNTING HEIGHTS OF FIRE PROTECTION DEVICES AND APPURTENANCES WITH THE LOCAL AUTHORITY HAVING JURISDICTION, APPLICABLE ADA REQUIREMENTS AND ALL TRADE CONTRACTORS.	H I. E. L.Z. NC
HYDRAULIC CALCULATIONS SHALL DICTATE THE ADEQUATE SIZES OF PIPING. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PIPING OF A LARGER DIAMETER, IF NECESSARY, TO BRING THE SYSTEM TO FULL COMPLIANCE WITH THE HYDRAULIC CALCULATIONS.	NC NIC NO NTS
AS APPLICABLE, FIRE PROTECTION SPRINKLER AND OR STANDPIPE SYSTEM HYDRAULIC CALCULATIONS SHALL BE SUBMITTED AND APPROVED BY THE OWNER'S UNDERWRITER, AUTHORITIES HAVING JURISDICTION AND THE ENGINEER PRIOR TO REVIEW AND APPROVAL OF A FIRE PUMP SHOP DRAWING SUBMISSION.	PA PC PG
CONTRACTOR SHALL VERIFY CONCEALED SPACES ARE PROTECTED IN ACCORDANCE WITH N.F.P.A. 13 AND ANY LOCAL CODE REQUIREMENTS.	PIV PRESS PS
ADDITIONAL SPRINKLER HEADS SHALL BE PROVIDED UNDER ALL DUCTS AND ALL OTHER OBSTRUCTIONS THAT ARE 4'-0" AND GREATER IN WIDTH IN ACCORDANCE WITH NFPA 13. COORDINATE FINAL SPRINKLER HEAD LOCATIONS AND REQUIREMENTS WITH THE MECHANICAL AND ARCHITECTURAL DRAWINGS.	PSI PSIG SF
ADDITIONAL SPRINKLER HEADS SHALL BE PROVIDED AT THE LOWEST LANDING AND TOP OF ALL STAIRTOWERS IN ACCORDANCE WITH NFPA 13.	SP SPR STDP
SPRINKLER SHALL BE LOCATED IN THE CENTER OF CEILING TILES UNLESS SPECIFICALLY NOTED OTHERWISE.	TB
ALL PIPING PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED WITH UL LISTED FIREPROOFING SYSTEM TO MATCH THE RATING OF THE WALL OR FLOOR.	TDH TOP TS
PROVIDE NEC REQUIRED PIPE CLEARANCE ABOVE OR AROUND ANY ELECTRICAL EQUIPMENT, PANELS, ETC.	TYP VIF
PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.	W/ W/O WSP
SPRINKLER PIPING, IN BAR JOIST CONSTRUCTION, SHALL BE SUPPORTED FROM PANEL POINTS OF BAR JOIST. THRUST SUPPORTS SHALL BE ATTACHED TO TOP CHORD ONLY, UNLESS SUFFICIENT CROSS BRACING IS PROVIDED.	
FOR ADDITION OR RELOCATION OF SPRINKLER HEADS IN NEW AND EXISTING CONSTRUCTION, ALL SPRINKLER HEAD RESPONSE CHARACTERISTICS SHALL MATCH EXISTING SPRINKLER HEADS WITHIN THE SCOPE OF WORK INCLUDING SUBBOUNDING SPACES OUTSIDE OF THE SCOPE OF WORK AS REQUIRED PER NEPA STANDARDS	

INCLUDING SURROUNDING SPACES OUTSIDE OF THE SCOPE OF WORK AS REQUIRED PER NFPA STANDARDS.

ABBREVIATIONS	
 (E) EXISTING ITEM (ED) EXISTING ITEM TO BE DEMOLISHED (ER) EXISTING ITEM TO BE RELOCATED (N) NEW ITEM (RL) EXISTING ITEM TO BE RELOCATED 	
ACOMPRESSED AIRACABOVE CEILINGAFFABOVE FINISHED FLOORAFGABOVE FINISHED GRADEAPABOVE PIPEBFBELOW RAISED FLOOR	
BFPBACKFLOW PREVENTERBLDGBUILDINGBOPBOTTTOM OF PIPECACLEAN AGENTCB&VCURB BOX & VALVECIPCAST IRON PIPE	
CLG CEILING CONN CONNECT CONT CONTINUATION D DETECTION DEVICE (SHOWN IN SYMBOL) DIP DUCTILE IRON PIPE DN DOWN	(E) DSP →
DP DRY PIPE DR DRAIN RISER DSP DRY STANDPIPE DWG DRAWING EA EACH EC ELECTRICAL CONTRACTOR	
ELELEVATIONEQUIPEQUIPMENTFCVFLOOR CONTROL VALVEFDFLOOR DRAINFDCFIRE DEPARTMENT CONNECTIONFHFIRE HYDRANT	रे————————————————————————————————————
FHCFIRE HOSE CABINETFHRFIRE HOSE RACKFHVFIRE HOSE VALVEFPCFIRE PROTECTION CONTRACTORFPTHFIRE PUMP TEST HEADERFSFLOW SWITCH	D D D P Z FS
FTFOOT ,FEETGCGENERAL CONTRACTORGPGALVANIZED PIPEGPDGALLONS PER DAYGPHGALLONS PER HOURGPMGALLONS PER MINUTE	
HHALONI. E.INVERT ELEVATIONL.Z.LOW ZONENCNORMALLY CLOSEDNICNOT IN CONTRACTNONORMALLY OPEN	
NTSNOT TO SCALEPAPRE ACTIONPCPLUMBING CONTRACTORPGPRESSURE GAUGEPIVPOST INDICATOR VALVEPRESSPRESSURE	
PSPRESSURE SWITCHPSIPOUNDS PER SQUARE INCHPSIGPOUNDS PER SQUARE INCH GAUGESFSQUARE FOOTSPSPRINKLER PIPINGSPRSPRINKLER	
STDPSTAND PIPETBTHRUST BLOCKTDHTOTAL DYNAMIC HEADTOPTOP OF PIPETSTAMPER SWITCHTYPTYPICAL	
VIF VERIFY IN FIELD W/ WITH W/O WITHOUT WSP WET STAND PIPE	A MD SV CI

(DSP) #

	DRAWING
DRAWING NUMBER	DRAWING TITLE
FP0-0-1	FIRE PROTECTION COVER SHEET
FP1-1-0.5CD	FIRE PROTECTION UNDER MEZZANINE - AREAS C
FP1-1-0C	FIRE PROTECTION LOWER LEVEL FLOOR PLAN - A
FP1-1-0D	FIRE PROTECTION LOWER LEVEL FLOOR PLAN - A
FP1-1-1.5AB	FIRE PROTECTION FIRST FLOOR MEZZANINE LVL
FP1-1-1A	FIRE PROTECTION FIRST FLOOR PLAN - AREA A
FP1-1-1B	FIRE PROTECTION FIRST FLOOR PLAN - AREA B
FP1-1-1C	FIRE PROTECTION FIRST FLOOR PLAN - AREA C
FP1-1-1D	FIRE PROTECTION FIRST FLOOR PLAN - AREA D
FP1-1-2A	FIRE PROTECTION SECOND FLOOR PLAN - AREA A
FP1-1-2B	FIRE PROTECTION SECOND FLOOR PLAN - AREA E
FP1-1-2C	FIRE PROTECTION SECOND FLOOR PLAN - AREA C
FP1-1-2D	FIRE PROTECTION SECOND FLOOR PLAN - AREA D
FP1-1-3A	FIRE PROTECTION THIRD FLOOR PLAN - AREA A
FP1-1-3B	FIRE PROTECTION THIRD FLOOR PLAN - AREA B
FP1-1-3C	FIRE PROTECTION THIRD FLOOR PLAN - AREA C
FP1-1-3D	FIRE PROTECTION THIRD FLOOR PLAN - AREA D
FP1-1-4A	FIRE PROTECTION FOURTH FLOOR PLAN - AREA A
FP1-1-4B	FIRE PROTECTION FOURTH FLOOR PLAN - AREA B
FP1-1-4C	FIRE PROTECTION FOURTH FLOOR PLAN - AREA C
FP1-1-4D	FIRE PROTECTION FOURTH FLOOR PLAN - AREA D
FP1-2-1A	FIRE PROTECTION ROOF PLAN - AREA A
FP1-2-1B	FIRE PROTECTION ROOF PLAN - AREA B
FP1-2-1C	FIRE PROTECTION ROOF PLAN - AREA C
FP1-2-1D	FIRE PROTECTION ROOF PLAN - AREA D
FP5-0-1	FIRE PROTECTION RISER DIAGRAM
FP6-0-1	FIRE PROTECTION DETAILS

EXISTING FIRE MAIN										
DRAIN PIPING										
EXISTING DRAIN PIP SPRINKLER PIPING		IC								
EXISTING SPRINKLE	LER PIF	PING								
EXISTING PREACTIC	ING		PIPING	j						
EXISTING DRY SPRI	em Pip	ING								
EXISTING CLEAN AG			PIPING							
EXISTING DRY STAN CHECK VALVE	D PIPE									
BUTTERFLY VALVE BALL VALVE										
GATE VALVE - OUTS ANGLE VALVE	IDE SC	REW &	YOKE							
PIPE CAP - FLANGED FLANGED PIPE CON			R GRO	OVED -	ΓΥΡΕ					
GROOVED PIPE MEC	HANIC	AL CON	INECTI	ON						
FIRE DEPARTMENT					NG)					
FIRE DEPARTMENT										
FIRE HYDRANT		ELECT	RIC BEI	_L)						
POST INDICATOR VA	IVE.									
PRESSURE SWITCH										
WALL INDICATOR VA	R SYST									
DRY PIPE SPRINKLE PREACTION SPRINK										
SMOKE DETECTOR										
PREACTION SYSTEM	STROB	e (Insie	DE ROC							
BELL/AMBER STROE	ROBE (I	NSIDE I	ROOM,	PREAC	TION S	YSTEN	1)	1)		
BELL/RED STROBE A	LING M	OUNTE	D)		ACTIO	N SYS	IEM)			
ION DETECTOR (ABC	.OW RA	ISED FI	LOOR)		D,					
PHOTOELECTRIC DE PHOTOELECTRIC DE	TECTO	R (ABC	VE CE	ILING M	OUNTE	D)				
PHOTOELECTRIC DE		אי (BEL	UW RA	ISED FI	_∪UR)					
CONNECT TO EXIST	em pui	-	-							
CLEAN AGENT SYST		JREST	ATION							
SOLENOID VALVE	-									
EMERGENCY POWE	K OFF									
CLEAN AGENT DISC	HARGE	NOZZL	e (und	ER FLC	OR)					
CLEAN AGENT DISC	HARGE	NOZZL	E (CEIL	.ING)						
CLEAN AGENT DISC CEILING)	HARGE	NOZZL	E (ABC	VE						
EQUIPMENT TAG										
DRY STAND PIPE RIS										
SPRINKLER RISER N										
	3ER No									
WET STAND PIPE RI										
WET STAND PIPE RI										
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DRAIN RISER No.	ROT									
DRAIN RISER No.					it					
DRAIN RISER No.					MSBA SET					
-					12-23 90% MSBA SET					
DRAIN RISER No.					05-12-23 90% MSBA SET					
DRAIN RISER No.	O 06-23-2022 DD COST ESTIMATE SET	O • 11-21-2022 60% CD COST ESTIMATE SET	• 01-13-2023 MSBA 60% CD SUBMISSION	• 03-31-23 90% CD COST ESTIMATE SET	• 05-12-23 90% MSBA SET					
DRAIN RISER No.	06-23-2022 DD COST ESTIMATE SET	● ● ○ ● 11-21-2022 60% CD COST ESTIMATE SET	01-13-2023 MSBA 60% CD SUBMISSION	03-31-23 90% CD COST ESTIMATE SET						
DRAIN RISER No.	O 06-23-2022 DD COST ESTIMATE SET	● ○ ● 11-21-2022 60% CD COST ESTIMATE SET		● ● 03-31-23 90% CD COST ESTIMATE SET	•					

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BAL, BALA CONSULTING ENGINEERS, INC. ENGINEERS BOSTON, MA 02111-1306 TEL: 617 357 6060 FAX: 617 357 5188 WWW.BALA.COM PHILADELPHIA | NEW YORK | BOSTON | BALTIMORE | WASHINGTON, DC MECHANICAL | ELECTRICAL | PLUMBING | FIRE PROTECTION STRUCTURAL | TECHNOLOGY | COMMISSIONING MSBA 90% CD **Construction Document** Submittal May 12th, 2023 С Β ,____t **D** KEY PLAN MAGNETIC NORTH PROJECT NORTH FIRE PROTECTION **COVER SHEET** Scale: As Job No.. 60-20-409 FP0-0-1 Drawn By: Author Date: May 12th, 2023

Drummey Rosane Anderson, Inc.

Studio 205

06074

South Windsor, CT

225 Oakland Road 260 Charles Street

Planning Architecture Interior Design

Tel: 617.964.1700

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Metropolitan

Regional

Vocational High

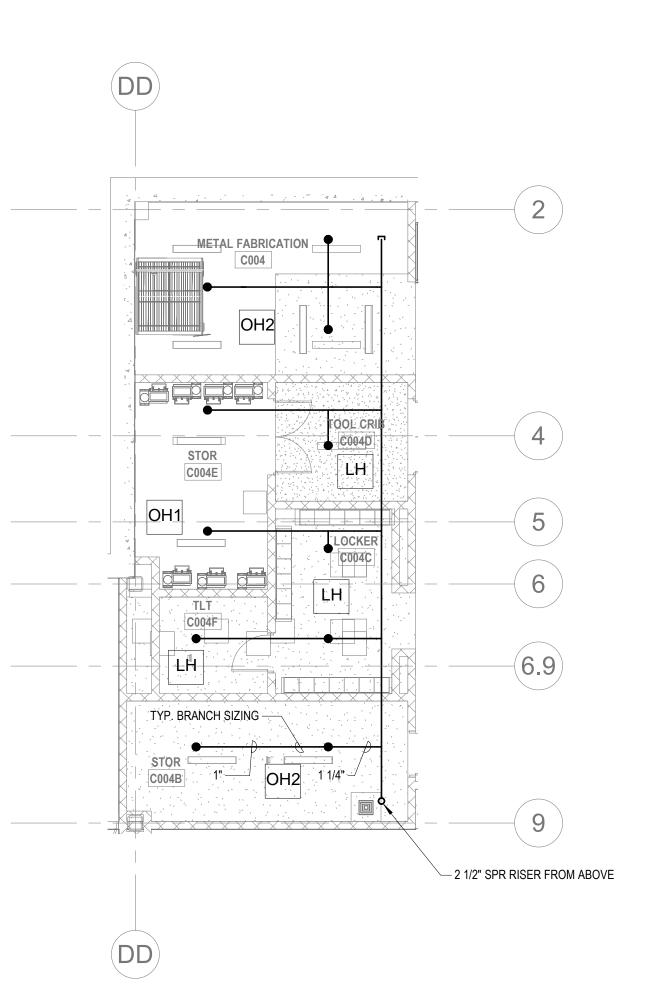
School

Wakefield, MA 01880

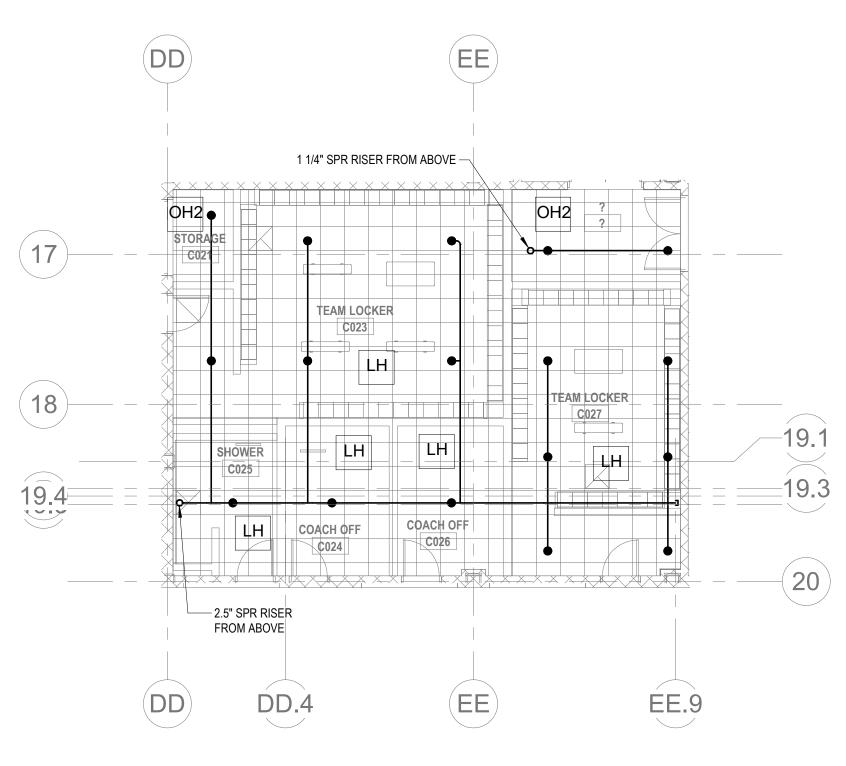
Studio 300

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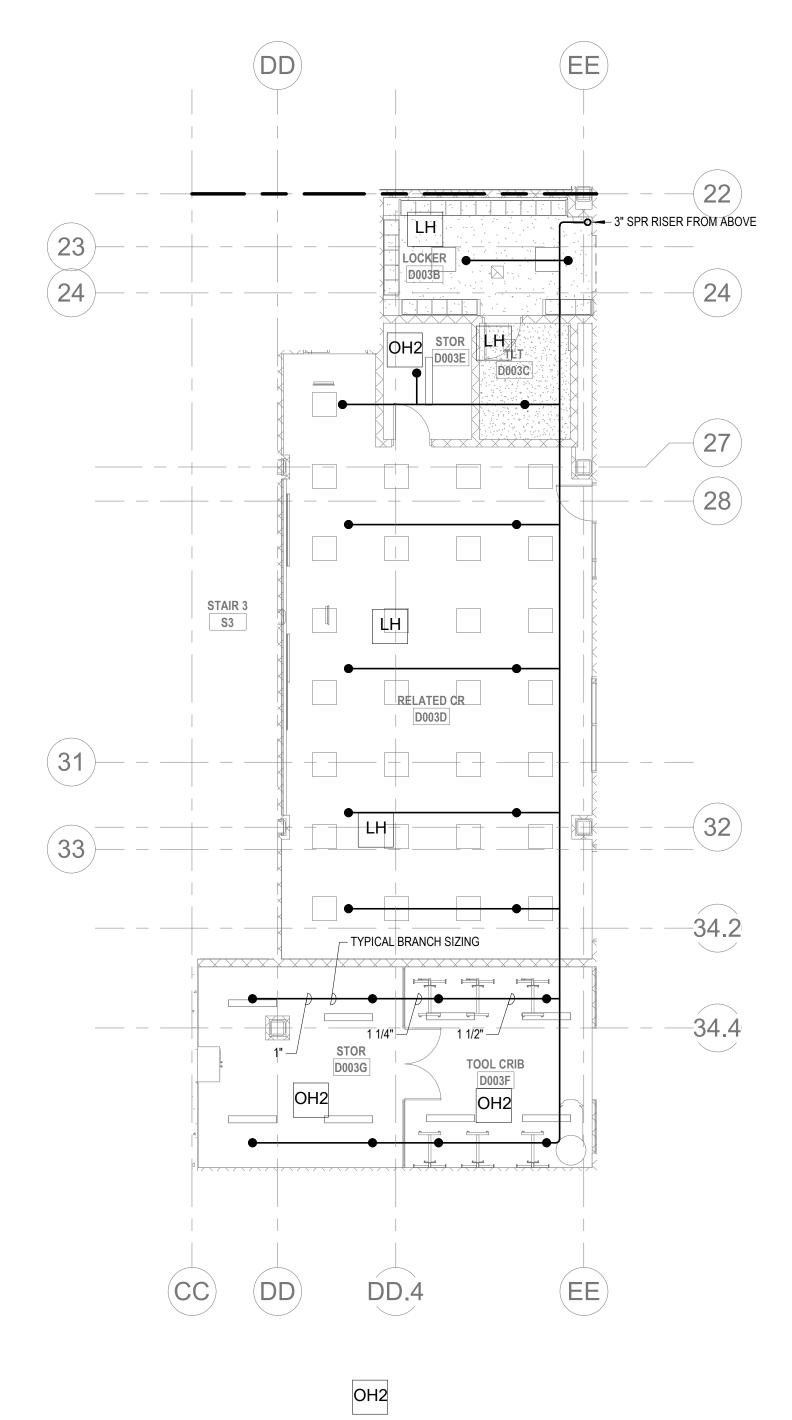
Waltham, MA



5 FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA C - Callout 1 1/8" = 1'-0"



FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA C - Callout 2 1/8" = 1'-0"



6 FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA D - Callout 1 1/8" = 1'-0"

LH LIGHT HAZARD OCCUPANCY

OH ORDINARY HAZARD OCCUPANCY

EH EXTRA HAZARD OCCUPANCY

FP GENERAL NOTES

- 1. WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILINGS ARE INDICATED. EXTEND NEW 1" ARMOVERS TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS
- REQUIRE TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
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- 3. SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR FLOOR OPENINGS.
- 4. SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERE WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13
- 5. CONCEALED SPRNKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.
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- 7. DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
- 8. SPRINKLERS SHALL BE PROVIED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
- PROVIDE CAGES ON EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF MEZZANINES.
 10. FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE
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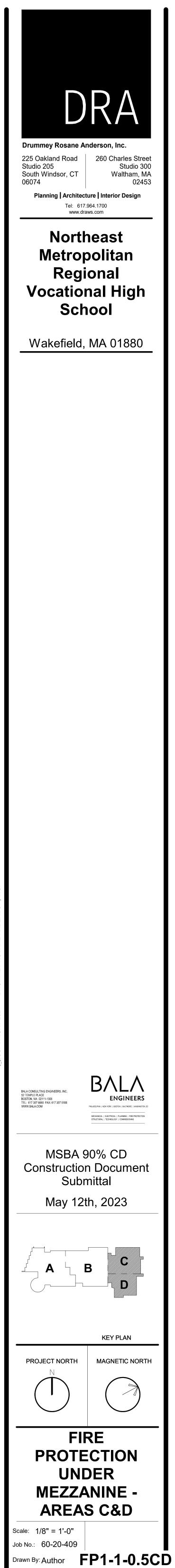
11. GENERAL NOTE AT SOUND BARRIER CEILING: - IN THE METAL FABRICATION AND AUTO COLLISION SHOP A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER-LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEP&FP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISTRUT SUPPORTS ATTACHED TO BOTTOM CORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEP&FP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEP&FP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS SPECIFICALLY INDICATED ON THE MEP&FP DRAWINGS.

12. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES: -ALL HVAC COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONRETE PLANK AS

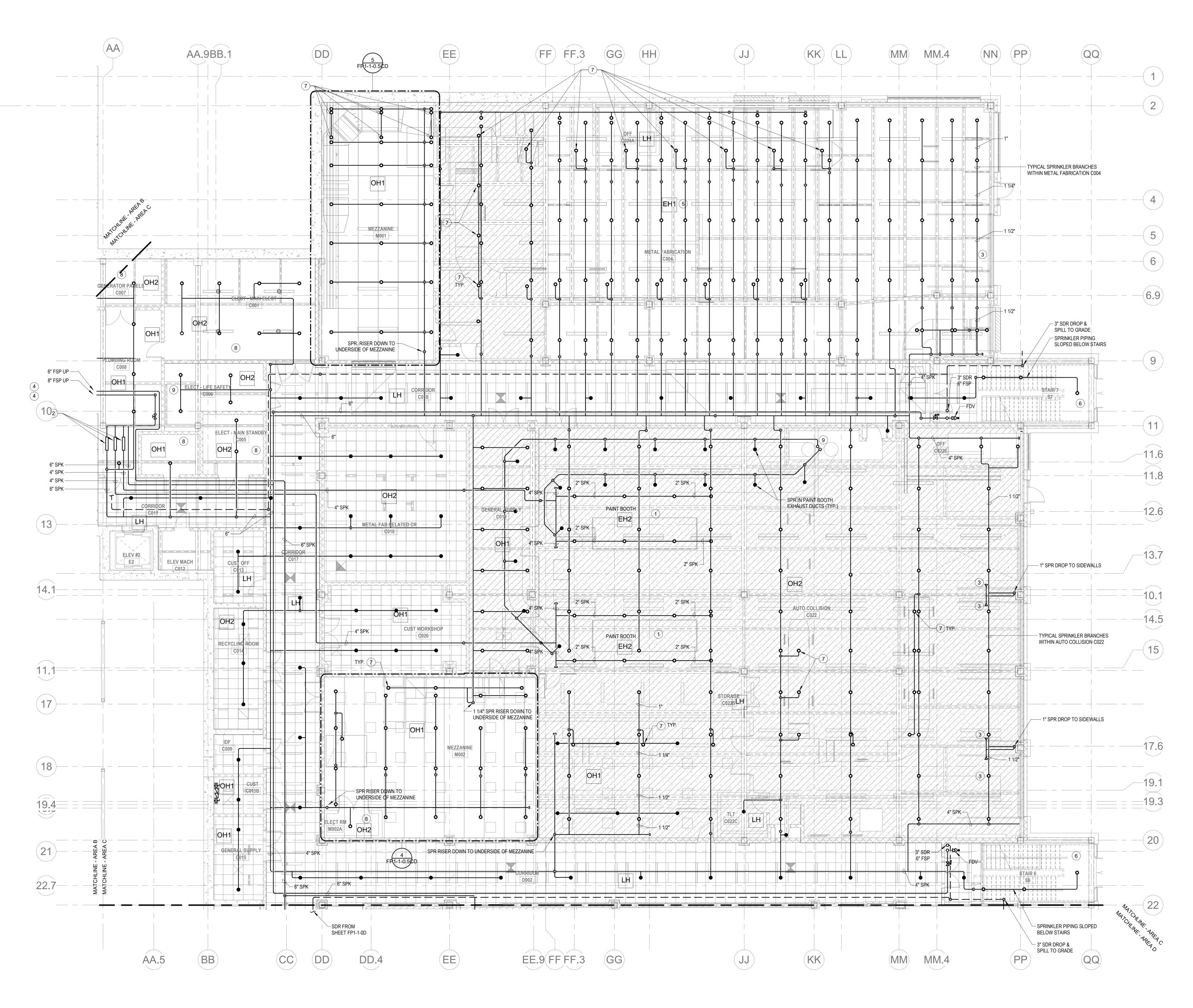
PART OF THE MEP-FP COORDINATION PROCESS. -ALL MECHANICAL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MECHANICAL COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND

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 $2 \frac{\text{FIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA C}}{1/8" = 1'-0"}$

KEYNOTES

- LH
 LIGHT HAZARD OCCUPANCY

 OH
 ORDINARY HAZARD OCCUPANCY
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INDICATED AREA.

- 1 THE INDICATED AREA SHALL BE PROTECTED BY SPRINKLERS WITH A EXTRA HAZARD GROUP 2 EQUIVA SPRINKLER DESIGN CRITERIA PER NFPA 13.
- 2 PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL)
- (3) PROVIDE DRY PENDENTS WITH GUARDS BENEATH THE GARAGE DOOR TRACK.
- (4) FOR ALL PIPING PASSING THROUGH COORDINATE Y9, PROVIDE AN EXPANSION LOOP AND ADD FLEXIBLE COUPLINGS ON EITHER SIDE.
- 5 PROVIDE HIGH TEMPERATURE RATED SPRINKLERS THROUGHOUT THE
- 6 SPRINKLER COVERAGE REQUIRED BELOW ALL ACCESSIBLE AREAS.
- (7) PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- 8 FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL CODES.
- 9 PROVIDE SPRINKLER HEAD EVERY 12' WITHIN VERTICAL PORTION OF PAINT BOOTH EXHAUST DUCT.
- GENERAL NOTES FOR PAINT SPRAY BOOTHS
- 1. SPRINKLERS PROTECTING THE PAINT SPRAY BOOTHS SHALL BE DESIGNED FOR AN EXTRA HAZARD (GROUP 2) OCCUPANCY IN ACCORDANCE WTH NFPA 13.
- THE SPRINKLER SYSTEM PROTECTING DUCTS SHALL MEET ALL OF THE FOLLOWING REQUIREMENTS:
 A. HORIZONTAL EXHAUST DUCTS SHALL HAVE SPRINKLERS LOCATED 12 FT CENTERS
- BEGINNING NO MORE THAN 6 FT FROM THE DUCT ENTRANCE.
 B. WHERE EXHAUST DUCTS ARE MANIFOLDED, A SPRINKLER SHALL BE LOCATED IN THE MANIFOLD AT THE JUNCTION OF EACH EXHAUST DUCT WITH THE MANIFOLD.
 C. SPRINKLERS SHALL PROVIDE A MINIMUM FLOW OF 30 GPM PER HEAD AT A MINIMUM OF 15 PSI PRESSURE.
- D. SPRINKLERS SHALL BE ORDINARY TEMPURATE RATE, UNLESS REQUIRED TO BE HIGHER DUE TO OPERATING TEMPERATURES MEASURED IN THE DUCTS, IN WHICH CASE THE OPERATING TEMPERATURE SHALL BE AT LEAST 50 F ABOVE THE INSIDE TEMPERATURE OF THE DUCT.
- 3. EXHAUST DUCTS SHALL BE PROVIDED WITH ACCESS OPENING FOR INSPECTION AND MAINTENANCE OF SPRINKLERS.
- 4. SPRNKLERS SHALL BE PERMITTED TO BE COVERED ONLY BY CELLOPHANE BAGS HAVING A THICKNESS OF 0.003 IN. OR LESS OR BY THIN PAPER BAGS. THESE COVERINGS SHALL BE REPLACED FREQURENTLY SO THAT HEAVY DEPOSITS DO NOT ACCUMULATE.
- 5. SPRINKLERS THAT HAVE BEEN PAINTED OR COATED BY OVERSPRAY OR RESIDUES SHALL BE REPLACED WITH NEW SPRINKLERS.

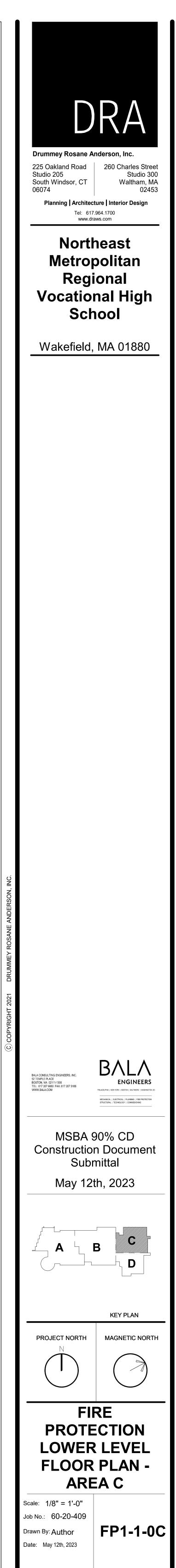
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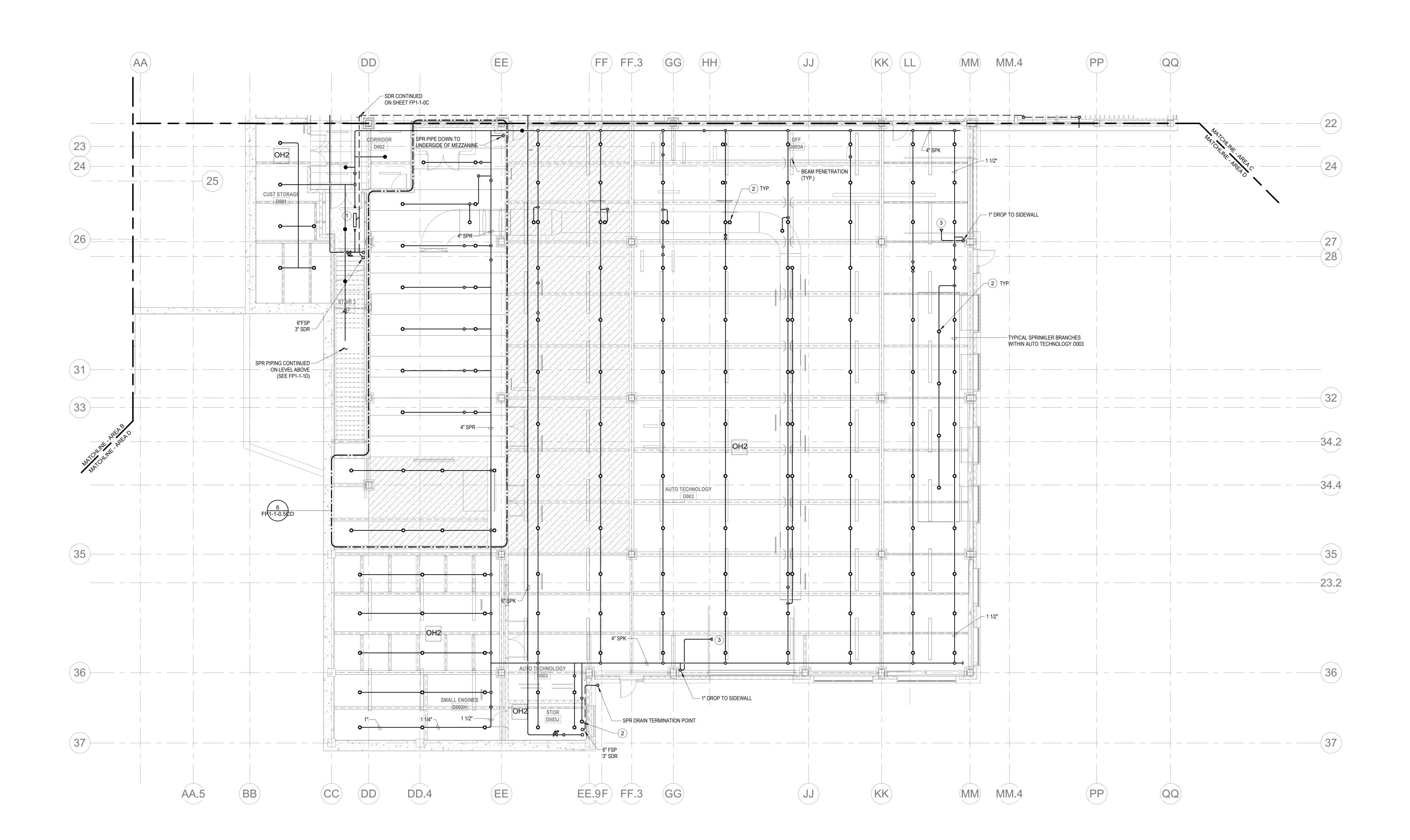
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PIRE PROTECTION LOWER LEVEL FLOOR PLAN - AREA D 1/8" = 1'-0"

KEYNOTES

 LH
 LIGHT HAZARD OCCUPANCY

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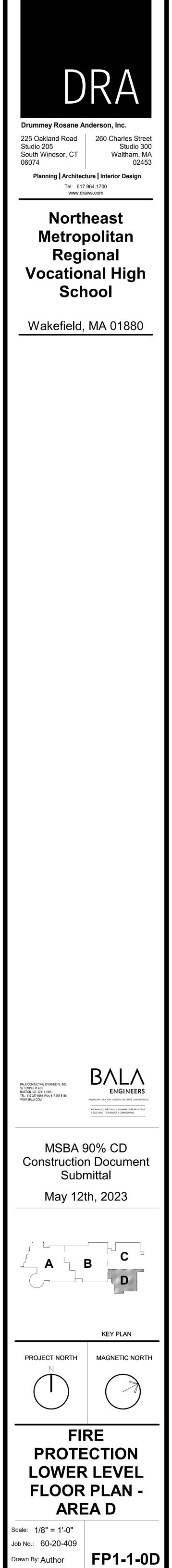
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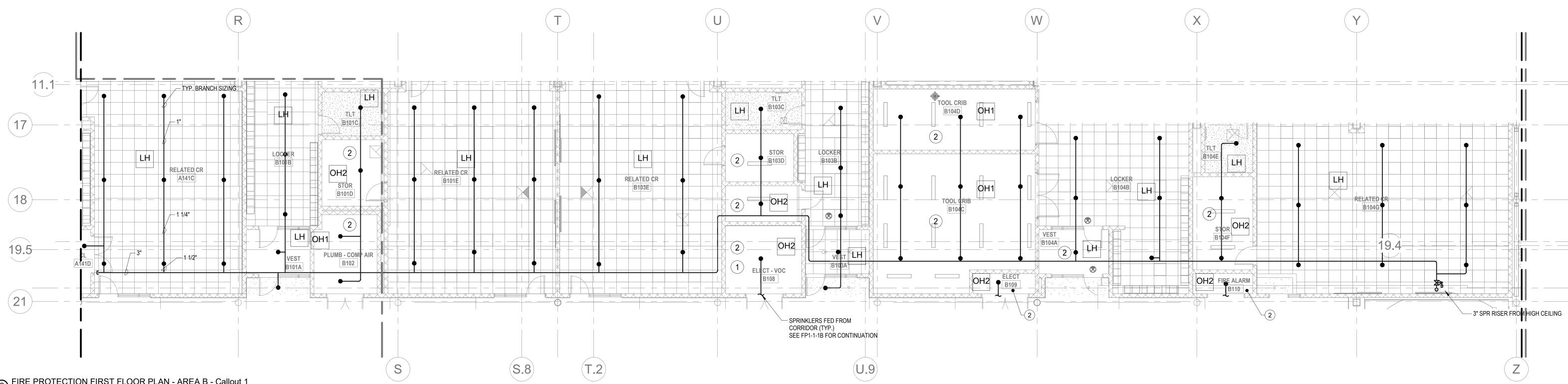
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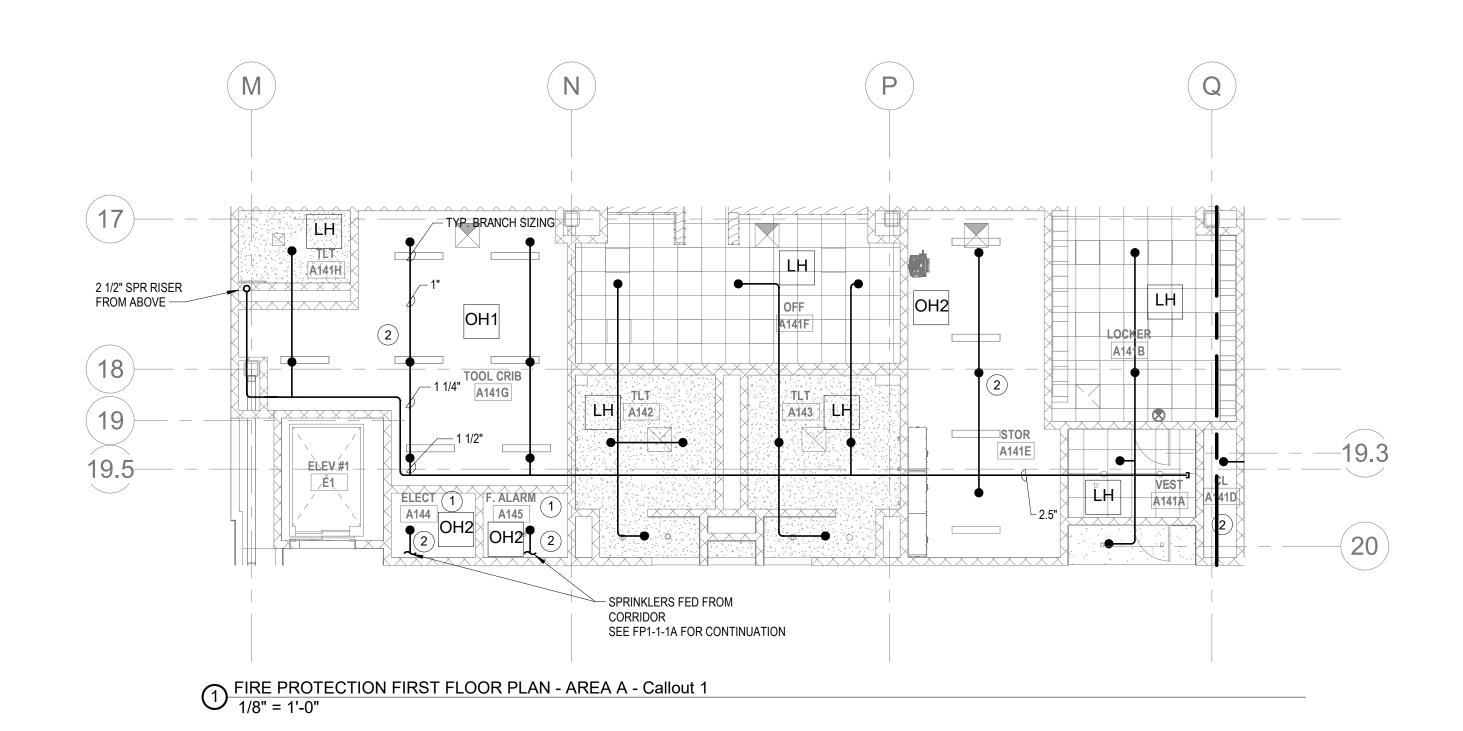
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PIRE PROTECTION FIRST FLOOR PLAN - AREA B - Callout 1 1/8" = 1'-0"



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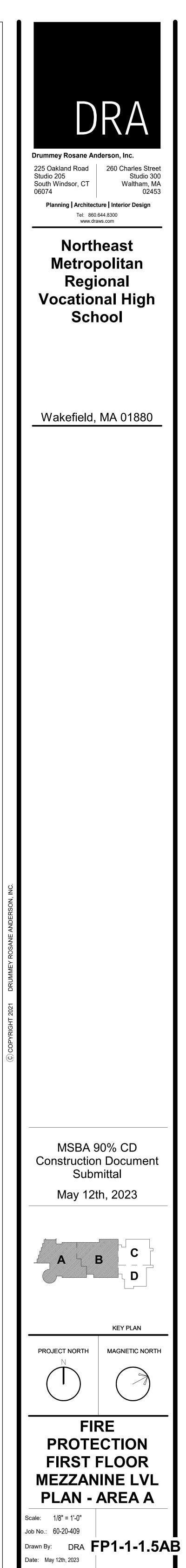
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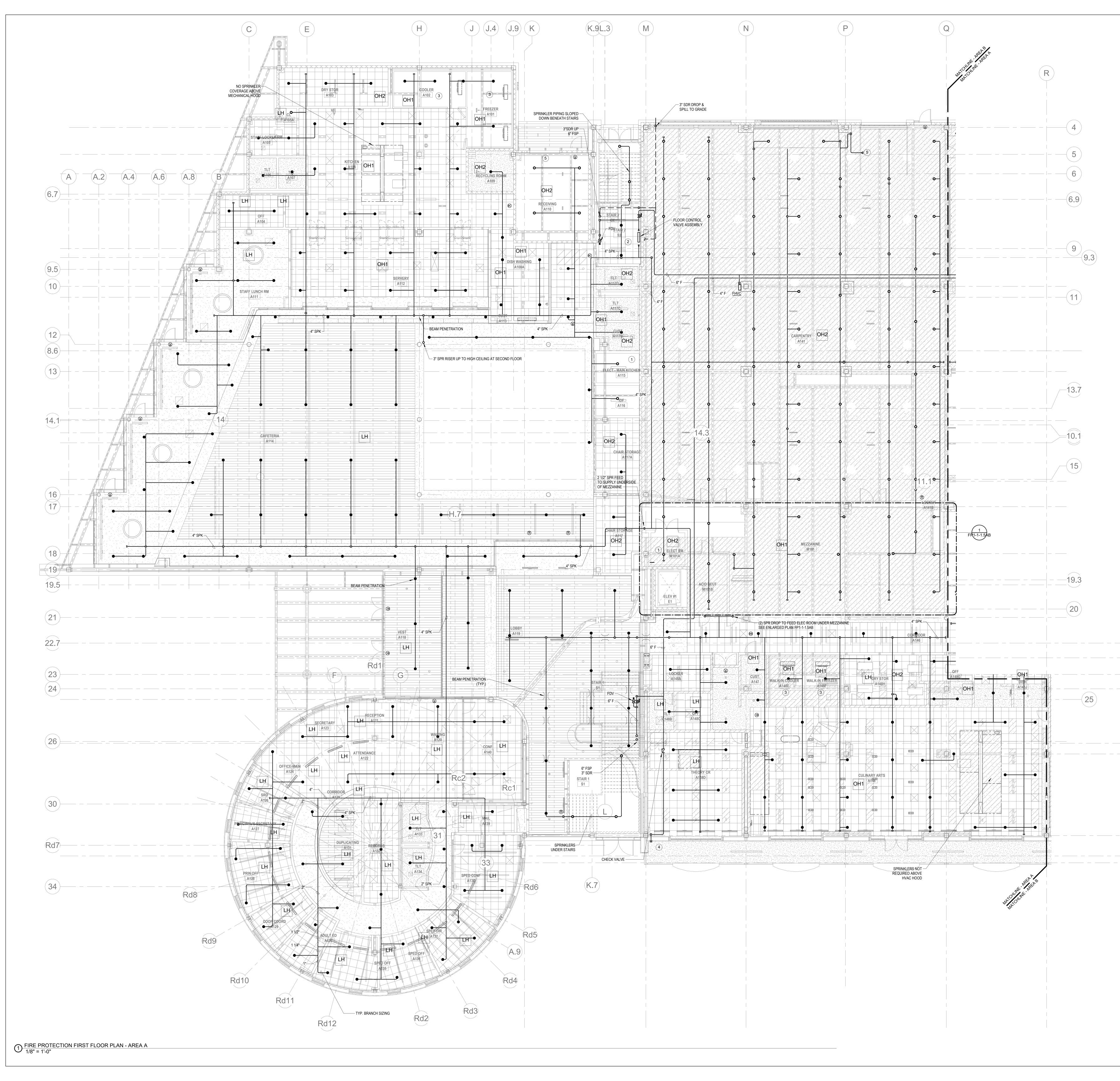
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2 SPRINKLERS LOCATED IN THIS AREA SHALL BE EXPOSED PENDENT SPRINKLERS





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- 3 PROVIDE DRY PENENTS TO SERVE THE ROOM. NO SPINKLER COVERAGE REQUIRED ABOVE WALK IN COOLER/FREEZER.
- (4) FIRE DEPARTMENT CONNECTION SHALL BE LOCATED WITHIN 100 FEET OF A FIRE HYDRANT. PROVIDE ELECTRIC ALARM BELL TO BE MOUNTED TO THE FDC.
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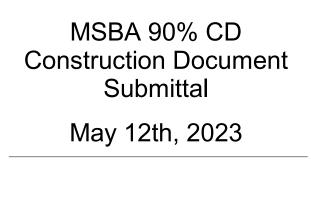
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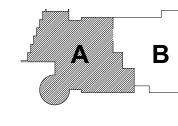
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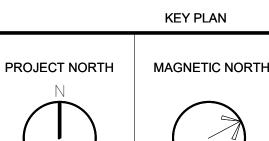
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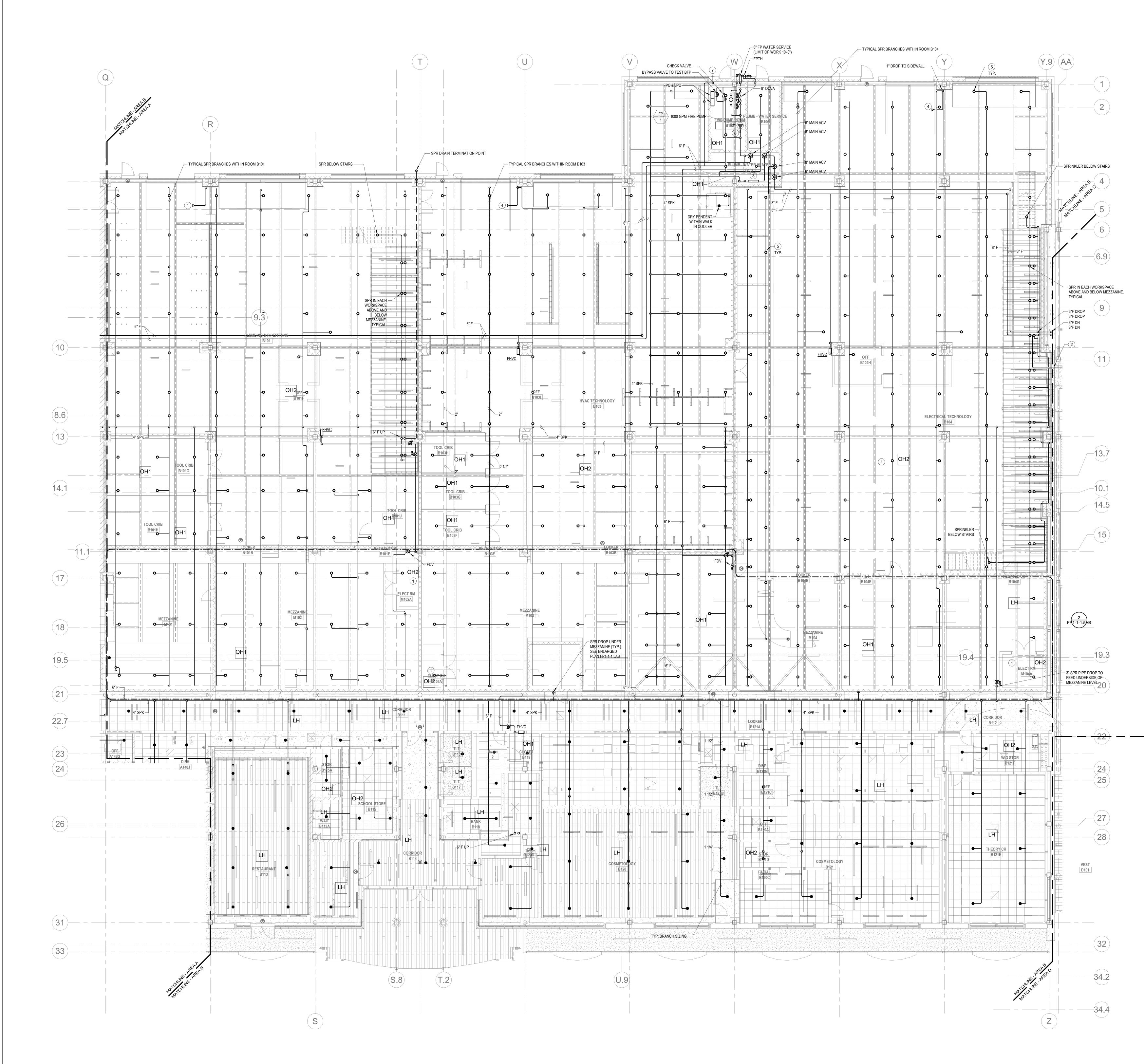








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- LH
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 ORDINARY HAZARD OCCUPANCY

 EH
 EXTRA HAZARD OCCUPANCY
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- (2) FOR ALL PIPING PASSING THROUGH COORDINATE Y9, PROVIDE AN EXPANSION LOOP AND ADD FLEXIBLE COUPLINGS ON EITHER SIDE.
- 3 PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL)
- (4) PROVIDE DRY PENDENTS WITH GUARDS BENEATH THE GARAGE DOOR TRACK.
- 5 PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- (6) FIRE PUMP FP-1 SHALL BE PEERLESS PUMP MODEL 6AE14A, DOUBLE SUCTION, CENTRIFUGAL PUMP. PUMP SHALL DELIVER 1000 GPM WITH DIFFERENTIAL PRESSURE OF 60 PSI. 460V, 3 PHASE, 50 HP, 1800 RPM MOTOR.
- 7 FIRE DEPARTMENT CONNECTION SHALL BE LOCATED WITHIN 100 FEET OF A FIRE HYDRANT. PROVIDE ELECTRIC ALARM BELL TO BE MOUNTED TO THE FDC.

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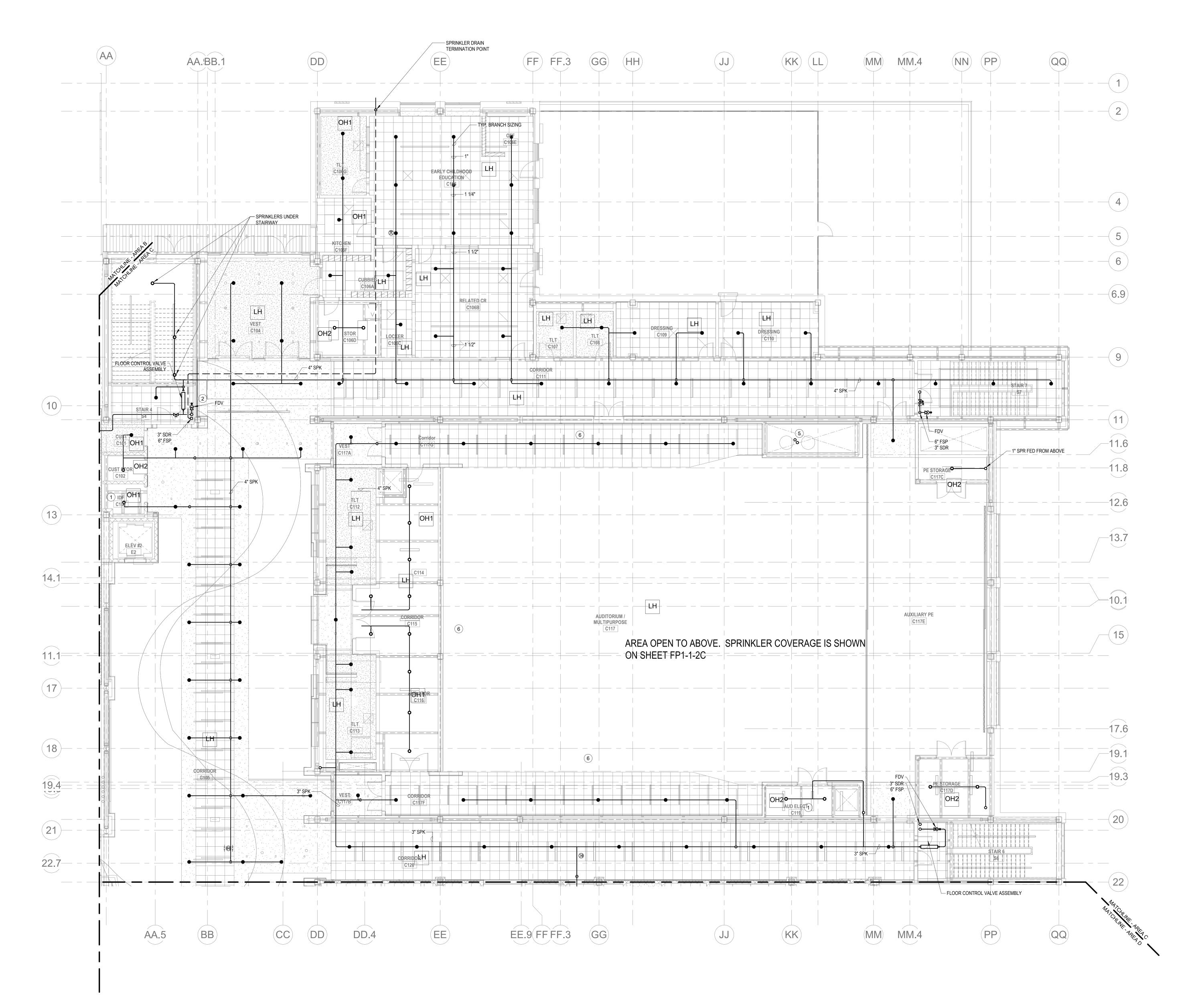
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Drummey Rosane Anderson, Inc. 225 Oakland Road 260 Charles Street Studio 205 Studio 300 South Windsor, CT Waltham, MA 06074 02453 Planning | Architecture | Interior Design Tel: 617.964.1700 www.draws.com Northeast Metropolitan Regional Vocational High School Wakefield, MA 01880 BALA ALA CONSULTING ENGINEERS, INC. ENGINEERS BOSTON, MA 02111-1306 TEL: 617 357 6060 FAX: 617 357 5188 WWW.BALA.COM PHILADELPHIA | NEW YORK | BOSTON | BALTIMORE | WASHINGTON, DC MECHANICAL | ELECTRICAL | PLUMBING | FIRE PROTECTION STRUCTURAL | TECHNOLOGY | COMMISSIONING MSBA 90% CD **Construction Document** Submittal May 12th, 2023 KEY PLAN MAGNETIC NORTH PROJECT NORTH FIRE PROTECTION **FIRST FLOOR** PLAN - AREA B Scale: 1/8" = 1'-0" Job No.: 60-20-409 FP1-1-1B Drawn By: Author



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KEYNOTES

- OH ORDINARY HAZARD OCCUPANCY
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- (3) PROVIDE A FIRE HOSE VALVE CABINET ON EACH SIDE OF THE STAGE IN ACCORDANCE WITH 780 CMR 905.3.4.
- (4) PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE.
- 5 PROVIDE SPRINKLER HEAD EVERY 12' WITHIN VERTICAL PORTION OF SPRAY PAINT ECHAUST DUCT.
- 6 PROVIDE ALLOWANCE FOR A 2 1/2" SPR MAIN DROP TO FEED (20) SIDEWALL HEADS AT UNDERSIDE OF RETRACTABLE BLEACHERS. FINAL LOCATION OF BLEACHERS SHALL BE COORDINATED.

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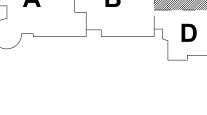
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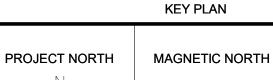
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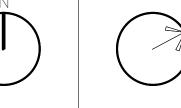
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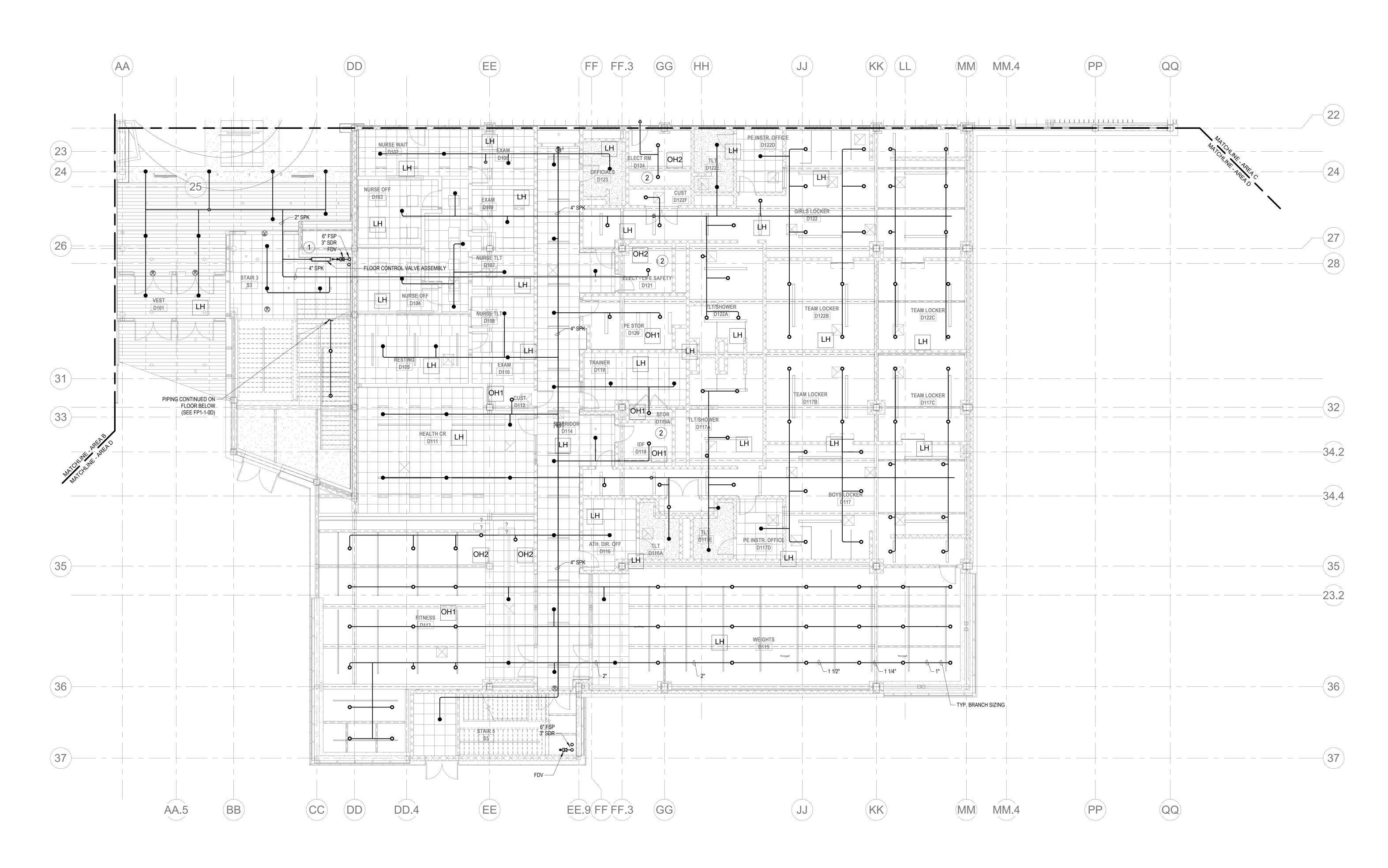




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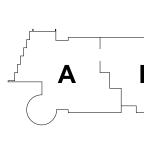
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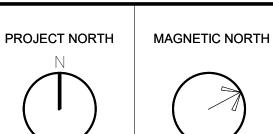
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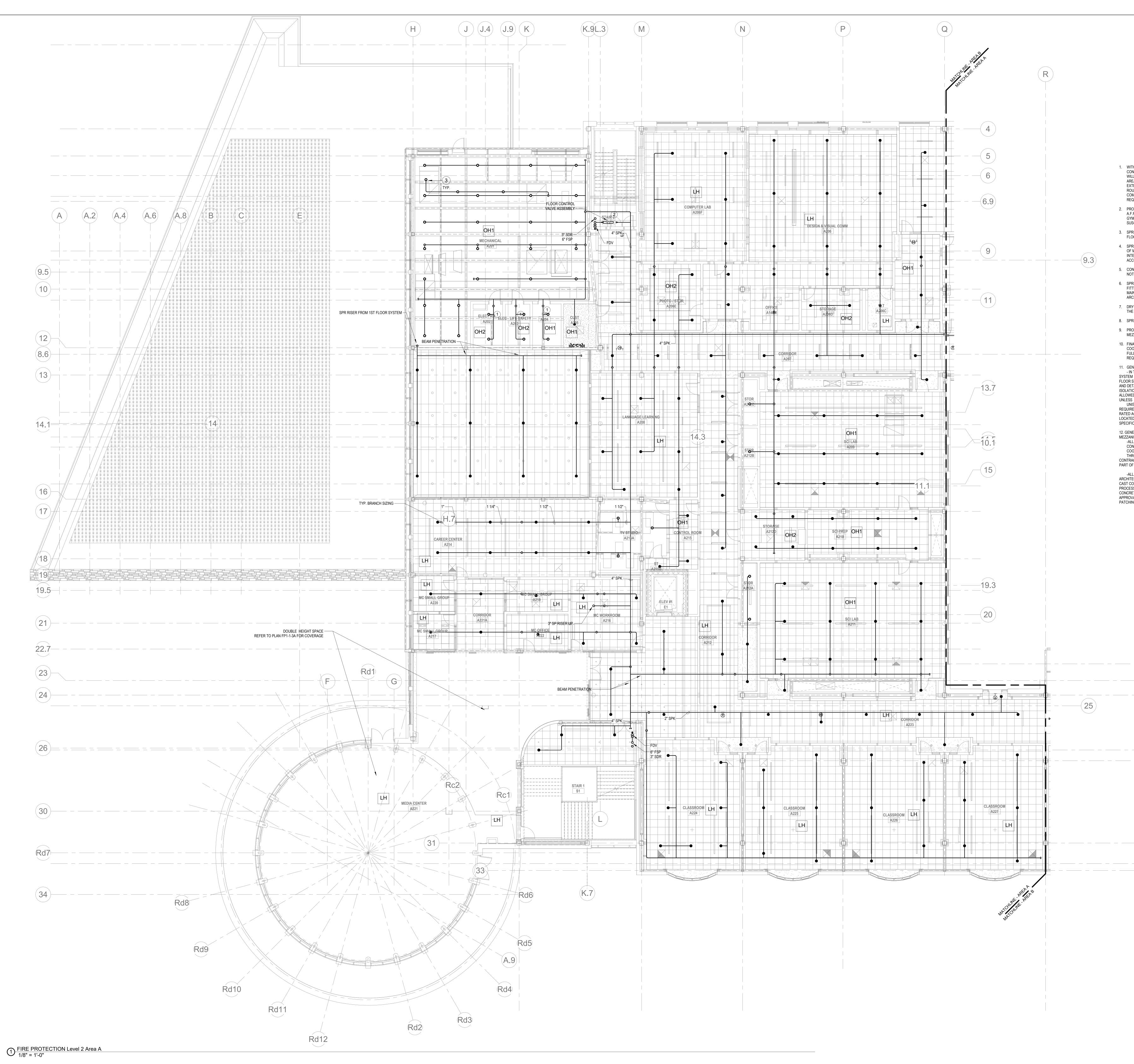
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KEY PLAN





Job No.: 60-20-409 Drawn By: Author Date: May 12th, 2023



KEYNOTES LH LIGHT HAZARD OCCUPANCY OH ORDINARY HAZARD OCCUPANCY EH EXTRA HAZARD OCCUPANCY (1) FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL Drummey Rosane Anderson, Inc. CODES. (2) PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE 225 Oakland Road 260 Charles Street ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW Studio 205 Studio 300 SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S South Windsor, CT Waltham, MA TEST CONNECTION. (AS REQUIRED PER DETAIL) 06074 02453 (3) PROVIDE SPRINKLER UNDERSIDE OF DUCTWORK. FIELD COORDINATE. Planning | Architecture | Interior Design Tel: 617.964.1700 www.draws.com FP GENERAL NOTES Northeast 1. WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY Metropolitan Regional Vocational High WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILINGS ARE INDICATED. EXTEND NEW 1" ARMOVERS TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRE TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET. 2. PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" School A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE. 3. SPRINKLERS SHALL BE PROVIDED WITH MAXIMUM SPACING OF 6 FEET NEAR STAIR Wakefield, MA 01880 FLOOR OPENINGS. 4. SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERE WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13 5. CONCEALED SPRNKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS. 6. SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT. 7. DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F. 8. SPRINKLERS SHALL BE PROVIED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH. 9. PROVIDE CAGES ON EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF MEZZANINES. 10. FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT. 11. GENERAL NOTE AT SOUND BARRIER CEILING: - IN THE METAL FABRICATION AND AUTO COLLISION SHOP A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER-LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEP&FP SYSTEMS COMPONENTS ARE NOT ALLOWED TO BE ATTACHED/SUSPENDED, OR INSTALLED ABOVE THIS CEILING SYSTEM UNLESS SPECIFICALLY NOTED OTHERWISE. EACH SUB-CONTRACTOR SHALL PROVIDE UNISTRUT SUPPORTS ATTACHED TO BOTTOM CORD OF STRUCTURAL STEEL BEAMS AS REQUIRED TO SUPPORT MEP&FP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEP&FP SYSTEMS COMPONENTS LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS SPECIFICALLY INDICATED ON THE MEP&FP DRAWINGS. 12. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP MEZZANINES: -ALL HVAC COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONRETE PLANK AS PART OF THE MEP-FP COORDINATION PROCESS.

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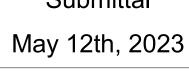


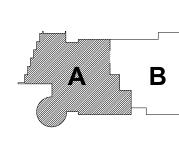
BALA CONSULTING ENGINEERS, INC. 52 TEMPLE PLACE BOSTON, MA 02111-1306 TEL: 617 357 6060 FAX: 617 357 5188 WWW.BALA.COM

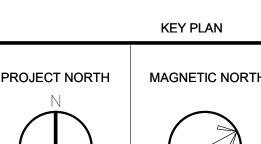
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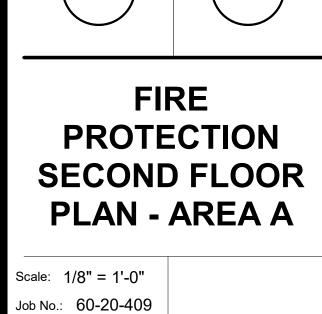
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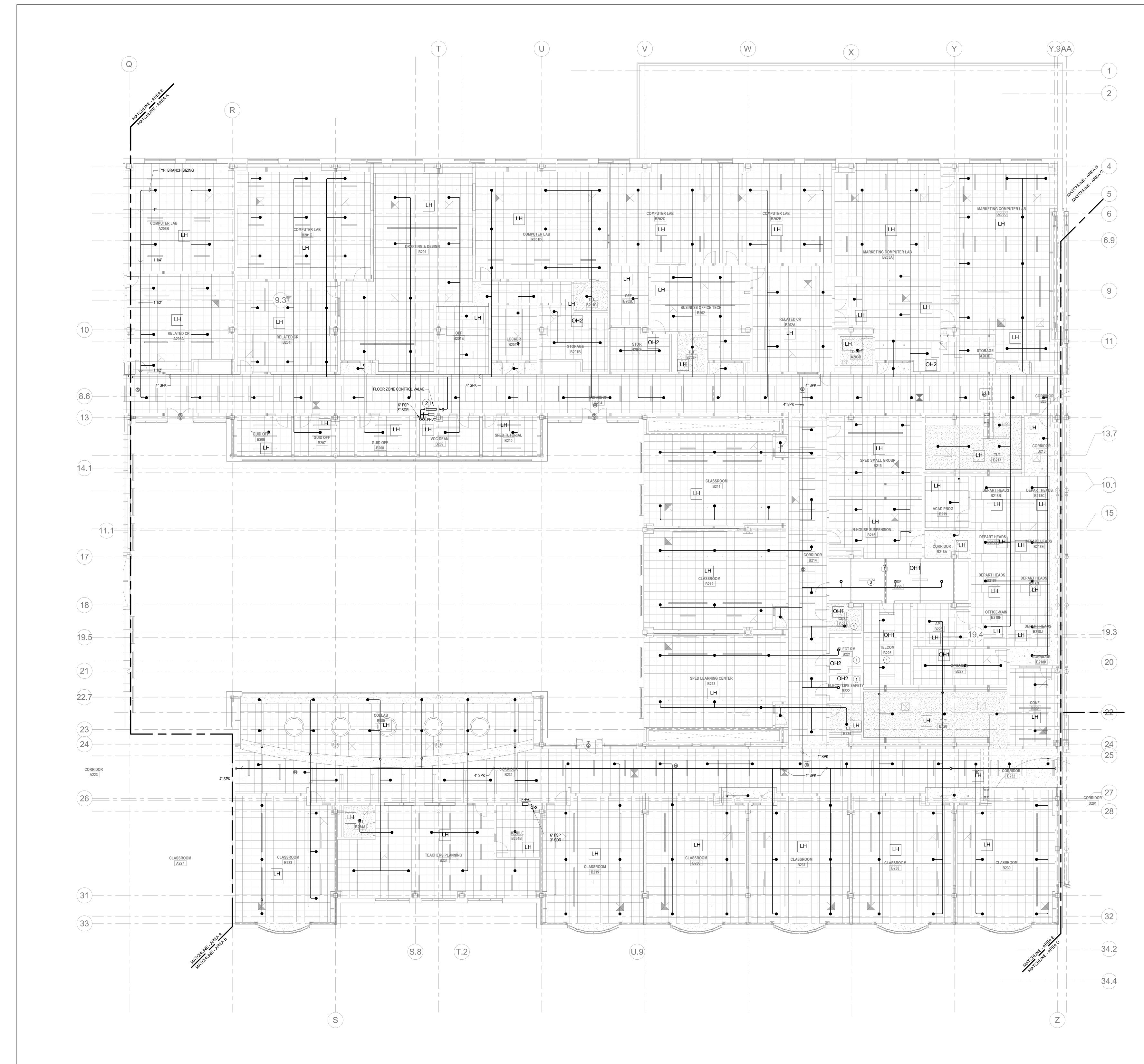




Drawn By: Author

Date: May 12th, 2023

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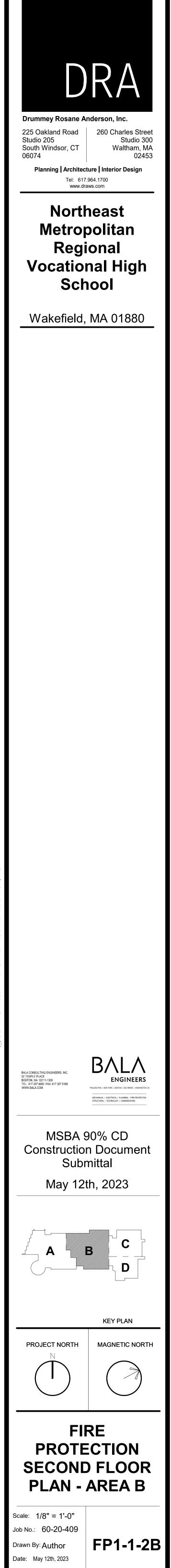
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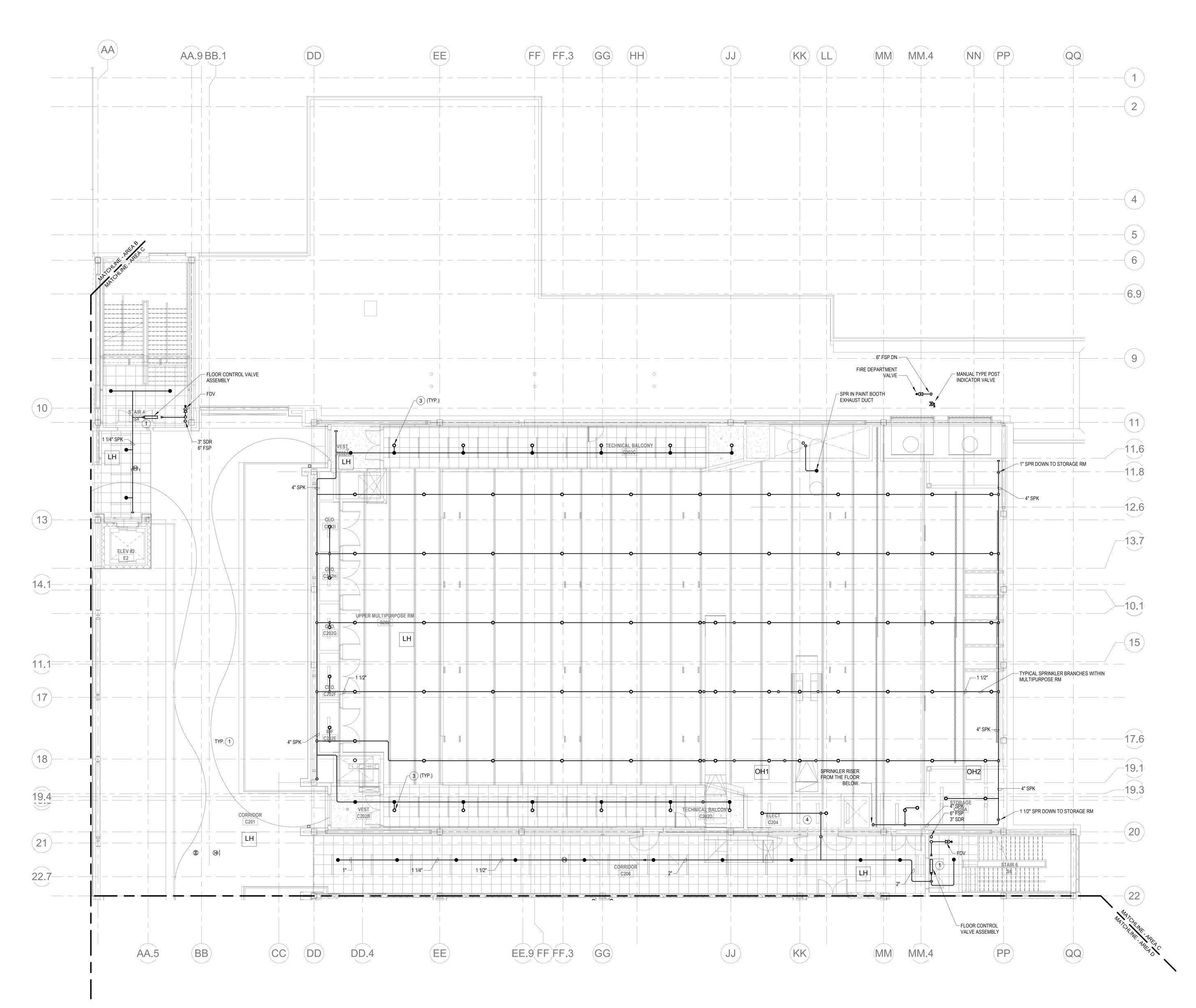
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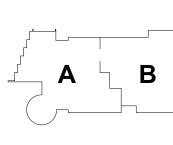


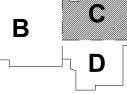
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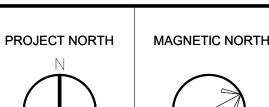
MSBA 90% CD Construction Document Submittal May 12th, 2023





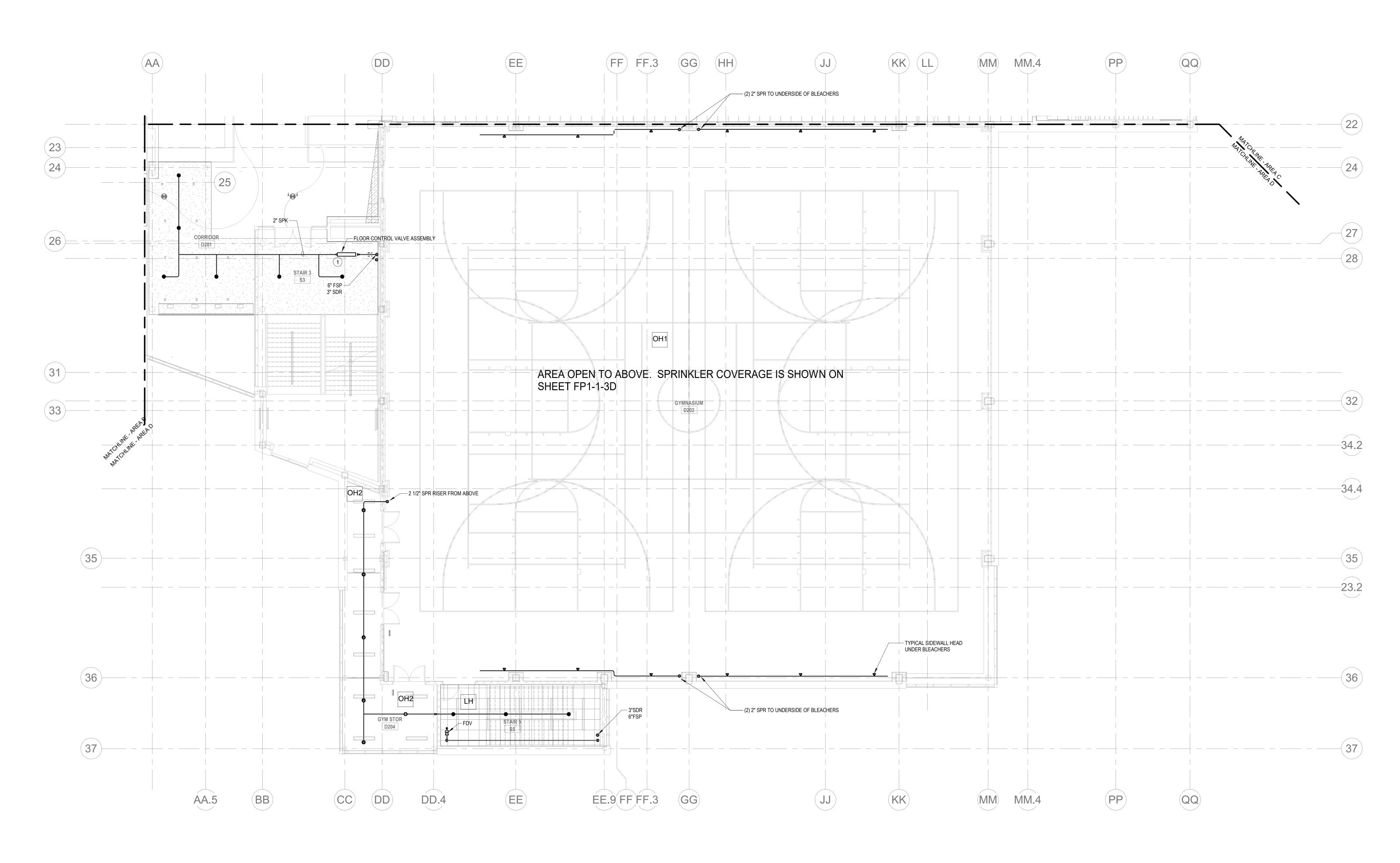
KEY PLAN

FP1-1-2C





Drawn By: Author Date: May 12th, 2023



 $1 \frac{\text{FIRE PROTECTION SECOND FLOOR PLAN - AREA D}}{1/8" = 1'-0"}$

- LH LIGHT HAZARD OCCUPANCY
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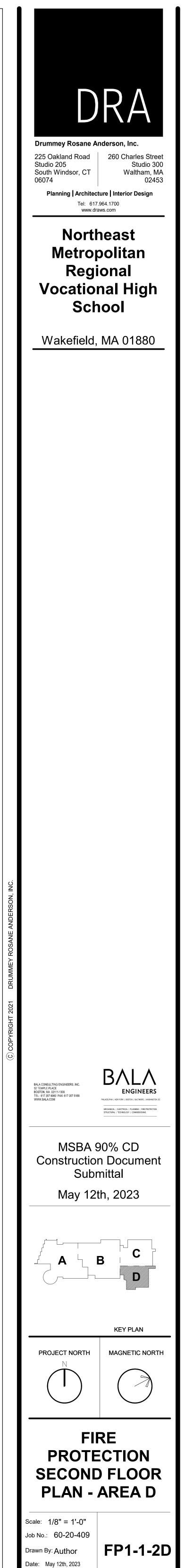
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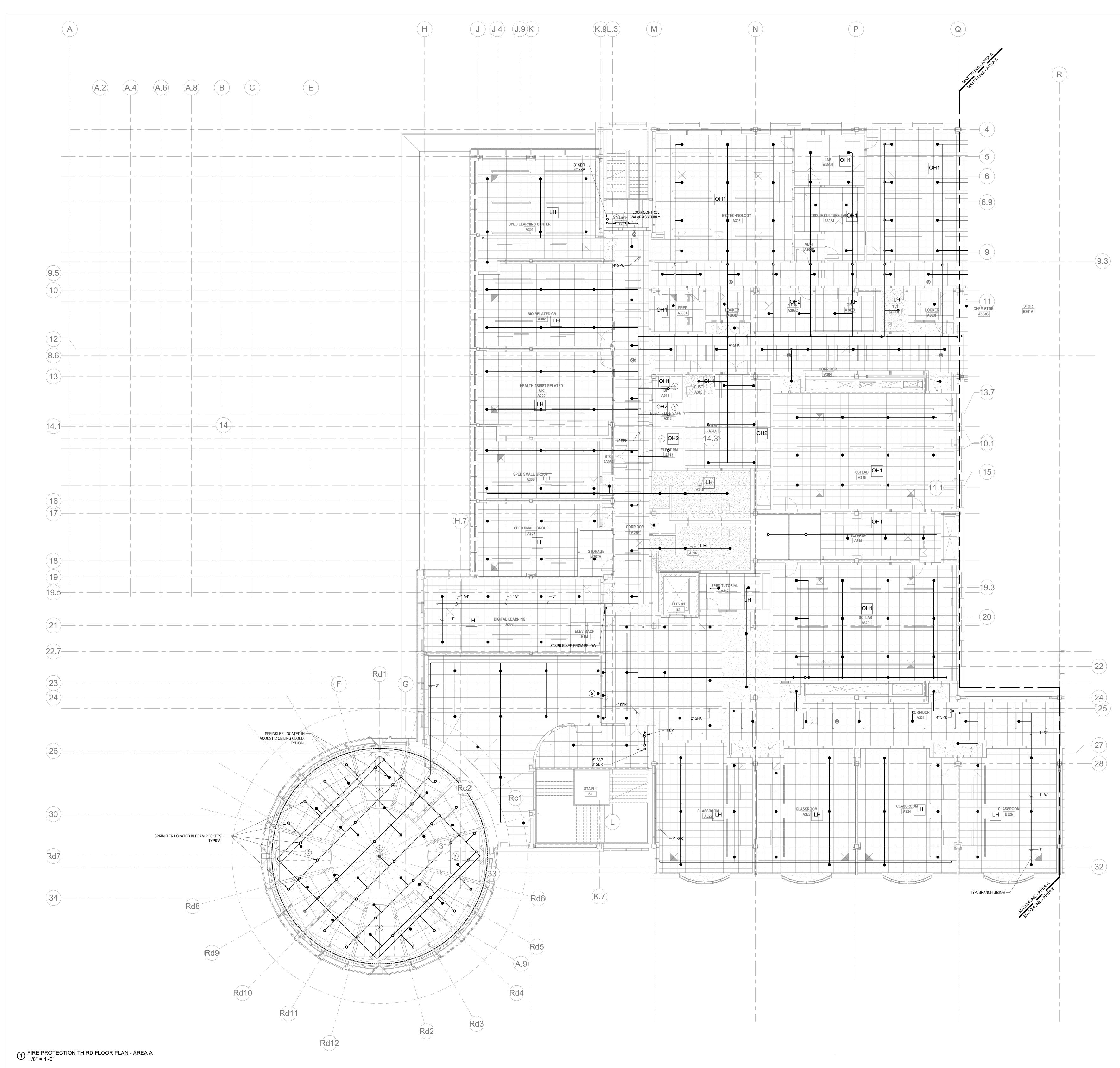
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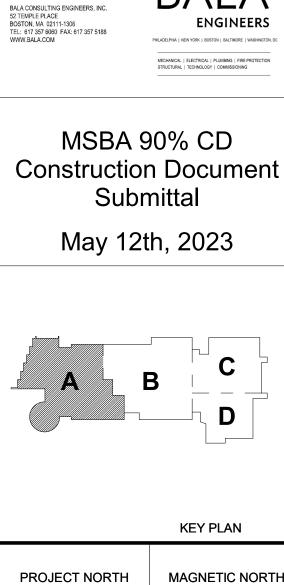
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 PROVIDE WINDOW SPRINKLERS WITHIN 2 IN. OF THE GLASS PARTITIONS
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FP GENERAL NOTES

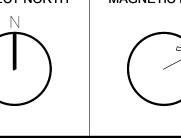
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- PROVIDE PROTECTIVE SPRINKLER GUARDS ON SPRINKLER HEADS LOCATED BELOW 7'-0" A.F.F. IN MECHANICAL ROOMS, STORAGE ROOMS, PUMP ROOMS, SERVICE AREAS, GYMNASIUMS REGARDLESS OF SPRINKLER HEAD ELEVATION AND WHERE OTHERWISE SUSCEPTIBLE TO DAMAGE.
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- DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
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- 9. PROVIDE CAGES ON EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF MEZZANINES.
- 10. FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.
- 11. GENERAL NOTE AT SOUND BARRIER CEILING: - IN THE METAL FABRICATION AND AUTO COLLISION SHOP A SOUND BARRIER CEILING SYSTEM IS INSTALLED BETWEEN STEEL BEAMS ON THE UNDERSIDE OF THE UPPER-LEVEL FLOOR STRUCTURE. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS, SECTIONS AND DETAILS DRAWINGS FOR ADDITIONAL INFORMATION. THIS IS A SPECIALTY SOUND ISOLATION SUSPENDED CEILING SYSTEM. MEP&FP SYSTEMS COMPONENTS ARE NOT
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Drummey Rosane Anderson, Inc. 225 Oakland Road 260 Charles Street Studio 205 Studio 300 South Windsor, CT Waltham, MA 06074 02453 Planning Architecture Interior Design Tel: 617.964.1700 www.draws.com Northeast Metropolitan Regional Vocational High School Wakefield, MA 01880

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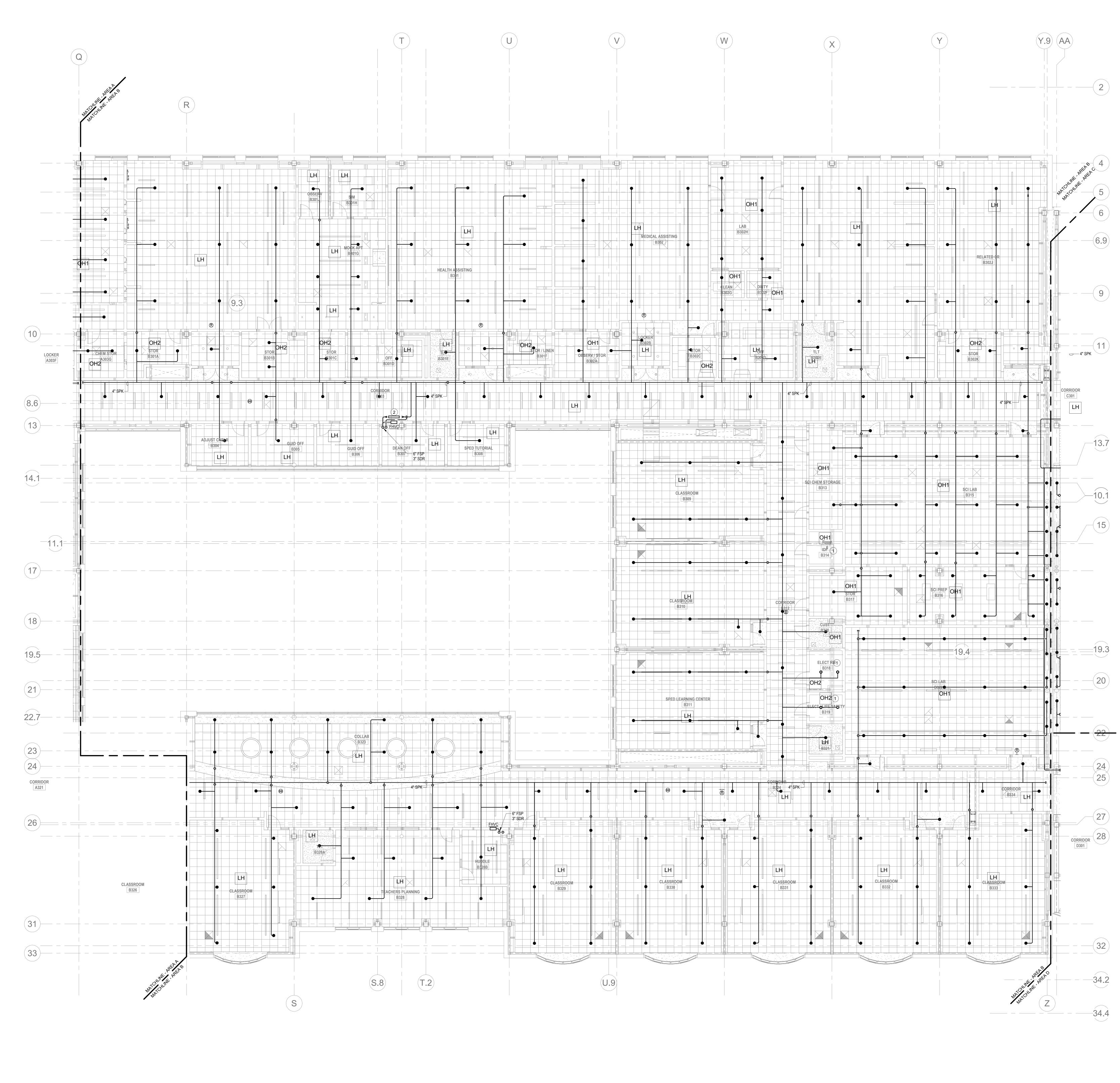


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Job No.: 60-20-409 Drawn By: Author Date: May 12th, 2023



KEYNOTES

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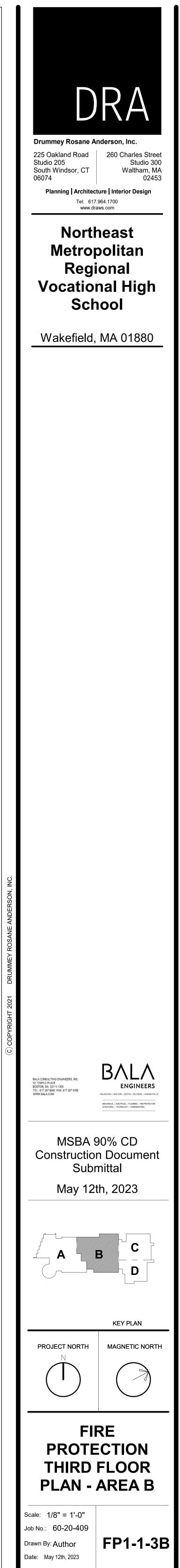
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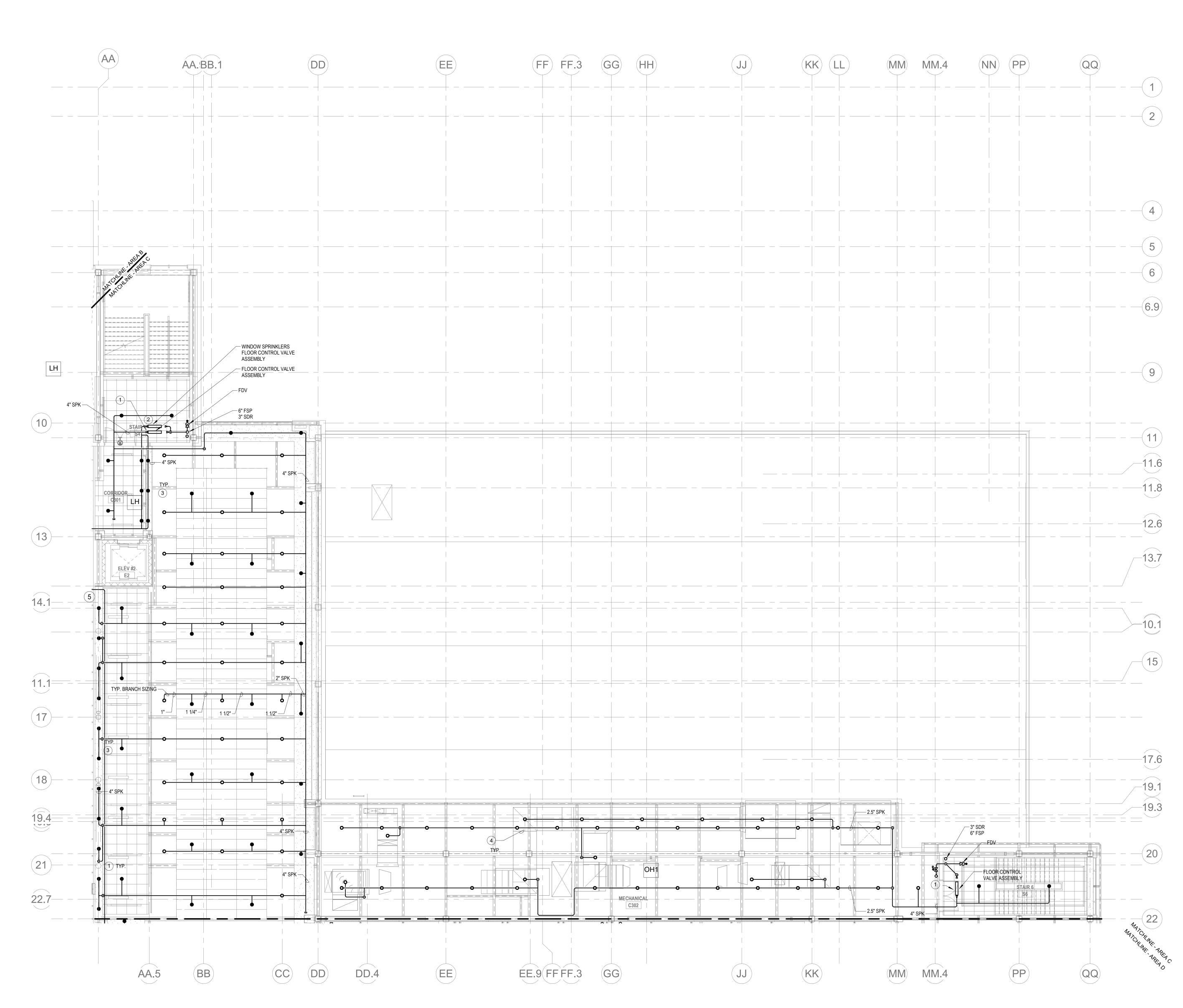
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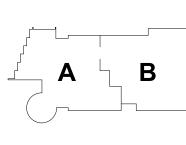
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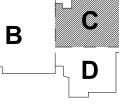
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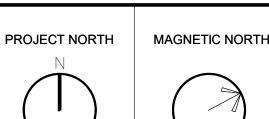
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MSBA 90% CD **Construction Document** Submittal May 12th, 2023



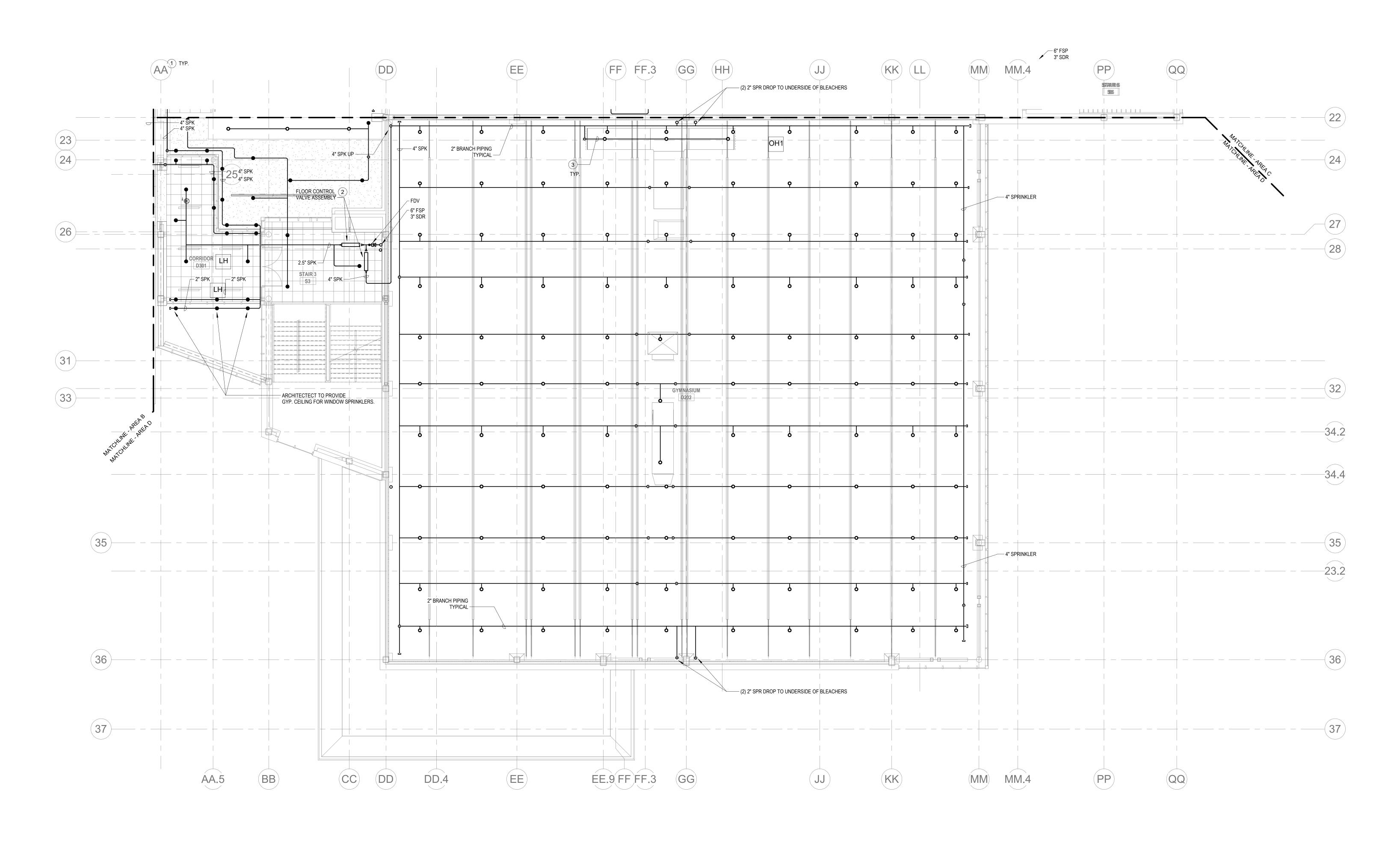


KEY PLAN





Job No.: 60-20-409 FP1-1-3C Drawn By: Author Date: May 12th, 2023



______4" SPK

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Metropolitan Regional Vocational High School

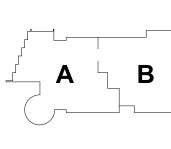
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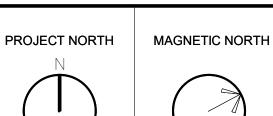
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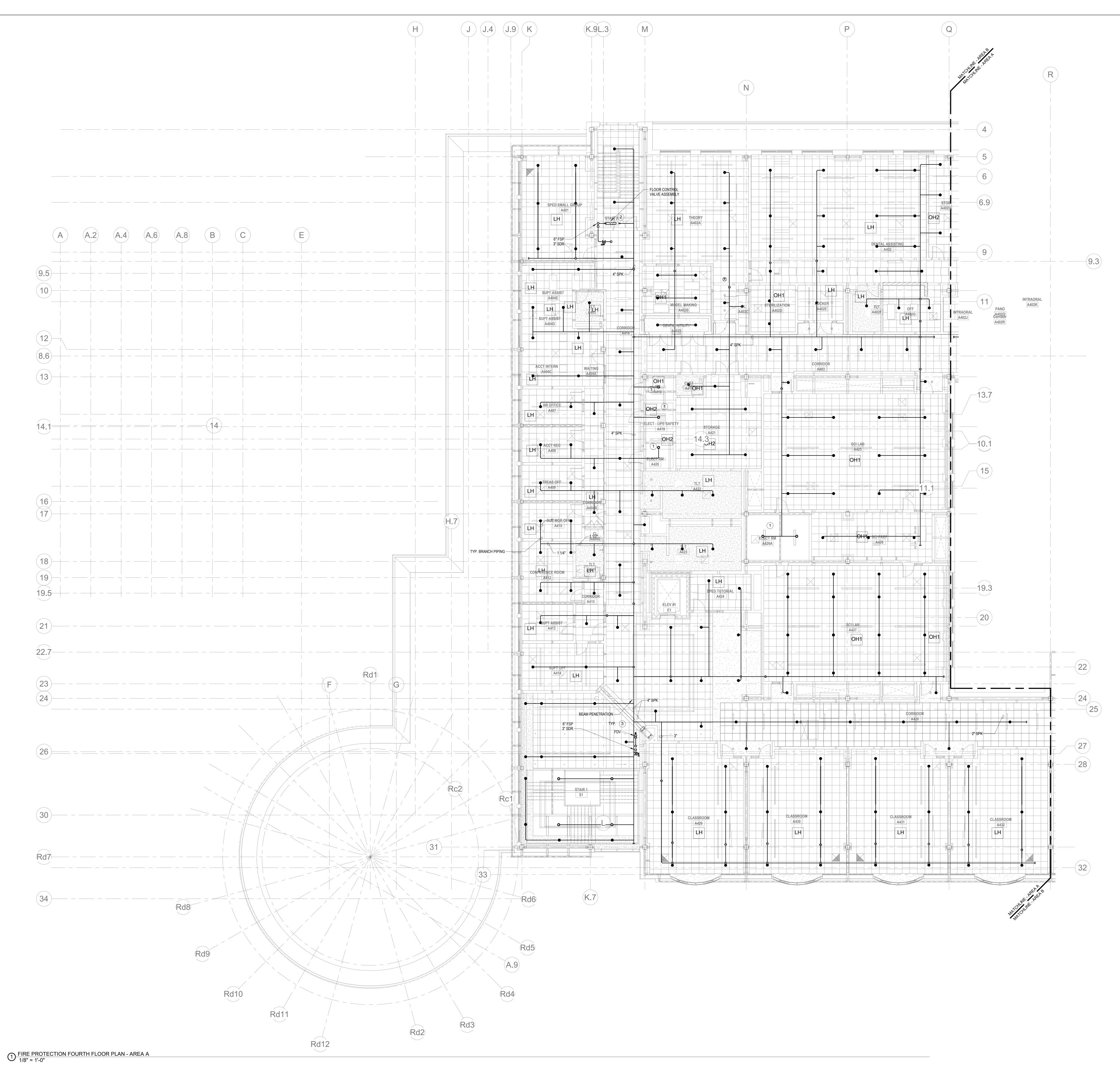
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Scale: 1/8" = 1'-0" Job No.: 60-20-409 FP1-1-3D Drawn By: Author Date: May 12th, 2023



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- 4. SPRINKLERS SHALL BE PROVIDED BENEATH MECHANICAL DUCTWORK AND/OR GROUPS OF MECHANICAL DUCTWORK GREATER THAN 4 FT IN WIDTH. WHERE DUCTWORK INTERFERE WITH SPRINKLERS, ADDITIONAL COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13
- CONCEALED SPRNKLER HEAD FINISHES TO MATCH CEILING COLOR. UNLESS OTHERWISE NOTED REFER TO ARCHITECTURAL DRAWINGS.
 SPRINKLERS SHALL BE PROVIDED BENEATH ACCESSIBLE LANDINGS. PIPING AND
- FITTINGS SHALL BE PROVIDED TO SPRINKLERS BENEATH ACCESSIBLE LANDINGS AND AT MAIN LANDING. LOCATION OF ALL EXPOSED PIPING SHALL BE FIELD COORDINATED WITH ARCHITECT.
- 7. DRY PENDENTS AND/OR DRY SIDEWALLS SHALL BE PROVIDED IN ROOMS/AREAS WHERE THE OPERATING TEMPERATURE IS LESS THAN 40F.
- SPRINKLERS SHALL BE PROVIED BENEATH FIXTURES GREATER THAN 4 FT IN WIDTH.
 PROVIDE CAGES ON EXPOSED PENDENT SPRINKLER HEADS AT THE UNDERSIDE OF MEZZANINES.
- FINAL LOCATION OF UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS ARE TO BE COORDINATED WITH STRUCTURE AND EQUIPMENT OF ALL OTHER TRADES TO ENSURE FULL COMPLIANCE WITH NFPA 13. PROVIDE ADDITIONAL SPRINKLER COVERAGE AS REQUIRED TO SUIT.

GENERAL NOTE AT SOUND BARRIER CEILING:

 IN THE METAL FABRICATION AND AUTO COLLISION SHOP A SOUND BARRIER CEILING
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 UNISTRUT SUPPORTS ATTACHED TO BOTTOM CORD OF STRUCTURAL STEEL BEAMS AS
 REQUIRED TO SUPPORT MEP&FP SYSTEMS COMPONENTS. SPECIALTY ACOUSTICALLY
 RATED ACCESS PANELS MAY BE ALLOWED TO ACCESS MEP&FP SYSTEMS COMPONENTS
 LOCATED ABOVE THE SOUND BARRIER SYSTEM ON THE LIMITED BASES AT LOCATIONS
 SPECIFICALLY INDICATED ON THE MEP&FP DRAWINGS.

 12. GENERAL NOTES AT PRE-CAST CONCRETE PLANKS LOCATED AT VOCATIONAL SHOP

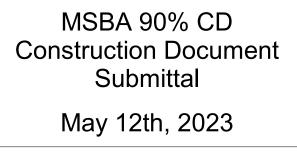
MEZZANINES: -ALL HVAC COMPONENTS THAT REQUIRE PENETRATIONS THROUGH PRE-CAST CONCRETE PLANK AT MECHANICAL MEZZANINE FLOOR STRUCTURE SHALL BE COORDINATED WITH THE PRE-CAST PLANK CORE LOCATIONS. PENETRATIONS THROUGH THE PRE-CAST PLANK ARE ONLY ALLOWED THROUGH THE CORES. GENERAL CONTRACTOR MUST COORDINATE ALL OPENINGS IN THE PRE-CAST CONRETE PLANK AS PART OF THE MEP-FP COORDINATION PROCESS.

-ALL MECHANICAL SYSTEMS AND COMPONENTS THAT REQUIRE ATTACHMENT TO THE ARCHITECTURAL PRE-CAST CONCRETE PANELS SHALL BE COORDINATED WITH THE PRE-CAST CONCRETE SUB-CONTRACTOR DURING COORDINATION AND SHOP DRAWING PROCESS. NO ATTACHMENT OF THE MECHANICAL COMPONENTS TO THE PRE-CAST CONCRETE PANELS SHALL BE ALLOWED IN THE FIELD WITHOUT PRIOR REVIEW AND APPROVAL BY THE PRE-CAST CONCRETE SUB-CONTRACTOR. NO CUTTING AND/OR PATCHING OF THE PRE-CAST CONCRETE PANELS IS ALLOWED IN THE FIELD.

Drummey Rosane Anderson, Inc. 225 Oakland Road 260 Charles Street Studio 205 Studio 300 South Windsor, CT Waltham, MA 06074 02453 Planning Architecture Interior Design Tel: 617.964.1700 www.draws.com Northeast Metropolitan . Regional Vocational High School Wakefield, MA 01880

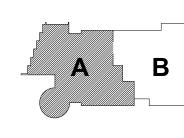
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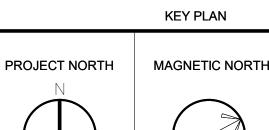
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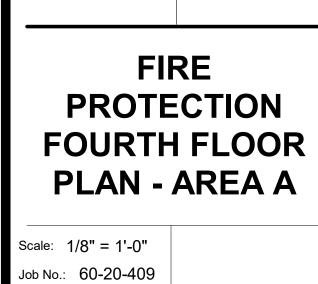
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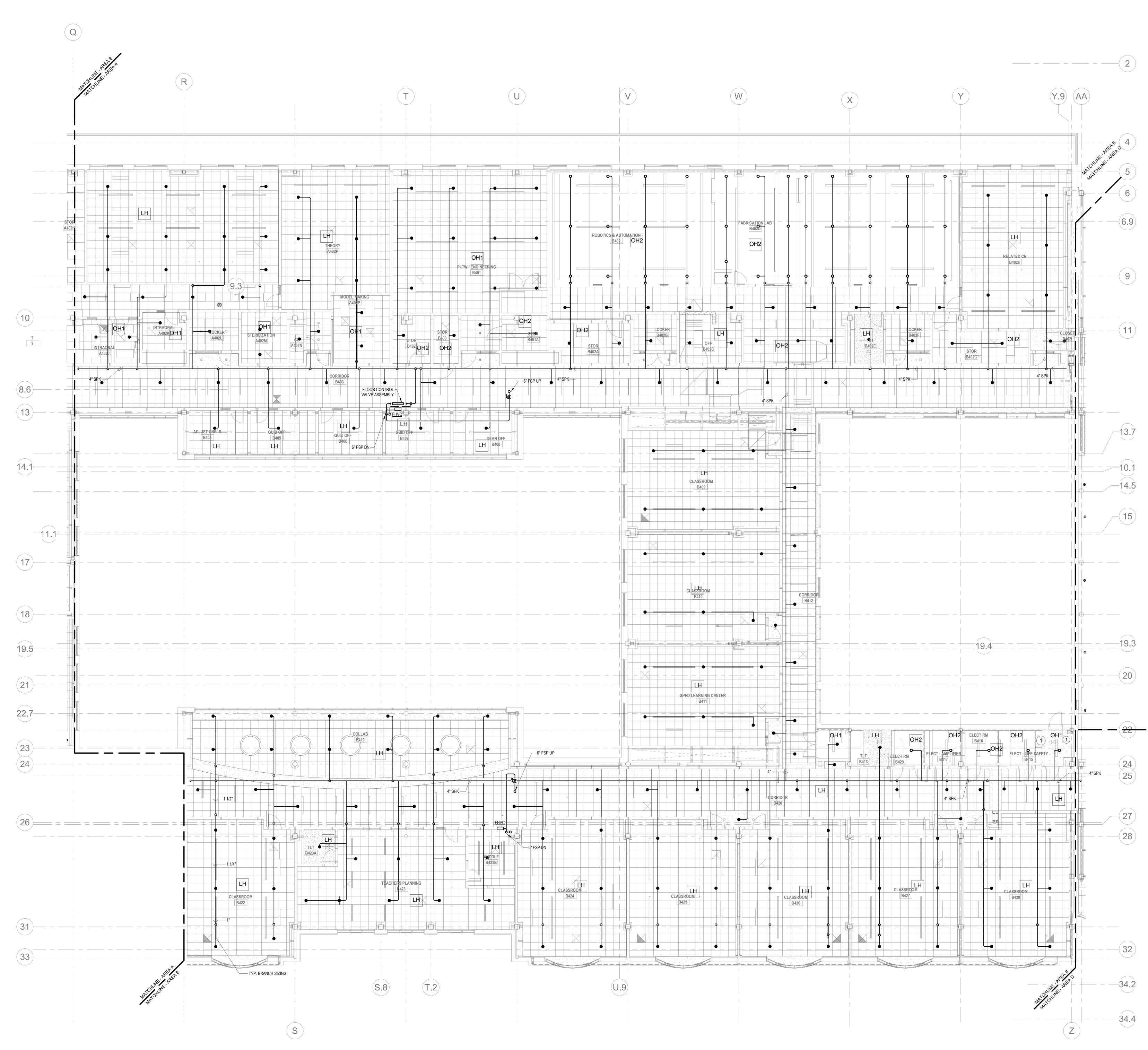
BOSTON, MA 02111-1306 TEL: 617 357 6060 FAX: 617 357 5188 WWW.BALA.COM





FP1-1-4A

Drawn By: Author Date: May 12th, 2023



KEYNOTES

- (LH) LIGHT HAZARD OCCUPANCY(OH) ORDINARY HAZARD OCCUPANCY
- EH EXTRA HAZARD OCCUPANCY
- 1 FINAL LOCATION OF ALL PIPING AND SPRINKLER HEADS IN ELECTRIC TYPE SPACES AND UTILITY ROOMS SHALL BE FIELD COORDINATED WITH ELECTRICAL CONTRACTOR AS TO VERIFY COMPLIANCE WITH ELECTRICAL
- 2 PROVIDE FLOOR CONTROL VALVE. THE FLOOR CONTROL VALVE ASSEMBLY SHALL CONSIST OF A BUTTERFLY VALVE, CHECK VALVE, FLOW SWITCH, PRESSURE GAUGE AND MAIN DRAIN VALVE WITH INSPECTOR'S TEST CONNECTION. (AS REQUIRED PER DETAIL)

FP GENERAL NOTES

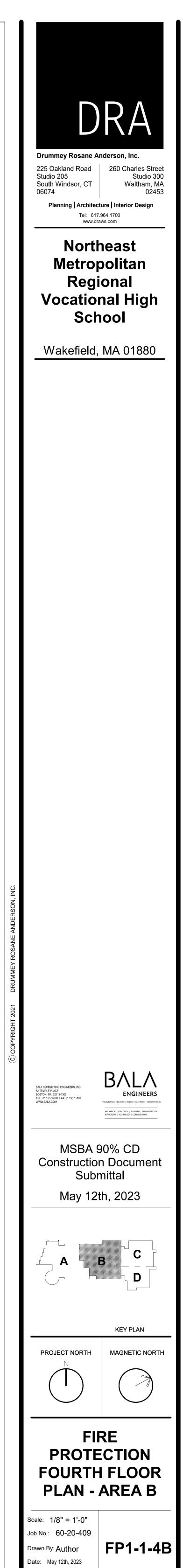
- 1. WITHIN AREA OF SCOPE EXTEND NEW 4" SPRINKLER MAIN PIPING FROM A NEW ZONE CONTROL VALVE. CONTRACTOR SHALL SIZE BRANCH PIPING TO ALLOW FOR VELOCITY WILL REMAIN BELOW 20 FPS. PROVIDE QUICK RESPONSE UPRIGHTS IN OPEN CEILING AREAS AND CONCEALED PENDENTS IN AREAS WHERE DROP CEILINGS ARE INDICATED. EXTEND NEW 1" ARMOVERS TO NEW CONCEALED PENDENTS. 1" SPRIGS SHALL BE ROUTED TO UPRIGHTS WITHIN 12" OF DECK. DESIGN INTENT IS TO PROVIDE A CODE COMPLIANT SPRINKLER LAYOUT FOR THE NEW PROGRAM LAYOUT. CONTRACTOR IS REQUIRE TO SUBMIT HYDRAULIC CALCULATIONS TERMINATED AT THE HYDRANT OUTLET.
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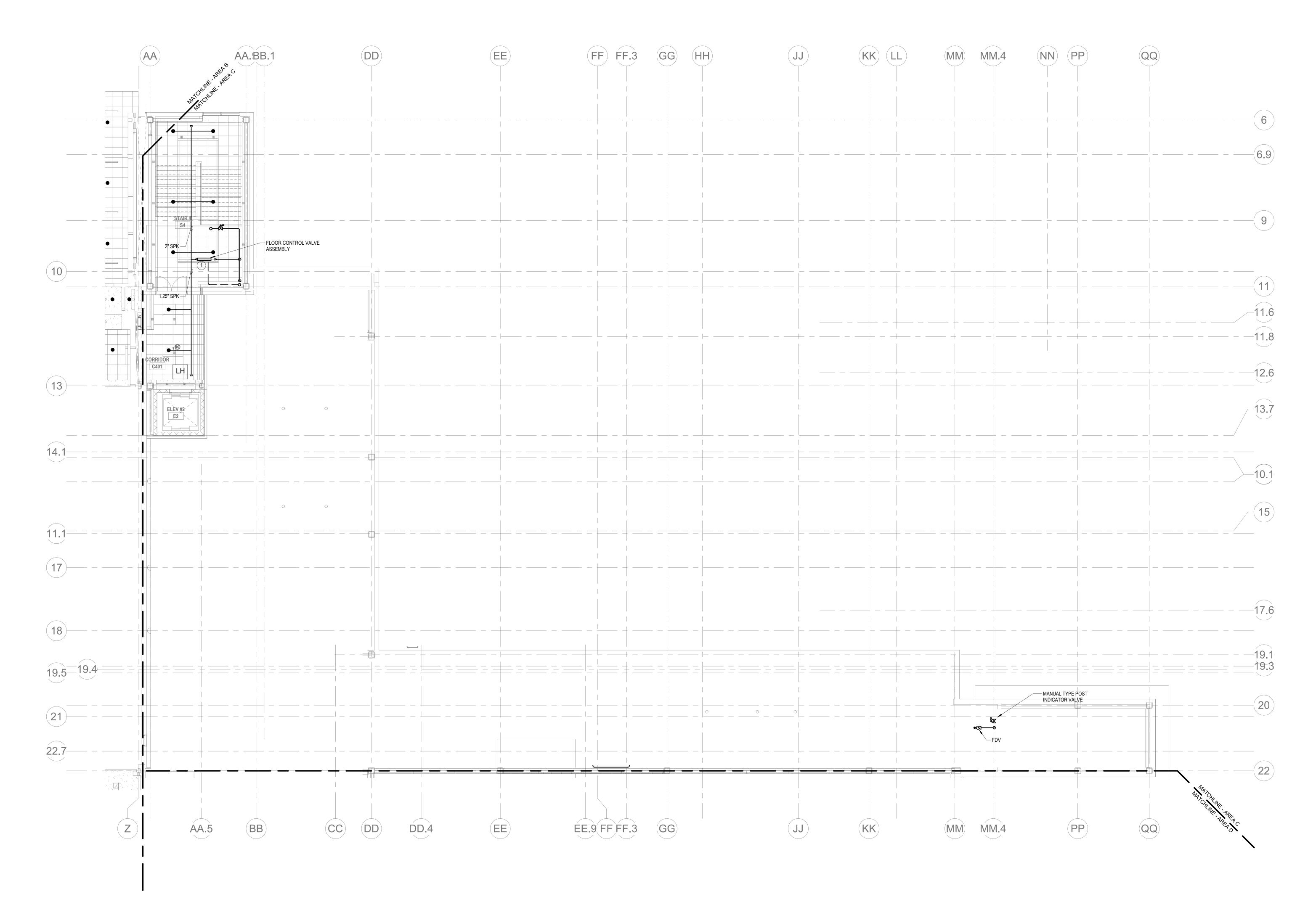
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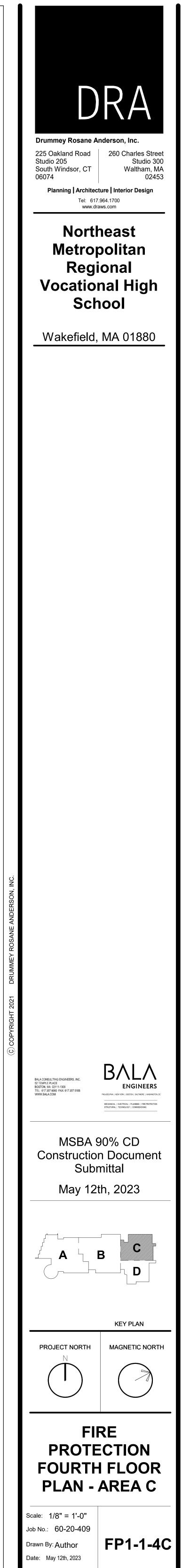
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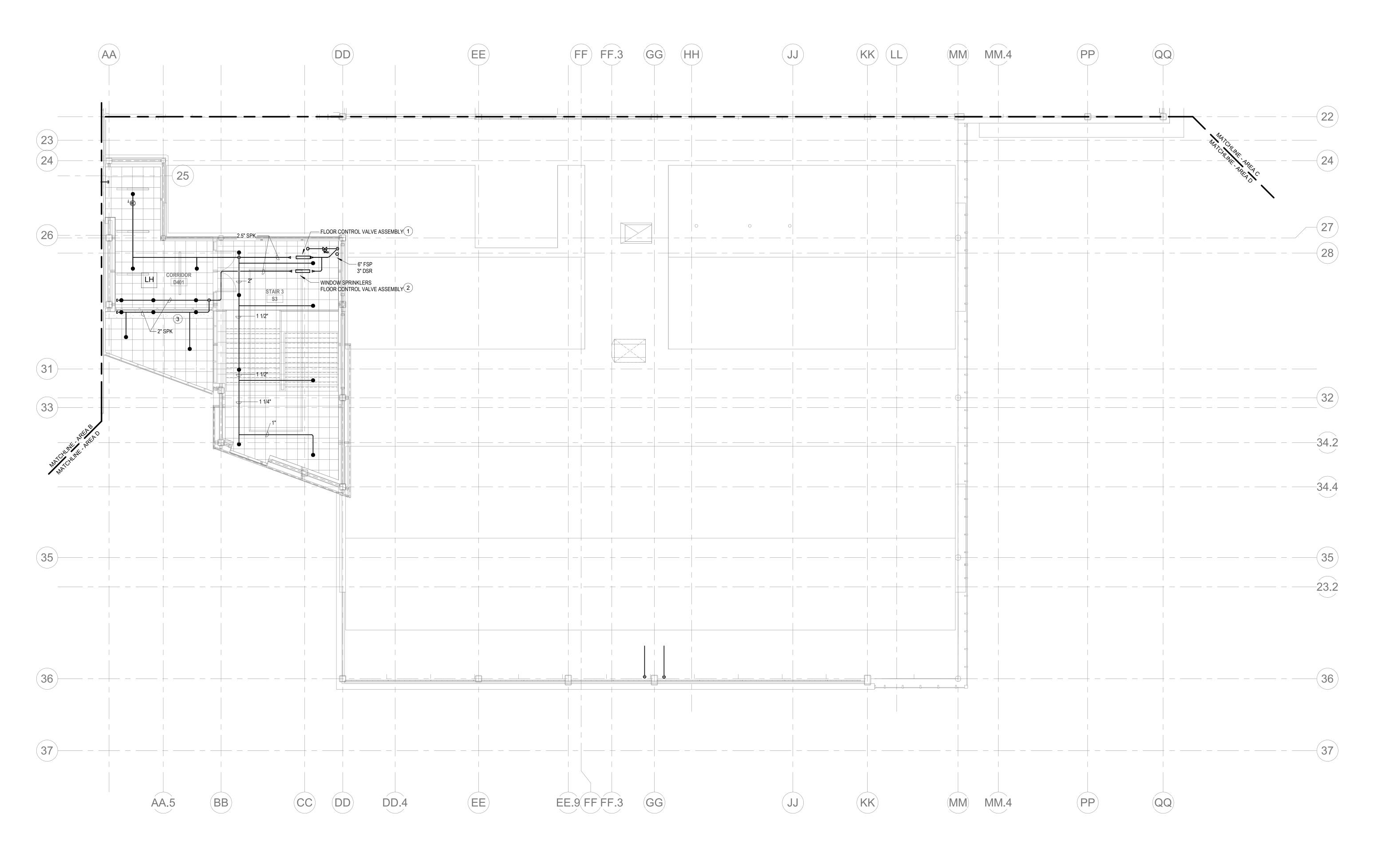
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 FIRE PROTECTION Level 4 Area D

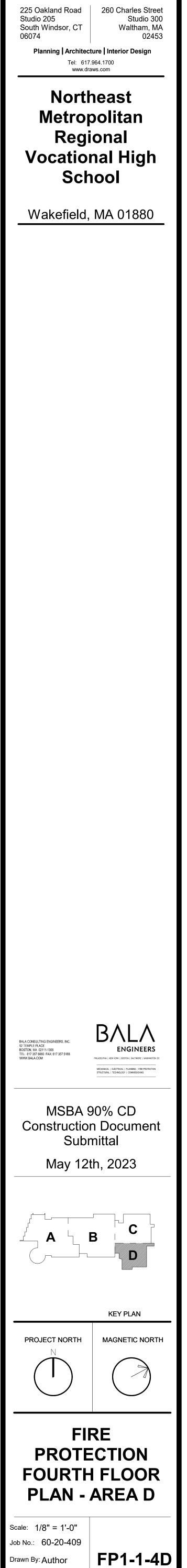
 1/8" = 1'-0"

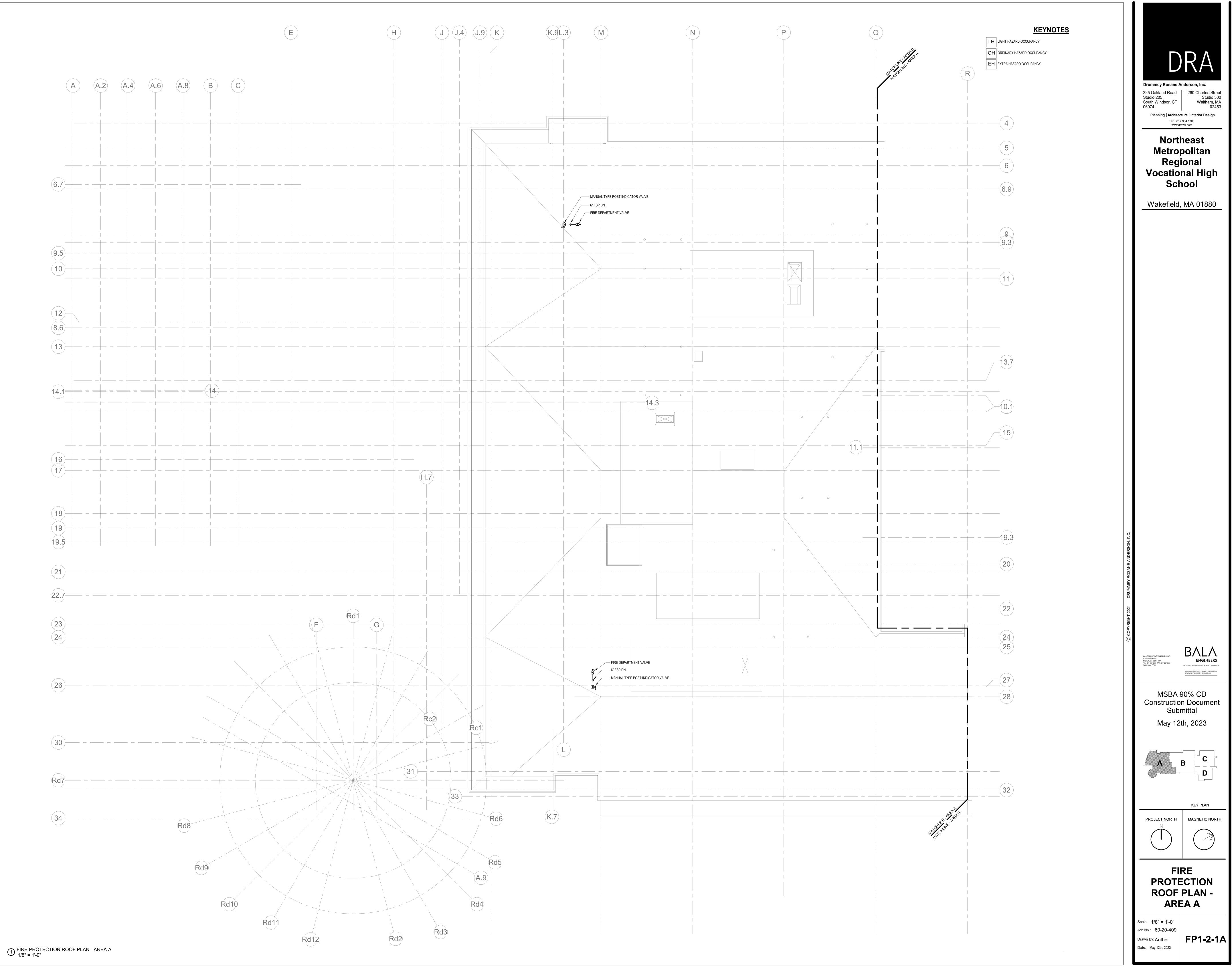
	KEYNOTES	
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3	PROVIDE WINDOW SPRINKLERS WITHIN 2 IN. OF THE GLASS PARTITIONS IN ACCORDANCE WITH NFPA 13 TABLE 7.8.8.4. THESE SPRINLERS SHALL BE SPACED NOT MORE THAN 10 FT FROM EACH OTHER.	225 Oakland Road 260 Charle Studio 205 Stu South Windsor, CT Walth 06074 Planning Architecture Interior De
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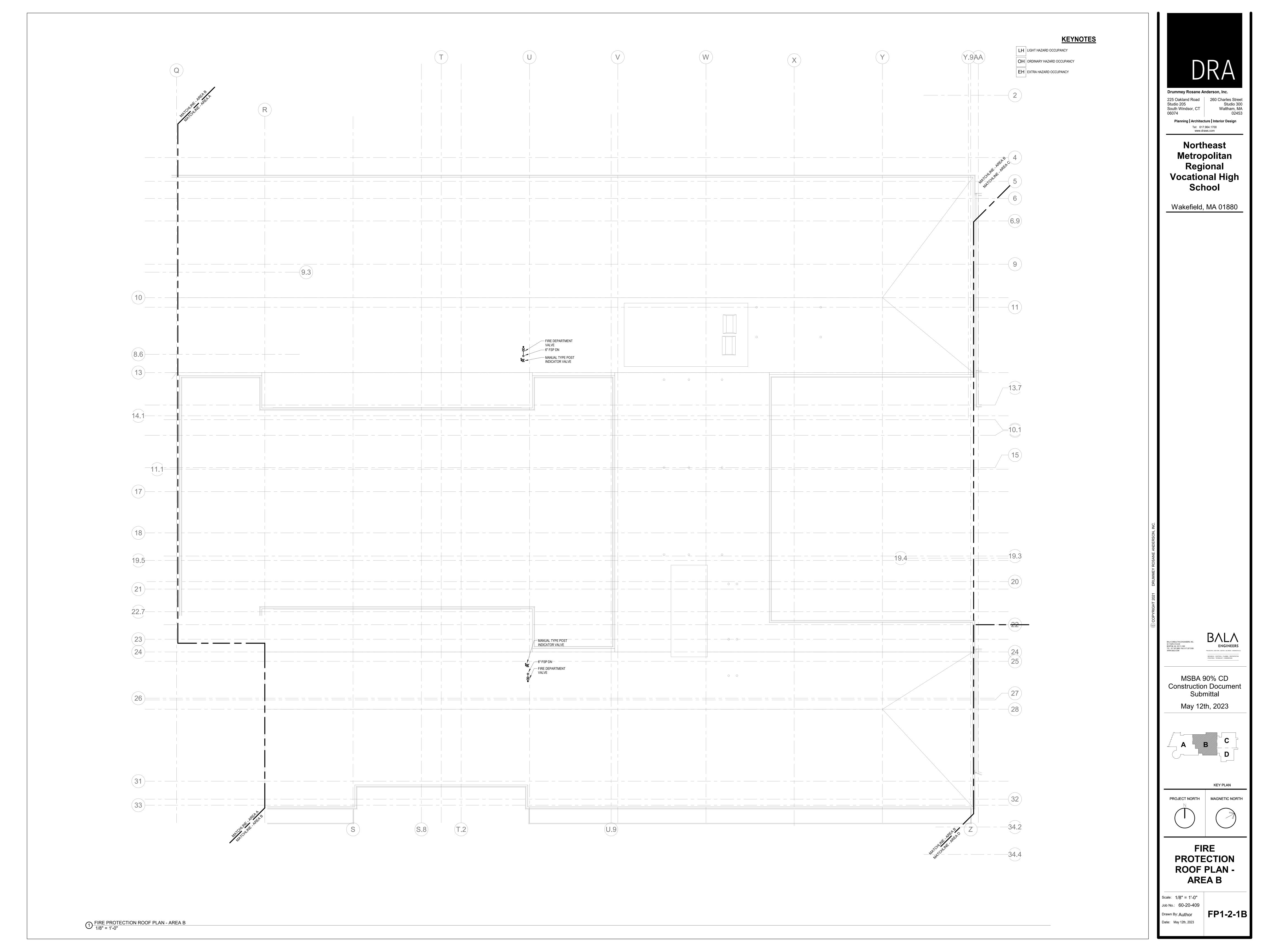
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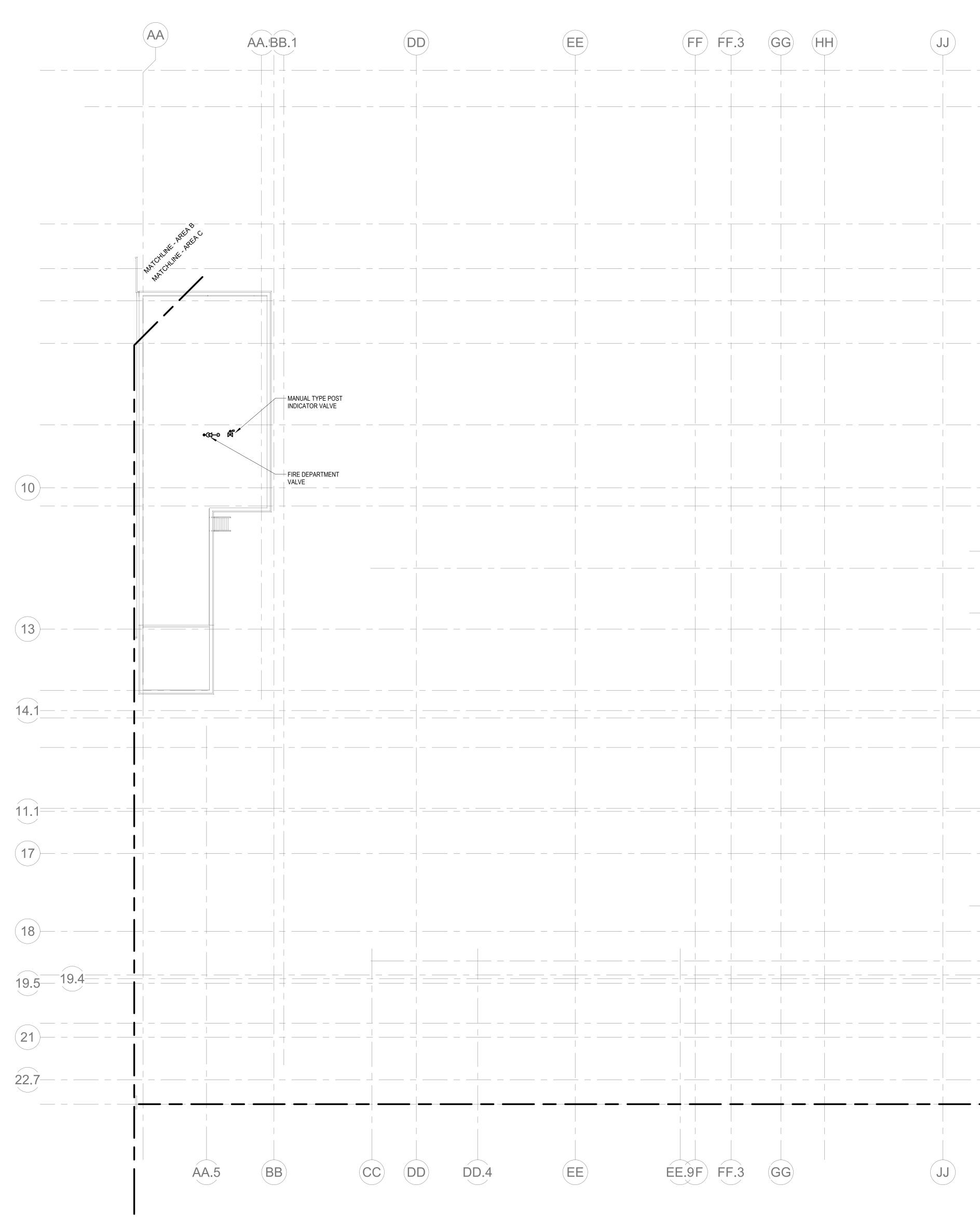
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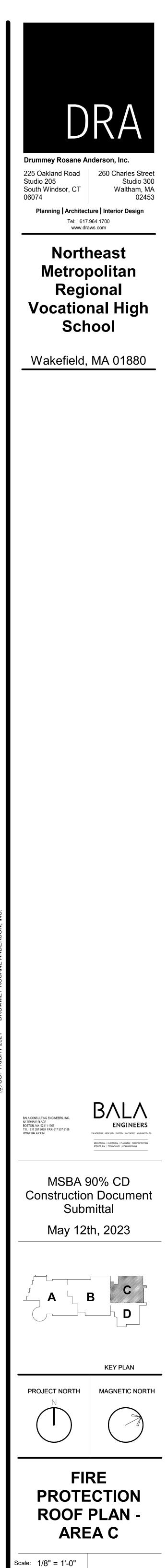




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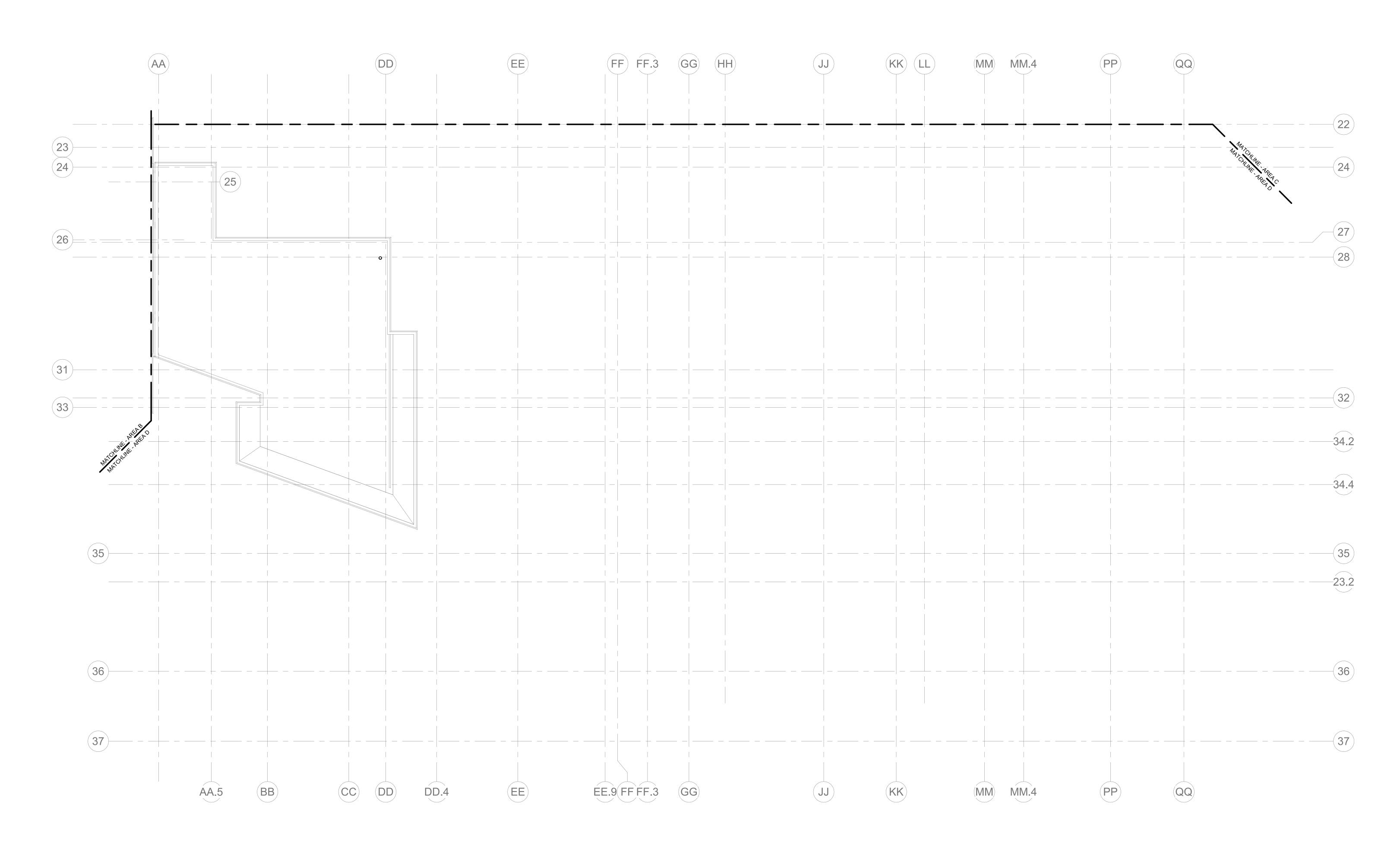
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Job No.: 60-20-409

Drawn By: Author

Date: May 12th, 2023

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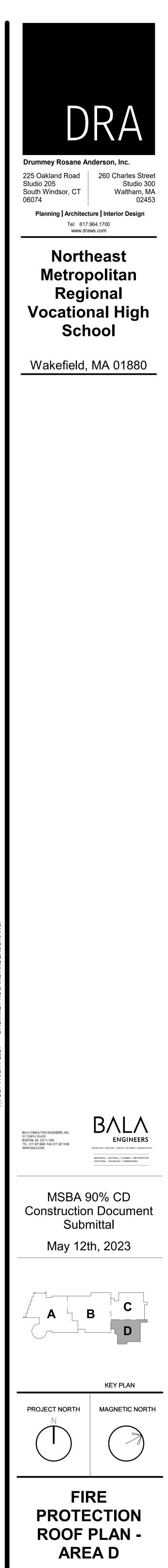




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HT 2021 DRUMMEY ROSANE ANDERSON

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

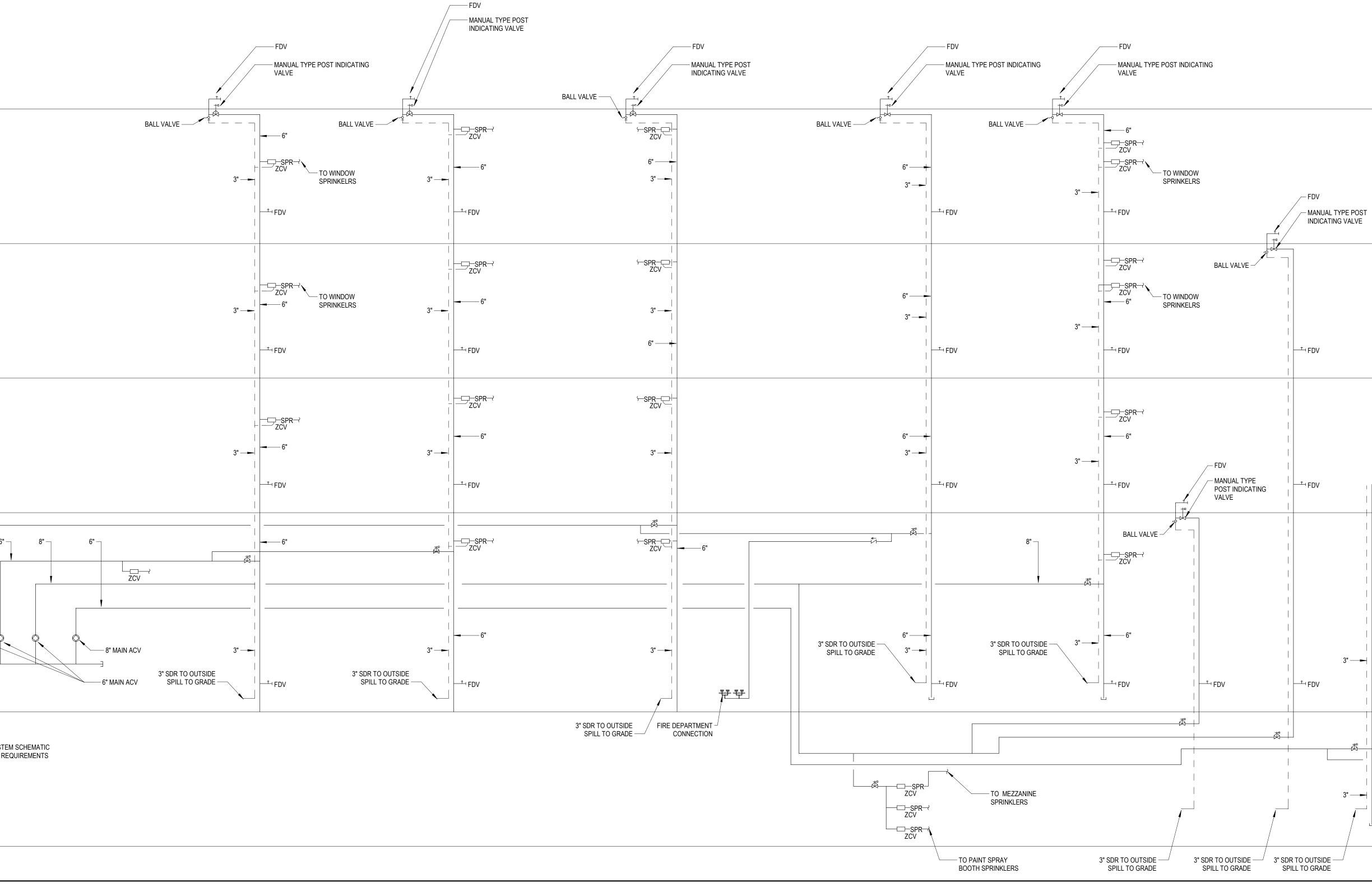
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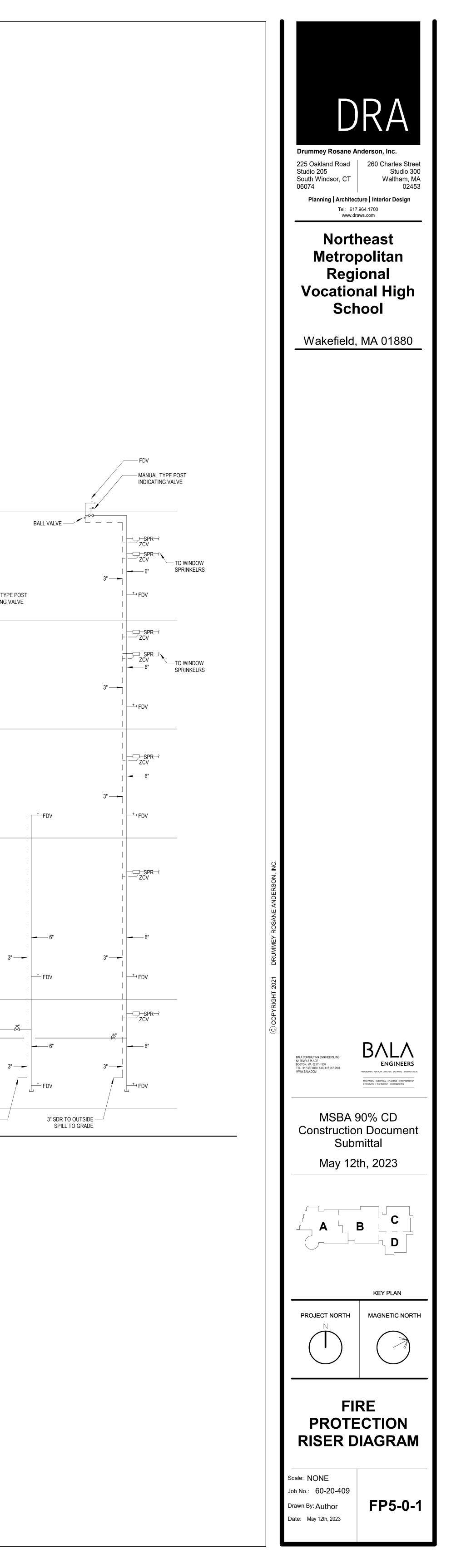
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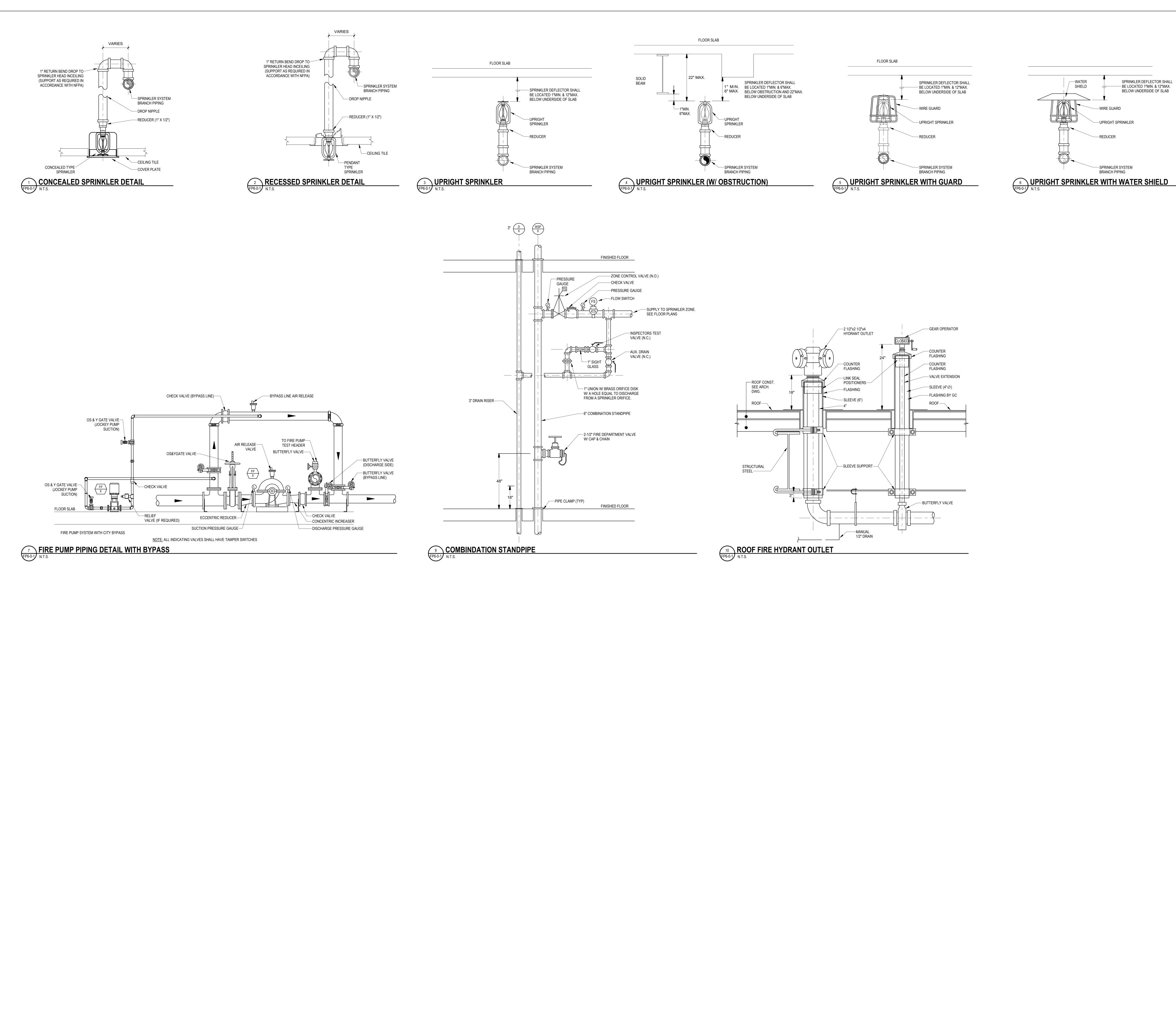
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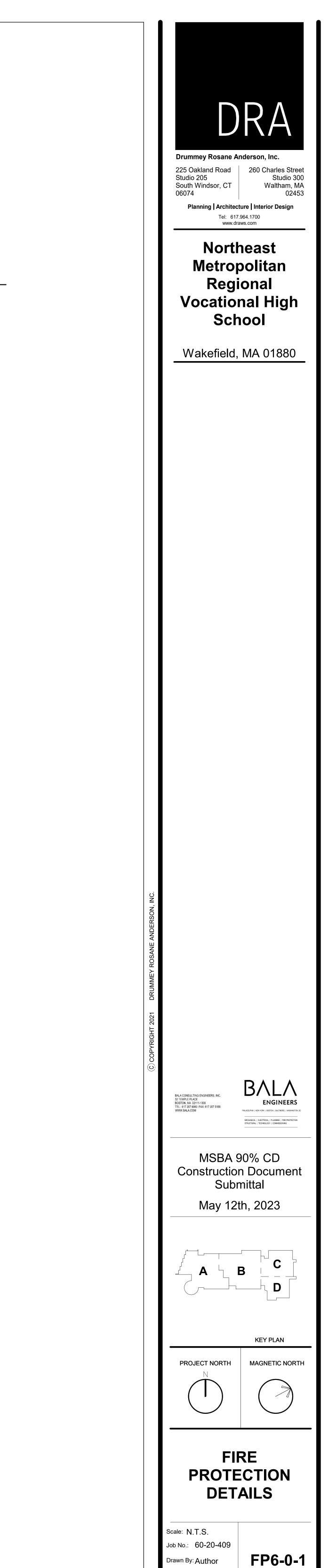
FP1-2-1D

BYPASS VALVE FOR BFP TESTING		
BYPASS VALVE FOR		
BFP IESTING		
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Date: May 12th, 2023

SPRINKLER DEFLECTOR SHALL — BE LOCATED 1"MIN. & 12"MAX. BELOW UNDERSIDE OF SLAB