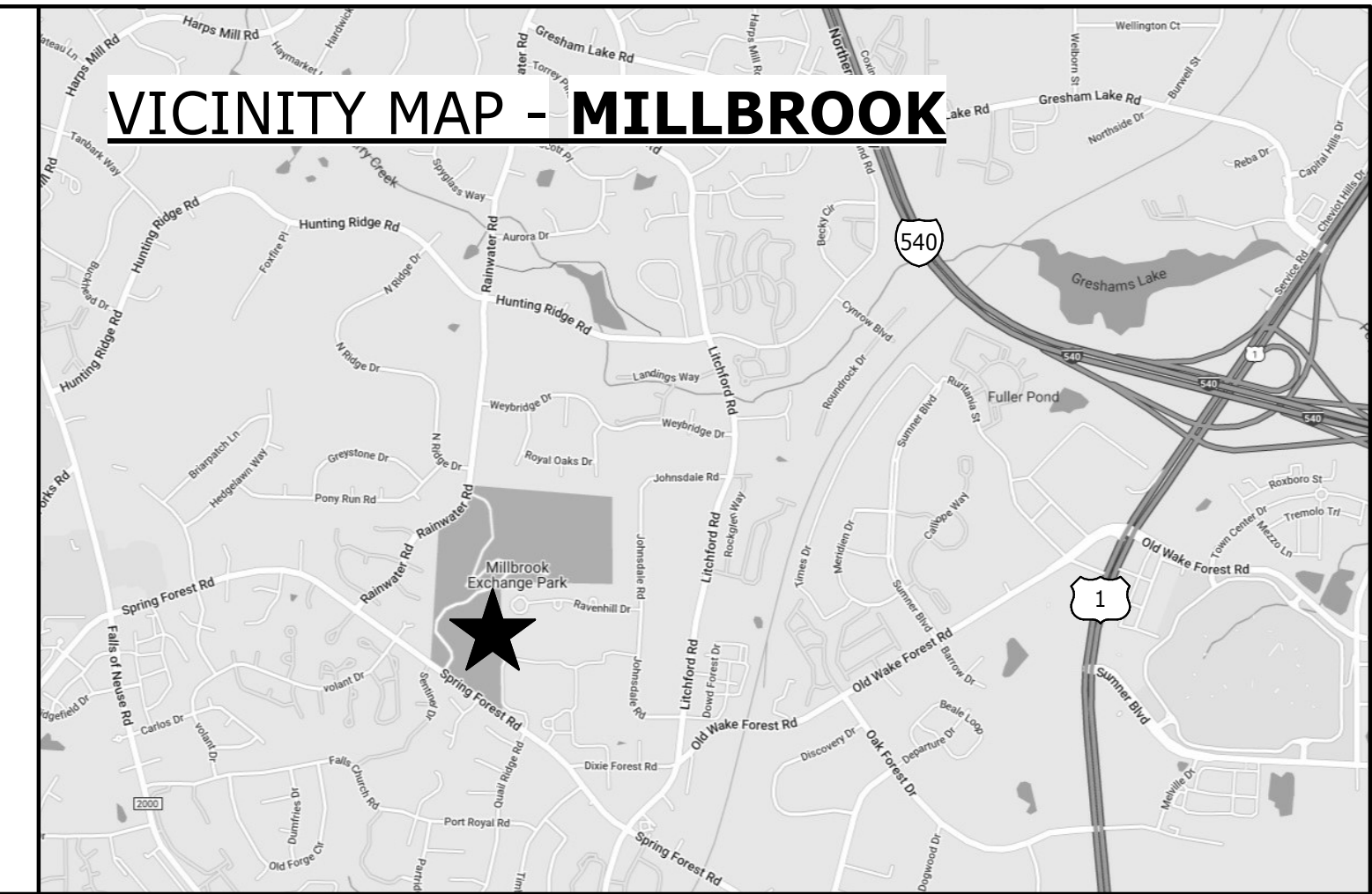


MILLBROOK EXCHANGE COMMUNITY CENTER HVAC REPLACEMENTS CITY OF RALEIGH

1905 SPRING FOREST ROAD, RALEIGH, NC 27615

SCO PROJECT NO.



1100 Dresser Court
Raleigh, NC 27609
Office 919.828.2301
Email office@hh-arch.com



DESIGN TEAM

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RALEIGH, NC 27605
CONTACT: Dana Beasley
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PROJECT NARRATIVE

MILLBROOK EXCHANGE WAS BUILT IN 1971 AND IS 15,495 SF COMMUNITY CENTER. THE BUILDING WILL HAVE HVAC SYSTEMS REPLACED (AIR HANDLER UNITS, CONDENSING UNITS, BOILER, HEATING HOT WATER PUMP, AND EXHAUST FANS) AND ALL EXISTING DUCTWORK, DIFFUSERS/GRILLES WILL BE REUSED. THE BOILER WILL BE RELOCATED IN THE INTERIOR OF THE BUILDING AND BOILER ROOM WILL BE ADDED TO THE BUILDING.

COMMUNITY CENTER HVAC REPLACEMENTS
(01 - MILLBROOK EXCHANGE)
CITY OF RALEIGH
1905 SPRING FOREST ROAD, RALEIGH, NC 27615
SCO PROJECT NO.

DRAWING LIST

00 - COVER	
G000	COVER SHEET
G001	GENERAL ARCHITECTURAL NOTES
G002	BUILDING CODE SUMMARY
G003	UL DETAILS
01 - ARCHITECTURAL	
A001	WALL TYPES, DOOR TYPE, AND DOOR SCHEDULE
A111	1st FLOOR PLAN AND REFLECTED CEILING PLAN
A610	EXTERIOR DETAILS
02 - PLUMBING	
P101	PLUMBING NOTES, PLANS, DETAILS, RISERS AND SCHEDULES
P102	GAS PIPING PLANS & RISER
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03 - MECHANICAL	
M001	MECHANICAL SCHEDULES, DETAILS AND NOTES
M002	MECHANICAL DETAILS & SCHEDULES
M101	MECHANICAL DEMOLITION PLAN
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04 - ELECTRICAL	
E001	ELECTRICAL SCHEDULES, DETAILS & NOTES
E101	ELECTRICAL DEMOLITION PLAN
E102	ELECTRICAL PLAN
E201	ELECTRICAL PANEL SCHEDULES AND RISER



NO.	REVISION	DATE

JOB NUMBER
23-084
DATE ISSUED
2/26/2025
PROJECT STATUS
ISSUED FOR BID

SHEET
COVER SHEET

ISSUED FOR BID
2/26/2025

G000

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ABBREVIATIONS

A.C.T.	ACOUSTICAL TILE
A.F.F.	ABOVE FINISHED FLOOR
A.R.A.	AREA OF RESCUE ASSISTANCE
ADJ	ADJACENT
ALT.	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
B.E.J.	BUILDING EXPANSION JOINT
BD	BOARD
BLDG	BUILDING
BOT	BOTTOM
BSMT	BASEMENT
C.F.C.I.	CONTRACTOR-FURNISHED CONTRACTOR-INSTALLED
C.F.O.I.	CONTRACTOR-FURNISHED OWNER-INSTALLED
C.J.	CONTROL JOINTS
C.O.	CLEAN OUT
C.T.	CERAMIC TILE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CPT	CARPET
DEPT	DEPARTMENT
DIA	DIAMETER
DIM	DIMENSION
DWG	DRAWING
E.J.	EXPANSION JOINT
E.W.C.	ELECTRIC WATER COOLER
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL

EQUIP	EQUIPMENT
EXIST	EXISTING
EXT	EXTERIOR
F.D.	FLOOR DRAIN
F.E.	FIRE EXTINGUISHER
F.F.E.	FURNITURE, FIXTURES, EQUIPMENT
F.O.E.W.	FACE OF EXISTING WALL
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
F.P.H.B	FREEZE-PROOF HOSE BIB
FACT	FACTORY FINISH
FE (SM)	SURFACE MOUNTED
FE (SR)	SEMI-RECESSED
FIN	FINISH
FLR	FLOOR
FLUOR	FLUORESCENT
FRP	FIBERGLASS REINFORCED PANELS
FTG	FOOTING
G.C.	GENERAL CONTRACTOR
G.D.S.	GUTTER DOWNSPOUT
GA	GAUGE
GALV	GALVANIZED
GWB	GYP SUM WALL BOARD
GYP.	GYP SUM
H.D.	HEAVY DUTY
H.M.	HOLLOW METAL
HDW	HARDWARE
HT	HEIGHT
I.D.	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
JT	JOINT
K	KIPS
LAM	LAMINATE
LAV	LAVATORY

M.O.	MASONRY OPENING
MAT'L	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NOM	NOMINAL
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.C.I.	OWNER-FURNISHED CONTRACTOR-INSTALLED
O.F.O.I.	OWNER-FURNISHED OWNER-INSTALLED
O.H.	OPPOSITE HAND
OVHD	OVERHEAD
P.L.	PLASTIC LAMINATE
P.S.F.	POUNDS PER SQ. FOOT
P.S.I.	POUNDS PER SQ. INCH
PART	PARTITION
PLY	PLYWOOD
PROP	PROPERTY
PT	PAINT
PVC	POLYVINYL CHLORIDE
Q.T.	QUARRY TILE
R	RADIUS
R.D.	ROOF DRAIN
R.D.L.	ROOF DRAIN LEADER
R/A	RETURN AIR
RCP	REFLECTED CEILING PLAN
REBAR	REINFORCING BAR
REC.	RECYCLING
REF	REFERENCE

REINF	REINFORCING
REQ'D	REQUIRED
REV	REVISION
RM	ROOM
S.C.	SOLID CORE
S.S.	STAINLESS STEEL
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ. FT.	SQUARE FEET
SQ. IN.	SQUARE INCH
STD	STANDARD
STL	STEEL
STRUC	STRUCTURAL
T.O.S.	TOP OF STEEL
TELE	TELEPHONE
THR'LD	THRESHOLD
TYP	TYPICAL
U.C.	UNDER COUNTER
U.N.O.	UNLESS NOTED OTHERWISE
V.C.T.	VINYL COMPOSITION TILE
V.W.C.	VINYL WALL COVERING
VERT	VERTICAL
W.C.	WATER CLOSET
W.G.	WIRE GLASS
W.W.F.	WELDED WIRE FABRIC
W/	WITH
WD	WOOD

SYMBOLS LEGEND

	ROOM / AREA
	DOOR ID.
	DETAIL
	NORTH ARROW
	ELEVATION CALLOUTS
	SECTION CALLOUT
	CEILING ELEVATION HEIGHT
	WINDOW TYPE
	PARTITION TYPE
	CASEWORK TYPE
	SPOT ELEVATION

GENERAL ARCHITECTURAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS, ELEVATIONS, AND OTHER REQUIREMENTS NECESSARY FOR CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
2. ALL DIMENSIONS ARE TO THE FACE OF CMU, FACE OF EXISTING WALL, OR FACE OF STUD, U.N.O., DIMENSIONS NOTED AS CLEAR ARE TO FACE OF FINISH.
3. REFERENCED FIRST FLOOR ELEVATION = 0' - 0".
4. GENERAL CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS. KEYNOTES DO NOT EXCLUDE CONTRACTOR FROM REPAIRING AND PATCHING ALL FLOORS, WALLS AND CEILINGS AS NEEDED AS A RESULT OF DEMOLITION WORK. GENERAL CONTRACTOR TO PREPARE ALL FLOORS AND WALL SUBSTRATES AS REQUIRED TO APPLY NEW FINISH AS INDICATED IN THE FINISH PLANS AND SPECIFICATIONS.

COMMUNITY CENTER HVAC REPLACEMENTS (01 - MILLBROOK EXCHANGE)

CITY OF RALEIGH
1905 SPRING FOREST ROAD, RALEIGH, NC 27615
SCO PROJECT NO.



NO.	REVISION	DATE

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PROJECT STATUS
ISSUED FOR BID

SHEET
GENERAL ARCHITECTURAL NOTES

G001

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

NAME OF PROJECT: **COMMUNITY CENTER HVAC REPLACEMENTS**
 ADDRESS: **1905 SPRING FOREST ROAD, RALEIGH, NC 27615** ZIP CODE: **-**
 OWNER/AUTHORIZED AGENT: **CITY OF RALEIGH** PHONE: **919.909.8673** EMAIL: **sarah.alexander@raleighnc.gov**
 OWNED BY: CITY/COUNTY PRIVATE STATE
 CODE ENFORCEMENT JURISDICTION: CITY **RALEIGH** COUNTY STATE

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
ARCHITECTURAL	HH ARCHITECTURE	SILER RANSMEIER, AIA	13024	919.828.2301	srsansmeier@hh-arch.com
CIVIL	N/A	-	-	-	-
ELECTRICAL	BAI ENGINEERING, PLLC	Nathan P. Birkedal	052020	919.341.4247	nph@ba-inc.com
FIRE ALARM	N/A	-	-	-	-
PLUMBING	BAI ENGINEERING, PLLC	Michael A. Jacobs	030561	919.341.4247	maj@ba-inc.com
MECHANICAL	BAI ENGINEERING, PLLC	Michael A. Jacobs	030561	919.341.4247	maj@ba-inc.com
SPRINKLER/STAMP	N/A	-	-	-	-
STRUCTURAL	N/A	-	-	-	-
RETAINING WALLS > 5' HIGH	N/A	-	-	-	-
PRE-CAST TRUSSES	N/A	-	-	-	-
LANDSCAPE	N/A	-	-	-	-
HAZMAT	N/A	-	-	-	-

2018 NC BUILDING CODE: NEW BUILDING ADDITION RENOVATION
 1st TIME INTERIOR COMPLETION
 SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS
 PHASED CONSTRUCTION - SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS

2018 NC EXISTING BUILDING CODE: EXISTING: PRESCRIPTIVE REPAIR CHAPTER 14 ALTERATION: LEVEL I LEVEL II LEVEL III HISTORIC PROPERTY OTHER USE OF USE

CONSTRUCTED (date): 1972 **CURRENT OCCUPANCY(S) (Ch. 3):** B/A-3
RENOVATED (date): - **PROPOSED OCCUPANCY(S) (Ch. 3):** B/A-3

RISK CATEGORY (Table 1604.5): **CURRENT:** I II III IV **PROPOSED:** I II III IV

CONSTRUCTED (date): - **ORIGINAL USE(S) (Ch. 3):** - **PROPOSED USE(S) (Ch. 3):** -
RENOVATED (date): - **CURRENT USE(S) (Ch. 3):** -

BASIC BUILDING DATA
 CONSTRUCTION TYPE: I-A II-A III-A IV-A V-A
 I-B II-B III-B V-B
 (check all that apply)
 SPRINKLERS: NO PARTIAL YES NFPA 13 NFPA 13R NFPA 13D
 STAMP/PIPES: NO YES CLASS I II III WET DRY
 FIRE DISTRICT: NO YES
 FLOOD HAZARD AREA: NO YES
 SPECIAL INSPECTIONS REQUIRED: NO YES (CONTACT THE LOCAL INSPECTION JURISDICTION FOR ADDITIONAL PROCEDURES AND REQUIREMENTS.)

GROSS BUILDING AREA TABLE			
FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd FLOOR	-	-	-
2nd FLOOR	-	-	-
MEZZANINE	-	-	-
1st FLOOR	15,242	0	15,242
BASEMENT	-	-	-
TOTAL			15,242 SF

ALLOWABLE AREA
PRIMARY OCCUPANCY CLASSIFICATION(S):
 ASSEMBLY A-1 A-2 A-3 A-4 A-5
 BUSINESS
 EDUCATIONAL
 FACTORY F-1 MODERATE F-2 LOW
 HAZARDOUS H-1 DETONATE H-2 DEFLAGRATE H-3 COMBUST H-4 HEALTH H-5 HPM
 INSTITUTIONAL I-1 CONDITION 1 2
 I-2 CONDITION 1 2
 I-3 CONDITION 1 2 3 4 5
 I-4
 MERCANTILE
 RESIDENTIAL R-1 R-2 R-3 R-4
 STORAGE S-1 MODERATE S-2 LOW HIGH-PILED
 PARKING GARAGE OPEN ENCLOSED REPAIR GARAGE
 UTILITY AND MISCELLANEOUS
ACCESSORY OCCUPANCY CLASSIFICATION(S): -
INCIDENTAL USES (Table 509): -
SPECIAL USES (Chapter 4 - List Code Sections): -
SPECIAL PROVISIONS (Chapter 5 - List Code Sections): -
MIXED OCCUPANCY: NO YES
 SEPARATION: - HR. EXCEPTION: -

NON-SEPARATED USE (508.3) - THE REQUIRED TYPE OF CONSTRUCTION FOR THE BUILDING SHALL BE DETERMINED BY APPLYING THE HEIGHT AND AREA LIMITATIONS FOR EACH OF THE APPLICABLE OCCUPANCIES TO THE ENTIRE BUILDING. THE MOST RESTRICTIVE TYPE OF CONSTRUCTION, SO DETERMINED, SHALL APPLY TO THE ENTIRE BUILDING.
 SEPARATED USE (508.4) - SEE BELOW FOR AREA CALCULATIONS FOR EACH STORY, THE AREA OF THE OCCUPANCY SHALL BE SUCH THAT THE SUM OF THE RATIOS OF THE ACTUAL FLOOR AREA OF EACH USE DIVIDED BY THE ALLOWABLE FLOOR AREA FOR EACH USE SHALL NOT EXCEED 1.

$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1.00$ AREA $\frac{\text{---}}{\text{---}} + \frac{\text{---}}{\text{---}} = X \leq 1.00$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2.1 AREA	(C) AREA FOR FRONTAGE INCREASE 1,5	(D) ALLOWABLE AREA PER STORY OR UNLIMITED 2,3
1	A-3	15,242	9,500	15,625	-

¹ Frontage area increases from Section 506.2 are computed thus:
 a. Perimeter which fronts a public way or open space having 20 feet minimum width = $\frac{\text{---}}{\text{---}}$ (F)
 b. Total building perimeter = $\frac{\text{---}}{\text{---}}$ (P)
 c. Ratio (F/P) = $\frac{\text{---}}{\text{---}}$ (F/P)
 d. W = Minimum width of public way = $\frac{\text{---}}{\text{---}}$ (W)
 e. Percent of frontage increase formula: $I_i = 100(F/P - 0.25) \times W/30 = \frac{\text{---}}{\text{---}}$ (%)
² Unlimited area applicable under conditions of section 507.
³ Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
⁴ The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.
⁵ Frontage increase is based on the unspinklered area value in Table 506.2.

ALLOWABLE HEIGHT		CODE REFERENCE
BUILDING HEIGHT IN FEET (Table 504.3)	-	-
BUILDING HEIGHT IN STORIES (Table 504.3)	-	-

¹ Provide code reference in the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	REQ'D	RATING		DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
			REQ'D	PROVIDED (w/ REDUCTION)				
STRUCTURAL FRAME, INCLUDING COLUMNS, GRIDERS, TRUSSES	-	0	-	-	-	-	-	-
BEARING WALLS	-	0	-	-	-	-	-	-
EXTERIOR	-	0	-	-	-	-	-	-
NORTH	-	0	-	-	-	-	-	-
EAST	-	0	-	-	-	-	-	-
WEST	-	0	-	-	-	-	-	-
SOUTH	-	0	-	-	-	-	-	-
INTERIOR	-	0	-	-	-	-	-	-
NONBEARING WALLS AND PARTITIONS	-	0	-	-	-	-	-	-
EXTERIOR WALLS	-	0	-	-	-	-	-	-
NORTH	-	0	-	-	-	-	-	-
EAST	-	0	-	-	-	-	-	-
WEST	-	0	-	-	-	-	-	-
SOUTH	-	0	-	-	-	-	-	-
INTERIOR WALLS & PARTITIONS	-	0	-	-	-	-	-	-
FLOOR CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS	-	0	-	-	-	-	-	-
FLOOR CEILING ASSEMBLY	-	N/A	-	-	-	-	-	-
COLUMNS SUPPORTING FLOORS	-	N/A	-	-	-	-	-	-
ROOF CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS	-	0	-	-	-	-	-	-
ROOF CEILING ASSEMBLY	-	0	-	-	-	-	-	-
COLUMNS SUPPORTING ROOF	-	0	-	-	-	-	-	-
SHAFT ENCLOSURES - EXIT	-	N/A	-	-	-	-	-	-
SHAFT ENCLOSURES - OTHER	-	N/A	-	-	-	-	-	-
CORRIDOR SEPARATION	-	0	-	-	-	-	-	-
OCCUPANCY/FIRE BARRIER SEPARATION	-	N/A	-	-	-	-	-	-
PARTY/FIRE WALL SEPARATION	-	N/A	-	-	-	-	-	-
SMOKE BARRIER SEPARATION	-	N/A	-	-	-	-	-	-
SMOKE PARTITION	-	N/A	-	-	-	-	-	-
TENANT / DWELLING UNIT / SLEEPING UNIT SEPARATION	-	N/A	-	-	-	-	-	-
INCIDENTAL USE SEPARATION (BOILER ROOM)	-	2-HR	2-HR	G003	U-419	P201	-	-

PERCENTAGE OF WALL OPENING CALCULATIONS			
FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWED F-AP**	TOTAL SHOWN ON PLANS (%)
-	-	-	-

LIFE SAFETY SYSTEM REQUIREMENTS
 EMERGENCY LIGHTING: NO YES
 EXIT SIGNS: NO YES
 FIRE ALARM: NO YES
 SMOKE DETECTION SYSTEM: NO YES PARTIAL
 CARBON MONOXIDE DETECTION: NO YES

LIFE SAFETY PLAN REQUIREMENTS
 LIFE SAFETY PLAN SHEET #: -
 FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7)
 ASSUMED AND REAL PROPERTY LINE LOCATIONS (IF NOT ON THE SITE PLAN)
 EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8)
 OCCUPANCY USE FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2)
 OCCUPANT LOADS FOR EACH AREA
 EXIT ACCESS TRAVEL DISTANCES (1017)
 COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(11))
 DEAD END LENGTHS (1020.4)
 CLEAR EXIT WIDTHS F²⁰⁰
 MAX. CALCULATED OCCUPANT LOAD PER EACH EXIT DOOR
 ACTUAL OCCUPANT LOAD PER EACH EXIT DOOR
 A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION
 LOCATION OF DOORS WITH PANIC HARDWARE (1010.1.10)
 LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1010.1.9.7)
 LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.9)
 LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES
 LOCATION OF EMERGENCY ESCAPE WINDOWS (1030)
 THE SQUARE FOOTAGE OF EACH FIRE AREA (202)
 THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT FOR OCCUPANCY CLASSIFICATION 1-2 (407.5)
 NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

ACCESSIBLE DWELLING UNITS (SECTION 1107)							
TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
-	-	-	-	-	-	-	-

ACCESSIBLE PARKING (SECTION 1106)						
LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	SPACES PROVIDED		TOTAL # ACCESSIBLE UNITS PROVIDED	
			BEGINNING	132" ACCESS AISLE		
-	-	-	-	-	-	
TOTAL	-	-	-	-	-	

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)										
USE	SPACE	WATERCLOSETS			URINALS		FOUNTAINS		REGULAR	ACCESSIBLE
		MALE	FEMALE	UNIFED	REGULAR	ACCESSIBLE				
EXIST'G	-	-	-	-	-	-	-	-	-	-
NEW	-	-	-	-	-	-	-	-	-	-
REQ'D	-	-	-	-	-	-	-	-	-	-

SPECIAL APPROVALS
 SPECIAL APPROVAL: (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DPI, DHHS, ICC, ETC., DESCRIBE BELOW)
 CITY OF RALEIGH

ENERGY SUMMARY
ENERGY REQUIREMENTS:
 THE FOLLOWING DATA SHALL BE CONSIDERED MINIMUM AND ANY SPECIAL ATTRIBUTE REQUIRED TO MEET THE ENERGY CODE SHALL ALSO BE PROVIDED. EACH DESIGNER SHALL FURNISH THE REQUIRED PORTIONS OF THE PROJECT INFORMATION FOR THE PLAN DATA SHEET. IF PERFORMANCE METHOD, STATE THE ANNUAL ENERGY COST FOR THE STANDARD REFERENCE DESIGN VS ANNUAL ENERGY COST FOR THE PROPOSED DESIGN.

EXISTING BUILDING COMPLIES WITH CODE: NO YES (THE REMAINDER OF THIS SECTION IS NOT APPLICABLE)
 EXEMPT BUILDING: NO YES (PROVIDE CODE OR STATUTORY REFERENCE): -
 CLIMATE ZONE: 3A 4A 5A
 METHOD OF COMPLIANCE: ENERGY CODE PERFORMANCE PRESCRIPTIVE
 ASHRAE 90.1 PERFORMANCE PRESCRIPTIVE
 (IF "OTHER" SPECIFY SOURCE HERE) -

THERMAL ENVELOPE (PRESCRIPTIVE METHOD ONLY)
ROOF / CEILING ASSEMBLY (EACH ASSEMBLY)
 DESCRIPTION OF ASSEMBLY: -
 U-VALUE OF TOTAL ASSEMBLY: -
 R-VALUE OF INSULATION: -
 SKYLIGHTS IN EACH ASSEMBLY: -
 U-VALUE OF SKYLIGHT: -
 TOTAL SQUARE FOOTAGE OF SKYLIGHTS IN EACH ASSEMBLY: -

EXTERIOR WALLS (EACH ASSEMBLY)
 DESCRIPTION OF ASSEMBLY: -
 U-VALUE OF TOTAL ASSEMBLY: -
 R-VALUE OF INSULATION: -
 OPENINGS (WITH GLAZING)
 U-VALUE OF ASSEMBLY: -
 SOLAR HEAT GAIN COEFFICIENT: -
 PROJECTION FACTOR: -
 DOOR R-VALUES: -

WALLS BELOW GRADE (EACH ASSEMBLY)
 DESCRIPTION OF ASSEMBLY: -
 U-VALUE OF TOTAL ASSEMBLY: -
 R-VALUE OF INSULATION: -

FLOORS OVER UNCONDITION SPACE (EACH ASSEMBLY)
 DESCRIPTION OF ASSEMBLY: -
 U-VALUE OF TOTAL ASSEMBLY: -
 R-VALUE OF INSULATION: -

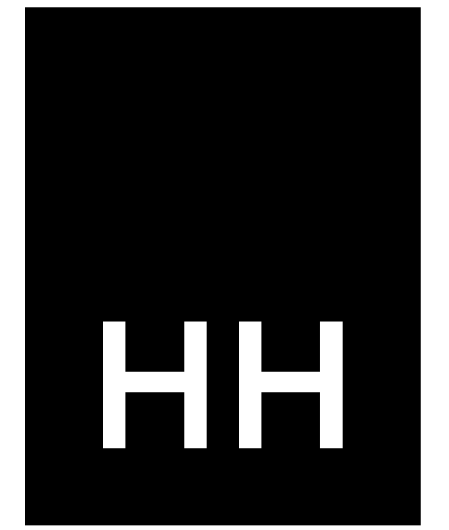
FLOORS SLAB ON GRADE
 DESCRIPTION OF ASSEMBLY: -
 U-VALUE OF TOTAL ASSEMBLY: -
 R-VALUE OF INSULATION: -
 HORIZONTAL/VERTICAL REQUIREMENT: -
 SLAB HEATED: -

STRUCTURAL SUMMARY
DESIGN LOADS:
 IMPORTANCE FACTORS: SNOW (Is) -
 SEISMIC (Ie) -
 LIVE LOADS: ROOF - psf
 MEZZANINE - psf
 FLOOR - psf
 GROUND SNOW LOAD: - psf
 WIND LOAD: ULTIMATE WIND SPEED - mph (ASCE-7)
 EXPOSURE CATEGORY -

SEISMIC DESIGN CATEGORY: A B C D
 PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
 RISK CATEGORY (Table 1604.5) I II III IV
 SPECTRAL RISK CATEGORY (Table 1604.5) I II III IV
 SITE CLASSIFICATION (ASCE 7) A B C D
 DATA SOURCE: Field Test Presumptive Historical Data
BASIC STRUCTURAL SYSTEM
 Bearing Wall Dual w/ Special Moment Frame
 Building Frame Dual w/ Intermediate R/C or Special Steel
 Moment Frame Inverted Pendulum
ANALYSIS PROCEDURE: Simplified Equivalent Lateral Force Dynamic
ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? YES NO
LATERAL DESIGN CONTROL: EARTHQUAKE WIND
SOIL BEARING CAPACITIES
 FIELD TEST (provide copy of test report) - psf
 PRESUMPTIVE BEARING CAPACITY - psf
 PILE SIZE, TYPE, AND CAPACITY -

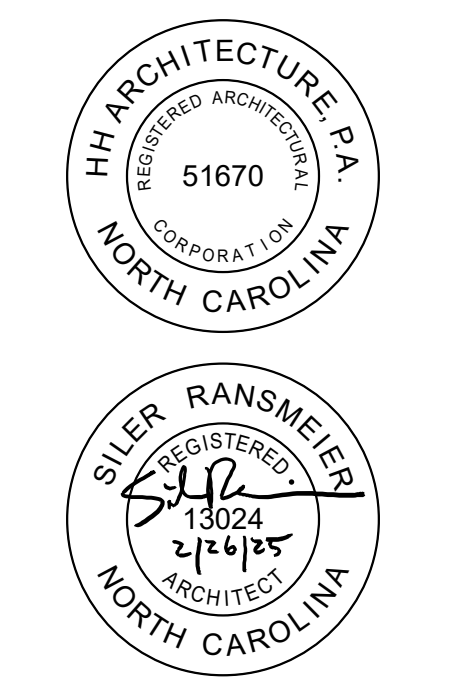
MECHANICAL SUMMARY
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
 THERMAL ZONE: 4A
 WINTER DRY BULB: 14
 SUMMER DRY BULB: 93
 INTERIOR DESIGN CONDITIONS:
 WINTER DRY BULB: 70
 SUMMER DRY BULB: 76
 RELATIVE HUMIDITY: 50%
 AREA OF WORK HEATING LOAD: 219.5 MBH
 AREA OF WORK COOLING: 341.3 MBH
 LOAD:
 MECHANICAL SPACING CONDITIONING SYSTEM
 UNITARY
 DESCRIPTION OF UNIT: SEE MECH. SCHEDULES
 HEATING EFFICIENCY: SEE MECH. SCHEDULES
 COOLING EFFICIENCY: SEE MECH. SCHEDULES
 SIZE CATEGORY OF UNIT: SEE MECH. SCHEDULES
 BOILER
 SIZE CATEGORY, IF OVERSIZED, STATE REASON: SEE MECH. SCHEDULES
 CHILLER
 SIZE CATEGORY, IF OVERSIZED, STATE REASON: NA
 LIST EQUIPMENT EFFICIENCIES: SEE MECH. SCHEDULES

ELECTRICAL SUMMARY
ELECTRICAL SYSTEMS AND EQUIPMENT:
 METHOD OF COMPLIANCE: ENERGY CODE PERFORMANCE PRESCRIPTIVE
 ASHRAE 90.1 PERFORMANCE PRESCRIPTIVE
 LIGHTING SCHEDULE: (each fixture type) SEE LIGHTING SCHEDULE
 LAMP TYPE REQUIRED IN FIXTURE
 NUMBER OF LAMPS IN FIXTURE
 BALLAST TYPE USED IN THE FIXTURE
 NUMBER OF BALLASTS IN FIXTURE
 TOTAL WATTAGE PER FIXTURE
 TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED (WHOLE BUILDING OR SPACE BY SPACE)
 TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED
ADDITIONAL EFFICIENCY PACKAGE OPTIONS
 (WHEN USING THE 2018 NCECC, NOT REQUIRED FOR ASHRAE 90.1)
 C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
 C406.3 REDUCED LIGHTING POWER DENSITY
 C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
 C406.5 ON-SITE RENEWABLE ENERGY
 C406.6 DEDICATED OUTDOOR AIR SYSTEM
 C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING



1100 Dresser Court
 Raleigh, NC 27609
 Office 919.828.2301
 Email office@hh-arch.com

**COMMUNITY CENTER HVAC REPLACEMENTS
 (01 - MILLBROOK EXCHANGE)**
 CITY OF RALEIGH
 1905 SPRING FOREST ROAD, RALEIGH, NC 27615
 SCO PROJECT NO.



NO.	REVISION	DATE

JOB NUMBER
23-084
 DATE ISSUED
2/26/2025
 PROJECT STATUS
ISSUED FOR BID

SHEET
BUILDING CODE SUMMARY

G002

UL Product IQ®

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Design/Systems/Construction/Assembly Usage Disclaimer

- Authorizes Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
Authorizes Having Jurisdiction should be consulted before construction.
Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

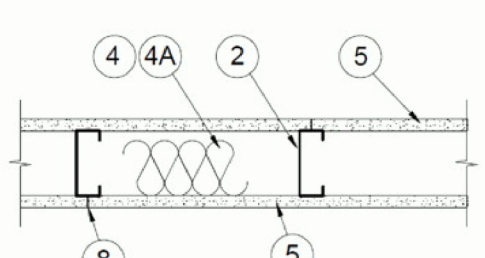
See General Information for Fire Resistance Ratings - ANSI/UL 263 Certified for United States

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design No. U419

February 16, 2024

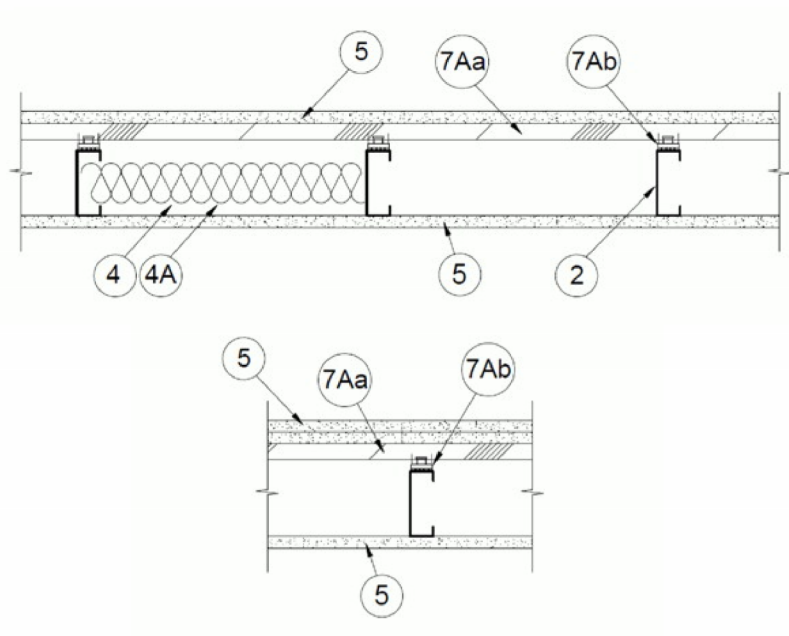
- Nonbearing Wall Construction - 1, 2, 3 or 4 R (See Items 4 & 5 through 5)
Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



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1. Floor and Ceiling Runners - (Not Shown) - For use with Item 2 - Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.

1A. Framing Members - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

CRMO L.L.C. - Viper25™ Track
CRMO MFG INC - SmartTrack25™
MARINOWARE, DIV OF WARE INDUSTRIES INC - Viper25™ Track
IMPERIAL MANUFACTURING GROUP INC - Viper25™ Track

1B. Framing Members - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

CRMO L.L.C. - Viper25™ Track
MARINOWARE, DIV OF WARE INDUSTRIES INC - Viper25™ Track
IMPERIAL MANUFACTURING GROUP INC - Viper25™ Track

1C. Framing Members - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - Channel shaped, attached to floor and ceiling with fasteners 24 in. OC max.
ALISTELL & FUSPION PRODUCTS INC - Type SUPREME D24/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP. BUILDING PRODUCTS DIV - Type SUPREME D24/30EQD and Type SUPREME D20

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QUAL RUN BUILDING MATERIALS INC - Type SUPREME D24/30EQD and Type SUPREME D20
SCAFFO STEEL STUD MANUFACTURING CO - Type SUPREME D24/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC - Type SUPREME D24/30EQD and Type SUPREME D20
TELLING INDUSTRIES L.L.C. - Type SUPREME D24/30EQD and Type SUPREME D20
UNITED METAL PRODUCTS INC - Type SUPREME D24/30EQD and Type SUPREME D20

1D. Floor and Ceiling Runners - (Not Shown) - For use with Item 2A - Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1E. Framing Members - Floor and Ceiling Runners - (Not Shown) - As an alternate to Item 1 - For use with Items 2E, 5G or 5I or 5J, only, Channel shaped, fabricated from min 0.015 in. min bare metal thickness galvanized steel, attached to floor and ceiling with fasteners 24 in. OC max.
CLARKDITRICH BUILDING SYSTEMS - CD ProTRAK

DMCWCS L.L.C. - ProTRAK
MBA METAL FRAMING - ProTRAK
RAM SALES L.L.C. - Ram ProTRAK
STEEL STRUCTURAL PRODUCTS L.L.C. - Tri-S ProTRAK

1F. Framing Members - Floor and Ceiling Runner - (Not Shown) - In lieu of Item 1 - For use with Item 2F, proprietary channel shaped runners, minimum width to accommodate stud size, with 1-1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
SUPER STUD BUILDING PRODUCTS - The Edge

1G. Framing Members - Floor and Ceiling Runner - For use with Item 2G, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 24 in. OC max.
STUCCO BUILDING SYSTEMS - CROCTULD Track

1H. Floor and Ceiling Runners - (Not Shown) - Channel shaped, fabricated from min 0.018 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.018 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC.
MARINOWARE, DIV OF WARE INDUSTRIES INC - Viper20™ Track VT100
IMPERIAL MANUFACTURING GROUP INC - Viper20™ Track VT100

1I. Framing Members - Floor and Ceiling Runners - (Not Shown) - As an alternate to Item 1 - For use with Item 2H, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC max.
TELLING INDUSTRIES L.L.C. - TRUE-TRACK™

1J. Framing Members - Floor and Ceiling Runner - (Not Shown) - In lieu of Item 1 - For use with Item 2J, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

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Table with 4 columns: Item, Rating, Stud Depth, In. Min. Insulation (Item 4). Rows 1-4 describe various framing member options.

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

THE SHAM GYPSUM INDUSTRY (SONGHAH) CO - 1/2 in. thick Type C and 5/8 in. thick Type SCX
UNITED STATES GYPSUM CO - 1/2 in. thick Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type SCX, SCX, SHX, ULX, WR, IP-X1, AR, C, WRC, FRG, G, IP-AR, IP-X2, IPC-AR, 3/4 in. thick Type IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

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1K. Framing Members - Floor and Ceiling Runner - (Not Shown) - In lieu of Item 1 - For use with Item 2I, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

1L. Framing Members - Floor and Ceiling Runner - (Not Shown) - In lieu of Item 1 - For use with Item 2J, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
RESOL METAL FRAMING, L.L.C. - AlphaTRAK

1M. Framing Members - Floor and Ceiling Runners - (Not Shown) - As an alternate to Item 1 - For use with Item 2O, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
RONDO BUILDING SERVICES PT LTD - Rondo Wall Track

1N. Framing Members - Floor and Ceiling Runners - (Not Shown) - As an alternate to Item 1 - For use with Item 2P, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
OGG BUILDING MATERIALS - OGG Track

1O. Framing Members - Floor and Ceiling Runner - (Not Shown) - In lieu of Item 1 - For use with Item 2Q, proprietary channel shaped runners, min width to accommodate stud size, fabricated from min. 25 MSG (0.018 in. min bare metal thickness), attached to floor and ceiling with fasteners spaced 24 in. OC max.
CIMCO LLC - Viper X Track

1P. Framing Members - Floor and Ceiling Runner - (Not Shown) - As an alternate to Item 1 - For use with Item 2R, channel shaped runners pre-punched with proprietary attachment clips. Min. 3-5/8 in. wide. Legs to top runners minimum 3-1/4 in. wide. Legs to bottom runners minimum 1-1/2 in. wide. Runners attached to floor and ceiling with fasteners 24 in. OC max.

HYPERFRAME INC - HyperTrack
1Q. Framing Members - Floor and Ceiling Runner - (Not Shown) - In lieu of Item 1 - For use with Item 2S, proprietary channel shaped runners, min width to accommodate stud size, fabricated from min. 20 G0225 min. (min. 0.0225 in. thick) galvanized steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

JAC INTERNATIONAL DISTRIBUTORS INC - Non-structural Tracks 3-5/8" and 4"

2. Steel Studs - Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2A. Steel Studs - (As an alternate to Item 2, for use with Items 5B, 5E, 5H, 5I or Type ULXO) - Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 12 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

2B. Framing Members - Steel Studs - (As an alternate to Item 2, for use with Items SC, SI or Type ULXO) - Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.
CIMCO LLC - Viper25™
CRMO MFG INC - SmartTrack25™

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3. Gypsum Board - For Use With Item 2B) - Rating Limited to 1 Hour. 5/8 in. thick, 48 in. wide. Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical joints and 12 in. OC in the field. Horizontal Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC in the field. Horizontal Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type 5 coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A).

THE SHAM GYPSUM INDUSTRY (SONGHAH) CO - Type SCX
UNITED STATES GYPSUM CO - Type SCX, SHX, ULX
USG BORAL DRYWALL SFZ LLC - Type SCX
USG MEXICO S A DE CV - Type SCX, SHX, ULX

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX or 3/4 in. thick Types IP-X3 or ULTRACODE

THE SHAM GYPSUM INDUSTRY (SONGHAH) CO - 1/2 in. thick Types C and 5/8 in. thick Type SCX, SHX, ULX or 3/4 in. thick Types IP-X3 or ULTRACODE
UNITED STATES GYPSUM CO - 1/2 in. thick Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type SCX, SCX, SHX, ULX, WR, IP-X1, AR, C, WRC, FRG, G, IP-AR, IP-X2, IPC-AR, 3/4 in. thick Type IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

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USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

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USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

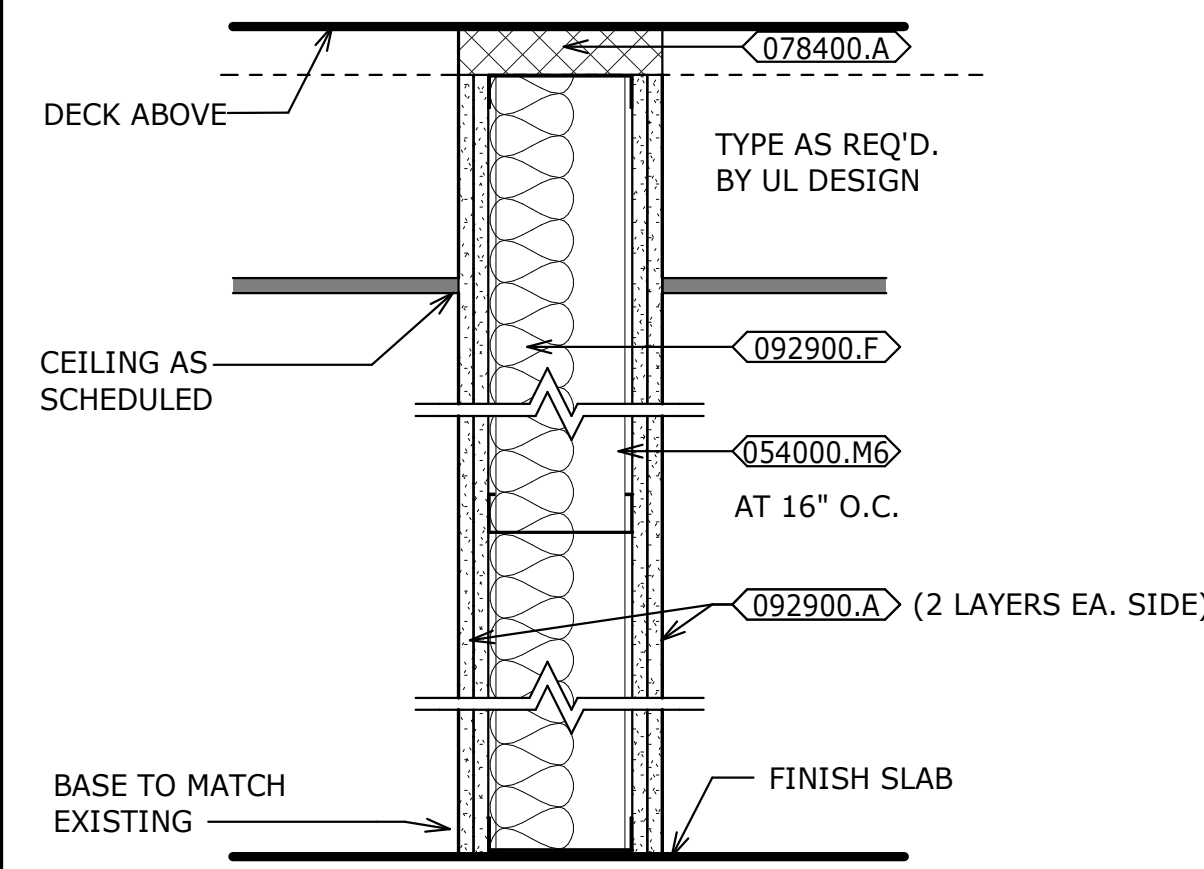
USG BORAL DRYWALL SFZ LLC - 1/2 in. Type C, 5/8 in. Type C, SCX, SCX, SHX, ULTRACODE
USG MEXICO S A DE CV - Type C, IP-X2, IPC-AR or WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or 3/4 in. thick Types IP-X3 or ULTRACODE

CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

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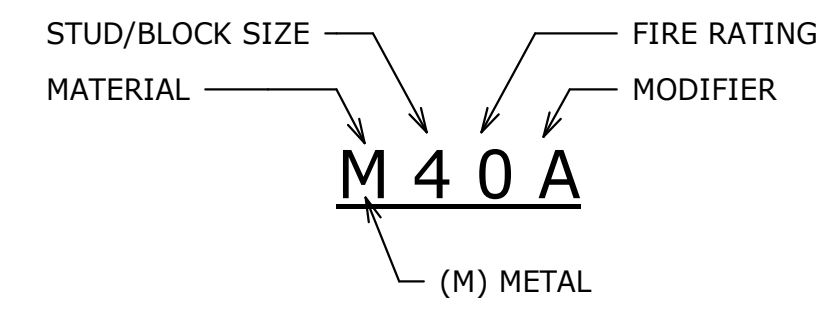
CGC INC - 1/2 in. thick Type IP-X2 or IPC-AR, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WR or 3/4 in. thick Types IP-X3 or ULTRACODE

INTERIOR WALL TYPES

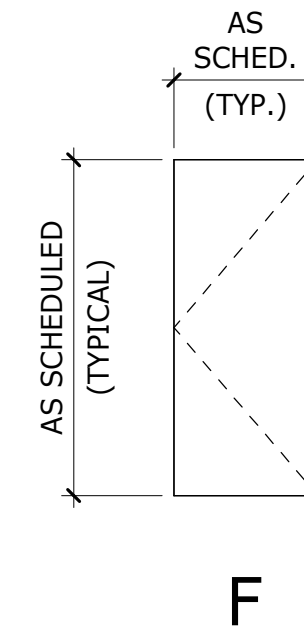


M61C	2 HR, 6" STUD, (2) 5/8" GWB EA. SIDE UL DESIGN: U419	2 HOUR
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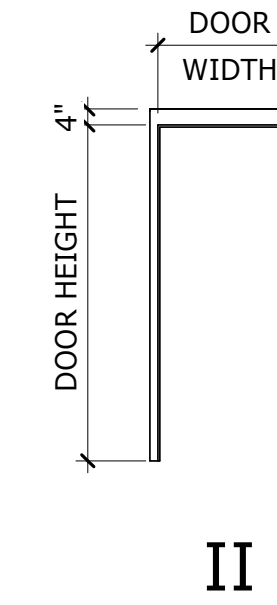
INTERIOR PARTITION NAMING LEGEND



DOOR ELEVATIONS



DOOR FRAME ELEVATIONS



KEYNOTES

- 054000.M6** COLD-FORMED METAL FRAMING, C-SHAPED STUDS, 6"
- 078400.A** FIRESTOPPING; SEE UL DETAILS
- 092900.A** GYPSUM WALLBOARD, 5/8"
- 092900.F** SOUND ATTENUATION BLANKET

DOOR & FRAME NOTES

1. ALL HOLLOW METAL FRAMES TO BE 2" WIDE FACE FRAME, U.N.O.
2. ALL FRAMES AT MASONRY WALLS 6" DEEP, TYP. U.N.O.
3. EXTERIOR DOORS ARE TO BE RECESSED 1-1/2" FROM FACE OF EXTERIOR MASONRY, TYP. U.N.O.
4. VERIFY FRAME DEPTH AT ALL WALL CONDITIONS.

DOOR SCHEDULE

DOOR NUMBER	ROOM	DOOR							FRAME			FIRE RATING	HDW	SIGN TYPE	COMMENTS	DOOR NUMBER
		ELEV.	WIDTH	HEIGHT	THICK	MAT'L	FINISH	ELEV.	MAT'L	FINISH						
1st FLOOR																
126B	BOILER ROOM	F	5' - 0"	7' - 0"	1 3/4"	HM		II	HM						LEVER STORAGE LOCKSET - MATCH TO EXIST.	126B

PARTITION NOTES:

1. ALL RATED WALL ARE TO BE STENCIL PAINTED IN RED WITH THE APPLICABLE RATING NOTED, PER PLANS. LETTERS TO BE 6" HIGH. STENCILS TO BE 12" ABOVE CEILING AND SPACED AT 48" O.C. MAX. BOTH SIDES OF WALL. EXAMPLE:
2-HR WALL
SEAL ALL PENETRATIONS
2. COORDINATE ADJACENT WALLS OF DIFFERENT TYPES SO THAT GYPSUM BOARD WALL FACES ALIGN.
3. SEAL PERIMETER OF ALL WALLS, TYP.
4. PROVIDE FIRE SEALANT AT BASE OF ALL WALLS REQUIRING FIRE RATING.
5. ALL RATED WALLS TO BE CONTINUOUS SYSTEMS. CONTRACTOR TO COORDINATE CORRECT SEQUENCING OF RATED WALL CONSTRUCTION.



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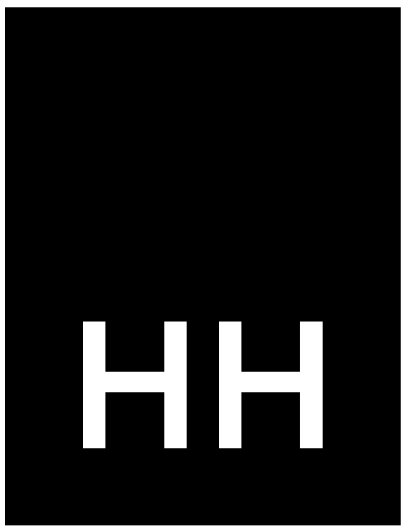
NO.	REVISION	DATE

JOB NUMBER
23-084
DATE ISSUED
2/26/2025
PROJECT STATUS
ISSUED FOR BID

SHEET
**WALL TYPES,
DOOR TYPE, AND
DOOR SCHEDULE**

A001

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SHEET
**1st FLOOR PLAN
AND REFLECTED
CEILING PLAN**

A111

PLAN NOTES

- 01 CONTRACTOR TO PROVIDE FIRESTOPPING AT TOP OF EXISTING MASONRY WALL TO ENSURE 2-HR FIRE RATING MATCHING UL#419.
- 02 CONTRACTOR TO PROVIDE NEW 8'X8' CONCRETE PAD, 4" THICK, OUTSIDE NEW BOILER ROOM DOORS. CONTRACTOR TO PROVIDE SAW CUT CONTROL JOINTS "CJ", AS INDICATED ON SLABS.
- 03 CONTRACTOR TO PROVIDE NEW 12'-0" X 26'-0" CONCRETE PAD, 4" THICK, FOR NEW MECHANICAL EQUIPMENT. CONTRACTOR TO PROVIDE SAW CUT CONTROL JOINTS "CJ", AS INDICATED ON SLABS.
- 04 CONTRACTOR TO PROVIDE NEW CHAIN LINK FENCE & GATE WITH SCREENING AT MECHANICAL EQUIPMENT, PER UDO 7.2.5.D.4 REQUIREMENTS.
- 05 CONTRACTOR TO PROVIDE NEW SCREENING TO EXISTING CHAIN LINK FENCE & GATE AT MECHANICAL EQUIPMENT, PER UDO 7.2.5.D.4 REQUIREMENTS.

PLAN LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- NEW WALL CONSTRUCTION
- ▬ 2-HR RATED FIRE BARRIER
- CJ CONTROL JOINTS AT CONCRETE SLAB

FLOOR PLAN & RCP GENERAL NOTES

- SEE MEP DRAWINGS FOR MORE DETAILED INFORMATION ON LIGHTS, MECHANICAL VENTS, ETC.
- ROOMS WITH NO CEILINGS, HVAC NOT SHOWN; SEE MEP DRAWINGS FOR COORDINATION.
- U.N.O. ALL RCP ELEVATIONS ARE TAKEN FROM THE F.F.E. OF THE ROOM IN WHICH THE CEILING IS LOCATED.
- CONTRACTOR IS REQUIRED TO PROVIDE FULL COORDINATION DRAWINGS FOR ALL MEP & FP SYSTEMS OVERHEAD AND ABOVE CEILING.
- REMOVAL OF STORAGE SHELVING IN EXISTING STORAGE ROOM BY OWNER.

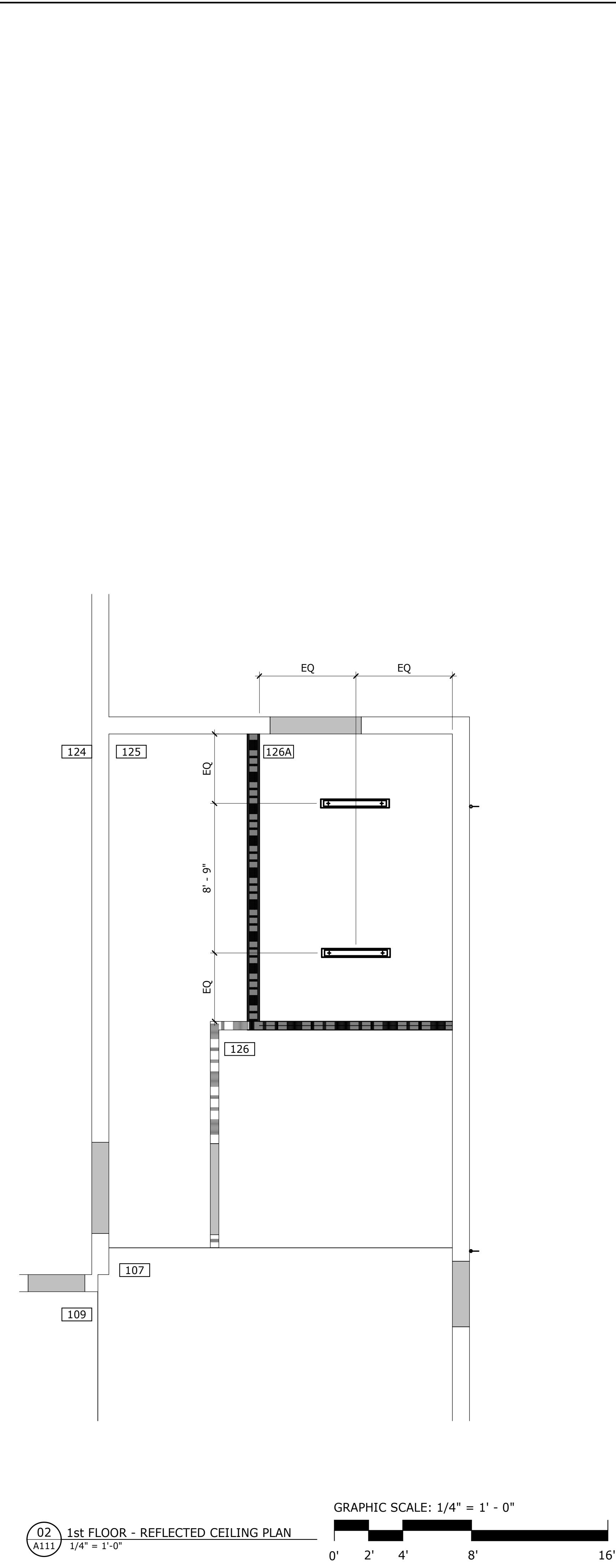
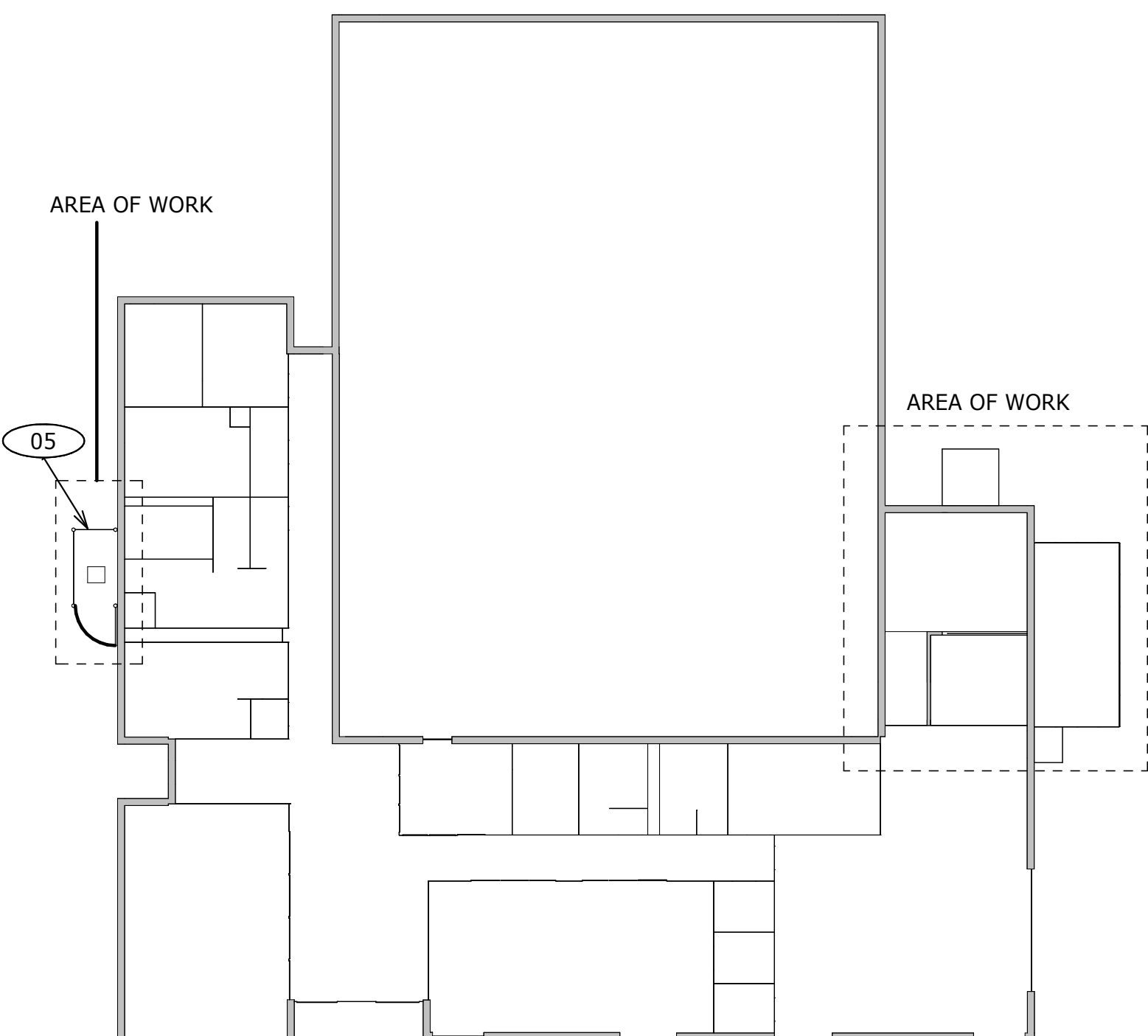
RCP LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- NEW WALL CONSTRUCTION
- ▬ 2-HR RATED FIRE BARRIER
- OPEN TO DECK; SEE FINISH SCHEDULE

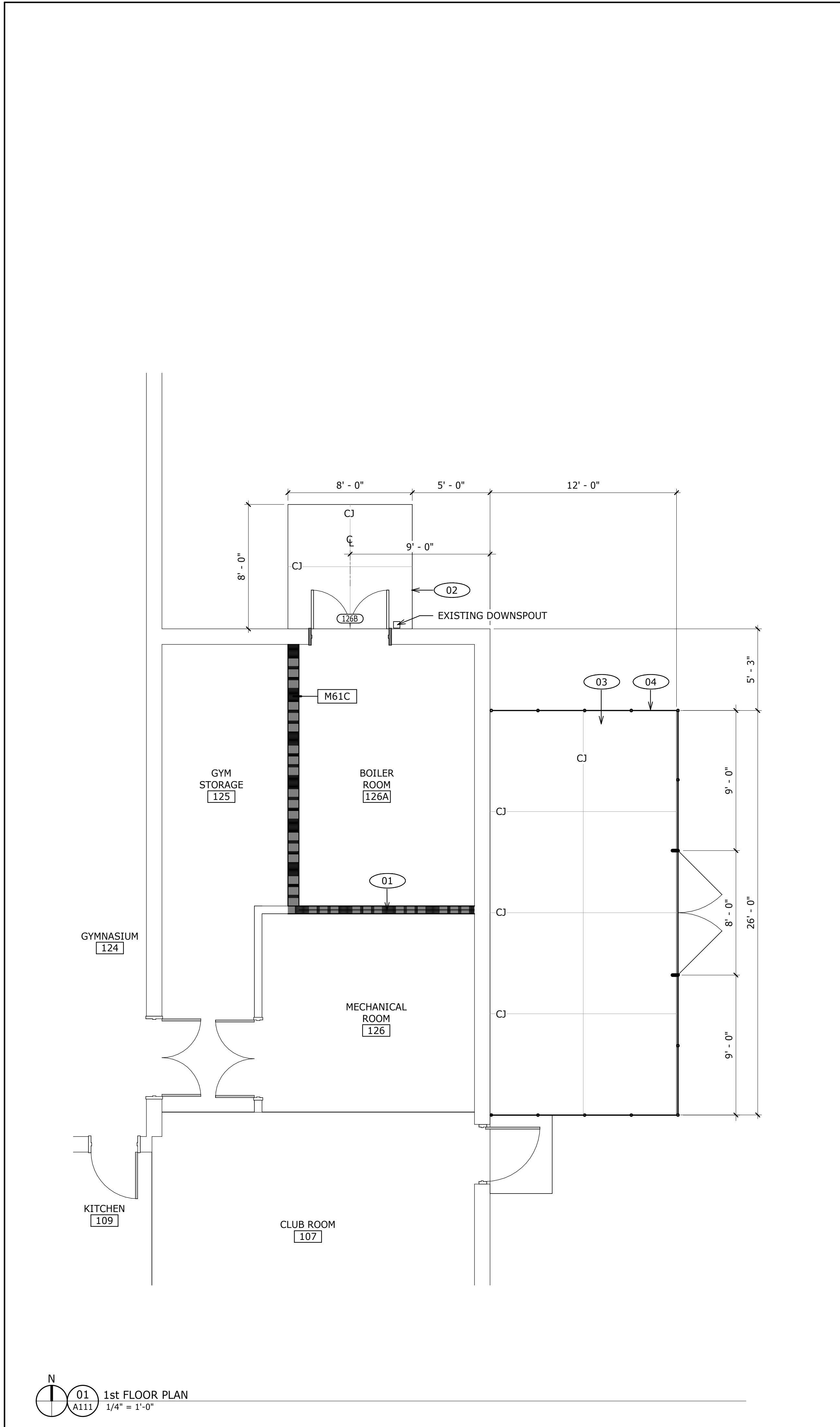
LIGHTING TYPES

- A LINEAR UTILITY FIXTURE

KEY PLAN

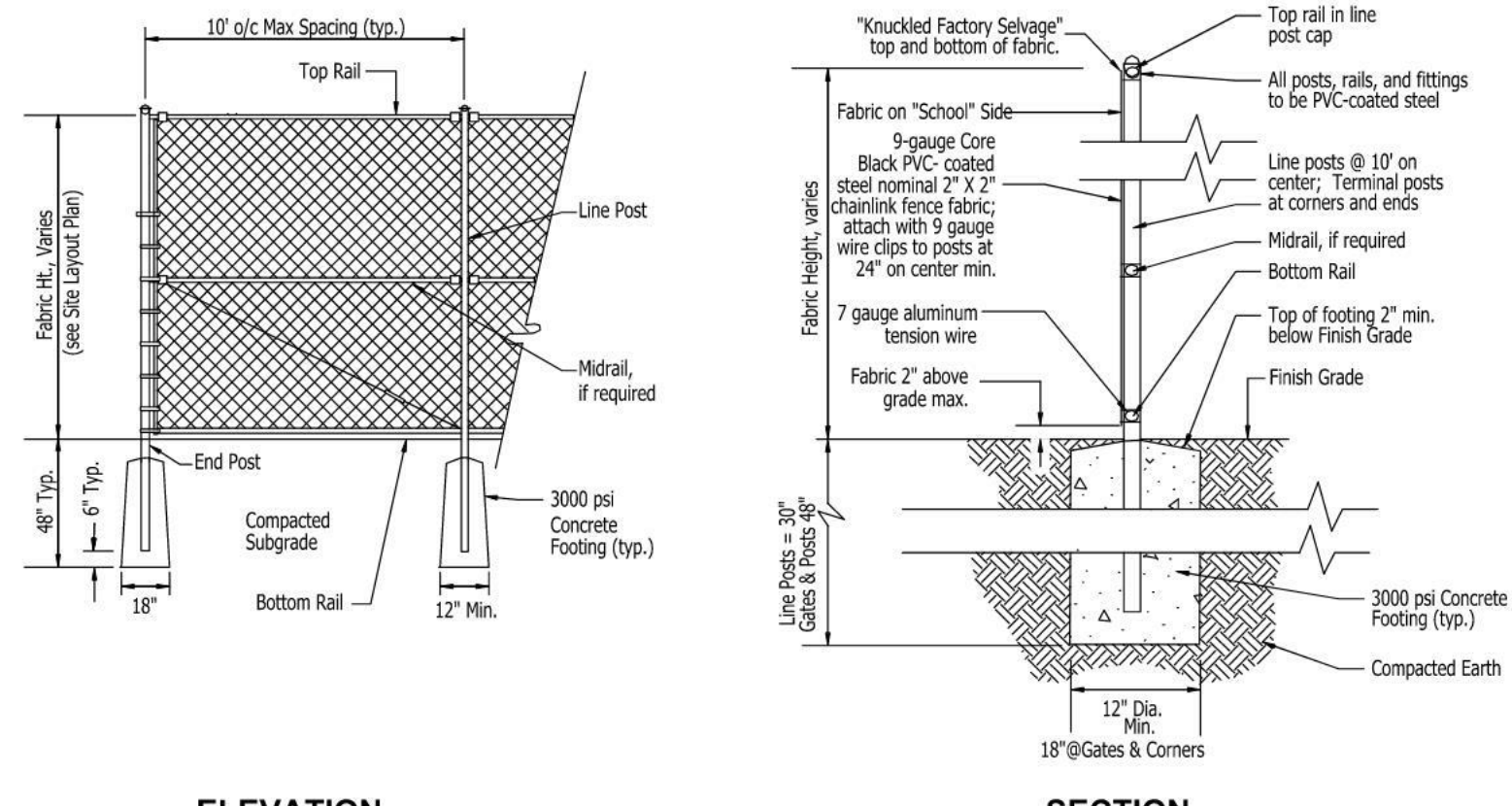


02 1st FLOOR - REFLECTED CEILING PLAN
A111 1/4" = 1'-0"



01 1st FLOOR PLAN
A111 1/4" = 1'-0"

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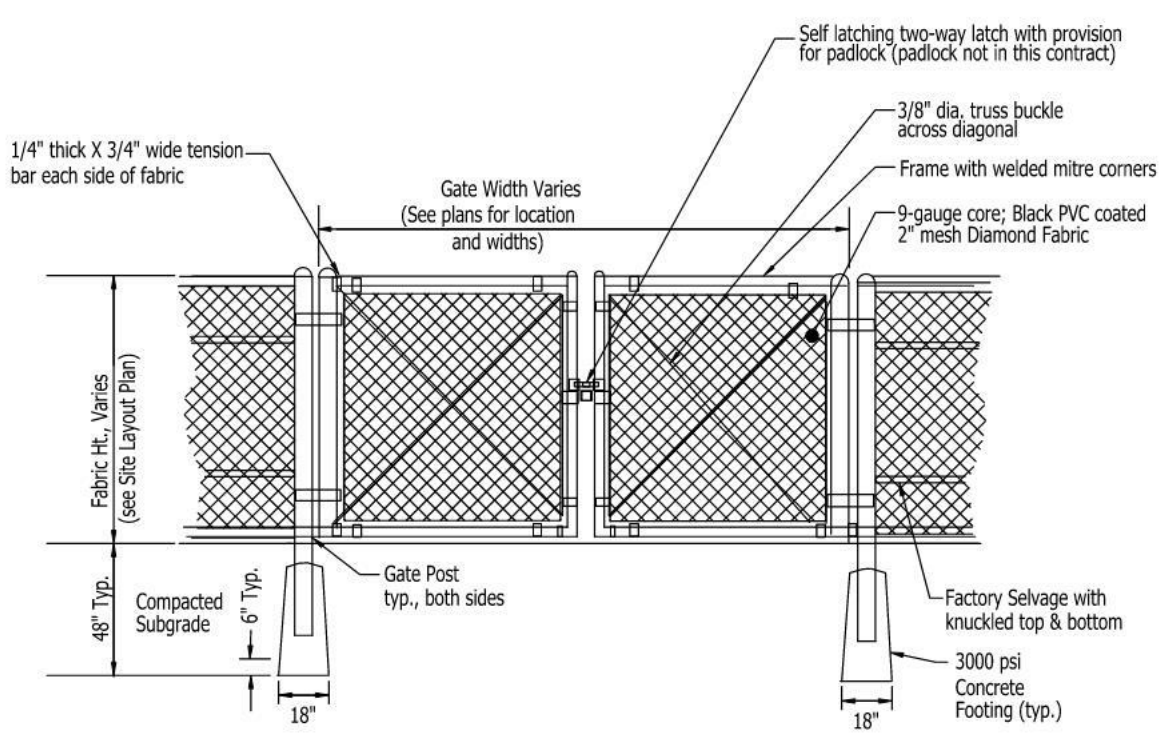


ELEVATION

SECTION

NOTE: ALL FENCE AND GATE MATERIALS, INCLUDING PANELS, POSTS, ETC. SHALL BE BLACK (VINYL PVC COATED) AND MATCH EXISTING TYPE & MATERIAL.
REFER TO SITE PLAN FOR EXTENDS AND LOCATION.

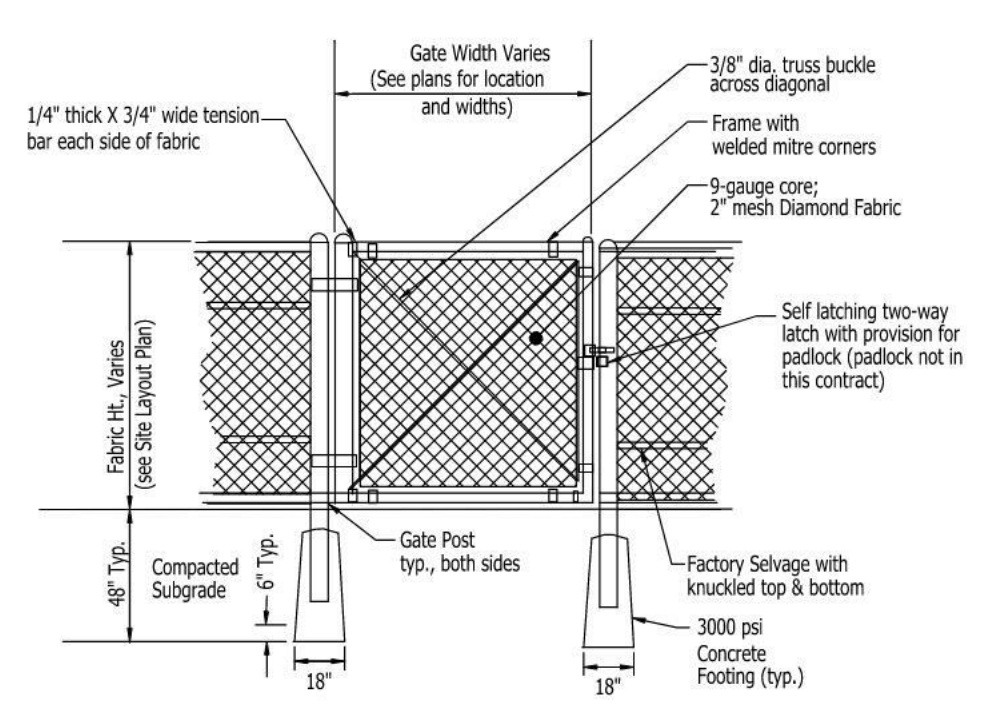
CHAINLINK FENCE DETAIL



NOTES:

1. CHAIN LINK FENCE IS PVC COATED. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. BRACE EACH GATE LEAF PER MANUFACTURER'S RECOMMENDATIONS.
3. INSTALL ONE AND ONE HALF PAIR OF HINGES (3) FOR EACH LEAF 4' OR 6' HEIGHT.
4. INSTALL TWO PAIR OF HINGES (4) FOR EACH LEAF 8' HEIGHT.

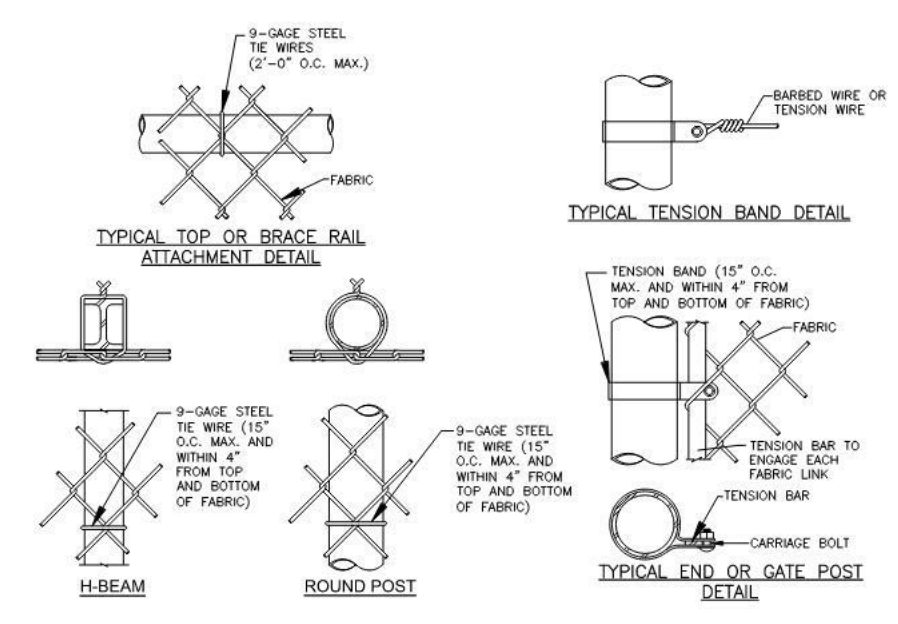
CHAINLINK FENCE DOUBLE-ACCESS GATES DETAIL



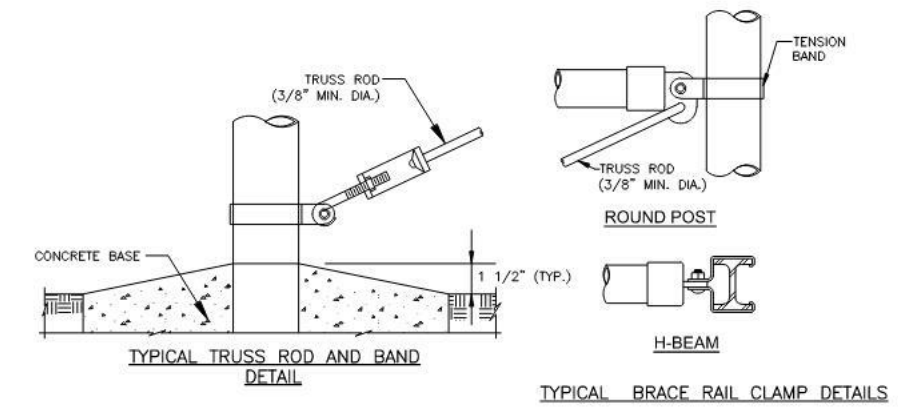
NOTES:

1. CHAIN LINK FENCE IS BLACK VINYL PVC COATED. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. BRACE EACH GATE LEAF PER MANUFACTURER'S RECOMMENDATIONS.
3. INSTALL ONE AND ONE HALF PAIR OF HINGES (3) FOR EACH LEAF 4' OR 6' HEIGHT.
4. INSTALL TWO PAIR OF HINGES (4) FOR EACH LEAF 8' HEIGHT.

CHAINLINK FENCE PEDESTRIAN GATE DETAIL



TYPICAL LINE POST ATTACHMENT DETAILS



TYPICAL FASTENING DETAILS

CHAINLINK FENCE COMPONENTS & FASTENING DETAIL

PRIVACY SLAT SPECIFICATIONS & NOTES

SPECIFICATIONS: SLAT WIDTH 1 1/4", MESH SIZE: 2", WIRE GAUGE: 9, (SLATS TO MATCH FENCE COLOR, HEIGHT & FABRIC MESH SIZE)
COVERAGE AREA: 10 LF
DESIGNATION: MEETS ASTM F3000/F3000M.
WIND LOAD & PRIVACY FACTOR: 75% BASED ON WIRE/MESH USED—STRETCH TENSION.

NOTE: PRIVACY SLATS SHALL BE EXTRUDED FROM HIGH-DENSITY POLYETHYLENE (HDPE), COLOR PIGMENTS AND ULTRAVIOLET (UV) INHIBITORS.
SLATS SHALL BE EZ SLATS OR APPROVED EQUAL. SLATS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, STANDARDS AND SPECIFICATIONS.

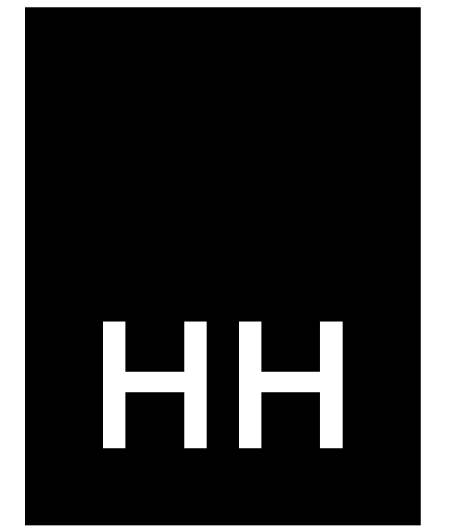
SLAT END VIEW

STEEL POST SCHEDULE	
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)
	FENCE HEIGHT 4', 6', 8', 10' & 12' (WITH PRIVACY SLATS)
TERMINAL POSTS CORNER, END & PULL TUBULAR - ROUND	UP TO 6': 2.375" O.D. OVER 6' TO 12': 2.875" O.D.
LINE POSTS TUBULAR - ROUND	UP TO 6': 1.90" O.D. UP TO 8': 2.875" O.D. UP TO 12': 2.875" O.D.
TOP, BOTTOM, MID & BRACE RAILS TUBULAR - ROUND	TOP RAIL: 1.66" O.D. BOTTOM, MID & BRACE RAIL: 1.63" O.D.
GATE POSTS (MAN/SWING GATES) TUBULAR - ROUND	UP TO 6': 2.875" O.D. OVER 6' TO 12': 4.00" O.D.

NOTE: ALL CHAINLINK FRAMING, COMPONENTS, FASTENING, AND ACCESSORIES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND SPECIFICATIONS. THIS INCLUDES BUT NOT LIMITED TO POSTS, RAILS, FOOTINGS AND GATES.

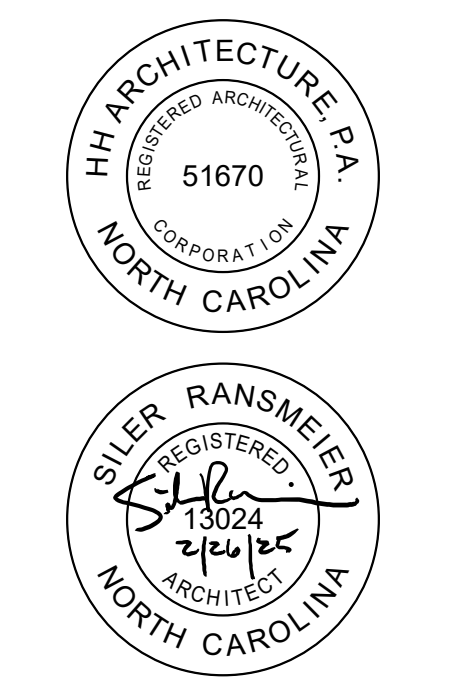
FENCING (PVC COATED) NOTES

1. FENCE FABRIC SHALL BE 2-INCH SQUARE MESH WITH MINIMUM WIRE THICKNESS OF 9 GAUGE (WITH COATING) STEEL WIRE. REFER TO PLANS FOR LOCATION.
2. POSTS SHALL BE SCHEDULE 40 (MIN.) STEEL POSTS (WITH COATING). FENCE POSTS, BRACING, AND OTHER STRUCTURAL MEMBERS SHALL BE PLACED ON SITE SIDE OF THE FABRIC.
3. FENCE FABRIC SHALL BE SECURELY FASTENED WITH TENSION WIRES WITH 9 GAUGE GALVANIZED TIE WIRES INCORPORATING AT LEAST A 540 DEGREE TIGHTENED LOOP.
4. CONTRACTOR SHALL PROVIDE NECESSARY GRADE UCH THAT FENCE FABRIC EXTENDS WITHIN 2-INCHES OF FIRM GROUND. PROVIDE ANCHORING TO PREVENT FABRIC FROM LIFTING.
5. FENCE FABRIC SHALL BE INTERWOVEN OR CLIPPED ALONG THE TOP AND THE BOTTOM ROW OF FABRIC DIAMONDS AND HAVE TWISTED AND BARBED SELVAGE AT THE TOP AND BOTTOM.
6. POSTS SHALL BE SAME MATERIAL AS FENCING WIRE.
7. POSTS SHALL BE VERTICAL WITHIN +/- 2-DEGREES IN TWO PLANES.
8. POSTS SHALL BE BURIED AND ENCASED IN CONCRETE FOOTINGS. FOOTINGS SHALL BE A MINIMUM OF 3'-6" IN DEPTH.
9. POST SEPARATION SHALL BE A MAXIMUM OF 10'-0".
10. EACH GATE AND END POST SHALL BE BRACED WITH TRUSS RODS INSTALLED DIAGONALLY FROM THE NEAR GROUND LEVEL OF THE GATE OR END POST TO THE TOP OF THE ADJACENT END POST. SEEL TRUSS RODS SHALL BE NO LESS THAN 3/8"-INCH NOMINAL DIAMETER WITH TURNBUCKLES FOR TENSIONING.
11. ASTM STANDARDS SHALL BE FOLLOWED FOR ALL MATERIALS, INSTALLATIONS, ACCESSORIES AND REPAIRS OF STANDARD FENCING FABRIC.
12. ALL FITTINGS SHALL BE ELECTROLYTICALLY COMPATIBLE WITH CONNECTING FITTINGS COMPONENTS AND FENCE FABRIC TO INHIBIT CORROSION.
13. ALL PRODUCTS AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.



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NO.	REVISION	DATE

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23-084
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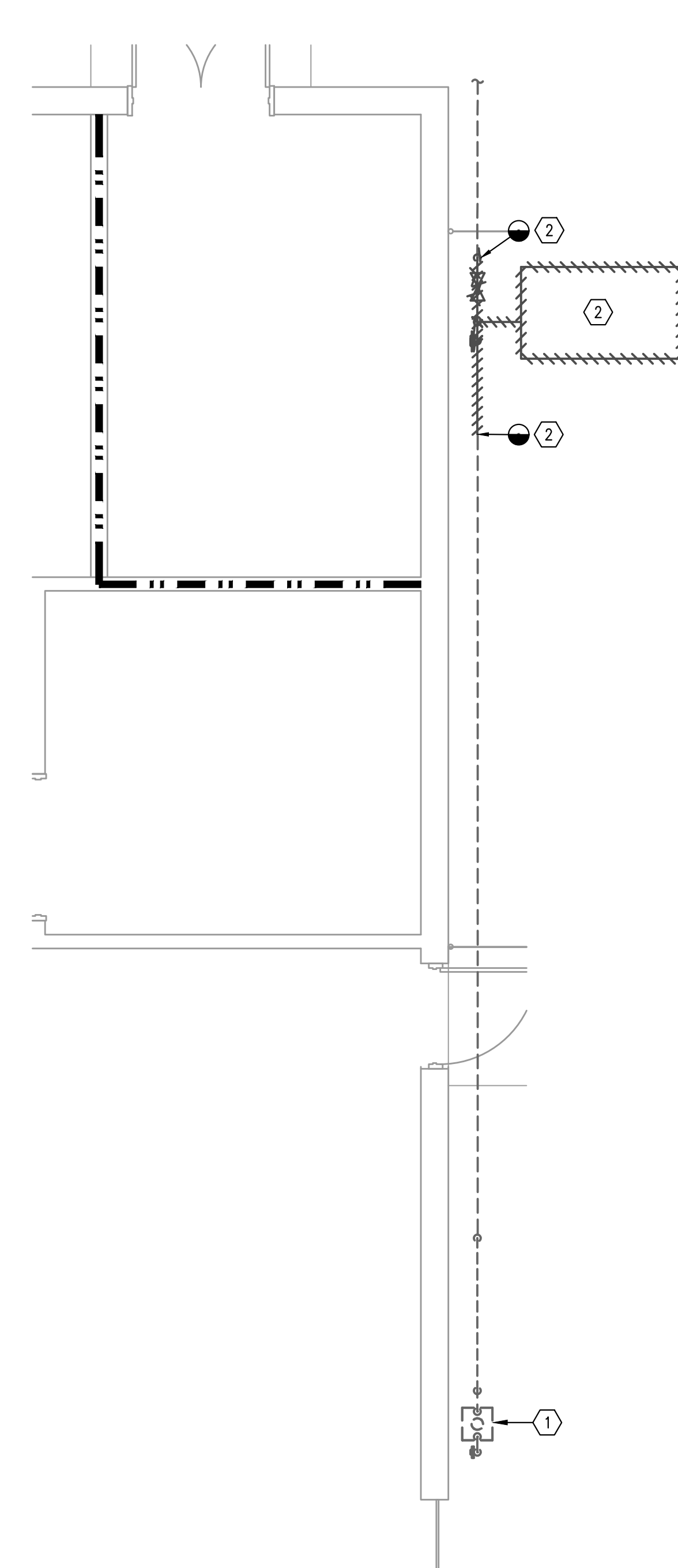
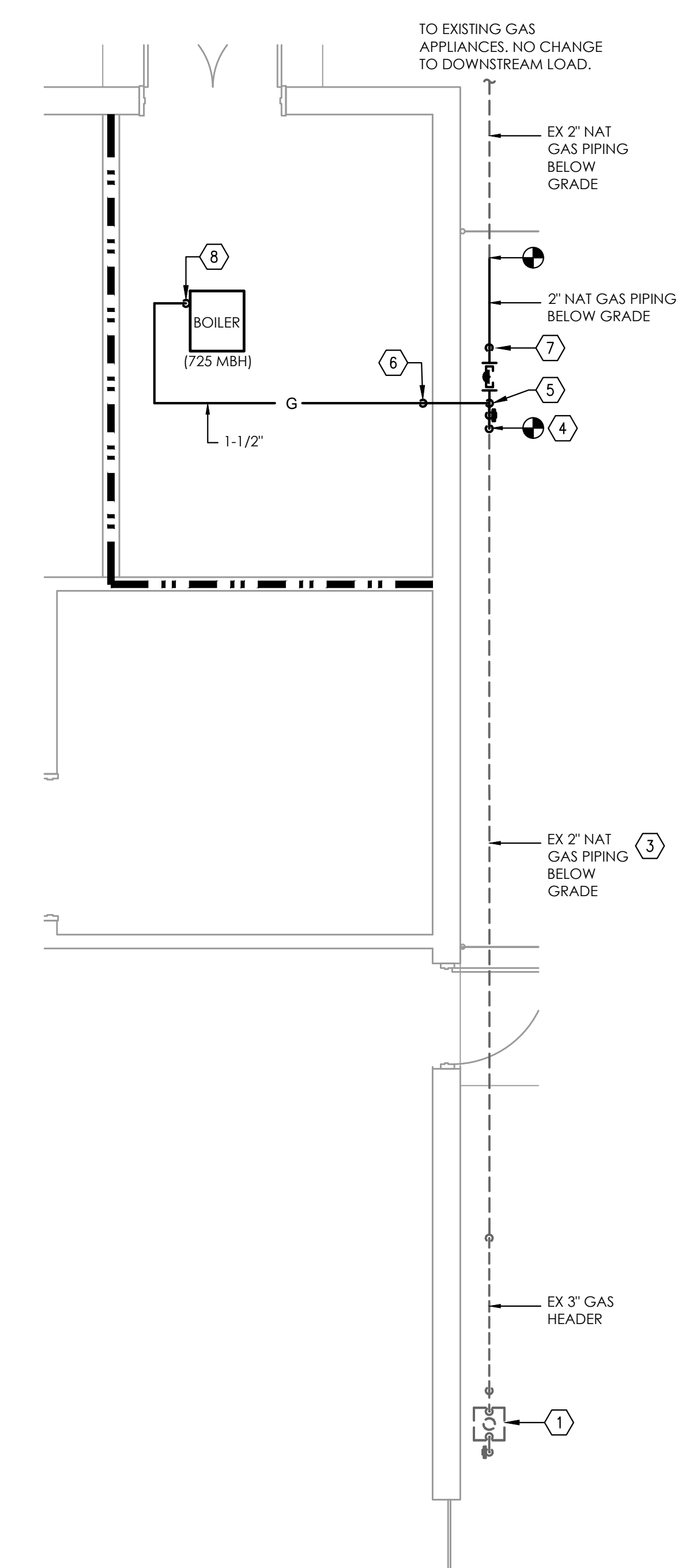
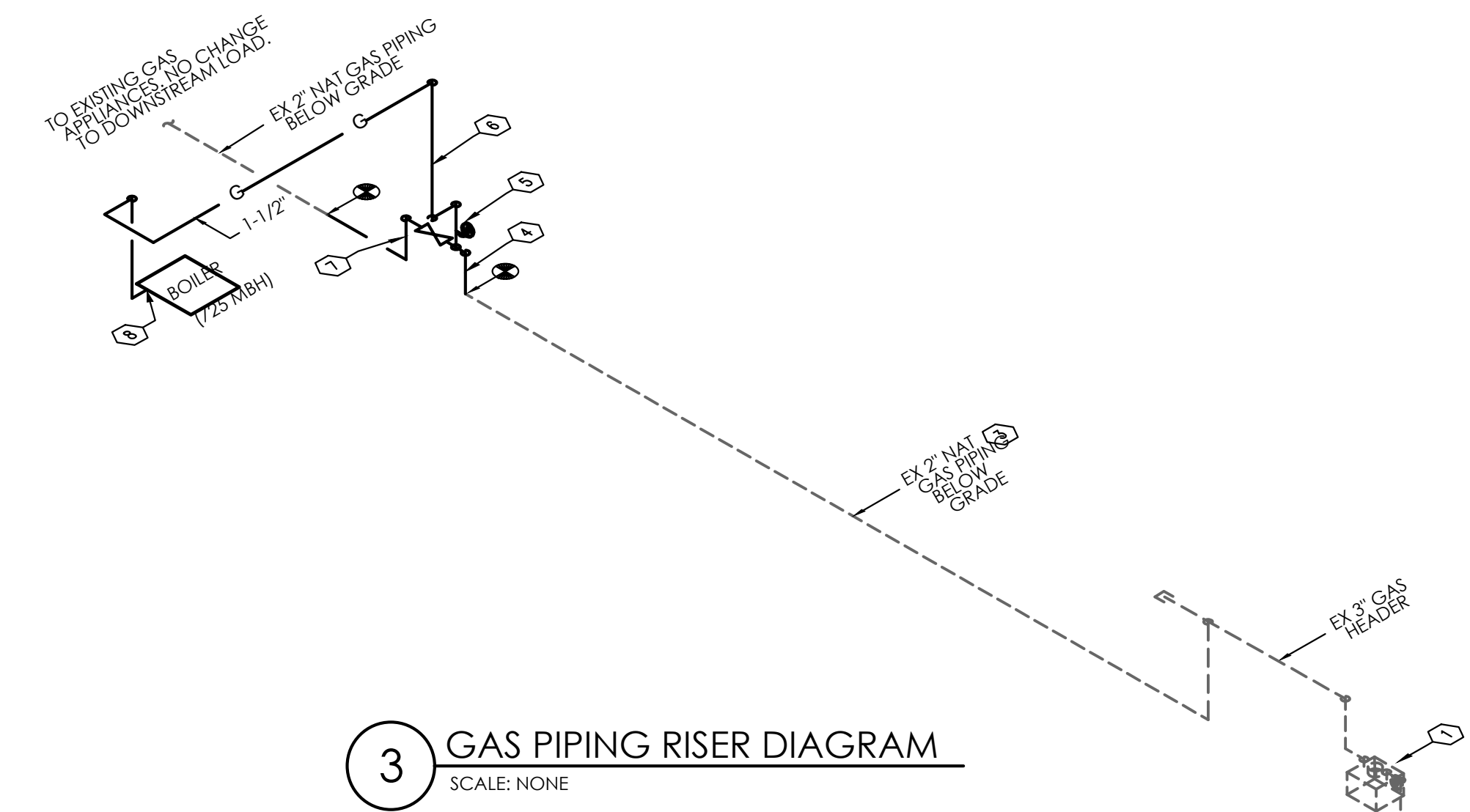
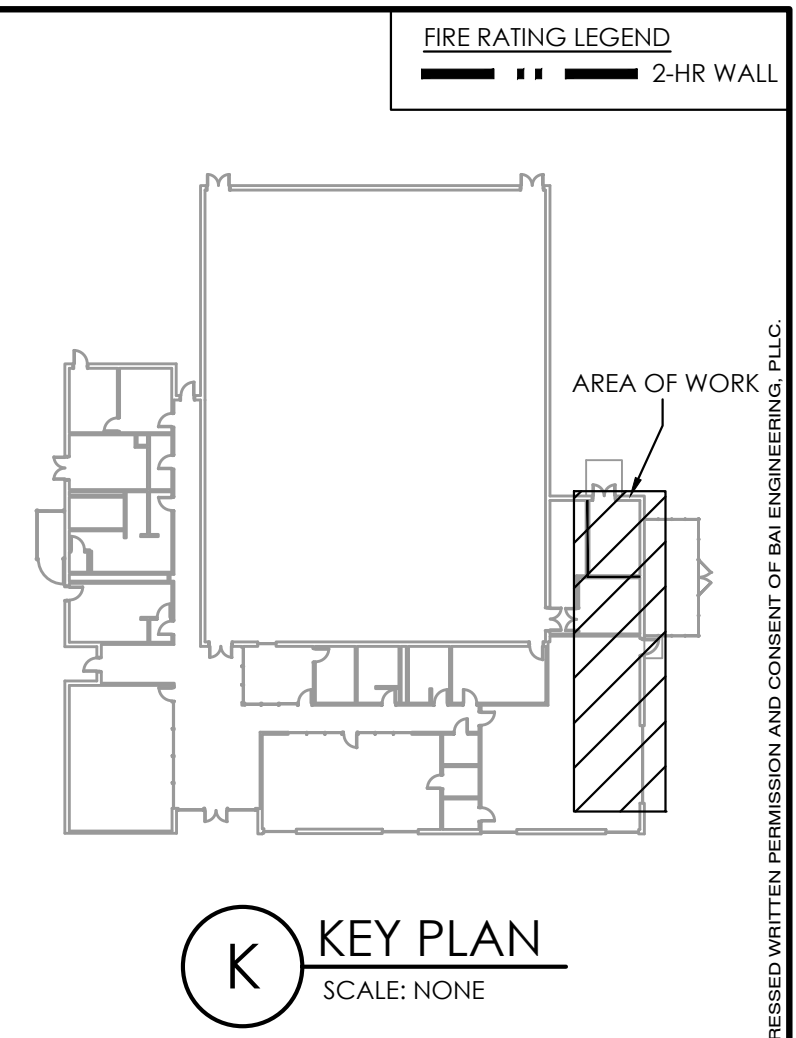
SHEET
**EXTERIOR
DETAILS**

NATURAL GAS CALCULATIONS TABLE 402.4(1)		
PIPE SIZE (IN.)	MAX CAPACITY OF PIPE IN MBH	
	EQUIV. LENGTH = 40 FT	
1/2"	62 MBH	
3/4"	129 MBH	
1"	243 MBH	
1-1/4"	499 MBH	
1-1/2"	747 MBH	

BASED UPON CHAPTER 4 OF THE 2018 NORTH CAROLINA FUEL GAS CODE, LESS THAN 2 PSI INLET PRESSURE, 0.3" WC PRESSURE DROP.

- GENERAL NOTES - THIS SHEET**
- ITEMS SHOWN IN FAINT & HATCHED ARE TO BE DEMO'D OR RELOCATED. ITEMS SHOWN IN FAINT ARE EXISTING TO REMAIN. NEW OR RELOCATED ITEMS ARE SHOWN IN BOLD. SEE LEGEND.
 - P.C. TO VERIFY EXACT SIZE AND LOCATION OF EXISTING LINES BEFORE BEGINNING WORK.
 - P.C. IS TO VERIFY EXACT SIZE AND LOCATION OF EQUIPMENT GAS CONNECTION(S) BEFORE BEGINNING WORK.
 - PROVIDE LABELING ON GAS PIPING AS REQUIRED BY 2018 NCGFC SEC. 401.5 & 401.7.
 - P.C. IS RESPONSIBLE FOR VENTING REGULATORS TO EXTERIOR AS REQ'D.

- TAGGED NOTES - THIS SHEET**
- EXISTING GAS METER WITH 2.0 PSI REGULATOR.
 - EXISTING BOILER TO BE DEMO'D BY M.C. ALL ASSOCIATED GAS PIPING TO BE DEMO'D TO DEMO POINTS SHOWN.
 - 2 PSI GAS PIPING SYSTEM DESIGNED FOR 1355 MBH TOTAL LOAD AND 250 FT EQUIVALENT LENGTH.
 - 2" GAS LINE CONNECTED TO EXISTING BELOW GRADE. TURN UP TO ABOVE GRADE. SEE RISER.
 - 1-1/2" GAS LINE W/ REGULATOR TO BUILDING. REGULATOR INLET PRESSURE: 2 PSI. OUTLET PRESSURE: 9" WC. DESIGN GAS LOAD: 725 MBH.
 - GAS LINE UP TO HIGH AS POSSIBLE IN SPACE.
 - 2" GAS LINE DOWN TO BELOW GRADE. CONNECT TO EXISTING. SEE RISER.
 - CONNECT 1-1/2" GAS TO BOILER. PROVIDE SHUT-OFF VALVE, UNION AND DRIP LEG AT CONNECTION. BOILER PROVIDED BY M.C.. ENSURE GAS PIPING INSTALLATION PER ALL MANUFACTURER'S REQUIREMENTS.



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NO.	REVISION	DATE


JOB NUMBER: 23-084
DATE ISSUED: 02/26/2025
PROJECT STATUS: ISSUED FOR BID

SHEET: GAS PIPING PLANS & RISER

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www.ba-ae.com

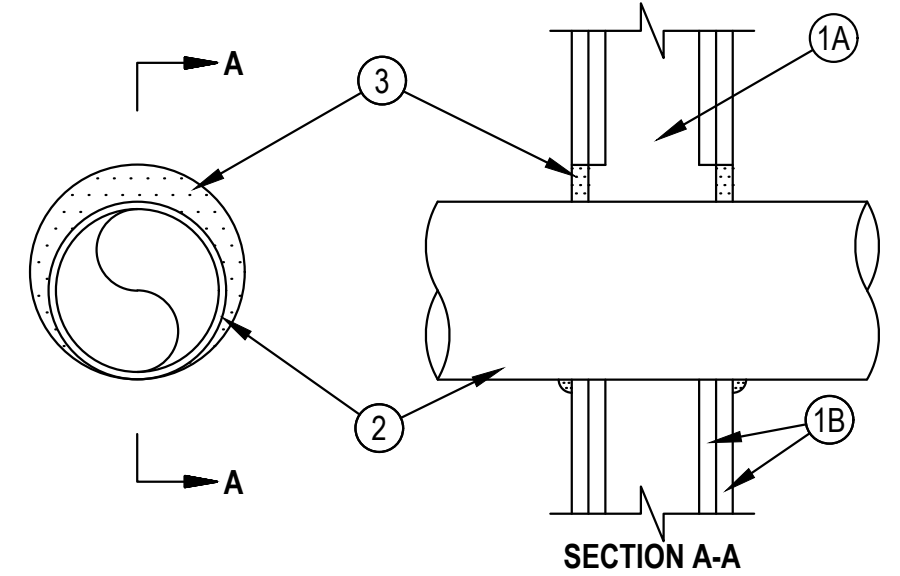
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PROJECT NO: 2024170.02
DRAWN BY: DWB
DESIGNED BY: DWB
CHECKED BY: MAJ



System No. W-L-1054

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 and 2 Hr (See Items 1 and 3)	F Ratings — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating at Ambient — Less Than 1 CFM/sq ft	FH Ratings — 1 and 2 Hr (See Items 1 and 3)
L Rating at 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	L Rating at Ambient — Less Than 1 CFM/sq ft
	L Rating at 400 F — Less Than 1 CFM/sq ft



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.

B. Gypsum Board — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.

The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly.

2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0.16 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe — Nom 3/8 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 3/8 in. (102 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) .diam steel conduit.


D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.

3. Fill, Void or Cavity Material — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC. — FS-One Sealant or FS-One MAJ Fluorescent Sealant


* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



Hilti Firestop Systems

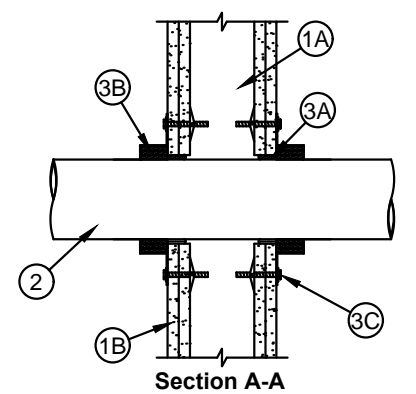
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October 14, 2015

2 METALLIC PIPE (GYPSUM WALL) DETAIL
NO SCALE



System No. W-L-2059

F Ratings — 1 and 2 Hr (See Items 2 and 3)	T Ratings — 3/4, 1, 1-1/2 and 2 Hr (See Items 2 and 3)
L Rating at Ambient — 1 CFM/sq ft	L Rating at 400 F — Less Than 1 CFM/sq ft



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 and V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.

2. Through-Penetrants - One nonmetallic pipe or conduit to be centered within the firestop system. The annular space shall be max 1/4 in. (6 mm). Pipe or conduit to be rigidly supported on both sides of the wall assembly. The following types and sizes of nonmetallic pipes or conduits may be used:

A. Polyvinyl Chloride (PVC) Pipe - Nom 4 in. (102 mm) diam (or smaller) Schedule 40 or 80 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. When Schedule 80 PVC pipe is used, the F and T Ratings are 1 hr. When Scheduled 80 PVC pipe is used in closed (process or supply) piping systems, the F and T Ratings are equal to the assembly rating of the wall in which it is installed.

B. Rigid Nonmetallic Conduit - Nom 4 in. (102 mm) diam (or smaller) Schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

C. Chromated Polyvinyl Chloride (CPVC) Pipe - Nom 4 in. (102 mm) diam (or smaller) SDR 33.5 CPVC pipe for use in closed (process or supply) piping systems.

D. Acrylonitrile Butadiene Styrene (ABS) Pipe - Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid or foamed core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

E. Fire Retardant Polypropylene (FRPP) Pipe - Nom 4 in. (102 mm) diam (or smaller) Schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

F. Polyvinylidene Fluoride (PVDF) Pipe - Nom 4 in. (102 mm) diam (or smaller) Schedule 40 PVDF pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

G. Fiberglass Reinforced Pipe (FRP) Pipe - Nom 4 in. (102 mm) diam (or smaller) glass fiber reinforced thermosetting resin pipe for use in closed (process or control) or vented (drain, waste or vent) piping systems. When FRP pipe is used, T Rating is 3/4 hr.

H. High Density Polyethylene (HDPE) Pipe - Nom 4 in. (102 mm) diam (or smaller) Schedule 40 HDPE pipe for use in closed (process or supply) piping systems.

3. Firestop System - The firestop system shall consist of the following:

A. Fill, Void or Cavity Material - Sealant - Fill material forced into annular space to max extent possible. Collar shall be installed flush with both surfaces of wall assembly. SPECIFIED TECHNOLOGIES INC. - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal LCI Sealant, Penal 300 Sealant or SpecSeal Series SBL300 Sealant.

B. Fill, Void or Cavity Material - Wrap Strip - Nom 1/8 or 3/16 in. (3.2 or 4.8 mm) thick intumescent material faced on both sides with a plastic film, supplied in 2 in. (51 mm) wide strips or nom 1/4 in. (6 mm) thick intumescent material faced on both sides with a plastic film, supplied in 1-1/2 in. (38 mm) wide strips. The layers of wrap strips are individually wrapped around the through-penetrant with ends butted and held in place with masking tape. Butted ends in successive layers shall be aligned.

Fire Rating of Wall Hr	Max Diam or Through Penetrant in. (mm)	No. of Wrap Strip Layers	F Rating Hr	T Rating Hr
1	1-1/2 (38)	1	1	1
2	1-1/2 (38)	1	2	1-1/2
1	2 (51)	1	1	1
2	2 (51)	1	2	1-1/2
1	3 (76)	2	1	1
2	3 (76)	2	2	2
1	4 (102)	3	1	1
2	4 (102)	3	2	2

Except as noted in Item 2, the F and T Rating of the firestop system is dependent upon the fire rating of wall, diam of through penetrant and the number of wrap strips as tabulated below.

SPECIFIED TECHNOLOGIES INC. - SpecSeal BLU Wrap Strip, SpecSeal BLU2 Wrap Strip or SpecSeal RED Wrap Strip


C. Steel Collar - Collar fabricated from coils of precut 0.016 in. (0.4 mm) thick (30 MSG) galv steel sheet available from wrap strip manufacturer. Collar shall be min 1-1/2 in. (38 mm) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs for securement to the concrete floor or wall. Retainer tabs, 3/4 in. (19 mm) wide tapering down to 1/4 in. (6 mm) wide and located opposite the anchor tabs, are folded 90 degree toward pipe surface to maintain the annular space around the pipe and to retain the wrap strips. Steel collar wrapped around wrap strips and pipe with a 1 in. (25 mm) wide overlap along its perimeter joint and secured together by means of a min 1/2 in. (13 mm) wide by 0.026 in. (0.7 mm) thick stainless steel hose clamp installed at mid-depth of the steel collar. As an alternate to the steel hose clamp, the steel collar may be secured together by means of three No. 8 by 1 1/4 in. (6 mm) long steel sheet metal screws when more than one layer of wrap strip is used.

Wrap strip/collar assembly is slid along the through-penetrant until abut the surface of the wall. Collar secured to wall by 1/8 in. (3.2 mm) diam by 1-3/4 in. (44 mm) long steel molly bolts in conjunction with 1-1/4 in. (32 mm) diam steel longer washers. The number of molly bolts used is dependent upon the nom diam of the through penetrant. Two molly bolts, symmetrically located, are required for nom 1-1/2 in. (38 mm) and 2 in. (51 mm) diam through penetrants. Three molly bolts, symmetrically located, are required for nom 2-1/2 in. (64 mm) and 3 in. (76 mm) diam through penetrants. Four molly bolts, symmetrically located, are required for nom 3-1/2 in. (89 mm) and 4 in. (102 mm) diam through penetrants. Steel collars are installed on each side of wall.

D. Firestop Device* - (Optional, Not Shown) - As an alternate to Item 3B and 3C, galv steel collar lined with an intumescent material sized to fit the specific diam of the through-penetrant. Device shall be installed around through-penetrant in accordance with accompanying installation instructions. Device incorporates anchor tabs for securement to each surface of wall assembly by means of 1/8 in. (3 mm) diam by 1-3/4 in. (45 mm) long steel molly bolts in conjunction with 1/4 in. (6 mm) diam by 1-1/2 in. (38 mm) diam steel longer washers.


SPECIFIED TECHNOLOGIES INC. - SpecSeal Firestop Collar, SpecSeal LCC Collar or SpecSeal SSC Collar. When SpecSeal LCC Collar or SpecSeal SSC Collar are used, the max annular space shall be 1/8 in. (3 mm) for max 2-1/2 in. (64 mm) diam pipe and shall be max 1/4 in. (6 mm) for pipe larger than 2-1/2 in. (64 mm) diam.

*Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



Specified Technologies Inc., 210 Evans Way Somerville, NJ 08876
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1 NON-METALLIC PIPE (GYPSUM WALL) DETAIL
NO SCALE



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02/25/2025



PROFESSIONAL ENGINEER
SEAL
030561
MICHAEL A. JACOBS
PLUMBING

NO.	REVISION	DATE

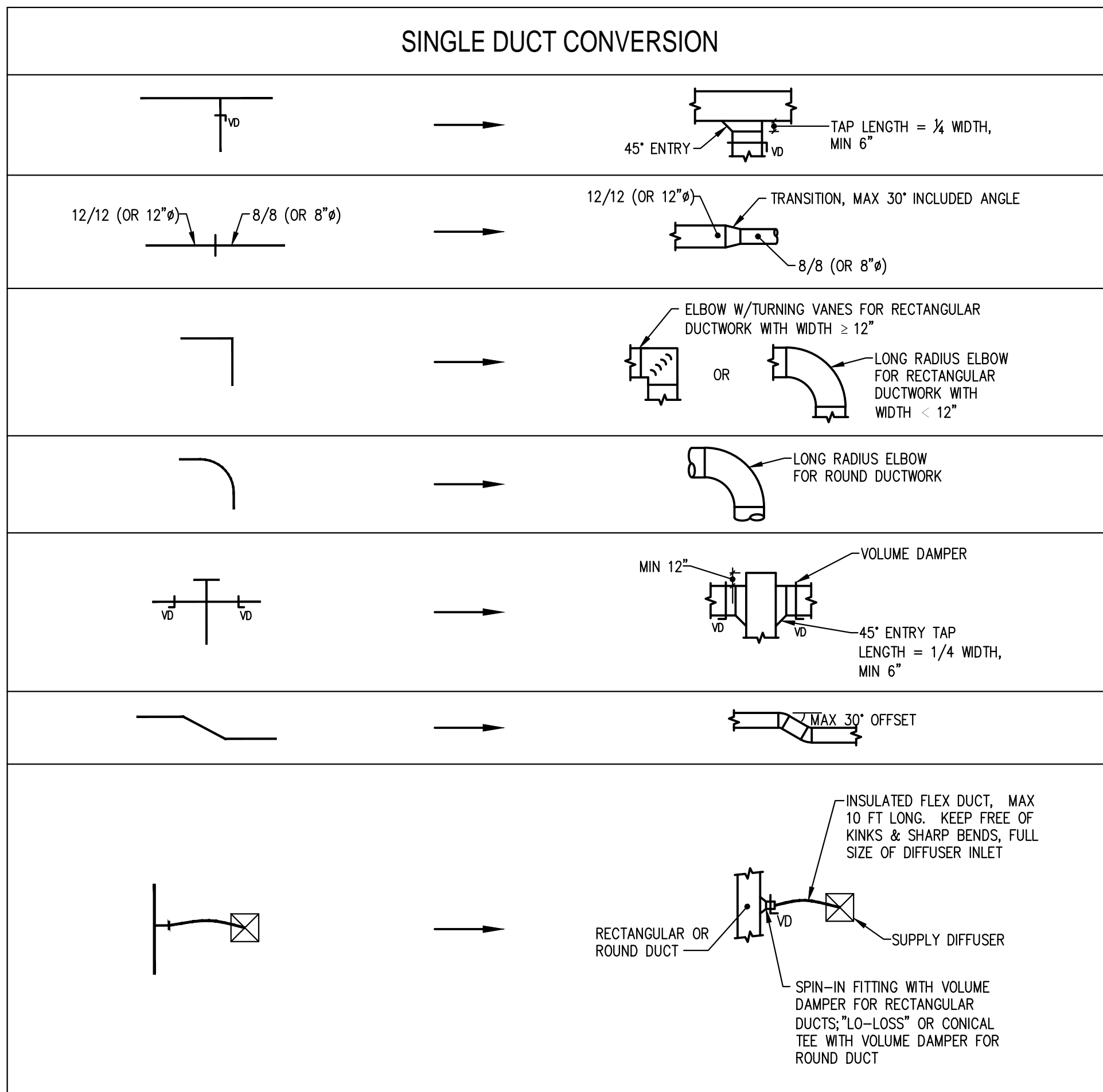
JOB NUMBER
23-084

DATE ISSUED
02/26/2025

PROJECT STATUS
ISSUED FOR BID

SHEET
PLUMBING
U.L.
DETAILS

P201



HVAC SYMBOLS SCHEDULE

SYMBOL	ABBREV	DESCRIPTION
	HWS	HOT WATER SUPPLY
	HWR	HOT WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	CHWR	CHILLED WATER RETURN
	ST	STEAM SUPPLY LINE - # PSIG
	C	CONDENSATE RETURN LINE - # PSIG
	CP	CONDENSATE PUMPED RETURN
	CD	CONDENSATE DRAINAGE
	MU	MAKE-UP WATER
	RL	REFRIGERANT LIQUID
	RS	REFRIGERANT SUCTION
	RG	REFRIGERANT HOT GAS
	FOS	FUEL OIL SUPPLY
	FOR	FUEL OIL RETURN
	FOV	FUEL OIL VENT
	FOG	FUEL OIL GAGE
	CS	CONDENSER WATER SUPPLY
	CR	CONDENSER WATER RETURN
		ELBOW TURNED UP
		ELBOW TURNED DOWN
		TEE TURNED UP
		TEE TURNED DOWN
		PIPE UNION
		FLEXIBLE PIPE CONNECTION
		PIPE ANCHOR
		PIPE GUIDE
	EXC	EXPANSION COMPENSATOR
		FLOW ARROW
	GA, BF	GATE OR BUTTERFLY VALVE (SEE SPEC)
	GL, BF	GLOBE OR BUTTERFLY VALVE (SEE SPEC)
	CK	CHECK VALVE
	BL	BALANCING VALVE
	BA	BALL VALVE
	CBL	CALIBRATED BALANCING VALVE
	PRV	PRESSURE REDUCING VALVE
	S	SAFETY VALVE (STEAM)
	R	SAFETY RELIEF VALVE (WATER)
	VFS	VENTURI FLOW STATION
		BACKFLOW PREVENTER
		CAP ON END OF PIPE
		TWO WAY CONTROL VALVE
		THREE WAY CONTROL VALVE
		SHUT-OFF VALVE (SEE SPEC)
		THERMOSTAT
		PRESSURE GAGE
		"Y" STRAINER WITH BLOWDOWN VALVE
	F & T	FLOAT & THERMOSTATIC STEAM TRAP
	TD	THERMO-DYNAMIC STEAM TRAP
	CO	CLEANOUT IN HORIZONTAL RUN
	T'STAT	THERMOSTAT
	H'STAT	HUMIDISTAT
	DT	DUCT TEMPERATURE SENSOR
	DH	DUCT HUMIDITY SENSOR
	TH	COMBINATION TEMPERATURE & HUMIDITY SENSOR
		TEMPERATURE SENSOR
		HUMIDITY SENSOR
	CO ₂	CARBON DIOXIDE SENSOR
	CO	CARBON MONOXIDE SENSOR

HVAC SYMBOLS SCHEDULE

SYMBOL	ABBREV	DESCRIPTION
	SA	SUPPLY AIR DUCT SECTION
	RA	RETURN AIR DUCT SECTION
	EA	EXHAUST AIR DUCT SECTION
	DEA	DISHWASHER, DISHWASHER HOOD, AND HIGH HUMIDITY EXHAUST AIR DUCT SECTION
	FEA	FUME HOOD, LABORATORY, AND PROCESS EXHAUST AIR DUCT SECTION
	KEA	KITCHEN HOOD EXHAUST AIR DUCT SECTION
	OA	OUTSIDE AIR DUCT SECTION
	Rel A	RELIEF AIR DUCT SECTION
	TA	TRANSFER AIR
	SA	SUPPLY AIR
	RA, EA, Rel A	RETURN, EXHAUST OR RELIEF AIR
	OA	OUTSIDE AIR
		SQUARE OR RECTANGULAR DUCT SIZE
		ROUND DUCT SIZE
		FLAT OVAL DUCT SIZE - MAJOR AXIS/MINOR AXIS
	DL	DOOR LOUVER
	UC	UNDER CUT
	VD	VOLUME DAMPER
	TV	TURNING VANES
	FC	FLEXIBLE CONNECTION
	MOD	MOTOR OPERATED DAMPER
		CHANGE OF ELEVATION: RISE - R, DROP - D
	FR D	FIRE DAMPER (HORIZ. RUN)
	FR D	FIRE DAMPER (VERT. RISE)
	SFD	SECONDARY FIRE DAMPER
	F/S D	COMBINATION FIRE/SMOKE DAMPER (HORIZ RUN)
	F/S D	COMBINATION FIRE/SMOKE DAMPER (VERT RISE)
	SK D	SMOKE DAMPER
	RD D	RADIATION DAMPER
	DD	DUCT SMOKE DETECTOR
	AP	ACCESS PANEL
	AD	ACCESS DOOR
		DISTANCE FROM FLOOR TO BOTTOM OF OBJECT
		CONNECT TO EXISTING
		POINT OF DISCONNECT
		DETAIL REFERENCE NUMBER → SHEET WHERE DRAWN
		SECTION REFERENCE LETTER → DIRECTION OF VIEW → SHEET WHERE DRAWN

SYMBOLS & IDENTIFICATION OF GRILLES, REGISTERS, & DIFFUSERS

IDENTIFICATION		
	12/12 (OR) NECK SIZE	NO. OF SLOTS (LD ONLY) [DEGREE OF DEFLECTION (SR ONLY)]
	CFM (LD ONLY)	STYLE
DESCRIPTION		
SR - SUPPLY REGISTER	RG - RETURN GRILLE	CD - CEILING DIFFUSER
RR - RETURN REGISTER	EG - EXHAUST GRILLE	LD - LINEAR DIFFUSER
ER - EXHAUST REGISTER	LFD - LAMINAR FLOW DIFFUSER	TG - TRANSFER GRILLE
RLR - RELIEF REGISTER		
STYLE		
	SQUARE DIFFUSER (HATCHED SECTOR INDICATES DIRECTION WITHOUT AIRFLOW)	
	ROUND DIFFUSER W/ ADJUSTABLE PATTERN	
	SIDEWALL REGISTER OR GRILLE	
	CEILING REGISTER OR GRILLE	

- #### GENERAL NOTES (APPLY TO ALL DRAWINGS):
- COMPLY WITH LOCAL, STATE, AND NATIONAL CODES AND REGULATIONS.
 - PLAN DOCUMENTS ARE SCHEMATIC TO CONVEY THE DESIGN INTENT. DO NOT SCALE DRAWINGS FOR EXACT PLACEMENT OF EQUIPMENT AND DISTRIBUTION SYSTEMS.
 - COORDINATION BETWEEN DISCIPLINES IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR AND/OR CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
 - THE DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. IN A CASE OF A CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS, REQUEST A DOCUMENTED INTERPRETATION FROM THE ENGINEER/ARCHITECT.
 - INSTALL EQUIPMENT PER MANUFACTURER'S INSTALLATION AND INSURANCE UNDERWRITER REQUIREMENTS.
 - THE LINE-TYPE AND SYMBOLS LEGENDS SHOW ITEMS TYPICALLY INCLUDED WITH THE SPECIFIED SYSTEMS. NOT ALL SYMBOLS AND/OR LINETYPES ARE UTILIZED.
 - INCLUDE DETAILS IN THE SCOPE OF WORK FOR EVERY SITUATION TO WHICH THAT DETAIL APPLIES EXCEPT WHERE A SPECIFIC DETAIL REFERENCE IS DESIGNATED TO INDICATE OTHERWISE.
 - EXISTING HVAC EQUIPMENT, PIPING AND DUCTWORK SHALL REMAIN UNLESS NOTED OTHERWISE.
 - SCHEDULE SYSTEM MODIFICATIONS TO MINIMIZE DISRUPTIONS TO EXISTING BUILDING SERVICES. COORDINATE SHUTDOWN REQUESTS PER SPECIFICATION AND OWNER REQUIREMENTS.
 - LOCATE DUCTWORK AND PIPING AS HIGH AS POSSIBLE, UNLESS NOTED OTHERWISE.
 - SEAL PENETRATIONS THROUGH FIRE AND/OR SMOKE BARRIERS WITH AN APPROVED SYSTEM TO MAINTAIN THE INTEGRITY OF THE BARRIER.
 - INSTALL FIRE DAMPERS, FIRE/SMOKE DAMPERS AND SMOKE DAMPERS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE PER NFPA REQUIREMENTS.
 - MAINTAIN DISTANCE, CONFIGURATION AND NUMBER OF ELBOWS FROM UNIT OR VAV BOXES TO FIRST DIFFUSER AS SHOWN ON PLANS FOR SOUND ATTENUATION. CONTRACTOR SHALL COORDINATE DEVIATIONS WITH THE ENGINEER OF RECORD.
 - PROVIDE TRANSITIONS REQUIRED FROM DUCT SIZE INDICATED ON PLANS TO HVAC EQUIPMENT CONNECTION SIZE. MAINTAIN 30 DEGREE MAXIMUM ANGLE FOR TRANSITION. CONTRACTOR SHALL COORDINATE DEVIATIONS WITH THE ENGINEER OF RECORD.
 - COORDINATE EXACT GRILLE/REGISTER/DIFFUSER LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN BEFORE ROUGH-IN.
 - COORDINATE ROOF PENETRATIONS WITH THE ROOFING CONTRACTOR OR ROOF WARRANTY UNDERWRITER TO MAINTAIN ROOFING SYSTEM INTEGRITY.
 - MINIMUM MECHANICAL PIPING SIZE SHALL BE 3/4" UNLESS NOTED OTHERWISE.
 - INSTALL FLEXIBLE CONNECTIONS BETWEEN ALL MOTORIZED EQUIPMENT AND THE CONNECTED SYSTEM. REFER TO SPECIFICATIONS FOR CONNECTION TYPE AND APPLICATION.

HVAC LINETYPE KEY

(APPLIES TO ALL HVAC SERVICES OR SYMBOLS)

SYMBOL	DESCRIPTION
	HEAVY LINETYPE INDICATES DUCTWORK, PIPING AND EQUIPMENT TO BE FURNISHED UNDER THIS PROJECT
	THIN LINETYPE INDICATES DUCTWORK, PIPING AND EQUIPMENT THAT ARE EXISTING TO REMAIN, UNLESS NOTED OTHERWISE
	DASHED LINETYPE INDICATES DUCTWORK, PIPING AND EQUIPMENT THAT ARE EXISTING TO BE REMOVED, UNLESS NOTED OTHERWISE

HVAC ABBREVIATIONS

AB CL	ABOVE CEILING	HC	HEATING/HVAC CONTRACTOR
AFF	ABOVE FINISHED FLOOR	FT HD	FEET OF HEAD
AFG	ABOVE FINISHED GRADE	HP	HORSEPOWER
APD	AIR PRESSURE DROP	HZ	HERTZ
ATC	AUTOMATIC TEMPERATURE CONTROL	KW	KILOWATT
BJ	BETWEEN JOIST	LAT	LEAVING AIR TEMPERATURE
BL GD	BELOW GRADE	LF	LINEAL FEET
CFM	CUBIC FEET PER MINUTE	LWT	LEAVING WATER TEMPERATURE
DB	DRY BULB	MC	MECHANICAL CONTRACTOR
DIA	DIAMETER	PC	PLUMBING CONTRACTOR
DIFF	DIFFUSER	PSIG	POUNDS PER SQUARE INCH GAGE
EAT	ENTERING AIR TEMP	RPM	REVOLUTIONS PER MINUTE
EC	ELECTRICAL CONTRACTOR	TJ	THRU JOIST
ESP	EXTERNAL STATIC PRESSURE	TR	THROUGH ROOF
EWT	ENTERING WATER TEMPERATURE	TP	TOTAL PRESSURE
EX	EXISTING	TSP	TOTAL STATIC PRESSURE
FPM	FEET PER MINUTE	TYP	TYPICAL
FRP	FIBERGLASS REINFORCED PLASTIC	UNO	UNLESS NOTED OTHERWISE
FV	FACE VELOCITY	WB	WET BULB
GC	GENERAL CONTRACTOR	IN WG	INCHES WATER GAGE
GPM	GALLONS PER MINUTE	WPD	WATER PRESSURE DROP
		V	VOLTS

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PROJECT NO. 2024170.02
 DRAWN BY: RCD
 DESIGNED BY: RCD
 CHECKED BY: SEO

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NO.	REVISION	DATE

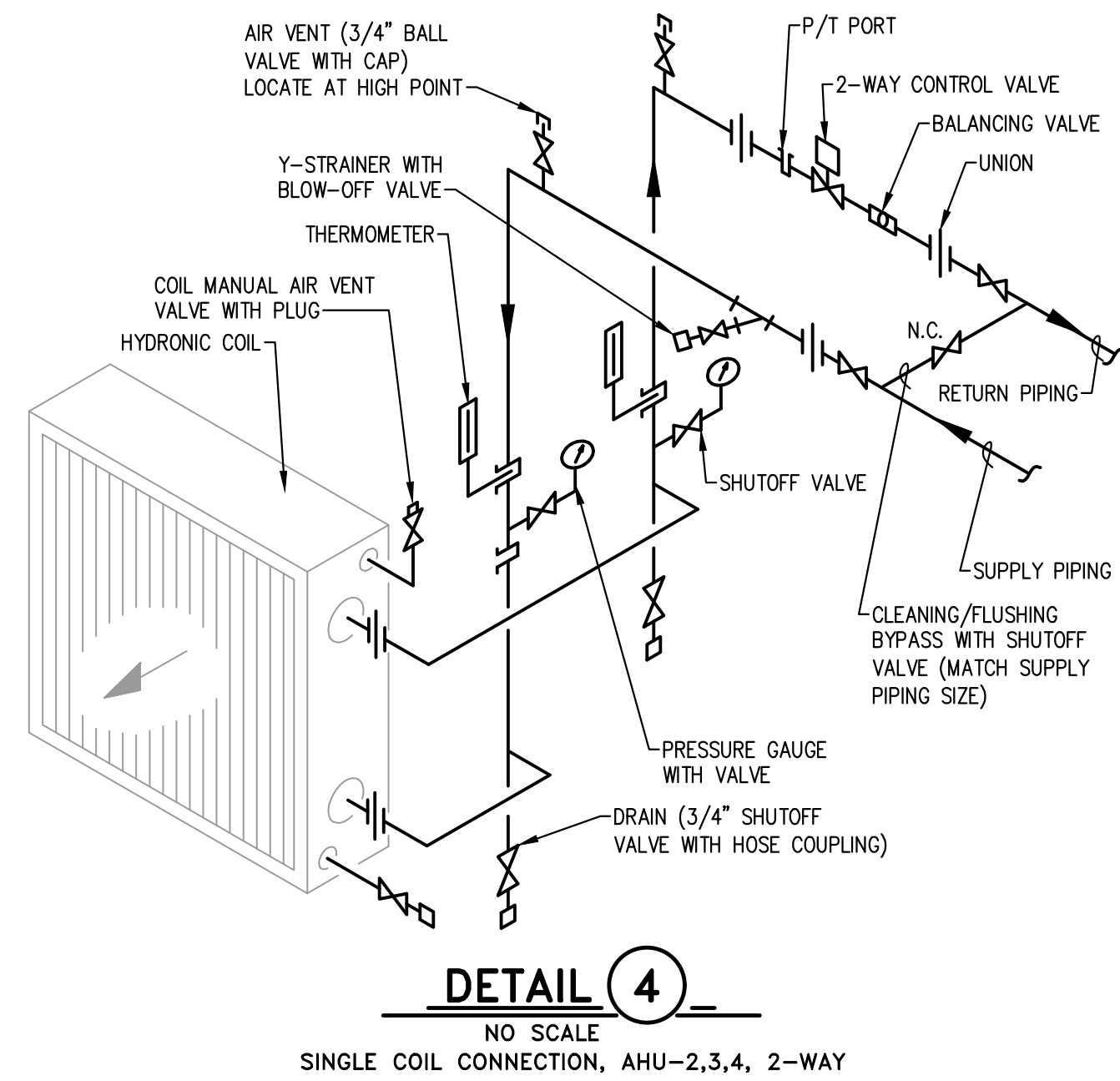
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DATE ISSUED
02/26/2025

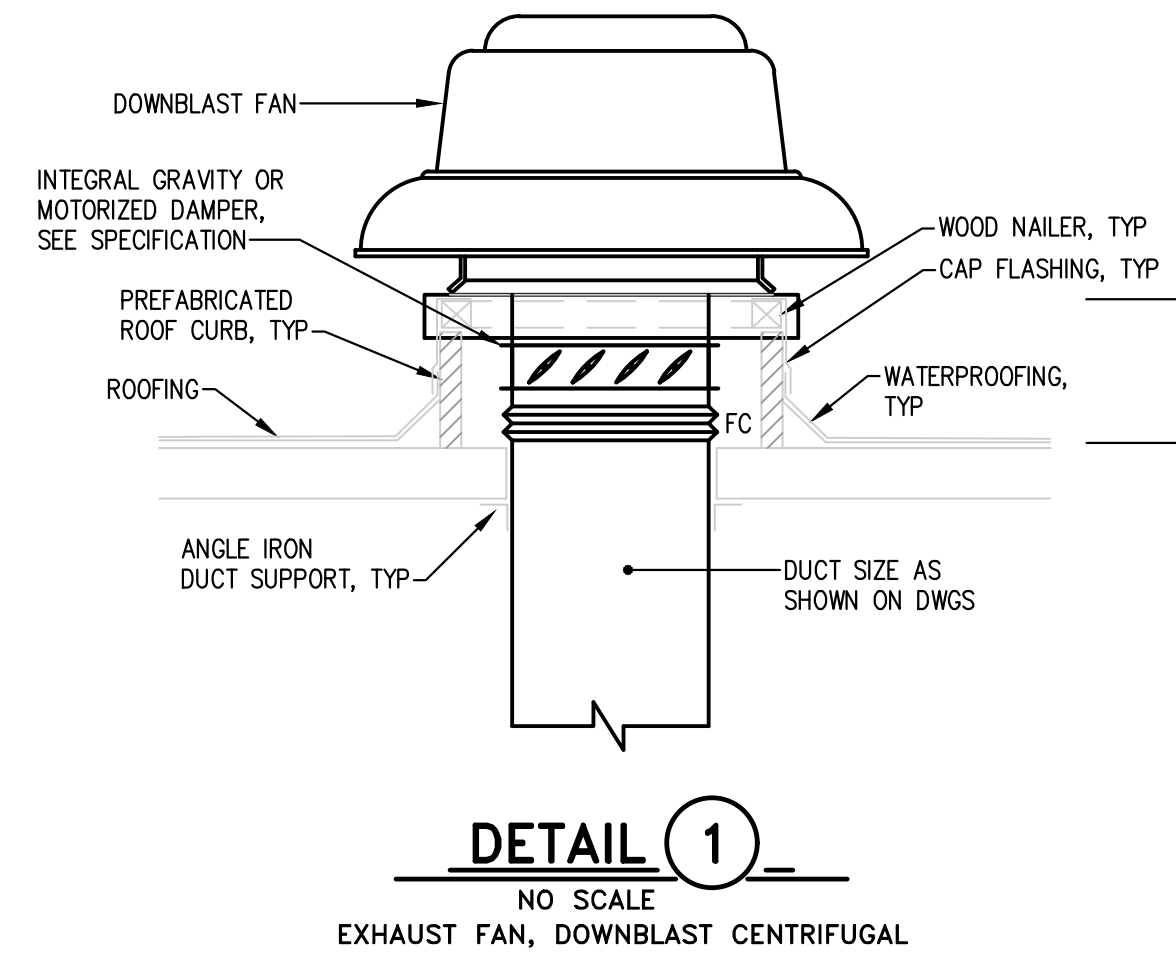
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ISSUED FOR BID

SHEET
MECHANICAL SCHEDULES, DETAILS AND NOTES

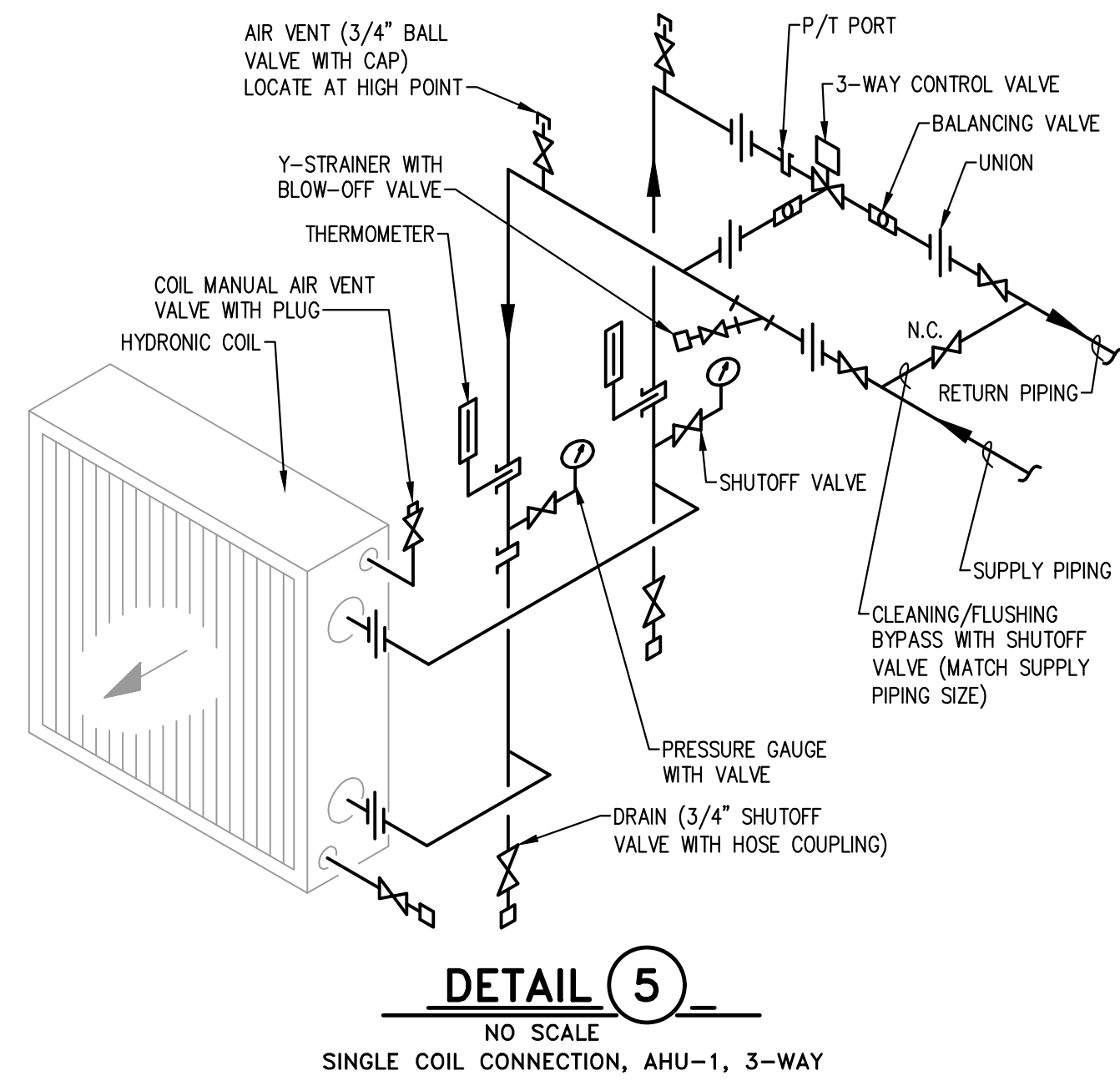
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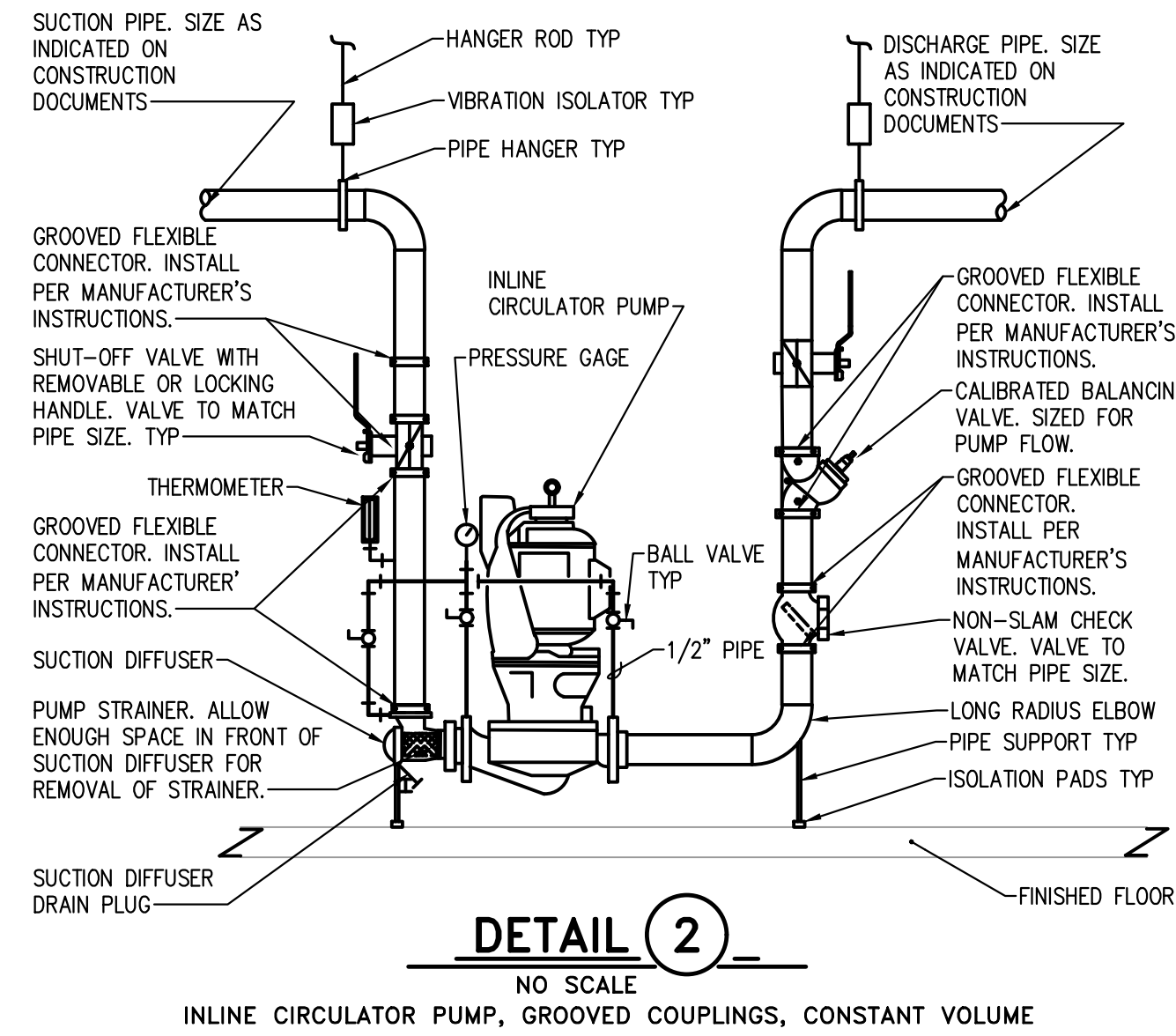
DETAIL 4
NO SCALE
SINGLE COIL CONNECTION, AHU-2,3,4, 2-WAY



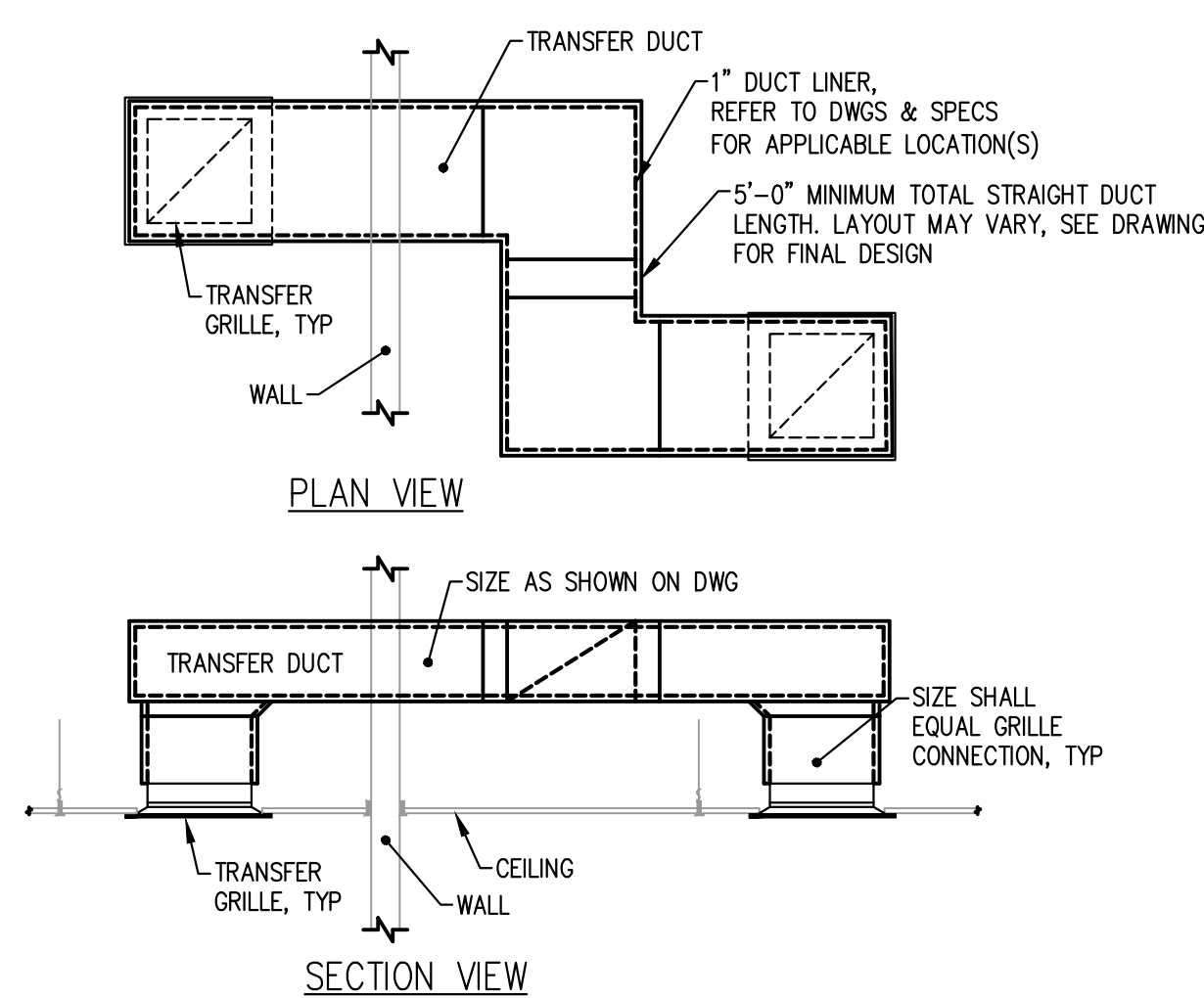
DETAIL 1
NO SCALE
EXHAUST FAN, DOWNBLAST CENTRIFUGAL



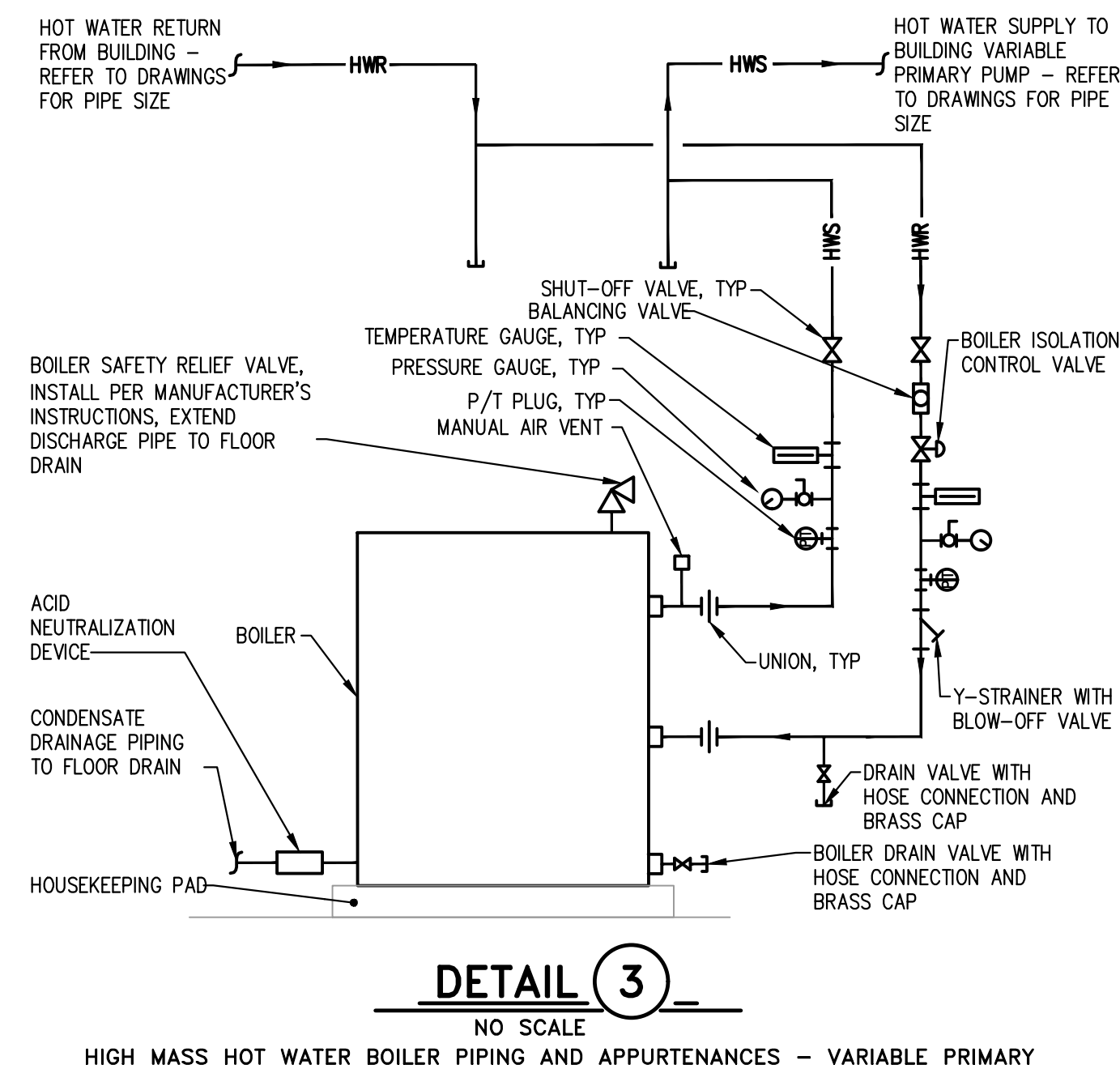
DETAIL 5
NO SCALE
SINGLE COIL CONNECTION, AHU-1, 3-WAY



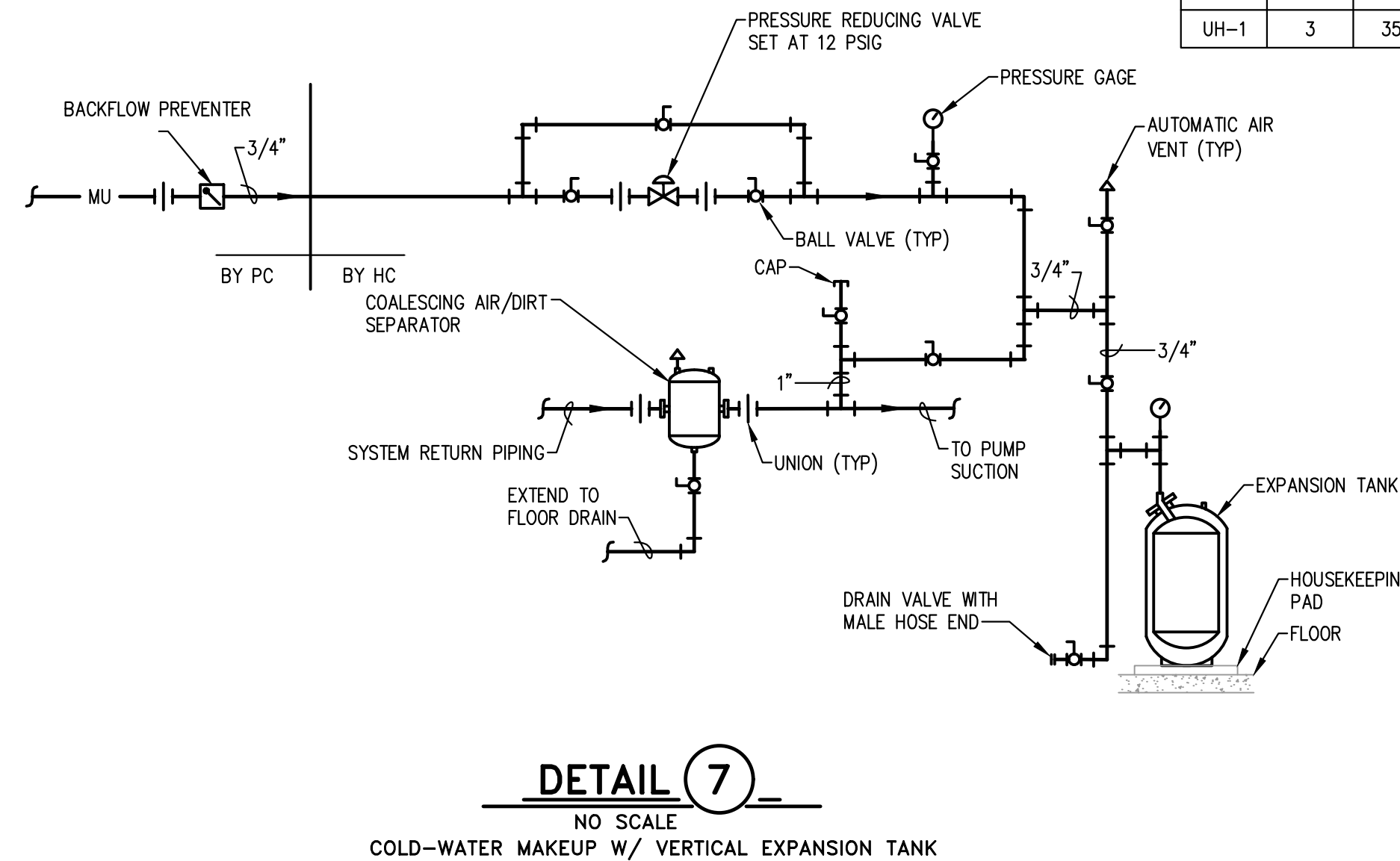
DETAIL 2
NO SCALE
INLINE CIRCULATOR PUMP, GROOVED COUPLINGS, CONSTANT VOLUME



DETAIL 6
NO SCALE
TRANSFER DUCT



DETAIL 3
NO SCALE
HIGH MASS HOT WATER BOILER PIPING AND APPURTENANCES - VARIABLE PRIMARY



DETAIL 7
NO SCALE
COLD-WATER MAKEUP W/ VERTICAL EXPANSION TANK

SPLIT SYSTEM AIR CONDITIONER SCHEDULE, HOT WATER HEAT																							
DESIG	CFM		COOLING					ESP (IN WG)	HP	HEATING COIL WATER					ELECTRICAL		ASSOCIATED CONDENSER - COMPRESSOR	BASIS OF DESIGN					
			MBH	EAT (°F)	LAT (°F)		MBH			GPM	WPD (FT HD)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	MCA			MOCP	VOLT	PHASE		
	TOTAL	OA	TOTAL	SENS	DB	WB	DB	WB	MBH	GPM	WPD (FT HD)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	MCA	MOCP	VOLT	PHASE				
AHU-1	1750	*	70.8	46.8	80	67	55	54	1.0	1	66.4	4.4	0.1	55	90	140	109.4	6.5	15	208	3	CU-1	TRANE UCCA
AHU-2	3500	*	137.1	92.4	80	67	55	54	1.0	3	132.9	8.5	0.2	55	90	140	108.5	14.3	25	208	3	CU-2	TRANE UCCA
AHU-3	3500	*	137.1	92.4	80	67	55	54	1.0	3	132.9	8.5	0.2	55	90	140	108.5	14.3	25	208	3	CU-3	TRANE UCCA

*BALANCE TO OUTSIDE AIRFLOW MEASURED DURING PRE-DEMOLITION TESTING.

CONDENSER-COMPRESSOR UNIT SCHEDULE									
DESIG	NOMINAL TONS	EER	ELECTRICAL					AIR ON COND (°F)	BASIS OF DESIGN
			MCA	MOCP	VOLT	PHASE	SCCR (kA)		
CU-1	6	12.5	33	45	208	3	5	95	TRANE TTA
CU-2	12.5	11.5	66	90	208	3	5	95	TRANE TTA
CU-3	12.5	11.5	66	90	208	3	5	95	TRANE TTA

SPLIT-SYSTEM HEAT PUMP SCHEDULE																		
DESIG	FAN				COOLING				AUX HEATER			ELECTRICAL			ASSOCIATED OUTDOOR UNIT			
	CFM		ESP (IN WG)	HP	MBH		EAT (°F)		SEER	EER	KW	NO. OF STEPS	EAT (°F)	MCA		MOCP	VOLT	PHASE
	TOTAL	OA			TOTAL	SENS	DB	WB										
SSH-4	1100	0	0.5	1	34.3	35.1	80	67	17.5	13.0	7.2	60	30	30	208	3	HP-4	

SAFETY RELIEF VALVE SCHEDULE						
DESIG	SERVICE	CAPACITY (MBH)	SETTING (PSI)	INLET	OUTLET	MAKE/MODEL
R-1	HEATING WATER	341	30	3/4	3/4	*

*PROVIDE BOILER MANUFACTURER'S OPTIONAL RELIEF VALVE.

SPLIT SYSTEM HEAT PUMP OUTDOOR UNIT SCHEDULE												
DESIG	NOMINAL TONS	AIR ON COND (°F)	SEER	EER	HEATING 47°F			ELECTRICAL				
					MBH	KW	COP	MCA	MOCP	VOLT	PHASE	SCCR (kA)
HP-4	3	95	17.5	13.0	32.8	3.5	4.0	15	25	208	3	5

AIR / DIRT SEPARATOR					
DESIG	SERVICE	PIPE CONNECTION SIZE	GPM	WPD (FT HD)	MAKE/MODEL
ADS-1	HOT WATER	2"	22	0.5	

HIGH EFFICIENCY BOILER SCHEDULE, NATURAL GAS													
DESIG	TYPE	MBH		GPM	LWT (°F)	EWT (°F)	WPD (FT HD)	GAS PRESSURE (IN WG)	ELECTRICAL				
		INPUT	NET AHRJ OUTPUT						MCA	VOLTAGE	PHASE	HZ	SCCR (kA)
B-1	CONDENSING	399	341	22	140	109	6.8	9.0	7	120	1	60	5

PUMP SCHEDULE													
DESIG	SERVICE	TYPE	GPM	FT HD	NPSH	% EFF	RPM	ELECTRICAL			CONNECTIONS		
								HP	VOLT	PHASE	IMPELLER SIZE	SUCT	DISCH
P-1	HOT WATER	INLINE	22	30	5.9	46.7	1656	3/4	208	3	5.75"	1.5"	1.5"

EXPANSION TANK SCHEDULE							
DESIG	SERVICE	TOTAL TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	ORIENTATION	SIZE		PRECHARGE PRESSURE (PSIG)
					LENGTH	DIAMETER	
EXP-1	HOT WATER	4	2.5	VERTICAL	15"	14"	12

FAN SCHEDULE										
DESIG	CFM	ESP (IN WG)	HP (WATTS)	RPM	VOLT	PHASE	TYPE	DRIVE	SPEED	SONES

UNIT HEATER SCHEDULE, ELECTRIC									
DESIG	KW	CFM	HP	RPM	ELECTRICAL		TYPE	SPEED	MODEL
					VOLT	PHASE			
UH-1	3	350	1/100	1600	208	1	HORIZ	SINGLE	BERKO HUHA



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23-084
DATE ISSUED
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PROJECT STATUS
ISSUED FOR BID

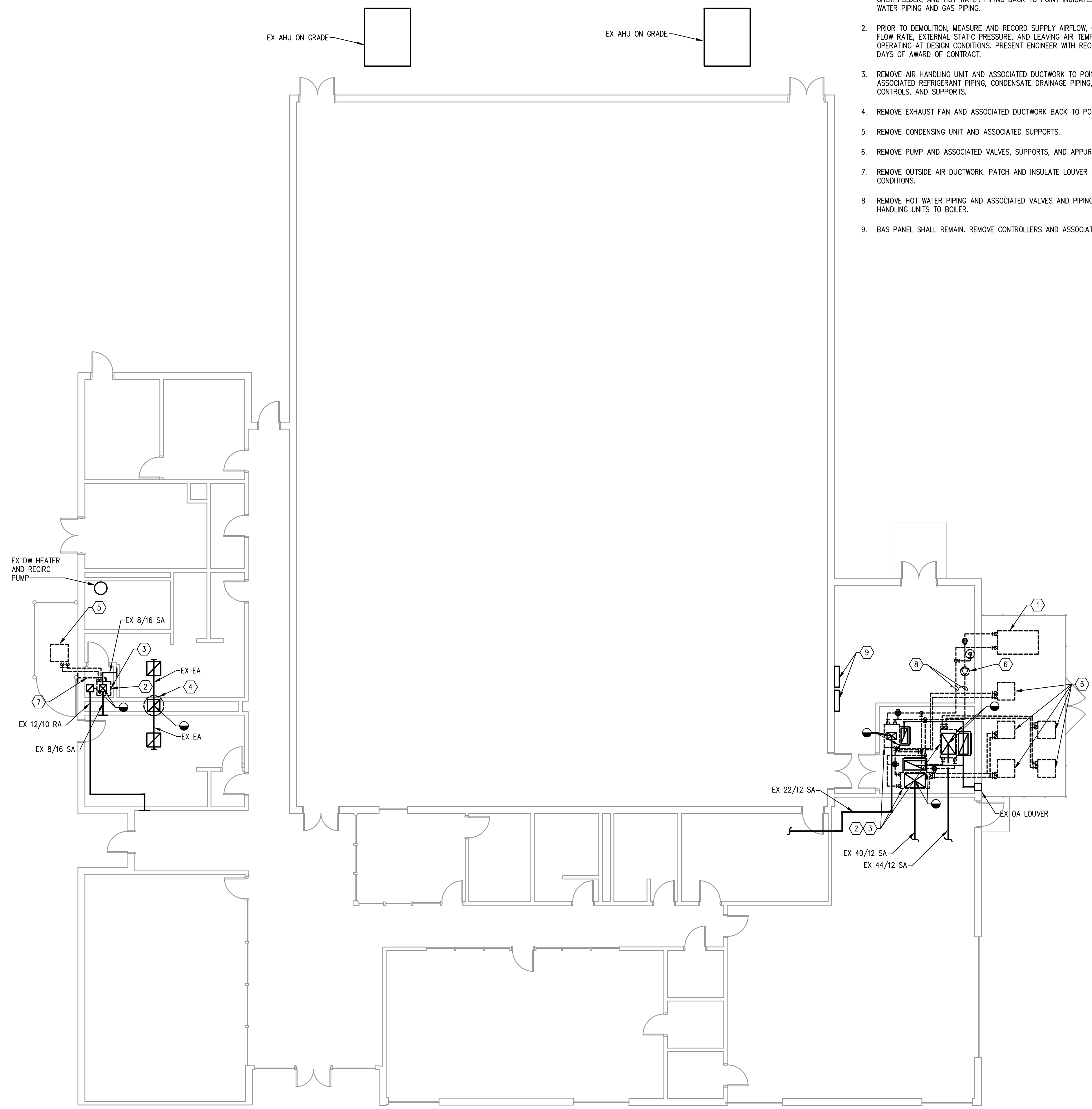
SHEET
MECHANICAL
DETAILS &
SCHEDULES

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DRAWN BY: RCD
DESIGNED BY: RCD
CHECKED BY: SEC

2024170.02-M002.DWG

M002

2024170-02-M101.DWG



- NOTES:**
1. REMOVE BOILER AND ASSOCIATED SUPPORTS, CONTROLS, EXPANSION TANK, AIR SEPARATOR, CHEM FEEDER, AND HOT WATER PIPING BACK TO POINT INDICATED. DISCONNECT MAKE-UP WATER PIPING AND GAS PIPING.
 2. PRIOR TO DEMOLITION, MEASURE AND RECORD SUPPLY AIRFLOW, OUTSIDE AIRFLOW, HOT WATER FLOW RATE, EXTERNAL STATIC PRESSURE, AND LEAVING AIR TEMPERATURE WHILE UNIT IS OPERATING AT DESIGN CONDITIONS. PRESENT ENGINEER WITH RECORD OF FINDINGS WITHIN 30 DAYS OF AWARD OF CONTRACT.
 3. REMOVE AIR HANDLING UNIT AND ASSOCIATED DUCTWORK TO POINT INDICATED. REMOVE ASSOCIATED REFRIGERANT PIPING, CONDENSATE DRAINAGE PIPING, HOT WATER PIPING, CONTROLS, AND SUPPORTS.
 4. REMOVE EXHAUST FAN AND ASSOCIATED DUCTWORK BACK TO POINT INDICATED.
 5. REMOVE CONDENSING UNIT AND ASSOCIATED SUPPORTS.
 6. REMOVE PUMP AND ASSOCIATED VALVES, SUPPORTS, AND APPURTENANCES.
 7. REMOVE OUTSIDE AIR DUCTWORK. PATCH AND INSULATE LOUVER TO MATCH SURROUNDING CONDITIONS.
 8. REMOVE HOT WATER PIPING AND ASSOCIATED VALVES AND PIPING SUPPORTS FROM AIR HANDLING UNITS TO BOILER.
 9. BAS PANEL SHALL REMAIN. REMOVE CONTROLLERS AND ASSOCIATED WIRING AND SENSORS.

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

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PROJECT STATUS
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SHEET
MECHANICAL
DEMOLITION
PLAN

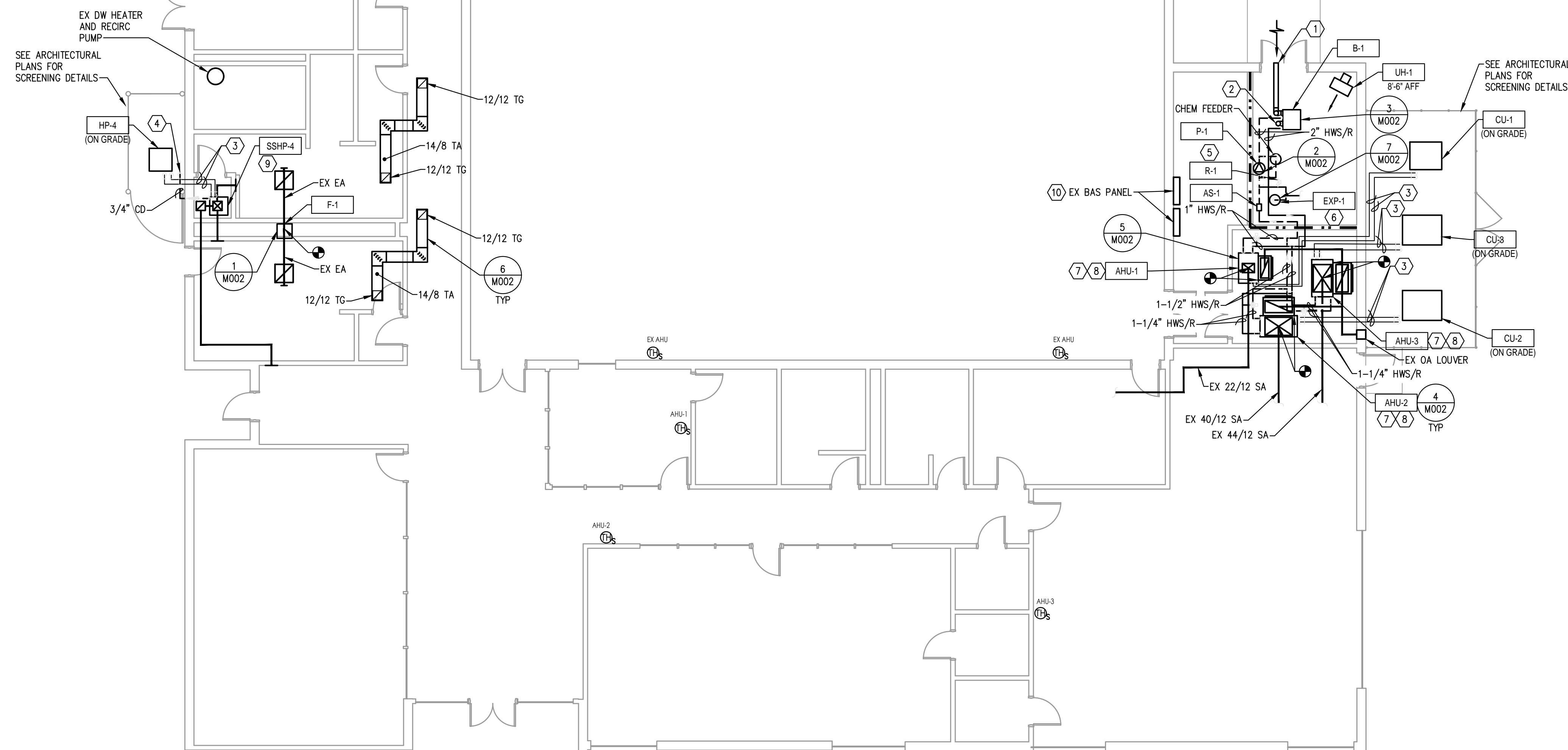
M101

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NOTES:

1. SIZE AND INSTALL BOILER INTAKE PER EQUIPMENT MANUFACTURER'S WRITTEN INSTRUCTIONS. TERMINATE BOILER INTAKE AT SIDEWALL.
2. SIZE AND INSTALL BOILER EXHAUST PER EQUIPMENT MANUFACTURER'S WRITTEN INSTRUCTIONS. EXTEND EXHAUST UP THROUGH ROOF AND TERMINATE WITH GOOSENECK.
3. SIZE, INSTALL, AND TRAP REFRIGERANT PIPING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. 3/4" CONDENSATE DRAINAGE PIPING DOWN ALONG WALL. TERMINATE 12" ABOVE FINISHED GRADE AND SPILL TO SPLASH BLOCK.
5. EXTEND DRAIN FULL SIZE WITH SHUT-OFF AND ACID NEUTRALIZATION TANK TO NEAREST FLOOR DRAIN.
6. INSTALL EXPANSION TANK ON 4" HIGH HOUSEKEEPING PAD. PAD SHALL EXTEND A MINIMUM OF 2" BEYOND TANK FOOTPRINT IN ALL DIRECTIONS.
7. VERIFY OUTSIDE AIR AND RETURN AIR DUCTWORK HAS BALANCING DAMPERS. IF NO BALANCING DAMPERS EXIST, PROVIDE VOLUME DAMPERS IN OUTSIDE AIR AND RETURN AIR DUCTWORK. BALANCE AHU TO AIRFLOWS NOTED ON SHEET M002.
8. AIR HANDLING UNIT PLENUM BOX SHALL BE SAME WIDTH AS AHU RETURN INLET CONNECTION AND EXTEND AWAY FROM UNIT A MINIMUM OF 30" FOR OUTSIDE AIR AND RETURN AIR CONNECTION.
9. SPLIT SYSTEM HEAT PUMP PLENUM BOX SHALL BE SAME WIDTH AS SSHP RETURN INLET CONNECTION AND EXTEND AWAY FROM UNIT A MINIMUM OF 30" FOR RETURN AIR CONNECTION. BALANCE UNIT TO AIRFLOWS NOTED ON SHEET M002.
10. REPLACE BUILDING AUTOMATION SYSTEM WITH OWNER'S STANDARD CONTROL SYSTEM. REFER TO SPECIFICATIONS FOR DETAILS. IN ADDITION TO NEW EQUIPMENT, EXISTING TO REMAIN EQUIPMENT SHALL BE CONTROLLED BY THE REPLACEMENT BUILDING AUTOMATION SYSTEM. MATCH EXISTING SEQUENCES FOR EXISTING TO REMAIN EQUIPMENT.



2024170.02-M102.DWG

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

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SHEET MECHANICAL PLAN

M102

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GENERAL ELECTRICAL NOTES

- GENERAL REQUIREMENTS:**
 - ELECTRICAL CONTRACTOR IS TO FURNISH AND PAY FOR ALL LABOR, MATERIAL, EQUIPMENT, PERMITS & FEES REQUIRED FOR THE COMPLETE INSTALLATION OF ALL SYSTEMS IN THIS SECTION OF WORK.
 - ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH NEC AND ALL OTHER APPLICABLE CODES. EC IS TO COORDINATE W/ G.C. IN REGARDS TO PROJECT TIMELINE, WORK HOURS, AS WELL AS ANY BONDING OR INSURANCE REQUIREMENTS.
 - ALL ELECTRICAL & LIGHTING EQUIPMENT SHALL BE PROVIDED COMPLETE WITH ALL ACCESSORIES, HANGERS, SUPPORTS, CONTROLS, ETC FOR A FULLY FUNCTIONING SYSTEM REGARDLESS OF PRESENCE ON PLANS.
 - ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE, IF LONGER. EXISTING EQUIPMENT IS EXCLUDED FROM WARRANTY REQUIREMENT.
 - THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATION AND ARRANGEMENT OF ALL MATERIALS AND EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT.
 - DO NOT SCALE DRAWINGS FOR MEASUREMENT. IF PRECISE DIMENSIONS ARE NEEDED, ELECTRONIC DRAWINGS ARE AVAILABLE UPON REQUEST FROM ARCH/ENGINEER FOR PREPARATION OF COORDINATION DRAWINGS BY CONTRACTOR.
 - INFORMATION GIVEN IN SCHEDULES INCLUDES BOTH DESCRIPTION OF PRODUCT AND MANUFACTURER'S MODEL #. IF CONFLICT IS PRESENT BETWEEN DESCRIPTION AND MODEL #, EQUIPMENT DESCRIPTION SHALL TAKE PRECEDENT. IN CASE OF CONFLICT BETWEEN THE PLANS AND NOTES/SPECIFICATIONS OR CONFLICT BETWEEN INFORMATION PRESENTED ON THE PLANS OR IN THE NOTES/SPECIFICATIONS, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
 - BESIDE BID EC IS RESPONSIBLE FOR CLARIFYING W/ G.C. ANY CONFUSION IN REGARDS TO RESPONSIBILITY OF WORK TO BE PERFORMED OR MATERIALS TO BE PROVIDED. THE SUBMITTAL OF THE BID BY THE CONTRACTOR WILL BE HELD AS PROOF THAT THE CONTRACTOR UNDERSTANDS THOROUGHLY AND COMPLETELY THE SCOPE OF THE WORK INVOLVED, AND HAS INCLUDED ON THE BID ALL THE NECESSARY ITEMS TO CARRY OUT THIS SECTION OF WORK.
 - AS SOON AS POSSIBLE (AND NOT MORE THAN 30 DAYS) AFTER CONTRACT IS SIGNED, THE EC SHALL PROVIDE SUBMITTALS OF EQUIPMENT HE/SHE INTENDS TO PURCHASE FOR REVIEW AND COMMENT BY THE ENGINEER. ENGINEER IS TO APPROVE SUBMITTALS BEFORE EQUIPMENT IS ORDERED.
 - E.C. & G.C. SHALL CONSULT OWNER OR OWNER'S REPRESENTATIVE REGARDING DISPOSAL, STORING OR REUSE OF ALL DEMO/REMOVED EQUIPMENT AND MATERIALS.
 - ALL EXISTING EQUIPMENT AND SYSTEMS ARE ASSUMED BY ENGINEER TO BE IN GOOD WORKING ORDER. BEFORE BEGINNING WORK E.C. IS TO ENSURE ANY EQUIPMENT & SYSTEMS TO REMAIN ARE PROPERLY FUNCTIONING. NOTIFY G.C. IMMEDIATELY IF PROBLEMS ARE DISCOVERED.
 - ALL QUESTIONS MUST BE SUBMITTED IN RFI FORMAT TO THE ARCHITECT AND MUST BE ADDRESSED BY THE APPROPRIATE DESIGNER OF RECORD PRIOR TO BECOMING A PROPOSED CHANGE ORDER.
 - E.C. IS TO REVIEW COMPLETE DRAWING SET. E.C. IS RESPONSIBLE FOR WORK EXPLICITLY SHOWN AND WORK IMPLIED, UNLESS OTHERWISE NOTED FINAL ELECTRICAL CONNECTION TO ALL EQUIPMENT, FURNITURE (I.E. CUBICLES, WORKSTATIONS, ETC) IS THE RESPONSIBILITY OF THE E.C..
- DIVISION OF WORK:**
 - ALL LOW VOLTAGE WIRING RELATED TO MECHANICAL EQUIPMENT AND SYSTEMS IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR (ANY LOW VOLTAGE FIRE ALARM WIRING TO BE BY E.C.). ALL HIGH VOLTAGE CONNECTIONS TO MECHANICAL EQUIPMENT, TO BE PROVIDED AND INSTALLED BY E.C. (SEE EQUIPMENT SCHEDULE FOR DISCONNECT RESPONSIBILITY).
 - G.C. TO BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ACCESS DOORS (WALL, FLOOR, CEILING) RELATED TO ELECTRICAL SYSTEM. E.C. RESPONSIBLE FOR COMMUNICATING TO G.C. SIZE AND LOCATION OF REQ'D ACCESS DOOR(S).
 - ELECTRICAL CONTRACTOR IS TO EMPLOY THE SERVICES OF THE G.C. FOR CUTTING AND PATCHING OF WALLS, FLOORS & CEILINGS RELATED TO THE INSTALLATION OF ELECTRICAL EQUIPMENT & SYSTEMS.
 - G.C. RESPONSIBLE FOR PAINTING OF ANY EXPOSED CONDUIT, WIRE, BOXES ETC. E.C. RESPONSIBLE FOR CLEANING AND PREPARING ITEMS FOR PAINT. COORDINATE W/ G.C.
 - E.C. TO COORDINATE W/ G.C. PRIOR TO BID REGARDING HIRING OF FIRE ALARM, DATA/TELE & SECURITY SUB-CONTRACTORS (IF APPLICABLE).
- MATERIALS:**
 - ALL MATERIAL, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES, INC., AND THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION.
 - PROVIDE HANGERS & SUPPORTS APPROVED FOR USE BY NEC.
 - CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS. MINIMUM SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS #10 AND SMALLER MAY BE SOLID OR STRANDED, UNLESS OTHERWISE NOTED. CONDUCTOR INSULATION SHALL BE TYPE THIN UNLESS OTHERWISE NOTED. ALL EXTERIOR CABLE OR OTHER WIRE EXPOSED TO SUNLIGHT SHALL BE RATED FOR EXTERIOR USE & SUNLIGHT RESISTANT.
 - ALL WIRING SHALL BE INSTALLED IN GALVANIZED RIGID CONDUIT, INTERMEDIATE METAL CONDUIT, OR EMT, EXCEPT AS ALLOWED BELOW. EMT SHALL NOT BE USED IN OR UNDER CONCRETE SLABS, OR IN MASONRY WALLS. USE SCHEDULE 40 PVC OUTDOORS WHERE NOT SUBJECT TO PHYSICAL DAMAGE OR BELOW FLOOR SLAB. PVC NOT TO BE USED IN PATIENT CARE AREAS. MINIMUM CONDUIT SIZE TO BE 1/2". TYPE MC AND AC CABLE MAY BE USED WHERE PERMISSIBLE BY NEC. FLEXIBLE CONDUIT SHALL BE USED FOR CONNECTIONS TO VIBRATING EQUIPMENT AND LUMINAIRES, BUT SHALL NOT EXCEED 6' IN LENGTH. NM & SER CABLE MAY BE USED IN CONSTRUCTION TYPES AND OCCUPANCIES ALLOWED BY NEC. NO NM OR SER CABLE MAY BE INSTALLED EXPOSED. ALL NM AND SER CABLE SHOULD BE PROTECTED FROM PHYSICAL DAMAGE AND INSTALLED IN ACCORDANCE WITH NEC 310.
- METAL CONDUIT COUPLINGS TO BE COMPRESSION TYPE OR THREADED WHEN ACCESSIBLE TO BUILDING OCCUPANTS. METAL CONDUIT COUPLINGS MAY BE SET-SCREW TYPE WHEN CONCEALED IN BUILDING STRUCTURE OR LOCATED MORE THAN 10' AFF. PLASTIC CONDUIT COUPLINGS TO BE SOCKET GLUED TYPE.
- FUSES 0 - 600 AMPS SHALL BE UL CLASS "RK-1" LOW PEAK DUAL ELEMENT TIME DELAY WITH 200,000 AMPERE INTERRUPTING RATING AS MANUFACTURED BY BUSSMANN, UNLESS NOTED OTHERWISE.
- ALL TERMINALS/LUGS SHALL BE 60/75% RATED. ALL TERMINALS, SPICING CONNECTORS, LUGS, ETC SHALL BE IDENTIFIED FOR USE WITH THE MATERIAL (CU/AL) OF THE CONDUCTOR AND SHALL BE PROPERLY INSTALLED.
- RECEPTACLES IN COMMERCIAL AREAS SHALL BE 20 AMP COMMERCIAL SPECIFICATION GRADE EQUAL TO HUBBELL SERIES. GROUND FAULT RECEPTACLES SHALL BE EQUAL TO COOPER VGF SERIES.
- ANY MULTI-WIRE BRANCH CIRCUITS ARE TO PROVIDED WITH MULTI-POLE BREAKERS.

LIGHTING FIXTURE SCHEDULE

MARK	MANUF.	CATALOG NUMBER	LAMP DATA		VOLTS	BALLAST DATA		INPUT WAITS	MOUNTING	DESCRIPTION
			NO.	TYPE		NO.	TYPE			
F1	LITHONIA	ZL1D	-	LED	MVOLT	1	DRIVER	41	SUSPENDED	4' LED STRIP LIGHT, DROP LENS DIFFUSER, 5000 LUMENS, 4000K COLOR TEMP., 80 CRI, WHITE FINISH.
F2	LITHONIA	ELM2L LED	2	1.5 W	120, 277	-	-	1.4	SEE PLAN	GEN. PURPOSE EMERGENCY LED LIGHT, (2) ADJ. HEADS, BATTERY BACK-UP.

- NOTES:
- UNLESS OTHERWISE NOTED COLOR & FINISH OF FIXTURE HOUSING, BAFFLE, OR SIMILAR EXPOSED ELEMENTS TO BE BY ARCHITECT.
 - ALL LAMPS OF A SINGLE FIXTURE TYPE INSTALLED IN EACH AREA/ROOM/SPACE ARE TO BE OF SAME TEMPERATURE/COLOR.
 - EXIT AND EMERGENCY LIGHTING FIXTURES SHALL BE CIRCUITED TO AN UNSWITCHED LEG OF A NORMALLY ON LOCAL LIGHTING CIRCUIT (UNLESS NOTED OTHERWISE), INCLUDE 90 MINUTE BATTERY BACKUP & TESTING MEANS.

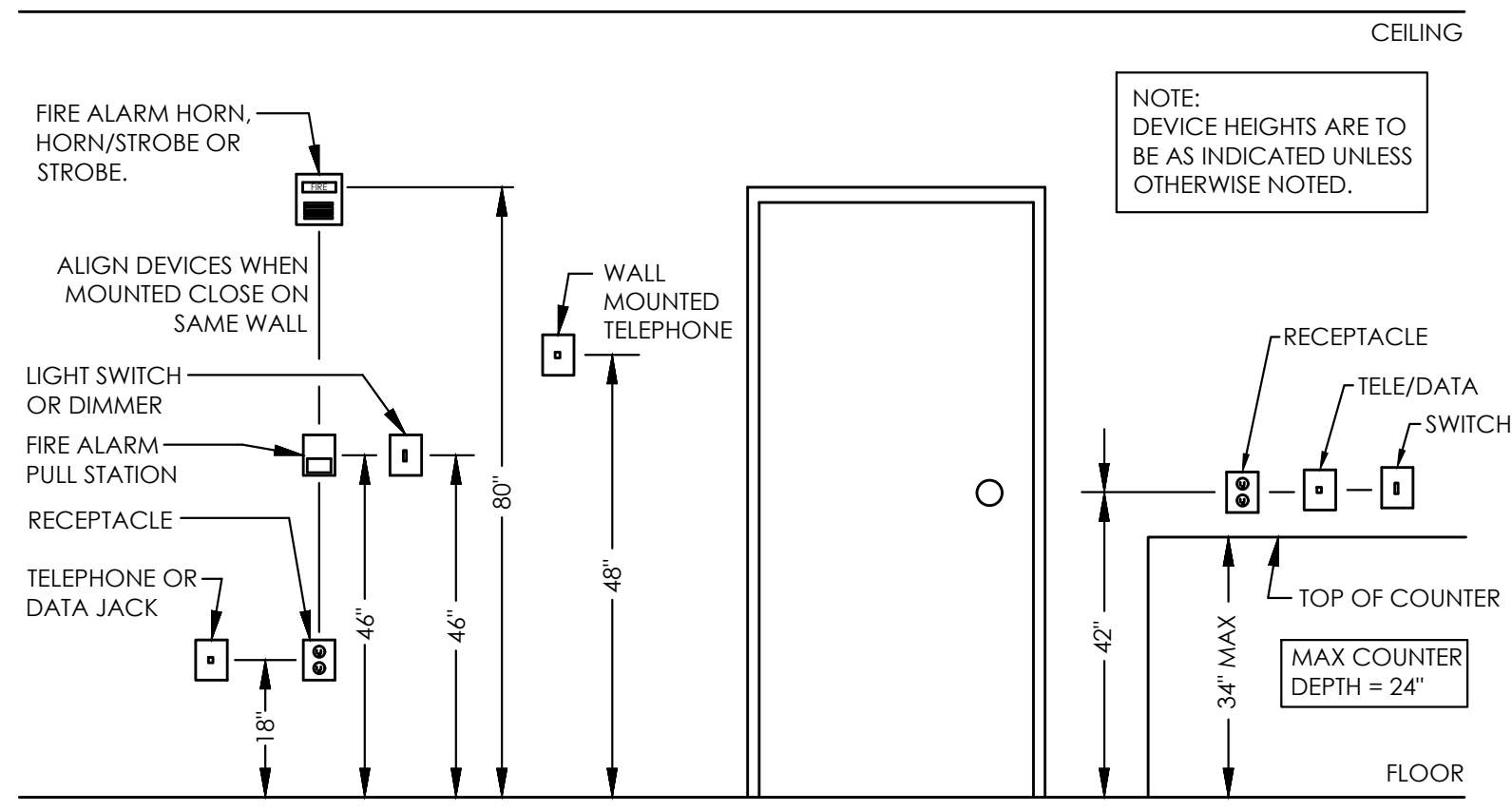
LIGHTING SYSTEMS
NCECC SECTION C405 & C406

LIGHTING POWER DENSITY CALCULATION COMPLIANCE		DESIGNER STATEMENT:	
INTERIOR LIGHTING POWER DENSITY CALCULATION PER TABLE C405.4.2. SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE INFORMATION.	INTERIOR WATTAGE SPECIFIED VS. ALLOWED	TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE LIGHTING SYSTEMS REQUIREMENTS OF THE NORTH CAROLINA ENERGY CONSERVATION CODE, SECTION C405 & C406 AND ANY LOCAL AMENDMENTS THEREOF.	
EXTERIOR LIGHTING POWER DENSITY CALCULATION PER TABLE C405.5.1. SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE INFORMATION.	EXTERIOR WATTAGE SPECIFIED VS. ALLOWED	SIGNED: _____	
TRADABLE EXTERIOR WATTAGE SPECIFIED VS. ALLOWED	NONTRADABLE EXTERIOR WATTAGE SPECIFIED VS. ALLOWED	NAME: <u>NATHAN P. BIRKEDAL, PE</u>	
_____ NA VS. NA	_____ NA VS. NA	TITLE: <u>ELECTRICAL ENGINEER</u>	

ADDITIONAL PRESCRIPTIVE COMPLIANCE	
NOT APPLICABLE (RENOVATION PROJECT)	_____ C406.5 ON-SITE RENEWABLE ENERGY
C406.2 MORE EFFICIENT MECHANICAL EQUIPMENT	_____ C406.6 DEDICATED OUTDOOR AIR SYSTEM
C406.3 REDUCED LIGHTING POWER DENSITY	_____ X C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING
C406.4 ENHANCED DIGITAL LIGHTING CONTROLS	_____

ELECTRICAL SYMBOL LEGEND

- CIRCUIT CONDUCTORS CONCEALED IN FLOOR, WALL OR CEILING.
- ARROWHEAD INDICATES HOMERUN TO PANEL NOTED.
- INDICATES HOT LEG OF CIRCUIT TO BE CARRIED OVER TO NEXT DEVICE. SEE PLANS FOR CONTROL SCHEME.
- JUNCTION BOX CEILING MOUNTED.
- JUNCTION BOX FLOOR MOUNTED.
- JUNCTION BOX WALL MOUNTED AT HEIGHT INDICATED ON DRAWINGS.
- SINGLE POLE SWITCH, 20A, 120/277 VOLT, 48" A.F.F. TO CENTER.
"3" INDICATES 3-WAY SWITCH.
"4" INDICATES 4-WAY SWITCH.
- "D" INDICATES DIMMER SWITCH OF TYPE TO SUIT LOAD.
"M" INDICATES 120V, 20A MOTOR RATED TOGGLE SWITCH.
"DP" INDICATES DOUBLE POLE.
- INDICATES FLUORESCENT FIXTURES DUAL SWITCHED, INBOARD/OUTBOARD SWITCHED SEPARATELY.
- SINGLE RECEPTACLE, 20 AMP, 120 VOLT, 18" A.F.F. TO CENTER.
- DUPLEX RECEPTACLE, 20 AMP (15 AMP RESIDENTIAL, UON), 120 VOLT, 18" A.F.F. TO CENTER.
"WF" INDICATES GROUND FAULT CIRCUIT INTERRUPTER TYPE.
"WP" INDICATES WEATHERPROOF.
"EW" INDICATES RECEPTACLE INSIDE ENCLOSURE OF ELECTRIC WATER COOLER PROVIDE GF BREAKER FOR CIRCUIT.
"ASW" INDICATES ABOVE SHOW WINDOW, PER NEC SHOW WINDOW REQ'S.
- QUADRUPLEX RECEPTACLE, AS ABOVE, 18" A.F.F.
- DUPLEX RECEPTACLE, AS ABOVE, SPLIT WIRED, TOP HALF SWITCHED, 18" A.F.F.
- DUPLEX RECEPTACLE, AS ABOVE, MOUNTED 6" ABOVE COUNTER TOP OR 4" ABOVE BACKSPLASH, AS APPROPRIATE, OR AT HEIGHT INDICATED.
- DUPLEX RECEPTACLE, AS ABOVE, MOUNTED 6" ABOVE COUNTER TOP OR 4" ABOVE BACKSPLASH, AS APPROPRIATE, OR AT HEIGHT INDICATED, WITH GFI PROTECTION.
- RECESSED FLUSH FLOOR DUPLEX RECEPTACLE WITH BRASS COVERPLATE. COORDINATE EXACT FINISH WITH ARCHITECT AND OWNER.
- 208V RECEPTACLE, SEE PLANS FOR NEMA CONFIGURATION.
- TELEPHONE/DATA OUTLET, 18" A.F.F. TO CENTER OR ALIGN MOUNTING HEIGHT WITH ADJACENT DEVICE, UNLESS OTHERWISE NOTED. COORDINATE EXACT DEVICE TYPE AND REQUIRED FACEPLATE W/ OWNER/TENANT.
- HEAVY DUTY FUSIBLE/NON-FUSIBLE DISCONNECT SWITCH, NUMBERS INDICATE FRAME SIZE, NUMBER OF POLES AND FUSING. PROVIDE NEMA 1 ENCLOSURE INSIDE. PROVIDE NEMA 3 ENCLOSURE FOR ALL SWITCHES LOCATED OUTSIDE.
"FPN" INDICATES FUSE PER EQUIPMENT NAMEPLATE
"NF" INDICATES NON-FUSED.
"MS" INDICATES MOTOR STARTER OF TYPE TO SUIT LOAD.
- 208Y/120V PANEL, SURFACE OR RECESS MOUNTED, SEE SCHEDULE FOR DETAILS.
- 480Y/277V PANEL, SURFACE OR RECESS MOUNTED, SEE SCHEDULE FOR DETAILS.
- FAN, PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR. PROVIDE DISCONNECTING MEANS AS REQUIRED.
- RECESSED MOUNTED 2x4 FLUORESCENT TROFFER. SEE FIXTURE SCHEDULE FOR DETAILS.
- TRACK LIGHTING FIXTURE. SEE FIXTURE SCHEDULE FOR DETAILS.
- SURFACE MOUNTED FLUORESCENT STRIP. SEE FIXTURE SCHEDULE FOR DETAILS.
- WALL MOUNTED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE FOR DETAILS.
- SURFACE, RECESSED OR GROUND MOUNTED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE FOR DETAILS.
- ELECTRIC UTILITY METER LOCATION.
- KITCHEN EQUIPMENT TAG.
- DEMO'D LIGHT FIXTURE OR SIMILAR.
- DEMO'D RECEPTACLE OR SIMILAR.
- CABLE TV OUTLET, 18" A.F.F. TO CENTER, UNLESS OTHERWISE NOTED.



1 TYPICAL DEVICE MOUNTING HEIGHTS
NO SCALE

ELECTRICAL ABBREVIATIONS

18"	DIMENSION INDICATES HEIGHT ABOVE FINISHED FLOOR AT WHICH CENTER OF DEVICE IS TO BE MOUNTED.
AFB	ABOVE FINISHED FLOOR.
AFG	ABOVE FINISHED GRADE.
E.C.	ELECTRICAL CONTRACTOR.
FPN	FUSE PER EQUIPMENT NAMEPLATE REQUIREMENTS.
G.C.	GENERAL CONTRACTOR.
M.C.	MECHANICAL CONTRACTOR.
P.C.	PLUMBING CONTRACTOR.
WP	INDICATES DEVICE TO HAVE WEATHERPROOF COVER.
UON	UNLESS OTHERWISE NOTED.
FACP	FIRE ALARM CONTROL PANEL.
SMP	SPRINKLER MONITORING PANEL.
NL	NIGHT LIGHT, LIGHT NOT SWITCHED.



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NO.	REVISION	DATE

JOB NUMBER
23-084
DATE ISSUED
02/26/2025
PROJECT STATUS
ISSUED FOR BID

SHEET
ELECTRICAL
SCHEDULES,
DETAILS &
NOTES

E001

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DESIGNED BY: NHV
CHECKED BY: WFB
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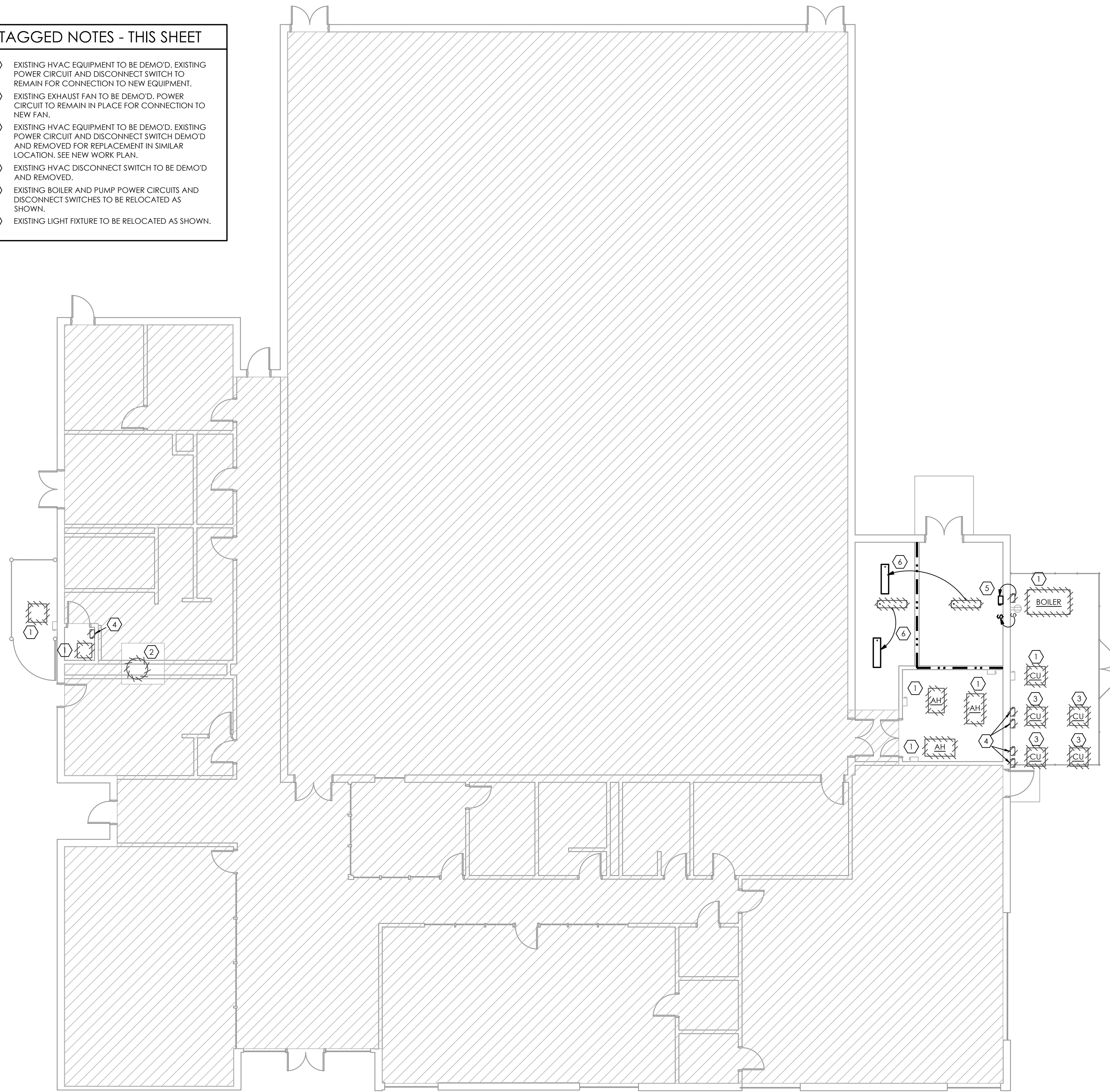
FIRE RATING LEGEND
 ■ ■ ■ 2-HR WALL

GENERAL NOTES - THIS SHEET

- ITEMS SHOWN IN FAINT & HATCHED ARE TO BE DEMO'D OR RELOCATED. ITEMS SHOWN IN BOLD ARE EXISTING TO REMAIN. RELOCATED ITEMS ARE SHOWN IN BOLD. SEE LEGEND.
- E.C. TO VERIFY EXISTING CONDITIONS BEFORE BEGINNING WORK.
- HATCHED AREA INDICATES EXISTING AREAS NOT INCLUDED IN SCOPE OF WORK.

TAGGED NOTES - THIS SHEET

- EXISTING HVAC EQUIPMENT TO BE DEMO'D. EXISTING POWER CIRCUIT AND DISCONNECT SWITCH TO REMAIN FOR CONNECTION TO NEW EQUIPMENT.
- EXISTING EXHAUST FAN TO BE DEMO'D. POWER CIRCUIT TO REMAIN IN PLACE FOR CONNECTION TO NEW FAN.
- EXISTING HVAC EQUIPMENT TO BE DEMO'D. EXISTING POWER CIRCUIT AND DISCONNECT SWITCH DEMO'D AND REMOVED FOR REPLACEMENT IN SIMILAR LOCATION. SEE NEW WORK PLAN.
- EXISTING HVAC DISCONNECT SWITCH TO BE DEMO'D AND REMOVED.
- EXISTING BOILER AND PUMP POWER CIRCUITS AND DISCONNECT SWITCHES TO BE RELOCATED AS SHOWN.
- EXISTING LIGHT FIXTURE TO BE RELOCATED AS SHOWN.



1 ELECTRICAL DEMOLITION PLAN
 SCALE: 1/8" = 1'-0"

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 DESIGNED BY: NHV
 CHECKED BY: NPB

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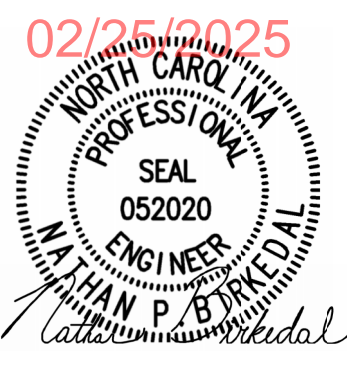
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SHEET
 ELECTRICAL
 DEMOLITION
 PLAN

E101

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VOLTAGE: 208Y/120V		GYM STORAGE PANEL: E												3 PHASE, 4 WIRE		
AMPS: 225-MLO		LOAD PER PHASE												SURFACE MOUNTED		
-DESCRIPTION-		POLE	WIRE SIZE	BRK SIZE	CKT #	A	B	C	CKT #	BRK SIZE	WIRE SIZE	POLE	-DESCRIPTION-			
SPARE	3	-	60		1	0	0		7			60	-	3	SPARE	
#4 CU-1	3	6	45	7	3.2	6.4			8			90	2	3	CU-3 #4	
				9		3.2	6.3		10							
				11			3.1	6.3	12							
				13	0	6.3		14								
SPARE	3	-	40	15			0	6.3		16		90	2	3	CU-2 #4	
				17			0	6.4	18							
				19	1.4	0			20							
				21		1.4	0		22							
#4 AH-2	3	10	25	23					1.3	0	24		40	-	3	SPARE
				25	1.4	0.6			26							
				27		1.3	0.6		28							
				29			1.4	0	30							
#4 AH-3	3	10	25	31	0	0.6				32	20	-	1	SPACE		
				33			0	0		34	-	1	HOT WATER PUMP			
				35				0.2	0	36	-	1	SPACE			
				37	0.8	0			38	20	-	1	SPACE			
#2 BOILER	1	-	15	39					0.8	1.5	40				UH-1	
				41				0	1.5	42	20	12	2			
				TOTAL CONNECTED KVA:			62.3			DEMAND KVA:			67.1			
				PANEL RMS SYM. AMPS:			SEE RISER			DEMAND AMPS:			186.1			

- EXISTING PANEL, EXISTING CIRCUITS/BREAKERS SHOWN IN SHADED. NEW WORK SHOWN IN NON-SHADED. REMOVE ANY UNUSED OR ABANDONED CIRCUITS. SET BREAKER TO "OFF" AND RE-LABEL AS SPARE. PROVIDE UPDATED PANEL CARD.
- EXISTING EQUIPMENT CIRCUIT TO BE RE-USED TO SERVE NEW EQUIPMENT IN SAME LOCATION. E.C. TO CONFIRM NEW EQUIPMENT IS COMPATIBLE WITH EXISTING CIRCUITS AMPACITY.
- PROVIDE HACR BREAKERS FOR HVAC & REFRIGERATION EQUIPMENT.
- NEW BREAKER TO SERVE NEW/REPLACEMENT EQUIPMENT SIMILAR TO DEMO'D EQUIPMENT. EXISTING CIRCUIT CONDUCTORS MAY BE RE-USED IF WIRE SIZES ARE SUFFICIENT FOR NEW CIRCUIT AMPERAGE.

PANEL E LOAD SUMMARY				
LOAD TYPE	KVA CONN.	DEM. FACT.	KVA DEM.	
LOADS ON 225 AMP BREAKER @ PANEL MDP				
HVAC & R	ELEC HEAT	3.0	1.0	3.0
	LARGEST MOTOR	19.0	1.25	23.8
	REMAINDER	37.9	1.0	37.9
BOILER & PUMP		2.4	1.0	2.4
TOTALS		62.3		67.1
TOTAL AMPS @ 208 V		3 PHASE		186.1

PANEL C LOAD SUMMARY				
LOAD TYPE	KVA CONN.	DEM. FACT.	KVA DEM.	
LOADS ON 125 AMP BREAKER @ PANEL MDP				
LIGHTS				
RECEPTACLES	1st 10 kVA	2.4	1.25	2.4
	REMAINDER	0.0	0.5	0.0
HVAC & R	ELEC HEAT	20.2	1.0	20.2
	LARGEST MOTOR	4.3	1.25	5.4
	REMAINDER	4.8	1.0	4.8
WATER HEATERS		2.9	1.25	3.6
OTHER EQUIPMENT - NON-CONT		1.8	1.0	1.8
TOTALS		41.2		44.2
TOTAL AMPS @ 208 V		3 PHASE		122.7

VOLTAGE: 208Y/120V		ELECTRICAL ROOM PANEL: C												3 PHASE, 4 WIRE		
AMPS: 125-MLO		LOAD PER PHASE												SURFACE MOUNTED		
-DESCRIPTION-		POLE	WIRE SIZE	BRK SIZE	CKT #	A	B	C	CKT #	BRK SIZE	WIRE SIZE	POLE	-DESCRIPTION-			
LTS	1	-	20		1	0.8	0.8		2	20	-	1	REC			
#3 SSHP-4	3	10	30	3			2.9	0.8		4	20	-	1	VENDING		
				7	2.8	0.8		2.9	0.2	6	20	-	1	EXHAUST FAN		
				8							8	20	-	1	LTS	
				9			0.8	1.2		10	20	-	1	EXHAUST FAN		
LTS	1	-	20	9				1.0	0.6	12	20	-	1	WATER HEATER PUMP		
HEATER	1	-	15	11						14	20	-	1	REC		
REC	1	-	20	13	0.8	0.8				14	20	-	1	REC		
WINDOW UNIT	2	-	20	15				1.0	0.8		14	20	-	1	REC	
				17				1.0	0.8	16	20	-	1	LTS		
				19	1.4	0.8			20	20	-	1	LTS			
				21			1.4	2.0		22						
#3 HP-4	3	10	25	23				1.5	2.0	24	30	-	3	HEATER		
				25	2.0	2.0			26							
				27			2.0	0.2		28	20	-	1	BAS		
				29			2.0	0.8	30	20	-	1	EXIST.			
HEATER	3	-	30							30	20	-	1	SPACE		
SPACE	1	-	-	31	0	0				32	-	-	1	SPACE		
SPACE	1	-	-	33			0	0		34	-	-	1	SPACE		
LTS	1	-	20	35				0.8	1.5	36	20	-	1	WATER HEATER		
SPACE	1	-	-	37	0	0				38	-	-	1	SPACE		
SPACE	1	-	-	39				0	0	40	-	-	1	SPACE		
SPACE	1	-	-	41				0	0	42	-	-	1	SPACE		
TOTAL CONNECTED KVA:		13.0		13.1		15.1		DEMAND KVA:		44.2						
PANEL RMS SYM. AMPS:		SEE RISER		DEMAND AMPS:		122.7										

- EXISTING PANEL, EXISTING CIRCUITS/BREAKERS SHOWN IN SHADED. NEW WORK SHOWN IN NON-SHADED. REMOVE ANY UNUSED OR ABANDONED CIRCUITS. SET BREAKER TO "OFF" AND RE-LABEL AS SPARE. PROVIDE UPDATED PANEL CARD.
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