

WESTON BUILDING COMMITTEE  
SPECIAL MEETING AGENDA

WEDNESDAY, JANUARY 6, 2020, 7:30 PM

Due to Covid 19, this meeting will take place via internet or phone

To join via internet: <https://us02web.zoom.us/j/84304795861>

Meeting ID: 843 0479 5861 Passcode: 900579

To join by phone: 646 558 8656

- 1) Call to order
- 2) Election of Officers
- 3) High School Façade and Concrete Repair Project
- 4) Intermediate School precast concrete sill failure study
- 5) Weston High School Old Gym air handler replacement project
- 6) Discussion about a Library re-roofing project
- 7) Adjournment

# WESTON HIGH SCHOOL RENOVATION

## ISSUE FOR BUILDING REVIEW

12/23/2020



WESTON HIGH SCHOOL  
RENOVATION

WESTON HIGH SCHOOL

115 SCHOOL ROAD  
WESTON, CT 06883



HALSEY MCCORMACK & HELMER INC ARCHITECTS

275 SEVENTH AVENUE  
NEW YORK NY 10001  
212.938.1280

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE ARCHITECT.

OWNER'S REPRESENTATIVE		STRUCTURAL ENGINEER	
NAME	ADDRESS LINE 1	NAME	ADDRESS LINE 1
ADDRESS LINE 2	PHONE NUMBER	ADDRESS LINE 2	PHONE NUMBER
MEP ENGINEER		EXPEDITOR	
GOLDMAN COPELAND	229 WEST 36TH STREET	NAME	ADDRESS LINE 1
NEW YORK, NY 10018	212.868.4690	ADDRESS LINE 2	PHONE NUMBER

**NOT FOR CONSTRUCTION**

NO.	DATE	ISSUE / REVISION
1	12/23/2020	ISSUE FOR BUILDING REVIEW

KEY PLAN:

DRAWING TITLE: <b>COVER SHEET</b>	
DRAWING NUMBER: <b>G-000 .00</b>	
ARCHITECT OF RECORD WILLIAM S. MANDARA LIC. # ARI.0013734	SEAL:
DRAWING SCALE: AS NOTED	
MD PROJECT NUMBER: 02-3095-0200	

## BLDG. DEPARTMENT NOTES

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SECURING OF ALL PERMITS.  
 2. CONTRACTOR TO BE PRESENT AT FINAL INSPECTIONS WITH THE BUILDING DEPARTMENT OFFICIAL.

3. APPLICABLE REGULATIONS:

- 2018 CONNECTICUT STATE BUILDING CODE
- 2015 INTERNATIONAL BUILDING CODE
- 2015 INTERNATIONAL EXISTING BUILDING CODE
- 2015 NATIONAL STANDARD PLUMBING CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2017 NATIONAL ELECTRICAL CODE
- 2015 INTERNATIONAL FIRE CODE
- 2015 INTERNATIONAL FUEL GAS CODE
- 2015 INTERNATIONAL ENERGY CONSERVATION CODE
- ICC/ANSI A117.1-2009 ACCESSIBLE AND USAGE OF BUILDINGS AND FACILITIES

4. INTERNATIONAL BUILDING CODE REQUIREMENTS:

A. USE AND OCCUPANCY:

- EXISTING BUILDING: E (EDUCATION).
- ALTERATION: E (EDUCATION)- NO CHANGE IN EXISTING USE OR OCCUPANCY.

B. CONSTRUCTION CLASSIFICATION:

- EXISTING BUILDING IS TYPE "2A"-NONCOMBUSTIBLE PROTECTED. AN AUTOMATIC FIRE SUPPRESSION SYSTEM IS PROVIDED.

C. REQUIRED FIRE RESISTANCE RATING OF ELEMENTS:

- ONE HOUR: MECHANICAL SHAFTS.
- ONE HOUR: EXITS.
- ZERO HOUR: EXIT ACCESS CORRIDORS (FULLY SPRINKLERED FLOOR).
- ONE HOUR : TENANT SPACE SEPARATION (FULLY SPRINKLERED FLOOR)
- ONE HOUR: STRUCTURAL FRAME, INCLUDING FLOOR CONSTRUCTION: BEAMS, GIRDERS AND JOISTS
- ONE HOUR : STRUCTURAL FRAME INCLUDING ROOF CONSTRUCTION: BEAMS, GIRDERS AND JOISTS.
- ONE HOUR: STRUCTURAL FRAME COLUMNS.

D. ALTERATIONS:

COMPLY WITH THE APPLICABLE FEDERAL LAWS, RULES AND REGULATIONS LOCAL, STATE AND PERTAINING TO THE FOLLOWING:

- DEMOLITION AND ALTERATION WORK, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: O.S.H.A., C.S.A., AND THE IBC-CHAPTER 33.
- NONCOMBUSTIBLE TYPE CONSTRUCTION CONFORMING TO EXISTING STRUCTURE AND TO REQUIREMENTS OF NEW STRUCTURES.
- EXIT FACILITIES: IBC-CHAPTER 10 & LIFE SAFETY CODE NFPA 101, CHAPTER 5, SECT. 27-2.
- INTERIOR FINISH: IBC CHAPTER 8.
- GLASS & GLAZING: IBC CHAPTER 24.
- SUSPENDED GYPSUM BOARD AND PLASTER CEILING SYSTEM: IBC-CHAPTER 25 & ASTM C754.
- SUSPENDED ACOUSTICAL CEILING SYSTEMS: IBC SECTION 1613, ASCE 7-10

5. GENERAL BUILDING DATA:

- a. THERE ARE NO CHANGE TO THE USE, EGRESS OR OCCUPANCY AS PART OF THIS ALTERATION WORK DOCUMENTED HEREWITH.
- b. ENTIRE BUILDING IS A SINGLE-TENANT
- c. GROSS FLOOR AREA: 216,000 S.F.
- d. WORK AREA: 13,500 S.F.
- e. HEIGHT: BUILDING IS 1 STORIES HIGH.
- f. EXIT ACCESS WIDTH: 3'-8"
- g. EXIT ACCESS TRAVEL DISTANCE: 250 FEET MAXIMUM (PER TABLE 1017.2, FULLY SPRINKLERED BUILDING)
- h. COMMON PATH OF EGRESS TRAVEL: 75 FEET MAXIMUM (PER TABLE 1006.2.1, FULLY SPRINKLERED BUILDING)
- i. DEAD END CORRIDORS: 50 FEET MAXIMUM (PER 1020.4, FULLY SPRINKLERED BUILDING)
- j. PANIC HARDWARE IS PROVIDED ON ALL DOORS IN MEANS OF EGRESS IN AN ASSEMBLY OCCUPANCY WITH 100 OCCUPANTS OR MORE IN ACCORDANCE WITH SECTION 1003.3.1.9.
- k. FLAME SPREAD RATING: COMPLY W/ DOC. FF.1 AND NFPA 253
- l. FLOOR COVERING: COMPLY W/ DOC. FF. 1. AND NFPA 253.
- m. WALL & CEILING MATERIAL: CLASS 'I' (26-75) TO COMPLY W/ NFPA 255, AND ASTM E-84.
- n. MAINTAIN TWO MEANS OF EGRESS FROM ALL PORTIONS OF THE FLOOR DURING ALL PHASES OF CONSTRUCTION.
- o. ALL NEW DOORS SHALL BE CLEAR 36 INCHES WIDE. U.O.N..
- p. ALL GYPSUM BOARD PARTITIONS SUPPORTING WALL HUNG CABINETS, SHELVING, OVERHEAD BINS AND FURNITURE SHALL HAVE 20 GAUGE METAL STUDS SPACED 16 INCHES ON CENTER MAXIMUM.
- q. ALL DOOR HARDWARE SHALL BE THE LEVER TYPE., U.O.N.

## DRAWING INDEX

DWG #	DRAWING DESCRIPTION	12/23/2020 ISSUE FOR BUILDING REVIEW
ARCHITECTURE		
G-000	COVER SHEET	•
G-001	DRAWING INDEX AND BUILDING NOTES	•
G-002	GENERAL NOTES AND ENERGY CODE	•
A-100	1ST FLOOR CONSTRUCTION PLAN	•
A-101	ROOF CONSTRUCTION PLAN	•
A-155	FIRESTOPPING AT CONCRETE PENETRATIONS	•
A-180	WINDOW SCHEDULES AND OPENINGS DETAILS	•
A-300	EXTERIOR BUILDING ELEVATIONS	•
MECHANICAL		
M-050	FIRST FLOOR MECHANICAL DEMO PLAN	
M-100	FIRST FLOOR MECHANICAL FLOOR PLAN	
M-101	ROOF MECHANICAL FLOOR PLAN	
M-200	MECHANICAL SCHEDULE	
ELECTRICAL		
E-001	ELECTRICAL NOTES, SYMBOLS, AND ABBREVIATIONS	
E-050	FIRST FLOOR ELECTRICAL DEMOLITION PLAN	
E-200	FIRST FLOOR ELECTRICAL FLOOR PLAN	
E-201	ROOF ELECTRICAL FLOOR PLAN	
E-202	FIRST FLOOR ELECTRICAL FLOOR PLAN	
E-350	ELECTRICAL PARTIAL RISER DIAGRAM	
FIRE ALARM		
FA-001	FIRE ALARM RISER DIAGRAM AND MATRIX	
FA-100	FIRST FLOOR FIRE ALARM FLOOR PLAN	

## BLDG RULES AND REGS

1. GENERAL CONTRACTOR TO OBTAIN COPY OF BUILDING RULES AND REGULATIONS AND FOLLOW BUILDING STANDARDS DURING ENTIRE PROJECT CONSTRUCTION, U.O.N.
2. GENERAL CONTRACTOR SHALL COMPLY WITH BUILDING NOISE RESTRICTIONS AND PERFORM ALL DRILLING, SHOOTING, CUTTING ETC. BEFORE 8AM FROM MONDAY THRU FRIDAY
3. REFER TO SPECIFICATION MANUAL FOR ADDITIONAL INFORMATION.

## TENANT PROTECTION NOTES

1. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH THE CONNECTICUT STATE BUILDING CODE AND REGULATIONS OF ALL OTHER AGENCIES HAVING JURISDICTION.
2. ALL EXISTING MEANS OF EGRESS FOR TENANTS OF THE BUILDING ARE TO BE MAINTAINED CLEAR AND FREE OF ALL OBSTRUCTIONS.
3. ALL BUILDING MATERIALS IN THE CONSTRUCTION AREA ARE TO BE SECURED IN A LOCKED AREA. THE OWNER ASSUMES NO RESPONSIBILITY FOR THE SAFE KEEPING OF BUILDING MATERIALS.
4. CONTRACTOR TO PROVIDE ADEQUATE TEMPORARY SHORING AND BRACING WHEREVER STRUCTURAL WORK IS REQUIRED.
5. CONSTRUCTION OPERATIONS SHALL NOT INVOLVE INTERRUPTION OF HEATING, WATER, ELECTRICAL WITHOUT PROPER PRIOR CONSENT.



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212.868.4660	PHONE NUMBER

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KEY PLAN:

DRAWING TITLE: <b>DRAWING INDEX AND BUILDING NOTES</b>	
DRAWING NUMBER: <b>G-001 .00</b>	
ARCHITECT OF RECORD <b>WILLIAM S. MANDARA</b> LIC. # ARI.0013734	SEAL:
DRAWING SCALE: AS NOTED	
MD PROJECT NUMBER: 02-3095-0200	

NOT FOR CONSTRUCTION

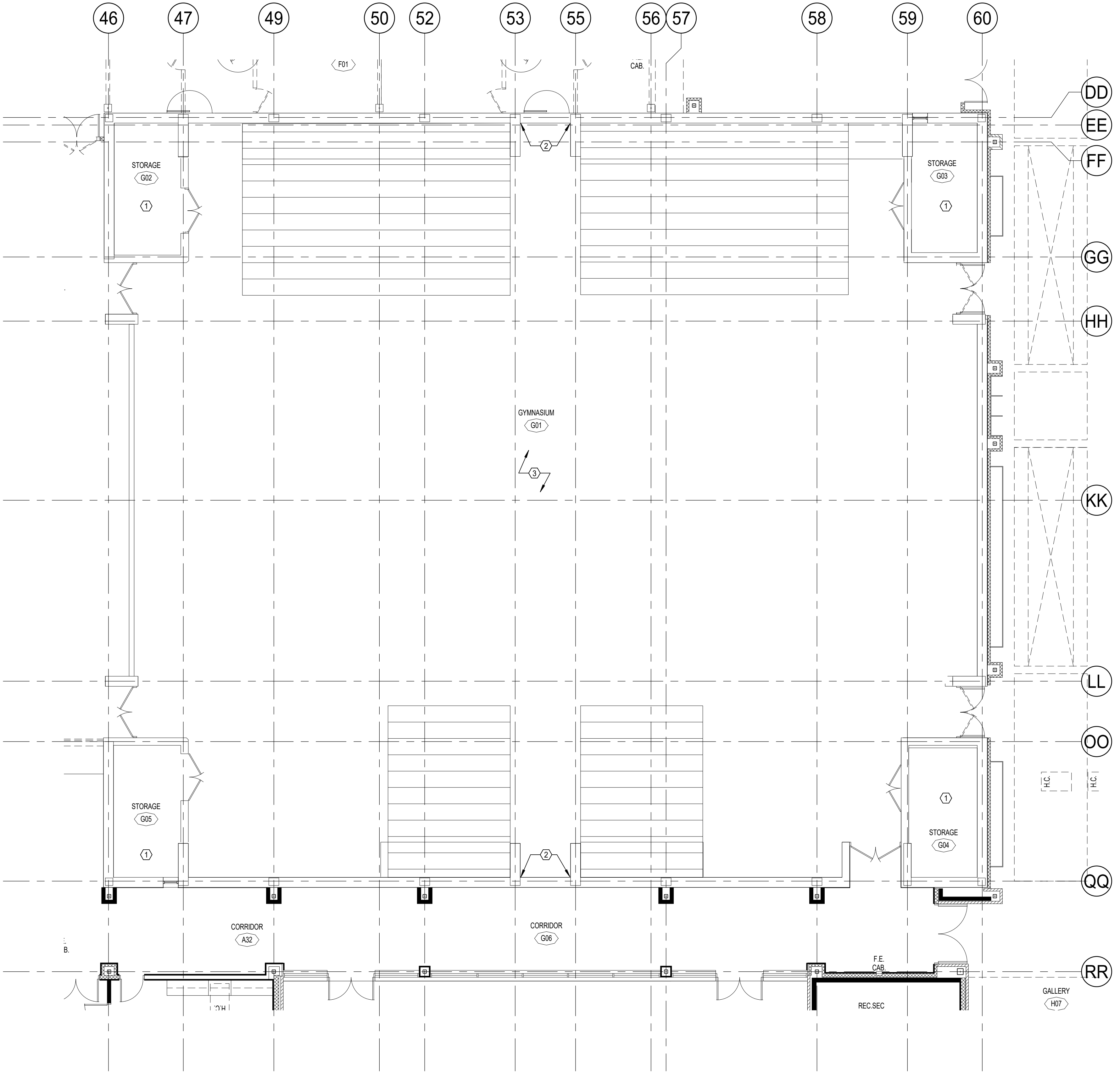


### CONSTRUCTION KEYNOTES PLAN KEY: ①

- REMOVE EXISTING CEILING HUNG MECHANICAL UNIT AND REPLACE WITH NEW UNIT. PATCH AND REPAIR EXISTING CEILING AS REQUIRED. REFER TO MECHANICAL ENGINEERING DRAWINGS FOR FURTHER INFORMATION. REFER TO EXTERIOR BUILDING ELEVATIONS FOR PROPOSED CONNECTION LOCATIONS.
- NEW PENETRATION IN EXISTING WALL FOR MECHANICAL UNIT. SEE ELEVATIONS FOR LOUVER LOCATION
- EXISTING GYMNASIUM SPACE TO BE PROTECTED FROM DEBRIS. REPAIR ALL DAMAGE TO MATCH EXISTING AS REQUIRED.
- GO TO VERIFY STRUCTURAL INTEGRITY OF CONCRETE WINDOW SHADE STRUCTURE TO REMAIN PRIOR TO WINDOW REPLACEMENT. REFER TO ELEVATION FOR LOCATION OF WINDOWS BELOW SHADE STRUCTURE.

### CONSTRUCTION PLAN NOTES

- ON ALL FIRE RATED PARTITIONS - ALL PENETRATIONS TO BE FIRESAFED AND SEALED AND JOINTS ARE TO BE TAPED AND SPACKLED SLAB TO SLAB.
- STUD SIZE SHALL BE PER MANUFACTURER SPECIFICATION FOR HEIGHT, GAUGE AND SPACING. MAX. STUD HEIGHT IS BASED ON L/240 (L/360 FOR PARTITIONS WITH TILE AND/OR STONE FINISH).
- PROVIDE 2X6 (FLAT STOCK) AND/OR WOOD BLOCKING AS REQUIRED AT ALL WALL MOUNTED FIXTURES. VERIFY EXTENT AND LOCATION OF BLOCKING PRIOR TO GWB INSTALLATION.
- PARTITIONS SHALL NOT BE FASTENED OR BRACED TO DUCTWORK, CONDUIT OR PIPING.
- ALL FIRE STOPPING UTILIZED AT PENETRATIONS THROUGH FLOOR ASSEMBLIES SHALL PROVIDE A FIRE RESISTANCE RATING PER THE APPLICABLE CODE. FIRE STOPPING/FIRE SAFING THROUGH PARTITION ASSEMBLIES SHALL PROVIDE A FIRE RESISTIVE RATING THAT MATCHES THAT OF THE PARTITION. COMPLY WITH UL 1479 "FIRE TESTS OF THROUGH PENETRATION FIRE-STOP".
- FLOOR MUST REMAIN IN A STATE OF SAFE CONDITIONS WITH REGARD TO FIRE SAFETY FOR PERSONNEL WORKING ON THE FLOOR. ALL FIRE STAIRS, ALARMS, SPEAKERS ETC. MUST REMAIN ACCESSIBLE AND OPERABLE AT ALL TIMES.
- ALL WOOD TO BE FIRE RETARDANT. COPIES OF CERTIFICATION SHALL BE SUBMITTED TO LANDLORD IF REQUIRED.
- A COPY OF PERMIT FROM DEPT. OF BLDGS. MUST BE SUBMITTED TO BUILDING MANAGEMENT BEFORE ANY WORK CAN PROCEED.
- GENERAL CONTRACTOR TO FOLLOW BUILDING RULES AND REGULATIONS WITH REGARD TO ALL DELIVERIES FOR SUB-CONTRACTORS.
- FIRE SAFETY EQUIPMENT AND THEIR ASSOCIATED CONDUIT AND WIRING SYSTEMS SHALL NOT BE MARRIED DURING CONSTRUCTION AND SHALL BE PROTECTED FROM ANY PHYSICAL DAMAGE BY THE GENERAL CONTRACTOR AND SUBCONTRACTOR FOR THE DURATION OF THE PROJECT.
- WHERE FIREPROOFING OF EXISTING COLUMNS OR BEAMS IS DISTURBED BY NEW WORK, THE FIREPROOFING SHALL BE RESTORED TO PROVIDE A MINIMUM RESISTANCE RATING AS REQUIRED BY THE APPLICABLE BUILDING CODE.
- CONTRACTOR SHALL ISSUE COMPLETE, FULL SETS OF DRAWINGS AND SPECIFICATIONS TO SUB-CONTRACTORS FOR BIDDING PURPOSES. CONTRACTOR SHALL NOTIFY MANCINI DUFFY OF ANY CONFLICTS BETWEEN DRAWINGS. FOR RESPONSE AND RESOLUTION.
- CONTRACTOR SHALL VISIT THE PROJECT SITE AND BECOME ACQUAINTED WITH EXISTING CONDITIONS. CONTRACTOR SHALL NOTIFY MANCINI DUFFY OF ANY DISCREPANCIES PRIOR TO BID SUBMISSION. ANY ADDITIONAL COSTS RESULTING FROM FAILURE TO DO SO SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING, AND REPAIRING AS REQUIRED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE PROJECT.
- ALL ITEMS RECESSED INTO ONE OR TWO HOUR FIRE RATED PARTITIONS (SUCH AS OUTLET BOXES, PANEL BOXES, ETC) SHALL HAVE THE OPENINGS PROTECTED WITH BACK-UP MATERIALS SO AS TO RETAIN THE INTEGRITY OF THE FIRE RATING OF THE PARTITION THROUGHOUT. NO ITEMS SHALL BE RECESSED IN THE CASE OR INSTANCE OF THREE HOUR FIRE RATED PARTITIONS. PROTECTION OF THE ONE AND TWO HOUR RATED PARTITIONS SHALL BE IN STRICT CONFORMANCE WITH THE APPLICABLE BUILDING CODE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREAS. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ANY STRUCTURAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURY CAUSED BY OR DURING THE EXECUTION OF THE WORK.
- MECHANICALLY CLEAN ALL DUCT SYSTEMS TO REMOVE ALL VISIBLE CONTAMINANTS, SUCH THAT THE SYSTEMS ARE CAPABLE OF PASSING CLEANING VERIFICATION TESTS (NADCA STANDARDS).
- ALL FIRE RATED PARTITIONS TO HAVE 5/8" THICK TYPE "X" GYPSUM BOARD U.O.N.
- U.O.N. ALL WALLS TO HAVE ASSEMBLY EXTEND FULL HEIGHT OF SPACE FROM T.O. SLAB TO UNDERSIDE OF SLAB.
- MAINTAIN ACOUSTIC AND/OR FIRE RATINGS AROUND RECESSED FIXTURES, PIPING, DUCTWORK, PENETRATIONS AND ALL OBSTRUCTIONS.
- DO NOT LOCATE OUTLET BOXES OPPOSITE ONE ANOTHER IN PARTITIONS (BACK-TO-BACK). LOCATE OUTLETS AT LEAST 12" APART AND IN SEPARATE STUD SPACES. CAULK PERIMETER OF OUTLET WITH ACOUSTICAL SEALANT.
- USE FIRE RATED SEALANT AT FIRE-RATED PARTITIONS AS REQUIRED BY PARTITION TYPE AND PROJECT MANUAL.
- MAINTAIN INTEGRITY OF EXTERIOR WALL CONTINUITY, ASSEMBLIES, INSULATION AND FINISHES AS REQUIRED.
- COORDINATE ALL MECHANICAL TRANSFER GRILLES AND RETURN AIR OPENING THAT OCCUR ABOVE THE FINISHED CEILING IN FIRE RATED AND ACOUSTICALLY TREATED WALLS. PROVIDE FIRE DAMPERS WHERE INDICATED. PROVIDE RETURN AIR (CEILING PLENUM) OPENINGS WHERE REQUIRED BY THE MECHANICAL DRAWINGS.



### CONSTRUCTION PLAN LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Solid Line]	EXISTING EXTERIOR AND CORE WALLS	[Office Symbol]	INDICATES ROOM/ AREA NAME
[Dashed Line]	EXISTING INTERIOR PARTITIONS TO REMAIN	[Floor Number Symbol]	ROOM/AREA NUMBER
[Line with 1]	PARTITION TYPE	[Floor Number Symbol]	FLOOR NUMBER
[Line with 2]	NEW GWB PARTITION	[Revision Symbol]	REVISION NUMBER
[Line with 3]	NEW CMU WALL	[Keynote Symbol]	KEYNOTE NUMBER
[Line with 4]	NEW CONCRETE WALL	[Section Symbol]	SECTION NUMBER
[Line with 5]	NEW SPECIALTY WALL	[Section Symbol]	SHEET NUMBER
[Line with 6]	FIRE RATING DENOTES PARTITION TYPE, SEE A-150	[Section Symbol]	DETAIL NUMBER
[Line with 7]	PARTITION TYPE VARIABLE	[Section Symbol]	SHEET NUMBER
[Line with 8]	NEW MILLWORK	[Section Symbol]	REFERENCE TYPE
[Line with 9]	RECESSED FIRE EXTINGUISHER CABINET	[Section Symbol]	ELEVATION NUMBER
[Line with 10]	SURFACE MOUNTED FIRE EXTINGUISHER	[Section Symbol]	SHEET NUMBER
[Line with 11]	EXISTING DOOR TO REMAIN	[Section Symbol]	ELEVATION NUMBER
[Line with 12]	6" TYP DOOR NUMBER	[Section Symbol]	SHEET NUMBER
[Line with 13]	FLOOR NUMBER	[Section Symbol]	FLOOR DRAIN
[Line with 14]	EXTENT OF CONCRETE SLAB INFILL	[Section Symbol]	CORNER GUARD
[Line with 15]	AREA NOT IN CONTRACT	[Section Symbol]	EQUIPMENT TAG
		[Section Symbol]	EXISTING STAND PIPE & FIRE HOSE

1 FIRST FLOOR CONSTRUCTION PLAN  
SCALE: 1/8" = 1'-0"



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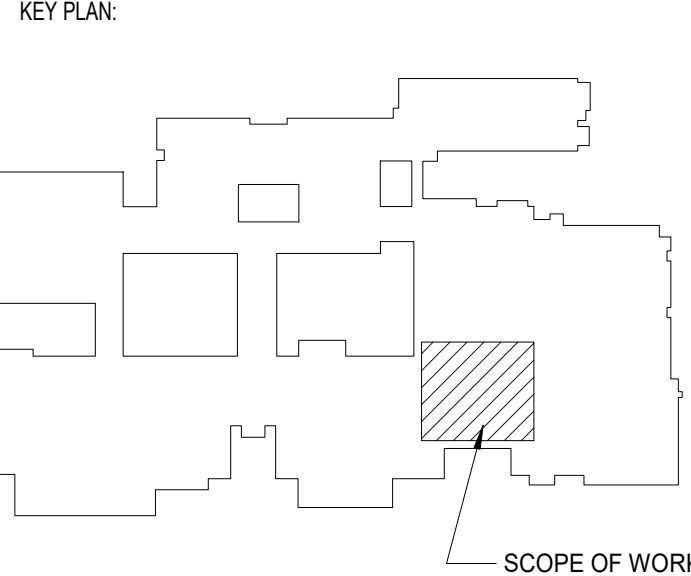
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DRAWING TITLE:  
**1ST FLOOR CONSTRUCTION PLAN**

DRAWING NUMBER:  
**A-100 .00**

ARCHITECT OF RECORD SEAL:  
WILLIAM S. MANDARA  
LIC. # ARI.0019734

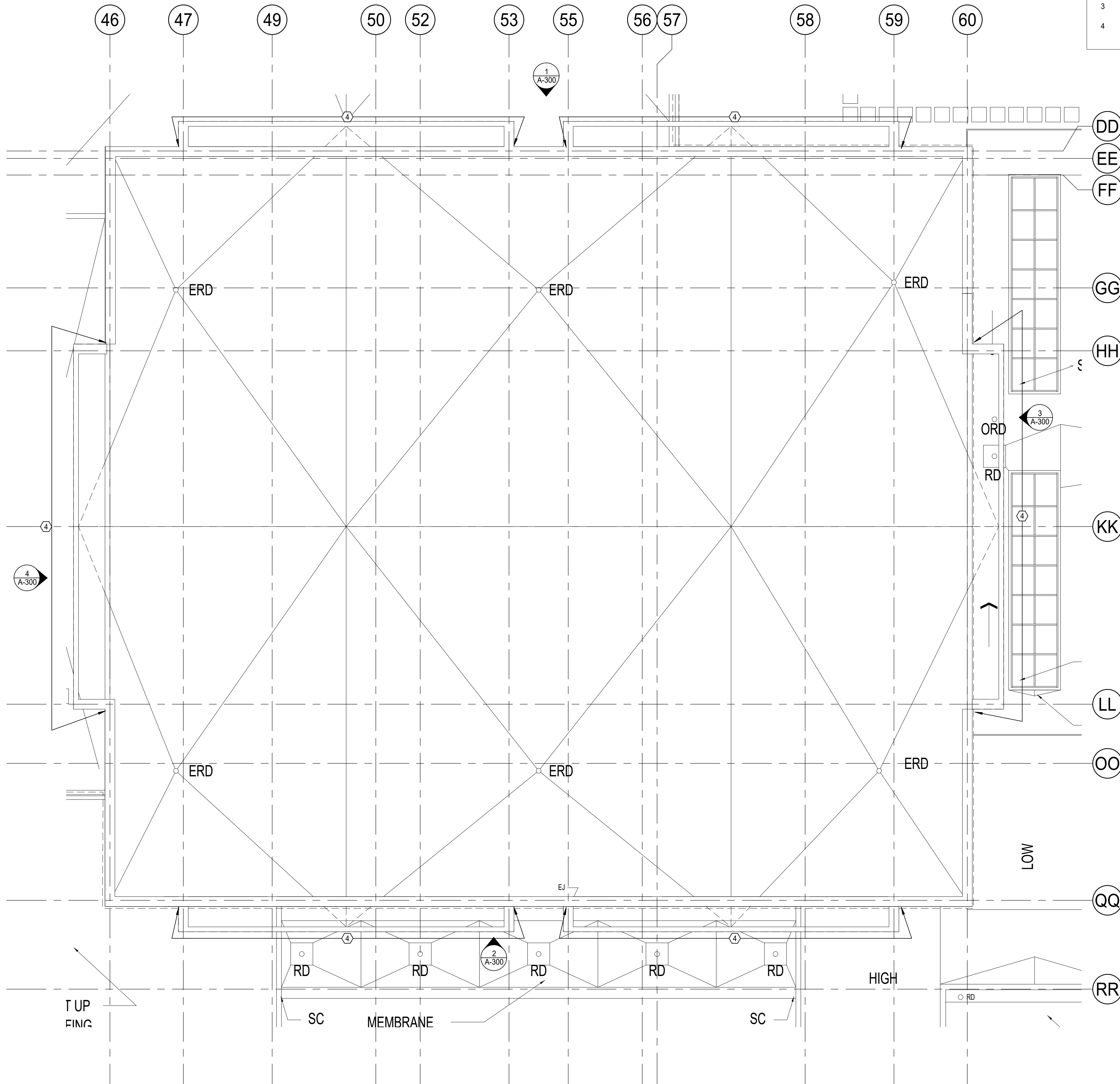
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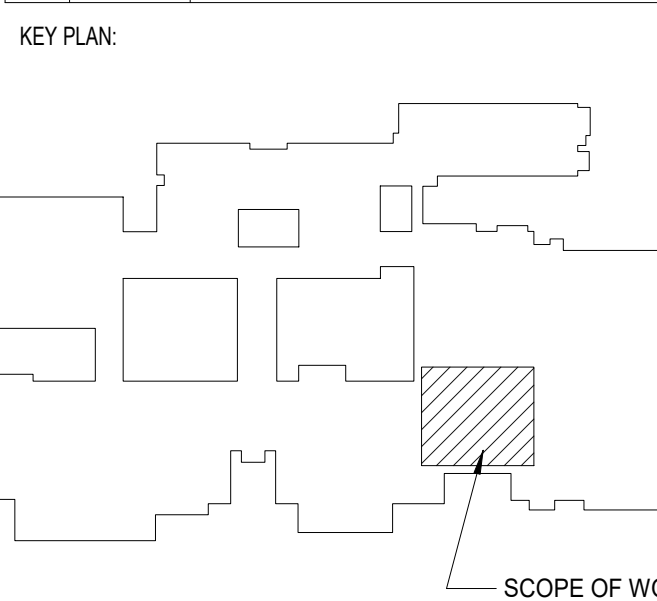
**1 ROOF CONSTRUCTION PLAN**  
SCALE: 1/8" = 1'-0"

**CONSTRUCTION PLAN LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Solid Line]	EXISTING EXTERIOR AND CORE WALLS	[Office Symbol]	INDICATES ROOM/ AREA NAME
[Dashed Line]	EXISTING INTERIOR PARTITIONS TO REMAIN	[FL01]	ROOM/AREA NUMBER
[Line with 1]	PARTITION TYPE	[Floor Number]	FLOOR NUMBER
[Line with 2]	NEW GWB PARTITION	[Revision Number]	REVISION NUMBER
[Line with 3]	NEW CMU WALL	[Keynote]	KEYNOTE NUMBER
[Line with 4]	NEW CONCRETE WALL	[Section Number]	SECTION NUMBER
[Line with 5]	NEW SPECIALTY WALL	[A-101]	SHEET NUMBER
[Line with 6]	FIRE RATING DENOTES PARTITION TYPE, SEE A-150	[Detail Number]	DETAIL NUMBER
[Line with 7]	PARTITION TYPE VARIABLE	[A-101]	SHEET NUMBER
[Line with 8]	NEW MILLWORK	[SIM]	REFERENCE TYPE
[Line with 9]	RECESSED FIRE EXTINGUISHER CABINET	[Elevation Number]	ELEVATION NUMBER
[Line with 10]	SURFACE MOUNTED FIRE EXTINGUISHER	[A-101]	SHEET NUMBER
[Line with 11]	EXISTING DOOR TO REMAIN	[A-101]	ELEVATION NUMBER
[Line with 12]	6" TYP DOOR NUMBER	[A-101]	SHEET NUMBER
[Line with 13]	FLOOR NUMBER	[FD]	FLOOR DRAIN
[Line with 14]	EXTENT OF CONCRETE SLAB INFILL	[CG]	CORNER GUARD
[Line with 15]	AREA NOT IN CONTRACT	[E-T]	EQUIPMENT TAG
		[FHC]	EXISTING STAND PIPE & FIRE HOSE

NOT FOR CONSTRUCTION

NO.	DATE	ISSUE / REVISION
1	12/23/2020	ISSUE FOR BUILDING REVIEW



DRAWING TITLE:  
**ROOF CONSTRUCTION PLAN**

DRAWING NUMBER:  
**A-101.00**

ARCHITECT OF RECORD: **WILLIAM S. MANDARA**  
LIC. # ARI.0013734

DRAWING SCALE:  
AS NOTED

MD PROJECT NUMBER:  
02-3095-0200

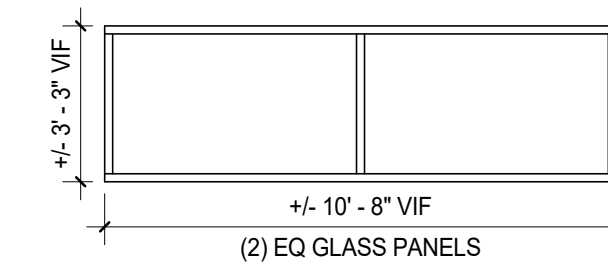


# WINDOW TYPES

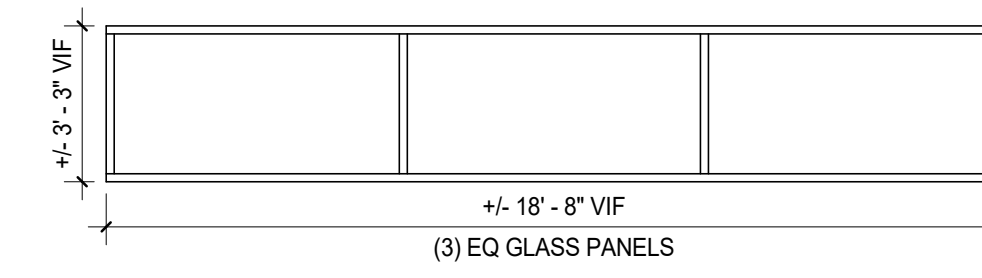
NOT TO SCALE

ALL NEW WINDOWS TO BE INSTALLED IN COMPLIANCE WITH CONNECTICUT BUILDING CODE. MANUFACTURER TO PROVIDE SIGNED AND SEALED SHOP DRAWINGS AND STRUCTURAL ANALYSIS DATA INCLUDING STRUCTURAL CALCULATIONS BY A CONNECTICUT LICENSED PROFESSIONAL ENGINEER.

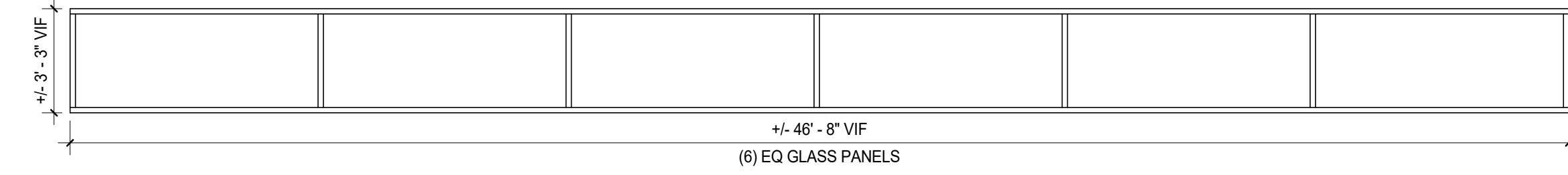
WINDOWS BASIS OF DESIGN  
 FIXED - SIGNATURE SERIES BY OLDCASTLE BUILDING ENVELOPE WITH 1" INSULATED TEMPERED, LOW E GLASS  
 FINISH - TO MATCH EXISTING WINDOW COLORING  
 MAX U VALUE (ENTIRE ASSEMBLY) = 0.36  
 MAX SHGC (ENTIRE ASSEMBLY) = 0.40



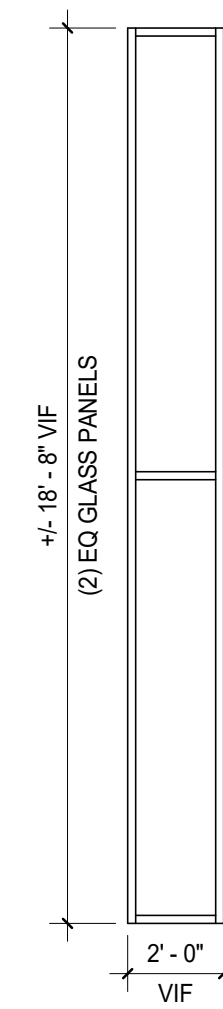
WINDOW TYPE A1



WINDOW TYPE A2

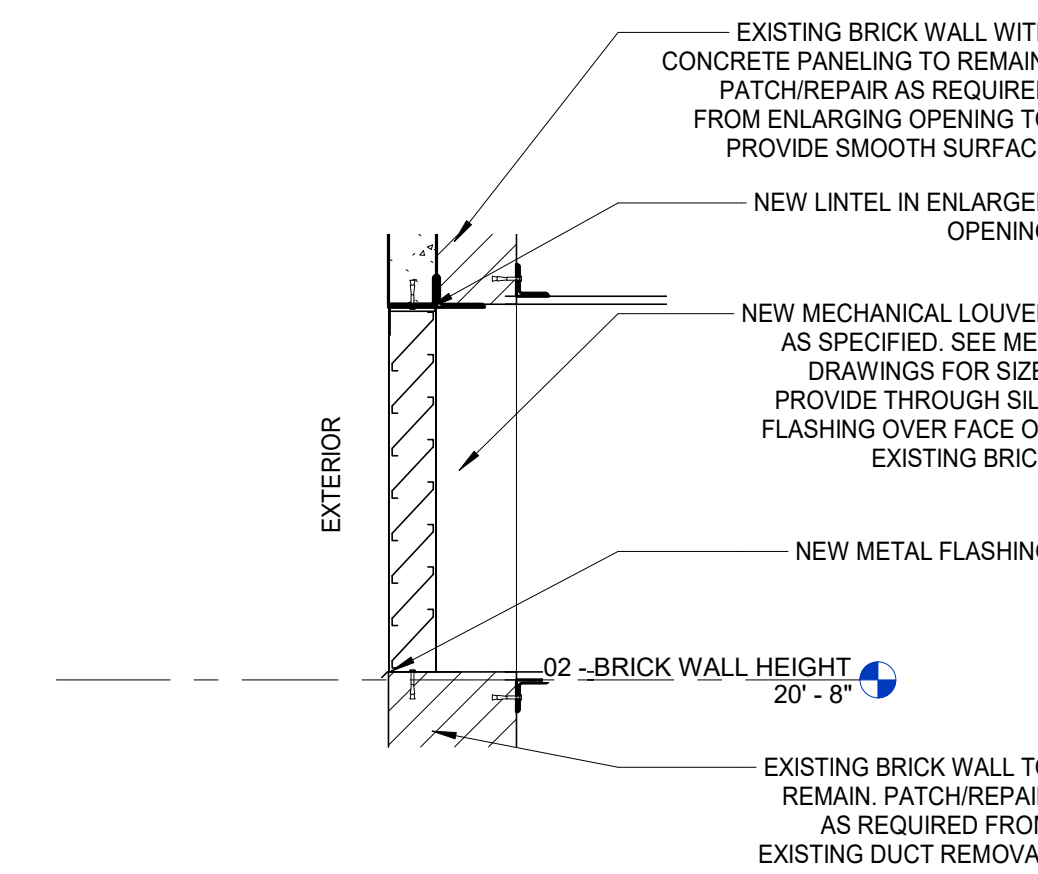


WINDOW TYPE A3

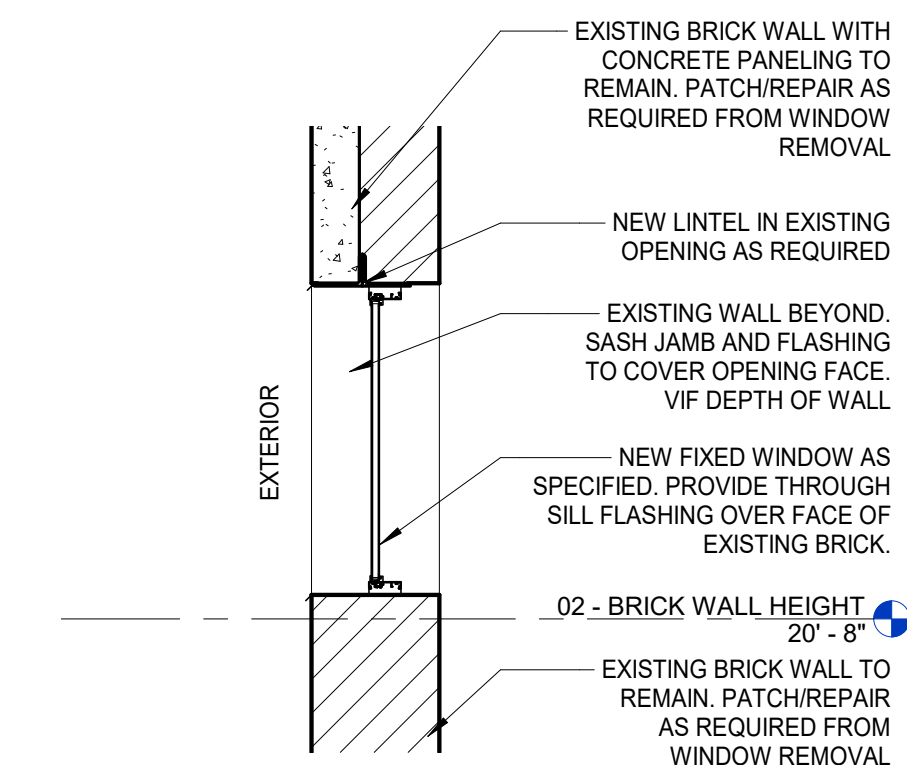


WINDOW TYPE A4

WINDOW SCHEDULE						
WINDOW TYPE	DESCRIPTION	MANUFACTURER	WIDTH	HEIGHT	COMMENTS	ADDITIONAL DESIGN INFORMATION
A1	FIXED	OLDCASTLE	10' - 8"	3' - 3"	VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.	PROVIDE TWO ALTERNATE BID NUMBERS, ONE FOR REPLACING GLASS WITH INSULATED METAL PANELS AND ONE FOR USING SOLARGRAY GLASS OR EQUIVILENT FROSTED PANEL.
A2	FIXED	OLDCASTLE	18' - 8"	3' - 3"	VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.	PROVIDE TWO ALTERNATE BID NUMBERS, ONE FOR REPLACING GLASS WITH INSULATED METAL PANELS AND ONE FOR USING SOLARGRAY GLASS OR EQUIVILENT FROSTED PANEL.
A3	FIXED	OLDCASTLE	46' - 8"	3' - 3"	VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.	PROVIDE TWO ALTERNATE BID NUMBERS, ONE FOR REPLACING GLASS WITH INSULATED METAL PANELS AND ONE FOR USING SOLARGRAY GLASS OR EQUIVILENT FROSTED PANEL.
A4	FIXED	OLDCASTLE	2' - 0"	18' - 8"	VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.	PROVIDE TWO ALTERNATE BID NUMBERS, ONE FOR REPLACING GLASS WITH INSULATED METAL PANELS AND ONE FOR USING SOLARGRAY GLASS OR EQUIVILENT FROSTED PANEL.



2 LOUVER OPENING SECTION  
 SCALE: 1/2" = 1'-0"



1 TYPICAL WINDOW REPLACEMENT  
 SCALE: 1/2" = 1'-0"



WESTON HIGH SCHOOL  
 RENOVATION  
 WESTON HIGH SCHOOL

115 SCHOOL ROAD  
 WESTON, CT 06883



HALSEY MCCORMACK & HELMER INC ARCHITECTS  
 275 SEVENTH AVENUE  
 NEW YORK NY 10001  
 212.938.1280

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE ARCHITECT.

OWNER'S REPRESENTATIVE	STRUCTURAL ENGINEER
NAME	NAME
ADDRESS LINE 1	ADDRESS LINE 1
ADDRESS LINE 2	ADDRESS LINE 2
PHONE NUMBER	PHONE NUMBER
MEP ENGINEER	EXPEDITOR
GOLDMAN COPELAND	NAME
229 WEST 36TH STREET	ADDRESS LINE 1
NEW YORK, NY 10018	ADDRESS LINE 2
212.868.4660	PHONE NUMBER

NOT FOR CONSTRUCTION

NO.	DATE	ISSUE / REVISION
1	12/23/2020	ISSUE FOR BUILDING REVIEW

KEY PLAN:

DRAWING TITLE:  
**WINDOW SCHEDULES  
 AND OPENINGS DETAILS**

DRAWING NUMBER:

**A-180 .00**

ARCHITECT OF RECORD  
 WILLIAM S. MANDARA  
 LIC. # ARI.0013734

SEAL:

DRAWING SCALE:

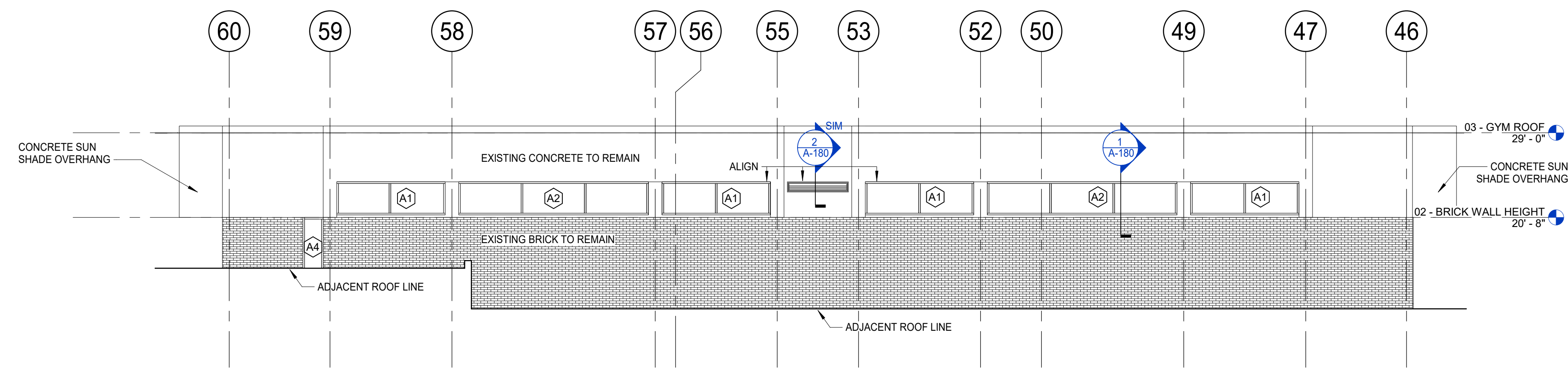
AS NOTED

MD PROJECT NUMBER:

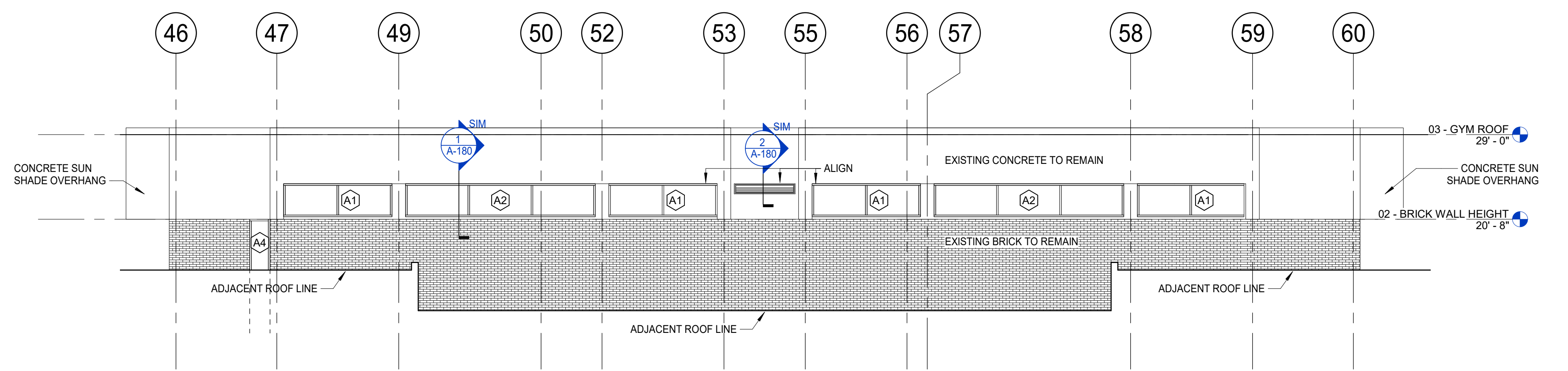
02-3095-0200



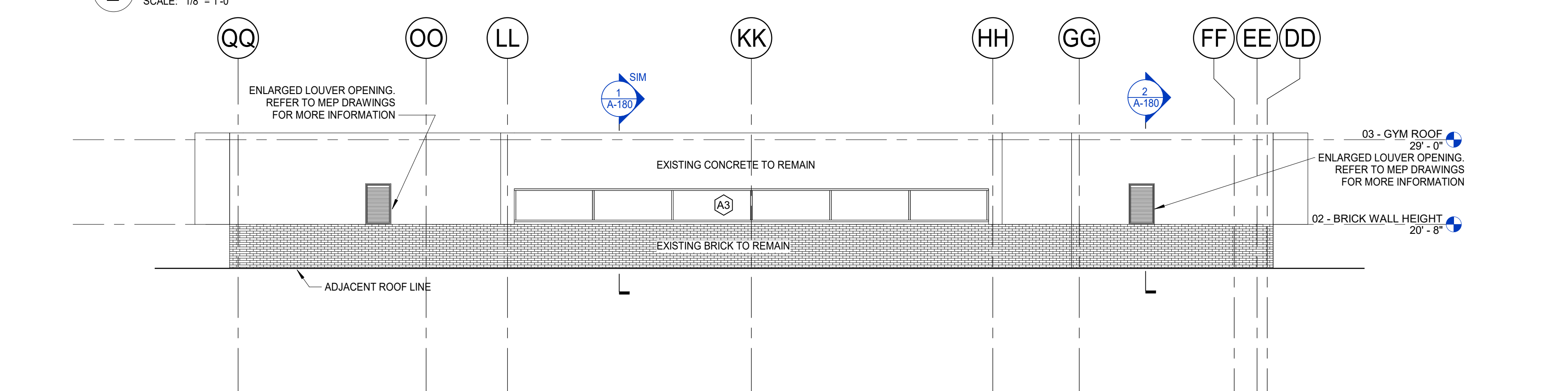
OWNER'S REPRESENTATIVE	STRUCTURAL ENGINEER
NAME	NAME
ADDRESS LINE 1	ADDRESS LINE 1
ADDRESS LINE 2	ADDRESS LINE 2
PHONE NUMBER	PHONE NUMBER
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GOLDMAN COPELAND	NAME
229 WEST 36TH STREET	ADDRESS LINE 1
NEW YORK, NY 10018	ADDRESS LINE 2
212.868.4660	PHONE NUMBER



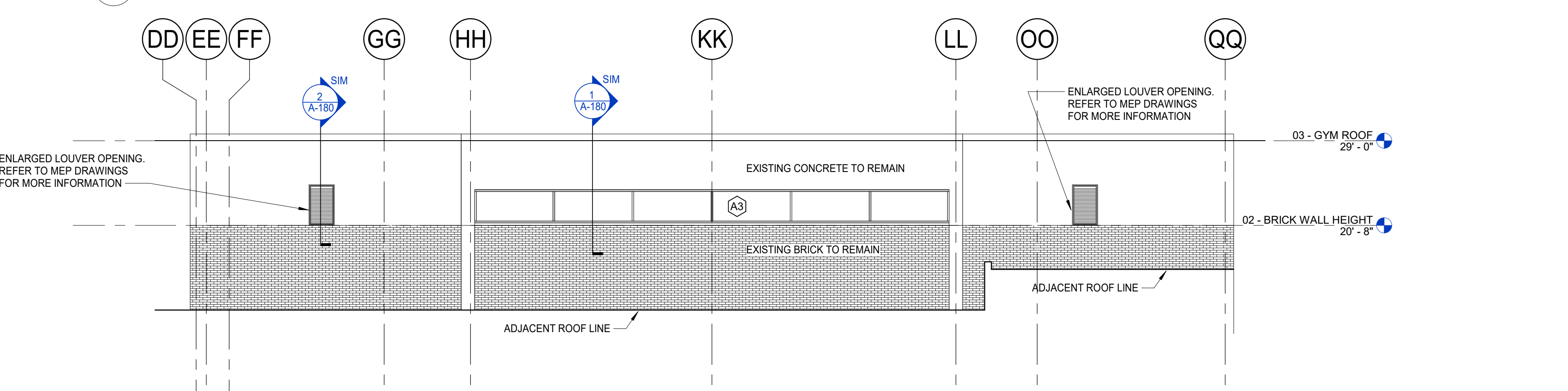
**1 NORTH GYM ELEVATION**  
SCALE: 1/8" = 1'-0"



**2 SOUTH GYM ELEVATION**  
SCALE: 1/8" = 1'-0"



**3 EAST GYM ELEVATION**  
SCALE: 1/8" = 1'-0"



**4 WEST GYM ELEVATION**  
SCALE: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

NO.	DATE	ISSUE / REVISION
1	12/23/2020	ISSUE FOR BUILDING REVIEW

KEY PLAN:

DRAWING TITLE:  
**EXTERIOR BUILDING  
ELEVATIONS**

DRAWING NUMBER:  
**A-300 .00**

ARCHITECT OF RECORD SEAL:  
WILLIAM S. MANDARA  
LIC. # ARI.0013734

DRAWING SCALE:  
AS NOTED  
MD PROJECT NUMBER:  
02-3095-0200

**GENERAL NOTES**

- ALL WORK SHALL BE COORDINATED WITH THE OTHER TRADES TO AVOID CONFLICT.
- ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. EQUIPMENT AND MATERIALS SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL), MANUFACTURED IN ACCORDANCE WITH ASME, ANSI, IEEE STANDARDS, WHERE APPLICABLE, AND ALL WORK MUST BE APPROVED BY LOCAL AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS TO AREAS NOT COVERED BY RENOVATION AND SHALL PROVIDE 48 HOUR NOTICE TO BUILDING MANAGEMENT OF ANY PLANNED POWER INTERRUPTIONS OR SIGNAL SYSTEM OUTAGES.
- ALL CONDUITS TO BE CONCEALED UNLESS OTHERWISE INDICATED.
- CONTRACTOR TO FURNISH AND INSTALL ALL BOXES, FITTINGS, DEVICES, RACEWAYS, CONDUCTORS, CONNECTIONS, MANUFACTURER ACCESSORIES, ADAPTERS AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR A COMPLETE INSTALLATION.
- THE CONTRACTOR SHALL REPAIR OR REPLACE, AS DIRECTED BY THE ARCHITECT, AT NO ADDITIONAL COST TO THE OWNER, ANY ITEM DAMAGED DUE TO THE INSTALLATION, RELOCATION, OR REINSTALLATION.
- THE CONTRACTOR, BEFORE FINAL ACCEPTANCE WILL BE GRANTED, SHALL CLEAN ALL LIGHTING FIXTURES, GLASSWARE, PANELBOARDS, CABINETS, DEVICE PLATES, SERVICE FITTINGS AND OTHER ITEMS FURNISHED UNDER THIS CONTRACT, AND SHALL ENSURE THAT ALL DIRECTORIES ARE IN PLACE WITH COMPLETED OR REVISED SCHEDULES AND ALL IDENTIFICATIONS AND MARKINGS EQUIPMENT, CABLES AND OTHER ITEMS ARE COMPLETED.
- JUNCTION AND PULL BOXES SHALL GENERALLY BE LOCATED FOR FLUSH MOUNTING IN FINISHED SPACES. WHERE NECESSARY, CONDUIT SHALL BE REROUTED OR OTHER ARRANGEMENTS SHALL BE MADE FOR CONCEALMENT. PROVIDE PULL BOXES AS INDICATED AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE LOCATION WITH OTHER TRADES. COVERS OF PULL AND JUNCTION BOXES SHALL BE ACCESSIBLE.
- WIRING FOR ALL LOW VOLTAGE SYSTEMS SHALL BE RUN IN SPACES ABOVE THE CEILING. CABLE SHALL BE ADEQUATELY HARNESSSED, BUNDLED AND TIED AT 4 FOOT INTERVALS BY INDIVIDUAL SYSTEMS AND MARKED WITH IDENTIFICATION TAGS. LOW VOLTAGE WIRING IN CEILING USED AS AIR PLENUMS SHALL BE INSTALLED IN EMT CONDUIT, UNLESS THE INSULATION IS APPROVED FOR USE IN AIR PLENUM CEILING.
- ALL WORK IS NEW UNLESS NOTED.
- CONTRACTOR TO PROTECT AND MAINTAIN ALL REMAINING FIRE ALARM DEVICES AND CABLING DURING CONSTRUCTION.
- RESTOR ALL OPENINGS IN FLOOR AND WALL.
- ELECTRIC CLOSETS SHALL BE KEPT CLEAR OF DEBRIS AND FOREIGN MATERIALS. CONTRACTOR SHALL NOT USE ELECTRIC CLOSETS FOR STORAGE OF MATERIAL OF EQUIPMENT, AT THE COMPLETION OF THE PROJECT ELECTRIC CLOSETS SHALL BE LEFT CLEAN TO THE SATISFACTION OF THE BUILDING MANAGEMENT OFFICE.
- THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL CONDUITS AND WIRING LEFT EXPOSED BY THE DEMOLITION OF WALLS, CEILING, ETC., AND SHALL REMOVE ANY ABANDONED AND CONCEALED CONDUIT AND WIRING.
- WIRE ALL FIXTURES, DEVICES, ETC., TO RESPECTIVE PANELS AND CONTROLS AS SHOWN ON THE PLANS IN SYMBOL FORM. BRANCH CIRCUIT WIRING IS NOT COMPLETELY SHOWN ON DRAWINGS. CONTRACTOR IS RESPONSIBLE TO WIRE ALL DEVICES AS CIRCUITED SYMBOLICALLY.
- COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.
- ALL RECEPTACLES TO BE (P-TOUCH) LABELED INDICATING SOURCE PANEL AND CIRCUIT NUMBER.
- CONTRACTOR SHALL PROVIDE DEDICATED NEUTRALS FOR EACH PHASE CONDUCTOR BRANCH CIRCUIT.
- NEW PANELS SHALL BE DOOR-IN-DOOR, WITH GROUND BAR, CIRCUIT BREAKERS SHALL BE 'BOLT-ON', ALL INTERIOR CONDUIT SHALL BE EMT, FITTING SHALL BE STEEL SET SCREW.
- ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH ALL LAWS ORDINANCES, RULES & REGULATIONS OF THE NYC BUILDING CODE, & NYC AMENDMENTS TO THE 2008 NEC, & RELATED ADMINISTRATIVE PROVISIONS.
- MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO PURCHASE AND SUPPLY ALL MOTOR STARTERS AND VFDs FOR MECHANICAL EQUIPMENT. ALL MOTOR STARTERS TO BE INSTALLED BY ELECTRICAL CONTRACTOR.
- CONTRACTOR TO HAVE SLAB SCANNED UTILIZING A GROUND PENETRATING RADAR AND REPORT FINDINGS TO ARCHITECT AND ENGINEER.
- CONDUCTORS SHALL BE COPPER, 600 VOLT, COLOR CODE ALL WIRING, INSULATION THIN FOR FEEDERS AND FOR BRANCH WORK. MINIMUM SIZE SHALL BE #12 FOR BRANCH CIRCUITS UP TO 100 FT. PROVIDE #10 FOR OVER 100' UP TO 150 FT. PROVIDE #8 FOR OVER 150 FT. UP TO 200 FT.

**REMOVAL NOTES**

- EQUIPMENT AND DEVICES TO BE REMOVED SHALL BE DISCONNECTED AND ALL WIRING REMOVED BACK TO THE SOURCE. U.O.N.
- ALL WIRING, SUPERFLUOUS WIRING MATERIAL, AND RACEWAYS THAT BECOME EXPOSED, UNSIGHTLY OR IMPEDE THE NEW WORK, SHALL BE REMOVED AND REROUTED SO AS TO BE CONCEALED BEHIND FINISHED SURFACES.
- WHEN PORTIONS OF FEEDERS TO BE REMOVED OR ABANDONED BUT ARE REQUIRED TO FEED NEW OR EXISTING EQUIPMENT, THE CONTRACTOR SHALL CUT AT THE JUNCTION BOX AT A CONVENIENT LOCATION, REROUTE AND RECONNECT AS REQUIRED. THE CONTRACTOR SHALL INSTALL JUNCTION BOXES AND REQUIRED DEVICES TO ASSURE BYPASS CONNECTION.
- ALL ELECTRICAL FACILITIES SHALL BE LEFT IN A CONDITION OF SAFETY AFTER WIRING TO EQUIPMENT HAS BEEN DISCONNECTED.
- INTERRUPTION OF POWER AND AUXILIARY SYSTEMS SHALL BE COORDINATED WITH THE BUILDING AUTHORITIES. SUCH OUTAGES SHALL OCCUR ONLY DURING BUILDING MANAGEMENT'S PREARRANGED TIME AT NO ADDITIONAL COST TO THE CONTRACT PRICE.
- ALL UNUSED OUTLET BOXES SHALL HAVE MATCHING BLANK COVERPLATES.
- USABLE REMOVALS ARE PROPERTY OF THE OWNER AND SHALL BE DISPOSED OR STORED BY THE CONTRACTOR AS DIRECTED BY THE OWNER. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF DEMOLITION WORKS.
- FLUORESCENT LIGHTING FIXTURES SHALL BE DISPOSED OF AS FOLLOWS: LAMPS REMOVED AND RECYCLED, BALLAST (UNLESS CLASS 'P') AND REMAINING FIXTURE BODIES AS NORMAL CONSTRUCTION DEBRIS.

**COORDINATION NOTE**

PROVIDE COORDINATION DRAWINGS FOR ALL AREAS OF WORK. THE DRAWINGS SHALL HAVE THE FOLLOWING QUALITIES:

- MINIMUM 3/8" SCALE.
- CLEARLY SHOW ALL THE WORK FOR EACH TRADE INCLUDING, BUT NOT LIMITED TO HANGERS, VALVES, DAMPERS, ACTUATORS, ACCESS DOORS AND SERVICE ACCESS REQUIREMENTS FOR ALL ITEMS.
- INDICATE BOTTOM ELEVATIONS OF ALL DUCTWORK, ELECTRICAL CONDUIT, RACEWAYS, CABLE TRAYS, CONTROL WIRING AND PIPING.
- DUCTWORK, PIPING, AND CONDUIT 3 INCHES AND SMALLER MAY BE SHOWN IN SINGLE LINE.
- DUCTWORK, PIPING, AND CONDUIT GREATER THAN 3 INCHES SHALL BE SHOWN IN DOUBLE LINE.

**VOLTAGE DROP WIRE SIZE MODIFICATIONS**

VOLTAGE DROP FOR CONDUCTORS SIZED ON DRAWINGS WITH MINIMUM #12 AWG, INCREASE WIRE SIZE BY NUMBER OF STANDARD COPPER SIZES AS SHOWN TO COMPENSATE FOR VOLT DROP AND INCREASE CONDUIT SIZES ACCORDINGLY AS REQUIRED. CONTACT ENGINEER OF RECORD FOR ASSISTANCE IF CIRCUIT LENGTH FROM THE SOURCE TO LOAD EXCEEDS MAXIMUMS SHOWN.

CCT VOLTS/PH	CCT LENGTH FT.	UPSIZING
120/1	75-100	1
120/1	150-200	2
120/1	OVER 200	3
208/3 OR 277/1	150-200	1
208/3 OR 277/1	200-250	2
208/3 OR 277/1	OVER 250	3
480/3	300-450	1
480/3	450-550	2

**ABBREVIATIONS**

Symbol	Description
A	AMPERE
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
D	DEDICATED
DWG	DRAWING
EX	EXISTING TO REMAIN
E.C.	EMPTY CONDUIT
EM	EMERGENCY
G	GROUND
GFI	GROUND FAULT INTERRUPTER
MLO	MAIN LUG ONLY
N	NEW
P	POLE
R	REMOVE
RE	RELOCATED EXISTING
RL	EXISTING TO BE RELOCATED
SW	SWITCH
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTS

**ELECTRICAL SYMBOL LIST**

	20A, 277/120V TOGGLE SWITCH
	20A, 120V/277V, THREE WAY TOGGLE SWITCH
	20A, 120V, FOUR WAY TOGGLE SWITCH
	20A, 120V, SINGLE POLE, THERMAL OVERLOAD SWITCH
	20A, 125V, GROUNDING TYPE, SIMPLEX RECEPTACLE, NEMA 5-20R COLOR BY ARCHITECT. RECEPTACLE SHALL BE HOSPITAL GRADE. EM DENOTES EMERGENCY, AND SHALL BE RED.
	20A, 125V, GROUNDING TYPE, DUPLEX RECEPTACLE, NEMA 5-20R COLOR BY ARCHITECT. RECEPTACLE SHALL BE HOSPITAL GRADE. EM DENOTES EMERGENCY, AND SHALL BE RED.
	20A, 125V, GROUNDING TYPE, DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R COLOR BY ARCHITECT. RECEPTACLE SHALL BE HOSPITAL GRADE. EM DENOTES EMERGENCY, AND SHALL BE RED.
	20A, 125V, GROUNDING TYPE, DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R COLOR BY ARCHITECT. TR DENOTES TAMPER RESISTANT. RECEPTACLE SHALL BE HOSPITAL GRADE. EM DENOTES EMERGENCY, AND SHALL BE RED.
	20A, 125V, GROUNDING TYPE, DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R COLOR BY ARCHITECT. GFI DENOTES 5mA GROUND FAULT CIRCUIT INTERRUPTER. RECEPTACLE SHALL BE HOSPITAL GRADE. EM DENOTES EMERGENCY, AND SHALL BE RED.
	20A, 125V, GROUNDING TYPE, DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R COLOR BY ARCHITECT. WP DENOTES WATER PROOF COVER. RECEPTACLE SHALL BE HOSPITAL GRADE. EM DENOTES EMERGENCY, AND SHALL BE RED.
	60/-/3/3R UNFUSED DISCONNECT SWITCH. SIZE/-/POLE/NEMA TYPE ENCLOSURE
	60/40/3/3R FUSED DISCONNECT SWITCH. SIZE/FUSE/POLE/NEMA TYPE ENCLOSURE
	COMBINATION MOTOR STARTER AND MOTOR CIRCUIT PROTECTOR, COORDINATE WITH HVAC CONTRACTOR
	ENCLOSED CIRCUIT BREAKER
	POWER HOME RUN TO PANEL BOARD
	MOTOR; "5" INDICATES HORSEPOWER
	JUNCTION BOX, PROVIDE BACKBOX, 1 1/4" C AND STUB UP 3" ABOVE FINISHED CEILING. TERMINATE WITH BUSHING.
	CONDUIT TURNING UP OR TOWARDS OBSERVER
	CONDUIT TURNED DOWN OR AWAY FROM OBSERVER
	EXISTING SURFACE MOUNTED PANEL BOARD
	NEW SURFACE MOUNTED PANEL BOARD
	EXISTING RECESSED MOUNTED PANEL BOARD
	NEW RECESSED MOUNTED PANEL BOARD
	BACK BOX FOR VOICE/DATA OUTLET WITH BLANK COVER PLATE AND 1 1/4" CONDUIT WITH (2) DRAG LINES TO 6" ABOVE HUNG CEILING. TERMINATE CONDUIT WITH BUSHING.
	MOTORIZED DAMPER, PROVIDE SERVICE DISCONNECT SWITCH (SINGLE POLE 120V)
	VARIABLE FREQUENCY DRIVE
	CONDENSATE PUMP, PROVIDE THERMAL OVERLOAD SWITCH (SINGLE POLE 120V)
	LEAK DETECTOR

2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

CONSULTANTS:  
**GOLDMAN COPELAND** Consulting Engineers  
 229 West 36th Street  
 New York, NY 10018  
 V: 212.868.4660  
 F: 212.868.4680

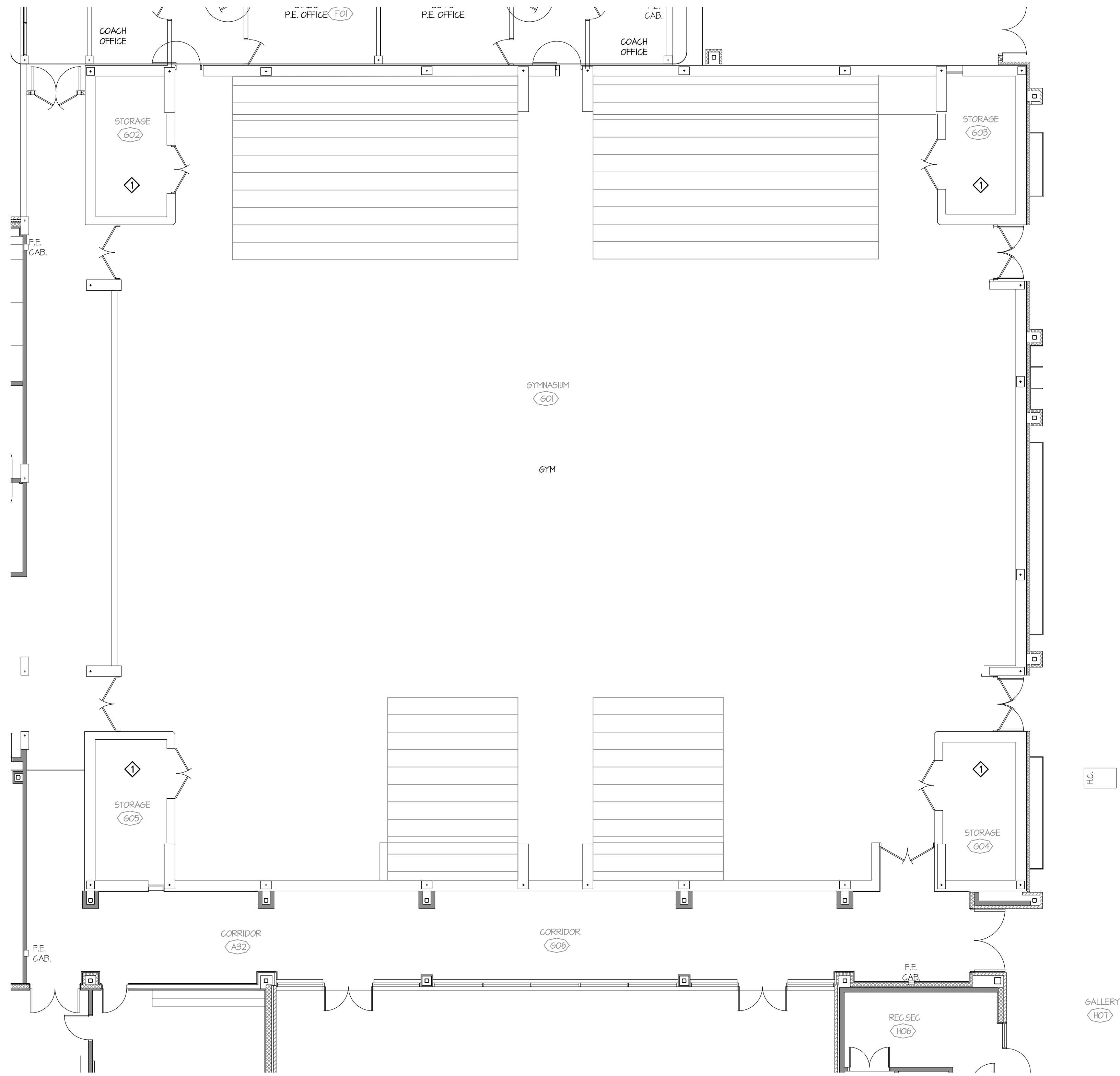
CLIENT:  
**WESTON HIGH SCHOOL**  
 115 School Rd  
 Weston, CT 06883  
 T 203.221.6500  
 F 203.221.6501

KEY PLAN:  
 PROJECT NAME:  
**Weston High School  
 GYM HVAC Upgrade**

PROJECT ADDRESS:  
 DRAWING TITLE:  
**ELECTRICAL  
 NOTES, SYMBOL LIST,  
 AND ABBREVIATIONS**

DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
SCALE:	N.T.S.	
DRAWN BY:	M.F.	
CHECKED BY:	J.M.	

DRAWING NO.  
**E-001.00**  
 X OF X



**GYM 1ST FLOOR PLAN**  
 SCALE: 1/8" = 1'-0"  
 0 8' 16'  
 1/8" = 1'-0"

**GENERAL DEMOLITION NOTES**

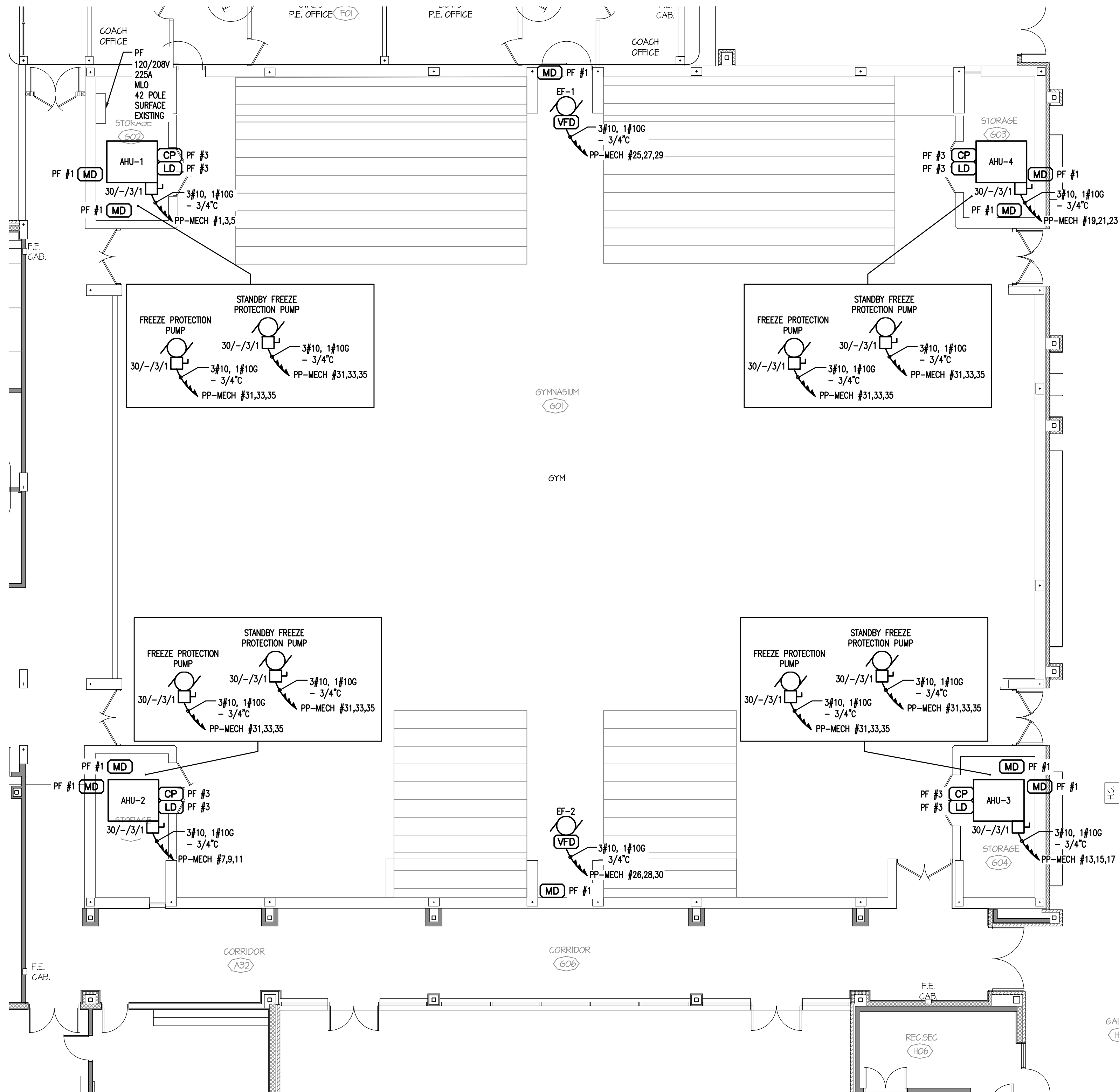
1. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, STORAGE FACILITIES, SERVICES AND SUPERVISION NECESSARY FOR THE COMPLETE AND SATISFACTORY DEMOLITION WORK AS INDICATED ON DRAWINGS AND SPECIFIED HEREIN AND AS INDICATED ON ARCHITECTURAL AND MECHANICAL DEMOLITION DRAWINGS.
2. THE PROTECTION OF ANY AND ALL EXISTING WORK TO REMAIN SHALL INCLUDE BUT IS NOT LIMITED TO THE PROTECTION OF ALL MATERIALS, EQUIPMENT, AND WORK LIABLE TO DAMAGE THROUGH OPERATIONS UNDER THIS CONTRACT. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGES OCCURRING FROM HIS WORK.
3. ALL WORK SHALL BE EXECUTED IN AN ORDERLY AND CAREFUL MANNER WITH DUE CONSIDERATION FOR PUBLIC SAFETY AND IN CONFORMANCE WITH OSHA STANDARDS.
4. CONTRACTOR TO WORK WITH CONSTRUCTION MANAGER TO PREVENT DUST, ODORS, DIRT, AND DEBRIS FROM MIGRATING TO OTHER AREAS.
5. REMOVAL OF ANY MATERIAL AND EQUIPMENT SHALL INCLUDE ALL ASSOCIATED ITEMS SUCH AS FASTENERS, SUPPORTS, CONDUIT, FLASHING, ADHESIVE, ETC.
6. ALL DEBRIS TO BE REMOVED AS IT ACCUMULATES. DO NOT STORE OR PERMIT DEBRIS TO ACCUMULATE ON SITE. IF THE CONTRACTOR FAILS TO REMOVE DEBRIS PROMPTLY OR PROPERLY, THE OWNER HAS THE RIGHT TO REMOVE AT THE CONTRACTOR'S EXPENSE.
7. ANY AND ALL EXISTING EQUIPMENT OR MATERIALS TO BE RE-USED AS DETERMINED BY ENGINEER/ARCHITECT, OR NOT SHOWN ON THE DRAWINGS TO BE RETAINED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES. REMOVED ITEMS SERVICEABLE BY THE OWNER SHALL BE TURNED OVER FOR STORAGE AND LOCATED AS REQUIRED.
8. THE CONTRACTOR SHALL INCLUDE ALL COSTS FOR REMOVALS IN THE CONTRACT. THESE COSTS SHALL INCLUDE WORK DESCRIBED HEREIN WITH ALLOWANCES FOR NORMAL UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN SPECIFIC CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT/ENGINEER.
9. THE CONTRACTOR SHALL REMOVE EXISTING ELECTRICAL WORK WHICH IS AFFECTED BY THE ARCHITECT'S DEMOLITION PLAN. ALL WORK WHICH IS NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE SOURCE OF POWER SUPPLY.
10. THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL OUTLETS, SWITCHES AND OTHER DEVICES, COMPLETE WITH ASSOCIATED WIRING AND CONDUITS, ETC. FROM PARTITIONS THAT ARE TO BE REMOVED. OTHERWISE, CONDUIT AND WIRING TO BE REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION BOX THAT IS TO REMAIN OR TO THE PANELBOARD.
11. THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL CEILING MOUNTED LIGHTING FIXTURES AND OTHER CEILING MOUNTED DEVICES, COMPLETE WITH ASSOCIATED WIRING AND CONDUITS, ETC. FROM CEILINGS THAT ARE TO BE REMOVED. CONDUIT AND WIRING TO BE REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION BOX THAT IS TO REMAIN OR TO THE PANELBOARD.
12. TAKE POSSESSION AND REMOVE FROM THE PREMISES ALL ABANDONED MATERIALS AND EQUIPMENT UNLESS OTHERWISE SPECIFIED AS RETURNABLE TO THE OWNER, IN WHICH CASE REMOVE WITHOUT DAMAGE ALL SUCH EQUIPMENT AND DELIVER TO OWNER WITHIN BUILDING AT LOCATION DESIGNATED BY CONSTRUCTION MANAGER. COORDINATE LOCATION WITH CONSTRUCTION MANAGER.
13. ELECTRICAL CONTRACTOR PRIOR TO SUBMISSION OF BID SHALL VISIT SITE AND EXAMINE EXISTING CONDITIONS, QUANTITIES AND DIFFICULTIES THAT WILL BE INCURRED DURING THE PERFORMANCE OF WORK. CLAIMS FOR ADDITIONAL COMPENSATION THAT ARE DUE TO THE FAILURE OF THE CONTRACTOR TO EXAMINE THE PREMISES WILL NOT BE CONSIDERED.
14. CONTRACTOR SHALL TRACE ALL CONDUITS AND WIRING BEFORE REMOVAL TO CONFIRM AREAS TO REMAIN ARE NOT INTERRUPTED. PROVIDE CONDUIT AND WIRE AS REQUIRED TO MAINTAIN AREAS AFFECTED.
15. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL ELECTRICAL DEMOLITION OR DISCONNECT WORK REQUIRED.
16. LIGHTING FIXTURE BALLASTS MANUFACTURED PRIOR TO 1976 AND CONTAINING PCB FILLED OR IMPREGNATED COMPONENTS, AS WELL AS, FLUORESCENT LAMPS CONTAINING MERCURY AND OTHER HAZARDOUS MATERIALS, INCLUDING LOW MERCURY AND GREEN END CAP LAMPS, SHALL BE REMOVED FROM THE LIGHTING FIXTURE HOUSING AND LEGALLY DISPOSED OF IN A MANNER ACCEPTABLE TO THE EPA AND STATE APPLICABLE CODES. THE CONTRACTOR SHALL PERFORM ALL REQUIRED TESTING, FILING, LAMP AND BALLAST REMOVAL RECORDING AND PRODUCTS DISPOSAL ALL IN STRICT ACCORDANCE WITH THE APPLICABLE RULES, REGULATIONS AND ALL STATE, LOCAL AND FEDERAL ORDINANCES. ALL CHARGES ASSOCIATED WITH TESTING, FILING, DISPOSAL PREPARATION, AND SUBMISSION OF ALL REQUIRED DOCUMENTATION SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE. NO ADDITIONAL COSTS SHALL BE PAID TO THE CONTRACTOR BECAUSE OF THE CONTRACTOR'S FAILURE TO COMPLY WITH THE ABOVE. PROVIDE CERTIFICATION THAT THE ABOVE CONDITIONS HAVE BEEN ADHERED TO.
17. THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL CEILING MOUNTED AND WALL MOUNTED FIRE ALARM SYSTEM DEVICES INCLUDING BUT NOT LIMITED TO SMOKE DETECTORS, DUCT MOUNTED SMOKE DETECTORS AND REMOTE ALARM INDICATORS, SPEAKERS, STROBES, COMBINATION SPEAKER/STROBES, FIRE WARDEN TELEPHONES, COMPLETE WITH ASSOCIATED WIRING AND CONDUITS, CONDUIT AND WIRING TO BE REMOVED BACK TO THE NEAREST JUNCTION POINT THAT IS TO REMAIN OR TO THE TRANSponder CABINET SERVING THE AREA. COORDINATE THIS WORK WITH THE FIRE ALARM SYSTEM VENDOR.
18. EXISTING WIRING CONDITIONS SHALL BE BROUGHT UP TO CURRENT CODE. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THAT ALL WIRING IS HOSPITAL GRADE AND HAS PROPER GROUNDING FROM DEVICE TO ELECTRICAL PANEL SERVING IT.

**CODED NOTES**

◆ CONTRACTOR SHALL REMOVE HVAC EQUIPMENT AS SHOWN ON MECHANICAL DRAWINGS. CONTRACTOR SHALL REMOVE ALL ASSOCIATED WIRING, CONDUIT, DISCONNECT SWITCHES, ETC. BACK TO SOURCE. IDENTIFY SOURCE OF POWER FOR EACH PIECE OF EQUIPMENT BEING REMOVED AND REPORT FINDINGS TO ENGINEER.

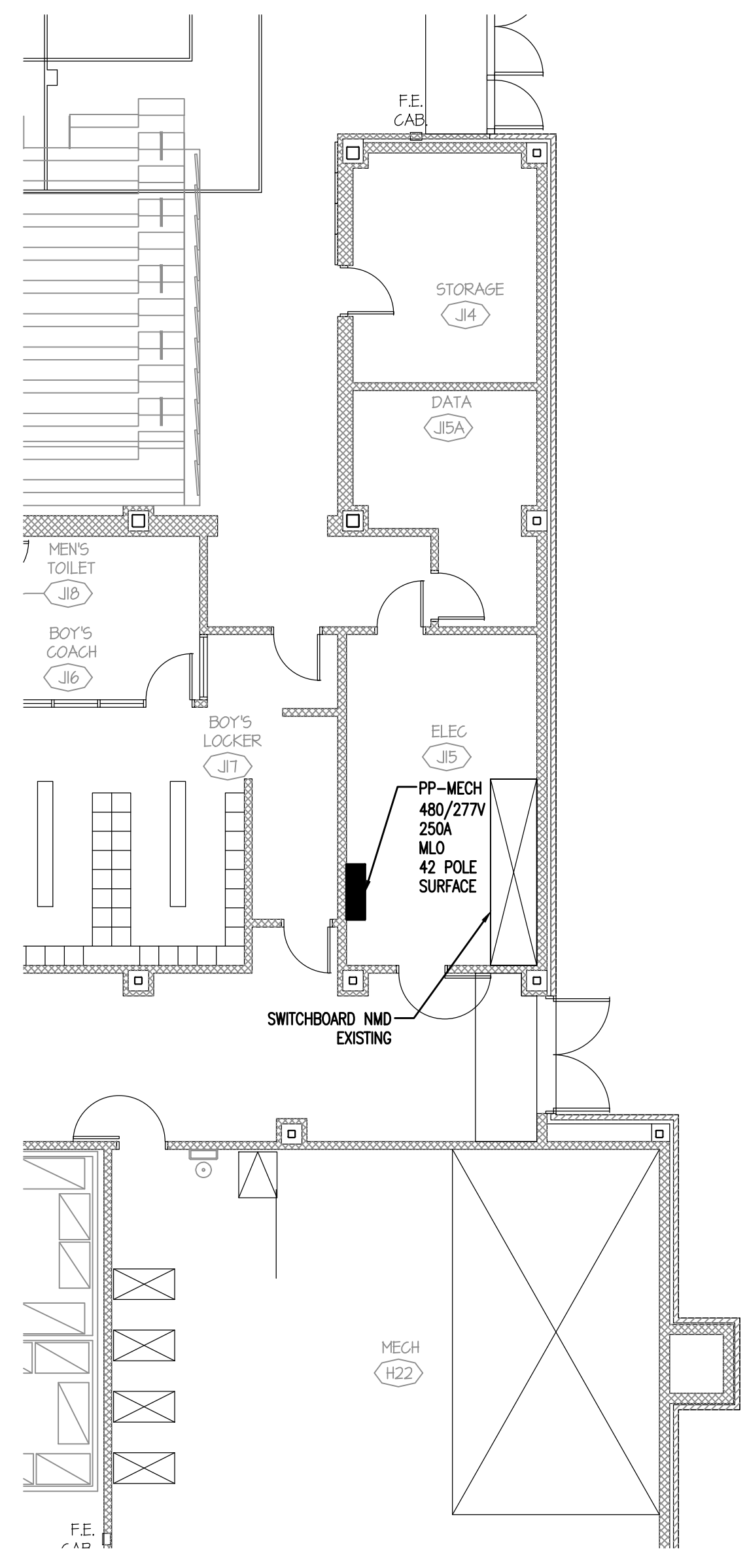
2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN
CONSULTANTS: <b>GOLDMAN COPELAND</b> Consulting Engineers 229 West 36th Street New York, NY 10018 V: 212.868.4660 F: 212.868.4680		
CLIENT: <b>WESTON HIGH SCHOOL</b> 115 School Rd Weston, CT 06883 T 203.221.6500 F 203.221.6501		
KEY PLAN: 		
PROJECT NAME: <b>Weston High School          GYM HVAC Upgrade</b>		
PROJECT ADDRESS: 		
DRAWING TITLE: <b>FIRST FLOOR          ELECTRICAL          DEMOLITION PLAN</b>		
DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
SCALE:	AS SHOWN	
DRAWN BY:	M.F.	
CHECKED BY:	J.M.	
DRAWING NO.		<b>E-050.00</b> X OF X
DOB NOW JOB #		

Filename: S:\Weston\Weston High School - Weston\CT\Gym HVAC Upgrade - 2020\050-E-050.00.dwg, By: MATTHEW FOO, On: December 21, 2020, At: 8:57 AM



**GYM 1ST FLOOR PLAN**  
 SCALE: 1/8"=1'-0"  
 0 8' 16'  
 1/8"= 1'-0"

- NOTES**
1. CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES ONLY. FIELD CONDITIONS SHALL PREVAIL.
  2. AIR HANDLER LOCATIONS ARE APPROXIMATE. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS.
  3. PRIMARY FREEZE PROTECTION PUMP AND STANDBY FREEZE PROTECTION PUMP SHALL BE INTERLOCKED. TYPICAL FOR ALL.



**ELECTRICAL ROOM 1ST FLOOR PLAN**  
 SCALE: 1/8"=1'-0"  
 0 8' 16'  
 1/8"= 1'-0"

2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

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CLIENT:  
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 115 School Rd  
 Weston, CT 06883  
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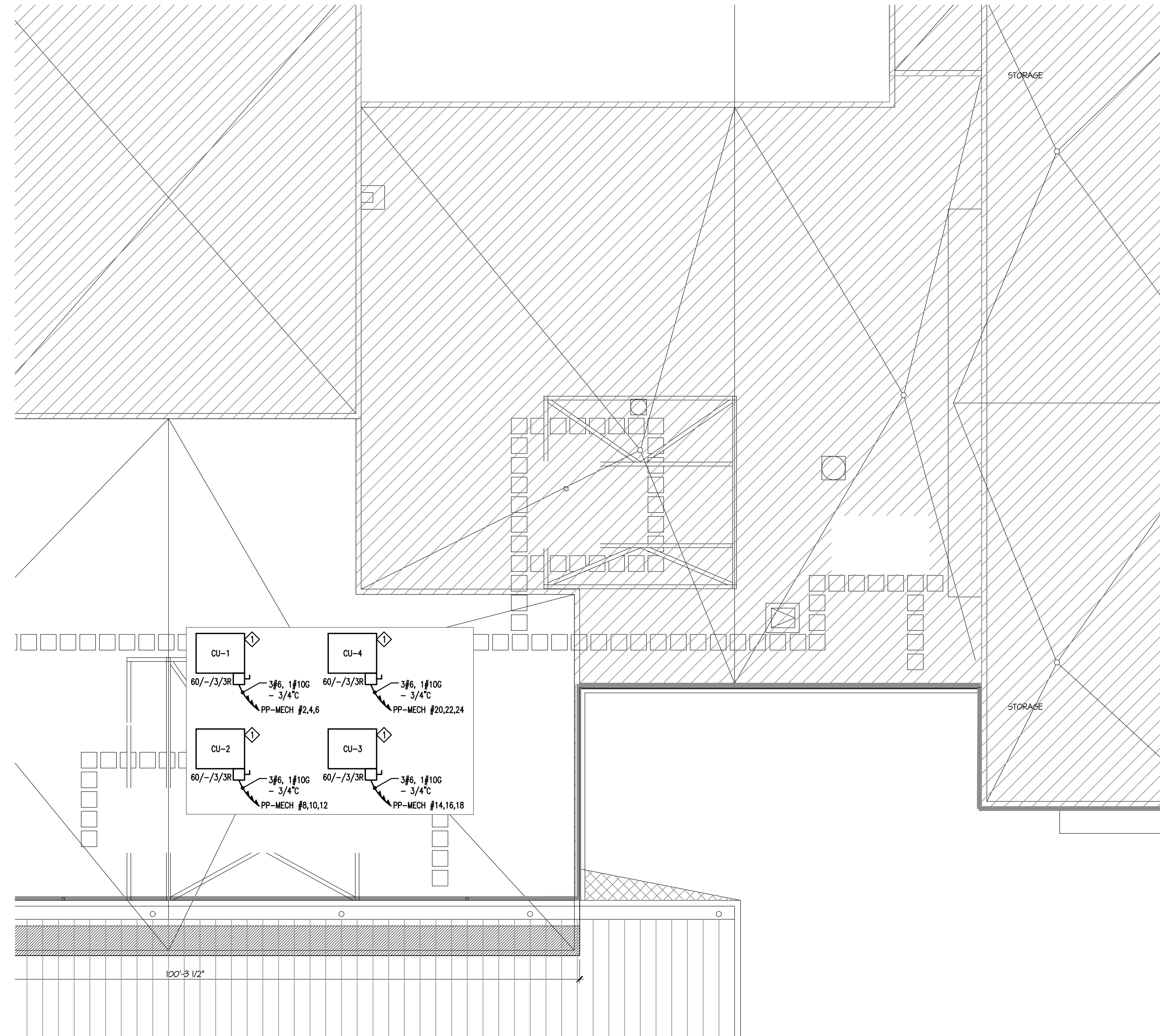
KEY PLAN:  
 PROJECT NAME:  
**Weston High School GYM HVAC Upgrade**

PROJECT ADDRESS:  
 DRAWING TITLE:  
**FIRST FLOOR ELECTRICAL FLOOR PLAN**

DATE: 11/04/2020  
 PROJECT No: 20279.00  
 SCALE: AS SHOWN  
 DRAWN BY: M.F.  
 CHECKED BY: J.M.

DRAWING NO.  
**E-200.00**  
 SEAL & SIGNATURE  
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Filename: S:\Weston\Weston High School - Weston\CT\Gym HVAC Upgrade - 20279.00E-200.00.dwg, By: MATTHEW FOO, On: December 24, 2020, At: 8:57 AM



**GYM ROOF PLAN**  
 SCALE: 1/8"=1'-0"  
 0 8' 16'  
 1/8"= 1'-0"

**NOTES**

1. CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES ONLY. FIELD CONDITIONS SHALL PREVAIL.
2. ALL CONDUITS RUN OUTDOORS SHALL BE RIGID GALVANIZED STEEL.
3. CONDENSING UNIT LOCATIONS ARE APPROXIMATE. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS.
4. ALL CONDUITS SHALL FOLLOW REFRIGERANT PIPING ROUTE FROM CONDENSING UNITS TO ASSOCIATED AHU.
5. HVAC CONTROL PANELS SHALL BE POWERED FROM PF #5. SEE MECHANICAL DRAWINGS FOR HVAC CONTROL PANEL LOCATIONS. SEE DRAWING E-200 FOR ELECTRICAL PANELBOARD "PF" LOCATION.

**CODED NOTES**

- ◇ CONTRACTOR SHALL PROVIDE 3/4" EMPTY CONDUIT FOR CONTROL WIRING DOWN TO ASSOCIATED AIR HANDLER.


2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

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**WESTON HIGH SCHOOL**  
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 Weston, CT 06883  
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 F 203.221.6501

KEY PLAN:  
 [Blank area for key plan]

PROJECT NAME:  
**Weston High School  
 GYM HVAC Upgrade**

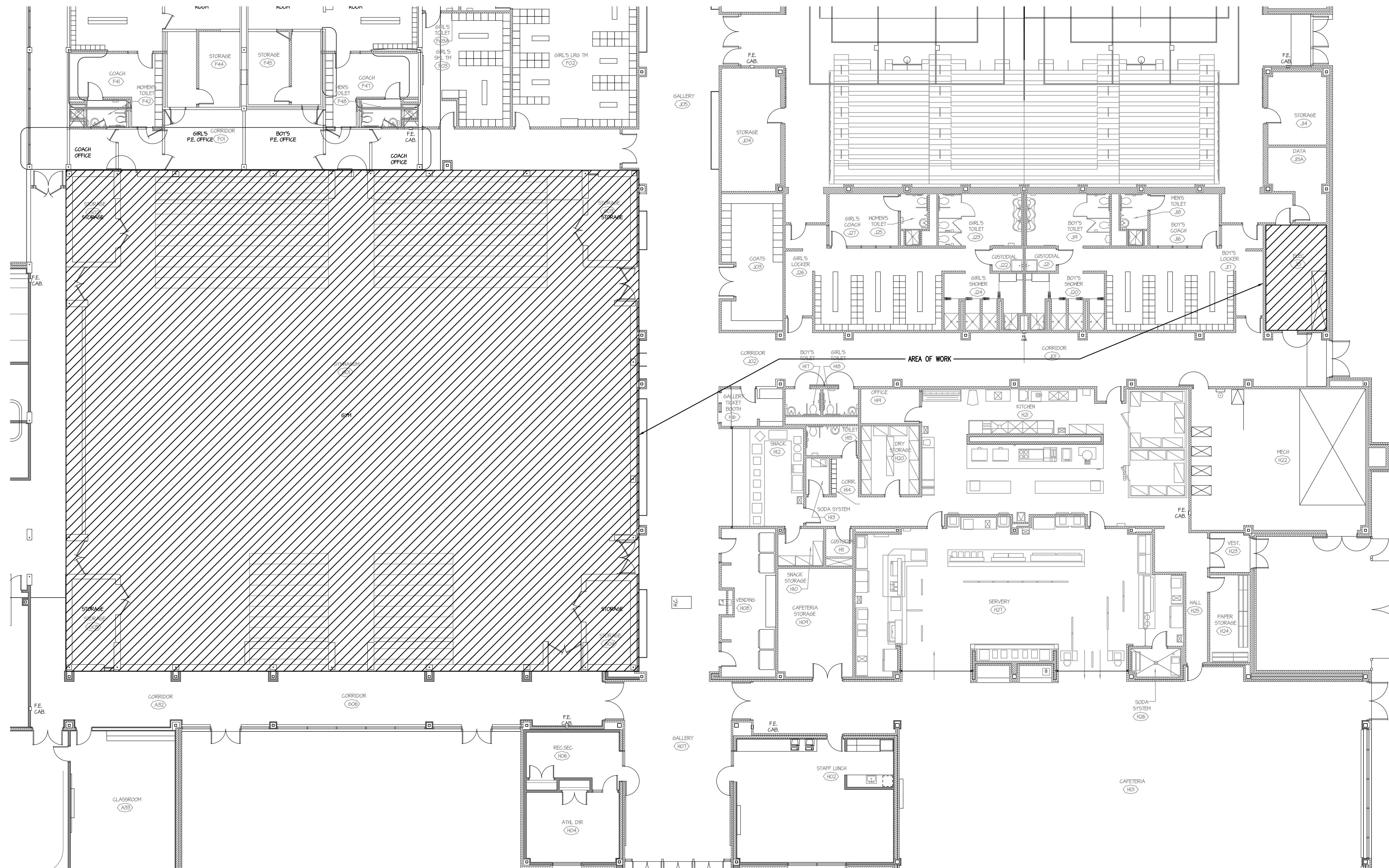
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DRAWING TITLE:  
**ROOF  
 ELECTRICAL  
 FLOOR PLAN**

DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
SCALE:	AS SHOWN	
DRAWN BY:	M.F.	
CHECKED BY:	J.M.	

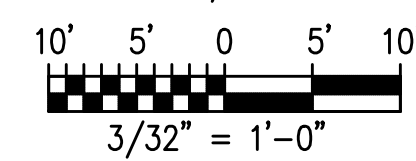
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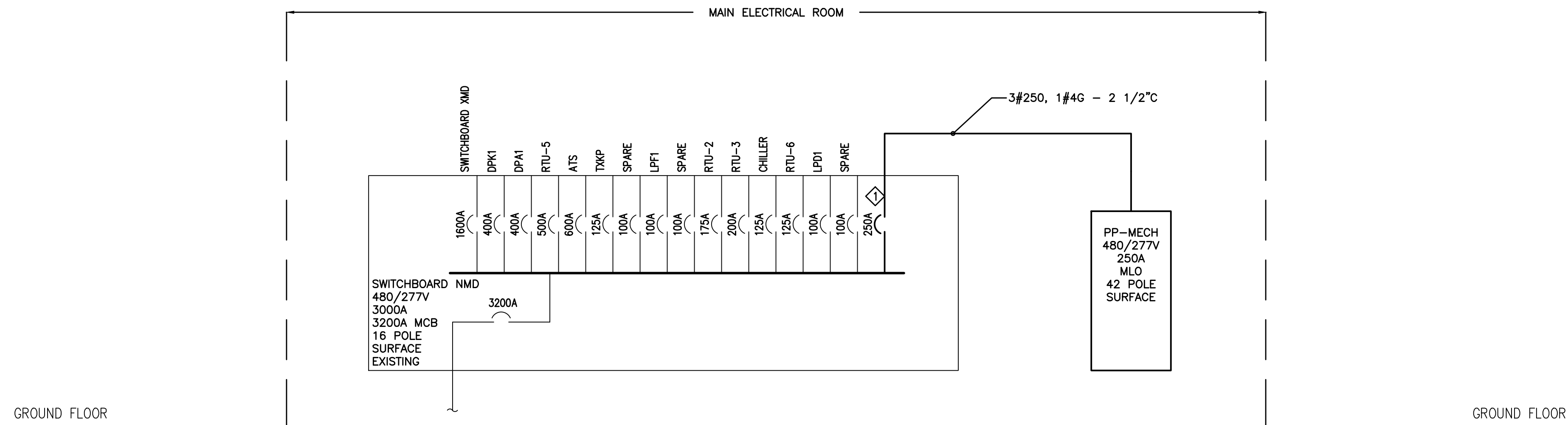


**1ST FLOOR PLAN**

SCALE: 3/32" = 1'-0"



2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN
<b>CONSULTANTS:</b> <b>GOLDMAN COPELAND</b> Consulting Engineers 229 West 36th Street New York, NY 10018 V: 212.868.4660 F: 212.868.4680		
<b>CLIENT:</b> <b>WESTON HIGH SCHOOL</b> 115 School Rd Weston, CT 06883 T 203.221.6500 F 203.221.6501		
<b>KEY PLAN:</b>		
<b>PROJECT NAME:</b> <b>Weston High School GYM HVAC Upgrade</b>		
<b>PROJECT ADDRESS:</b>		
<b>DRAWING TITLE:</b> <b>FIRST FLOOR ELECTRICAL FLOOR PLAN</b>		
DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
SCALE:	AS SHOWN	
DRAWN BY:	M.F.	
CHECKED BY:	J.M.	
DRAWING NO.		<b>E-202.00</b> X OF X



**NOTES**

- SEE DRAWING E-001 FOR GENERAL NOTES, REMOVAL NOTES, ABBREVIATIONS AND SYMBOL LIST.
- SEE DRAWING E-500 FOR SPECIFICATIONS.

**CODED NOTES**

- CONTRACTOR SHALL INSTALL NEW 250A CIRCUIT BREAKER TO MATCH EXISTING IN AVAILABLE SPACE TO FEED NEW ELECTRICAL PANEL BOARD PP-MECH.

**LEGEND**

- ROOM DEMARCATION ————
- NEW CONDUIT AND WIRE ————

PANEL DESIGNATION	SERVICE	MAIN BUS			MAIN CIRCUIT BREAKER				MOUNTING				PANEL LOCATION	
		480/277V			250A				MAIN ELEC. CLOSET					
LOAD DESCRIPTION	LOAD BREAKDOWN			CR. NO.	CIRCUIT BREAKER TRIP	BUS POL	CIRCUIT BREAKER POL	CR. NO.	TOTAL LOAD WATTS			LOAD BREAKDOWN		
	LTS	REC	MOT & MISC.						αA	αB	αC	αA	αB	αC
AHU-1			1385	1	15		50	2	10250					CU-1
			1385	3				4	10250					
			1385	5				6	10250					
AHU-2			1385	7	15		50	8	10250					CU-2
			1385	9				10	10250					
			1385	11				12	10250					
AHU-3			1385	13	15		50	14	10250					CU-3
			1385	15				16	10250					
			1385	17				18	10250					
AHU-4			1385	19	15		50	20	10250					CU-4
			1385	21				22	10250					
			1385	23				24	10250					
EF-1			942	25	15		15	26	942					EF-2
			942	27				28	942					
			942	29				30	942					
FREEZE PROTEC. PUMPS				31			20	32						SPARE
				33			20	34						SPARE
				35			20	36						SPARE
SPARE				37			20	38						SPARE
SPARE				39			20	40						SPARE
SPARE				41			20	42						SPARE

**NOTES**

- ALL PANELS SHALL BE DOOR IN DOOR.
- ALL PANELS SHALL HAVE COPPER WITH A GROUND BUSS.
- ALL BREAKERS SHALL BE "BOLT-ON" TYPE.
- ALL PANELS SHALL BE FULLY RATED. SERIES RATED IS NOT ACCEPTABLE.

2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

CONSULTANTS:  
**GOLDMAN COPELAND** Consulting Engineers  
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KEY PLAN:  
 PROJECT NAME:  
**Weston High School  
 GYM HVAC Upgrade**

PROJECT ADDRESS:  
 DRAWING TITLE:  
**ELECTRICAL  
 PARTIAL RISER DIAGRAM**

DATE: 11/04/2020  
 PROJECT No: 20279.00  
 SCALE: N.T.S.  
 DRAWN BY: M.F.  
 CHECKED BY: J.M.

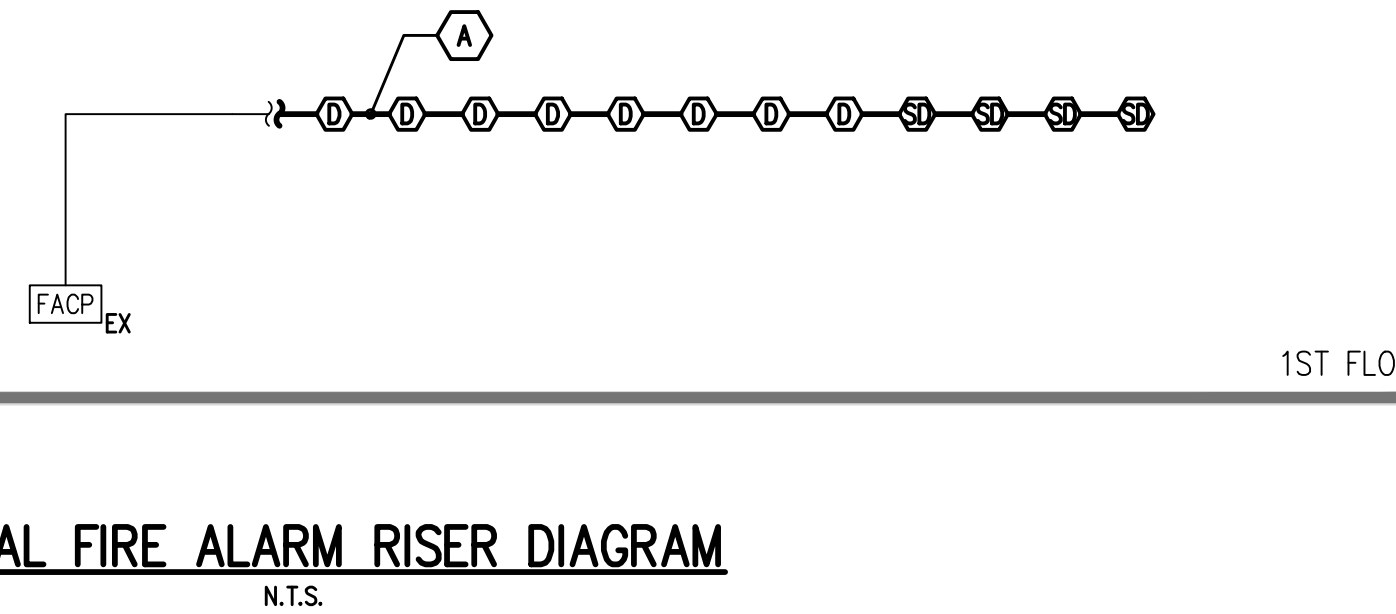
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**E-350.00**  
 X OF X





**FIRE ALARM NOTES**

1. PRIOR TO SUBMISSION OF BIDS: THE ELECTRICAL CONTRACTOR SHALL CONTACT THE BUILDING FIRE ALARM VENDOR AND BUILDING CHIEF ENGINEER FOR DIRECTIONS.
2. ALL FIRE ALARM DEVICES SHALL BE PURCHASED FROM BUILDING FIRE ALARM VENDOR TO ASSURE COMPATIBILITY WITH THE EXISTING SYSTEM. ALL FIRE ALARM DEVICES SHALL BE UL LISTED. THE FIRE ALARM VENDORS PRICE SHALL INCLUDE ALL REQUIRED DEVICES (ZONES, BATTERIES, ETC.) TO MAKE THIS A COMPLETE WORKING SYSTEM.
3. THIS IS NOT A POINT TO POINT WIRING DIAGRAM. USE THIS DIAGRAM FOR ESTIMATING PURPOSES ONLY. PRIOR TO STARTING ANY WORK, A WORKING POINT TO POINT WIRING DIAGRAM SHALL BE OBTAINED FROM BUILDING FIRE ALARM VENDOR. THE EXACT LOCATION AND QUANTITIES OF FIRE ALARM DEVICES, REFER TO FLOOR PLANS.
4. CONTRACTOR TO PROTECT AND MAINTAIN ALL REMAINING FIRE ALARM DEVICES AND CABLING DURING CONSTRUCTION. FIRE STOP ALL OPENINGS IN FLOOR AND WALL.
5. ALL REPROGRAMMING OF SOFTWARE, HARDWARE AND THE FINAL CONNECTIONS TO EXISTING FIRE DATA GATHERING PANEL SHALL BE DONE BY BUILDING FIRE ALARM VENDOR, BUT THIS CONTRACTOR SHALL INCLUDE PRICE OF THIS WORK IN THE BID PRICE. THE FIRE ALARM VENDOR SHALL ALSO INCLUDED ALL EQUIPMENT (DGP, CABLES STROBE PANEL, PROGRAMMING, ETC.) REQUIRED TO MAKE THE SYSTEM OPERABLE.
6. STROBE LIGHTS SHALL BE ADA APPROVED TYPE AND SHALL BE MOUNTED AT 80" ABOVE FINISHED FLOOR OR 6" BELOW CEILING, WHICHEVER IS LOWER. STROBE LIGHTS SHALL BE RATED AT 75 CANDELA.
7. ALL EXISTING BASE BUILDING DEVICES ARE TO REMAIN UNLESS OTHERWISE NOTED. REACTIVATE AND LEAVE IN WORKING CONDITION UPON COMPLETION OF THIS PROJECT.
8. IF EXISTING BASE BUILDING DEVICES ARE NOT IN WORKING ORDER, THE CONTRACTOR SHALL REPAIR/REPLACE AS PART OR THIS SCOPE OF WORK.
9. THE INSTALLATION SHALL COMPLY WITH THE BUILDING CODE OF THE STATE OF CONNECTICUT, NATIONAL ELECTRICAL CODE AND RELATED ADMINISTRATIVE PROVISIONS AND FIRE DEPARTMENT REQUIREMENTS.
10. THE CONTRACTOR SHALL FILE A-433 AND OBTAIN APPROVAL FROM THE FIRE DEPARTMENT, INCLUDING THE TESTING OF 10% OF BUILDING FIRE ALARM DEVICES DURING INSPECTION.
11. PROVIDE ALTERNATE STROBE LIGHT AND SPEAKER CIRCUITS A & B TO FEED NEW DEVICES TO BALANCE LOAD AND TO ELIMINATE ADJACENT DEVICES WIRED TO SAME CIRCUITS.
12. LOCATIONS FOR ALL SPEAKER/STROBES & OTHER F.A. & SECURITY DEVICES ARE TO BE VERIFIED WITH ARCHITECT PRIOR TO INSTALLATION.
13. CONTRACTOR SHALL VERIFY EXACT LOCATION OF NEAREST USABLE DGP WITH THE BASE BLDG FIRE ALARM REPRESENTATIVE PRIOR TO SUBMISSION OF BID.
14. CONNECT ALL SPEAKERS (IN SPEAKER/STROBE DEVICES) INDEPENDENTLY TO THE EXISTING FIRE ALARM CONTROL PANEL.
15. ALL INACCESSIBLE DUCT DETECTORS SHALL HAVE A REMOTE LED INDICATOR.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMISSION OF AS-BUILTS TO ENGINEER MINIMUM 1 WEEK PRIOR TO FIRE DEPARTMENT TESTING OR CLIENT MOVE-IN, WHICHEVER COMES FIRST.



**PARTIAL FIRE ALARM RISER DIAGRAM**

**FIRE ALARM WIRING SCHEDULE**

A	1 PAIR #16 AWG FPLP PER CIRCUIT (ADDRESSABLE CIRCUIT)
---	---

FIRE ALARM SYMBOL LIST	
H	HEAT DETECTOR
SD	SMOKE DETECTOR
D	DUCT MOUNTED SMOKE DETECTOR
H	HORN
H	HORN/STROBE
S	STROBE
F	SPEAKER/STROBE
T	TROUBLE BELL
F	PULL STATION
M	MAGNETIC DOOR RELAY
T	SPRINKLER VALVE TAMPER SWITCH
WF	SPRINKLER WATER FLOW SWITCH
WS	WARDEN STATION
FCS	FIRE ALARM COMMAND STATION
FCO	FUSE CUT OUT
FSD	FIRE/SMOKE DAMPER
FSR	FAN SHUTDOWN RELAY
FDGP	FIRE ALARM DATA GATHERING PANEL
FACP	FIRE ALARM CONTROL PANEL
---	EXISTING WIRING
---	NEW WIRING
EX	EXISTING TO REMAIN
R	REMOVE
RL	TO BE RELOCATED
RE	RELOCATED

**FIRE ALARM MATRIX**

	DEVICES							
	MANUAL PULL STATION	ELEVATOR LOBBY SMOKE DETECTOR	ELEVATOR MACHINE RM SMOKE DETECTOR	DUCT DETECTOR (SUPPLY)	DUCT DETECTOR (RETURN)	SMOKE/HEAT DETECTOR	WATERFLOW SWITCH	TAMPER SWITCH
STATUS INDICATION AT FACP	X	X	X	X	X	X	X	X
AUDIBLE NOTIFICATION FIRE ZONE	X	X	X	X	X	X	X	X
VISUAL NOTIFICATION FIRE ZONE	X	X	X	X	X	X	X	X
FAN SHUT DOWN	X	X	X	X	X	X	X	X
DAMPER CLOSE	X	X	X	X	X	X	X	X
DOOR RELEASE	X	X	X	X	X	X	X	X
ELEVATOR RECALL	X	X	X	X	X	X	X	X
CENTRAL OFFICE NOTIFICATION	X	X	X	X	X	X	X	X

2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN
CONSULTANTS:		
<b>GOLDMAN COPELAND</b> <small>Consulting Engineers</small>		229 West 36th Street New York, NY 10018 V: 212.868.4660 F: 212.868.4680
CLIENT:		
<b>WESTON HIGH SCHOOL</b> 115 School Rd Weston, CT 06883 T 203.221.6500 F 203.221.6501		
KEY PLAN:		
PROJECT NAME:		
<b>Weston High School                  GYM HVAC Upgrade</b>		
PROJECT ADDRESS:		
DRAWING TITLE:		
<b>FIRE ALARM                  RISER DIAGRAM AND MATRIX</b>		
DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
SCALE:	N.T.S.	
DRAWN BY:	M.F.	
CHECKED BY:	J.M.	
DRAWING NO.		
FA-001.00		
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## GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF BUILDING STANDARDS.
- CONTRACTOR TO VERIFY EXISTING CONDITIONS IN THE FIELD.
- SPECIAL INSPECTION SHALL BE PERFORMED AS REQUIRED IN ARTICLE 115 & ARTICLE 116 OF THE ADMINISTRATIVE PROVISION IN THE 2014 NYC BUILDING CODE AS WELL AS BUILDING CODE 109 & BUILDING CODE 1704.15.
- INSTALL ALL WORK IN SUCH A MANNER SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIRS.
- ALL DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.
- ALL DUCTWORK SHALL BE MOUNTED AS HIGH AS POSSIBLE ABOVE FINISHED FLOORS TO MAINTAIN CEILING HEIGHTS INDICATED ON ARCHITECTURAL DRAWINGS. THIS CONTRACTOR IS REQUIRED TO CHANGE THE DUCT DIMENSIONS WITHOUT ADDITIONAL CHARGE TO THE OWNER.
- ALL NEW ROUND, OVAL AND RECTANGULAR DUCTWORK IN AREAS THAT DO NOT HAVE A HUNG CEILING SHALL BE SHIPPED TO THE SITE IN A PAINT READY STATE (CLEAN, LABELED AND DENT FREE).
- ALL SUPPLY DUCTWORK IN UNCONDITIONED SPACE SHALL HAVE A MINIMUM OF R-6 INSULATION. A MINIMUM OF R-8 INSULATION LOCATED OUTSIDE OF BUILDING, EXCEPT WHERE 1" ACOUSTIC LINING IS SHOWN AND/OR SPECIFIED.
- PROVIDE NEW INSULATION TO EXISTING DUCTWORK WHERE MISSING, DAMAGED DURING CONSTRUCTION AND WHERE BRANCH DUCTWORK HAS BEEN REMOVED, THICKNESS AND TYPE SHALL MATCH THAT OF THE EXISTING INSULATION.
- PROVIDE AND INSTALL ALL DAMPERS INDICATED ON DRAWINGS AND IN DUCTWORK AS REQUIRED FOR PROPER BALANCING ON SYSTEMS. ALL DAMPERS LOCATED ABOVE SHEETROCK OR INACCESSIBLE CEILING SHALL HAVE CABLE WITH REMOTE MANUAL CONTROL.
- PROVIDE GALVANIZED DRIP PAN UNDER AC UNIT WITH 3" LIP AND LEAK DETECTOR WIRED TO AUDIO/VISUAL ALARM WHEN ACTIVATED. TIE IN TO BUILDING BMS.
- RUN 1" CONDENSATE DRAIN PIPING DISCHARGE TO PANTRY FUNNEL DRAIN.
- ALL DUCTS WHICH PENETRATE FIRE RATED PARTITIONS MUST HAVE FIRE DAMPERS AND ACCESS DOORS WHERE REQUIRED BY CODE.
- NEW PARTITION WALLS SHALL NOT BLOCK THE OPENINGS OF ALL EXISTING PERIMETER RADIATORS.
- MINIMUM DUCT SIZE, UNLESS OTHERWISE INDICATED IS 12 X 6.
- ALL DUCTWORK, PIPING, AND CONDUIT RUNS SHALL BE COMPLETELY COORDINATED (SIGNED OFF BY ALL TRADES) PRIOR TO INSTALLATION. CONTRACTORS SHALL ADVISE OF ANY CONFLICTS OR INTERFERENCES PRIOR TO INSTALLATION.
- PIPING SHALL BE ARRANGED TO PERMIT EQUIPMENT SERVICE, REMOVAL AND CLEANING.
- REPLACE DAMAGE OR REMOVED FIRE PROOFING RESULTING FROM REMOVALS AND CONSTRUCTION.
- INTERRUPTION OF HEATING, COOLING, POWER AND AUXILIARY SYSTEMS SHALL BE COORDINATED WITH THE BUILDING OWNER AND SUCH OUTAGES SHALL OCCUR ONLY DURING PREARRANGED ACCEPTABLE TIMES. THE EXISTING BUILDING SHALL NOT BE LEFT WITHOUT USE OF HEATING, COOLING, LIGHTING, POWER, ETC., EXCEPT FOR FINAL CONNECTIONS, WHICH SHALL BE PERFORMED AT A TIME CONVENIENT TO AND WITH NO ADDITIONAL EXPENSE TO THE BUILDING OWNER.
- REROUTE EXISTING PIPING, CONDUIT AS REQUIRED TO PERMIT NEW DUCTWORK INSTALLATION.
- COORDINATE EXACT LOCATION OF CEILING DIFFUSERS, REGISTERS, GRILLS INCLUDING UNIT THERMOSTATS WITH THE ARCHITECT.
- CONTRACTOR TO PROVIDE TRANSFER AIR OPENING ABOVE CEILING IN EACH ROOM WHERE NEW FULL HEIGHT PARTITIONS ARE TO BE INSTALLED. SIZE OPENING TO 250CFM/SQ FT MAXIMUM, MINIMUM OPENING SHALL BE ONE (1) SQFT.
- TESTING AND BALANCING SHALL BE PERFORMED AT COMPLETION OF WORK IN THE PRESENCE OF THE BUILDING ENGINEER. SUBMIT ONE COPY OF THE REPORT TO THE BUILDING MANAGER.
- THE CONTRACTOR SHALL PROVIDE ALL ITEMS OF LABOR OR MATERIALS NOT SPECIFICALLY INDICATED, BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATION TO INSTALL A COMPLETE AND OPERATING SYSTEM.
- THE CONTRACTOR SHALL BE HELD TO HAVE VISITED THE PREMISES TO DETERMINE EXISTING CONDITIONS AND COMPARE SAME WITH DRAWINGS AND SPECIFICATIONS. NO ALLOWANCE WILL BE MADE FOR FAILURE TO COMPLY WITH THESE REQUIREMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CONDITIONS FOUND DURING THE COURSE OF THE CONTRACT. A SUBMITTED PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS SATISFIED HIMSELF OF ALL EXISTING CONDITIONS.
- THE CONTRACTOR SHALL REMOVE, RELOCATE, REPLACE, ADJUST, ADAPT, AND MODIFY EXISTING EQUIPMENT AND/OR SYSTEMS AS REQUIRED BY THE DRAWINGS OR SPECIFICATIONS AND AS MAY BE REQUIRED WHEN SUCH WORK IS UNCOVERED AND FOUND IN THE FIELD TO INTERFERE WITH THE COMPLETION OF WORK IN THIS CONTRACT OR OTHER CONTRACT WORK.
- THE EXISTING PERIMETER INDUCTION UNITS ARE TO BE PROTECTED FROM DUST AND DEBRIS DURING CONSTRUCTION AND CLEANED AFTER THE COMPLETION OF CONSTRUCTION. REPORT ANY VISUAL DEFICIENCIES TO BUILDING MANAGEMENT.
- ALL NEW BRANCH DUCTWORK SERVING A SINGLE DIFFUSER SHALL BE PROVIDED WITH A VOLUME DAMPER IF EXISTING IS REMOVED OR NONE EXISTS.
- ALL RETURN GRILLES IN DROP CEILING SHALL BE PROVIDED WITH BLACK PERFORATED SCREEN.
- CONTRACTOR SHALL FURNISH AND INSTALL EQUIPMENT AND ALL WORK IN ACCORDANCE TO THE BUILDING STANDARD; CONTRACTOR SHALL VISIT THE SITE AND BE FAMILIAR WITH THE BUILDING STANDARD REQUIREMENTS PRIOR TO BID.
- BRANCH DUCTS TO INDIVIDUAL AIR OUTLETS ARE NECK SIZE UNLESS INDICATED OTHERWISE.
- CONTRACTOR TO PROVIDE PRE-CONSTRUCTION AIR READING FOR BOTH SUPPLY AIR SHAFTS

## SCOPE OF WORK

FURNISH AND INSTALL ALL LABOR, MATERIALS, APPARATUS, AND APPLIANCES ESSENTIAL TO THE COMPLETE FUNCTIONING OF THE SYSTEMS DESCRIBED AND/OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL, WHETHER MENTIONED IN THE CONTRACT DRAWINGS AND SPECIFICATIONS OR NOT.

PROVIDE TESTING, ADJUSTING & BALANCING REPORT, SHOP DRAWINGS & AS-BUILT DRAWINGS.

- INSTALL AIR COOLED AC SPLIT SYSTEM AND ALL ASSOCIATED APPURTENANCES AS INDICATED.
- INSTALL SUPPLY DUCTWORK AS INDICATED. ALL EXPOSED DUCTWORK TO BE FLAT OVAL & COORDINATED WITH ARCHITECT FOR FINISHED COLOR/STYLE.
- INSTALL ALL DUCTWORK SUPPORTS/HANGERS AS REQUIRED.
- INSTALL FLUSH MOUNTED REGISTER ON ALL EXPOSED DUCTWORK. COORDINATE WITH ARCHITECT FOR FINISH COLOR.
- INSTALL TRANSFER DUCTS AS REQUIRED FOR ALL FULL HEIGHT WALLS/PARTITIONS.
- INSTALL INSULATION/ACOUSTICAL LINING AS INDICATED AND REQUIRED BY THE MECHANICAL SPECIFICATIONS.
- SEE PLANS & SPECIFICATIONS FOR MORE DETAILS.

## DEMOLITION NOTES

- DEMOLITION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS, CODES AND LAWS.
- ALL EXISTING SYSTEMS SERVING CORE AREAS TO REMAIN UNLESS OTHERWISE NOTED. PROTECT & MAINTAIN DURING DEMOLITION AND CONSTRUCTION. ALL SYSTEMS TO RUN WITHOUT INTERRUPTION.
- ALL PRECAUTIONS NECESSARY SHALL BE TAKEN TO PREVENT ANY DUST AND DEBRIS FROM ENTERING DUCTWORK. PROTECT DURING DEMOLITION AND CONSTRUCTION.
- ALL EXITS SHALL BE KEPT READILY ACCESSIBLE AND UNOBSTRUCTED AT ALL TIMES. ALL WASTE AND DEBRIS SHALL BE REMOVED IN APPROVED CONTAINERS ON A DAILY BASIS.
- MISSING OR DAMAGED FIREPROOFING OF BEAMS, GIRDERS, AND/OR COLUMNS SHALL BE RESTORED/PATCHED TO MAINTAIN FIREPROOF RATING.
- REMOVE ALL ABANDONED PIPING, DUCTWORK AND EQUIPMENT IN THE PREMISES. CAP AT MAIN.
- REMOVE DUCTWORK, EQUIPMENT, & PIPING AS INDICATED ON DRAWING. EQUIPMENT, DIFFUSERS AND DUCTWORK NOT SHOWN ON PLANS ARE TO REMAIN, UNLESS OTHERWISE NOTED.
- CONTRACTOR TO COORDINATE ALL WORK WITH OTHER TRADES. CONTRACTOR SHALL VERIFY IN FIELD AND NOTIFY ENGINEER OF ANY AND ALL PIPING AND DUCTWORK THAT SERVES AREAS OUTSIDE OF THE SCOPE OF WORK PRIOR TO REMOVAL.

## DUCT AND PLENUM INSULATION AND SEALING NOTES

DUCT AND PLENUM INSULATION AND SEALING. ALL SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND A MINIMUM OF R-8 INSULATION WHERE LOCATED OUTSIDE THE BUILDING. WHERE LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY A MINIMUM OF R-8 INSULATION.

### EXCEPTIONS:

- WHERE LOCATED WITHIN EQUIPMENT.
- WHERE THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM DOES NOT EXCEED 15°F (8°C).

ALL DUCTS, AIR HANDLERS AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH SECTION 603.9 OF THE NEW YORK CITY MECHANICAL CODE.

DUCT CONSTRUCTION. DUCTWORK SHALL BE CONSTRUCTED AND ERECTED IN ACCORDANCE WITH THE STATE MECHANICAL CODE.

LOW-PRESSURE DUCT SYSTEMS. ALL LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS AND CONNECTIONS OF SUPPLY AND RETURN DUCTS OPERATING AT A STATIC PRESSURE LESS THAN OR EQUAL TO 2 INCHES WATER GAUGE (W.G.) (500 PA) SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), MASTIC-PLUS-EMBEDDED-FABRIC SYSTEMS OR TAPES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PRESSURE CLASSIFICATIONS SPECIFIC TO THE DUCT SYSTEM SHALL BE CLEARLY INDICATED ON THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE STATE MECHANICAL CODE.

EXCEPTION: CONTINUOUSLY WELDED AND LOCKING-TYPE LONGITUDINAL JOINTS AND SEAMS ON DUCTS OPERATING AT STATIC PRESSURES LESS THAN 2 INCHES WATER GAUGE (W.G.) (500 PA) PRESSURE CLASSIFICATION.

MEDIUM-PRESSURE DUCT SYSTEMS. ALL DUCTS AND PLENUMS DESIGNED TO OPERATE AT A STATIC PRESSURE GREATER THAN 2 INCHES WATER GAUGE (W.G.) (500 PA) BUT LESS THAN 3 INCHES W.G. (750 PA) SHALL BE INSULATED AND SEALED IN ACCORDANCE WITH SECTION EC403.2.9. PRESSURE CLASSIFICATIONS SPECIFIC TO THE DUCT SYSTEM SHALL BE CLEARLY INDICATED ON THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE STATE MECHANICAL CODE.

## DUCTWORK SYMBOLS

SINGLE LINE	DOUBLE LINE
	TYPICAL TURNING VANES PER SMACNA FIG. 2-3 AND 2-4 1985 FIRST EDITION TRANSITION MAINTAIN SAME SIZE THRU TURN. SEE SMACNA DETAILS FOR UNEVEN SIZES
	FULL RADIUS (X) ELBOW
	BRANCH DUCT (TYPICAL) VOLUME DAMPER DUCT MAIN 45° BOOT
	BRANCH DUCT CFM "A" DUCT MAIN DIMENSION "C" MAIN CFM "C" NECK SIZE "A" = $\frac{CFM "A"}{CFM "C"} \times DIM "C"$ NOTE: IF NO NECK SIZE IS GIVEN, CALCULATE WITH FORMULA
	BRANCH "A" BRANCH "B" DUCT MAIN "C" NECK SIZE IF NO NECK SIZE IS GIVEN, CALCULATE FOR BRANCH "A" AS SHOWN ABOVE
	BRANCH "A" NECK SIZE DUCT MAIN "C" IF NO NECK SIZE IS GIVEN, CALCULATE FOR BRANCH "A" AS SHOWN ABOVE
	BRANCH DUCT MAIN 45° BOOT BLIND FLANGE BRANCH X VD 0.5X (4" MIN.)
	45° MAX
	1" ACOUSTICAL LINING
	INDICATED DUCT SIZES ARE CLEAR INSIDE DIMENSIONS TRANSFER DUCT: 1" ACOUSTIC LINING EACH LEG (L) MIN. 3'-0" LONG

DUCT SYMBOL	DESCRIPTION
	EXISTING DUCTWORK TO REMAIN
	EXISTING DUCT TO BE REMOVED
	NEW DUCTWORK
	NEW DUCTWORK WITH 1" A.L.
	EXISTING CEILING SUPPLY DIFFUSER
	EXISTING CEILING RETURN GRILLE/REGISTER
	CEILING SUPPLY DIFFUSER
	3-WAY BLOW CEILING SUPPLY DIFFUSER
	CEILING RETURN GRILLE/REGISTER
	EXHAUST REGISTER
	ACCESS DOOR
	TRANSFER AIR OPENING
	TRANSFER DUCT
	NEW 90 DEG ELBOW WITH TURNING VANES
	NEW 90 DEG SMOOTH ELBOW
	EXIST 90 DEG ELBOW
	EXIST 90 DEG SMOOTH ELBOW
	NEW DUCTWORK BOOT
	FLEXIBLE CONNECTION
	BACK-DRAFT DAMPER
	CORD OPERATED DAMPER
	FIRE DAMPER WITH ACCESS DOOR
	COMBINATION FIRE/SMOKE DAMPER WITH ACCESS DOOR
	MOTORIZED DAMPER
	DUCT MOUNTED SMOKE DETECTOR
	VOLUME DAMPER

DRAWING SYMBOL	DESCRIPTION
	POINT OF DISCONNECTION
	CONNECT NEW TO EXISTING
	SHEET NOTE NUMBER
	THERMOSTAT

PIPING SYMBOL	DESCRIPTION
	EXISTING PIPING TO REMAIN
	EXISTING PIPING TO BE REMOVED
	NEW PIPING
	NEW PIPING WITH INSULATION
	BUTTERFLY VALVE
	BUTTERFLY VALVE W/ ELECTRIC MOTOR
	STRAINER
	PRESSURE GAUGE
	THERMOMETER
	BALL VALVE
	MOTORIZED BALL VALVE
	TEMPERATURE SENSOR
	PLUG VALVE (NON LUBRICATED)
	BALANCING VALVE
	THREADED CAP

ABBREVIATIONS	DESCRIPTION
(XXX)	AIR FLOW, CFM AIR QUANTITY
AC	AIR CONDITIONING UNIT
AL	ACOUSTIC LINING
AD	ACCESS DOOR
COND	CONDENSATE
CP	CONDENSATE PUMP
DWG	DRAWING
EXIST / (E)	EXISTING
AHU	AIR HANDLING UNIT
CU	CONDENSING UNIT
FC	FLEXIBLE CONNECTION
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
TD	TRANSFER AIR DUCT
RG	RETURN GRILLE
SR	SIDE REGISTER
TYP	TYPICAL
N.T.S.	NOT TO SCALE
UON	UNLESS OTHERWISE NOTED
WMS	WIRE MESH SCREEN

2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

CONSULTANTS:  
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 New York, NY 10018  
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 115 School Rd  
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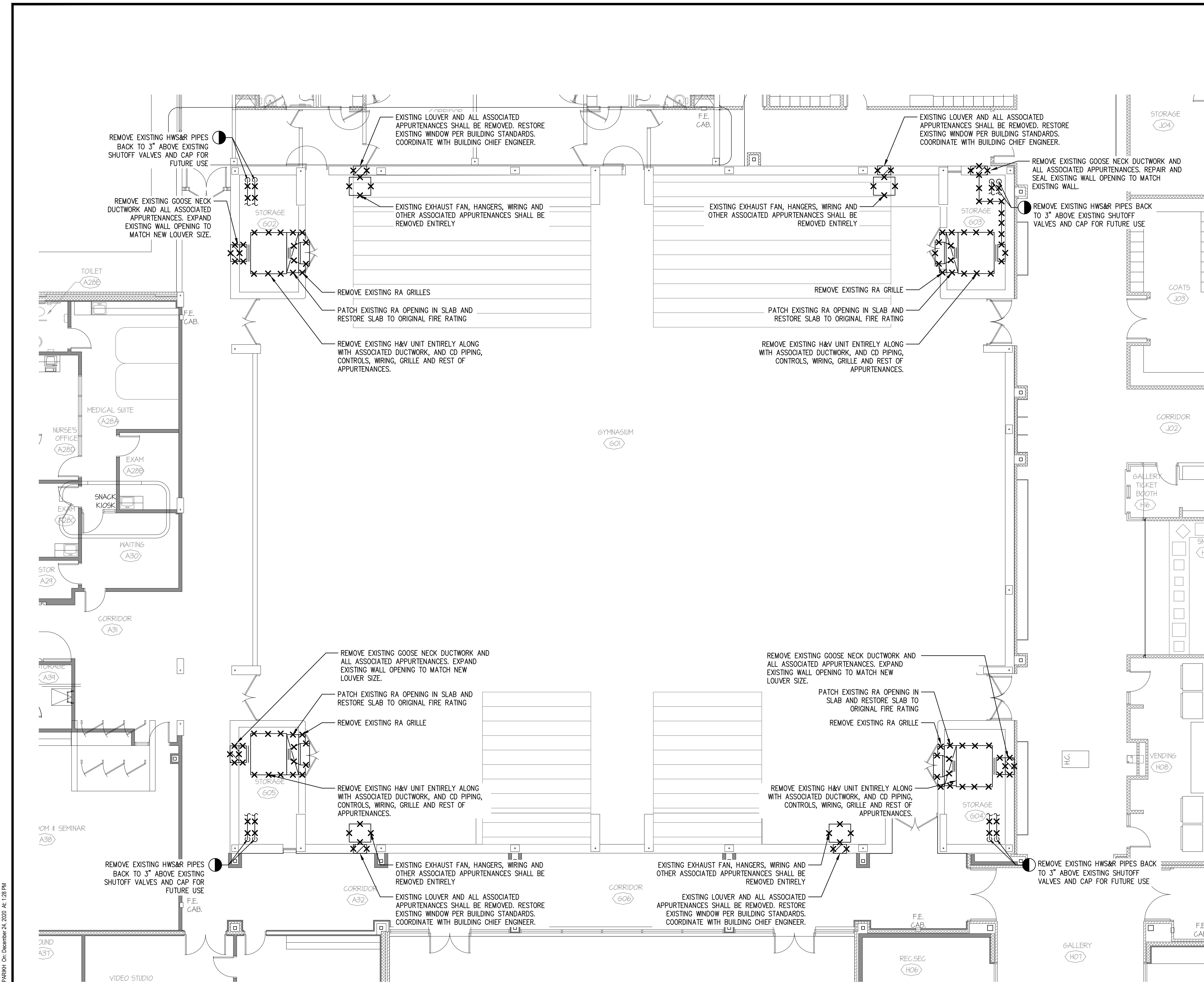
KEY PLAN:  
 PROJECT NAME:  
**Weston High School GYM HVAC Upgrade**

PROJECT ADDRESS:

DRAWING TITLE:  
**MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS**

DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
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CHECKED BY:	XX	

DRAWING NO.  
**M-001.00**



**GYM 1ST FLOOR DEMO PLAN**  
SCALE: 1/8" = 1'-0"

**GENERAL NOTES:**

1. CONTRACTOR SHALL VISIT THE SITE AND BE FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO BID.
2. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD.
3. REPLACE DAMAGE OR REMOVED FIRE PROOFING RESULTING FROM REMOVALS AND CONSTRUCTION.
4. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST BUILDING OWNER'S STANDARDS.
5. CONTRACTOR TO REMOVE AND RECOVER ALL REFRIGERANT FROM AC UNITS PRIOR TO DEMOLITION AS PER EPA REQUIREMENTS.

**DEMOLITION NOTES:**

1. ALL DUCTS AND/OR PIPING PENETRATIONS OUT TO THE EXTERIOR SHALL BE PATCHED WITH SAME BUILDING MATERIAL AND RATING TO MAKE SMOOTH & WATER TIGHT CONSTRUCTION.
2. ALL HVAC UNITS AND THEIR ASSOCIATED PIPING, DUCTWORK, SUPPORTS, CONTROLS, AND ELECTRICAL SHALL BE REMOVED. CONSULT WITH BUILDING ENGINEERING.
3. MISSING OR DAMAGED FIRE PROOFING OF BEAMS, GIRDERS AND/OR COLUMNS SHALL BE RESTORED/PATCHED TO MAINTAIN FIREPROOF RATING.
4. ALL WINDOW OPENINGS ARE TO BE RESTORED TO THEIR ORIGINAL BUILDING CONDITION COORDINATE WITH ARCHITECT.
5. REMOVE ALL EXISTING CEILING AIR OUTLETS AND GRILLES, U.O.N.
6. DEMOLITION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS, CODES, AND LAWS.
7. SPECIAL INSPECTION SHALL BE PERFORMED AS REQUIRED IN ARTICLE 115 AND ARTICLE 116 OF THE ADMINISTRATIVE PROVISION IN THE 2008 NYC BUILDING CODE AS WELL AS BC 109 AND BC 1704.15.
8. CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS AND QUANTITIES OF ALL AC UNITS TO BE REMOVED.
9. RECLAIM ALL REFRIGERANT PRIOR TO COMMENCEMENT OF DEMOLITION AS REQUIRED IN SECTION 608 OF THE CLEAN AIR ACT AND PER EPA GUIDELINES.
10. BMS SYSTEM SERVING HVAC TO BE DISCONNECTED PRIOR TO DEMOLITION. COORDINATE WITH CHIEF ENGINEER.

2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

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CLIENT:

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KEY PLAN:

PROJECT NAME:

**Weston High School  
 GYM HVAC Upgrade**

PROJECT ADDRESS:

DRAWING TITLE:

**FIRST FLOOR  
 MECHANICAL  
 DEMOLITION PLAN**

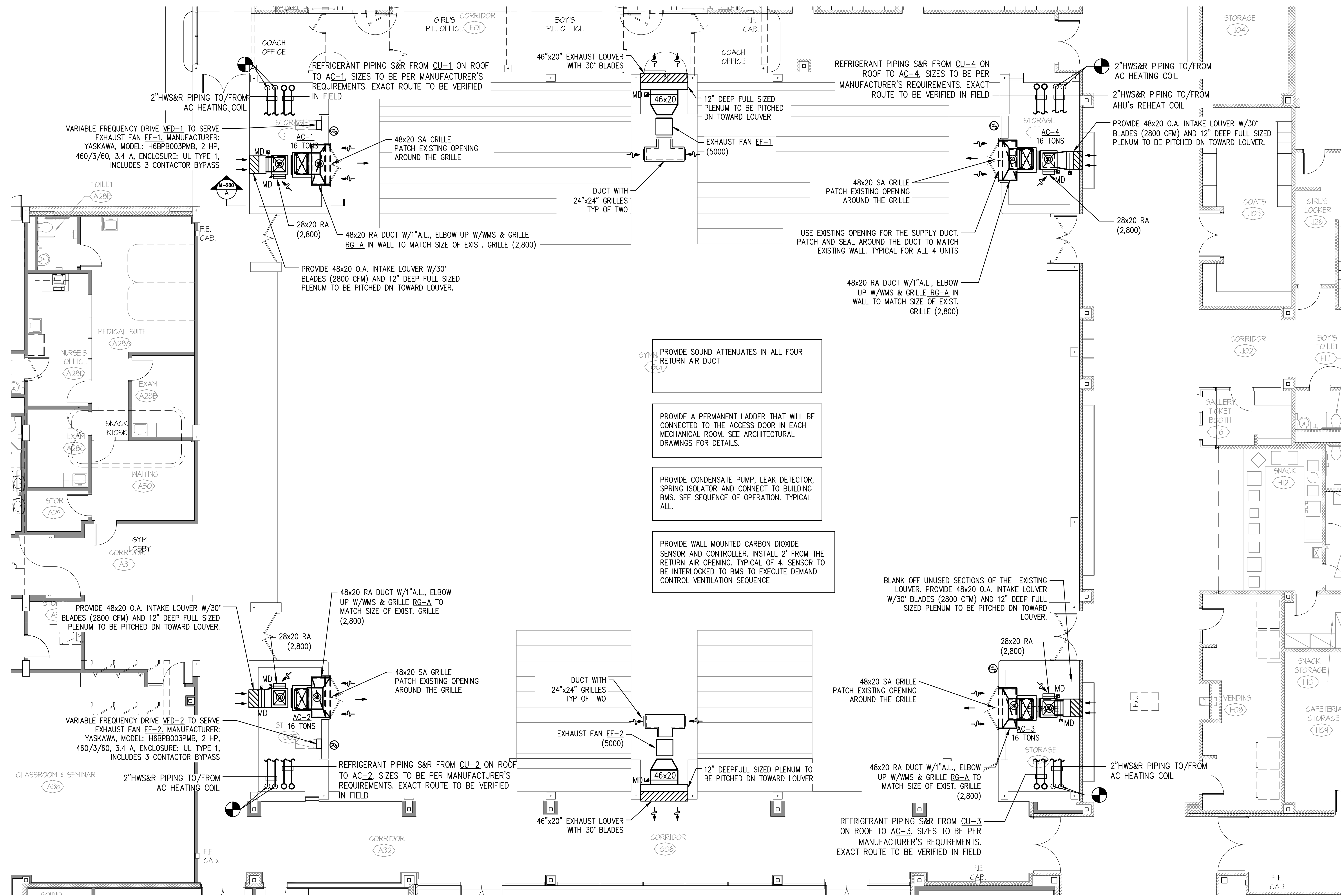
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PROJECT No:	20279.00	
SCALE:	AS SHOWN	
DRAWN BY:	XX	
CHECKED BY:	XX	
DRAWING NO.		

**M-050.00**

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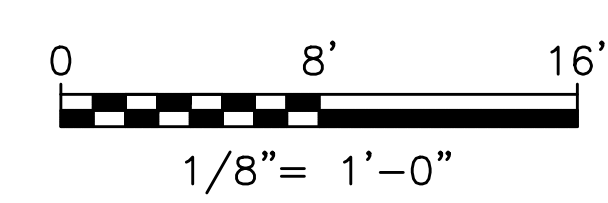
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**GYM 1ST FLOOR PLAN**

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



2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

CONSULTANTS:

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KEY PLAN:

PROJECT NAME:

**Weston High School  
GYM HVAC Upgrade**

PROJECT ADDRESS:

DRAWING TITLE:

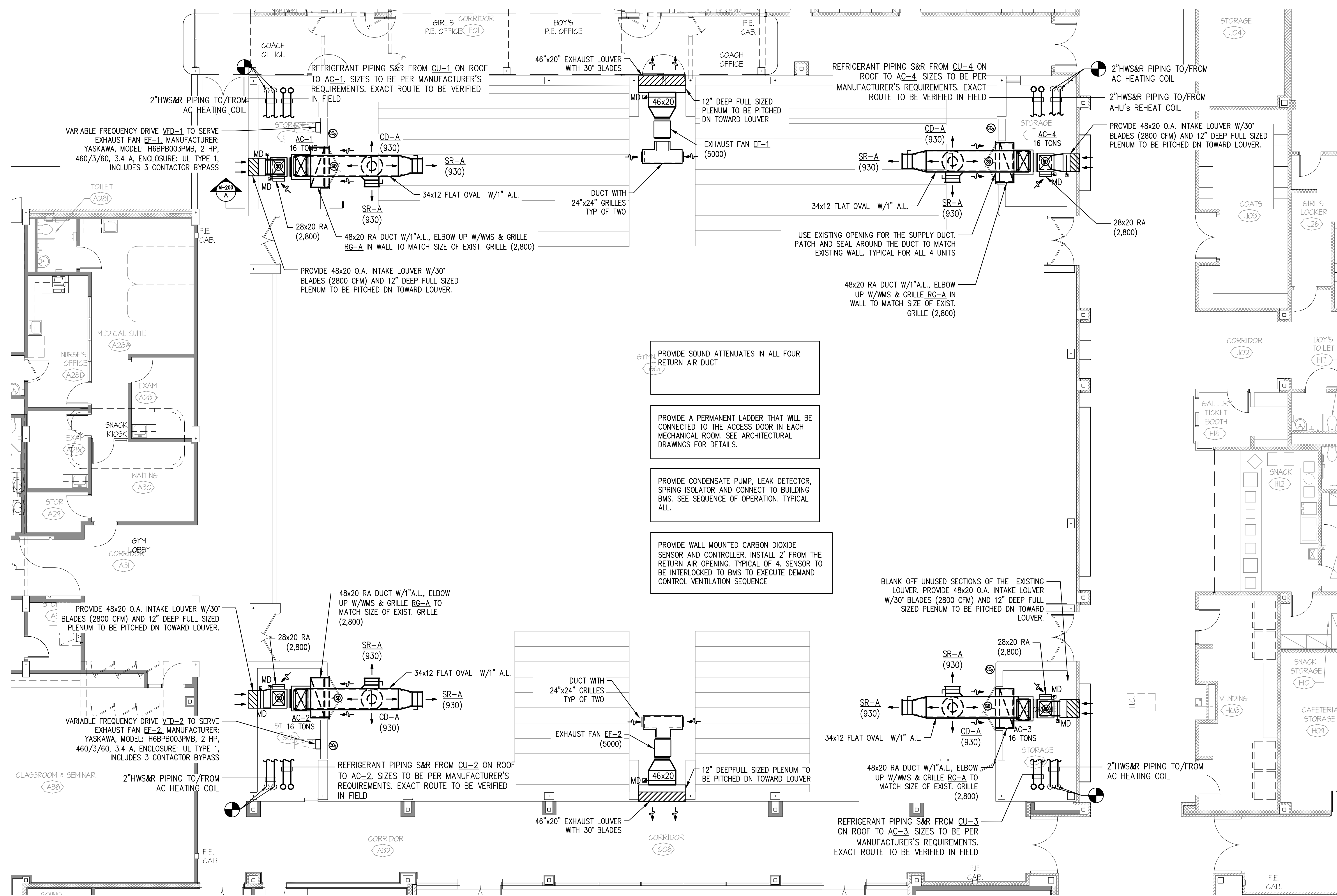
**FIRST FLOOR  
MECHANICAL  
FLOOR PLAN - OPTION II**

DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
SCALE:	AS SHOWN	
DRAWN BY:	XX	
CHECKED BY:	XX	
DRAWING NO.	<b>M-100A.00</b>	

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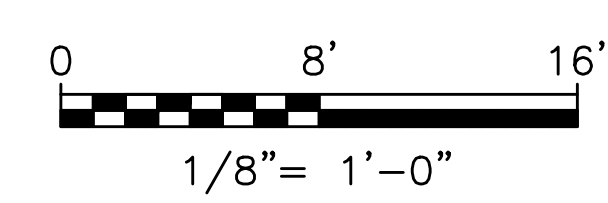
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**GYM 1ST FLOOR PLAN**

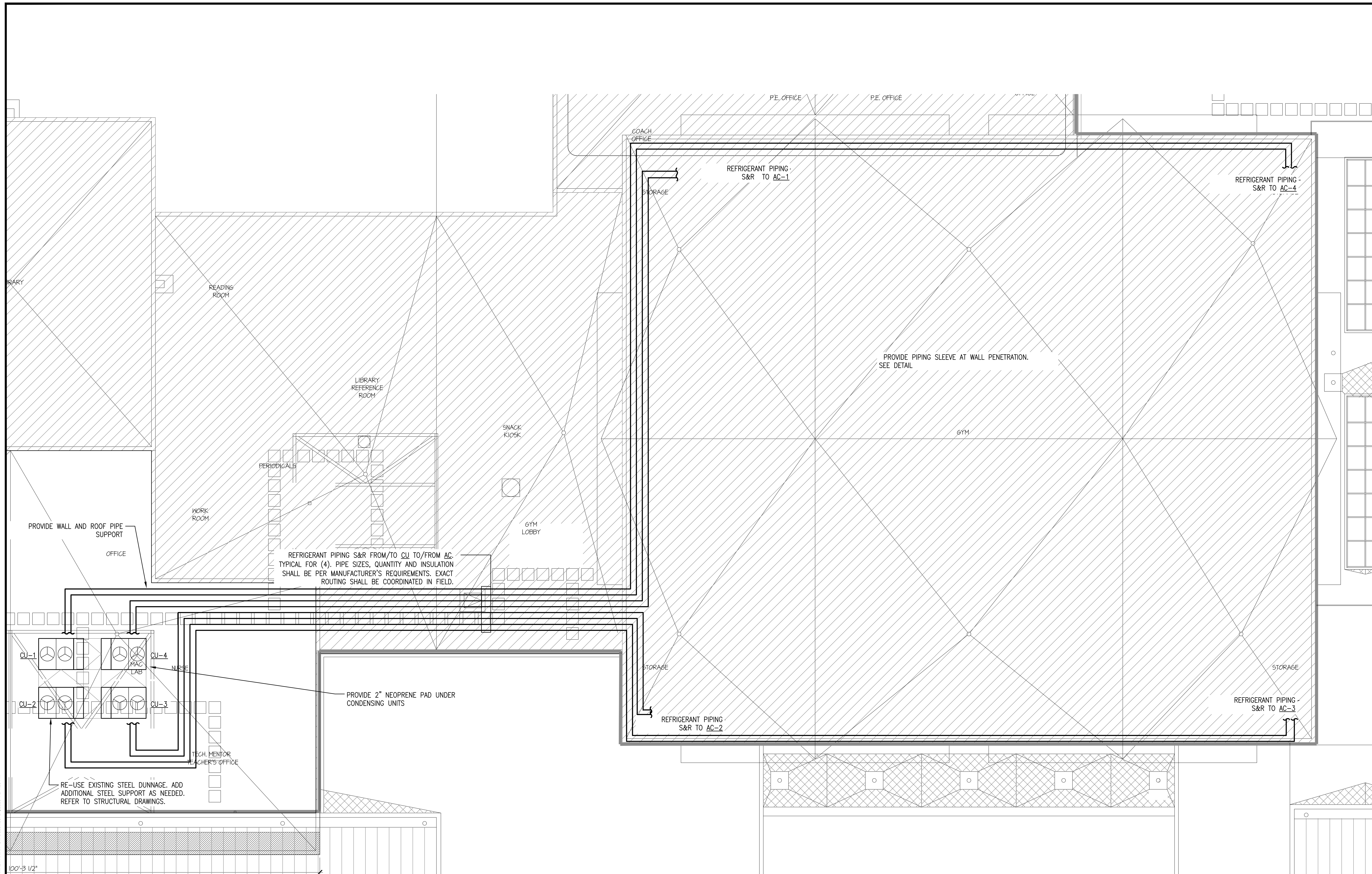
SCALE: 1/8" = 1'-0"



- PROVIDE SOUND ATTENUATES IN ALL FOUR RETURN AIR DUCT
- PROVIDE A PERMANENT LADDER THAT WILL BE CONNECTED TO THE ACCESS DOOR IN EACH MECHANICAL ROOM. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
- PROVIDE CONDENSATE PUMP, LEAK DETECTOR, SPRING ISOLATOR AND CONNECT TO BUILDING BMS. SEE SEQUENCE OF OPERATION. TYPICAL ALL.
- PROVIDE WALL MOUNTED CARBON DIOXIDE SENSOR AND CONTROLLER. INSTALL 2' FROM THE RETURN AIR OPENING. TYPICAL OF 4. SENSOR TO BE INTERLOCKED TO BMS TO EXECUTE DEMAND CONTROL VENTILATION SEQUENCE

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2.	12-24-20	ISSUED FOR REVIEW			
1.	12-4-20	SCHEMATIC DESIGN			
CONSULTANTS:					
<b>GOLDMAN COPELAND</b>		229 West 36th Street New York, NY 10018 V: 212.868.4660 F: 212.868.4680			
CLIENT:					
<b>WESTON HIGH SCHOOL</b>					
115 School Rd Weston, CT 06883 T 203.221.6500 F 203.221.6501					
KEY PLAN:					
PROJECT NAME:					
<b>Weston High School GYM HVAC Upgrade</b>					
PROJECT ADDRESS:					
DRAWING TITLE:					
<b>FIRST FLOOR MECHANICAL FLOOR PLAN</b>					
DATE:	11/04/2020	SEAL & SIGNATURE			
PROJECT No:	20279.00				
SCALE:	AS SHOWN				
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CHECKED BY:	XX				
DRAWING NO.	<b>M-100.00</b>				
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**GYM ROOF PLAN**  
SCALE: 1/8"=1'-0"


2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

**CONSULTANTS:**  
**GOLDMAN COPELAND**  
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 F 203.221.6501

**KEY PLAN:**

**PROJECT NAME:**  
 Weston High School  
 GYM HVAC Upgrade

**PROJECT ADDRESS:**

**DRAWING TITLE:**  
 ROOF  
 MECHANICAL PLAN

<b>DATE:</b> 11/04/2020	<b>SEAL &amp; SIGNATURE</b>
<b>PROJECT No:</b> 20279.00	
<b>SCALE:</b> AS SHOWN	
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X OF X

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**AIR CONDITIONING UNITS – AIR COOLED – (SPLIT SYSTEM)**

**SPLIT SYSTEM – EVAPORATOR**

UNIT	SERVICE	LOCATION	C F M	OA	EXT. S.P.	COOLING COIL										HEATING COIL										EVAPORATOR FAN				FILTERS					ELECTRICAL					WEIGHT LBS	EER	MODEL	REMARKS
						T.C. MBH	S.C. MBH	ENT. AIR °F	LVG. AIR °F	FACE AREA (SQFT)	FACE VELOCITY (FFM)	T.C. MBH	ENT. AIR °F	LVG. AIR °F	FACE AREA (SQFT)	FACE VELOCITY (FFM)	FLUID TYPE	FLOW RATE (GPM)	PRESS. DROP (FTWTR)	HP	FLA	QTY	RPM	TYPE	QTY.	VOLTS	Ø	HZ	FLA	MCA													
AC-1	GYM	MEZZANINE MER	2,800	2,800	1	197	122	80	67	52	53	R-410A	6	7.1	393	274	10	180	94.7	160	10	2	7.1	387	HOT WATER	29	13.2	4	4.9	1	2040	PLEATED 2" MERV 13	6	460	3	60	5	15	624	11.2	V3CRB30162C	AIR SIDE ECONOMIZER	
AC-2	GYM	MEZZANINE MER	2,800	2,800	1	197	122	80	67	52	53	R-410A	6	7.1	393	274	10	180	94.7	160	10	2	7.1	387	WATER	29	13.2	4	4.9	1	2040	PLEATED 2" MERV 13	6	460	3	60	5	15	624	11.2	V3CRB30162C	AIR SIDE ECONOMIZER	
AC-3	GYM	MEZZANINE MER	2,800	2,800	1	197	122	80	67	52	53	R-410A	6	7.1	393	274	10	180	94.7	160	10	2	7.1	387	WATER	29	13.2	4	4.9	1	2040	PLEATED 2" MERV 13	6	460	3	60	5	15	624	11.2	V3CRB30162C	AIR SIDE ECONOMIZER	
AC-4	GYM	MEZZANINE MER	2,800	2,800	1	197	122	80	67	52	53	R-410A	6	7.1	393	274	10	180	94.7	160	10	2	7.1	387	WATER	29	13.2	4	4.9	1	2040	PLEATED 2" MERV 13	6	460	3	60	5	15	624	11.2	V3CRB30162C	AIR SIDE ECONOMIZER	

MFR. (AS STD.) "AAON"

**SPLIT SYSTEM – CONDENSING UNIT**

UNIT	SERVING	CFM	RLA	REFRIG. CHRG. LB	DESIGN AMBIENT °F	COMPRESSOR QUANTITY	ELECTRICAL							WEIGHT LBS	MODEL	REMARKS
							VOLTS	Ø	HZ	FLA	MIN. CIRCUIT AMPS	MOP				
CU-1	AC-1	-	16.7	-	-30 TO 105	2	460	3	60	37	41	50	1464	CFA020CA3		
CU-2	AC-2	-	16.7	-	-30 TO 105	2	460	3	60	37	41	50	1464	CFA020CA3		
CU-3	AC-3	-	16.7	-	-30 TO 105	2	460	3	60	37	41	50	1464	CFA020CA3		
CU-4	AC-4	-	16.7	-	-30 TO 105	2	460	3	60	37	41	50	1464	CFA020CA3		

**NOTES:**

UNITS SHALL BE PROVIDED WITH THE FOLLOWING: STAGING COMPRESSORS, AUTOMATIC AIR SIDE ECONOMIZER, CONVENIENCE OUTLET, RE-HEAT HOT GAS COIL, DISCONNECT SWITCH, SMOKE DETECTOR, FREEZE STAT/LOW AMBIENT, VIBRATION ISOLATORS AND HOT WATER FREEZE PROTECTION PUMPS (SEE DETAIL) HOT GAS RE-HEAT COIL.

**DIFFUSERS REGISTERS AND GRILLES MFR. (AS STD.) "TITUS"**

TYPE	SERVICE	CFM RANGE (MAX)	FACE SIZE (INCH)	NOMINAL NECK SIZE (INCH)	SLOT	NC Ø MAX CFM	MODEL	MATERIAL	BORDER	REMARK
<b>DIFFUSERS</b>										
CD-A	SUPPLY	930-950	36ø	16	NA	28	TMRA	STEEL	SEE PLANS	USE DUCT MOUNTED DIFFUSER WITH WIRE GUARD
<b>RETURN AND EXHAUST GRILLES</b>										
RG-A	EXHAUST	2000-3000	68x20	NA	NA	15	350RL	STEEL	SEE PLANS	USE SURFACE MOUNTED DIFFUSER IN WALL
<b>SUPPLY REGISTERS</b>										
SR-A	SUPPLY	850-950	24x12	NA	NA	21	300RL	STEEL	SEE PLANS	

**NOTES:**

- PROVIDE FACE OPERATED DAMPER FOR ALL DIFFUSERS THAT ARE NOT ACCESSIBLE.
- COORDINATE EXACT LOCATION AND COLOR WITH ARCHITECTS DRAWINGS.
- PROVIDE DIFFUSERS WITH EQUALIZING GRID AND OPPOSED BLADE DAMPERS.
- PROVIDE IN LAY-IN CEILINGS WITH TYPE 3 FRAME. FOR 2-WAY OR 3-WAY BLOW, BLANK OFF NECK (NECK TO BE NEXT SIZE).
- ALL SUPPLY REGISTERS SHALL BE DOUBLE DEFLECTING TYPE, FRONT BLADES VERTICAL AS MANUFACTURED BY "TITUS", MODEL AS SHOWN.

**CONDENSATE PUMP SCHEDULE MFR. (AS STD.) "LITTLE GIANT"**

UNIT ID	SERVICE	LOCATION	GPM	DISCHARGE PRESSURE (PSI)	HP	ELECTRIC			SIMPLEX OR DUPLEX	RECEIVER VOLUME (GALLON)	WEIGHT (LBS)	MODEL	REMARKS
						VOLTS	PH	HZ					
CP	EACH AC UNIT	DRIP PAN IN EACH MER	1.75	10.4	1/8	115	1	60	SIMPLEX	1	8.0	VCL-24ULS	TOTAL OF 4

**NOTES:**

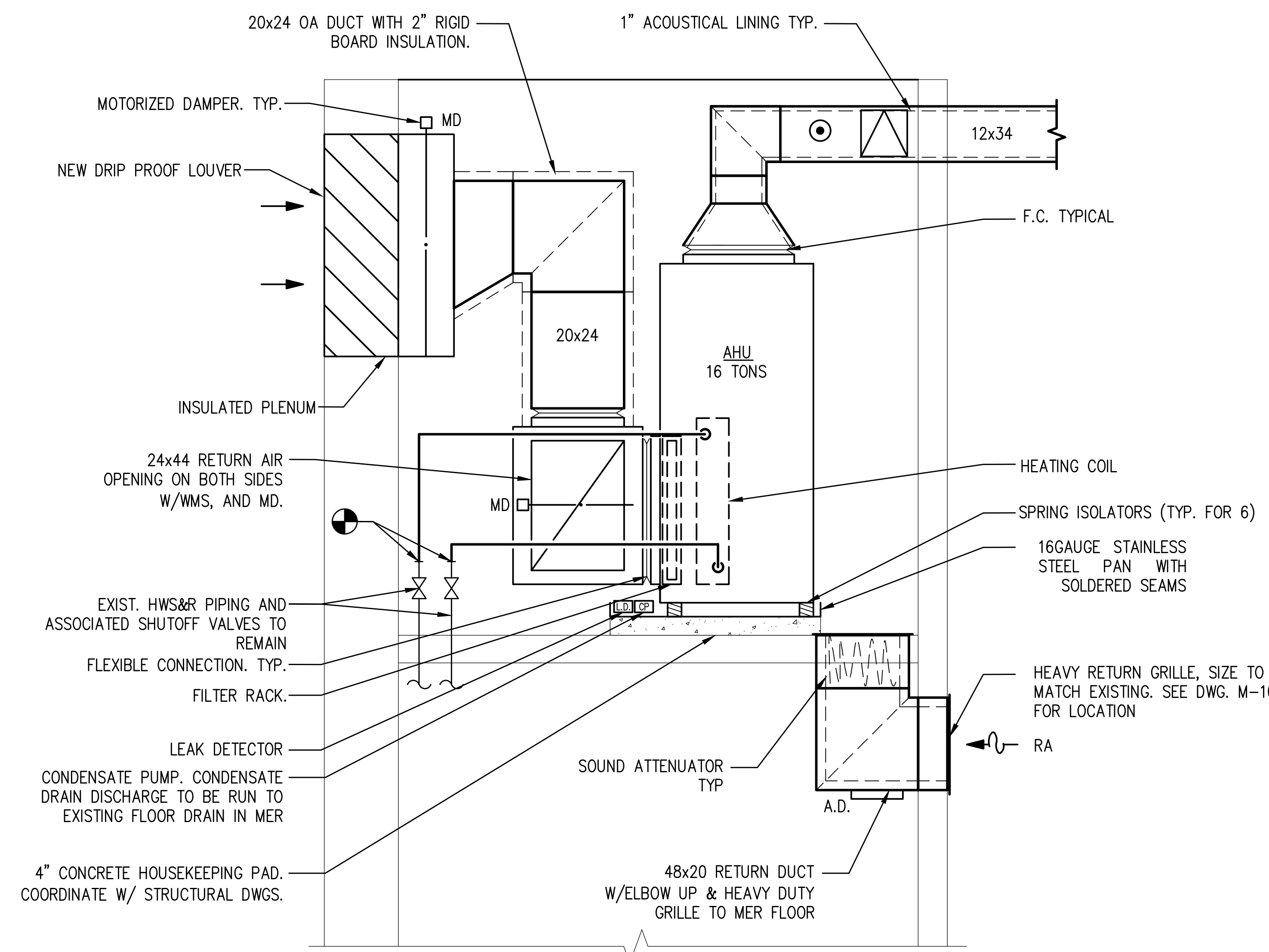
PROVIDE FLOAT OPERATED HIGH WATER ALARM SWITCH AND AUTOMATIC CUT-OUT SWITCH TO PREVENT RECEIVER OVERFLOW. SHALL SHUT DOWN RESPECTIVE AC UNIT & SOUND ALARM UPON HIGH WATER LEVEL.

**FAN SCHEDULE MFR. (AS STD.) "GREENHECK"**

UNIT ID	SERVICE	LOCATION	FAN DATA			MOTOR DATA			ELECTRIC			SIZE WxLxH (INCHES)	WEIGHT (LBS)	TYPE	MODEL	REMARKS
			CFM	ESP IN W.G.	RPM	HP	DRIVE	STARTER	VOLTS	PH	HZ					
EF-1, EF-2	GYM	CEILING	5,000	0.75	1,650	1.5	BELT	COMB.	460	3	60	31x43x36	230	INLINE	QEI-20	

**NOTES:**

- PROVIDE VFD WITH BY-BASS FOR EACH FAN. MODEL: H6BPB003PMB, MANUFACTURER: YASKAWA, NEMA 1 ENCLOSURE. SEE DWG. M-100 FOR MORE INFORMATION.
- PROVIDE ISOLATOR MOUNTING BRACKETS PN800201.
- PROVIDE DISCONNECT SWITCH FOR EACH FAN.
- PROVIDE MOUNTED AND WIRED JUNCTION BOX AND FLEX CONNECTIONS.
- RADIANT NOISE 50 DBA AND INLET NOISE 60 DBA



**SECTION 'A-A'**  
**(TYPICAL FOR ALL AHU UNITS)**

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

**FREEZE PROTECTION PUMP SCHEDULE MFR. (AS STD.) "B&G"**

UNIT ID	SERVICE	LOCATION	GPM	HEAD	HP	ELECTRIC			RPM	TYPE	WEIGHT (LBS)	MODEL	REMARKS
						VOLTS	PH	HZ					
FPP	EACH AC UNIT	MER	29	25	0.75	408	3	60	1750	INLINE	-	BG-E90-150-AAB	TOTAL OF 4

**NOTES:**

PROVIDE TWO PUMPS FOR EACH AC UNIT. ONE PUMP IS STAND BY.

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**KEY PLAN:**

**PROJECT NAME:**

Weston High School  
GYM HVAC Upgrade

**PROJECT ADDRESS:**

**DRAWING TITLE:**

MECHANICAL SCHEDULES  
AND SECTION

DATE: 11/04/2020

SEAL & SIGNATURE

PROJECT No: 20279.00

SCALE: AS SHOWN

DRAWN BY: XX

CHECKED BY: XX

DRAWING NO.

**M-200.00**

X OF X



**SEQUENCE OF OPERATION AND CONTROL NOTES:**

**A. AC-1/CU-1 THRU AC-4/CU-4:**

**1. UNITS FEATURES:**

AC UNIT SHALL BE CONTROLLED BY THE FACTORY MOUNTED DDC CONTROLLER COMPLETE SET UP FOR DX COOLING, HOT WATER HEATING, AIR SIDE ECONOMIZER THRU OUTSIDE AIR DAMPER CONTROL, DEMAND CONTROL THRU CO2 SENSOR AND OUTSIDE AIR DAMPER AND GOT GAS COIL REHEAT. CONTROLLER SHALL BE PROGRAMMABLE FOR OCCUPIED HEATING AND COOLING. THE AC UNIT CONTROLLER THRU STANDALONE CONTROLLER SHALL BE CAPABLE OF CONNECTING TO EXISTING BMS VIA BACNET COMMUNICATION LINK (MS/TP). ABS IS THE BMS VENDOR CONTACT NUMBER 1-860-657-9257.  
BMS SHALL BE CAPABLE OF RECEIVING GENERAL ALARM/STATUS AND SCHEDULED REMOTE STOP/START WITH LOCAL OVERRIDE AND REMOTE RE-SETTING TEMPERATURE SET POINT. THE TEMPERATURE CONTROL CONTRACTOR IS RESPONSIBLE FOR ALL CONTROL WIRING COMMUNICATION LINK TO REMOTE TEMPERATURE AND AIR PRESSURE SENSORS AND OUTSIDE AIR DAMPER AND SPILL AIR FANS INTERLOCK.

**2. UNIT START UP:**

UNITS SHALL BE STARTED AND STOPPED PER BMS TIME SCHEDULE AND AUTOMATICALLY SET TO COOLING OR HEATING MODE PER OUTSIDE AIR TEMPERATURE SET POINTS WITH LOCAL OVERRIDE SWITCH AT EACH UNIT CONTROLLER. WHEN UNIT STARTS, CORRESPONDING MOTORIZED OUTSIDE AIR DAMPER (MD) SHALL OPEN TO MINIMUM POSITION SET POINT. SUPPLY AIR FAN SHALL START AND REMOTE ASSOCIATED CONDENSING UNIT SHALL BE ENABLED WHEN IN COOLING MODE. ASSOCIATED SPILL FAN SHALL BE INTERLOCKED TO START AT MINIMUM CAPACITY SET POINT

**3. COOLING**

UNIT SHALL BE IN COOLING MODE WHEN OUT DOOR TEMPERATURE RISE ABOVE 55F (ADJ). SPACE THERMOSTAT SHALL CYCLE COMPRESSOR(S) IN STAGES TO MAINTAIN DISCHARGE AND SPACE TEMPERATURE SET POINT. FAN SHALL RUN CONTINUOUSLY.

**4. FREE COOLING:**

WHEN OUTSIDE AIR ENTHALPY LOWER OR EQUAL INDOOR AIR ENTHALPY (ADJ) AND AC UNIT IS IN COOLING MODE UNIT WILL START FREE COOLING MODE. OUTSIDE AIR MOTORIZED DAMPER WILL BE FULLY OPEN. COMPRESSOR(S) SHALL BE CYCLED AS NEEDED. FAN SHALL RUN CONTINUOUSLY. CO2 DEMAND CONTROL SHALL BE LOCKED OUT. INTERLOCKED EXHAUST FAN SHALL OPERATE AT FULL CAPACITY.

**5. HEATING:**

UNIT SHALL SWITCH TO HEATING ON DROP OF OUTSIDE AIR BELOW 55F (ADJ) ON CALL FOR HEATING THRU SPACE THERMOSTAT AC UNIT HW COIL CONTROL VALVE SHALL MODULATE TO OPEN TO MAINTAIN SPACE SET POINT. COMPRESSORS SHALL BE LOCKED OUT AND FAN SHALL RUN CONTINUOUSLY.

**6. DEMAND CONTROL VENTILATION:**

ASSOCIATED SPACE CO2 SENSOR (ONE PER AC UNIT) SHALL MODULATE OUTSIDE AIR DAMPER TO CLOSED POSITION ON DECREASE IN CO2 PPM IN SPACE TO MAINTAIN SPACE SET POINT. INTERLOCKED EXHAUST FAN SHALL THRU VFD PROPORTIONALLY REDUCE ITS FLOW.

**7. PRE COOLING MODE:**

SHALL BE SCHEDULED THRU BMS OR MANUALLY STARTED FOR ADJUSTABLE TIME PERIOD PRIOR TO OCCUPIED MODE.  
AC SHALL START IN COOLING MODE, OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND SPILL AIR FAN SHALL BE LOCKED OUT. UNIT SHALL GO TO NORMAL COOLING UPON SPACE REACHING SET POINT TEMPERATURE IS REACHED OR WHEN OCCUPIED MODE INITIATED.

**8. AFTER HOUR SWITCH:**

LOCAL SWITCH BY AC UNITS WILL ENABLE UNITS TO START FOR ADJUSTABLE TIME PERIOD IN HEATING OR COOLING MODE BEYOND THE BMS TIME SCHEDULE, IN COORDINATION WITH BUILDING OPERATION OF HW PUMPS (HEATING MODE)

**9. SAFETIES:**

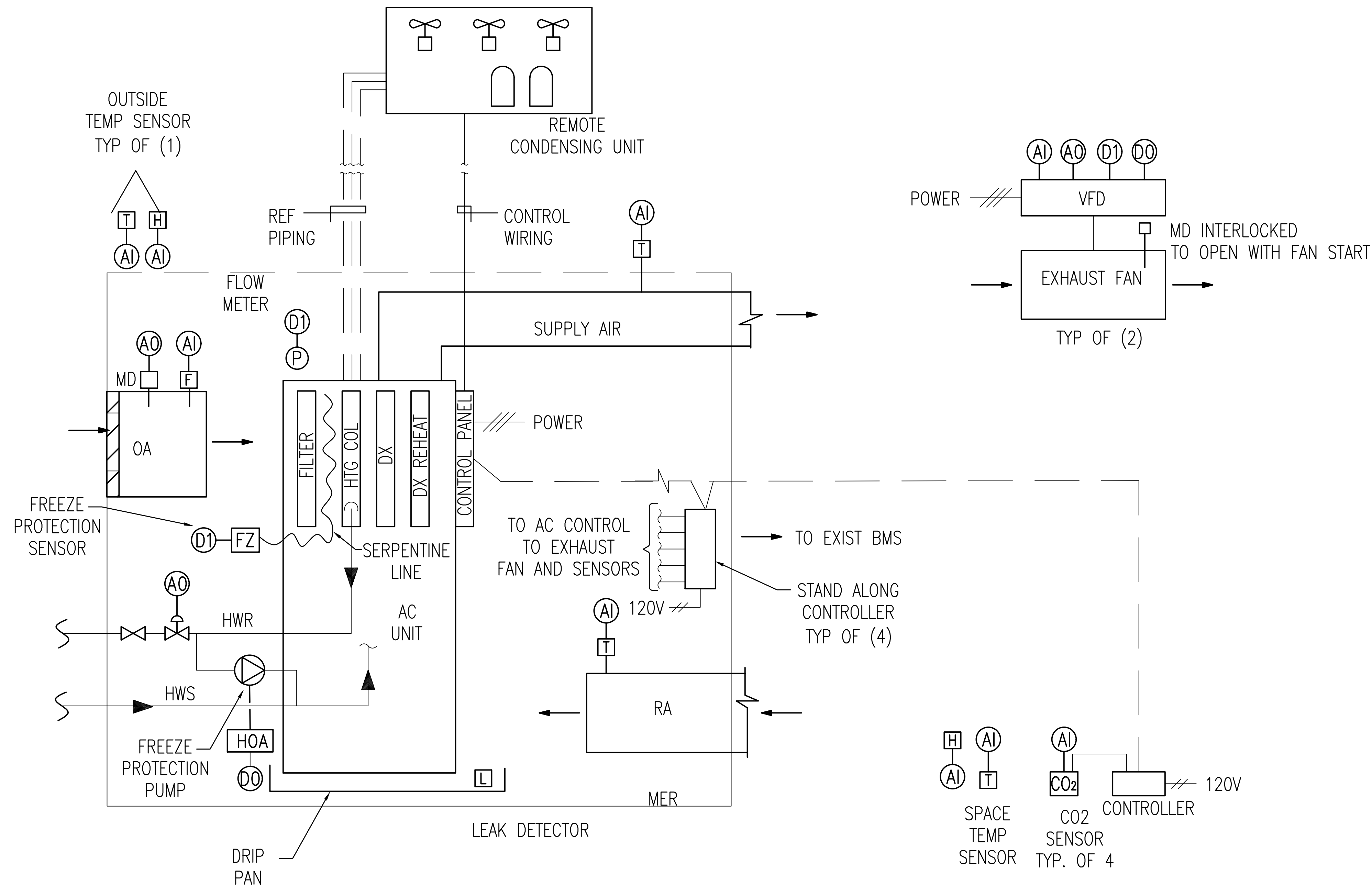
DUCT SMOKE DETECTORS ON AC DISCHARGE & INTAKE THRU FIRE ALARM SYSTEM SHALL SHUT UNIT WHEN ACTIVATED AND SIGNAL BMS. FREEZE STAT SET AT 40 (ADJUSTABLE) LOCATED UPSTREAM HEATING COIL (SERPENTINE TYPE) SHALL SHUT UNIT WHEN ACTIVATED AND GENERATE ALARM IN BMS. FREEZE PROTECTION PUMP SHALL AUTOMATICALLY START ON DROP IN OUTSIDE AIR TEMPERATURE BELOW 35F (ADJ). LEAK DETECTOR IN DRAIN PAN UNDER AC UNIT SHALL SHUT UNIT WHEN ACTIVATED ON RISE IN WATER LEVEL ABOVE ADJUSTABLE SET POINT AND GENERATE ALARM TO BMS. AC UNIT'S FACTORY CONTROLLER SHALL GENERATE GENERAL ALARM SIGNAL AT BMS UPON ANY COMPONENTS FAILURE OF OPERATION. UNITS SHALL BE SHUT DOWN AUTOMATICALLY UPON A SIGNAL FROM THE LOCAL SUPERVISORY FIRE ALARM PANEL THAT THE FIRE PROTECTION SYSTEM HAS BEEN ACTIVATED.

**B. SPILL AIR FANS:**

- 1) FANS SHALL BE ACTIVATED BY BMS COMMAND WHEN AC UNITS ARE ACTIVATED. EF-1 SHALL BE ACTIVATED WHEN AC-1 & AC-4 STARTS. EF-2 SHALL BE ACTIVATED WHEN AC-2 & AC-3 STARTS.
- 2) WHEN FAN STARTS, CORRESPONDING MOTORIZED DAMPER (MD) SHALL BE INTERLOCK TO OPEN. FAN SHALL START AFTER (MD) END SWITCH MAKES CONTACT IN OPEN POSITION.
- 3) WHEN FAN STOPS, MOTORIZED DAMPER SHALL CLOSE.
- 4) FANS SPEED WILL MODULATE THROUGH THE VFDs AND DEMAND CONTROL VENTILATION.
- 5) FANS SHALL BE SHUT DOWN AUTOMATICALLY UPON A SIGNAL FROM THE FIRE ALARM PANEL WHEN THE FIRE PROTECTION SYSTEM HAS BEEN ACTIVATED.
- 6) BMS SHALL HAVE THE ABILITY TO MONITOR FANS STATUS AND ALARMS AND STOP/START.

**C. CONTROL NOTES:**

- 1) DDC STAND ALONE CONTROLLER SHALL BE PLACED NEAR EACH AC UNIT. CONTROLLER SHALL BE PROGRAMMED TO MONITOR AND EXECUTE ABOVE SEQUENCE OF OPERATION, AND COMMUNICATE WITH AC UNIT, ASSOCIATED EXHAUST FAN, CO2 SENSOR, OUTSIDE AIR TEMPERATURE SENSOR AND COMMUNICATE ALL TO EXISTING BMS.
- 2) TEMPERATURE CONTROL CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED WIRING AND INTERLOCKS EXISTING BMS SOFTWARE AND HARDWARE TO ACCOMMODATE SEQUENCE OF OPERATION AND REMOTE CONTROL CAPABILITY INCLUDING GRAPHIC DISPLAY OF SYSTEMS CONFIGURATION INDICATING TEMPERATURE SET POINTS, EQUIPMENT STATUS, MODE OF OPERATION DAMPERS AND CONTROL VALVES POSITION



**AC CONTROL SYSTEM**

TYPICAL OF (4) SYSTEM  
OPERATING WITH (2) EXHAUST FANS  
( (2)SYSTEM W/(1) EXHAUST FAN)

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2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

**CONSULTANTS:**  
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**KEY PLAN:**

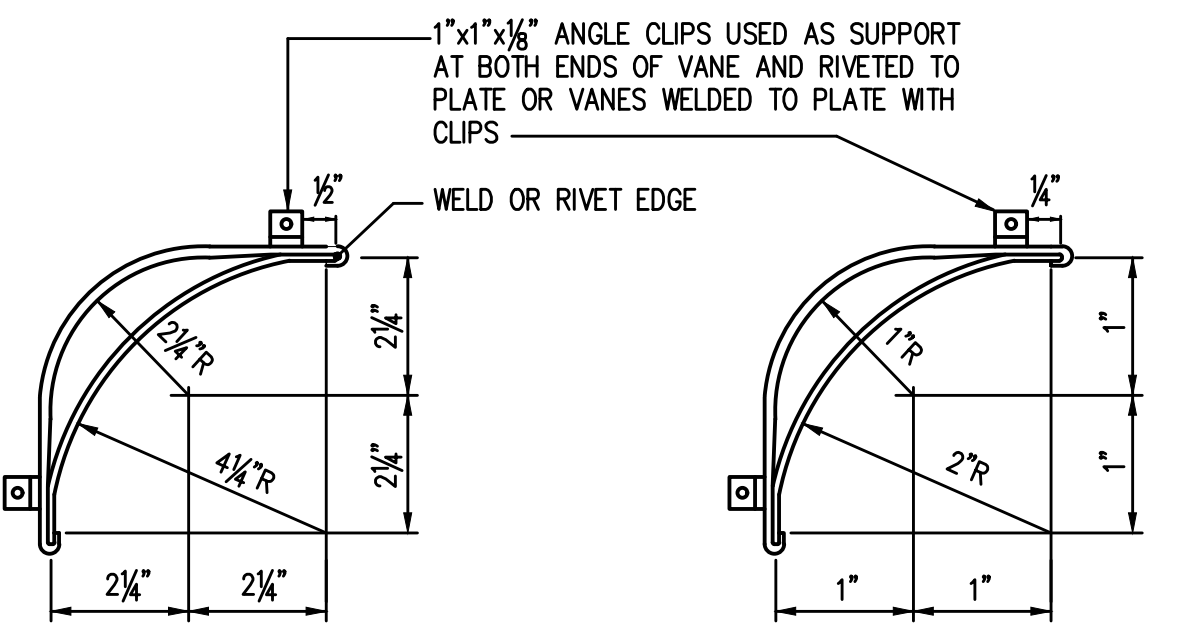
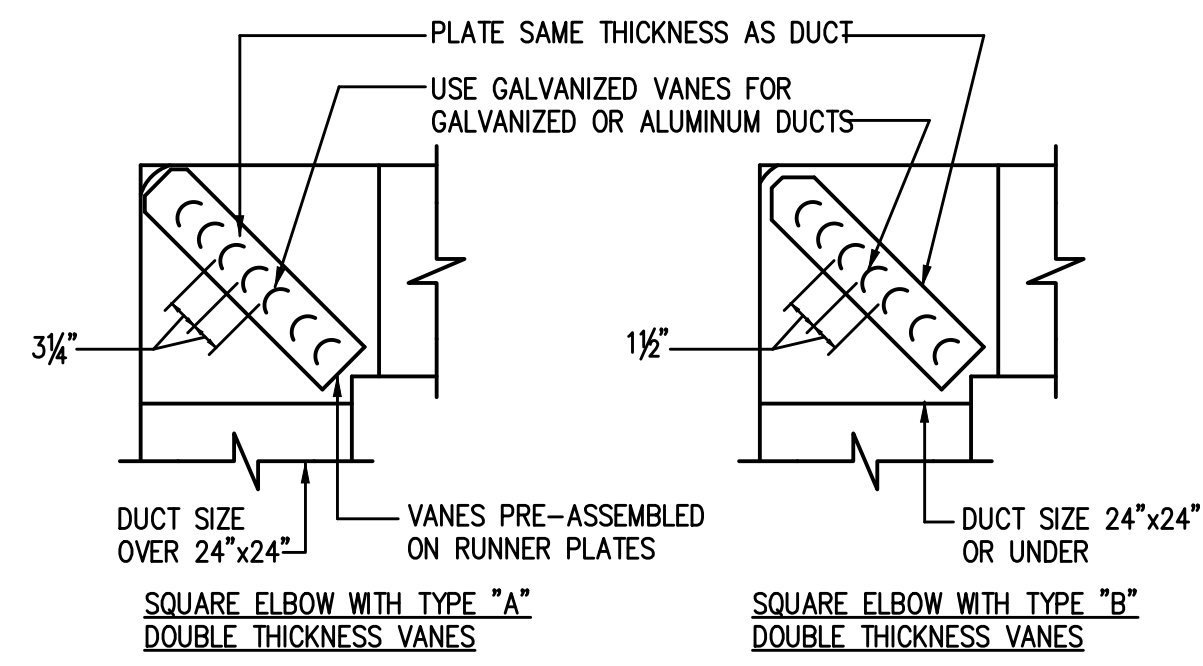
**PROJECT NAME:**  
**Weston High School GYM HVAC Upgrade**

**PROJECT ADDRESS:**

**DRAWING TITLE:**  
**MECHANICAL CONTROLS AND SEQUENCE OF OPERATION**

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PROJECT No:	20279.00	
SCALE:	AS NOTED	
DRAWN BY:	XX	
CHECKED BY:	XX	
DRAWING NO.	<b>M-201.00</b>	

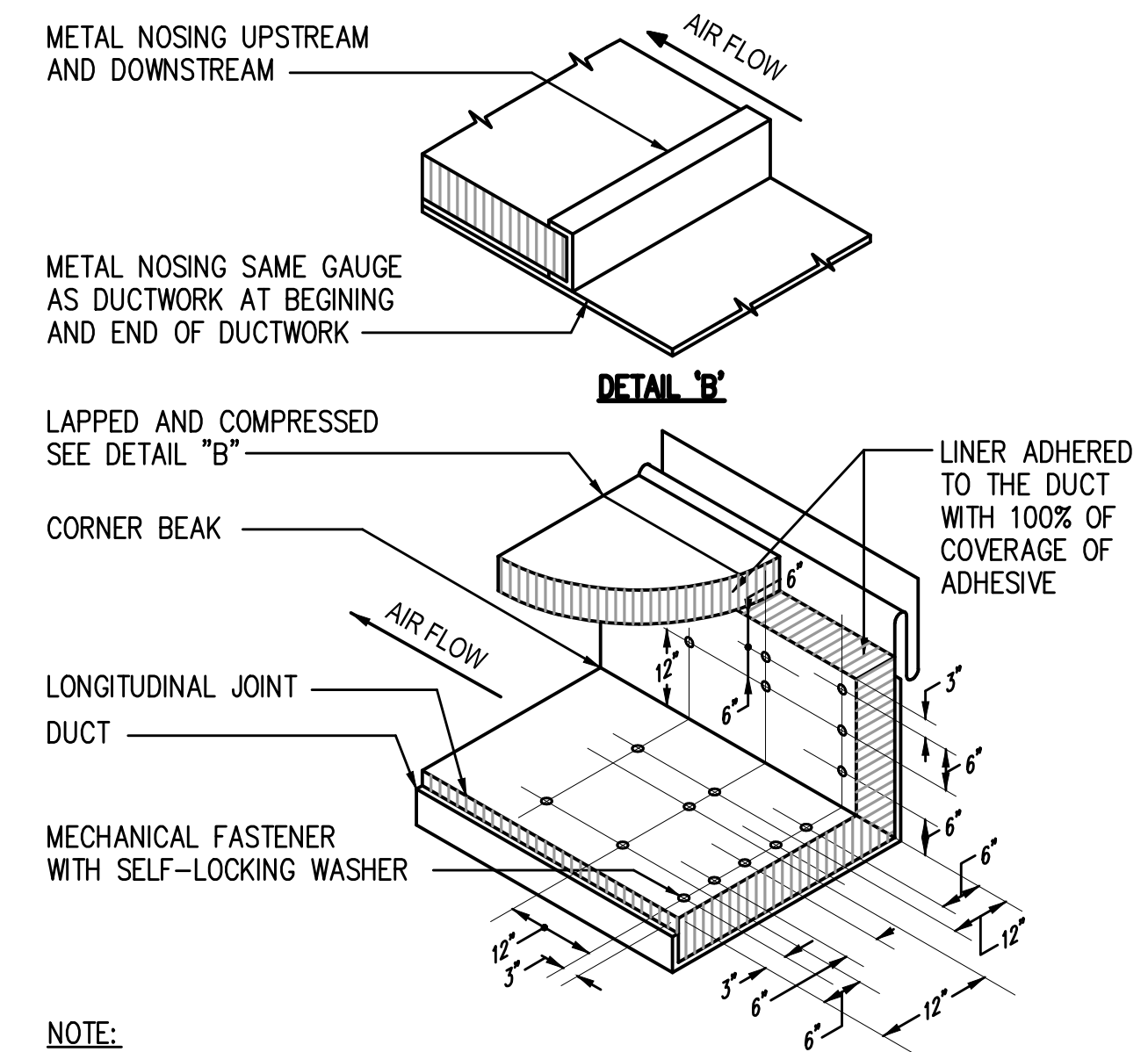
File name: S:\ad\Weston High School - Waterbury CT Gym HVAC Upgrade - 2023\001\201.dwg By: NIKHIL PAREKH On: December 24, 2020 At: 1:28 PM



TYPE "A" VANE USED IN DUCT OVER 24"x24" SAME GAGE THICKNESS AS DUCT NOT TO EXCEED 20 U.S. GAUGE  
TYPE "A" VANE CONSTRUCTION

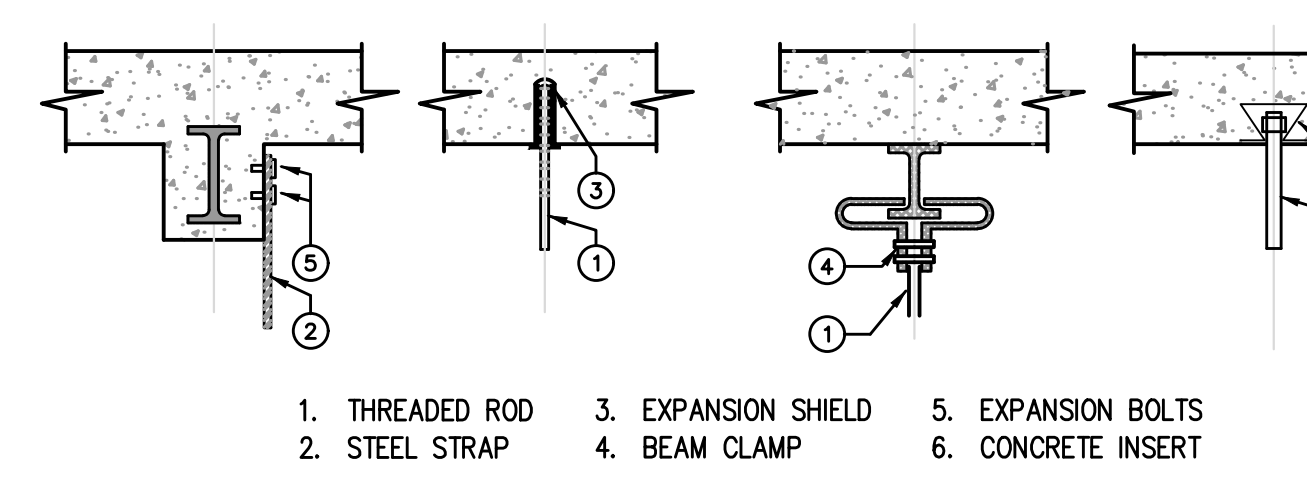
TYPE "B" VANE USED IN DUCT 24"x24" AND UNDER SAME GAGE THICKNESS AS DUCT  
TYPE "B" VANE CONSTRUCTION

**SQUARE DUCT ELBOWS DETAILS**  
N.T.S.

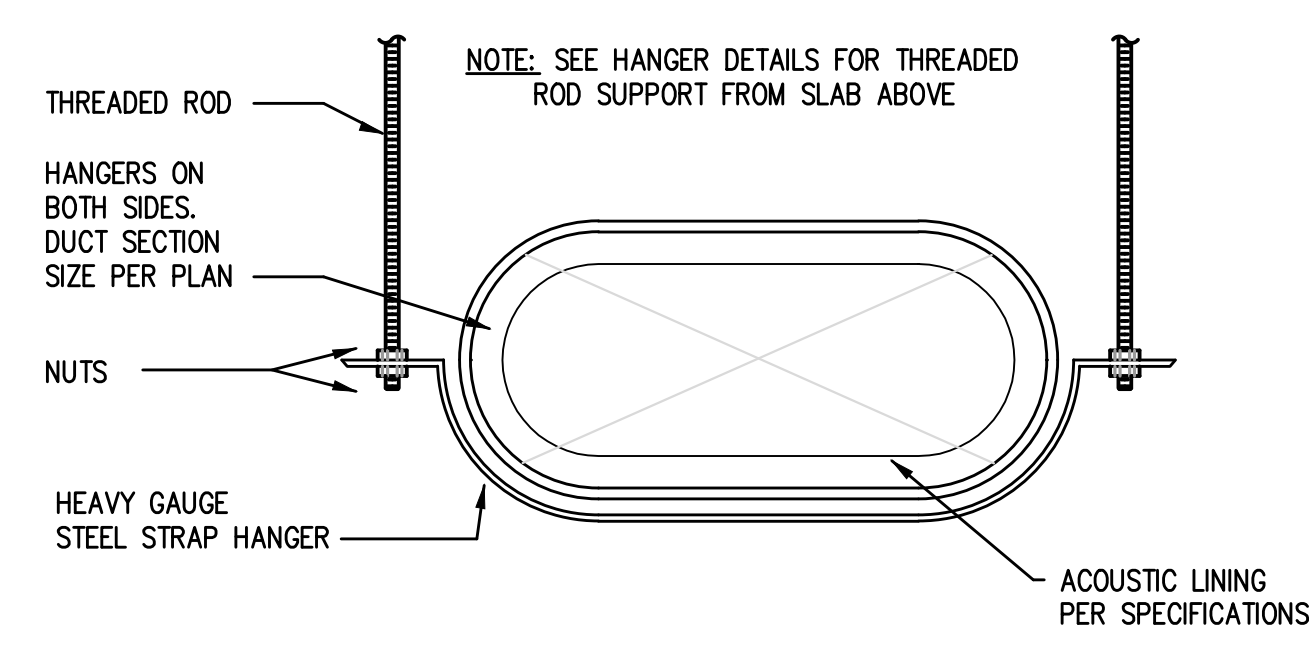


NOTE:  
1. MECHANICAL FASTENERS ARE TO BE SPOT WELDED TO DUCTWORK - GRIP CONNECTION NOT ACCEPTABLE

**ACOUSTICAL DUCT LINING DETAIL**  
SCALE: NONE



**HANGER SUPPORT DETAILS**  
N.T.S.

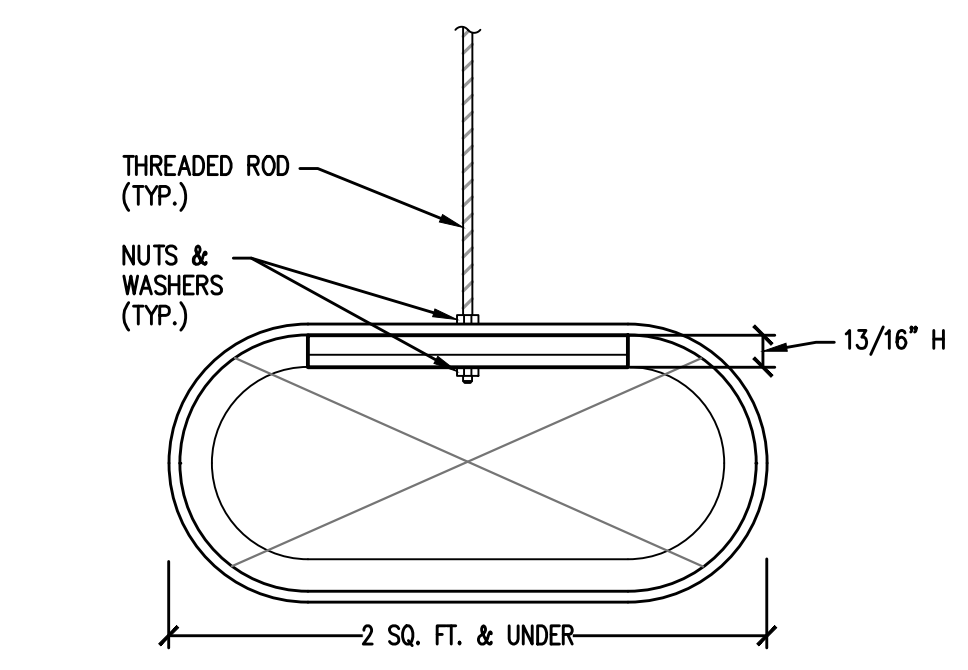


**HANGER SPACING**

DUCT FACE AREA FROM 0 TO 4 SQ. FT., 96" ON CENTER, MAX.  
DUCT FACE AREA FROM 4 TO 10 SQ. FT., 72" ON CENTER, MAX.  
DUCT FACE AREA FROM 10 & GREATER, 48" ON CENTER, MAX.  
FOR DUCTS WITH A CROSS-SECTIONAL AREA OF 2 SQ. FT. OR LESS, HANGERS SHALL BE CONSTRUCTED OF AT LEAST 1" X 1/16" STEEL STRAP.  
FOR DUCTS WITH A CROSS-SECTIONAL AREA OF OVER 2 SQ. FT., HANGERS SHALL BE CONSTRUCTED OF AT LEAST 1" X 1/8" STEEL STRAP.

WHERE DUCTS ARE GREATER THAN EIGHT SQ. FT. IN FACE AREA, THEY SHALL BE BRACED BY 1" X 1/8" ANGLES ALL AROUND, SPACED NO MORE THAN 4' ON CENTER.  
WHERE DUCTS ARE OVER 48" WIDE, THE HANGERS SHALL BE BROUGHT DOWN UNDER THE DUCT SIDES BY 4", & FASTENED TO THE DUCT BOTTOM.

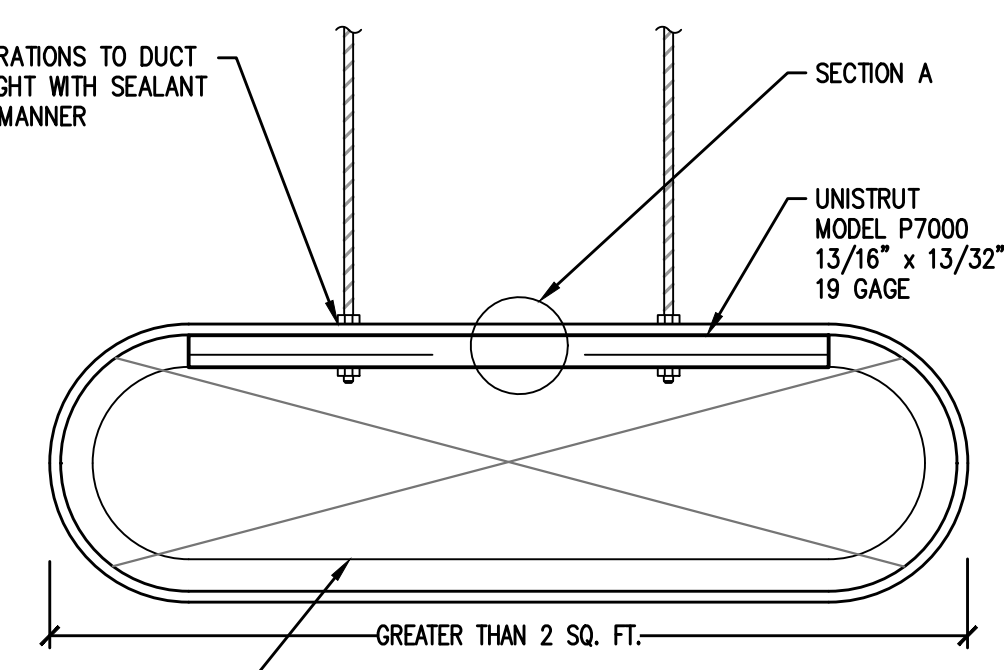
**DUCT HANGERS**  
N.T.S.



**HANGER SPACING:**

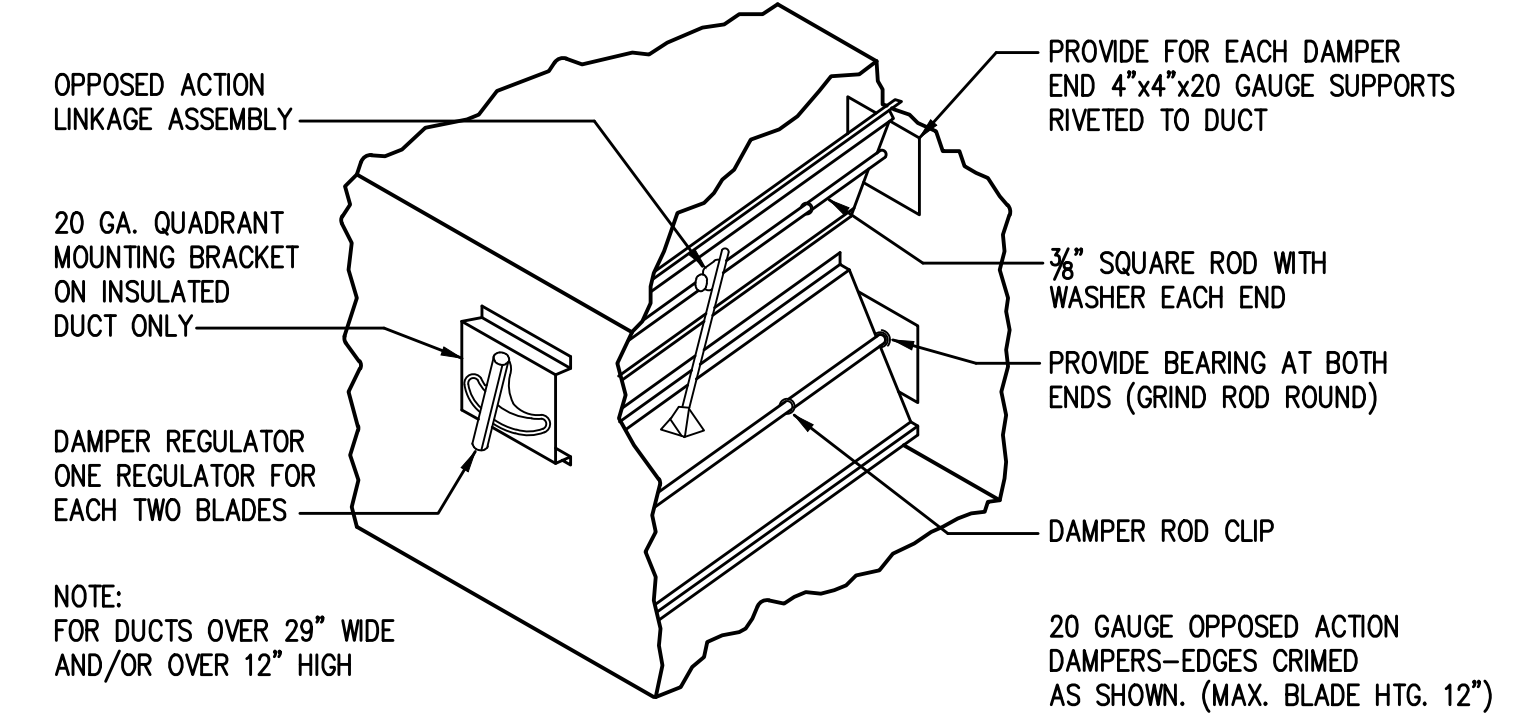
- DUCT FACE AREA FROM 0 TO 4 SQ. FT., 96" ON CENTER, MAX.
- DUCT FACE AREA FROM 4 TO 10 SQ. FT., 72" ON CENTER, MAX.
- DUCT FACE AREA FROM 10 & GREATER, 48" ON CENTER, MAX.
- FOR DUCTS WITH A CROSS-SECTIONAL AREA OF 2 SQ. FT. OR LESS, THEY SHALL BE PROVIDED WITH (1) 3/8" THREADED ROD CONNECTED TO UNISTRUT SIMILAR TO MODEL P7000 - 13/16" x 13/32", 19 GAGE CHANNEL WITH 3/8" NUTS & WASHERS (TYP. FOR 2).
- WHERE DUCTS ARE GREATER THAN 2 SQ. FT. IN FACE AREA, THEY SHALL BE PROVIDED WITH (2) 3/8" THREADED ROD CONNECTED TO UNISTRUT SIMILAR TO MODEL P7000 - 13/16" x 13/32", 19 GAGE CHANNEL WITH 3/8" NUTS & WASHERS (TYP. FOR 4).

**FLAT-OVAL DUCT HANGER**  
NOT TO SCALE



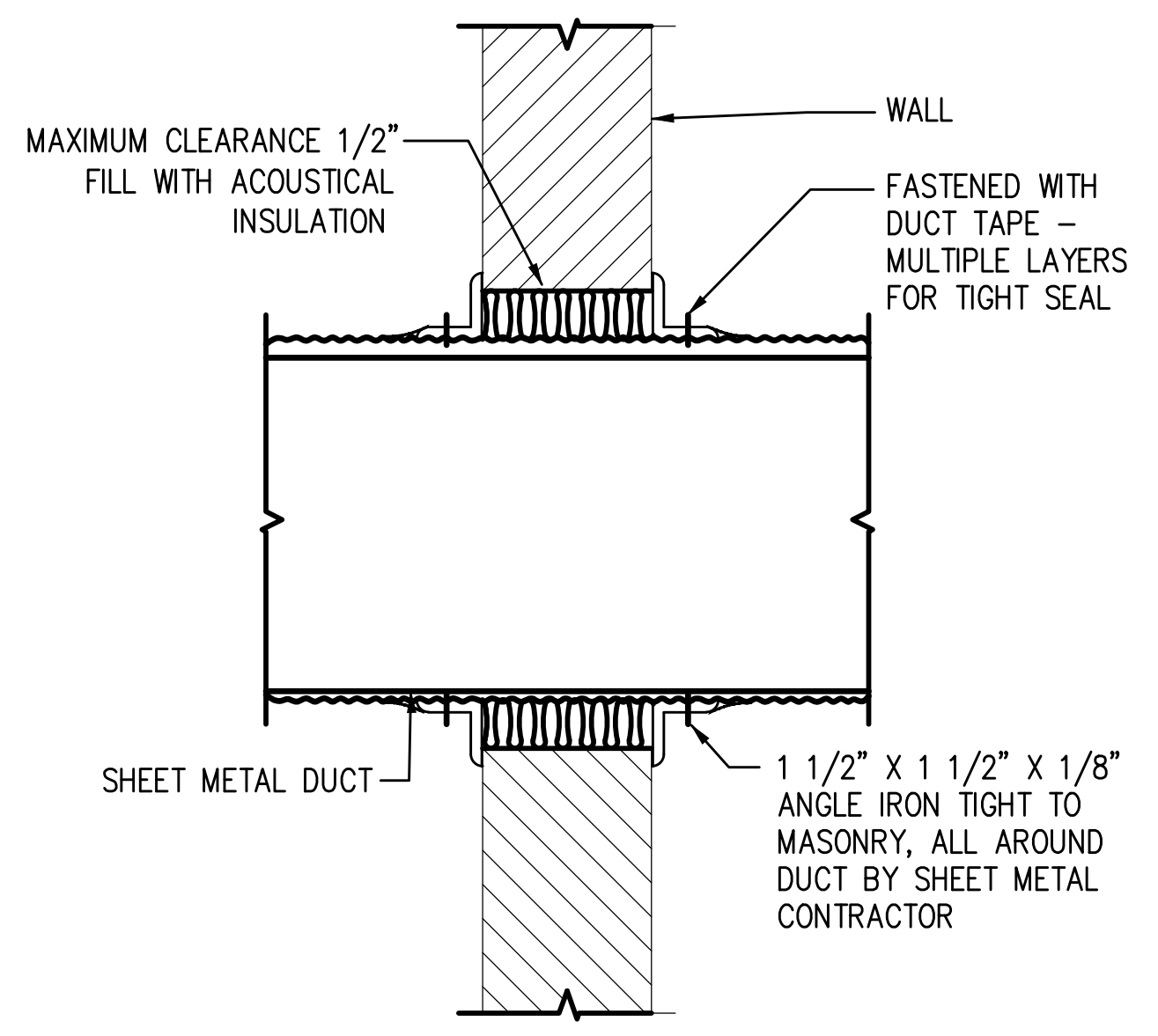
ACOUSTIC LINING PER SPECIFICATIONS. CONTRACTOR TO MODIFY ACOUSTICAL LINING AS REQUIRED TO ENSURE UNISTRUT IS FLUSH WITH DUCTWORK.

NOTE:  
SEE HANGER DETAILS FOR THREADED ROD SUPPORT FROM SLAB ABOVE.

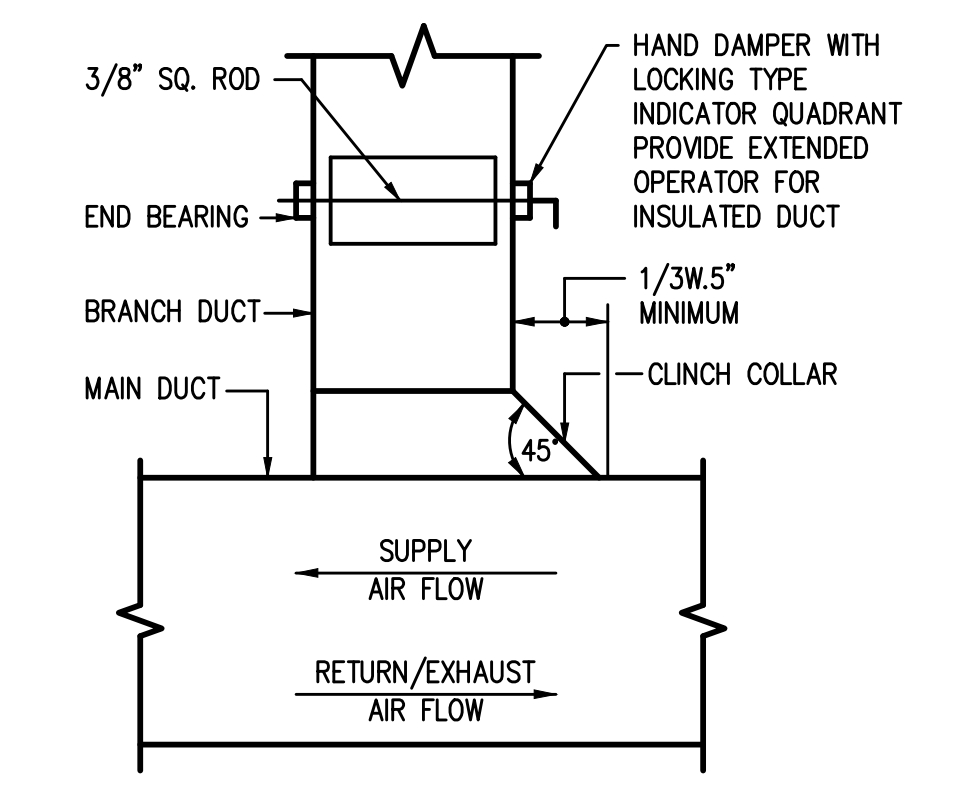


NOTE:  
FOR DUCTS OVER 29" WIDE AND/OR OVER 12" HIGH

**LOW PRESSURE BALANCING DAMPER**  
N.T.S.

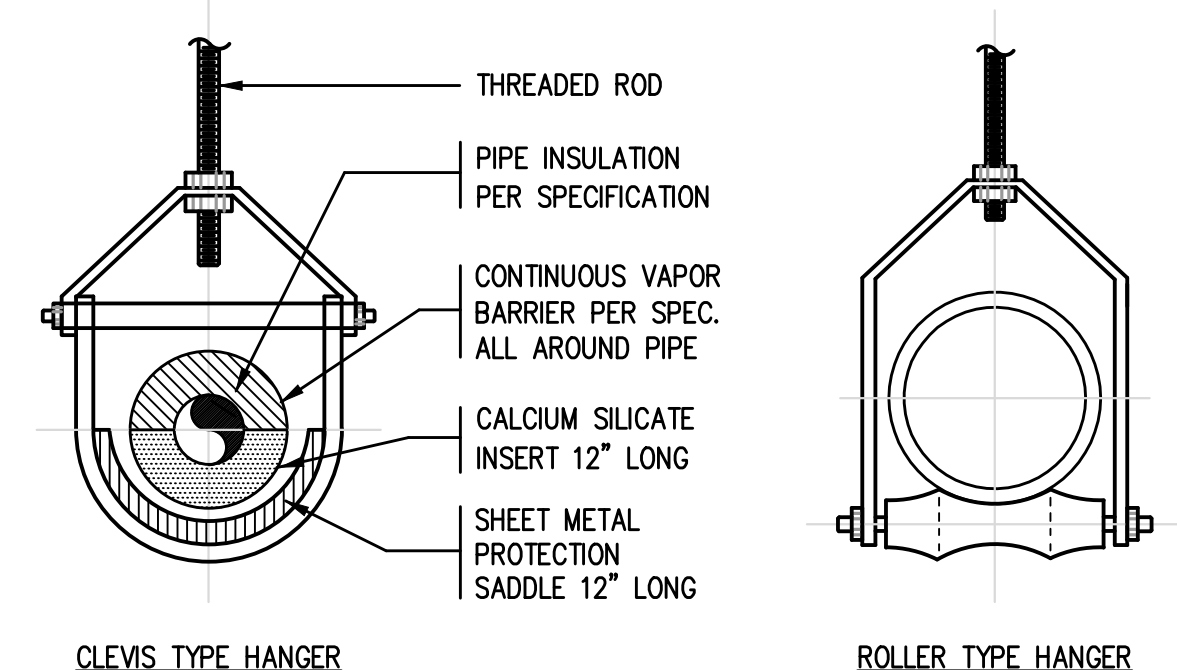


**DUCT PENETRATING FULL HEIGHT WALL**  
N.T.S.



NOTE: FURNISH THIS TYPE CONNECTION WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS FOR BRANCHES WITH LESS THAN 25% OF THE TOTAL AIR FLOW.

**RECTANGULAR DUCT TAP WITH VOLUME DAMPER**  
N.T.S.



**PIPE HANGERS**  
N.T.S.

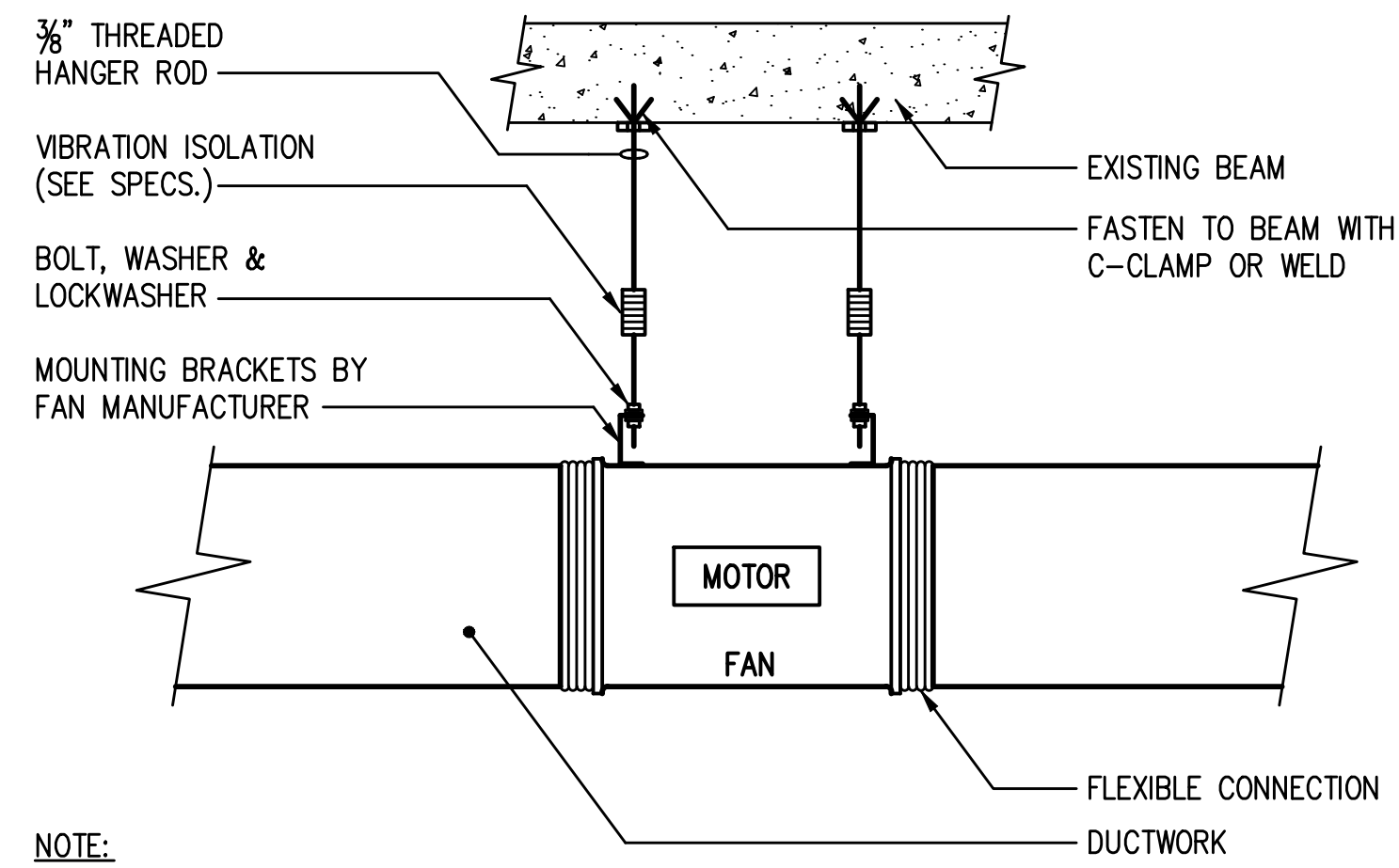
NOTES:  
1. CLEVIS TYPE HANGER FOR PIPES 4" AND UNDER.  
2. USE TWO RODS & ROLLER TYPE HANGER FOR PIPES LARGER THAN 4".  
3. INSULATION: HIGH PRESSURE STEAM ALL CALCIUM SILICATE CHILLED WATER 1/2 CALCIUM SILICATE AT SUPPORTS ONLY.

**PIPE HANGERS**  
N.T.S.

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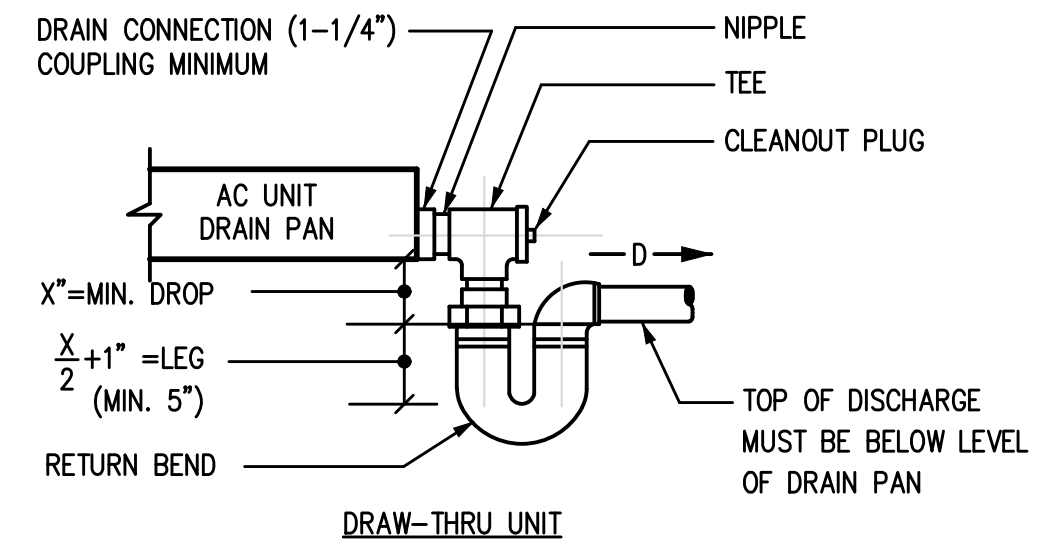
2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN
CONSULTANTS:		
<b>GOLDMAN COPELAND</b> Consulting Engineers 229 West 36th Street New York, NY 10018 V: 212.868.4660 F: 212.868.4680		
CLIENT:		
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KEY PLAN:		
PROJECT NAME:		
<b>Weston High School GYM HVAC Upgrade</b>		
PROJECT ADDRESS:		
DRAWING TITLE:		
<b>MECHANICAL DETAILS SHEET 1</b>		
DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
SCALE:	AS SHOWN	
DRAWN BY:	XX	
CHECKED BY:	XX	
DRAWING NO.	<b>M-300.00</b>	
DOB NOW JOB #	M00341201-11	
		X OF X

Filename: S:\Arch\Weston High School - Waltham\Weston High School HVAC Upgrade - 20279.00\300.001.dwg By: NIRMAL PABRIKHI On: December 24, 2020 At: 1:28 PM



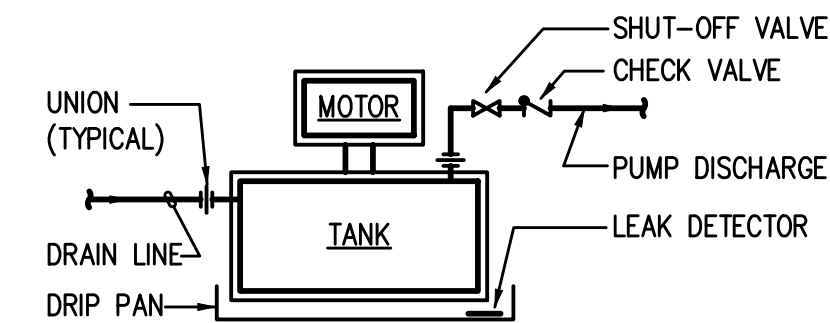
NOTE:  
 MECHANICAL CONTRACTOR SHOULD PROVIDE ALL MISC. STEEL AS REQ'D.

**INLINE FAN HANGING SUPPORT DETAIL**  
 NOT TO SCALE

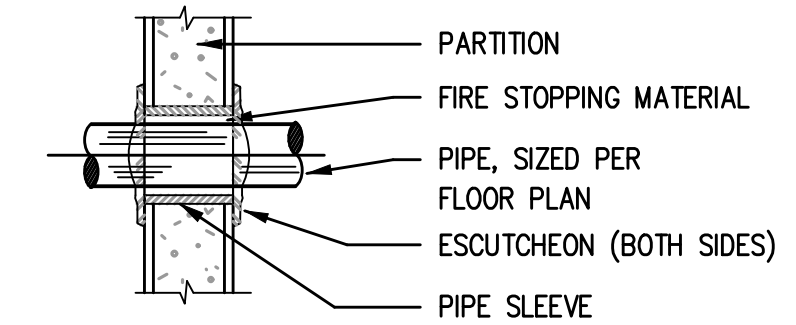


- NOTES:
1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAP.
  2. PITCH DRAIN FOR PROPER RUN-OFF.
  3. MANUALLY PRIME FILL TRAP BEFORE START-UP TO FORM INITIAL DRAIN SEAL.
  4. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW.
  5. X MUST BE A MINIMUM OF WHICHEVER IS GREATER: 4", OR 2" LESS THAN THE TOTAL STATIC PRESSURE OF THE FAN.
  6. ALL CONDENSATE SHALL BE PIPED TO FLOOR DRAIN IN MER. COORDINATE WITH PLUMBING DRAWINGS.

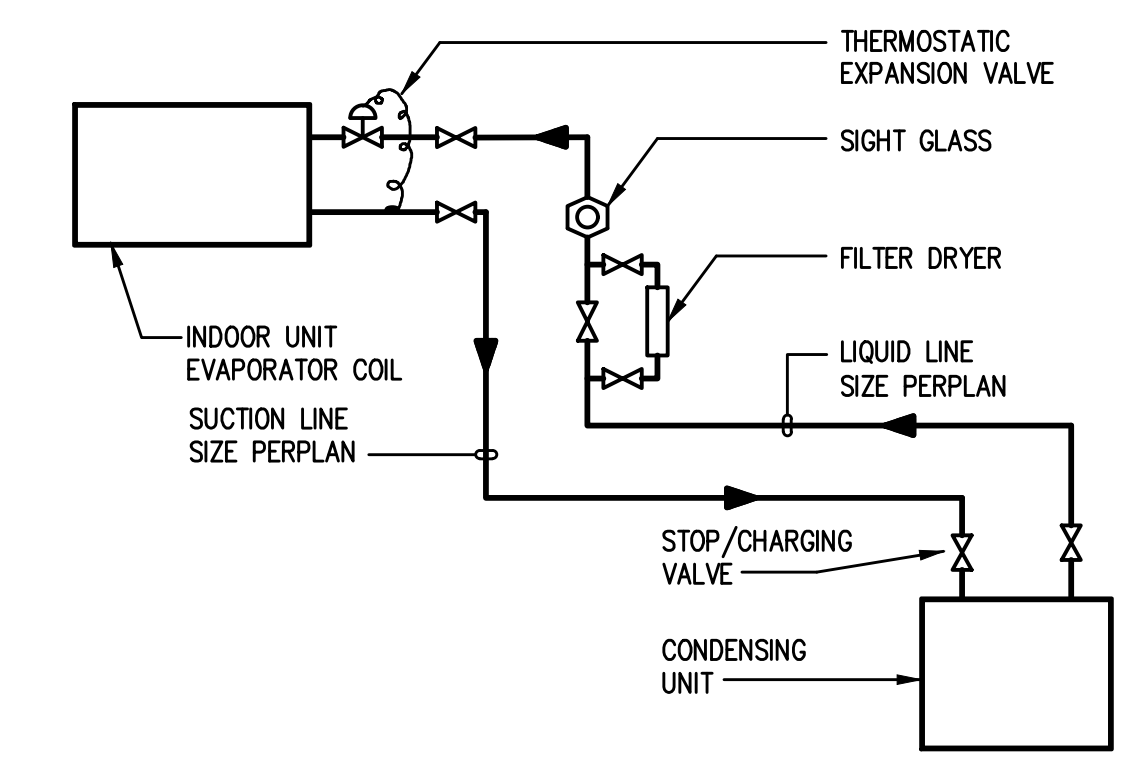
**PRIMARY DRAIN PAN WATER SEAL PIPING DETAIL**  
 N.T.S.



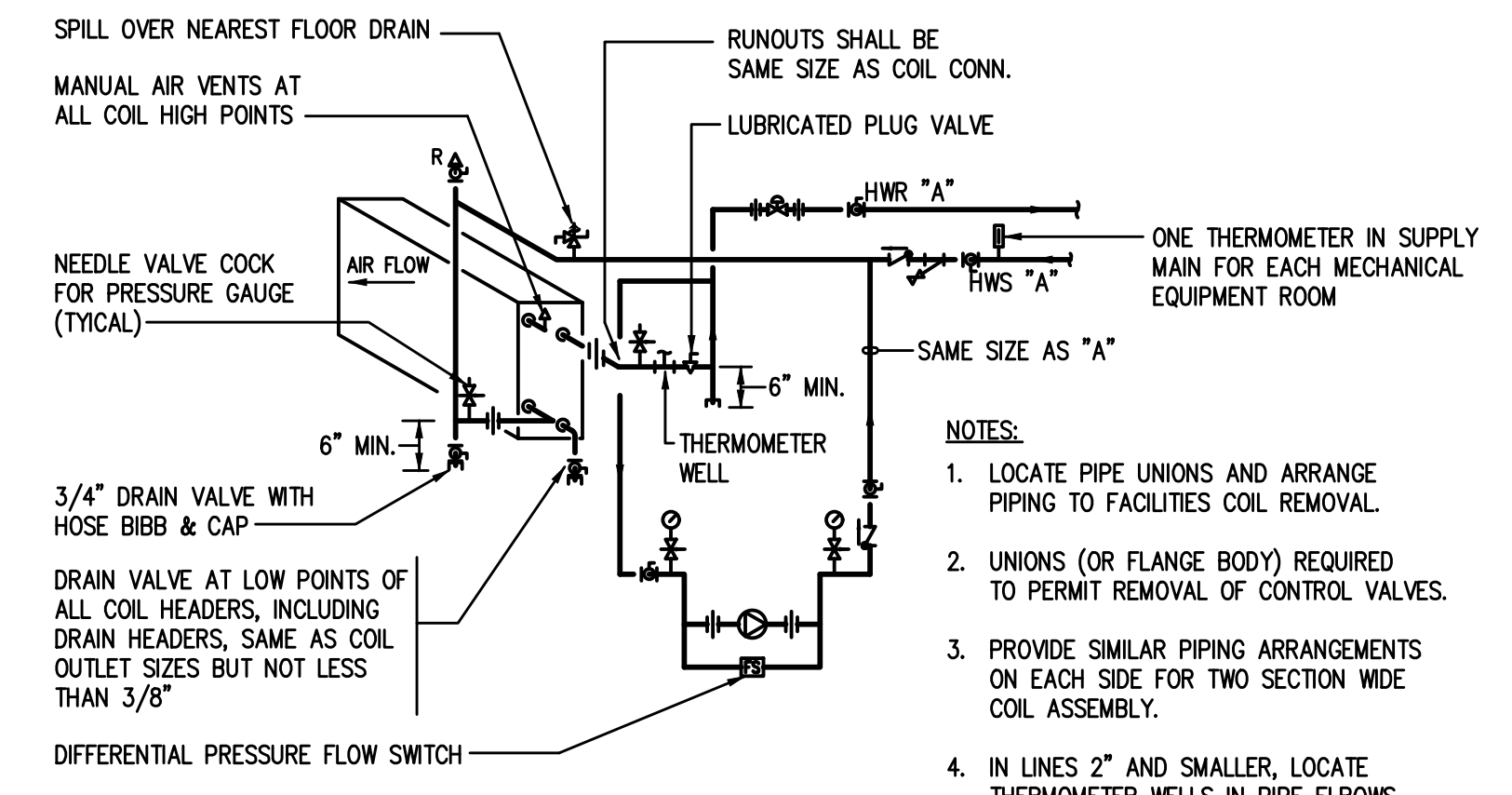
**CONDENSATE PUMP DETAIL**  
 N.T.S.



**THRU INTERIOR PARTITION PIPING PENETRATIONS DETAILS**  
 N.T.S.



**REFRIGERATION PIPING DIAGRAM**  
 NOT TO SCALE



- NOTES:
1. LOCATE PIPE UNIONS AND ARRANGE PIPING TO FACILITATE COIL REMOVAL.
  2. UNIONS (OR FLANGE BODY) REQUIRED TO PERMIT REMOVAL OF CONTROL VALVES.
  3. PROVIDE SIMILAR PIPING ARRANGEMENTS ON EACH SIDE FOR TWO SECTION WIDE COIL ASSEMBLY.
  4. IN LINES 2" AND SMALLER, LOCATE THERMOMETER WELLS IN PIPE ELBOWS.
  5. INSTALL AQUASTAT AT THERMOMETER WELL TO ACTIVATE PUMP AT 40° DEG.

**HOT WATER COIL (IN AIR HANDLING UNITS) WITH FREEZE PROTECTION PUMPS**  
 N.T.S.

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CONSULTANTS:  
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KEY PLAN:  
 PROJECT NAME:  
**Weston High School GYM HVAC Upgrade**

PROJECT ADDRESS:  
 DRAWING TITLE:  
**MECHANICAL DETAILS SHEET II**

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PROJECT No:	20279.00	
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DRAWN BY:	XX	
CHECKED BY:	XX	
DRAWING NO.		

**M-301.00**

X OF X

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SPECIFICATIONS  
SECTION 15000  
HEATING, VENTILATING AND AIR CONDITIONING SPECIFICATION

1. SCOPE

THE WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, FACILITIES AND SERVICES NECESSARY AND AS REQUIRED TO COMPLETE ALL THE HEATING VENTILATING AND AIR CONDITIONING WORK AS INDICATED ON THE DRAWINGS, AS DESCRIBED IN THE SPECIFICATION, OR AS REASONABLY INFERABLE FROM THE DRAWINGS AND SPECIFICATIONS. THE WORK SHALL PROVIDE COMPLETE AND OPERATING, SAFE, AND CODE COMPLYING HVAC SYSTEMS THAT INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO:

- A. AIR COOLED SPLIT SYSTEM AND CONDENSATE PUMPS.
- B. DUCTWORK OF THE LOW PRESSURE DESIGN AND CONNECTIONS TO OUTLETS AND EQUIPMENT.
- C. EXHAUST FANS.
- D. DIFFUSERS, GRILLES AND REGISTER.
- E. VOLUME DAMPERS, MOTORIZED DAMPERS, TURNING VANES AND ACCESS DOORS.
- F. INSULATION, ACOUSTIC LINING AND COVERING.
- G. TESTING, ADJUSTING AND BALANCING. COMMISSIONING OF AHUs.
- H. AS-BUILT DRAWINGS.
- I. SHOP DRAWINGS.

2. GENERAL REQUIREMENTS

- A. COMPLY WITH ALL APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS OF THE CONTRACT AND CONSTRUCTION SPECIFICATIONS. THEY SHALL APPLY TO AND BY THEIR MENTION HEREIN BE INCLUDED UNABRIDGED AS PART OF THE FOLLOWING SPECIFICATION ARTICLES.
- B. ALL MATERIALS AND WORK, INCLUDING AIR BALANCING AND TESTING SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE CITY OF NEW YORK BUILDING CODE, THE CURRENT STANDARDS FOR HVAC WORK OF ASHRAE AND SMACNA AND ALL BASE BUILDING REQUIREMENTS AND SPECIFICATIONS.
- C. WHERE CODES REQUIRE A VARIATION FROM DRAWINGS AND SPECIFICATIONS, WORK SHALL BE EXECUTED AS REQUIRED TO COMPLY WITH CODE, BUT NOT UNTIL POINT OR POINTS IN QUESTION HAVE BEEN BROUGHT TO THE ATTENTION OF THE ENGINEERS.
- D. ALL MATERIALS, EQUIPMENT AND FIXTURES NOT SPECIFICALLY INDICATED EXISTING SHALL BE FURNISHED UNDER THIS SECTION NEW AND UNUSED, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION OVER THE WORK.
- E. ALL WORKMEN EMPLOYED TO PERFORM THE WORK OF THE CONTRACT SHALL BE SKILLED IN THEIR RESPECTIVE TRADES.
- F. THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO SERVE JOINTLY AS A BASIS UPON WHICH THE CONTRACTOR SHALL SUBMIT A CONTRACT PRICE FOR THE MATERIAL AND LABOR PROVISIONS.
- G. WHEN CONFLICTS OCCUR IN THE SPECIFICATIONS OR ON THE DRAWINGS, OR BETWEEN EITHER, THE ITEMS OF GREATER QUANTITY OR HIGHER COST SHALL BE PROVIDED.
- H. THE CONTRACTOR SHALL PROVIDE ALL ITEMS OF LABOR OR MATERIALS NOT SPECIFICALLY INDICATED, BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATIONS TO INSTALL A COMPLETE AND OPERATING SYSTEM.
- I. THE CONTRACTOR SHALL COORDINATE HIS WORK OR ADJUST SAME TO THAT OF ALL OTHER TRADES INVOLVED IN THE CONSTRUCTION TO INCLUDE THE REFLECTED CEILING PLAN, IN ORDER THAT CONFLICTS IN SPACE LOCATIONS DO NOT OCCUR.
- J. THE WORK UNDER THIS CONTRACT SHALL BE PERFORMED SIMULTANEOUSLY WITH WORK OF OTHER TRADES, SO AS NOT TO DELAY THE OVERALL PROGRESS OF WORK.
- K. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK UNTIL ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF SAME WHICH MAY BE DAMAGED, LOST OR STOLEN, WITHOUT ADDITIONAL COSTS TO THE OWNER.
- L. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK.

- M. INSTALL ALL WORK IN SUCH A MANNER SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIRS.
- N. ALL CUTTING AND PATCHING IN CONNECTION WITH TRADE SHALL BE DONE BY THAT TRADE.
- O. EVERY EFFORT SHALL BE MADE TO MINIMIZE VIBRATION AND NOISE THROUGH CAREFUL FABRICATION AND ERECTION.
- P. CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT SITE AND BE RESPONSIBLE FOR CORRECTIONS OF SAME.
- Q. CONNECT ALL NEW WORK TO EXISTING IN A NEAT AND APPROVED MANNER. RESTORE EXISTING WORK AFTER MAKING SUCH CONNECTION TO PERFECT CONDITION.

3. WORK INCLUDED UNDER OTHER SECTIONS OF WORK

- A. ITEMS OF WORK WHICH SHALL BE INCLUDED UNDER OTHER SECTIONS OF WORK ARE AS FOLLOWS:
  - (1) ELECTRICAL WIRING FOR POWER, AUTOMATIC, SAFETY AND INTERLOCKING CONTROLS.
  - (2) FINISH PAINTING OR EQUIPMENT (EXCEPT FACTORY SUPPLIED AND SPECIFIED).
  - (3) PROVISIONS OF ELECTRICAL DISCONNECT SWITCHES OR FUSES.

4. CODES, PERMITS AND INSPECTIONS

- A. ALL WORK SHALL MEET OR EXCEED LATEST REQUIREMENT OF NATIONAL, STATE, COUNTY, MUNICIPAL AND OTHER AUTHORITIES EXERCISING JURISDICTION OF THE WORK OF THIS PROJECT.
- B. ANY PORTION OF WORK WHICH IS NOT SUBJECT TO THE APPROVAL OF AN AUTHORITY HAVING JURISDICTION SHALL BE PROVIDED IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION REQUIREMENTS.
- C. CONTRACTOR SHALL PAY ALL FEES, GIVE ALL NOTICES, FILE ALL NECESSARY DRAWINGS AND OBTAIN ALL PERMITS AND CERTIFICATES OF APPROVAL REQUIRED IN CONNECTION WITH ALL WORK UNDER THIS CONTRACT TO INCLUDE BUT NOT BE LIMITED TO NYC BUILDING AND FIRE DEPT. HE SHALL COMPLY WITH ALL LOCAL LAWS, ORDINANCES, RULES AND REGULATIONS AND WITH THE NATIONAL & LOCAL ELECTRICAL CODES. THIS CONTRACTOR SHALL PERFORM ALL CONTROLLED SPECIAL INSPECTIONS. CONTRACTOR SHALL GIVE TO OWNER ALL PERMITS AND INSPECTION CERTIFICATES AT THE COMPLETION OF THE WORK. THIS CONTRACTOR SHALL DO ALL WORK REQUIRED BY DIRECTIVE 14 AND TR-1.

5. HOLD HARMLESS

- A. TO THE MAXIMUM EXTENT PERMITTED BY LAW, CONTRACTOR HEREBY AGREES TO INDEMNIFY AND HOLD HARMLESS, THE OWNER, ARCHITECT, AND GOLDMAN COPELAND ASSOCIATES ("GCA"), ITS OFFICERS, AGENTS AND EMPLOYEES, FROM ANY AND ALL CLAIMS, JUDGMENTS, DAMAGES, COSTS, EXPENSES TO WHICH THE OWNER, ARCHITECT, AND GCA MAY BE SUBJECTED, OR WHICH THE OWNER, ARCHITECT, AND GCA MAY SUFFER OR INCUR BY REASON OF ANY LOSS, PROPERTY DAMAGE, BODILY INJURY, WRONGFUL DEATH, ETC., WHICH WAS CAUSED, IN WHOLE OR IN PART, BY ANY ACT, ERROR, OMISSION, OR FAILURE OF CONTRACTOR OR ANYONE EMPLOYED BY CONTRACTOR, IN THE PERFORMANCE OF ITS WORK, OR FROM THE FAILURE TO COMPLY WITH ANY OF THE PROVISIONS OF ITS CONTRACT, OR THE LAW.
- B. IN THE EVENT THE OWNER, ARCHITECT OR GCA IS A PARTY TO ANY ACTION ARISING IN WHOLE OR IN PART OUT OF CONTRACTOR'S SERVICES HEREUNDER, CONTRACTOR AGREES TO INDEMNIFY THE OWNER, ARCHITECT, AND GCA FOR ALL COSTS INCURRED IN DEFENDING SUCH ACTION, INCLUDING BUT NOT LIMITED TO, THE OWNER'S, ARCHITECT'S AND GCA'S ATTORNEY'S FEES, DEFENSE COST AND TIME OF THE OWNER'S, ARCHITECT'S AND GCA'S PERSONNEL IN ASSISTING IN THE DEFENSE OF SUCH ACTION.

6. APPROVALS AND SUBSTITUTIONS

- A. IT IS THE INTENT OF THESE SPECIFICATIONS THAT WHEREVER A MANUFACTURER IS SPECIFIED AND SUBSTITUTIONS ARE MADE, THEY SHALL CONFORM IN ALL RESPECTS TO THE SPECIFIED ITEM. CRITERIA AS DELINEATED FOR EQUIPMENT SHALL BE INTERPRETED AS MINIMUM PERFORMANCE REQUIREMENTS.
- B. SUBSTITUTED EQUIPMENT WHERE PERMITTED MUST CONFORM TO SPACE REQUIREMENTS. ANY SUBSTITUTED EQUIPMENT THAT CANNOT MEET SPACE REQUIREMENTS, WHETHER APPROVED OR NOT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ANY SUCH MODIFICATION OR RELATED SYSTEMS CHANGE OR ADDITIONAL DESIGN OR CONSTRUCTION COSTS THAT RESULT FROM SUBSTITUTED EQUIPMENT SHALL BE BORNE BY THE CONTRACTOR.

- C. IT SHALL BE MANDATORY FOR EACH CONTRACTOR TO SUBMIT HIS PROPOSAL PRICE BASED ON SPECIFIED MANUFACTURER OR SUPPLIER OF MATERIALS OR SERVICES. IF THE CONTRACTOR DESIRES TO SUBSTITUTE OTHER THAN SPECIFIED, HE SHALL SUBMIT SEPARATE PRICES FOR EACH OF THESE ITEMS FOR ADDITIONS OR DEDUCTIONS TO THE CONTRACT PROPOSAL PRICE; FOR ACCEPTANCE OR REJECTION AT THE TIME WHEN BIDS ARE DUE. AS PART OF HIS PROPOSAL FOR SUBSTITUTION THE CONTRACTOR MUST SUPPLY A TECHNICAL COMPARISON OF THE SUBSTITUTED VS. SPECIFIED ITEM. SHOULD THESE SUBSTITUTIONS BE REJECTED, THE CONTRACTOR SHALL BE OBLIGED TO PROVIDE SPECIFIED MATERIALS AND SERVICES.

7. VERIFYING EXISTING CONDITIONS

- A. THE CONTRACTOR SHALL BE HELD TO HAVE VISITED THE PREMISES TO DETERMINE EXISTING CONDITIONS AND COMPARE SAME WITH DRAWINGS AND SPECIFICATIONS. NO ALLOWANCE WILL BE MADE FOR FAILURE TO COMPLY WITH THESE REQUIREMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CONDITIONS FOUND DURING THE COURSE OF THE CONTRACT. A SUBMITTED PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS SATISFIED HIMSELF OF ALL EXISTING CONDITIONS.

8. REMOVALS AND ALTERATIONS

- A. THE CONTRACTOR SHALL REMOVE, RELOCATE, REPLACE, ADJUST, ADAPT, AND MODIFY EXISTING EQUIPMENT AND/OR SYSTEMS AS REQUIRED BY THE DRAWINGS OR SPECIFICATIONS AND AS MAY BE REQUIRED WHEN SUCH WORK IS UNCOVERED AND FOUND TO INTERFERE WITH THE COMPLETION OF WORK IN THIS CONTRACT OR OTHER CONTRACT WORK.

9. SHOP DRAWINGS AND EQUIPMENT SUBMISSIONS

REQUIRED MATERIALS SUBMITTED FOR APPROVAL PRIOR TO ORDERING OR FABRICATION AS FOLLOWS:

- A. SHOP DRAWINGS, CUTS AND CATALOG INFORMATION SHOWING IDENTIFICATION, CONSTRUCTION, PERFORMANCE, DIMENSIONS, WEIGHT, ETC. OF ALL EQUIPMENT AND ACCESSORIES FURNISHED UNDER THIS CONTRACT.
- B. SHEET METAL LAYOUTS DRAWN TO SCALE (3/8"). 1 SEPIA AND 2 PRINTS.
- C. AUTOMATIC TEMPERATURE CONTROL DIAGRAMS WITH SEQUENCE OF OPERATION AND CATALOG PAGES OF INSTRUMENTS.
- D. CERTIFIED EQUIPMENT MANUFACTURER'S DATA (4 COPIES).
- E. OPERATING AND MAINTENANCE INSTRUCTIONS.

10. OPERATING AND MAINTENANCE INSTRUCTIONS

- A. AFTER FINAL TESTS AND ADJUSTMENTS, FULLY INSTRUCT OWNER'S OPERATING PERSONNEL IN ALL DETAILS OF OPERATION FOR EQUIPMENT INSTALLED. A SIGNED RECEIPT WHICH SHALL BE OBTAINED FROM THE OWNERS OPERATOR SHALL BE CONSTRUED AS EVIDENCE THAT INSTRUCTIONS WERE SATISFACTORY.
- B. FURNISH THREE (3) COPIES OF WRITTEN DESCRIPTIONS OF ALL SYSTEMS COVERING ALL MANUAL OPERATING PROCEDURES, AUTOMATIC CONTROL DESCRIPTIONS AND AUTOMATIC CONTROL TEMPERATURE AND PRESSURE SETTINGS TO INCLUDE BUT NOT BE LIMITED TO: START-UP, SHUTDOWN, SEASONAL CHANGE OVER, NIGHT SETBACK AND EMERGENCY PROCEDURES IN CASE OF EQUIPMENT OR POWER FAILURE. WRITTEN DESCRIPTIONS SHALL INCLUDE LUBRICATION SCHEDULES, PARTS LIST, PERFORMANCE SERVICES FOR EQUIPMENT, FILTER SIZE/QUANTITY SCHEDULES, ETC. WHEN MANUFACTURER'S STANDARD INSTRUCTIONS ARE UTILIZED, THEY SHALL BE CLEARLY MARKED TO INDICATE APPLICABILITY. INCLUDE A COMPLETE SET OF EQUIPMENT CATALOGUE CUTS IN EACH MANUAL.

11. IDENTIFICATION OF EQUIPMENT AND CONTROLS

- A. ALL EQUIPMENT SHALL BE STENCILED OR LABELED WITH LAMACOID PLATED SCREWED THEREON WHICH SHALL INDICATE SYSTEMS SERVED.
- B. MOTOR STARTERS SHALL BE PROVIDED WITH LAMACOID PLATES WHICH INDICATE EQUIPMENT SERVED.

12. AS-BUILT DRAWINGS

- A. THE CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF WORK AS THE JOB PROGRESSES. CONTRACTOR'S SHOP DRAWINGS SHALL BE KEPT UP TO DATE WITH ALL AS-BUILT CONDITIONS SO THAT AT THE COMPLETION OF THE JOB REPRODUCIBLE MYLAR RECORD SHOP DRAWINGS WILL BE SUPPLIED TO THE OWNER AS A COMPLETE AND ACCURATE RECORD OF ALL WORK AS ACTUALLY INSTALLED.

13. GUARANTEES

- A. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR OTHER DEFECTS. ALL DEFECTIVE MATERIAL OR WORKMANSHIP AS WELL AS DAMAGES TO THE WORK OF ALL TRADES RESULTING FROM SAME SHALL BE REPLACED OR REPAIRED FOR THE DURATION OF THE GUARANTEE PERIOD.
- B. THE GUARANTEE PERIOD FOR ALL WORK EXCEPT COMPRESSORS SHALL BE FOR ONE (1) YEAR FROM THE DATE OF ACCEPTANCE, WHICH SHALL BE THE DATE OF FINAL PAYMENT OR THE DATE OF FORMAL NOTICE OF ACCEPTANCE, WHICHEVER IS EARLIER. COMPRESSORS SHALL HAVE A FOUR (4) YEAR WARRANTY.
- C. CERTIFICATION SHALL BE SUBMITTED BY THE CONTRACTOR ATTESTING TO THE FACT THAT SPECIFIED PERFORMANCE CRITERIA ARE MET BY ALL EQUIPMENT.

14. TESTING, ADJUSTMENTS AND BALANCING

- A. PRIOR TO STARTING OF EQUIPMENT, THE MECHANICAL CONTRACTOR, WITH ANY REQUIRED ASSISTANCE OF MANUFACTURER'S PERSONNEL SHALL START UP, CHECK OUT AND VERIFY PERFORMANCE OF ALL EQUIPMENT TO INCLUDE BUT NOT BE LIMITED TO ALL FANS, AIR CONDITIONING UNITS, CONDENSATE PUMPS, ETC. BY TAKING READINGS OF CFM, AMPS, RPM, GPM STATIC PRESSURE, TEMPERATURE DIFFERENTIALS ACROSS EQUIPMENT (FAN OR PUMP).
- B. MAKE ALL REQUIRED ADJUSTMENTS OF AIR SYSTEM DEVICES UNTIL ALL SPECIFIED PERFORMANCES ARE MET.
- D. ALL FANS AND AIR SUPPLY, RETURN AND EXHAUST OUTLETS AND DAMPERS SHALL BE ADJUSTED TO A MAXIMUM DEVIATION OF 5% OF THE AIR QUANTITIES INDICATED ON THE DRAWINGS. THE SYSTEM SHALL BE PROPERLY BALANCED AND ADJUSTED FOR THE REQUIRED OPERATING CONDITIONS. THE MAXIMUM ACCEPTABLE LEAKAGE OF SUPPLY AIR IS 5% ALL MEASUREMENTS READING REQUIRED ABOVE (CFM, TEMPERATURE AND AIR STATIC PRESSURE ETC.) TAKEN DURING THE ADJUSTMENT WORK SHALL BE RECORDED. FOUR COPIES OF THE RESULTING DATA SHALL BE SUBMITTED FOR EXAMINATION AND APPROVAL TO THE ENGINEER. FINAL COMFORT BALANCING SHALL BE MADE TO ELIMINATE DRAFTS AND WHERE OTHERWISE DIRECTED BY THE OWNER OR HIS REPRESENTATIVE.

15. VIBRATION ISOLATION SYSTEMS

- A. ALL ROTATING, REVOLVING OR RECIPROCATING EQUIPMENT, INCLUDING PIPING CONNECTIONS TO EQUIPMENT SHALL BE FURNISHED WITH VIBRATION ISOLATORS, TO PREVENT THE TRANSMISSION OF OBJECTIONABLE NOISES, SOUND OR VIBRATIONS TO THE OCCUPIED SPACES AND TO THE BUILDING STRUCTURES.
- B. VIBRATION ISOLATORS FOR FLOOR OR CEILING SUPPORTED EQUIPMENT SHALL HAVE A MAXIMUM LATERAL MOTION UNDER EQUIPMENT START-UP OR SHUTDOWN CONDITIONS OF 1/4" MOTIONS IN EXCESS SHALL BE RESTRAINED BY SPRING TYPE MOUNTINGS.
- C. FLEXIBLE DUCT CONNECTIONS SHALL BE GLASS CLOTH. UNCLAMPED SECTION SHALL BE 4" IN LENGTH.
- D. APPROVED MANUFACTURERS OF VIBRATION ARE AS FOLLOWS:
  - (1) MASON INDUSTRIES
  - (2) VIBRATION ELIMINATOR CO.
  - (3) CONSOLIDATED KINETICS CO.

16. ELECTRICAL WIRING AND WIRING DIAGRAMS

- A. ELECTRICAL WIRING FOR POWER, SAFETY AND INTERLOCKING CONTROLS FOR MOTORS, MOTOR STARTER AND OTHER ELECTRICAL APPARATUS AND DEVICES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNDER ANOTHER DIVISION OF CONTRACT WORK.
- B. THE MECHANICAL CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL TERMINAL POINT TO TERMINAL POINT, COMPLETELY COORDINATED AND INTEGRATED WIRING DIAGRAMS. CONTROL CONTRACTOR RESPONSIBLE FOR ALL CONTROL WIRING, CONTROL TERMINATION AND COMMUNICATION CABLING TO BMS.
- C. SPECIFIC WIRING DIAGRAMS OF FACTORY INSTALLED EQUIPMENT WIRING SHALL ALSO BE SUBMITTED FOR APPROVAL AND FURNISHED TO THE ELECTRICAL CONTRACTOR FOR HIS INSTALLATION REQUIREMENTS AND OTHER USES.

2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

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KEY PLAN:

PROJECT NAME:

**Weston High School  
GYM HVAC Upgrade**

PROJECT ADDRESS:

PROJECT TITLE:

**MECHANICAL  
SPECIFICATIONS  
SHEET I**

DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
SCALE:	AS SHOWN	
DRAWN BY:	XX	
CHECKED BY:	XX	

DRAWING NO.

**M-400.00**

X OF X

THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

<p>17. MOTOR STARTERS AND CONTROL DEVICES</p> <p>A. FURNISH TO THE ELECTRICAL CONTRACTOR WHO SHALL ERECT AND WIRE SUITABLE STARTING AND CONTROL EQUIPMENT FOR ALL MOTORS.</p> <p>B. MOTOR STARTERS SHALL BE CUTLER HAMMER, WESTINGHOUSE OR ALLEN-BRADLEY MANUFACTURE, SUITABLE FOR WALL OR ANGLE IRON FRAME MOUNTING.</p> <p>C. GENERAL NOTES</p> <p>(1) ALL STARTERS FOR MOTORS LESS THAN 1/2 HP SHALL BE 120 VOLT, SINGLE PHASE, 60 CYCLE, A.C. SERVICE. MANUAL STARTERS WITH OVERLOAD PROTECTION AND LOCKOUT TYPE DISCONNECT SWITCH OR BREAKER MAY BE USED TO CONTROL SUCH MOTORS, EXCEPT WHERE INTERLOCKS OR AUTOMATIC CONTROLS ARE REQUIRED. IN SUCH CASES, MAGNETIC ACROSS-THE-LINE STARTERS SHALL BE FURNISHED.</p> <p>(2) ALL MAGNETIC STARTERS SUBJECT TO MANUAL START AND IN DIRECT VIEW OF THE MOTORS THEY CONTROL SHALL HAVE MOMENTARY CONTACT START AND STOP BUTTONS AND PILOT LIGHT BUILT INTO COVER. ALL MAGNETIC STARTERS SUBJECT TO ELECTRICAL INTERLOCK OR AUTOMATIC CONTROL SHALL HAVE HANDS/OFF/AUTOMATIC SWITCHES BUILT INTO COVER. ALL SELECTOR SWITCHES IN STARTERS SHALL BE OF THE MAINTAIN CONTACT TYPE.</p> <p>(3) WHERE STARTERS ARE NOT IN SIGHT OF MOTORS THEY CONTROL, A LOCAL DISCONNECT SWITCH WILL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.</p> <p>(4) ALL MAGNETIC STARTERS SHALL HAVE THERMAL OVERLOAD IN EACH PHASE LEG AND LOW VOLTAGE PROTECTION.</p> <p>(5) ALL COILS, CORES, RESISTANCE, INSULATION CONTACTS, TRIPPERS, ETC., OF STARTERS AND RELAYS SHALL BE OF THE APPROVED TYPE. ALL PARTS SUBJECT TO WEAR ARCING, ETC., SHALL BE RENEWABLE.</p> <p>(6) ALL WIRING, STARTERS, SWITCHES, ETC., SHALL BE IN FULL ACCORDANCE WITH ALL LOCAL AND INSURANCE UNDERWRITERS' CODE REQUIREMENTS.</p> <p>(7) FURNISH DETAILED COMPOSITE WIRING DIAGRAMS FOR THOSE INSTALLING THE ELECTRICAL WORK, AND FURNISH SUCH OTHER INFORMATION NECESSARY TO ASSURE THE PROPER CONNECTION, OPERATION AND CONTROL OF MOTORIZED EQUIPMENT, INCLUDING INTERLOCKS, AUTOMATIC OR SAFETY CONTROLS AND AUXILIARY CIRCUITS.</p> <p>(8) PROVIDE LAMACOID NAME PLATE ATTACHED TO EACH STARTER IDENTIFYING THE SYSTEM IT SERVES.</p>	<p>(3) ACCESS DOORS IN DUCTS IN GENERAL NOT TO BE SMALLER THAN 12" X 12" EXCEPT FOR ACCESS DOORS TO FIRE DAMPERS WHICH SHALL DEPEND ON SIZE OF THE FIRE DAMPER.</p> <p>D. PROVIDE MANUAL DAMPERS IN EACH SPLIT OR TAP CONNECTION TO TRUNK DUCTS FOR BALANCING PURPOSES WHETHER OR NOT SHOWN ON DRAWINGS. EACH DAMPER SHALL BE PROVIDED WITH OPERATOR AND LOCKING DEVICE AND BE OF OPPOSED BLADE TYPE. ALL DAMPERS WHICH ARE NOISY SHALL BE REMOVED, REPAIRED AND REINSTALLED.</p> <p>E. PROVIDE FIRE SMOKE DAMPERS AND SMOKE DETECTORS AT LOCATION SHOWN ON DRAWINGS AND WHERE NECESSARY TO COMPLY WITH LOCAL OR OTHER AGENCIES OR JURISDICTIONS REQUIRING THEIR INSTALLATIONS AND IN COMPLIANCE WITH THEIR CONSTRUCTION REQUIREMENTS.</p> <p>F. PROVIDE GALVANIZED SHEET STEEL DUCTWORK FOR THE LOW PRESSURE SYSTEMS IN ACCORDANCE WITH THE REQUIREMENTS STANDARDS OF SMACNA. LOW PRESSURE DUCTWORK SHALL BE CONSTRUCTED AS 2" CLASSIFICATION AND SHALL INCLUDE ALL RETURN, EXHAUST AND SUPPLY DUCTWORK OPERATING LESS THAN OR EQUAL TO 2" WATER GAUGE PRESSURE AND/OR WITH VELOCITIES LESS THAN 1800 FT. PER MINUTE.</p> <p>G. WHERE DUCTS ARE SHOWN TO BE ACOUSTICALLY LINED, THE SIZES SHOWN ON THE PLANS SHALL BE THE CLEAR INSIDE DIMENSIONS WHEN LINING IS TO BE PROVIDED.</p> <p>H. CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB AND CONVEY SAME ON HIS SUBMITTED SHOP DRAWINGS.</p> <p>I. EXCEPT WHERE DIMENSIONS ARE SHOWN TO LOCATE DUCTWORK OR EQUIPMENT, THE DRAWINGS SHOW DUCT SIZE AND ARRANGEMENTS ONLY. EQUIPMENT AND DUCTWORK ARRANGEMENTS SHALL FIT INTO THE SPACE AS INDICATED, AND SHALL ALLOW ADEQUATE CLEARANCES FOR ENTRY, SERVICING AND MAINTENANCE. REVERSE DUCT ASPECT RATIOS AS REQUIRED, 4:1 MAXIMUM, UNLESS INDICATED OTHERWISE ON DRAWING.</p> <p>J. INSTALL ALL DUCTS AS HIGH AS POSSIBLE EXCEPT WHERE OTHERWISE INDICATED ON THE DRAWINGS.</p> <p>K. PROVIDE RISERS, DROPS AND OFFSETS IN DUCT OR FOR A DUCT TO CLEAR BEAMS, COLUMNS, LIGHTS, PIPES AND OTHER OBSTRUCTIONS. LAYOUT SHALL CONFORM TO CEILING HEIGHTS SHOWN ON ARCHITECTURAL DRAWINGS. WHERE CONFLICTS ARISE, THE PROBLEM SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION BEFORE PROCEEDING.</p> <p>L. PROVIDE TURNING VANES ON ALL RECTANGULAR ELBOWS AND WHERE OTHERWISE SHOWN ON THE DRAWINGS. TURNING VANES SHALL BE DOUBLE THICKNESS TYPE, CONSTRUCTED IN ACCORDANCE WITH SMACNA MANUAL. SUBMIT DETAIL ON INITIAL DUCTWORK SHOP DRAWINGS.</p> <p>M. WHEN DUCTWORK PENETRATES FULL-HEIGHT PARTITIONS THE OPENING AROUND THE DUCT IS TO BE SEALED WITH INSULATION AND CAULKED.</p>	<p>F. HANGER LOCATIONS MUST BE APPROVED BY THE OWNER'S STRUCTURAL ENGINEER.</p> <p>G. HANGERS FOR EQUIPMENT MUST BE DESIGNED WITH ISOLATION DEVICES AS SCHEDULED.</p> <p>H. THE CONTRACTOR SHALL NOT INSTALL ANY AIR CONDITIONING UNITS OR CEILING HUNG EXHAUST FAN ABOVE A LIGHT FIXTURE OR FULL HEIGHT PARTITION.</p> <p>21. INSULATION</p> <p>A. ALL PIPING, DUCTWORK AND EQUIPMENT THAT EITHER TRANSMITS OR RECEIVES HEAT, FORMS CONDENSATION, OR IS SUBJECT TO FREEZING SHALL BE INSULATED UNLESS IT IS SPECIFICALLY STATED OTHERWISE. INSULATION AND ACCESSORIES SHALL CONFORM TO RECOMMENDATIONS OF THE NFPA, AND SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM-E84, NFPA 255 OR UL 723 NOT EXCEEDING: FLAME SPREAD 25 AND SMOKE DEVELOPED 50.</p> <p>B. DUCTWORK INSULATION</p> <p>(1) CONDITIONED AIR SUPPLY DUCTS: R-6" FIBERGLASS WITH VAPOR SEAL. BAIL WITH WIRE.</p> <p>(2) ALL CONDENSER DUCTS, FRESH AIR DUCTS AND SPILL AIR DUCTS TO BE INSULATED WITH 6LB. DENSITY 2" BOARD ASJ TYPE INSULATION. ALL ANCHORING PINS TO BE WELDED OR PERFORATED MASTIC TYPE. NO SELF STICK PINS ALLOWED. ALL JOINTS TO BE TAPED AND SEALED WITH MASTIC BOARD COATING.</p> <p>C. PERFORM ALL WORK IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.</p> <p>D. SEAL ALL VAPOR BARRIERS CONTINUOUS AND THROUGHOUT AGAINST MOISTURE PENETRATIONS.</p> <p>22. INSTALLATION OF PIPING - GENERAL</p> <p>A. FURNISH AND INSTALL PIPING SYSTEMS WHICH ARE SCHEMATICALLY INDICATED ON THE DRAWINGS IN CONFORMANCE TO THE LATEST ASA CODE FOR PRESSURE PIPING. PIPING SHALL BE SET UP, SET DOWN OR OFFSET TO MEET SPECIFIED HEADROOM, FIELD CONDITIONS AND COORDINATION BETWEEN TRADES WITHOUT ADDITIONAL COST. ALL CHANGES IN DIRECTION OF PIPING SHALL BE MADE WITH FITTINGS.</p> <p>B. PROVIDE PROPER PROVISION FOR EXPANSION OR CONTRACTION OF PIPING TO PREVENT STRAIN TO THE APPARATUS CONNECTED THEREWITH AND TO THE BUILDING STRUCTURE.</p> <p>C. ARRANGE PIPING TO EQUIPMENT TO PERMIT SERVICING OR REMOVALS WITHOUT DISMANTLING PIPING BRANCHES. INCLUDE ISOLATION VALVING FOR QUICK REMOVAL OF EQUIPMENT.</p> <p>D. PROVIDE MANUAL AIR VENT VALVE FACILITIES AT ALL WATER PIPING HIGH POINTS AND DRAIN VALVES AT LOW POINTS TO PERMIT DRAINING OF PIPE SYSTEMS.</p> <p>E. FURNISH AND INSTALL PIPING HANGERS, SUPPORTS, ANCHORS AND GUIDES HAVING A BUILT-IN SAFETY FACTOR OF FIVE (5) IN CONFORMANCE TO THE LATEST ASA CODE FOR PRESSURE PIPING AND SUCH THAT PIPE LINES SHALL NOT CREEP, SAG, OR BUCKLE. ALL HANGER SPECIALTIES SHALL BE FURNISHED WITH ZINC CHROMATE PRIME PAINT FINISH. ALL COPPER PIPE SHALL HAVE COPPER OR COPPER PLATE HANGERS. NO PIPES SHALL BE HUNG FROM OTHER PIPES.</p> <p>F. FURNISH AND INSTALL CONDENSATE DRAIN PIPING FROM ALL AIR CONDITIONING EQUIPMENT INDICATED ON THE DRAWINGS IN CONFORMANCE TO THE LATEST ASA CODE FOR PRESSURE PIPING. ALL PIPING TO BE PITCHED DOWN TO DRAIN, AT 1" PER 30' OR SUPPLIED WITH SUITABLE CONDENSATE PUMP.</p> <p>G. CONDENSATE DRAIN AND CONDENSATE PUMP DISCHARGE PIPING TO BE COPPER TYPE L, FITTINGS TO BE WROUGHT COPPER. PROVIDE ALL REQUIRED OFFSETS TO ACCOMMODATE FIELD CONDITIONS.</p> <p>H. REFRIGERANT PIPING</p> <p>(1) HARD TEMPER COPPER TUBING TYPE K ACR ASTM B88 RATING, CLEANED AND CAPPED.</p> <p>(2) ALL FITTINGS SHALL BE WROUGHT COPPER.</p> <p>(3) ALL PIPING JOINTS SHALL BE SILVER BRAZED.</p> <p>I. INSTALL ALL HORIZONTAL PIPING TO BE SLOPED AS REQUIRED BY ITS SERVICE.</p> <p>J. WHEN PIPING PENETRATES FULL-HEIGHT PARTITIONS THE OPENING AROUND THE PIPE SHALL BE SEALED WITH INSULATION AND CAULKED.</p> <p>K. PROVIDE DI-ELECTRIC UNIONS WHENEVER JOINING STEEL TO COPPER PIPE.</p> <p>L. PROVIDE THREE SWING ELBOWS AT ALL EQUIPMENT CONNECTION POINTS.</p> <p>23. SLEEVES AND ESCUTCHEONS FOR PIPING</p> <p>A. PROVIDE SLEEVES FOR PIPES PASSING THROUGH WALL PARTITIONS AND FLOORS.</p> <p>B. PIPING THROUGH FLOORS SHALL BE SCHEDULE 40 STEEL AND EXTEND 2" PAST FLOOR. SLEEVES THROUGH INTERIOR WALLS AND PARTITIONS SHALL BE 18 GAUGE GALVANIZED STEEL, FLUSH TO WALL.</p> <p>C. SPACE BETWEEN PIPE OR PIPE INSULATION SHALL BE CAULKED WITH INCOMBUSTIBLE ROPE OR MINERAL WOOL TO WITHIN 2" OF WALL FACES AND FILLED WITH ACCEPTABLE FIRE SAFING SEALANT COMPOUND TO WALL FACES.</p> <p>D. FURNISH AND INSTALL ESCUTCHEONS ON ALL EXPOSED PIPING THROUGH WALLS OR FLOORS AND HELD IN PLACE WITH SCREWS OR BE INTERNAL SPRING TENSION.</p>	<p>24. ACOUSTIC LINING</p> <p>A. ALL DUCTWORK SHALL BE INTERNALLY LINED TO BE A MINIMUM OF 1" MATTE-FACED DUCT LINER OF 1-1/2 LB./CU. FT. DENSITY AS CALLED FOR ON THE DRAWINGS OR AS FOLLOWS:</p> <p>(1) AIR CONDITIONING SUPPLY AIR DUCTS FROM AIR CONDITIONING UNITS FOR A MINIMUM DISTANCE OF 25'-0" IN EACH BRANCH DOWNSTREAM OF THE UNIT.</p> <p>(2) 7' DOWNSTREAM OF VAV BOXES.</p> <p>(3) 25' UPSTREAM OF EXHAUST FANS.</p> <p>B. WHERE DUCTWORK IS ACOUSTICALLY LINED, THERMAL INSULATION IS NOT REQUIRED IF THICKNESS IS AT LEAST EQUAL TO SPECIFIED THERMAL INSULATION.</p> <p>C. SIZES SHOWN FOR LINED DUCTS ARE CLEAR INSIDE DIMENSIONS AFTER THE LINING HAS BEEN INSTALLED.</p> <p>D. PROVIDE DUCT LINING INCLUDING FACINGS AND ADHESIVES WITH INCOMBUSTIBLE MATERIALS MEETING ALL CODE REQUIREMENTS AND FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM E-84, NATIONAL FIRE PROTECTION ASSOCIATION 225, AND UNDERWRITERS LABORATORIES 723, NOT EXCEEDING FLAME SPREAD 25 AND SMOKE DEVELOPED 50.</p> <p>E. ATTACH LINING WITH MECHANICAL FASTENERS WHICH SHALL NOT PIERCE THE SHEET METAL AND BE ON 12" CENTERS ON ALL SIDES AND MASTIC HAVING 100% SURFACE AREA CONTACT. CAULK ALL ABUTTING EDGES OF ACOUSTIC LININGS. ALL EXPOSED EDGES TO BE INSTALLED WITH SHEET METAL NOSINGS AT EACH DUCT JOINT.</p> <p>23. SPLIT AIR COOLED AC SYSTEM.</p> <p>A. FURNISH AND INSTALL SPLIT AIR COOLED AHUs AND CUs; SEE SCHEDULES FOR DATA.</p> <p>B. PROVIDE A SECONDARY DRIP PAN BELOW AHUs IN MERs WITH A WATER LEAK DETECTOR DEVICE TO SHUT DOWN THE UNIT IN THE EVENT OF WATER DETECTION IN THE PAN AND SOUND AN ALARM.</p> <p>C. AC UNITS CONTROLS</p> <p>(1) UNITS CONTROLS SHALL BE DDC TYPE SUITABLE FOR INTEGRATION WITH BUILDING BMS.</p> <p>(2) SAFETIES</p> <p>1. UNITS SHALL SHUT DOWN THRU HIGH TEMPERATURE SENSOR.</p> <p>2. GENERAL ALARM SHALL BE TRANSMITTED TO BMS INDICATING ANY FAILURE OF UNIT COMPONENTS.</p> <p>D. INSPECTION</p> <p>1. EXAMINE AREAS AND CONDITIONS UNDER WHICH AC SPLIT SYSTEM IS TO BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO THE AUTHORITY.</p> <p>E. INSTALLATION</p> <p>1. INSTALL AC SPLIT WHERE INDICATED ON DRAWINGS, IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS.</p> <p>2. COORDINATION</p> <p>COORDINATE WITH OTHER WORK INCLUDING DUCTWORK, FLOOR CONSTRUCTION, SUPPORT REQUIREMENTS, AND PIPING, AS NECESSARY TO INTERFACE INSTALLATION OF AC SPLIT SYSTEM WITH WITH OTHER WORK.</p> <p>3. ACCESS</p> <p>PROVIDE ACCESS SPACE AROUND AHUs &amp; CUs FOR SERVICE AS INDICATED, BUT IN NO CASE LESS THAN THAT RECOMMENDED BY MANUFACTURER.</p> <p>6. ELECTRICAL WIRING</p> <p>INSTALL ELECTRICAL DEVICES FURNISHED BY MANUFACTURER BUT NOT SPECIFIED TO BE FACTORY-MOUNTED. FURNISH COPY OF MANUFACTURER'S WIRING DIAGRAM SUBMITTAL TO ELECTRICAL. VERIFY THAT ELECTRICAL WIRING INSTALLATION IS IN ACCORDANCE WITH MANUFACTURER'S SUBMITTAL AND INSTALLATION REQUIREMENTS OF DIVISION 16 SECTIONS. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE.</p> <p>7. PIPING CONNECTIONS</p> <p>PROVIDE PIPING, VALVES, ACCESSORIES, GAGES, SUPPORTS, AND FLEXIBLE CONNECTORS AS INDICATED ON THE DRAWINGS AND AS SPECIFIED.</p> <p>8. DUCT CONNECTIONS</p> <p>PROVIDE DUCTWORK, ACCESSORIES AND FLEXIBLE CONNECTIONS AS INDICATED ON THE DRAWING AND AS SPECIFIED.</p> <p>F. FIELD QUALITY CONTROL</p> <p>1. UPON COMPLETION OF INSTALLATION OF AIR CONDITIONING SPLIT SYSTEM, START-UP AND OPERATE EQUIPMENT TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH REQUIREMENTS IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE AND THE BUILDING REPRESENTATIVE. FIELD CORRECT MALFUNCTIONING UNITS, THEN RETEST TO DEMONSTRATE COMPLIANCE. INSTALL NEW FILTERS AT COMPLETION OF AIR HANDLING SYSTEM WORK, AND PRIOR TO TESTING, ADJUSTING, AND BALANCING WORK. OBTAIN RECEIPT FROM CONTRACTOR THAT NEW FILTERS HAVE BEEN INSTALLED.</p>	<table border="1"> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>2.</td> <td>12-24-20</td> <td>ISSUED FOR REVIEW</td> </tr> <tr> <td>1.</td> <td>12-4-20</td> <td>SCHEMATIC DESIGN</td> </tr> </table>													2.	12-24-20	ISSUED FOR REVIEW	1.	12-4-20	SCHEMATIC DESIGN
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<p>PROJECT ADDRESS:</p>																						
<p>DRAWING TITLE:</p> <p><b>MECHANICAL SPECIFICATIONS SHEET II</b></p>																						
<p>DATE: 11/04/2020</p>		<p>SEAL &amp; SIGNATURE</p>																				
<p>PROJECT No: 20279.00</p>																						
<p>SCALE: AS SHOWN</p>																						
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26. AUTOMATIC TEMPERATURE CONTROLS

- A. THIS CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE AUTOMATIC TEMPERATURE CONTROL SYSTEM OF THE ELECTRONIC TYPE. FURNISH AND INSTALL ALL REQUIRED INSTRUMENTS, DEVICES, PANELS, CONDUIT, CONTROL AND POWER WIRING, RELAYS, DAMPERS, ETC. AS REQUIRED TO PROVIDE FOR THE SEQUENCE OF OPERATIONS AS DESCRIBED BELOW.
- B. ROOM THERMOSTAT SHALL BE OF THE FULLY PROPORTIONING TYPE WITH ADJUSTABLE SENSITIVITY OF THE THROTTLING RANGE AND CONTROL POINT. THERMOSTATS SHALL BE ABLE TO CONTROL WITHIN PLUS OR MINUS 1/2 DEG. F ROOM TYPE THERMOSTATS TO BE SINGLE TEMPERATURE, NON-INDICATING LOCK TYPE, KEY-ADJUSTED WITH COVERS. FINISH AND FINAL LOCATIONS AS REVIEWED BY THE ARCHITECT/ENGINEER.
- C. PROVIDE ALL REQUIRED RELAYS AND DEVICES FOR THE REMOTE SHUT DOWN OF ALL AIR CONDITIONING AND FAN SYSTEMS FROM THE BASE BUILDING CLASS "E" FIRE ALARM SYSTEM.
- D. ALL A/C EQUIPMENT POINTS ARE TO BE TIED INTO BMS.
- E. FOR OTHER CONTROL SEQUENCES, SEE SPECIFIC EQUIPMENT RELATED PARAGRAPHS.
- F. BMS / DDC AUTOMATIC TEMPERATURE CONTROLS AND THE INTEGRATION OF AC UNIT CONTROLLER DATA POINTS TO THE BUILDING AUTOMATION SYSTEM WILL BE PROVIDED BY THE BUILDING BMS CONTRACTOR.

27. BUILDING MANAGEMENT SYSTEM –BMS, THE FOLLOWING DATA WILL BE INTEGRATED FOR THE ABOVE REFERENCED AC UNITS.

- A. DATABASE PROGRAMMING AND ALL LOCAL PROGRAMMING TO INCLUDE THE FOLLOWING POINT DATA.
  - 1) COLOR GRAPHIC OF THE FLOOR WITH SPACE TEMPERATURES SHOWN.
  - 2) ALL CONTROL DATA POINTS FOR AHUs DISPLAYED ON INDIVIDUAL SYSTEM GRAPHICS FOR EACH AHU.
  - 3) COLOR GRAPHIC SHOWING ALL LISTED CONTROL SET POINTS FOR EACH AHU
  - 4) TIME SCHEDULE OPERATION FOR THE AHU CONTROLLER
  - 5) MANUAL OVERRIDE CONTROLS FOR AHU START STOP OPERATION.
  - 6) SUPPLY AIR TEMPERATURE FOR EACH AHU
  - 7) CONTROL TEMPERATURE SET POINT FOR EACH AHU
  - 8) FAN OPERATIONAL STATUS FOR EACH AHU
  - 9) FAN FAILURE ALARM FOR EACH AHU
  - 10) LEAK DETECTOR ALARM AND SHUTDOWN FOR EACH AHU
  - 11) ALL DATA POINTS AS REFERENCED ABOVE.

28. PROVIDE A PREWIRED AND TESTED CONTROL PANEL WITH DIRECT DIGITAL CONTROLLER AND DISPLAY, COMPATIBLE WITH THE BUILDING MANAGEMENT SYSTEM (BMS) FOR AC UNITS IN THE IT ROOM.

- A. TO BE PROVIDED BY NEW YORK TEMPERATURE CONTROLS FOR FIELD MOUNTING AND INSTALLATION.
  - 1) LEAK DETECTOR LIEBERT LIQUI-TECH SENSOR FOR UNIT DRIP PAN.
  - 2) CONDENSATE PUMP HIGH LEVEL SWITCH INPUT TO SHUT DOWN ACs. (CONDENSATE PUMP AND HI LEVEL SWITCH PROVIDED BY MECHANICAL CONTRACTOR).
  - 3) LOCAL ALARM FOR LEAK OR HIGH WATER DETECTION WITH AUDIBLE RESET ON LOCAL CONTROL PANEL.
- B. TO BE PROVIDED BY THE BUILDING CONTROLS CONTRACTOR FOR FOR MONITORING PURPOSES ONLY.
  - 1) DISCHARGE AIR TEMPERATURE SENSOR.
  - 3) RETURN AIR TEMPERATURE SENSOR.
  - 4) SPACE TEMPERATURE DISPLAY.
  - 5) SMOKE DETECTOR INPUT TO SHUT DOWN ACs. (PROVIDED BY OTHERS).
  - 5) LOCAL COMMUNICATION WIRING TO EXISTING BUILDING MANAGEMENT AUTOMATION SYSTEM – BMS.
  - 3) AC FAN STATUS MONITORING VIA CURRENT SENSING SWITCH. ACTUAL CFM

30. CARBON DIOXIDE/VENTILATION CONTROL

- A. THE MAXIMUM RETURN AIR CO2 LEVEL SETPOINT WILL BE EQUAL TO THE OUTSIDE CO2 LEVEL PLUS 400 PPM (ADJ)
- B. THE SUPPLY AIR FAN VFD SPEED CONTROL WILL BE OVERRIDDEN AS NECESSARY TO MAINTAIN EACH SPACE CARBON DIOXIDE LEVEL AND THE RETURN CO2 LEVEL AT SETPOINT. UPON AN INCREASE IN CARBON DIOXIDE LEVEL ABOVE SETPOINT, THE SUPPLY AIR FAN VFD WILL SPEED UP FROM MINIMUM CFM SETTING TO MAXIMUM CFM SETTING. OUTSIDE AIR DAMPER WILL MODULATE OPEN TO ALLOW MAXIMUM LEVEL OF FRESH AIR.
- C. UPON A DECREASE IN CARBON DIOXIDE LEVEL, THE SUPPLY AIR FAN WILL RESUME NORMAL OPERATION. THE OUTSIDE AIR DAMPER WILL MODULATE TO PROVIDE THE MINIMUM LEVEL OF FRESH AIR.
- D. WHEN THE SPACE AND RETURN CO2 LEVELS ARE BELOW SETPOINT, THE SUPPLY AIR FAN VFD WILL MODULATE TO MAINTAIN THE MINIMUM OUTSIDE AIR INTAKE (CFM) SETTING AS SENSED BY THE OUTDOOR AIR FLOW MONITORING STATION.

2.	12-24-20	ISSUED FOR REVIEW
1.	12-4-20	SCHEMATIC DESIGN

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KEY PLAN:

PROJECT NAME:

**Weston High School  
GYM HVAC Upgrade**

PROJECT ADDRESS:

DRAWING TITLE:

**MECHANICAL  
SPECIFICATIONS  
SHEET III**

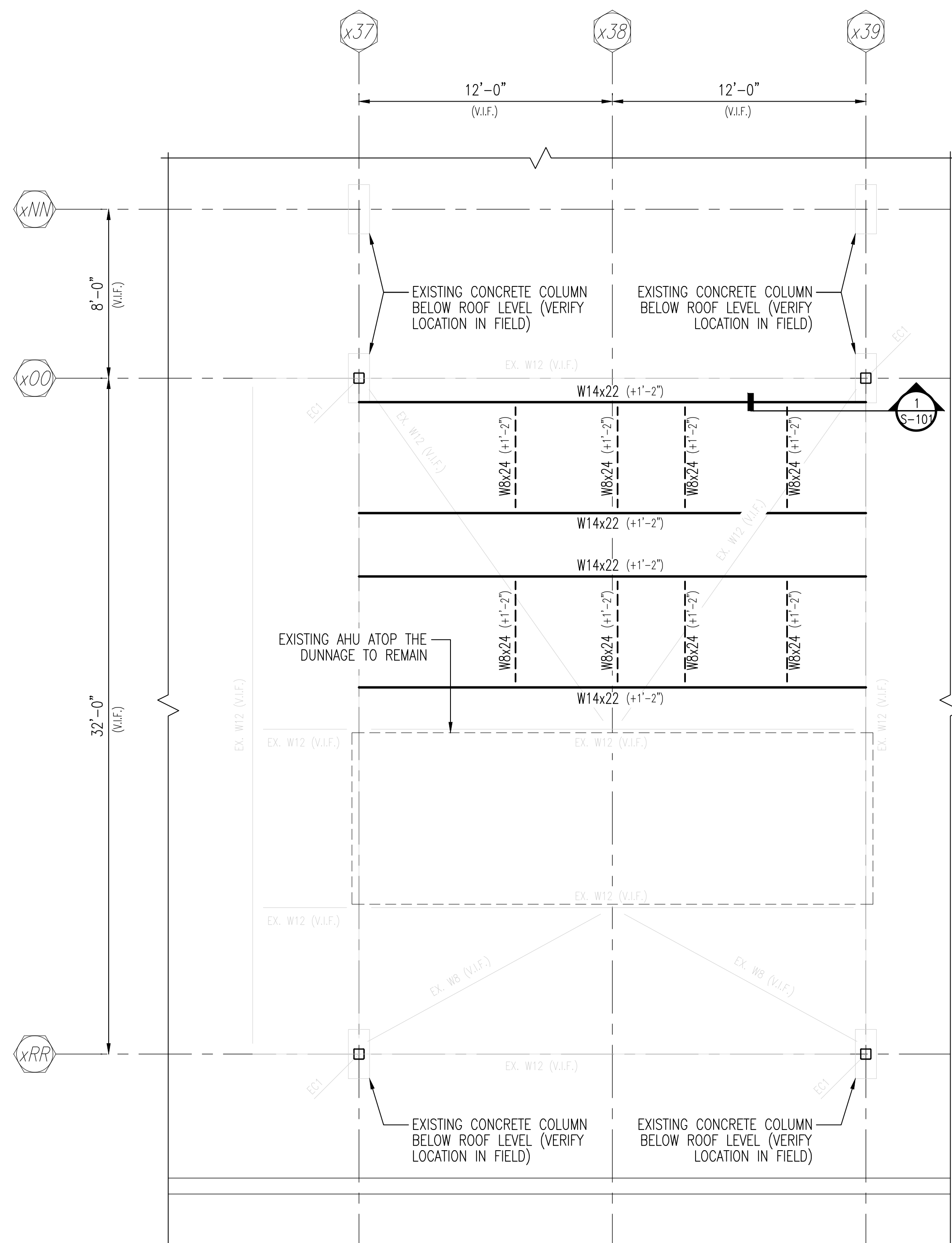
DATE:	11/04/2020	SEAL & SIGNATURE
PROJECT No:	20279.00	
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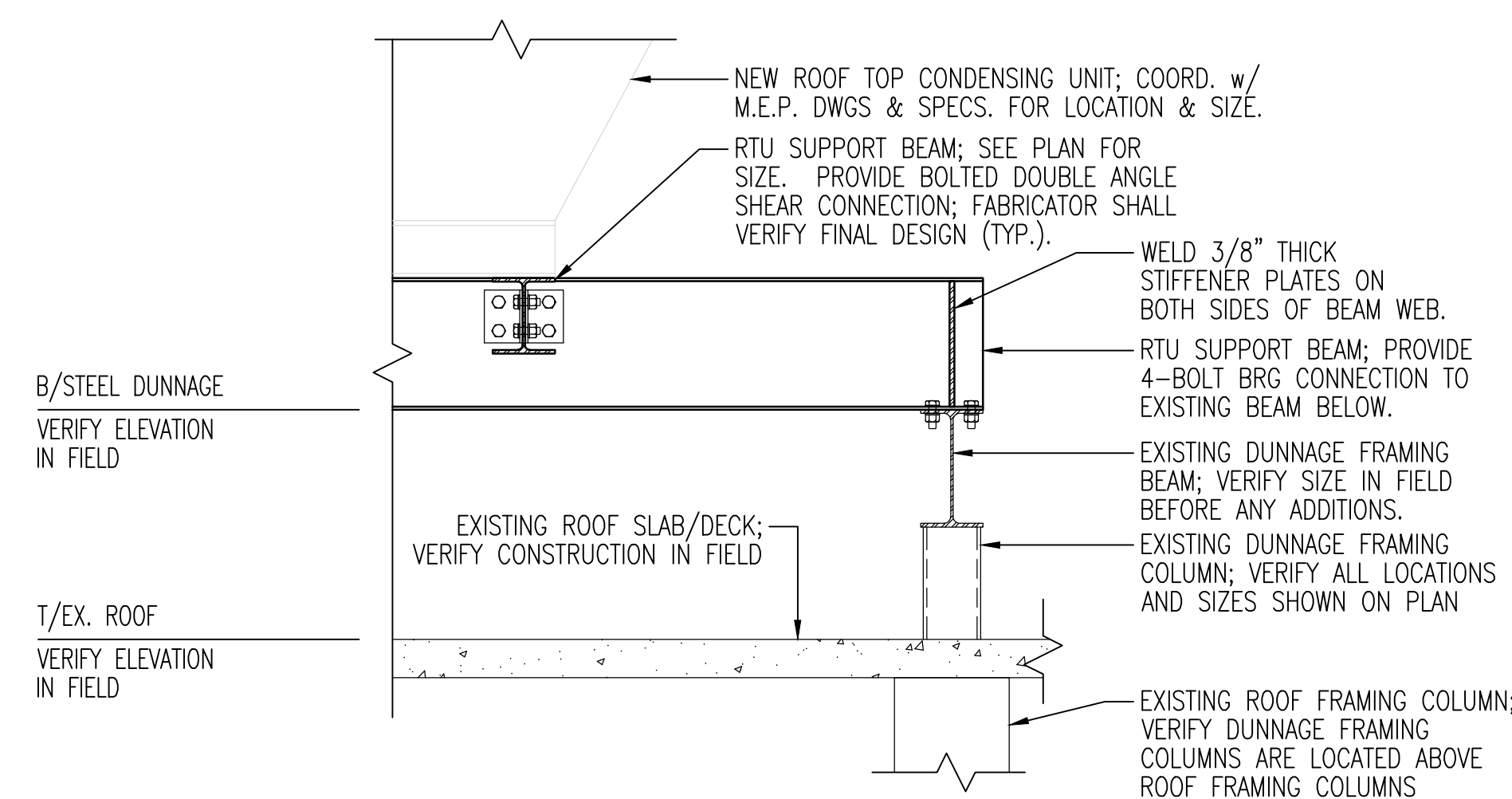
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**EXISTING DUNNAGE FRAMING PARTIAL PLAN**

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

- TOP OF EXISTING DUNNAGE FRAMING +0'-0" (DATUM) UNLESS OTHERWISE NOTED. ELEVATIONS ARE TO BE REVIEWED AND VERIFIED BEFORE CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, BEAM SIZES AND LOCATIONS, AND EXISTING CONDITIONS PRIOR TO DUNNAGE FABRICATION AND INSTALLATION IF REQUIRED. THE CONTRACTOR SHALL NOTIFY THE DESIGN TEAM OF ANY DISCREPANCIES.
- EXISTING DUNNAGE FRAMING IS TO BE VERIFIED BEFORE CONSTRUCTION. EC# INDICATES EXISTING COLUMN AS LISTED BELOW:  
EC1 - HSS6x6x3/8.
- ALL NEW FRAMING SHALL BE HOT-DIPPED GALVANIZED UNLESS OTHERWISE NOTED. NEW FRAMING SHALL BE BOLTED TO THE EXISTING FRAMING. TOUCH UP ANY EXISTING SURFACES DAMAGED DURING ERECTION WITH COLD-GALVANIZING AND/OR HIGH-PERFORMANCE RUST INHIBITIVE PAINT.
- ALL NEW STEEL FRAMING SHALL BE ASTM A-992, UNLESS OTHERWISE NOTED.
- SEE THIS DRAWING FOR ADDITIONAL CONSTRUCTION INFORMATION AND GENERAL NOTES REGARDING THE NEW DUNNAGE FRAMING.



- GENERAL NOTE:
- ALL NEW DUNNAGE STEEL SHALL BE HOT-DIPPED GALVANIZED UNLESS OTHERWISE NOTED.
  - CONTRACTOR SHALL COORDINATE WITH THE M.E.P. DRAWINGS AND SHOP DRAWINGS REGARDING THE REQUIRED FRAMING LAYOUT BASED ON THE FINAL PURCHASED EQUIPMENT/UNITS.

**SECTION AT NEW DUNNAGE FRAMING ON EXISTING SUPPORT COLUMN**  
SCALE: 3/4" = 1'-0"

**GENERAL INFORMATION**

- (UNLESS OTHERWISE NOTED OR SHOWN ON PLAN, THE FOLLOWING NOTES SHALL APPLY)
- "LOADS" INDICATED IN THE DESIGN LOAD CRITERIA TABLE ARE THOSE USED IN DESIGN OF THE BUILDING SUPERSTRUCTURE.
  - DESIGN LOADS AND CRITERIA USED IN THE DESIGN OF SPECIALTY STRUCTURAL SYSTEMS (i.e. CURTAINWALL, FIRESTAIRS, COLD-FORMED METAL FRAMING, ARCHITECTURAL PRECAST CONCRETE, METAL PANELS, ETC.) ARE TO BE DETERMINED BY A THIRD-PARTY ENGINEER CONTRACTED BY THE SPECIALTY STRUCTURAL SYSTEM MANUFACTURER IN ACCORDANCE WITH CODE REQUIREMENTS OF THE GOVERNING JURISDICTION. THE SPECIALTY STRUCTURAL ENGINEER IS RESPONSIBLE FOR ALL CONNECTIONS OF THESE SYSTEMS TO THE SUPERSTRUCTURE, INCLUDING, BUT NOT LIMITED TO, ENGINEERING, DETAILING, AND INSTALLATION. IF ALTERATION TO THE SUPERSTRUCTURE IS REQUIRED AS DETERMINED BY THE E.O.R. TO REINFORCE FOR HIGH CONCENTRATED FORCES APPLIED BY THE SPECIALTY SYSTEM CONNECTION, THE REINFORCEMENT AND COST SHALL BE BORNE BY THE SPECIALTY SUBCONTRACTOR AND SHALL BE CONSIDERED A PART OF THE SPECIALTY CONNECTION.
  - ALL DETAILS MARKED "TYPICAL" IN THE SET OF STRUCTURAL DRAWINGS SHALL BE APPLIED THROUGHOUT THE PROJECT AS REQUIRED TO SATISFY THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL COORDINATE REQUIREMENTS FOR QUANTITY AND LOCATION WHERE THE "TYPICAL" DETAILS APPLY.
  - FAILURE ON THE PART OF THE CONTRACTOR TO REVIEW THE DRAWINGS OF OTHER DISCIPLINES (i.e. ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ETC.) TOGETHER WITH THE FULL EXTENT OF THE PROJECT SPECIFICATIONS DOES NOT RELIEVE THEM OF THE RESPONSIBILITY TO FURNISH AND INSTALL ITEMS THAT ARE PART OF THEIR WORK AS INDICATED BY THE DRAWINGS AND SPECIFICATIONS OF OTHER TRADES. ALL STRUCTURAL TRADE CONTRACTORS AND SUBCONTRACTORS ARE PROHIBITED FROM EXCLUDING STRUCTURAL WORK FROM THEIR CONTRACT NOT SHOWN IN THE STRUCTURAL DRAWINGS.
  - THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE NOT ISSUED FOR BID OR CONSTRUCTION UNLESS THE INDIVIDUAL SHEETS ARE IDENTIFIED AS "ISSUED FOR BID" OR "ISSUED FOR CONSTRUCTION."

**STRUCTURAL STEEL GENERAL NOTES**

- (UNLESS OTHERWISE NOTED OR SHOWN ON PLAN, THE FOLLOWING NOTES SHALL APPLY)
- STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) STEEL CONSTRUCTION MANUAL THIRTEENTH EDITION.
  - UNLESS OTHERWISE NOTED, ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

MEMBER	ASTM	MINIMUM STRENGTH
ROLLED SHAPES	A992	50 KSI
OTHER ROLLED PLATES	A36	36 KSI
CONNECTION BOLTS	A325	92 KSI
ANCHOR BOLTS	F1554	----
THREADED RODS	A36	36 KSI
NON-SHRINK GROUT	C1107	8,000 PSI
  - CONNECTIONS SHALL BE SHEAR TYPE CONNECTIONS AND DESIGNED BY THE FABRICATOR. MINIMUM BOLT DIAMETER SHALL BE 3/4" UNLESS OTHERWISE NOTED. BOLTS SHALL BE SHEAR/BEARING TYPE BOLTS AND BE "SNUG-TIGHT". STEEL BEAM CONNECTIONS SHALL BE DESIGNED TO SUPPORT A MINIMUM OF ONE HALF THE MAXIMUM TOTAL UNIFORM LOAD FOR PARTICULAR BEAM AND SPAN CONDITION AS DEFINED BY THE AISC MANUAL OF STEEL CONSTRUCTION (FOR COMPOSITE BEAMS, MULTIPLY BY 1.33).
  - WELDING SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) SPECIFICATION D1.1 USING E70XX ELECTRODES. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS. FILLER MATERIALS SHALL HAVE A MINIMUM YIELD STRENGTH OF 58 KSI.
  - HOLES IN STEEL BEAMS SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED.
  - STEEL FABRICATORS SHALL BE AN AISC CERTIFIED SHOP FOR CATEGORY I STEEL STRUCTURES AND MAINTAIN DETAILED QUALITY CONTROL PROCEDURES AS REQUIRED TO SATISFY THE SPECIAL INSPECTION REQUIREMENTS OF THE LATEST BUILDING CODE HAVING JURISDICTION.
  - UNLESS OTHERWISE NOTED, STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER, INCLUDING ALL BRICK SHELF ANGLES, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. PROTECTIVE COATING DAMAGED DURING THE TRANSPORT, ERECTING AND FIELD WELDING PROCESS SHALL BE REPAIRED IN THE FIELD TO MATCH THE SHOP APPLIED COATING.
  - THE OWNER WILL HIRE AN INDEPENDENT TESTING AGENCY TO PROVIDE SPECIAL INSPECTIONS OF THE BOLTING, WELDING, AND OTHER ITEMS IN ACCORDANCE WITH THE LATEST BUILDING CODES HAVING JURISDICTION.

**SPECIAL INSPECTIONS, TESTS & QUALITY ASSURANCE VERIFICATIONS AND TEST REQUIREMENTS**

- (UNLESS OTHERWISE NOTED OR SHOWN ON PLAN, THE FOLLOWING NOTES SHALL APPLY)
- TESTING: THE OWNER SHALL RETAIN A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY APPROVED BY THE OWNER TO PERFORM THE FOLLOWING SERVICES:
- SPECIAL INSPECTIONS, VERIFICATIONS AND TESTS: SPECIAL INSPECTIONS, VERIFICATIONS AND TESTING SHALL BE DONE IN ACCORDANCE WITH IBC (CT ED) CHAPTER 17 AND THE STATEMENT OF SPECIAL INSPECTIONS HEREIN PER IBC (CT ED.)
  - STRUCTURAL STEEL: STRUCTURAL STEEL MEMBERS AND THEIR CONNECTIONS SHALL BE INSPECTED PER THE REQUIREMENTS OF THE CONNECTICUT EDITION OF THE INTERNATIONAL BUILDING CODE (CT 2018 IBC) TABLE 1704.3.
    - STEEL FABRICATOR INSPECTION: THE FABRICATOR SHALL BE AN AISC CERTIFIED SHOP FOR CATEGORY I STEEL STRUCTURES AND MAINTAIN DETAILED QUALITY CONTROL PROCEDURES AS REQUIRED TO SATISFY THE FABRICATION SITE SPECIAL INSPECTION REQUIREMENTS OF THE CONNECTICUT EDITION OF THE INTERNATIONAL BUILDING CODE (CT 2018 IBC) SECTIONS 1704.2.1 AND 1704.2.2.
  - WRITTEN REPORTS SHALL BE SUBMITTED TO THE ENGINEER STATING COMPLIANCE OR NONCOMPLIANCE WITH THE DESIGN DOCUMENTS. ALL REPORTS SHALL BE SIGNED AND SEALED BY A LICENSED ENGINEER IN THE STATE OF CONNECTICUT.
  - FAILURE TO RETAIN A TESTING AGENCY TO PERFORM THE REQUIRED SERVICES SPECIFIED ABOVE, OR FAILURE TO SUBMIT SIGNED AND SEALED REPORTS, INDICATES NONCOMPLIANCE WITH THE CONTRACT DOCUMENTS.
  - SEE MECHANICAL, ELECTRICAL, AND PLUMBING CONSTRUCTION DOCUMENTS FOR ADDITIONAL NON-STRUCTURAL SPECIAL INSPECTION ITEMS.

**EXISTING CONDITIONS GENERAL NOTES**

- (UNLESS OTHERWISE NOTED OR SHOWN ON PLAN, THE FOLLOWING NOTES SHALL APPLY)
- DIMENSIONS AND ELEVATIONS OF EXISTING CONDITIONS GIVEN ON STRUCTURAL DRAWINGS ARE BASED ON LIMITED FIELD OBSERVATIONS AND MEASUREMENTS.
  - CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS BY ACTUAL MEASUREMENT. PRIOR TO BEGINNING WORK, AND WHEN FEASIBLE, PRIOR TO SHOP DRAWING SUBMITTALS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE SAID DISCREPANCIES WITH ALL SUB-CONTRACTORS AND MATERIAL SUPPLIERS.
  - CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AND MAKE SAFE ALL FLOORS AND/OR ADJACENT PROPERTY AS PROJECT CONDITIONS REQUIRE. DESIGN SHALL BE CERTIFIED BY A LICENSED ENGINEER EMPLOYED BY THE CONTRACTOR.
  - STRUCTURAL ELEMENTS WHICH ARE UNCOVERED DURING THE COURSE OF THE REHABILITATION, AN WHICH ARE FOUND TO BE UNSOUND OR DEFICIENT, SHALL BE REINFORCED, SUPPORTED OR REPLACED IN ACCORDANCE WITH THE STRUCTURAL DESIGN CRITERIA OF THE BUILDING SUBCODE.

**SYMBOL KEY/LEGEND**

- (UNLESS OTHERWISE NOTED OR SHOWN ON PLAN, THE FOLLOWING NOTES SHALL APPLY)
- NEW COLUMN LINE
  - EXISTING COLUMN LINE
  - INDICATES SPAN OF METAL DECK. DECK SPANS PERPENDICULAR TO FRAMING UNLESS OTHERWISE NOTED.
  - SECTION NUMBER
  - SECTION SHEET LOCATION
  - DROP-IN FRAME FOR OPENING IN ROOF CONSTRUCTION

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KEY PLAN:

PROJECT NAME:

Weston High School  
GYM HVAC Upgrade

PROJECT ADDRESS:

DRAWING TITLE:

**EXISTING DUNNAGE FRAMING PLAN w/ NEW WORK**

DATE: 12/23/2020

PROJECT No: 20279.00

SCALE: AS SHOWN

DRAWN BY: AW

CHECKED BY: TM

DRAWING NO.

SEAL & SIGNATURE

**S-101**

OF

# WINDOWSILL CONDITION ASSESSMENT REPORT

## WESTON INTERMEDIATE SCHOOL

95 SCHOOL ROAD  
WESTON, CT 06883



**Issue Date:**

01/04/2021

**Reference:**

20-0718

**Prepared For:**

Weston Building Committee  
c/o Mr. Jonathan Luiz  
Weston Town Administrator  
Town of Weston  
PO Box 1007  
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ARCHITECTS PC

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## TABLE OF CONTENTS

I.	INTRODUCTION .....	3
II.	MISSION STATEMENT .....	3
III.	INSPECTION METHODOLOGY .....	3
IV.	REPORT LIMITATIONS.....	3
V.	BACKGROUND .....	4
VI.	OBSERVATIONS .....	4
VII.	REPAIR RECOMENDATIONS.....	7
VIII.	CONCLUSION.....	8

DRAFT

## I. INTRODUCTION

Pursuant to the request of the Weston Building Committee, via Mr. Jonathan Luiz (Weston Town Administrator), the following Report was prepared by Howard L. Zimmerman Architects, P.C. The purpose of the Report is to describe the conditions of the exterior precast concrete windows sills of the Intermediate School with consideration to the condition of the sills not remaining in plane with the exterior masonry as designed.

### Statement of Qualifications

Howard L. Zimmerman Architects, P.C. (HLZA) is an architectural and engineering firm that specializes in the restoration, preservation, and alteration of existing buildings, including their mechanical, electrical and structural systems. Our team of architects, engineers, technical specialists, and building systems specialists offer expertise in the adaptive reuse of existing buildings, exterior envelope, forensic investigation and MEP. In addition, we are also advisors for new construction, applying our years of experience to assist in meeting clients' new design needs. For nearly 40 years, HLZA has developed an excellent reputation as the go-to architecture firm for residential, commercial, and institutional properties in the New York region.

## II. MISSION STATEMENT

It is the intent of this Report to present a description of the existing conditions at the Building, to evaluate any problematic conditions concerning the masonry sills, and to provide an assessment of the rehabilitation needs, including upgrades as may be required by the State of Connecticut Building Code, based on visual inspection of the building.

## III. INSPECTION METHODOLOGY

The scope of HLZA's investigative work included, but was not limited to, the following:

- Visual observations and inspections from the building exterior, including observations made from grade around the perimeter of the building.
- Conversations with the Building representatives and Building personnel.
- Review of the construction drawings, including plans, elevations and details. Drawing files were provided by Mr. Jonathan Luiz.

## IV. REPORT LIMITATIONS

Visual observations were performed to gain as much information about the Building as reasonably possible. Typically, at the beginning of an investigation, an assumption is made that the structure was designed and built in accordance with applicable codes and regulations, industry standards and manufacturers' requirements in effect on the dates of construction or alteration. As such, the accuracy of this Report is limited only to the areas observed. Conditions noted within the report reflect the observations made on the date of survey.

## V. BACKGROUND

The subject building was designed by TAC, The Architects Collaborative, and subsequently alterations and additions were made, designed by XXX. The additions are brick exterior with aluminum double paned windows and metal doors, and are very similar to the additions made at the High School.

## VI. OBSERVATIONS

The building was reviewed from grade; the attached photographs show the conditions noted.

The windowsills at the additions are precast concrete. They are colored to match the flat band of precast concrete that wraps the building at sill level, and are as long as the masonry openings for the windows. The sills are set in a mortar bed resting on the brickwork below, and have aluminum windows resting on the upper inner portion of the precast units. From review of the sills, the sills do not have any visible flashing below them (as do the sills at the high school). Another difference from the high school design is that the sills are much longer than the sill units used at the high school.

The amount of movement in the sills roughly corresponds to the amount of exposure to the sun- the sills to the north see the least amount of sun and have the least amount of movement, and the sills to the south exhibit the most amount of movement. This indicates that the sill movement is caused by thermal expansion.

In addition to the movement noted, there are fine hairline cracks developing in the tops of the sills, most notably located below the locations where windows are mullied together. The cracks are indicative of stress being imparted on the sill member, and could be caused by:

- the way the windows are fastened to the sills. If non stainless steel fasteners were used, the fasteners may be rusting and expanding, causing cracks to form. There is no visible evidence of rust staining however.
- Windows are typically fastened on all sides to the building substrate- and with the sills moving, the fasteners of the windows may be preventing the movement of the sills, causing stress cracks to form. Upon visual review, the cracking is most notable at the south side of the building and less noticeable on the north side. Of note were the apparent presence of the window mounting fasteners under the caulk between the sill and the window- when a finger is run along the caulk, one can feel regular changes in the caulk surface that correspond to the crack locations.

While the high school and the intermediate school were designed by the same firm, the detailing of the window sills on the two buildings are different. The sills themselves appear to be identical but for length, and the manner in which they were installed is different. The short sections of sills at the High School have a steel flashing with a drip edge visible under the sill sections, while the sills at the Intermediate School do not have any visible flashing.

The details from the construction drawings for the High School call for steel flashing, and the flashing and sills rest on a steel angle fastened to the stud wall behind the brickwork. Notable in the detail are steel studs welded to the steel angle onto which the sills are mounted- thus, at the High School the sills themselves cannot move because they are pinned in place. (See attached detail)

Given the movement of the sills at the Intermediate School, it is evident that the sills here are not pinned in place. Upon review of the drawings provided, the autocad files are incomplete, with missing references to the wall sections and details. Further review of the files is being made to locate the missing references.

It may be possible that the steel pins welded to the support angle were omitted from the detail or that

the pins were value engineered out of the job as a cost savings measure. It is also possible that the stud welds to the steel angle has failed. Prior to any probes or repair work, the window sill details will be needed to determine what is the best corrective action to take. As the sills appear to be 'rotating' out of plane, and the felt presence of window anchor tabs at the sill/window frame joint. It is possible that the sills are being restrained at the top side via the window mounts.

Further review of drawing hardcopies is required; one of the concerns involves the window anchors- if the window anchors are aluminum fastened to the rear of the sills, it is possible that because aluminum expands at a greater rate than steel does when heated, it is possible that the aluminum anchors are expanding as the building heats, pushing the sills away from the steel lintel they presumably rest on.

The other issue is the length of the sills- the longer the sill, the greater the expansion over a given length. Since the sills are restrained at the ends by the masonry, one would expect damage limited to the ends of the sills or the brickwork adjacent, which is not apparent.

## VII. REPAIR RECOMENDATIONS

The sills should be removed from the window openings and salvaged if possible. Any fasteners used to anchor the windows to the sills will need to be cut off to allow removal. Upon removal, examination of the flashing and sill mounting points should be made, with revisions as required- installation of metal pan flashing and mounting stud installation (or welding existing studs if weld failures are present). The sills with cracks in them may be repaired (epoxy and patching material) or replaced with new units if the cracking is severe or the patches are not aesthetically pleasing. Some new replacements may be needed, as determined by the damage severity (cost of repair material and manpower vs cost of replacement)

The sills would then be reinstalled, with new mortar setting bed. The mortar joints should be left recessed, to provide space for a backer rod and caulk joint to complete the installation, with the joint between the sills and the aluminum window frame also receiving backer rod and caulk.

Given that there are no leaks reported at the windowsills (or below the windows) the sills are still working as needed to shed water, and the work on the sills can be budgeted for. If there are other exterior projects being contemplated at the building, the sill work should be added. Repairs to the sills should be made in the next two to three years.

Consideration to replacing the sills on an ad-needed basis in shorter sections like the high school should also be an alternate, as in the future any repair issues will be simpler to deal with.

## VIII. CONCLUSION

To be determined after review of construction documents.



**Photo A1:**

Precast concrete window sill, typical. The sill is slightly out of plane with the precast concrete band that is built into the brickwork. Note caulk joint between sill and band, caulk joint between sill and aluminum window frame.

**Date:** Nov. 3, 2020



**Photo A2:**

Same sill as above, with cracks indicated. The cracks are of varying size and severity.

**Date:** Nov. 3 2020



**Photo B:**

Sill with minor movement

**Date:** Nov. 32020



**Photo C:**

Sill movement along wall- all sills have moved somewhat from their original positions and appear to be rotating.

**Date:** Nov. 3, 2020



**Photo D:**

Sill at south side of the building showing greater movement. Note caulk has failed here, as the movement is greater than the design of the joint can handle.

**Date:** Nov. 3, 2020



**Photo E1:**

Hairline crack at mulled joint in window. Running a finger along the caulk joint one can feel what appear to be the window mounting clips under the caulk.

**Date:** Nov. 3, 2020





**Photo E2:**

Continuation of wall; no expansion joints in brickwork.

**Date:** Nov. 3, 2020



**Photo E3:**

For reference, this is a typical sill at the High School prior to being cleaned. Note flashing visible under sill, and also note that the sill sections are much shorter in length than the sills at the intermediate school.

**Signature™ Series Fixed**

**SECTION 08 51 13**

**ALUMINUM WINDOWS**

PART 1 GENERAL

1.01 SUMMARY

- A. Related Documents: Conditions of the Contract, Division 1 - General Requirements, and Drawings apply to Work of this Section.

\*\*\*\*\*  
*Edit this paragraph to briefly describe the contents of the section. After editing section, refer back to this paragraph to verify no conflicts exist.*  
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B. Section Includes:

1. Aluminum Prime Windows
  - a. Type: Fixed and Casement
  - b. Category: Architectural (AW)
  - c. Designation: FW-AW150

C. Related Sections

1. Drawings, General and Supplementary Conditions of the Contract, Division 1 and the following Specification Sections, apply to this Section.
2. Section 01 41 00 – Regulatory Requirements
3. Section 01 43 00 – Quality Assurance
4. Section 07 92 00 – Joint Sealants
5. Section 08 51 13 – Aluminum Windows
6. Section 08 81 00 – Glass Glazing

1.02 REFERENCES

A. American Architectural Manufacturers Association (AAMA):

1. AAMA/WDMA/CSA 101/I.S.2/A440–Standard Specifications for Windows, Doors, and Skylights
2. AAMA 910 – Voluntary “Life Cycle” Specifications and Test Methods for AW Class Architectural Windows and Doors
3. 1503 – Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections

B. American National Standards Institute (ANSI)

1. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.

C. ASTM International

1. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
2. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
3. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
4. ASTM E2188 - Standard Test Method for Insulating Glass Unit Performance.
5. ASTM E2189 - Standard Test Method for Testing Resistance to Fogging in Insulating Glass Units.
6. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.

D. Consumer Product Safety Commission (CPSC)

1. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.

E. Glass Association of North America (GANA)

1. Glazing Manual (current edition)

### 1.03 SYSTEM DESCRIPTION

A. Test Procedures and Performance

1. Specifications for Windows, Doors and Unit Skylights: AAMA 101.
2. Air Infiltration Test: ASTM E 283, at 6.24 psf static air pressure differential. Air infiltration shall not exceed 0.10 CFM per sq. ft.
3. Water Resistance Test: ASTM E 331, no water leakage at 15 psf static air pressure differential.
4. Uniform Load Deflection Test: ASTM E 330, at static air pressure of +/- 150 psf. No member shall deflect more than 1/175 of its span.
5. Uniform Load Structural Test: ASTM E 330, at static air pressure difference of +/- 225 psf.
6. Condensation Resistance Test: AAMA 1503.1, CRF shall be not less than 55.
7. Thermal Transmittance Test: AAMA 1503.1, U-Value shall not exceed .60 BTU/HR/SQ.FT/°F.
8. Acoustical Test: ASTM E 90 / ASTM E 413, reference 2.02, D. for acoustical glass type, or Section 08 81 00

### 1.04 SUBMITTALS

A. Provide submittals in a timely manner to meet required construction completion schedule and in accordance with specifications.

1. Shop Drawings

- a. Shop drawings will be prepared by the window manufacturer. Shop drawings prepared by window distributor, installer, representative/dealer of outside drafting firm are not acceptable.

- b. Show components complete with dimensions, material and details of anchoring and fastening.
- c. Show finishes, sealants and other information indicating compliance with specifications.
- d. Submit test report per 1.03 SYSTEM DESCRIPTION A. Test Procedures and Performance.

2. Samples

- a. Components: submit samples of anchors, fasteners, hardware, assembled corner sections and other materials and components if requested by architect.
  - b. Finish: submit full range color samples for approval by architect.
3. Warranties: submit written copies in accordance with - 1.08 WARRANTIES

1.05 DELIVERY, STORAGE AND HANDLING

- A. Protect materials from damage before installation per instructions and in accordance with specifications.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer that has completed the same or similar projects in size and scope.
- B. Source Limitations: Obtain aluminum windows from single source manufacturer.
- C. In-House Testing: Conduct air and/or water testing of 2% windows prior to shipping.
1. Detailed documentation on in-house testing is available upon request.

1.07 PROJECT / SITE CONDITIONS

- A. Ensure ambient and surface temperatures and joint conditions are suitable for installation of materials.

1.08 WARRANTY

A. Window System

1. Qualified window manufacturer, with proven financial responsibility and years of experience of at least the length of the warranty period shall provide written 10-year warranty against defects in materials and workmanship.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Subject to compliance with requirements indicated, provide products by one of the following:
1. Oldcastle BuildingEnvelope®. Drawings and Specifications are based on Signature™ Series Fixed

## 2.02 MATERIALS

- A. Aluminum: 6063-T5 alloy shall have 0.062" wall thickness.
  - 1. Extrusions: comply with ASTM B 221. Extrusion tolerances shall meet ANSI H35.2.
  - 2. Sheet: comply with ASTM B 209.
  - 3. Frame Depth: 4".
  - 4. Thermal Barrier: Crimped-in-place glass reinforced polyamide 6/6 nylon strut.
- B. Hardware: material shall be corrosion resistant and compatible with aluminum. Hardware must prove its strength and suitability by being installed on units that are tested in accordance with specifications.
  - 1. Fasteners: provide non-magnetic stainless steel screws, epoxy adhesives, or other material warranted by the manufacturer.
- C. Sealants: color of exposed sealants shall be compatible with adjacent window materials. Comply with AAMA 803.3.
- D. Glazing: windows shall be factory glazed unless too large or unsafe for handling.
  - 1. Glass: provide in accordance with Section 08 81 00.
  - 2. Glazing Materials: units shall be wet glazed using silicone sealant, setting blocks, edge blocks and accessories as recommended by and in accordance with GANA Glazing Manual.
- E. Access Panels: shall be hinged mitered, epoxied, mechanically crimped over gussets and sealed to form a hairline joint.
- F. Blinds: shall be 5/8" with pull cord, slip clutch and tilt control.
  - 1. Aluminum surfaces shall be coated with baked enamel. Blind color shall be: TBD.
- G. Muntins: shall be TBD **[Choose the type that applies: true, glazed in, interior face applied, exterior face applied, between-the-glass] [Between-the-glass muntins specified in Section 08 80 00] [Delete 2.02, H. if Muntins are not used**

## 2.03 FABRICATION

- A. Frames: shall be machined, mechanically fastened and sealed to form a watertight joint.
- B. Ventilators: shall be mitered, epoxied, mechanically crimped over solid aluminum gussets and sealed to form a watertight joint.
- C. Component Forming: all aluminum components shall be formed, free of scratches and burrs, before application of finish.

## 2.04 FINISHES

- A. Cover all exposed areas of aluminum windows and components. Overall finish shall be **Clear Anodized or Color Anodized**
  - 1. **[Clear Anodized]**
    - a. Type: Architectural Class I clear anodizing
    - b. AAMA Specification: Comply with AAMA 611

- c. Aluminum Association Designation: AA-M10-C22-A41
- d. Color: Clear 215-R1
- 2. **[Color Anodized]**
  - a. Type: Architectural Class I for color anodizing
  - b. AAMA Specification: Comply with AAMA 611
  - c. Aluminum Association Designation: AA-M10-C22-A44
  - d. Color: TBD **[ Champagne bronze, light bronze, medium bronze, dark bronze, or black]**

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that openings are dimensionally within allowable tolerances, plumb, level, clean, provide a solid anchoring surface and are in accordance with approved shop drawings.

### 3.02 INSTALLATION

- A. Install windows with skilled tradesman in accordance with approved shop drawings and specifications.
- B. Unfinished aluminum shall be insulated from direct contact with steel, masonry concrete, and non-compatible materials by bituminous paint, zinc chromate primer or other suitable insulating material.
- C. Install vapor retarder/air barrier in accordance specifications between window perimeter and adjoining collateral materials and existing wall barriers to assure continuity.
- D. Plumb window faces in a single plane for each wall plane. Erect square and true. Anchor to maintain position when subjected to normal thermal and building movement, seismic forces and specified wind loads.
- E. Apply sealants at joints and intersections and at opening perimeters in accordance with approved shop drawings and Section 07 93 13 to provide watertight installation.

### 3.03 FIELD QUALITY CONTROL

- A. Conduct on-site air and water infiltration tests in accordance with AAMA 502, ASTM E 783, ASTM E 1105, and with architect and window manufacturer's representative present. Architect will select units to be tested. Air infiltration shall not exceed 1.5 x air infiltration amount specified for laboratory testing.
- B. Tested units not meeting specified requirements and units having similar deficiencies shall be corrected at no cost to owner.
- C. Cost for successful tests shall be paid by owner. Unsuccessful tests shall be paid by contractor.
- D. Testing shall be by agency acceptable to architect and window manufacturer and employed by contractor.

### 3.04 CLEANING

- A. After installation and testing, windows and glazing shall be inspected, adjusted, and left clean and free of labels and dirt. Protect finished installation against damage.
- B. Final cleaning of anodized finish shall be in accordance with AAMA 609.1; painted finish shall be in accordance with AAMA 610.1.

END OF SECTION