

NEW STUDY ROOMS
FOR THE
JOHN C. HART LIBRARY

1130 EAST MAIN STREET
SHRUB OAK, NY 10588



April 5, 2023

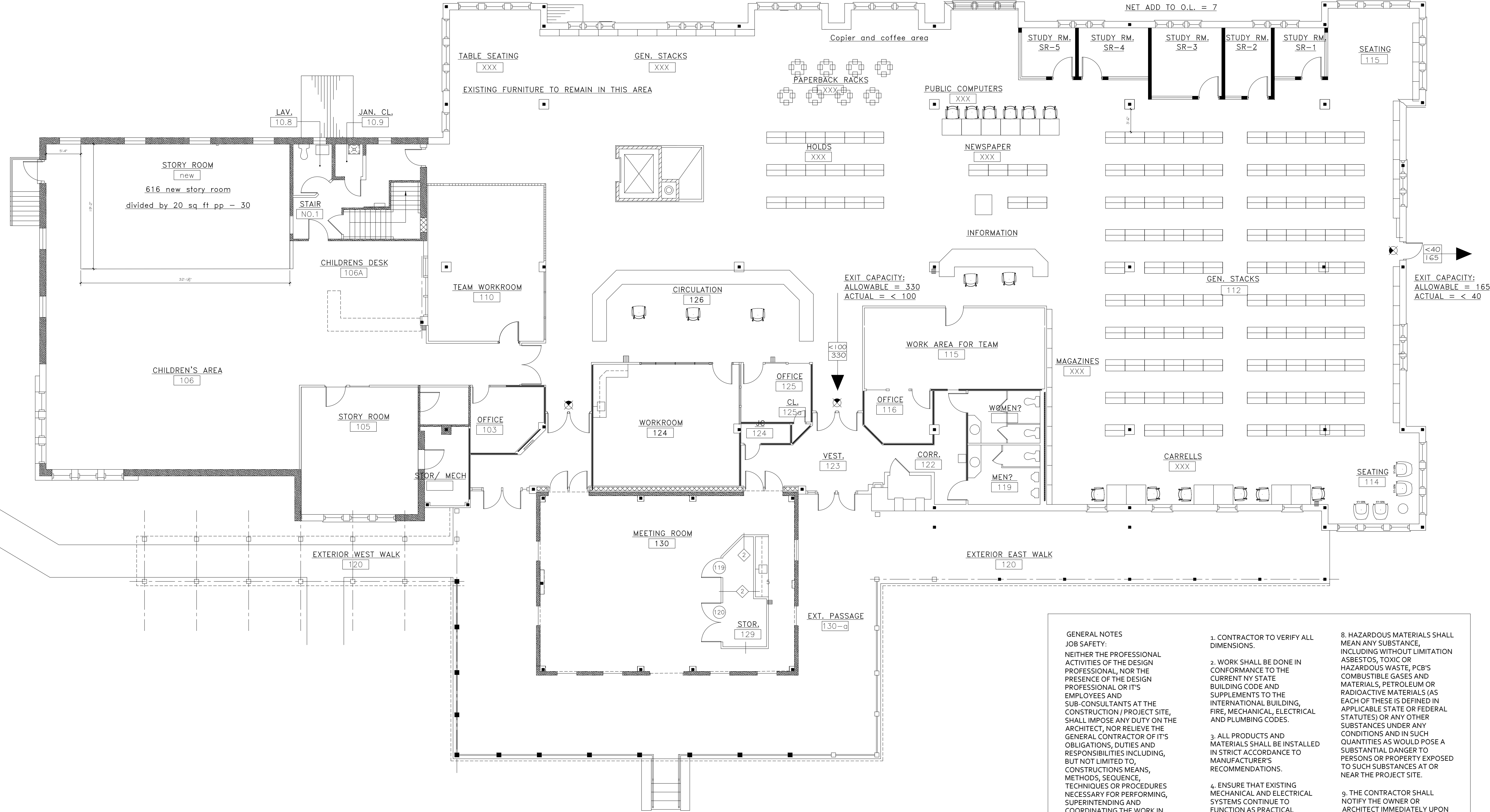
LIST OF DRAWINGS:
COVER PAGE

- A-1 STUDY ROOMS NEW EGRESS / CODE PLAN MAIN LEVEL
- A-2 STUDY ROOMS FLOOR PLANS, SCHEDULES & NOTES
- A-3 STUDY ROOMS FLOOR PLANS & ELEVATIONS



26 STUART DRIVE, BLOOMFIELD, CT 06002

EXISTING STACK AREA:
 650 SF / 100 = 6
 PROPOSED READING ROOMS:
 650 SF / 50 = 13
 ACTUAL PER FURNITURE = 12
 NET ADD TO O.L. = 7



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

- GENERAL NOTES**
 JOB SAFETY:
 NEITHER THE PROFESSIONAL ACTIVITIES OF THE DESIGN PROFESSIONAL, NOR THE PRESENCE OF THE DESIGN PROFESSIONAL OR ITS EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION / PROJECT SITE, SHALL IMPOSE ANY DUTY ON THE ARCHITECT, NOR RELIEVE THE GENERAL CONTRACTOR OF ITS OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE DESIGN PROFESSIONAL AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PROGRAMS OR PROCEDURES. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOBSITE AND WORKER SAFETY AND WARRANTS THAT THIS INTENT SHALL BE CARRIED OUT IN THE OWNER'S CONTRACT WITH THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL DEFEND AND INDEMNIFY THE OWNER, THE ARCHITECT AND THE ARCHITECT'S SUB-CONSULTANTS, UNLESS OTHERWISE NOTED, THE OWNER, THE DESIGN PROFESSIONAL AND THE DESIGN PROFESSIONAL'S SUB-CONSULTANTS SHALL BE MADE ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE.
- CONTRACTOR TO VERIFY ALL DIMENSIONS.
 - WORK SHALL BE DONE IN CONFORMANCE TO THE CURRENT NY STATE BUILDING CODE AND SUPPLEMENTS TO THE INTERNATIONAL BUILDING, FIRE, MECHANICAL, ELECTRICAL AND PLUMBING CODES.
 - ALL PRODUCTS AND MATERIALS SHALL BE INSTALLED IN STRICT ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
 - ENSURE THAT EXISTING MECHANICAL AND ELECTRICAL SYSTEMS CONTINUE TO FUNCTION AS PRACTICAL THROUGHOUT THE CONSTRUCTION PROCESS. COORDINATE WITH THE OWNER DIRECTLY, ANY TIME PERIODS DURING WHICH ESSENTIAL SERVICES MAY BE NON-FUNCTIONING OR DISCONNECTED.
 - CONTRACTOR SHALL PULL & PAY FOR ALL REQUIRED PERMITS.
 - PROVIDE EMERGENCY LIGHTING AS REQUIRED BY CODE. VERIFY WITH LOCAL AUTHORITY HAVING JURISDICTION.
 - HAZARDOUS MATERIALS SHALL MEAN ANY SUBSTANCE, INCLUDING WITHOUT LIMITATION ASBESTOS, TOXIC OR HAZARDOUS WASTE, PCB'S COMBUSTIBLE GASES AND MATERIALS, PETROLEUM OR RADIOACTIVE MATERIALS (AS EACH OF THESE IS DEFINED IN APPLICABLE STATE OR FEDERAL STATUTES) OR ANY OTHER SUBSTANCES UNDER ANY CONDITIONS AND IN SUCH QUANTITIES AS WOULD POSE A SUBSTANTIAL DANGER TO PERSONS OR PROPERTY EXPOSED TO SUCH SUBSTANCES AT OR NEAR THE PROJECT SITE.
 - THE CONTRACTOR SHALL NOTIFY THE OWNER OR ARCHITECT IMMEDIATELY UPON DETECTION OR SUSPECTED DETECTION OF ANY HAZARDOUS MATERIALS.
 - THE CONTRACTOR SHALL NOTIFY THE OWNER OR ARCHITECT IMMEDIATELY UPON THE DISCOVERY OF ANY MOLD.
 - THE CONTRACTOR SHALL HAVE AND MAINTAIN ALL STATE OR FEDERAL CERTIFICATIONS REQUIRED FOR THE REMOVAL, HANDLING AND DISPOSAL OF LEAD PAINT.

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1130 Main Street
 SHRUB OAK, NY



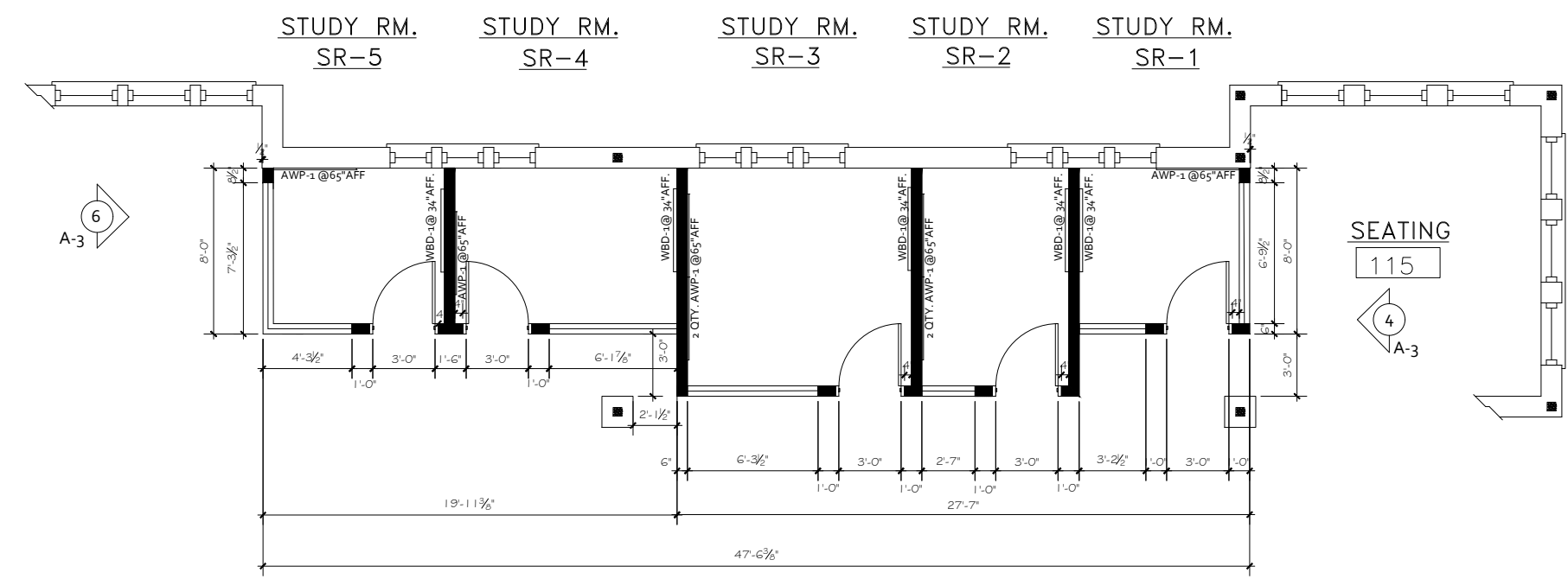
STUDY ROOMS
 NEW EGRESS / CODE PLAN
 MAIN LEVEL

DATE: 04/05/23

SCALE: 1/8" = 1'-0"
 PROJECT No: NY122

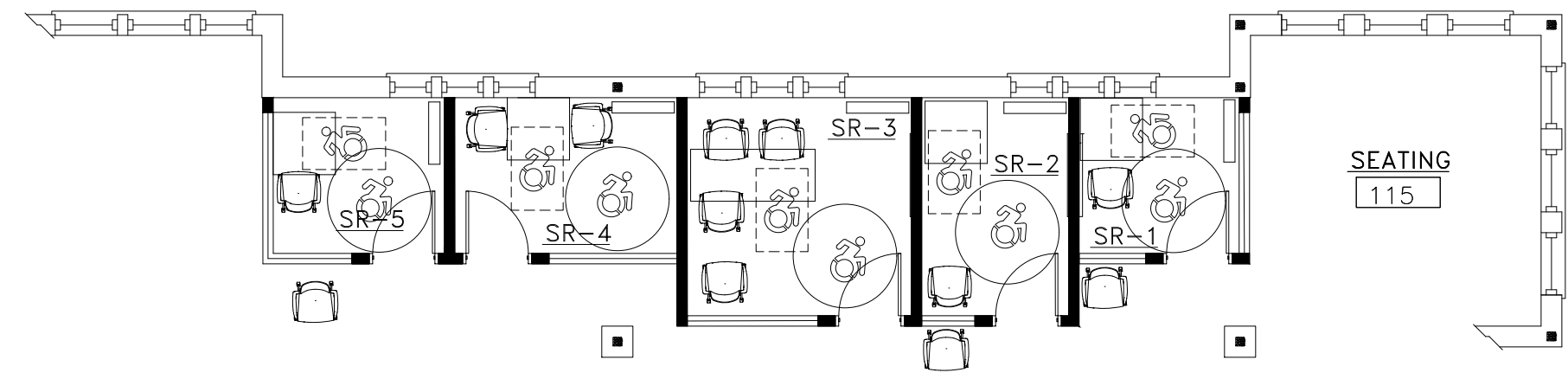
DRAWING
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A-1



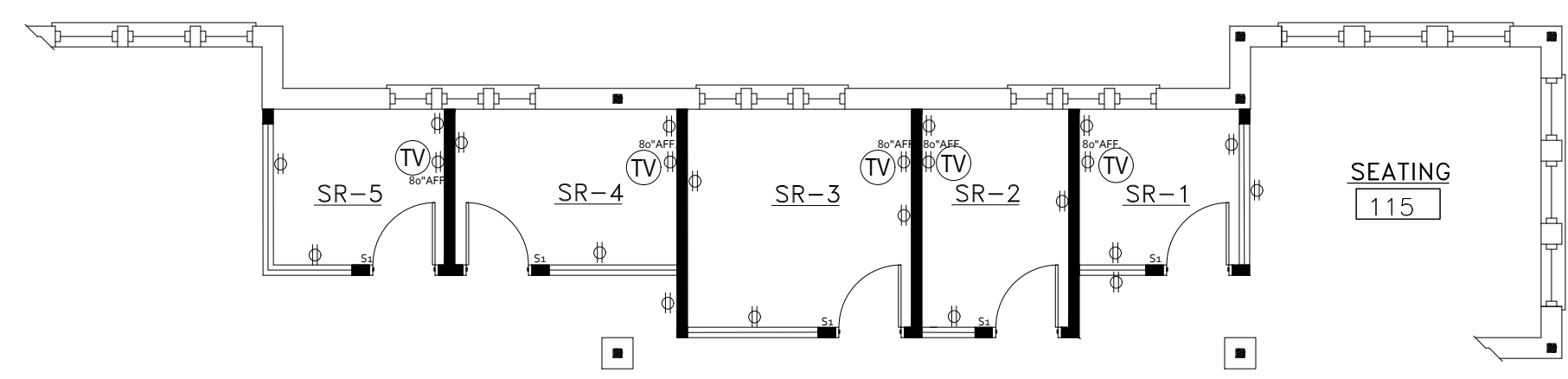
1 STUDY ROOMS- FLOOR PLAN

1/8 = 1'-0"
 ALL WINDOWS WILL INCLUDE WINDOW SILLS - WPS-1



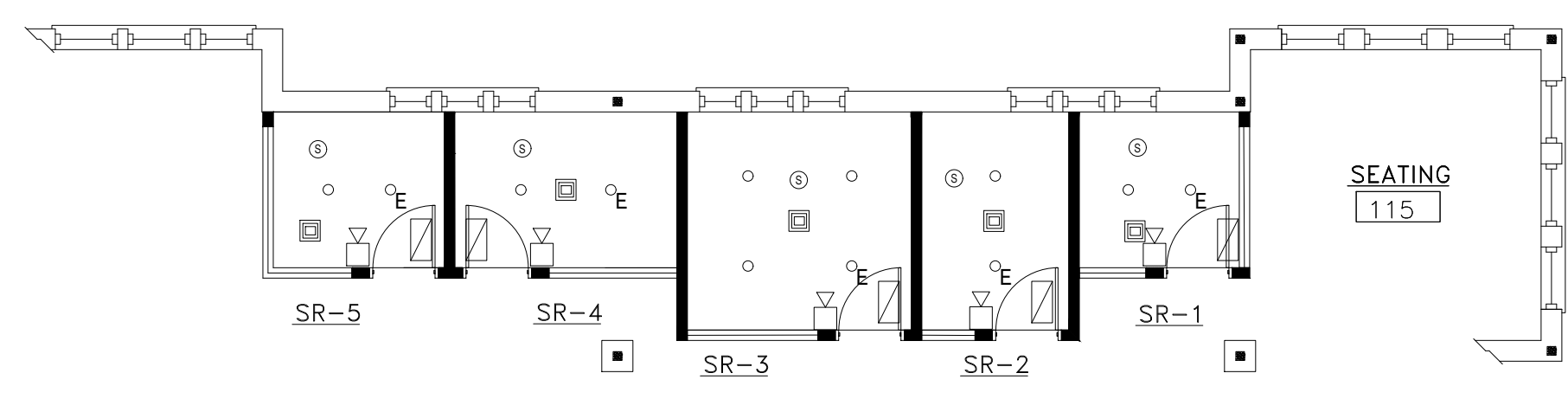
2 STUDY ROOMS- PROPOSED FURNITURE PLAN

1/8 = 1'-0"



3 STUDY ROOMS- ELECTRICAL PLAN

1/8 = 1'-0"



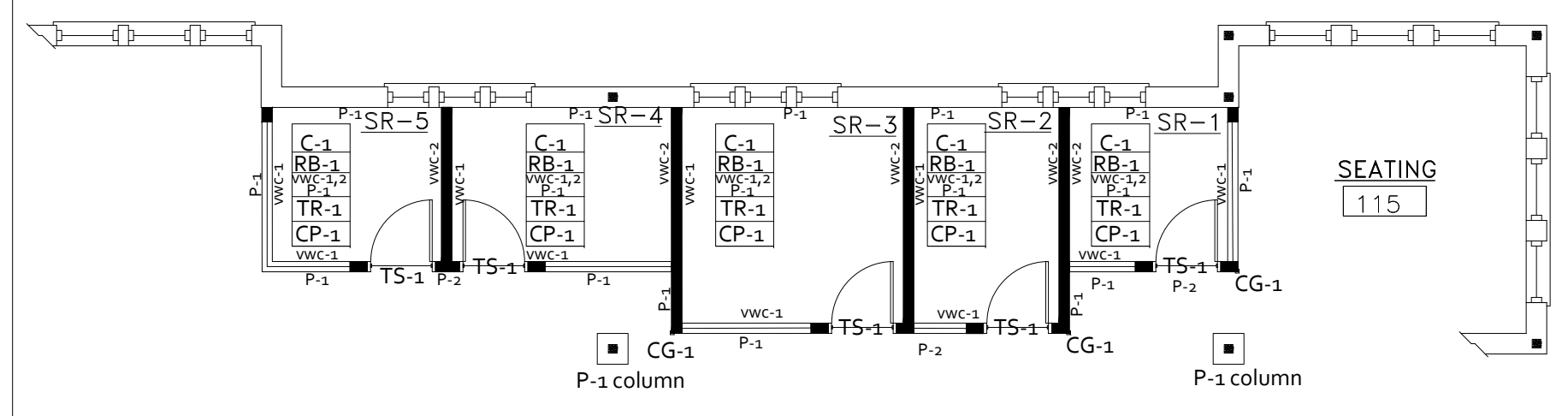
4 STUDY ROOMS- CEILING PLAN

1/8 = 1'-0"
 CEILING HEIGHT IN STUDY ROOMS 7'-6"

CEILING SCHEDULE	
CEILING: GYP. BOARD CEILING, SEE FRAMING PLAN	EXIT SIGN
RECESSED CAN LIGHTING- 6"	EMERGENCY HORN - STROBE DEVICE
VANTAGE LTG. - RMDL-NCFAQ- A6VOCLED NEW CONSTRUCTION FRAME	TV MOUNTING BRACKET
RECESSED CAN LIGHTING- 6" WITH EMERGENCY BACKUP VANTAGE LTG. - EM-RMDL-NCFAQ- A6VOCLED NEW CONSTRUCTION FRAME	SPEAKER
CONTACT- ROBIN DOERFLER-SK ASSOCIATES RDOERFLER@SK-ASSOC.COM MOBILE: 1-617-943-9109	OCCUPANCY SENSOR SWITCH
	DUPLEX OUTLET 1Ø AFF
	OUTLET FOR MONITOR

ALTERNATE # 1 DELETE VINYL WALL-COVERING VWC-1 AND ADD WCD-1 WALL CLADDING TO ELEVATION 2 AND 3. ALTERNATE # 1 WCD-1 EXTEND TO THE FLOOR. NO BASE. EXTERIOR OF STUDY ROOMS TO RECEIVE RB-1 EXCEPT WHEN THE ALTERNATE IS ACCEPTED. ALTERNATE # 2 ADD MORDERNFOLD DEMOUNTABLE PARTITION.

PRODUCTS AND FINISH NOTES:
 EXISTING COLUMNS TO RECEIVE PAINT - PATCH AND PRIME, TWO COATS OF P-1 TYPICAL OF TWO. TWO COLUMNS NOTED ABOVE MUST RECEIVE RB-1.
 NEW VINYL TRANSITION STRIPS AT ALL STUDY ROOM DOORS.
 ALL NEW DOORS AND WINDOWS TO RECEIVE 2-1/2" PRIMED FINGER JOINTED CASING - PINE, PAINTED WHITE SEMI GLOSS.
 ALL MATERIALS MUST ARRIVE TO THE SITE AND FOLLOW ALL THE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION, CLEANING AND THE PROTECTION OF SAID PRODUCT.
 ALL MATERIALS REQUIRE "EXTRA MATERIALS" TO 5%.
 ALL INTERIOR PRODUCTS MUST HAVE A FORMAL SUBMITTAL AS PART OF THIS PROJECT. THIS WILL INCLUDE INFORMATION ON THE PRODUCT INCLUDING FIRE / SMOKE RATINGS, INSTALLATION MATERIALS AND MAINTENANCE OF SAID PRODUCT.
 INTERIOR DESIGNER MUST APPROVE ANY SUBSTITUTIONS.
 C-1, OR EQUAL - CARPET TILE INSTALLATION. TESTING IS REQUIRED PRIOR TO CARPET INSTALLATION. TESTS INCLUDE THE RH TEST, CLC TEST AND BOND TEST. CARPET TILE REQUIRES A PRIMER, APPROVED BY THE MANUFACTURER. CARPET TILE REQUIRES ADHESIVE, LOW VOC, ENPRESS. CARPET MUST PASS THE FLAMMABILITY: ASTM E 648 - FLOORING RADIANT PANEL, ASTM E-662 SMOKE DENSITY LESS THAN 450.
 ALL MATERIALS MUST ARRIVE TO THE SITE AND FOLLOW ALL THE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION, CLEANING AND THE PROTECTION OF SAID PRODUCT.
 RB-1 OR EQUAL, JOHNSONITE RUBBER BASE, REQUIRED JOHNSONITE ADHESIVE - # 960, APPLY WITH 1/8" SQUARE KNOTTED TROWEL.
 ALL MATERIALS MUST ARRIVE TO THE SITE AND FOLLOW ALL THE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION, CLEANING AND THE PROTECTION OF SAID PRODUCT.
 VWC-1, VINYL WALLCOVERING TYPE II. TESTED TO ASTM E-84-TUNNEL TEST, CLASS A FIRE RATED. FLAME SPREAD 15, SMOKE DEVELOPED 10.
 ALL MATERIALS MUST BE DELIVERED TO THE SITE, STORED, INSTALLED AND CLEANED WHEN REQUIRED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.



5 STUDY ROOMS- FINISH PLAN

1/8 = 1'-0"
 FOR FURTHER CLARIFICATION ON THE PAINT COLORS ON EXTERIOR OF STUDY ROOMS SEE ELEVATIONS.

STUDY ROOMS- FINISH SCHEDULE

CODE	MANUFACTURER	MATERIAL / STYLE	PATTERN	COLOR	REMARKS / SPECIFICATIONS
Flooring					
C-1	MOHAWK COMMERCIAL FLOOR	LIVE & LEARN / SIDE STRIPE	566	CENTRAL	BRICK ASHLAR, ADHESIVE - ENPRESS
rep: JOHN TALIO, John_talio@mohawkind.com					
Primer					
P-1	SHERWIN WILLIAMS	PRIMER: SW PRO MAR 200 LOW VOC INTERIOR LATEX PRIMER/ SEALERB28W2800			
P-2	SHERWIN WILLIAMS	DRYWALL PAINT: SW PRO MAR 200 LOW VOC LATEX EGG-SHELL B20-1950 TWO COATS	SW6106	KILIM BEIGE	PRIMER AND TWO COATS OF FINISH- 2 coats
rep:Heather Bourgeois - Heather.R.Bourgeois@sherwin.com ALL PAINT PRODUCTS AND INSTALLATION MUST FOLLOW THE MANUFACTURERS RECOMMENDED METHODS FOR EACH SUBSTRATE.					
VWC-1	DE NOVO	SHIMA TEXTURE	DN2-SMT-02	PONGEE	ZINSSER SHIELD SIZING AND ZINSSER SURE GRIP VP ADHESIVE.
VWC-2	KOROSEAL	SILKEN ONE	5522-75	OPULENT	ZINSSER SHIELD SIZING AND ZINSSER SURE GRIP VP ADHESIVE.
VWC-1 rep: Nancy Royer - Nancyr@surfacematerials.com ALL WALLCOVERING PRODUCTS AND INSTALLATION MUST FOLLOW THE MANUFACTURERS RECOMMENDED METHODS FOR EACH SUBSTRATE. VWC-2 rep: Cal Raymond- craymond@koroseal.com					
RB-1	JOHNSONITE	RUBBER BASE	#18	NAVY BLUE	4" BASE HEIGHT WITH JOHNSONITE 950 ADHESIVE
rep: Carrie Bartucca - cbartucca@michaelhealebian.com					
CP-1	SHERWIN WILLIAMS	DRYWALL PAINT: SW PRO MAR 200 LOW VOC LATEX FLAT B30-12600- TWO COATS	XXXXXX	CEILING WHITE	PRIMER AND TWO COATS OF FINISH- 2 coats GYP. BOARD CEILING PRIMER IS THE SAME AS LISTED ABOVE.
Primer for Wood					
TR-1 / TRIM	WOOD DOOR TRIM AND CROWN	2 1/2" PROFILE & PAINT SW PRO INDUSTRIAL ACRYLIC SEMI-GLOSS 866-650	SW 7005	PURE WHITE	POPLAR PAINTED WHITE -SEMI-GLOSS - 2 COATS
TR-1 / TRIM	WOOD CROWN MOLDING	2 1/2" PROFILE & PAINT SW PRO INDUSTRIAL ACRYLIC SEMI-GLOSS 866-650	SW 7005	PURE WHITE	POPLAR PAINTED WHITE -SEMI-GLOSS - 2 COATS
WPS-1	WOOD TRIM- SILLS	WOOD SILL & PAINT SW PRO INDUSTRIAL ACRYLIC SEMI-GLOSS 866-650	SW 7005	PURE WHITE	POPLAR PAINTED WHITE -SEMI-GLOSS - 2 COATS
TS-1	JOHNSONITE - CTA-XX-M	TRANSITION FROM CARPET TO EXISTING		TBD	VINYL
CG-1	KOROSEAL	CORNER GUARD 4H	4h x 1-1/2"x1-1/2"	CLEAR	MECHANICALLY FASTENED rep: Cal Raymond- craymond@koroseal.com
AWP-1	ARMSTRONG CEILINGS	WALL PANELS BY FELTWORKS	48"W X 24"H X 1"	TBD	Installed with Z-clips and Z-bars. www.armstrongceilings.com
WBD-1	CLARIDGE PRODUCTS	LCS porcelain whiteboard EE4X4LCS	48"W X 48"H	WHITE	MECHANICALLY FASTENED www.claridgeproducts.com

SECURE ATTACHMENT OF FF&E
 TO ENSURE PROPER ATTACHMENT OF FIXTURES, FURNISHINGS & EQUIPMENT ITEMS INCLUDING TECHNOLOGY ITEMS, WHERE "ITEMS" ARE ATTACHED TO WALL, CEILING, OVERHEAD STRUCTURE, AND / OR FLOOR. CONTRACTOR SHALL PROVIDE INFORMATION ADEQUATE FOR ARCHITECT TO VERIFY ITEMS ATTACHED TO WALL, CEILING AND / OR FLOOR ARE ATTACHED SECURELY AND PER MANUFACTURER'S RECOMMENDATIONS.

ARCHITECT'S REVIEW MAY BE IMPLEMENTED DURING SUBMITTAL PROCESS. CONTRACTOR SHALL PROVIDE STRUTS, HANGERS, FASTENERS, SAFETY HARNESSES, CHANNELS, BOLTS, SCREWS, RODS, ETC. TO SECURELY ATTACHED ITEMS TO EXISTING STRUCTURE AS REQUIRED TO MEET FIELD CONDITIONS AND MEET APPLICABLE CODES.

CODE COMPLIANCE NOTES
 TO MEET THE NEEDS OF PERSONS WITH DISABILITIES, WHEN APPLICABLE, ALL FIXTURES, FURNISHINGS AND EQUIPMENT ITEMS SHALL COMPLY WITH:
 CURRENT NEW YORK STATE BUILDING & FIRE CODES INCLUDING 2009 ICC/ANSI A117.1

SECTION 504 OF THE REHABILITATION ACT OF 1973 INCLUDING CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN AND ADA REGULATIONS

AMERICAN WITH DISABILITIES ACT TITLE II INCLUDING CURRENT ADA STANDARDS AND ADA REGULATIONS
 ACCESSIBLE KNEE AND TOE CLEARANCE SHALL COMPLY WITH CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN, SECTION 306

COMPLIANCE WITH THE CURRENT STATE FIRE CODE AND CURRENT O.S.H.A. - TITLE 29 / LABOR IS ALSO REQUIRED. THE ITEMS SHALL INCLUDE, BUT ARE NOT LIMITED TO FIXTURES, FURNISHINGS, EQUIPMENT, WORKSTATIONS (INCLUDING BUILT-INS) & ALL FINISHES

ELECTRICAL NOTES

- ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
- ELECTRICAL CONTRACTOR SHALL DESIGN, PURCHASE AND INSTALL ALL NEW COMPONENTS AS REQUIRED TO PROPERLY SERVICE THE SPACE(S) AFFECTED BY THIS CONSTRUCTION PROJECT. IF THE MODIFICATION OF EXISTING ELECTRICAL SYSTEMS IS NECESSARY, SUCH MODIFICATIONS SHALL NOT ADVERSELY AFFECT THE OPERATION OF THESE SYSTEMS.
- COORDINATE ELECTRICAL WORK WITH THE WORK OF OTHER TRADES. DO NOT ALTER THE WORK OF PREVIOUS TRADES WITHOUT PRIOR APPROVAL.
- PERFORM ALL NEW ELECTRICAL WORK IN ACCORDANCE WITH STATE AND LOCAL CODES AND ACCEPTED STANDARDS OF PRACTICE.
- COORDINATE THE FINAL LOCATION OF ALL ELECTRICAL DEVICES AND THEIR INTENDED OPERATION WITH THE OWNER. SEE 'ELECTRICAL MOUNTING HEIGHTS', THIS SHEET, FOR GENERAL REQUIREMENTS.
- PROVIDE ALL NEW SWITCH AND OUTLET COVERS IN LAVATORIES IN WHITE.
- PROVIDE NEW OUTLET AND SWITCH COVERS FOR ALL OUTLETS IN MAIN LIBRARY PROJECT IN IVORY.

ELECTRICAL MOUNTING HEIGHTS

- ALL DIMENSIONS ARE TO THE CENTER OF THE DEVICE UNLESS OTHERWISE NOTED. SEE ELECTRICAL DRAWINGS FOR TYPES AND LOCATIONS.
- RECEPTACLES: 18" A.F.F. (AT LOCATIONS ABOVE CASEWORK, MOUNT BOTTOM OF RECEPTACLE AT 2" ABOVE COUNTERTOP, AT LOCATIONS BELOW CASEWORK, MOUNT AT 24" A.F.F.
- SWITCHES: 48" A.F.F.
- DATA / PHONE OUTLETS: 18" A.F.F.

Abbreviations

SOME NOT USED

ACP	ACOUSTICAL CEILING PANELS
CP	CEILING PAINT
C	CARPET TILE
CP	CEILING PANELS / PADS
CT	CERAMIC TILE
CWT	CERAMIC WALL TILE
DF	DOOR FRAME
GR	GROUT
GTE	GRANITE
M.TH	MARBLE THRESHOLD
NIC	NOT IN CONTRACT
NIS	NOT IN SCOPE
P	PAINT
PL	PLASTIC LAMINATE
PJS	PROJECTION SCREEN
PR	PROJECTOR
RRS	RESILIENT REDUCING STRIP
RB	RUBBER WALL BASE
S/C	SEALED CONCRETE THRESHOLD
TR	TRIM (PAINTED)
VCT	VINYL COMPOSITION TILE
VP	VINYL PLANK FLOORING
VWC	VINYL WALL-COVERING-TYPE 2
WCD	WALL CLADDING
WPS	WOOD PAINTED WINDOW SILLS

NIS - NOT IN SCOPE
 ETR= EXISTING TO REMAIN
 EXT= EXISTING TO REMAIN

FINISH LEGEND

----	Floor
----	Base
----	Walls
----	Trim
----	Ceiling

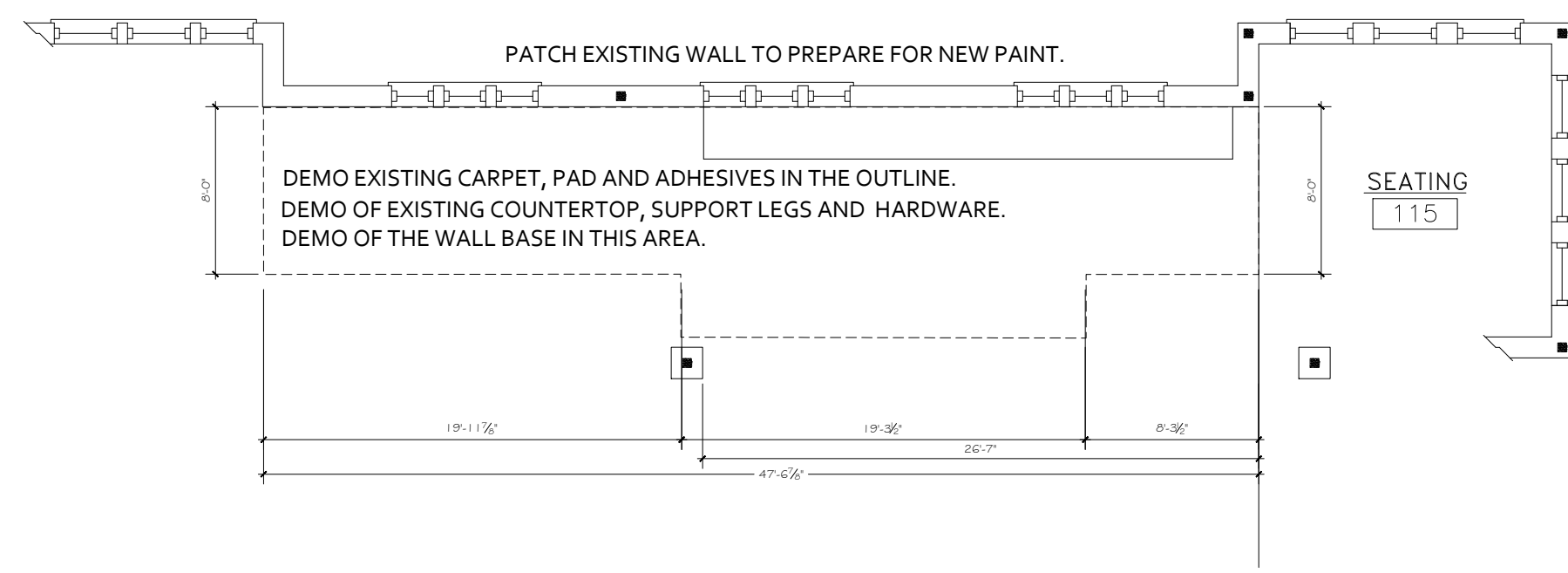


STUDY ROOMS FLOOR PLANS, SCHEDULES & NOTES

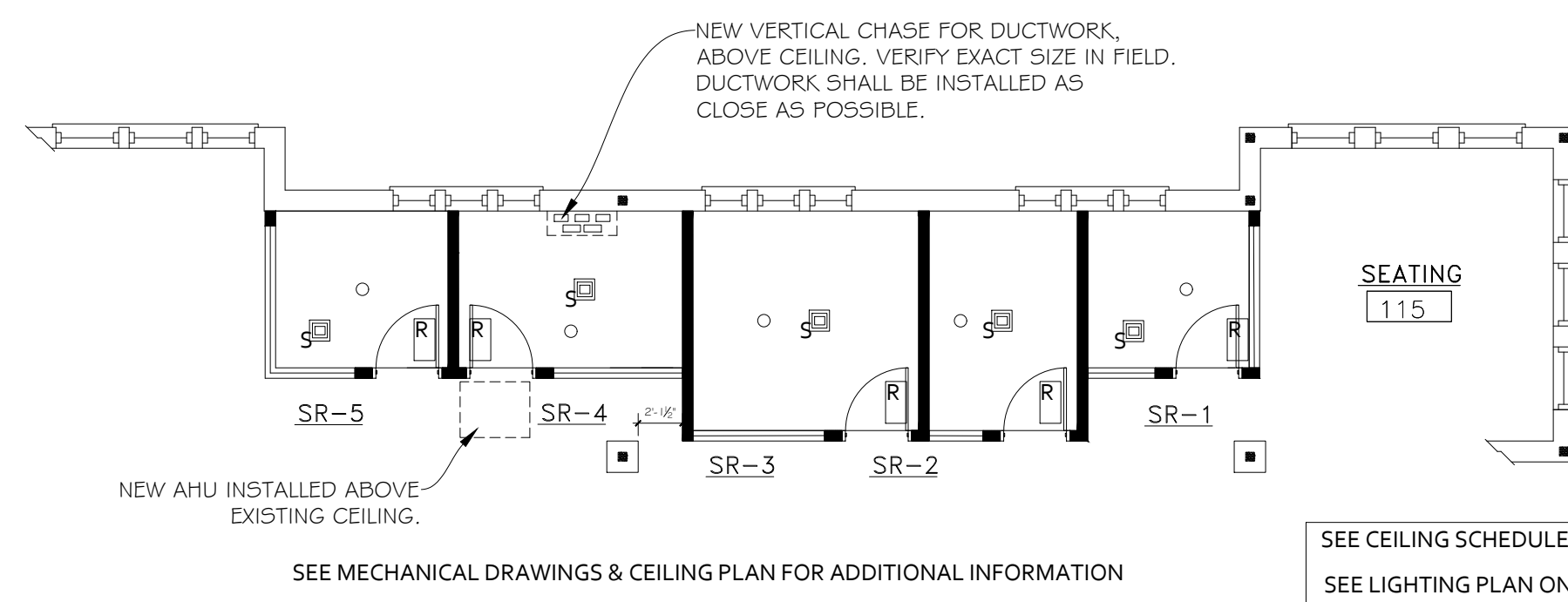
DATE: 04/05/23
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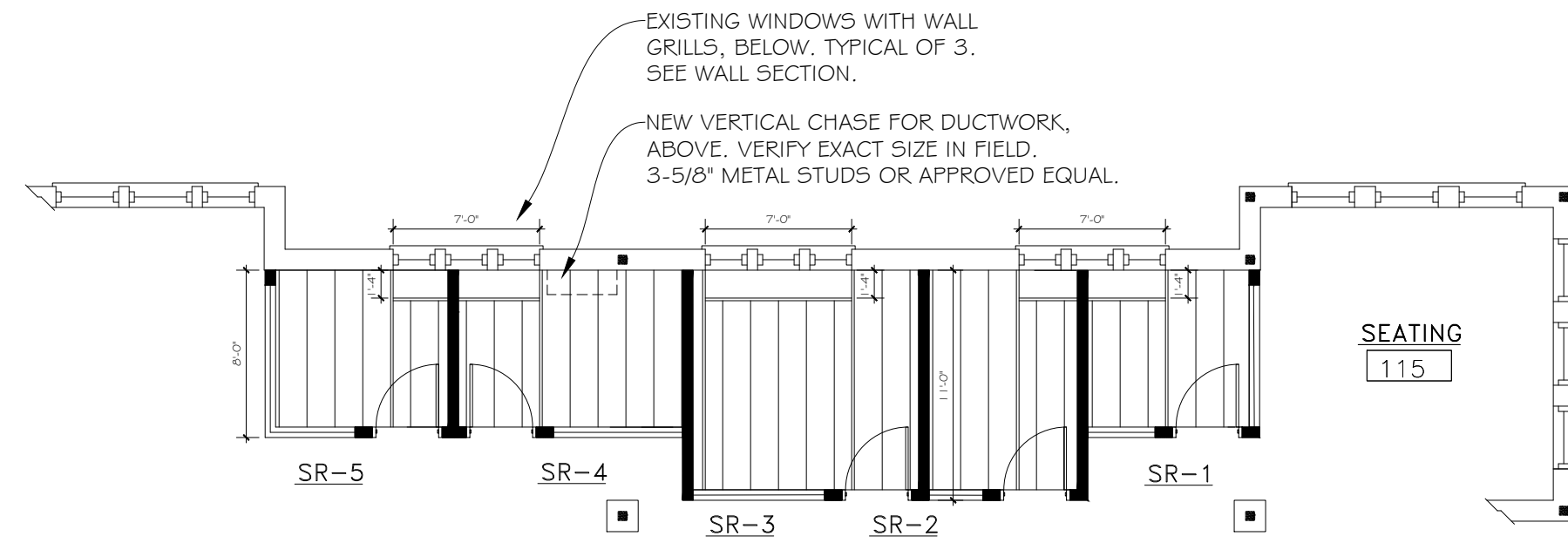


1 DEMOLITION PLAN
 1/8 = 1'-0"



2 MECHANICAL & FIRE PROTECTION PLAN
 1/8 = 1'-0"
 CEILING HEIGHT IN STUDY ROOMS +/- 7'-6"

- SEE CEILING SCHEDULE ON A-2
- SEE LIGHTING PLAN ON A-2
- Supply Air Grill
- Return Air Grill
- HEAT AND A/C - SPLIT SYSTEM
- SEE CEILING SCHEDULE ON A-2
- SEE LIGHTING PLAN ON A-2
- NEW SPRINKLER HEADS



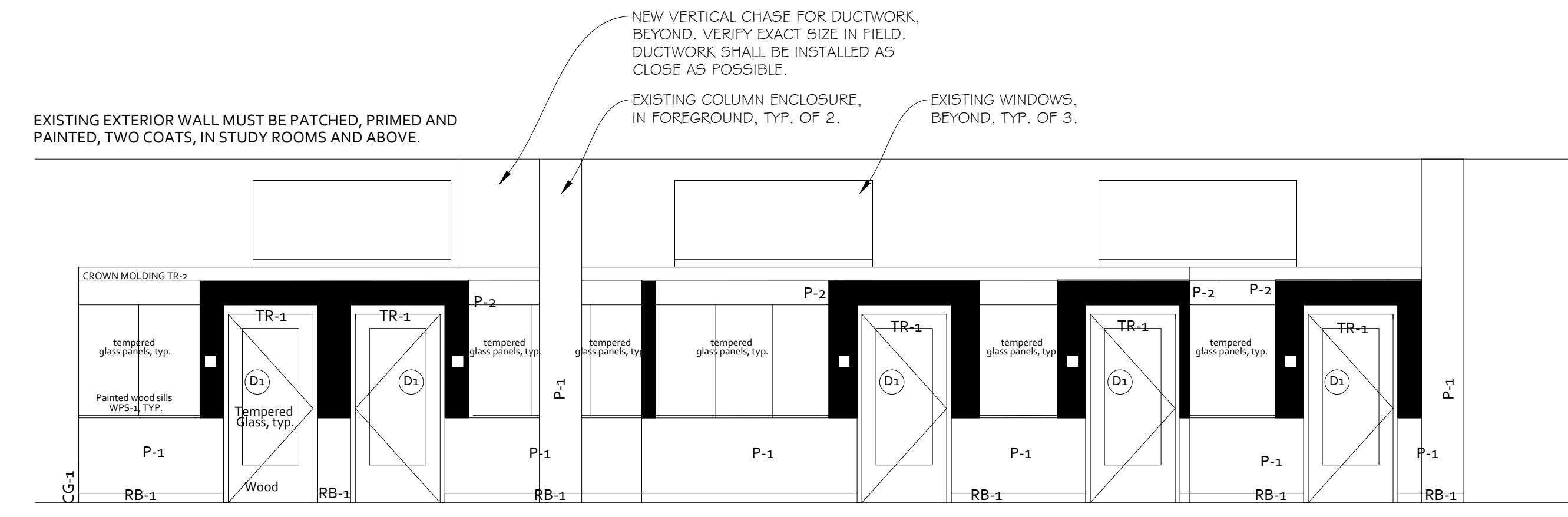
CEILING FRAMING TO BE 6" METAL STUDS
 1-5/8" WIDE, 18 GAUGE, AT 16" O.C.

3 CEILING FRAMING PLAN
 1/8 = 1'-0"
 CEILING HEIGHT IN STUDY ROOMS +/- 7'-6"



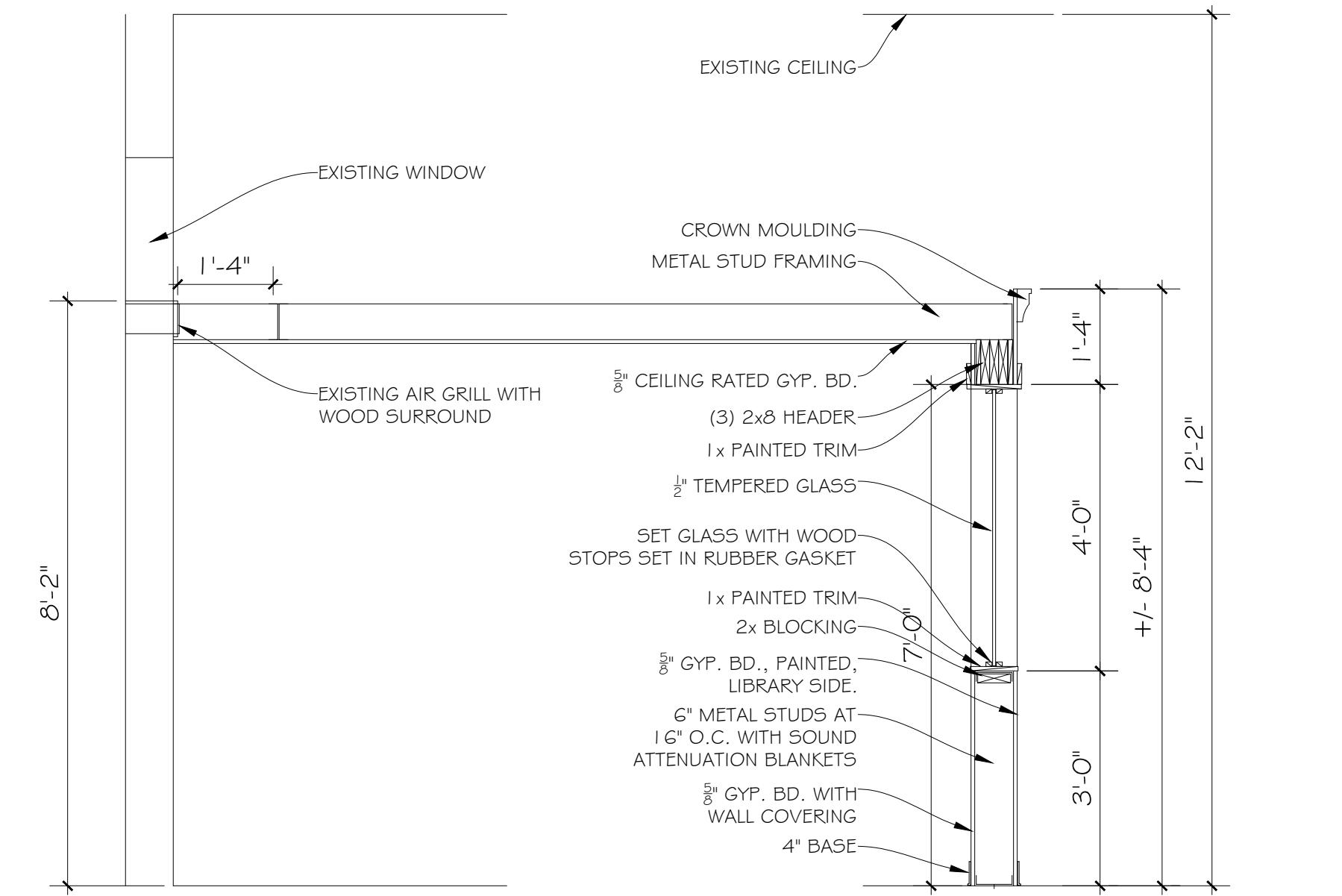
4 ELEVATION - 1
 1/4 = 1'-0"
 CEILING HEIGHT IN STUDY ROOMS +/- 7'-6"

6 ELEVATION - 3
 1/4 = 1'-0"
 CEILING HEIGHT IN STUDY ROOMS +/- 7'-6"

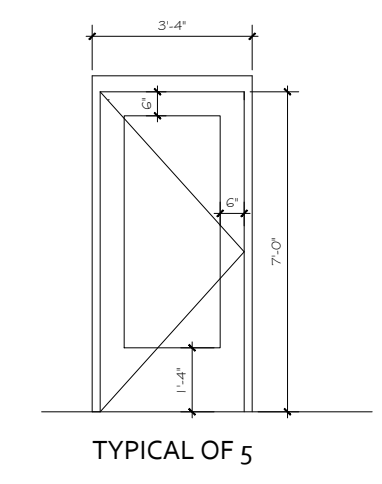


DOORS - MASONITE ARCHITECTURAL, 1-3/8" ROTARY CUT, WHITE BIRCH, ASPIRO SERIES, STAIN COLOR CLEAR, GLASS: FULL WITH TEMPERED GLASS.
 WINDOW GLASS PANELS - tempered
 DOOR TRIM 2-1/2" XXX PRIMED AND PAINTED WHITE.
 HARDWARE - ADA LEVER STYLE, LOCKING FROM EXTERIOR ONLY WHEN UNOCCUPIED. KEY'D ALIKE WITH A MASTER KEY, BRUSHED STAINLESS STEEL, FIVE (5) QTY. TYP.
 SIGNAGE - ASI SIGNAGE, ADA READY SIGNAGE, HIGH IMPACT ACRYLIC/PVC THERMOPLASTIC ALLOY USING UNIBOND CO-MOLDING PROCESS.
 TACTILE COPY AND GRADE 2 BRAILLE RAISED 1/32" MIN. COMPLY WITH ADA REGULATIONS AND REQUIREMENTS. TYPICAL OF 5 SIGNS, STIPPLE TEXTURE, COBALT PANEL BEIGE LETTERING.
 CEILING HEIGHT IN STUDY ROOMS +/- 7'-6"

5 ELEVATION - 2
 1/4 = 1'-0"
 ALL WINDOWS WILL INCLUDE WINDOW SILLS - WPS-1



7 WALL SECTION
 1/2 = 1'-0"



8 DOOR ELEVATIONS
 1/4 = 1'-0"

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STUDY ROOMS
 FLOOR PLANS & ELEVATIONS

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A-3

SPECIFICATIONS CONTINUED

M-27 PIPE INSULATION

A.) INSULATE ALL NEW PIPING WITH PRE-FORMED PIPE INSULATION. INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND A SMOKE-DEVELOPED INDEX NOT EXCEEDING 450. PIPE INSULATION INSTALLED WITHIN AIR PLENUMS SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723. REFER TO PIPE INSULATION SCHEDULE FOR INSULATION THICKNESS.

B.) PIPING VALVES AND FITTINGS ON ALL INSULATED PIPES SHALL BE PROVIDED WITH FABRICATED SECTIONS OF INSULATION OR PRE MOLDED FITTING COVERS EQUAL IN THICKNESS AND MATERIAL TO ADJOINING PIPE INSULATION.

C.) ALL INSULATION SHALL BE APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS WITH USE OF 2" STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. ALL SEAMS AND JOINTS SHALL BE VAPOR SEALED USING VAPOR BARRIER TAPE AND VAPOR SEAL ADHESIVE. STAPLES ARE NOT PERMITTED. ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS THROUGH SLEEVES, HANGERS, ETC. INSULATION FOR STRAINERS AND OTHER FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

D.) ALTERNATE MANUFACTURERS:
1.) ARMSTRONG, MANVILLE OR OWENS-CORNING

E.) PIPE INSULATION JACKETING: SHALL BE WHITE ZESTON 2000 PVC COVERS FOR PIPING AND FITTINGS. JACKET ALL PIPING AND FITTING THAT ARE EXPOSED IN ANY ROOM.

F.) REFRIGERANT PIPING: EXPANDED CLOSE CELL FLEXIBLE ELASTOMERIC INSULATION; ASTM E 84-91A, 'K' VALUE OF 0.27 AT 75°F; FLAME SPREAD RATING OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS. PERMEABILITY OF 0.1, ONE-PIECE OR SELF-SEALING. THICKNESS AS PER SCHEDULE. OUTDOOR APPLICATION SHALL BE FINISHED AS PER MANUFACTURERS RECOMMENDATIONS. FIELD FABRICATE FITTING AND VALVE INSULATION WITH MITER CUTS, SEAL ALL JOINTS AND SEAMS WITH ADHESIVE. ARMSTRONG AP ARMAFLEX OR EQUAL.

G.) PIPE LABELS: SHALL BE SETON ULTRA-MARK WEATHER RESISTANT FOR OUTDOOR APPLICATION AND OPTI-CODE FOR INDOOR APPLICATION. LETTERS AND ARROWS SHALL BE 2 1/2" HIGH AND SHALL BE WHITE ON A GREEN BACKGROUND AND SHALL CONFORM TO ANSI AND OSHA STANDARDS. APPLY OVER INSULATION ONLY.

M-28 PIPING INSTALLATION - GENERAL REQUIREMENTS

A.) REFER TO DRAWINGS FOR REQUIRED PIPING LAYOUTS. CONNECTION DETAILS INDICATE REQUIRED PIPING AT VARIOUS PIECES OF EQUIPMENT. FLOOR PLANS INDICATE GENERAL ROUTING OF PIPING. SPECIFICATIONS DEFINE MATERIALS. INSTALLATION REQUIREMENTS AND SUPPLEMENTARY REQUIREMENTS TO THOSE SHOWN ON DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE SYSTEM BASED ON ALL DOCUMENTATION PROVIDED. TO EQUIPMENT SCHEDULES FOR NOMINAL FLOW RATES. FINAL SIZING SHALL BE BASED ON FLOW RATE OF CONTRACTOR PURCHASED EQUIPMENT.

B.) PIPING SHALL BE INSTALLED IN STRAIGHT PARALLEL RUNS, PARALLEL TO PIPING OF OTHER TRADES. ROUTING SHALL BE COORDINATED WITH PIPING AND CONDUIT RUNS OF OTHER TRADES.

C.) ALL PIPE SHALL BE NEW, CLEAN, OF DOMESTIC MANUFACTURE, AND MARKED WITH APPROPRIATE STANDARD.

D.) PIPING SHALL BE INSTALLED TO MINIMIZE TURBULENCE AND PREVENT NOISE AND WATER HAMMER. WATER PIPING SHALL PITCH 1" IN 40 FEET, UPWARD IN DIRECTION OF FLOW. PROPER PROVISION SHALL BE MADE FOR EXPANSION AND CONTRACTION IN ALL PORTIONS OF PIPEWORK, TO PREVENT UNDUE STRAINS ON PIPING OR EQUIPMENT. ALL PIPE SHALL BE SUITABLY REINFORCED AT ALL ANCHOR POINTS.

E.) PIPE SUPPORTS SHALL BE SPACED, REDUCERS ARRANGED AND PIPING PITCHED TO ALLOW AIR TO BE VENTED TO SYSTEM HIGH POINTS AND TO ALLOW THE SYSTEM TO BE DRAINED AT THE LOW POINTS. DRAIN VALVES WITH HOSE CONNECTIONS SHALL BE PROVIDED AT THE BASE OF EACH RISER, AT ALL LOW POINTS AND WHEREVER REQUIRED TO PERMIT COMPLETE DRAINING OF ALL LINES.

F.) RUN OUTS, AND CONNECTIONS TO EQUIPMENT, SHALL BE PROVIDED WITH A SWING JOINT OR FLEXIBLE CONNECTION TO WITHSTAND EXPANSION AND CONTRACTION. RISERS SHALL HAVE SWING JOINTS COMPOSED OF AT LEAST 4 ELBOWS.

G.) ALL CHANGES IN SIZE AND DIRECTION OF PIPING SHALL BE MADE WITH FITTINGS. DO NOT USE MITER FITTINGS, FACE OR FLUSH BUSHINGS, CLOSE NIPPLES OR STREET ELBOWS. ALL NIPPLES (PIPE LESS THAN 3" LONG) SHALL BE EXTRA HEAVY.

H.) ALL BRANCH CONNECTIONS SHALL BE MADE WITH TEES, EXCEPT THAT ON STEEL PIPING FORGED STEEL "WELDOLETS" AND "LATROLETS" AS MANUFACTURED BY BONNEY FORGE MAY BE USED WHERE THE BRANCH PIPE IS AT LEAST TWO NOMINAL PIPE SIZES LESS THAN THE MAIN PIPE.

I.) ECCENTRIC REDUCING FITTINGS OR ECCENTRIC REDUCING COUPLINGS SHALL BE USED WHERE REQUIRED BY THE CONTRACT DOCUMENTS OR WHERE REQUIRED TO PREVENT POKETING OF LIQUID OR NON- CONDENSIBLES.

J.) FITTINGS SHALL BE FACTORY MANUFACTURED. SHOP OR FIELD FABRICATED FITTINGS ARE NOT ACCEPTABLE. WELDING FITTINGS SHALL BE "TUBE-TURNS" OR EQUIVALENT. FITTINGS SHALL HAVE THE SAME PRESSURE RATING AS THE SYSTEM IN WHICH THEY ARE INSTALLED.

K.) ELECTROLYTIC COUPLINGS OR UNIONS SHALL BE INSTALLED BETWEEN COPPER AND STEEL PIPE.

L.) ALL JOINTS SHALL BE MADE IN A WORKMANLIKE MANNER USING CLEAN THREADS, DEBURRED PIPE AND PROPER MATERIALS. ALL JOINTS SHALL CONFORM TO THE APPLICABLE ANSI AND ASTM STANDARDS. QUALIFY WELDERS TO THE CODE FOR PRESSURE PIPING ANSI SPECIFICATIONS B31.1, WITH CERTIFICATION BY THE WELDING BUREAU OF HEATING, PIPING AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION. ASME STAMP SHALL BE PROVIDED AS REQUIRED.

M.) RUN OUTS, AND CONNECTIONS TO EQUIPMENT, SHALL BE PROVIDED WITH A SWING JOINT OR FLEXIBLE CONNECTION TO WITHSTAND EXPANSION AND CONTRACTION. RISERS SHALL HAVE SWING JOINTS COMPOSED OF AT LEAST 4 ELBOWS.

N.) PIPING MATERIALS: REFER TO PIPING MATERIAL SCHEDULE.

SERVICE	SIZE	MATERIAL	TYPE/ STANDARD/WEIGHT
REFRIGERANT	ALL	COPPER	HARD/ASTM B88/TYPE K

O.) PIPE FITTINGS: REFER TO PIPING MATERIAL SCHEDULE.

SERVICE	SIZE	MATERIAL	TYPE/ STANDARD/WEIGHT
REFRIGERANT	ALL	COPPER	SILVER SOLDER/300 PSI ANSI B16.22

P.) PIPE SLEEVES AND ESCUTCHEONS

1.) ALL PIPE OPENINGS THROUGH WALLS, CEILINGS, FURRING, PARTITIONS AND SLABS SHALL BE PROVIDED WITH SLEEVES HAVING AN INTERNAL DIAMETER AT LEAST 2" LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE FOR UNINSULATED LINES OR OF THE INSULATION FOR INSULATED SERVICES. SLEEVES SHALL BE LOCATED SO THAT THE PIPE PASSES THROUGH CENTER OF SLEEVE.

2.) SLEEVES SHALL BE INSTALLED THROUGH INTERIOR WALLS AND PARTITIONS FLUSH WITH FINISHED SURFACE; SLEEVES THROUGH OUTSIDE WALLS SHALL PROJECT 1/2" ON EACH SIDE OF THE FINISHED WALL; FLOOR SLEEVES SHALL PROJECT 1" ABOVE FINISHED FLOORS.

3.) INTERIOR WALLS AND FLOORS - THE SPACE BETWEEN OUTSIDE OF PIPE OR INSULATION AND THE INSIDE OF THE SLEEVE OR FRAMED OPENING SHALL BE FILLED WITH FIBROUS GLASS AND FIRE STOPPED WITH 3-M FIRE BARRIER.

4.) ESCUTCHEONS SHALL BE PROVIDED ON BOTH SIDES OF THE PENETRATION THROUGH THE STRUCTURE FOR ALL PIPES EXPOSED TO VIEW PASSING THROUGH FURRING, WALLS, FLOORS, CEILING AND PARTITIONS, WHETHER INSULATED OR NOT. FOR PIPES PASSING THROUGH FLOORS, AND EXTERIOR WALLS, ESCUTCHEONS SHALL FIT OVER THE SLEEVE.

5.) ALL ESCUTCHEONS SHALL BE CHROME PLATED BRASS, SPLIT HINGED TYPE WITH SET SCREWS.

Q.) CLEANING - ALL PIPING SYSTEMS

1.) ALL OPEN ENDS OF PIPING, VALVES AND EQUIPMENT SHALL BE PLUGGED EXCEPT WHEN ACTUAL WORK IS BEING PERFORMED, TO MINIMIZE ACCUMULATION OF DIRT AND DEBRIS.

2.) AFTER INSTALLATION IS COMPLETE TEMPORARY SCREENS SHALL BE PLACED AT CONNECTIONS TO ALL EQUIPMENT AND AT AUTOMATIC CONTROL VALVES WHERE PERMANENT STRAINERS ARE NOT PROVIDED.

3.) PRIOR TO THE PERFORMANCE OF TESTS, ALL PIPING THAT IS TO RECEIVE A HYDROSTATIC TEST SHALL BE FLUSHED OUT WITH CLEAN WATER. PIPING THAT IS TO BE AIR OR GAS PRESSURE TESTED SHALL BE BLOWN OUT WITH COMPRESSED AIR. DIRT AND DEBRIS COLLECTED AT SCREENS STRAINERS, AND OTHER POINTS FROM THE SYSTEM, SHALL BE REMOVED BOTH BEFORE AND AFTER TESTING.

4.) THE MANUFACTURER SHALL CLEAN ALL STEEL PIPE AND FITTINGS BEFORE SHIPMENT. THE PIPE AND FITTINGS SHALL BE DIPPED INTO A SOLUTION OF SULPHURIC ACID TO REMOVE THE MILL SCALE AND THEN INTO A SOLUTION TO STOP THE CHEMICAL ACTION ON THE METAL AND REMOVE GREASE.

R.) HANGERS, SUPPORTS, ANCHORS AND GUIDES - GENERAL

1.) SUPPORT, ANCHOR AND GUIDE ALL PIPING AND CONNECTED EQUIPMENT TO PRECLUDE FAILURE OR DEFORMATION. CONSTRUCT AND INSTALL HANGERS, SUPPORTS, ANCHORS, GUIDES AND ACCESSORIES IN CONFORMANCE WITH THE CODE FOR PRESSURE PIPING ANSI B-31.1 AS A MINIMUM REQUIREMENT. WHERE SPECIFICATION REQUIREMENTS ARE MORE STRINGENT THAN THE CODE, THE SPECIFICATION SHALL APPLY. WIRE, TAPE OR METAL BANDS SHALL NOT BE USED.

2.) PIPING SHALL BE SECURELY FASTENED TO THE STRUCTURE WITHOUT OVERSTRESSING ANY PORTION OF THE SUPPORTS OF THE STRUCTURE ITSELF. SUFFICIENT INTERMEDIATE STEEL SHALL BE PROVIDED TO TRANSFER LOADS TO AREAS WHERE THEY CAN SAFELY BE ACCOMMODATED. PIPE SUPPORTS, ANCHORS AND GUIDES SHALL BE SECURED TO STEEL BY WELDED BRACKETS, BEAM CLAMPS, OR BY FASTENING RODS OVER THE BEAM TOP FLANGE, AND TO CONCRETE BY MEANS OF INSERTS, OR IF GREATER LOAD CARRYING CAPACITY IS REQUIRED, BY MEANS OF STEEL FISHPLATES EMBEDDED IN THE CONCRETE ABOVE THE REINFORCEMENT RODS. ALL HANGERS SHALL BE LOCATED TO PERMIT FREE EXPANSION AND CONTRACTION.

3.) UNLESS OTHERWISE INDICATED, ALL HORIZONTAL PIPING SHALL BE HUNG TIGHT TO CEILING BEAMS AND LOCATED MORE THAN SIX FEET ABOVE THE FLOOR. PIPING LOCATED WITHIN SIX FEET OF THE FLOOR SHALL BE SUPPORTED ON FABRICATED STANDS OR PIERS. WHERE PIPING RUNS ALONG WALLS, SUITABLE WALL TYPE AND GANG-TYPE HANGERS SHALL BE PROVIDED.

4.) PIPING AND TUBING SHALL BE SUPPORTED AT ALL CHANGES IN DIRECTION. MAXIMUM DEFLECTION SHALL BE 1/8". MAXIMUM SPACING BETWEEN SUPPORTS SHALL BE:

MATERIAL	1/2" - 1-1/4"	1-1/2" - 2"
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COPPER TUBING 6 FT O.C. 10 FT O.C.

5.) HANGER RODS FOR BOTH SINGLE AND DOUBLE ROD HANGERS SHALL CONFORM TO THE FOLLOWING SCHEDULE OF DIAMETERS:

STEEL PIPE		COPPER TUBING	
PIPE SIZE	HANGER ROD Ø	PIPE SIZE	HANGER ROD Ø
1/2" - 1"	- 3/8"	1/2" - 2"	- 3/8"
1-1/4" - 2"	- 1/2"	2-1/2" - 5"	- 5/8"
2-1/2" - 4"	- 1/2"	5" - 6"	- 3/4"

6.) COPPER PLATED PIPE HANGERS AND SUPPORTS SHALL BE USED FOR VERTICAL AND HORIZONTAL RUNS OF COPPER OR BRASS PIPE AND TUBING WHERE THE HANGER IS IN DIRECT CONTACT WITH THE PIPE, OTHERWISE STEEL HANGERS AND SUPPORTS SHALL BE USED.

7.) PIPE HANGERS AND SUPPORTS COMPLETE WITH RODS, BOLTS, LOCKNUTS, SWIVELS, COUPLINGS, BRACKETS AND ALL OTHER COMPONENTS AND ACCESSORIES SHALL BE PROVIDED.

S.) HANGER TYPES

1.) IN GENERAL, HANGERS SHALL BE OF CLEVIS TYPE OR ROLL TYPE WITH VERTICAL ADJUSTMENT. WHERE SEVERAL LINES OF PIPING RUN AS A COMMON GROUP, THEY SHALL BE SUPPORTED ON A COMMON HANGER BAR OF GALVANIZED CHANNEL OR BACK TO BACK ANGLE SECTIONS OR "UNISTRUT" TYPE SUPPORTS.

2.) HANGERS SHALL BE AS FOLLOWS:

APPLICATION	CENTRAL IRON FIG. NO.
CLEVIS HANGER	10
RISER CLAMP - THRU 3"	261
RISER CLAMP - OVER 3"	262
ROLL HANGER THRU 6"	272
ROLL HANGER OVER 6"	171

3.) ALTERNATE MANUFACTURERS: GRINELL, GRABLER, CRANE

M-29 WATER TREATMENT - NOT USED.

M-30 AUTOMATIC TEMPERATURE CONTROLS

A.) PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES, AND PERFORM ALL OPERATIONS REQUIRED FOR THE AUTOMATIC TEMPERATURE CONTROL SYSTEM.

B.) THE CONTROL SYSTEM SHALL BE COMPLETE WITH ALL NECESSARY CONTROL DEVICES, THERMOSTATS, VALVES, SWITCHES, PANELS AND CONTROL WIRING TO PROVIDE THE DESCRIBED FUNCTIONS. PROVIDE INFORMATION TO THE ELECTRICAL CONTRACTOR REQUIRED TO PERMIT INSTALLATION OF POWER WIRING TO ANY CONTROL COMPONENTS.

C.) THE CONTROLS MANUFACTURER SHALL FURNISH FACTORY WIRED CONTROL PANELS WHICH SHALL HOUSE ALL RELAYS, DEVICES, SWITCHES, TRANSFORMERS, TERMINAL STRIPS, ETC., AS REQUIRED FOR THE COMPLETE TEMPERATURE CONTROL OF THE SYSTEM.

D.) ALL CONTROLS SHALL BE THE PRODUCT OF ONE (1) MANUFACTURER AND ALL COMPONENTS SHALL BE U.L. APPROVED WHERE APPLICABLE. SYSTEM SHALL BE THE LATEST TOP QUALITY EQUIPMENT AND SHALL BE INSTALLED COMPLETE IN ALL RESPECTS BY COMPETENT MECHANICS, REGULARLY EMPLOYED BY THE MANUFACTURER OF THE CONTROL SYSTEM. ALL AUTOMATIC CONTROL VALVES AND DAMPERS SHALL BE MANUFACTURED BY THE CONTROL MANUFACTURER.

E.) AFTER COMPLETION OF THE CONTROL SYSTEM WORK, THE CONTROL MANUFACTURER SHALL REGULATE AND ADJUST ALL THERMOSTATS, CONTROL VALVES, ETC., AND PLACE THEM IN COMPLETE OPERATING CONDITION SUBJECT TO THE REVIEW OF THE ENGINEERS. COMPLETE INSTRUCTIONS SHALL BE GIVEN TO THE OPERATING PERSONNEL AND/OR OWNER.

F.) THE CONTROL SYSTEM HEREIN SPECIFIED SHALL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIAL UNDER NORMAL USE AND SERVICE. IF, WITHIN ONE (1) YEAR FROM DATE OF ACCEPTANCE BY THE OWNER, ANY EQUIPMENT HEREIN DESCRIBED IS PROVIDED TO BE DEFECTIVE IN WORKMANSHIP OR MATERIAL, IT SHALL BE ADJUSTED, REPAIRED OR REPLACED FREE OF CHARGE.

G.) DELIVER TO THE OWNER TWO (2) COPIES OF THE AS-INSTALLED CONTROL SYSTEM, LAMINATED IN CLEAR PLASTIC. PROVIDE IDENTIFYING TAGS ON ALL CONTROLS TO CONFORM TO THE DESIGNATIONS ON THE CONTROL DIAGRAMS.

H.) ALL CONTROL WIRING SHALL BE RUN IN EMT OR GALVANIZED CONDUIT. CONTROL CONDUIT AND/OR PIPING SHALL BE CONCEALED IN ALL SPACES EXCEPT IN MECHANICAL EQUIPMENT ROOMS AND UNFINISHED SPACES, AND SHALL BE INSTALLED IN PARALLEL BANKS WITH ALL CHANGES IN DIRECTIONS MADE AT 90 DEGREE ANGLES. CONTROL AND INSTRUMENT WIRING SHALL NOT BE INSTALLED ON DUCTWORK. WIRING AND PIPING SHALL BE SECURED TO THE BUILDING STRUCTURE, SUCH AS WALLS, COLUMNS, UNDERSIDE OF SLABS, ETC.

I.) ALL CONTROLLERS SHALL BE OF THE FULLY PROPORTIONING TYPE AND SHALL BE PROVIDED WITH AN ADJUSTABLE THROTTLING RANGE, MINIMUM RANGE SHALL BE 1°F. ALL ROOM THERMOSTATS SHALL BE LOCATED AS SHOWN ON THE PLANS. ALL THERMOSTATS AND OTHER CONTROLLERS SHALL HAVE ADJUSTABLE SET POINTS.

J.) PROVIDE A MINIMUM OF 5 FEET EXCESS CONTROL WIRING TO EACH THERMOSTAT FOR FUTURE RELOCATION OF THERMOSTATS. EXCESS CONTROL WIRING SHALL BE NEATLY BUNDLED AND SECURED.

M-31 SEQUENCE OF OPERATIONS

1.) THIS CONTRACTOR SHALL PROVIDE A CONTROL SYSTEM COMPLETE WITH ALL NECESSARY WIRING, VALVES, INTERLOCKS, PANELS, ETC. FOR SYSTEM TO OPERATE AS SPECIFIED IN THE SEQUENCE OF OPERATION.

2.) SUBMITTALS FOR REVIEW

A.) SHOP DRAWINGS: INDICATE ALL MECHANICAL CONTROLLED COMPONENTS AND CONTROL SYSTEM COMPONENTS. LABELLED WITH SETTINGS, AND ADJUSTABLE RANGE OF CONTROLS AND LIMITS. INCLUDE WRITTEN DESCRIPTION OF CONTROL SEQUENCE.

B.) INCLUDE FLOW DIAGRAMS FOR EACH CONTROL SYSTEM, GRAPHICALLY DEPICTING CONTROL LOGIC. INCLUDE DRAFT COPIES OF GRAPHIC DISPLAYS INDICATING MECHANICAL SYSTEM COMPONENTS, CONTROL SYSTEM COMPONENTS, AND CONTROLLED FUNCTION STATUS AND VALUE.

3.) DESIGN BASIS

A.) THE HVAC EQUIPMENT BASIS OF DESIGN IS DAIKIN. ALL BIDDERS SHALL FURNISH THE MINIMUM SYSTEM STANDARDS AS DEFINED BY THE BASE BID MODEL NUMBERS, MODEL FAMILIES OR AS OTHERWISE SPECIFIED HEREIN (SEE KEY GENERAL SPECIFICATIONS ALTERNATE SUPPLIER CHECKLIST). IN ANY EVENT THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SPECIFIED ITEMS AND INTENTS OF THIS DOCUMENT WITHOUT FURTHER COMPENSATION.

4.) AHU - MODEL #: FXM024PB - CONCEALED CEILING DUCTED UNIT (MED. STATIC)

A.) INDOOR UNIT:

1. THE DAIKIN INDOOR UNIT FXM024PB SHALL BE COMPLETELY FACTORY ASSEMBLED AND TESTED. INCLUDED IN THE UNIT IS FACTORY WIRING, PIPING, ELECTRONIC PROPORTIONAL EXPANSION VALVE, CONTROL CIRCUIT BOARD, FAN MOTOR THERMAL PROTECTOR, FLARE CONNECTIONS, CONDENSATE DRAIN PAN, CONDENSATE DRAIN PUMP, CONDENSATE SAFETY SHUTOFF AND ALARM, SELF-DIAGNOSTICS, AUTO-RESTART FUNCTION, 3-MINUTE FUSED TIME DELAY, AND TEST RUN SWITCH. THE UNIT SHALL BE EQUIPPED WITH AUTOMATICALLY ADJUSTING EXTERNAL STATIC PRESSURE LOGIC THAT IS SELECTABLE DURING COMMISSIONING. THIS ADJUSTS THE AIRFLOW BASED ON THE INSTALLED EXTERNAL STATIC PRESSURE.
2. INDOOR UNIT AND REFRIGERANT PIPES WILL BE CHARGED WITH DEHYDRATED AIR PRIOR TO SHIPMENT FROM THE FACTORY.
3. BOTH REFRIGERANT LINES SHALL BE INSULATED FROM THE OUTDOOR UNIT.
4. THE INDOOR UNITS SHALL BE EQUIPPED WITH A CONDENSATE PAN AND CONDENSATE PUMP. THE CONDENSATE PUMP PROVIDES UP TO 18-3/8" OF LIFT FROM THE CENTER OF THE DRAIN OUTLET AND HAS A BUILT IN SAFETY SHUTOFF AND ALARM.
5. THE INDOOR UNITS SHALL BE EQUIPPED WITH A RETURN AIR THERMISTOR.
6. THE INDOOR UNIT WILL BE SEPARATELY POWERED WITH 208-230V/1-PHASE/60HZ.

B.) CONTROL:

1. THE UNIT SHALL HAVE CONTROLS PROVIDED BY DAIKIN TO PERFORM INPUT FUNCTIONS NECESSARY TO OPERATE THE SYSTEM.
2. THE UNIT SHALL BE COMPATIBLE WITH A DAIKIN INTELLIGENT TOUCH MANAGER ADVANCED MULTI-ZONE CONTROLLER.

C.) OPTIONAL ACCESSORIES AVAILABLE:
1. MERV 13 FILTER KIT. CAN BE CONFIGURED FOR RIGHT OR LEFT ACCESS. FILTERS REPLACEABLE WITHOUT TOOLS.

D.) SECTION INCLUDES

1. THE DZK ZONING SOLUTION FOR VRV INDOOR UNITS INCLUDE:
 - 1.1. DZK ZONING KITS - DZK030E5-3
 - 1.2. DZK ZONE THERMOSTATS
 - 1.2.1. DZK-MTS-3-W WIRED THERMOSTAT
 - 1.2.2. DZK-ZTS-3-W WIRELESS THERMOSTAT
2. DZK ZONING KIT

GENERAL REQUIREMENTS:

1. EACH UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED AND TESTED.
2. THE FACTORY ASSEMBLED PLENUM AND ZONE OUTLETS SHALL BE FULLY INSULATED WITH CLOSED-CELL, R4 FOIL FACED INSULATION.
3. THE PLENUM DIMENSIONS SHALL BE SUITABLE FOR FIELD ATTACHMENT DIRECTLY TO THE COMPATIBLE VRV FAN COIL UNIT.
4. THE UNIT SHALL INCLUDE MULTIPLE MOTORIZED ZONE DAMPER OUTLETS CAPABLE OF MODULATING THE AIRFLOW VOLUME TO THE ZONE OUTLET IN RESPONSE TO THE DEMAND IN EACH ZONE. THE QUANTITY OF MOTORIZED DAMPER OUTLETS SHALL BE FIVE.
5. THE UNIT SHALL INCLUDE A FACTORY MOUNTED CONTROL PCB MOUNTED IN AN ENCLOSURE MEETING IP20 PROTECTION CLASS REQUIREMENTS.
6. THE UNIT SHALL INCLUDE A FACTORY MOUNTED DAIKIN D-III NET INTERFACE BOARD TO ALLOW THE DZK ZONING BOX TO DIRECTLY CONNECT TO AND CONTROL THE DAIKIN VRV FAN COIL UNIT.

PERFORMANCE

1. THE UNIT'S NOMINAL CAPACITY IS BASED ON THE NOMINAL CAPACITY OF THE CONNECTED VRV INDOOR UNIT.
2. AMBIENT TEMPERATURE OPERATION RANGE: 32°F-122°F
3. AMBIENT HUMIDITY OPERATION RANGE: 5-90%RH (NON-CONDENSING).

CONTROL

1. THE UNIT SHALL BE CAPABLE OF DIRECT CONTROL INTEGRATION TO THE VRV INDOOR UNIT VIA THE P1/P2 CONTROL PROTOCOL, ALLOWING THE DZK ZONING BOX TO TURN THE VRV INDOOR UNIT ON AND OFF, AND ALLOWING THE DZK ZONING BOX TO CONTROL THE VRV INDOOR UNIT'S MODE OF OPERATION (HEATING/COOLING/FAN), FAN SPEED, AND TEMPERATURE SET POINT.
2. THE UNIT SHALL AUTOMATICALLY ADJUST EACH DAMPER POSITION IN RESPONSE TO INFORMATION FROM THE DAMPER'S ASSOCIATED DZK-MTS-3-W WIRED THERMOSTAT OR DZK-ZTS-3-W WIRELESS THERMOSTAT.
3. EACH DAMPER SHALL BE CAPABLE OF MODULATING THROUGH UP TO FIVE (5) DAMPER POSITIONS, INCLUDING FULLY CLOSED.
4. THE UNIT SHALL ALLOW FOR FLEXIBLE ZONE SET UP AND CONFIGURATION TO MATCH THE ZONING INTENT INDICATED ON THE MECHANICAL PLANS, INCLUDING:
 - 4.1. ADJUSTABLE MINIMUM/MAXIMUM DAMPER OPENING POSITIONS.
 - 4.2. ZONE CLOSURE / NON-USE OF ZONE.
 - 4.3. LINKAGE OF ONE OR MORE ZONES FOR SIMULTANEOUS CONTROL BY A SINGLE THERMOSTAT.
5. OPERATION MODES
 - 5.1. COOL: THE VRV INDOOR SHALL OPERATE IN COOLING MODE ANY TIME THERE IS A COOLING DEMAND FROM ANY ZONE.
 - 5.2. HEAT: THE VRV INDOOR UNIT SHALL OPERATE IN HEATING MODE ANY TIME THERE IS A HEATING DEMAND FROM ANY ZONE.
 - 5.3. AUTO: THE VRV INDOOR UNIT SHALL SWITCH BETWEEN HEATING AND COOLING OPERATION DEPENDING ON THE GLOBAL DEMAND OF ALL ZONES.
 - 5.4. DRY: THE VRV INDOOR UNIT WILL OPERATE IN THE DRY MODE ANY TIME THERE IS A COOLING DEMAND FROM ANY ZONE.
 - 5.5. EMERGENCY HEAT: THE UNIT WILL ACTIVATE THE FIELD INSTALLED AUXILIARY HEAT SOURCE ANY TIME THERE IS A HEATING DEMAND FROM ANY ZONE.
6. USER MODE SETTINGS FOR ADJUSTMENT OF PRE-CONFIGURED SET POINT TEMPERATURES AND SET POINT RANGE LIMITS ACCORDING TO THE USER-SELECTED USER MODE. THE AVAILABLE USER MODE SETTINGS SHALL INCLUDE:
 - 6.1. COMFORT, ECO, NIGHT TIME, UNOCCUPIED, VACATION, STOP
7. THE UNIT'S CONTROL BOARD SHALL INCLUDE A NORMALLY-CLOSED DRY CONTACT INPUT THAT WILL CLOSE ALL DAMPERS IF ACTIVATED (OPEN CIRCUIT).
8. THE UNIT'S CONTROL BOARD SHALL BE CAPABLE OF CONNECTING A FIELD SUPPLIED THERMISTOR FOR MEASURING SUPPLY AIR TEMPERATURE. THE THERMISTOR SPECIFICATION SHALL BE NTC 10K - B₂₅₋₈₅ 3977.

3. DZK MTS-3-W WIRED THERMOSTAT

1. THE THERMOSTAT SHALL BE MOUNTED TO THE WALL IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS. THE SELECTED INSTALLATION LOCATION SHOULD AVOID DIRECT SUNLIGHT OR INCANDESCENT SPOT LIGHTS FOR THE BEST TEMPERATURE READINGS.
2. THE THERMOSTAT SHALL BE WIRED TO THE DZK ZONING BOX CONTROL BOARD ACCORDING TO THE WIRING REQUIREMENTS
3. THE SET POINT TEMPERATURE SHALL DISPLAY IN 1°F INCREMENTS WITH A RANGE OF 59°F TO 86°F.
4. THE ROOM TEMPERATURE SHALL DISPLAY IN 1°F INCREMENTS WITH A RANGE OF 50°F TO 95°F.
5. THE THERMOSTAT SHALL SUPPORT INDEPENDENT COOLING AND HEATING SET POINT TEMPERATURES. THE SET POINT DIFFERENTIAL SHALL BE ADJUSTABLE FROM 0-7°F. THE THERMOSTAT SHALL ALSO SUPPORT SINGLE SET POINT OPERATION IF DESIRED BY USER.
6. THE THERMOSTAT SHALL ALLOW FOR SYSTEM SETTING AND CONFIGURATION, INCLUDING:
 - 6.1. MINIMUM COOLING SET POINT TEMPERATURE (64-78°F ADJUSTABLE)
 - 6.2. MAXIMUM HEATING SET POINT TEMPERATURE RANGE (66-86°F ADJUSTABLE)
 - 6.3. DAMPER TYPE-OF-OPENING CONFIGURATION
 - 6.4. HEATING SUPPLY TEMPERATURE LIMIT PROTECTION SETTING
 - 6.5. AWAY-MODE HYSTERESIS SETTINGS FOR UNOCCUPIED AND VACATION USER MODES
 - 6.6. ROOM TEMPERATURE DISPLAY - SHOW OR HIDE THE ROOM TEMPERATURE AND/OR RELATIVE HUMIDITY
 - 6.7. SYSTEM RESET
7. THE THERMOSTAT SHALL SUPPORT 6 CONFIGURABLE PERIODS:
8. WAKE, DAY, EVENING, SLEEP, OCCUPIED, AND UNOCCUPIED.

OLA Consulting Engineers



**50 Broadway,
Hawthorne, NY 10532
914.747.2800**

**8 West 38th Street,
Suite 501
New York, NY 10018
646.849.4110**

olace.com

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1	ISSUED FOR CLIENT REVIEW	03/20/2023
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No.	ISSUE OR REVISION	DATE


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PROJECT TITLE

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DRAWING TITLE

**MECHANICAL
SPECIFICATIONS
2 OF 3**

SEAL	SCALE	PROJECT NO.
	AS NOTED	NYPL0001.00
	DRAWN BY	DRAWING NO.
	AE	M0.3
	CHECKED BY	
RJ	DATE	03/03/2023

SPECIFICATIONS CONTINUED

4. DZK ZTS-3-W WIRELESS THERMOSTAT
1. THE THERMOSTAT SHALL BE MOUNTED TO THE WALL IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS. THE SELECTED INSTALLATION LOCATION SHOULD AVOID DIRECT SUNLIGHT OR INCANDESCENT SPOT LIGHTS FOR THE BEST TEMPERATURE READINGS.
2. THE THERMOSTAT SHALL COMMUNICATE WIRELESS VIA RADIO SIGNAL TO THE DZK CONTROL BOARD.
3. THE SET POINT TEMPERATURE SHALL DISPLAY IN 1°F INCREMENTS WITH A RANGE OF 59°F TO 86°F.
4. THE ROOM TEMPERATURE SHALL DISPLAY IN 1°F INCREMENTS WITH A RANGE OF 50°F TO 95°F.
5. THE MAXIMUM WIRELESS COMMUNICATION REACH SHALL BE 130 FT. IN A CLEAR LINE OF SIGHT.
6. CONTROL:
 - 6.1. THE THERMOSTAT SHALL DISPLAY THE ZONE'S:
 - 6.1.1. SET POINT TEMPERATURE
 - 6.1.2. ROOM TEMPERATURE
 - 6.1.3. OPERATION MODE
 - 6.1.4. USER MODE
 - 6.1.5. AIRFLOW CONTROL
 - 6.1.6. LOCAL VENTILATION (ENABLED OR DISABLED)
 - 6.1.7. ON-TIMER SETTING
 - 6.2. THE THERMOSTAT SHALL ALLOW THE USER TO CONTROL THE ZONE'S:
 - 6.3. ZONE ON/OFF
 - 6.4. SET POINT TEMPERATURE
 - 6.5. LOCAL VENTILATION
 - 6.6. ZONE ON-TIMER
7. THE THERMOSTAT SHALL ALLOW THE USER TO ADJUST ADVANCED SETTINGS FOR THE ZONE, INCLUDING:
 - 7.1. LINKED ZONES
 - 7.2. MENU MODE - ADVANCED OR BASIC CONFIGURATION
 - 7.3. ROOM TEMPERATURE OFFSET SETTING
 - 7.4. ZONE WEIGHT
 - 7.5. RESET THERMOSTAT

5.) CONTRACTOR SHALL COORDINATE ALL SCHEDULING TIMES WITH OWNER.

M-32 MISCELLANEOUS

A.) THE CONTRACTOR SHALL PROVIDE THE OWNERS WITH CATALOG DATA, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND RECORD (AS-BUILT) DRAWINGS OF ALL COMPLETED WORK. AS-BUILT DRAWINGS SHALL SHOW EXACT LOCATION OF ALL MECHANICAL SYSTEMS, EQUIPMENT, DUCTWORK, PIPING, ETC.

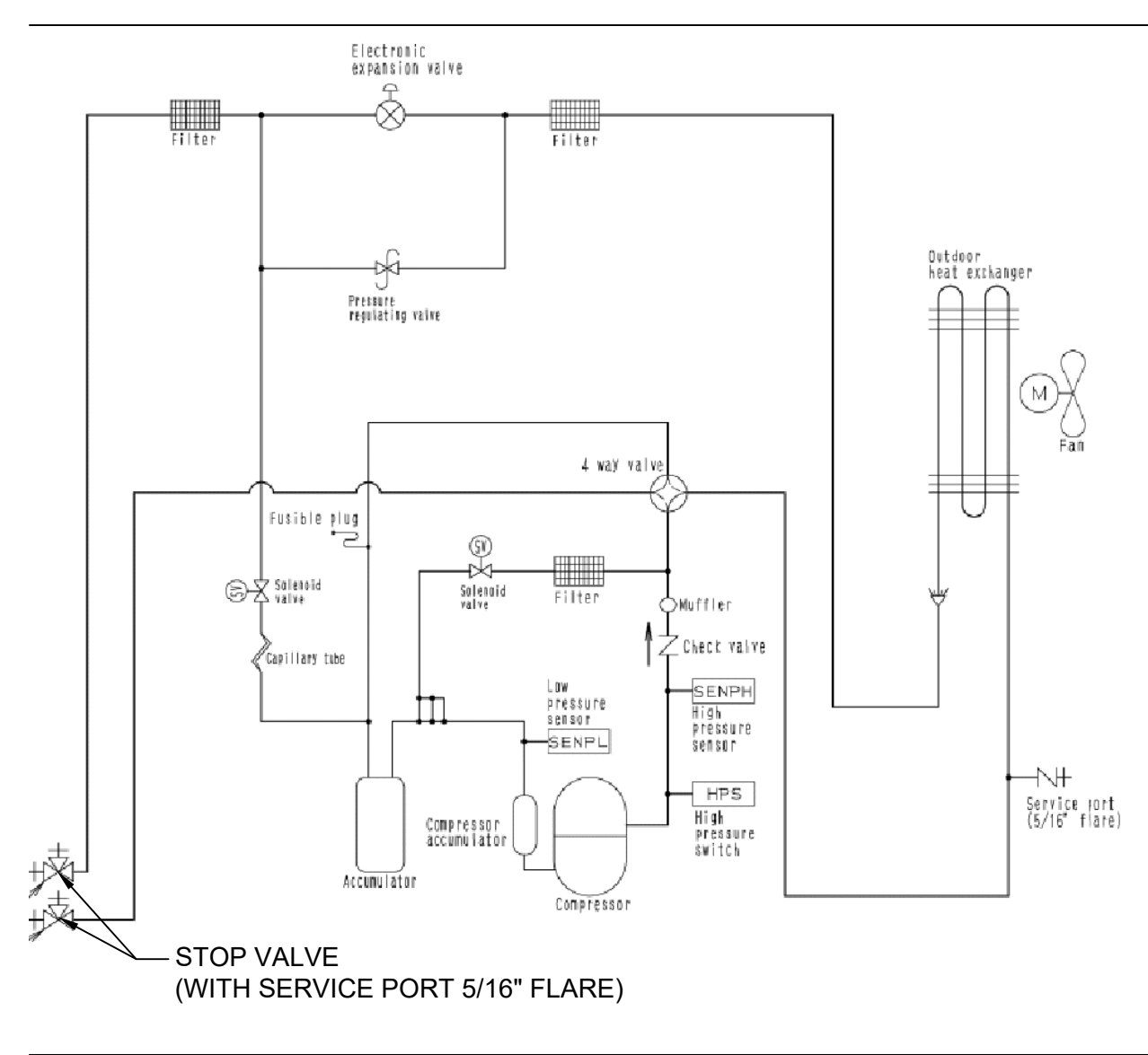
B.) SUBMIT THREE (3) SETS OF AS BUILT DRAWINGS AND AN ELECTRONIC FILE OF THE AS BUILT DOCUMENTS IN AN AUTO CAD LT 2004 FORMAT TO BUILDING MANAGEMENT.

C.) ALL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER.

END OF SPECIFICATIONS

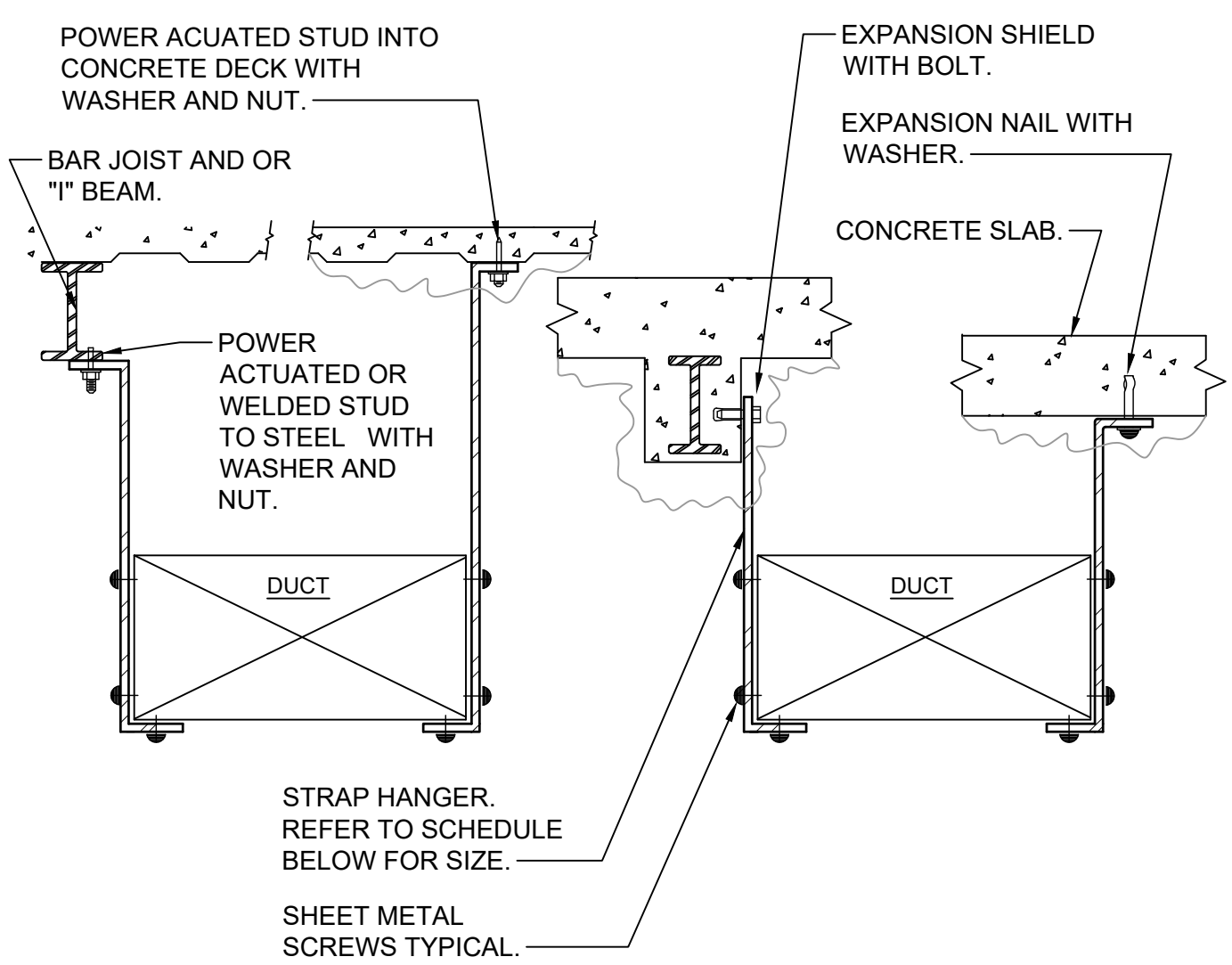
OLA Consulting Engineers
 50 Broadway,
 Hawthorne, NY 10532
 914.747.2800
 8 West 38th Street,
 Suite 501
 New York, NY 10018
 646.849.4110
 olace.com

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- NOTES:**
1. SUPPORT REFRIGERANT PIPING EVERY 6'-0" O.C.
 2. REFER TO MANUFACTURER'S RECOMMENDATIONS. PROVIDE AN ACCUMULATOR AS REQUIRED.
 3. REFER TO MECHANICAL PLAN FOR RS & RL LINE SIZES.

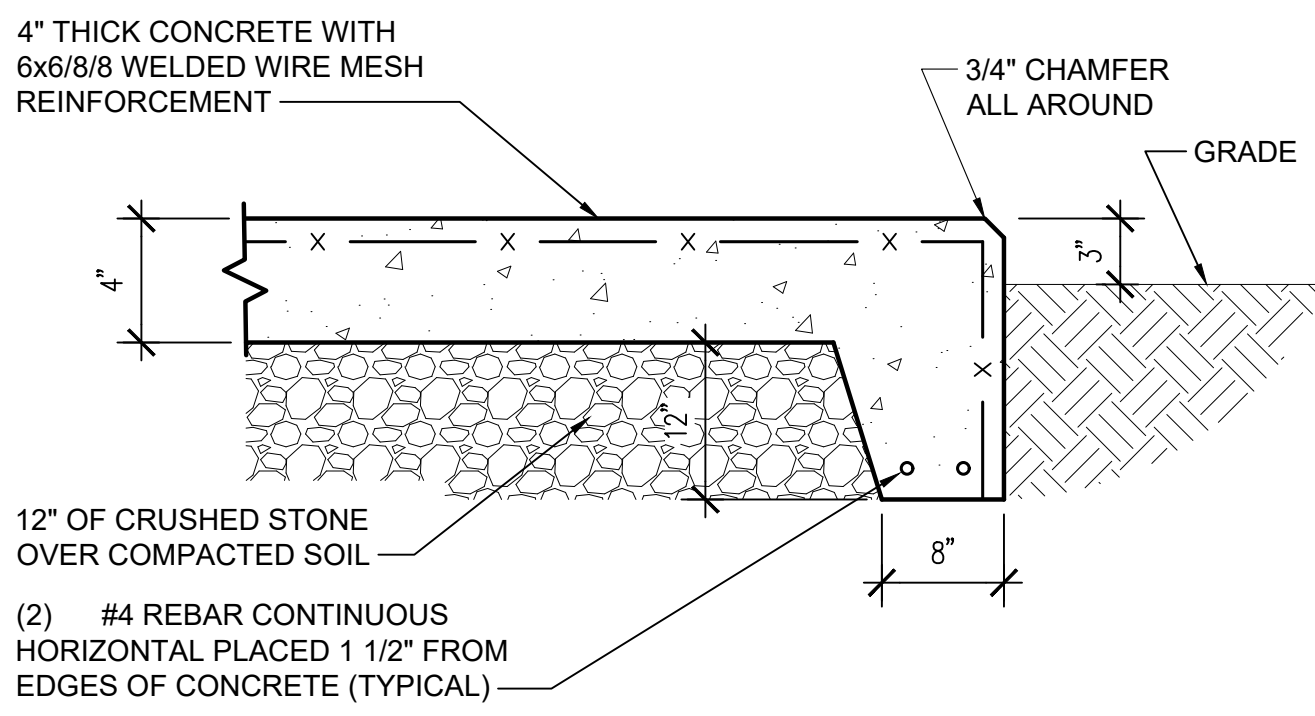
6 HEAT PUMP UNIT REFRIGERANT PIPING SCHEMATIC DETAIL
SCALE: NONE



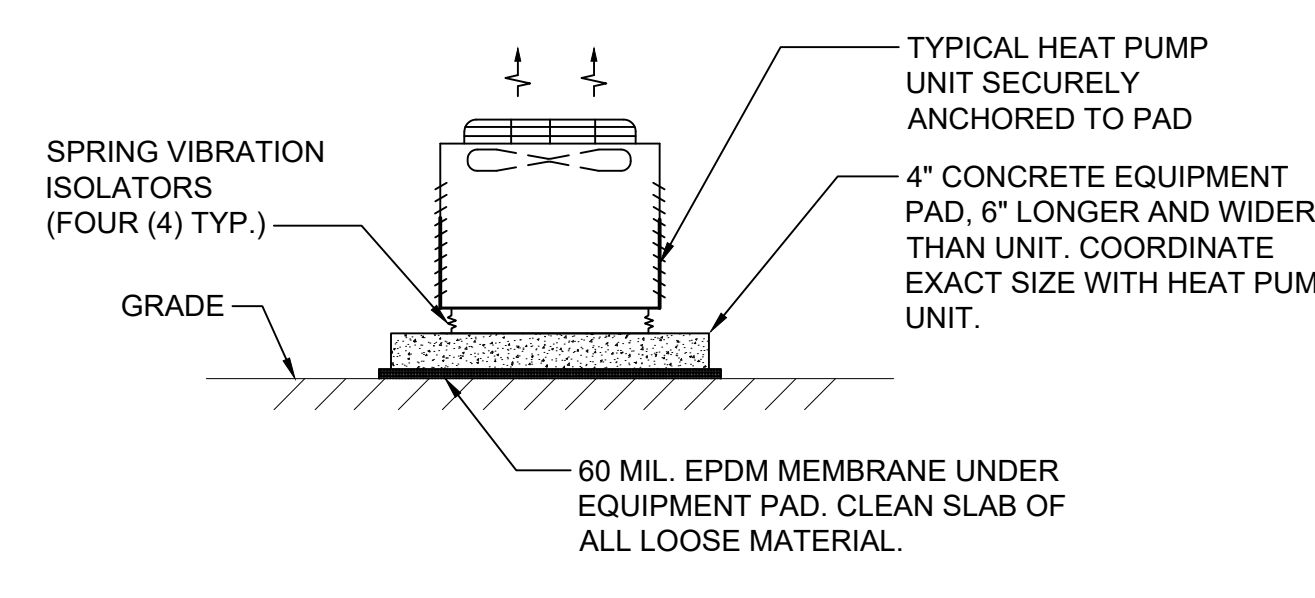
- NOTES:**
1. FOR DUCTS OVER 49" WIDE, THE STRAP HANGER SHALL BE TURNED UNDER THE BOTTOM OF THE DUCT.
 2. WHERE EXISTING BUILDING STRUCTURAL COMPONENTS HAVE FIREPROOF MATERIAL, ANY AREA THAT IS DISTURBED OR DAMAGED AS A RESULT OF HANGER INSTALLATION SHALL BE PATCHED WITH UL AND FM APPROVED FIREPROOFING TO MATCH EXISTING.

HANGER STRAP SCHEDULE		
DUCT SIZE	HANGER SIZE	MAXIMUM SPACING
UP TO 2 SQ. FT.	1" x 3/8"	8'-0"
2 SQ. FT. TO 4 SQ. FT.	1" x 1/2"	8'-0"
4 SQ. FT. TO 10 SQ. FT.	1" x 3/4"	6'-0"
OVER 10 SQ. FT.	1" x 1"	4'-0"

5 DUCT HANGER DETAIL
SCALE: NONE

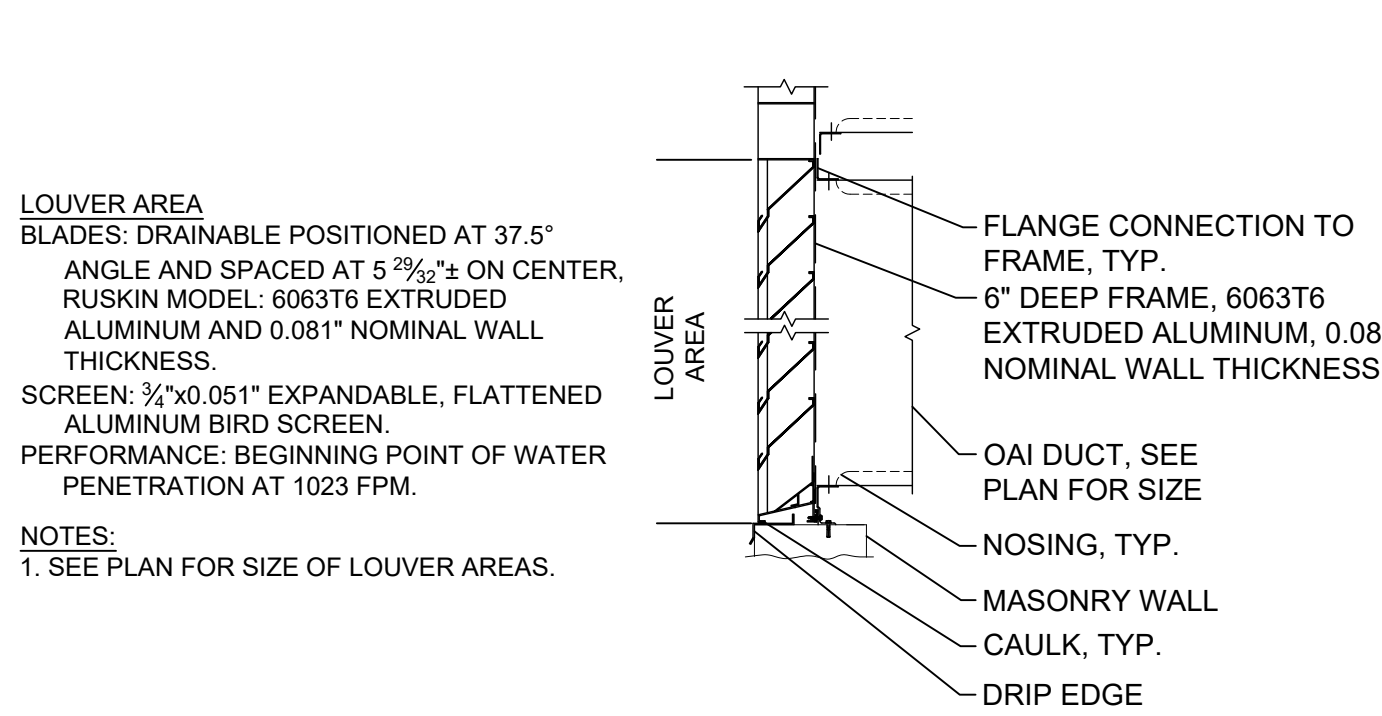


4 HEAT PUMP UNIT REFRIGERANT PIPING SCHEMATIC & MOUNTING DETAIL
SCALE: NONE

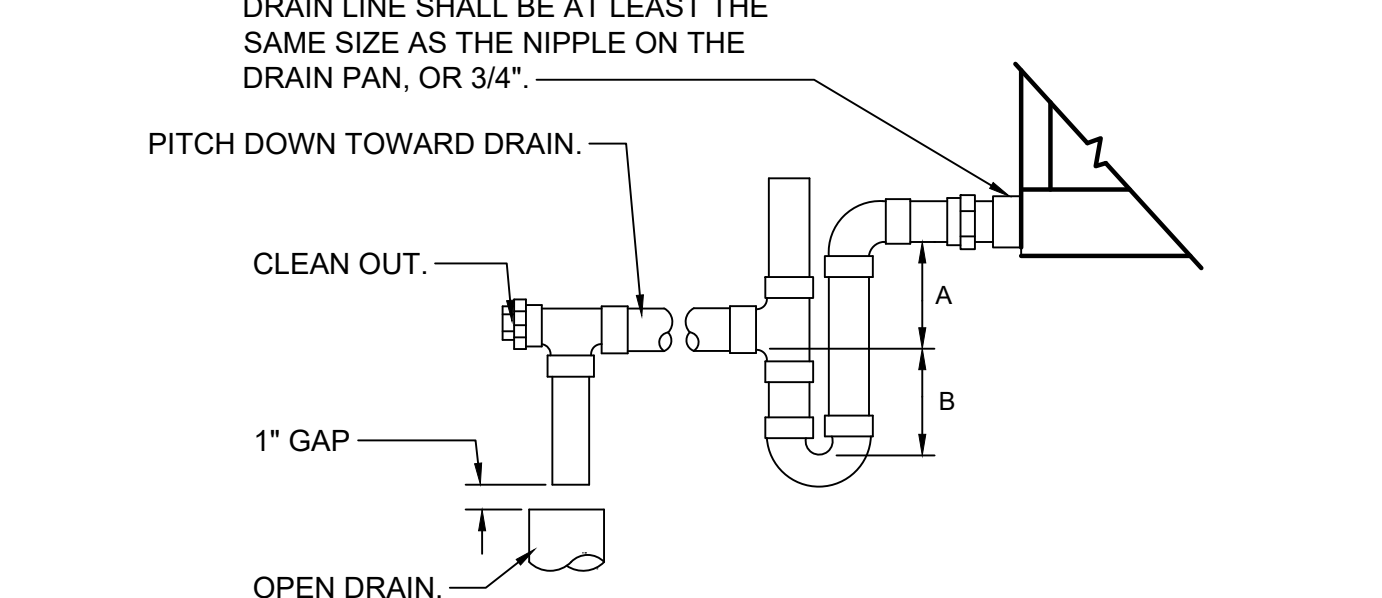


- NOTES:**
- 1.) ARRANGEMENT IS TYPICAL FOR UP FLOW OR HORIZONTAL FLOW HEAT PUMP UNITS.
 - 2.) EXTEND CONCRETE EQUIPMENT PAD SO THAT IT EXTENDS 12" LONGER AND WIDER THAN THE UNIT ON ALL SIDES.

3 HEAT PUMP UNIT SUPPORT PAD DETAIL
SCALE: NONE



2 LOUVER DETAIL
SCALE: NONE



1 AHU CONDENSATE DRAIN DETAIL
SCALE: NONE

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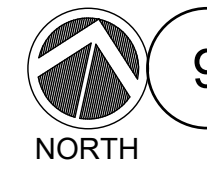
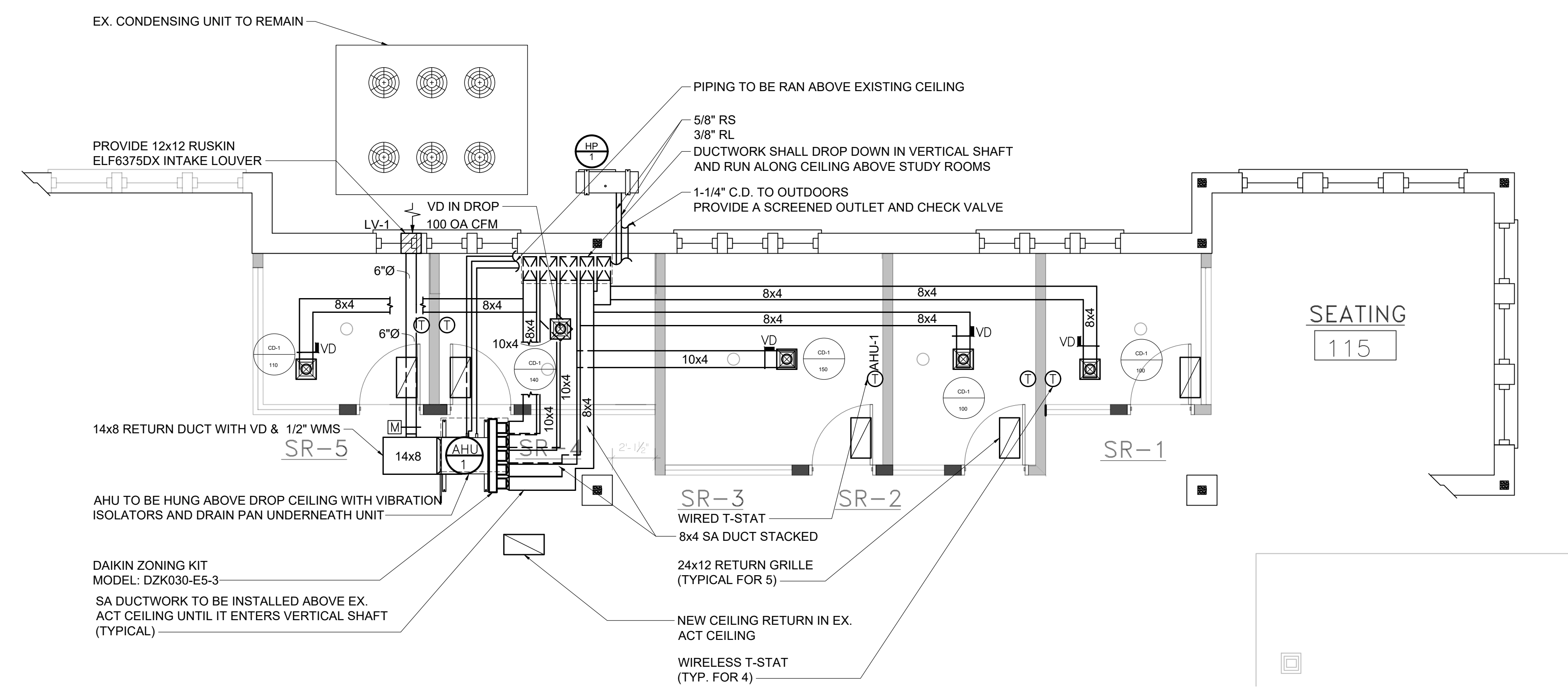
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DATE	03/03/2023	



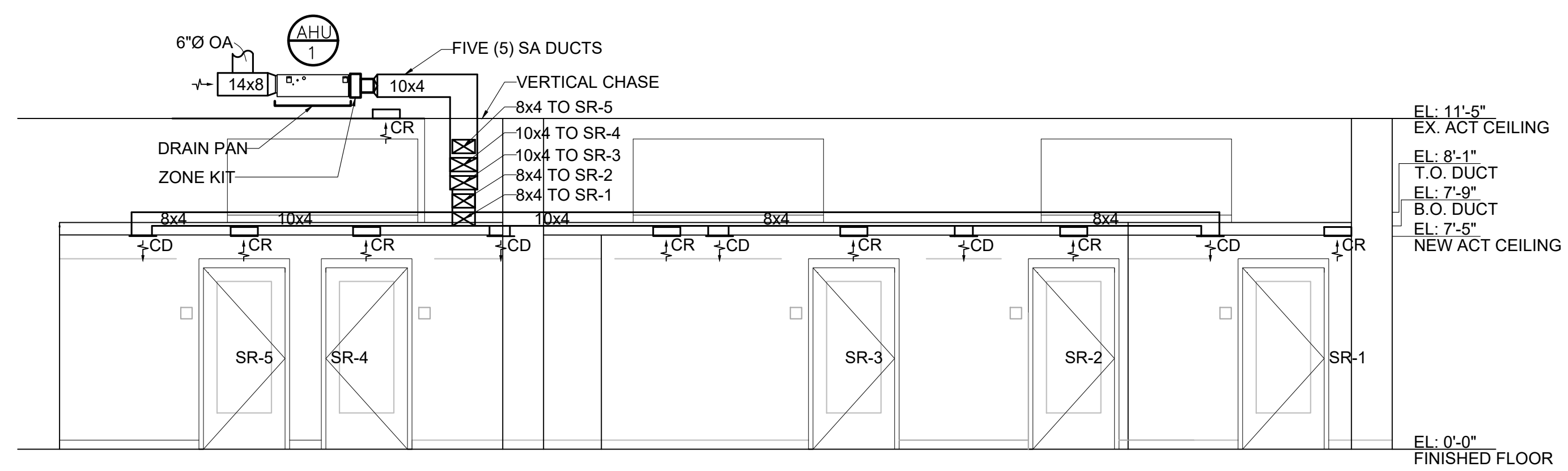
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 50 Broadway,
 Hawthorne, NY 10532
 914.747.2800
 8 West 38th Street,
 Suite 501
 New York, NY 10018
 646.849.4110
 olace.com



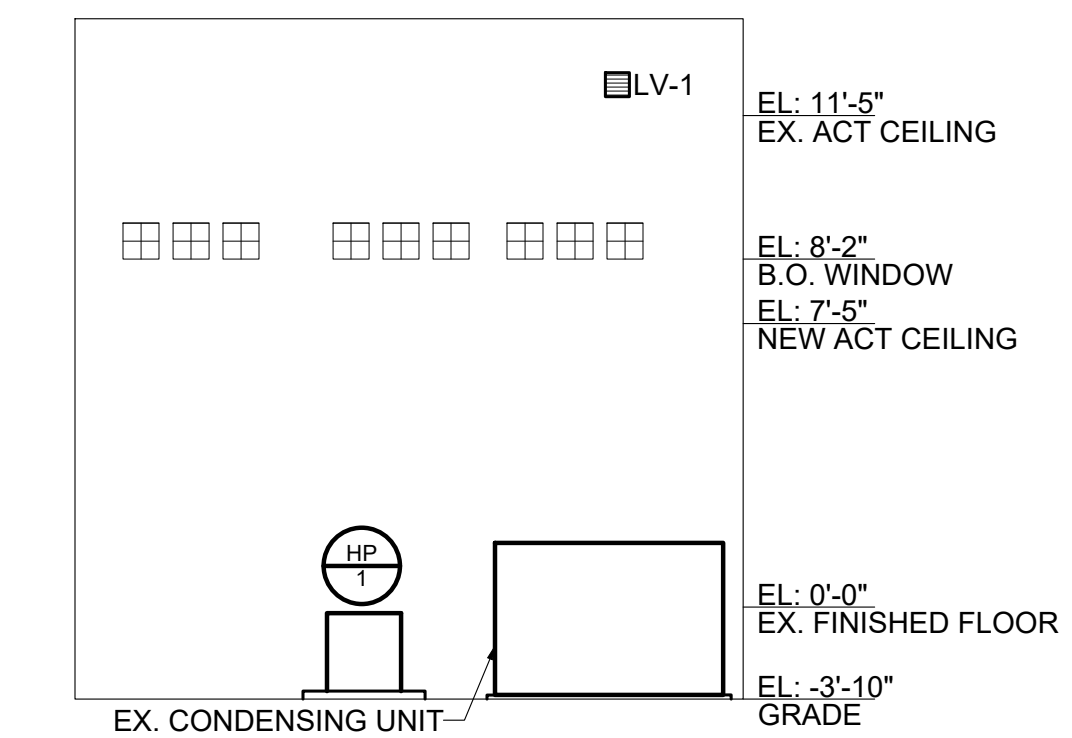
9 MECHANICAL FIRST FLOOR PLAN

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

- NOTES:
1. MAINTAIN ALL REQUIRED CLEARANCES AS PER MANUFACTURER'S INSTALLATION MANUAL.
 2. PROVIDE INSULATION ON REFRIGERANT PIPING.
 3. PROVIDE ZONE KIT CONNECTED TO INDOOR UNIT AS SHOWN. REFER TO MANUFACTURER'S INSTALLATION MANUAL.
 4. PROVIDE ONE (1) WIRED ZONE THERMOSTAT AND FOUR (4) WIRELESS ZONE THERMOSTATS.



2 INTERIOR MECHANICAL ELEVATION PLAN
 SCALE: 1/4" = 1'-0"



1 EXTERIOR MECHANICAL ELEVATION PLAN
 SCALE: 1/8" = 1'-0"

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