

# Carolina Charter Academy GYMNASIUM

Angier, North Carolina



PACKAGE

SEAL | DATE 07/19/21

## CONSTRUCTION DOCUMENTS



OWNER  
**HIGHMARK**  
746 East Winchester Street  
Suite 150  
Murray, Utah 84107  
(801)-256-9550

ARCHITECT  
**RATIO**  
227 Fayetteville Street, Suite 301  
Raleigh, North Carolina 27601  
(919) 821-0805

STRUCTURAL ENGINEER  
**Lynch Mykins Structural Engineers**  
301 North West Street  
Suite 105  
Raleigh, NC, 27603  
(919)-782-1833

CIVIL ENGINEER  
**Timmons Group**  
5410 Trinity Road  
Suite 102  
Raleigh, North Carolina, 27607  
919-866-4938

CONTRACTOR  
**Swinerton**  
5 West Hargett Street  
Suite 800  
Raleigh, North Carolina 27601  
(919) 867-4780

VOLUME  
**1**

RATIO PROJECT NO.  
**20408**

OWNER PROJECT NO.  
**12345**

DATE  
**07/19/21**

PROJECT ADDRESS  
**8529 Highway 55  
Angier, North Carolina  
27501**

VOLUME

SET NO.

DATE 07/19/21

CONSTRUCTION DOCUMENTS

RATIO PROJECT NO. 20408

PROJECT NAME  
Carolina Charter Academy GYMNASIUM









2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

Name of Project: GYMNASIUM
Address: 8529 Highway 55
Angier, North Carolina 27501

Owner/Authorized Agent: PATRICK ALCORN -DIRECTOR OF FACILITY DEVELOPEMENT
palcorn@highmarkschools.com (801)335-6514

Owned by: CITY/COUNTY PRIVATE STATE
Code Enforcement Jurisdiction: CITY: ANGIER, NC COUNTY: HARNETT STATE

LEAD DESIGN JURISDICTION: Harold M. Bowen, RATIO

GROSS BUILDING AREA:

Table with columns: DESIGNER, FIRM, NAME, LICENSE #, PHONE #, EMAIL. Lists designers like Harold M. Bowen, Blake Hall, etc.

2018 NC BUILDING CODE: NEW BUILDING ADDITION 1st TIME INTERIOR COMPLETIONS
SHELL/CORE PHASED CONSTRUCTION

\*CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE PROCEDURES AND REQUIREMENTS

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

CONSTRUCTED: (DATE) CURRENT OCCUPANCY(S): (CH. 3)
RENOVATED: (DATE) PROPOSED OCCUPANCY(S): (CH. 3)
OCCUPANCY CATEGORY: (TABLE 1604.5) CURRENT: PROPOSED:

BASIC BUILDING DATA

CONSTRUCTION TYPE: I-A II-A III-A IV
I-B II-B III-B V-A V-B

SPRINKLERS: NO PARTIAL YES NFPA 13 NFPA 15 NFPA 15R NFPA 15D

STANDPIPES: NO YES CLASS I II III WET DRY

FIRE DISTRICT: NO YES (PRIMARY) FLOOD HAZARD AREA NO YES

SPECIAL INSPECTIONS REQUIRED: YES NO IF SPECIAL INSTRUCTIONS ARE REQUIRED, CONTACT THE LOCAL JURISDICTION
BUILDING HEIGHT: (feet) 32'-8"

GROSS BUILDING AREA:

Table with columns: FLOOR, EXISTING (SQ. FT.), NEW (SQ. FT.), SUB-TOTAL. Lists floors from 6th to Basement.

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 I-2 I-3 I-4

I-1 AND I-2 CONDITION: 1 2

I-3 CONDITION: 1 2 3 4 5

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 SECTION):

SPECIAL PROVISIONS (CHAPTER 5 - LIST CODE SECTION):

MIXED OCCUPANCY:

Yes No SEPARATION: HR EXCEPTION:
Non-Separated Use (508.3)
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.

Table with columns: Story No., Description and Use, (A) Bldg Area Per Story (Actual), (B) Table 506.2 Area (Note 4), (C) Area for Frontage Increase (note 1.5), (D) Allowable Area or Unlimited (note 2.3). Rows for FIRST and SECOND EDUCATION.

- Notes:
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 = 1240'-0" (F)
b. Total Building Perimeter = 1240'-0" (P)
c. Ratio (F/P) = 1 (F/P)
d. W = Minimum width of public way = 30'-0" (W)
e. Percent of frontage increase If = 100 [(F/P - 0.25) x W/30] = 75.00 (%)
2. Unlimited area applicable under conditions of Section 507
3. Maximum Building Area = total number of stories in the building x D (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 unenclosed area value in Table 506.2

ALLOWABLE HEIGHT Provide code reference if "Shown on Plans" quantity is not based on Table 504.3 or 504.4

Table with columns: ALLOWABLE, SHOWN ON PLANS, CODE REFERENCE. Rows for Building Height in Feet (Table 504.3) and Building Height in Stories (Table 504.4).

FIRE PROTECTION REQUIREMENTS

Table with columns: BUILDING ELEMENT, Fire Separation Distance (feet), Rating, Detail No. / Sheet No., Design No. for Rated Assembly, Design No. for Rated Penetration, Design No. for Rated Joints. Lists elements like Structural Frame, Bearing Walls, etc.

LIFE SAFETY SYSTEM REQUIREMENTS

EMERGENCY LIGHTING: NO YES
EXIT SIGNS: NO YES
FIRE ALARM: NO YES
SMOKE DETECTION SYSTEMS: NO YES PARTIAL DUCT & ELEVATOR DETECTION
PANIC HARDWARE: NO YES

LIFE SAFETY PLAN REQUIREMENTS

- LIFE SAFETY PLAN SHEET #G-004
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)
EXISTING STRUCTURES WITHIN 30' OF THE PROPOSED BUILDING
OCCUPANCY TYPES FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.1)
OCCUPANT LOADS FOR EACH AREA
EXIT ACCESS TRAVEL DISTANCES (1017)
COMMON PATH OF TRAVEL DISTANCES (1006.2.1, 1006.3.2(1))
DEAD END LENGTHS (1020.4)
CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.3)
ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
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.

SEE SHEET C-0.0 FOR PARKING REQUIREMENTS

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

Table with columns: USE, WATERCLOSETS (TOILETS), URINALS, LAVATORIES (SINKS), SHOWERS/TUBS, DRINKING FOUNTAINS. Rows for EXISTING, NEW, REQUIRED.

SPECIAL APPROVALS

Special Approvals: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below)
TOWN OF ANGIER
HARNETT COUNTY

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attributes 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 ENVELOPE COMPLIES WITH CODE: NO YES (If checked, 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: Prescriptive (Energy Code) Performance (Energy Code) Other, Specify Source Here:
Prescriptive (ASHRAE 90.1) Performance (ASHRAE 90.1)

THERMAL ENVELOPE (Prescriptive Method Only):

ROOF/CEILING ASSEMBLY (each assembly) T.P.O. MEMBRANE; POLYISO INSULATION; 1/2" SHEATHING ON OPEN WEB WOOD TRUSSES
Description of assembly:
U-Value of total assembly: 0.039
R-Value of insulation: 25
Skylights in each assembly:
U-Value of Skylight: 0
Total square footage of skylights in each assembly: 0 SF
EXTERIOR WALLS (each assembly) EIFS SYSTEM, 3" EPS INSULATION, 12" CMU
Description of assembly:
U-Value of total assembly: SEE G-500 - COMCHECK REPORT
R-Value of insulation: SEE G-500 - COMCHECK REPORT
Openings (windows or doors with glazing)
U-Value of Assembly: SEE G-500 - COMCHECK REPORT
Solar heat gain coefficient: SEE G-500 - COMCHECK REPORT
Projection Factor: SEE G-500 - COMCHECK REPORT
Door R-Values: SEE G-500 - COMCHECK REPORT

WALLS BELOW GRADE (each assembly)
Description of assembly: N/A
U-Value of total assembly: 0
R-Value of insulation: 0

FLOORS OVER UNCONDITIONED SPACE (each assembly)
Description of assembly: N/A
U-Value of total assembly: 0
R-Value of insulation: 0

FLOORS SLAB ON GRADE
Description of assembly: 4" CONCRETE SLAB OVER VAPOR RETARDER; 4" DEPTH OF POROUS FILL
U-Value of total assembly: 0.1
R-Value of insulation: 10
Horizontal/Vertical Requirement:
Slab Heated:

SEE SHEET S-001 FOR STRUCTURAL DESIGN LOADS

SEE SHEET S-011 FOR SPECIAL INSPECTIONS

GYMNASIUM
8529 Highway 55
Angier, North Carolina
27501

Owner
Highmark School Department
746 East Winchester Street, Suite 150
Murray, Utah 84107
801-256-9550

Architect
RATIO
227 Fayetteville Street, Suite 301
Raleigh, North Carolina 27601
919-821-0805

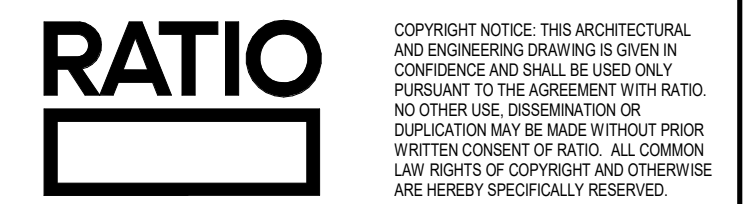
Structural Engineer
Lynch Mykins Structural Engineers, PC
301 North West St, Suite 105
Raleigh, North Carolina 27603
919-782-1833

Civil Engineer
Timmons Group
5410 Trinity Road, Suite 102
Raleigh, North Carolina 27607
919-866-4938

SEAL | DATE 09/10/21 CODE CERT.
HEREBY CERTIFY THAT THE BUILDING CODE SUMMARY COMPLETED ON THIS PAGE IS ACCURATE FOR THE TYPE OF BUILDING AND OCCUPANCY INTENDED FOR THIS PROJECT AND THAT THESE PLANS ARE COMPLETE AND COMPLY WITH ALL APPLICABLE STATE AND LOCAL BUILDING REGULATIONS

Table with columns: SHEET ISSUE, CONSTRUCTION DOCUMENTS, DATE. Rows for 1 CONSTRUCTION DOCUMENTS 07/19/21, 2 NCDOT Review 09/10/21.

Empty table grid for additional sheet issues.



PROJECT NO. 20408

SHEET TITLE
APPENDIX B 2018

SHEET NUMBER

G-003

**Carolina Charter Academy  
GYMNASIUM**  
8529 Highway 55  
Angier, North Carolina  
27501

**GENERAL LIFE SAFETY PLAN NOTES**

- A. REFER TO SHEET G-003 FOR CODE SUMMARY.
- B. REFER TO DOOR SCHEDULE FOR REQUIRED DOOR RATING.
- C. REFER TO INTERIOR PARTITION TYPES AND FLOOR PLAN FOR ADDITIONAL PARTITION REQUIREMENTS INCLUDING WALL HEIGHT, UL DESIGN, AND FIRE RATING.
- D. REFER TO C-3.0 FOR BUILDING ADJACENCIES AND PROPERTY LINES.
- E. REFER TO FLOOR PLANS FOR FIRE EXTINGUISHER LOCATIONS.

**LIFE SAFETY PLAN LEGEND**

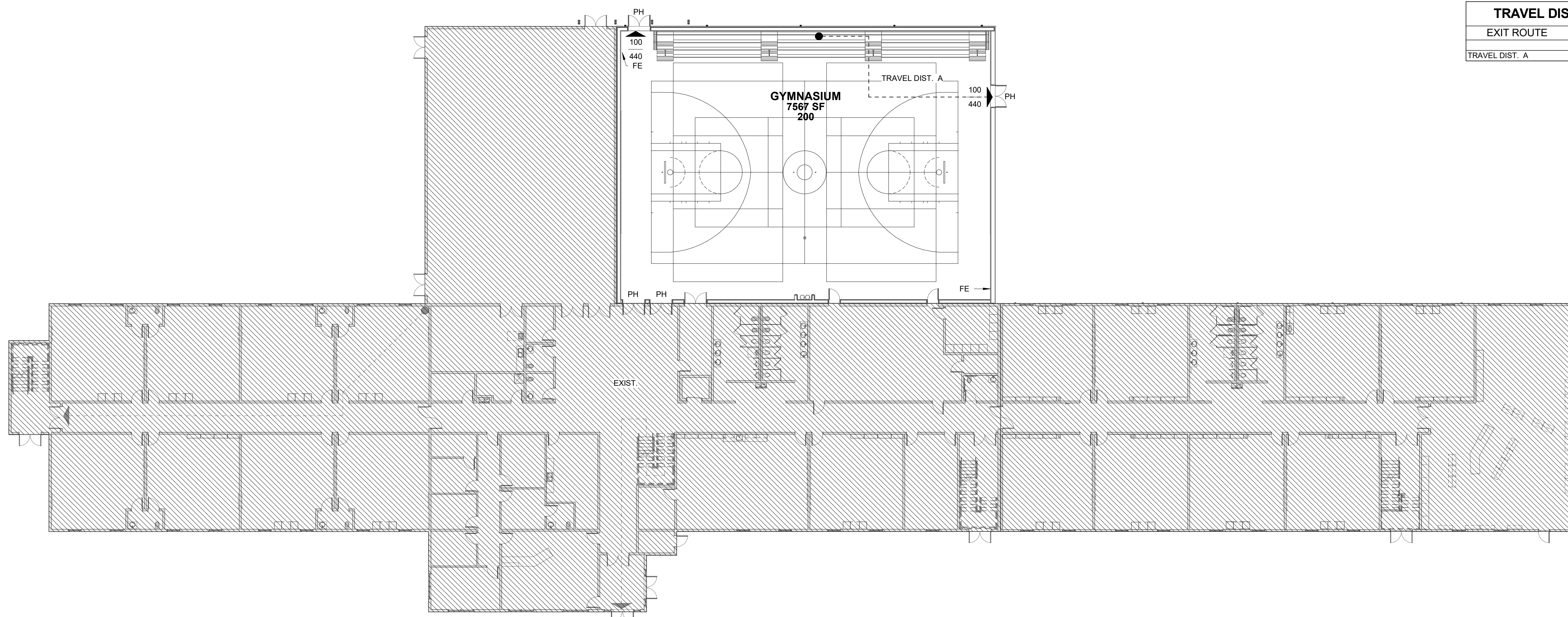
- RM NAME** — ROOM NAME, AREA & OCCUPANT CAPACITY
- 150 SF** — EXIT DIRECTION ARROW
- 20** — EXIT POPULATION
- 45** — EXIT CAPACITY [POPULATION]
- 120** — PATH OF TRAVEL
- — FIRE RATED WALL
- 2 - 2 -** — RATING REQUIRED .30-MIN, 1-HR, 2-HR, ETC.
- 35 - 35 -** — SMOKE BARRIER
- 35 - 35 -** — RATING IF REQUIRED .1-HR, 2-HR, ETC.
- — FIRE RATED WALL
- — PATTERN INDICATES CODE REQUIRED SEPARATION AS NOTED
- — FIRE SEPARATION AND OTHER ANNOTATION SO NOTED
- 1-HR** — FIRE RATED CEILING. RATING AS NOTED..1-HR, 2-HR, ETC.

**OCCUPANT LOAD SCHEDULE**

FLOOR LEVEL	OCCUPANT LOAD
FIRST LEVEL	200
	200

**TRAVEL DISTANCE SCHEDULE**

EXIT ROUTE	DISTANCE
TRAVEL DIST. A	64' - 2"



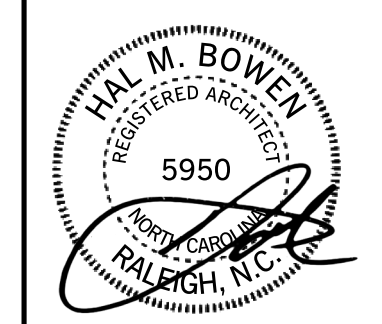
**Owner**  
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SEAL | DATE 07/19/21



**SHEET ISSUE**

ISSUE NO.	DESCRIPTION	DATE
1	CONSTRUCTION DOCUMENTS	07/19/21

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PROJECT NO. 20408  
SHEET TITLE  
**LIFE SAFETY PLANS AND CODE SUMMARY**

SHEET NUMBER  
**G-004**

7/20/2021 2:46:23 PM





























































**Carolina Charter Academy GYMNASIUM**  
 8529 Highway 55  
 Angier, North Carolina 27501

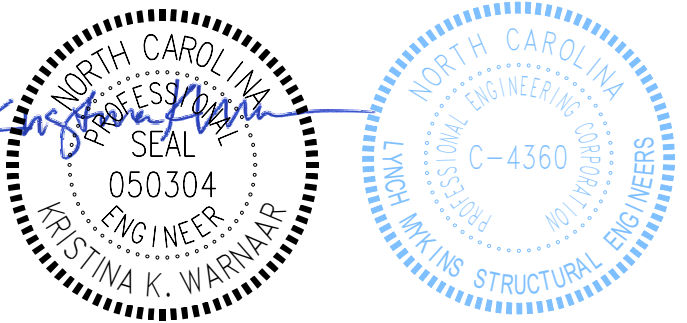
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 801-256-9550

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 919-821-0805

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 919-782-1833

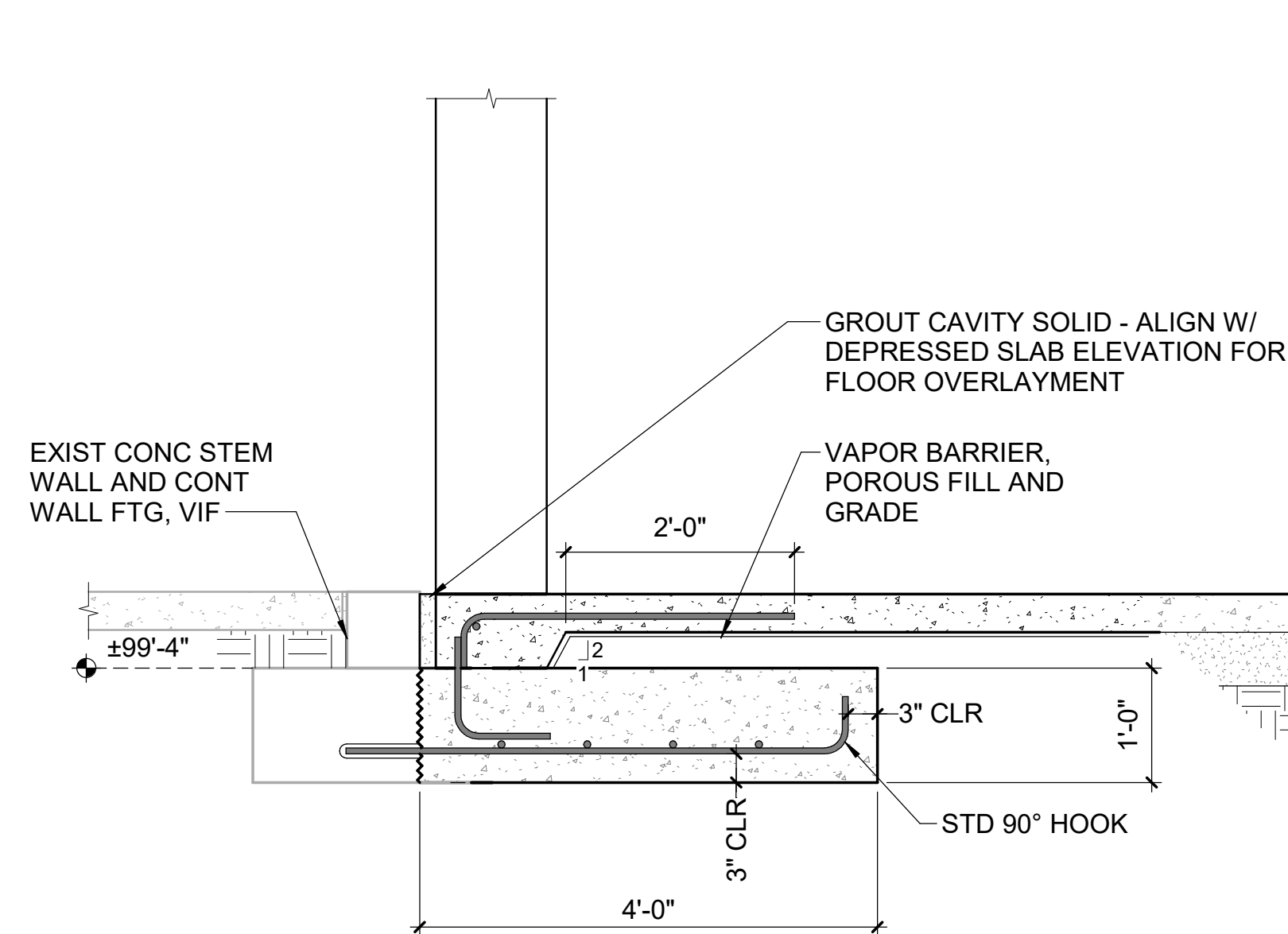
**Civil Engineer**  
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SEAL | DATE 08/20/21

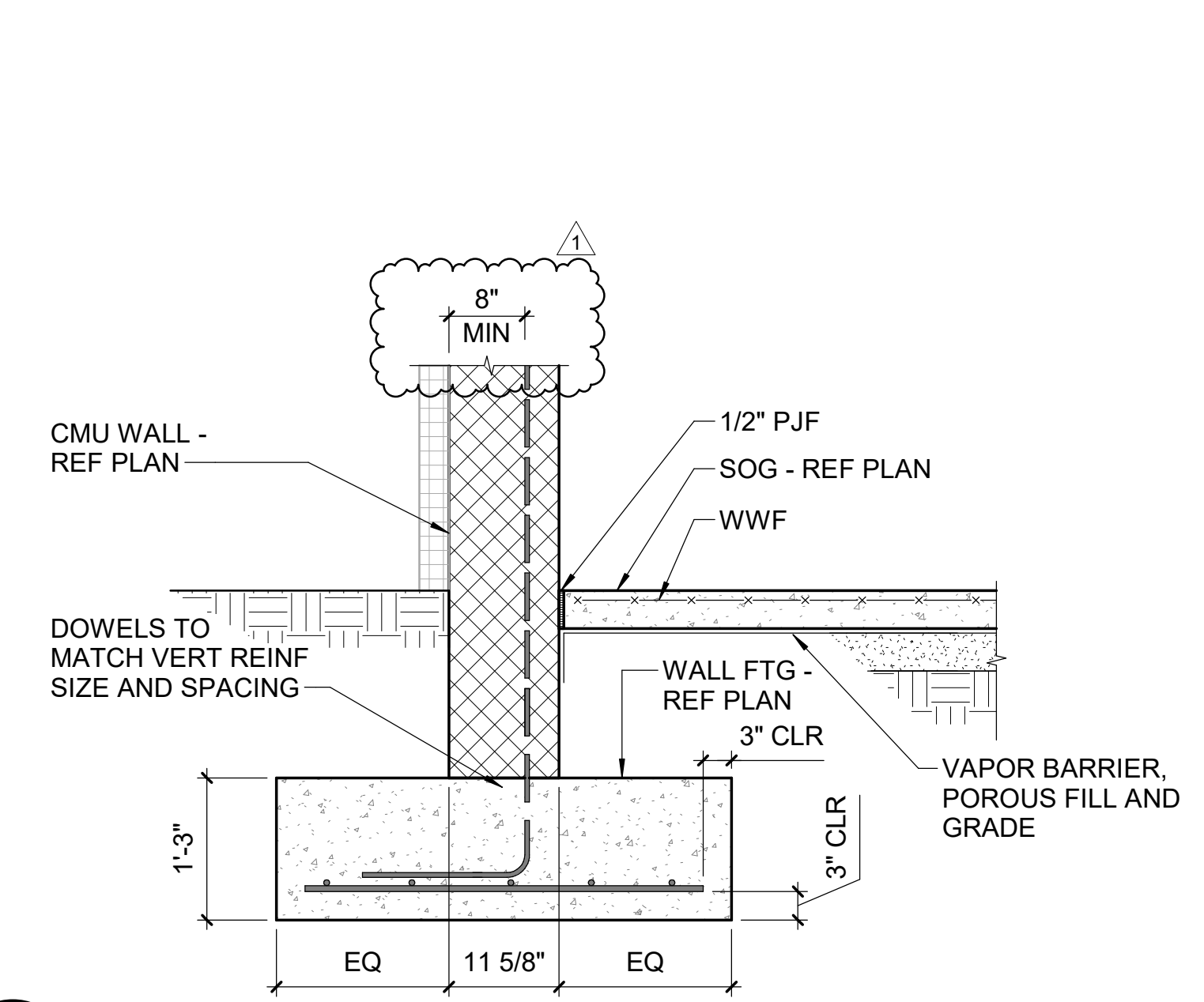


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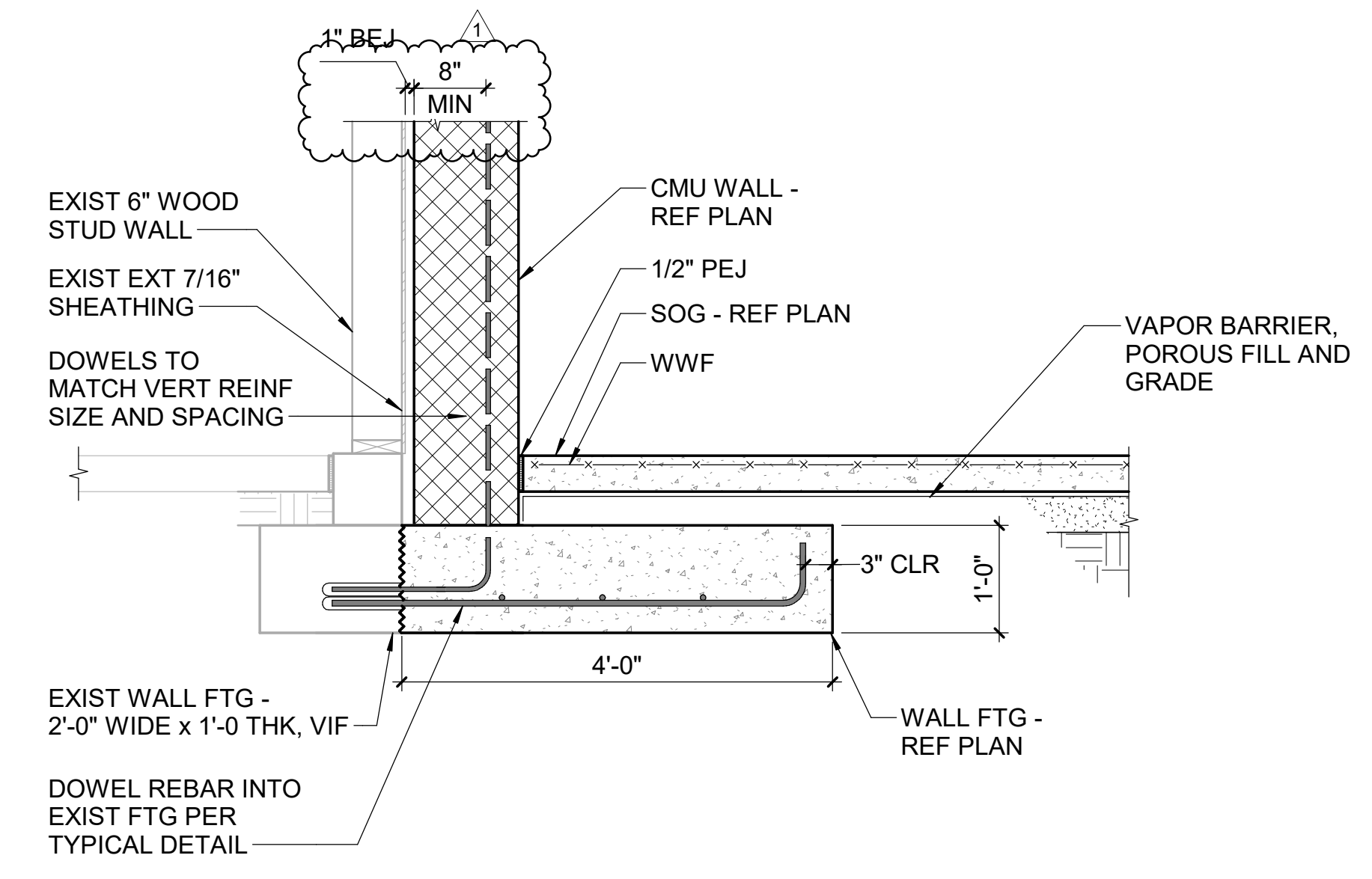
1	Addendum 1	08/20/21
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**1 SECTION**  
 S-301 3/4" = 1'-0"



**2 SECTION**  
 S-301 3/4" = 1'-0"



**3 SECTION**  
 S-301 3/4" = 1'-0"

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PROJECT NO. 20408

SHEET TITLE  
**SECTIONS**

SHEET NUMBER  
**S-301**















































**Carolina Charter Academy  
GYMNASIUM**  
8529 Highway 55  
Angier, North Carolina  
27501

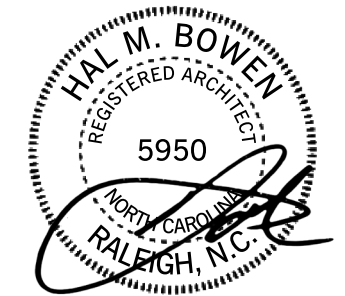
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SEAL | DATE 08/19/21



SHEET ISSUE		
1	CONSTRUCTION DOCUMENTS	07/19/21
2	REVISION 1	08/19/21

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PROJECT NO. 20408

SHEET TITLE  
**FIRST FLOOR  
EQUIPMENT PLAN**

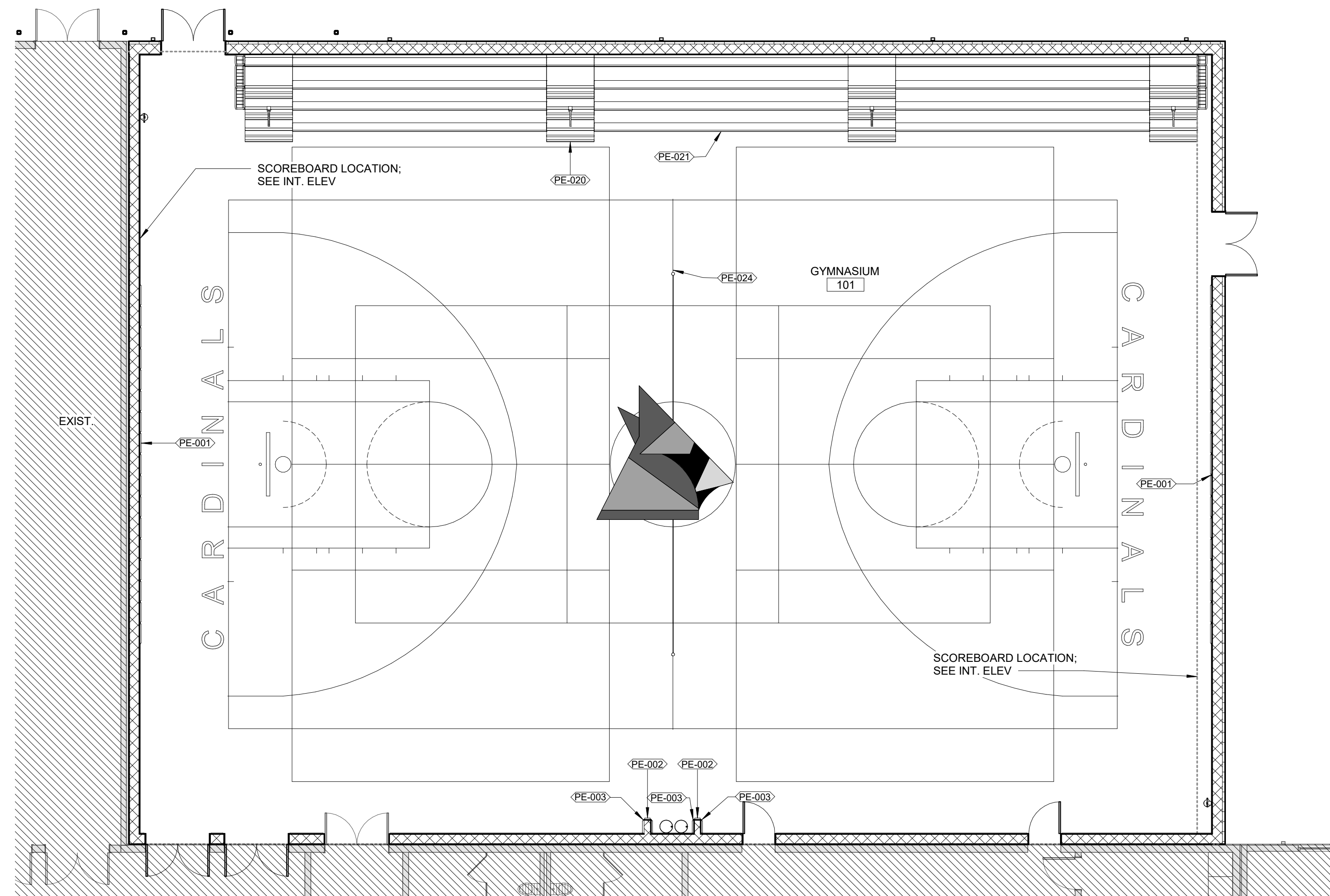
SHEET NUMBER

**A-171**

**EQUIPMENT SCHEDULE**

ME-01

TAG	CODE	CODE DESCRIPTION	DESCRIPTION	MANUFACTURER	MODEL NO.	ELEC REQ.	PLUMB REQ.	COMMENTS
GYM EQUIPMENT								
PE-001	PE	GYM EQUIPMENT	Standard Wall Pads, "Z" Track mounting, Upgrade fire coating W/PUPFRC	IPI by Bison	Protector Wall Padding	No	No	COLOR: TBD
PE-002	PE	GYM EQUIPMENT	Standard Wall Pads, "Z" Track mounting, Upgrade fire coating W/PUPFRC	IPI by Bison	Protector Wall Pads	No	No	COLOR: TBD
PE-003	PE	GYM EQUIPMENT	Standard Wall Pads, "Z" Track mounting, Upgrade fire coating W/PUPFRC	IPI by Bison	Protector Wall Pads	No	No	COLOR: TBD
PE-020	PE	GYM EQUIPMENT	SHERIDAN SEATING, TELESCOPING BLEACHERS, INCLUDE CENTER ISLE AND END RAIL HAND RAIL	Sheridan Seating Inc		Yes	No	Bleacher Aisle Unit
PE-021	PE	GYM EQUIPMENT	SHERIDAN SEATING, TELESCOPING BLEACHERS	Sheridan Seating Inc		Yes	No	Bleacher Bank
PE-022	PE	GYM EQUIPMENT	Multi-Sport Scoreboard for VB and BB	Electro-Mech	Model LX2665	Yes	No	ALT 02 ADD 2ND SCOREBOARD
PE-023	PE	GYM EQUIPMENT	Forward Fold Rear Braced Ceiling Attached Basketball Backstop	IP by Bison.	1350FF	Yes	No	INCLUDE BA973LF GOAL WINCH, BA975KS KEY OPERATION FOR HOOPS, 42XL BACKBOARD, BA355 RIM, BA68U DURASKIN SAFEDGE PAD, BA950 SAFE STRAP
PE-024	PE	GYM EQUIPMENT	6000 Match Point Volleyball Package	IPI	6000			IPI 6000 MATCH POINT VOLLEYBALL PACKAGE, INCLUDE VE26 SLEEVES & COVER PLATES, V916 JUDGES STAND, COLOR TBD



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

EXIST.









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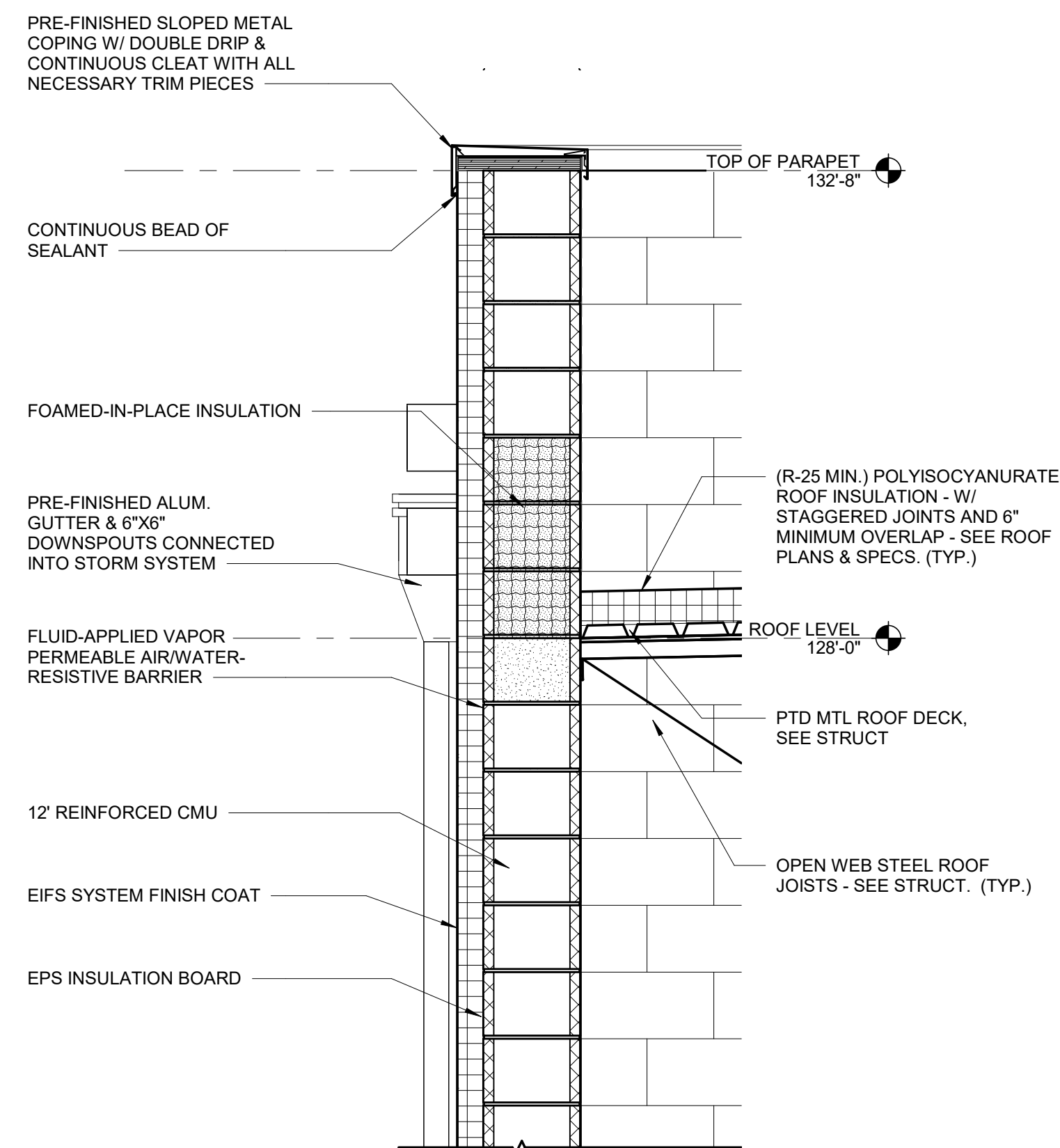
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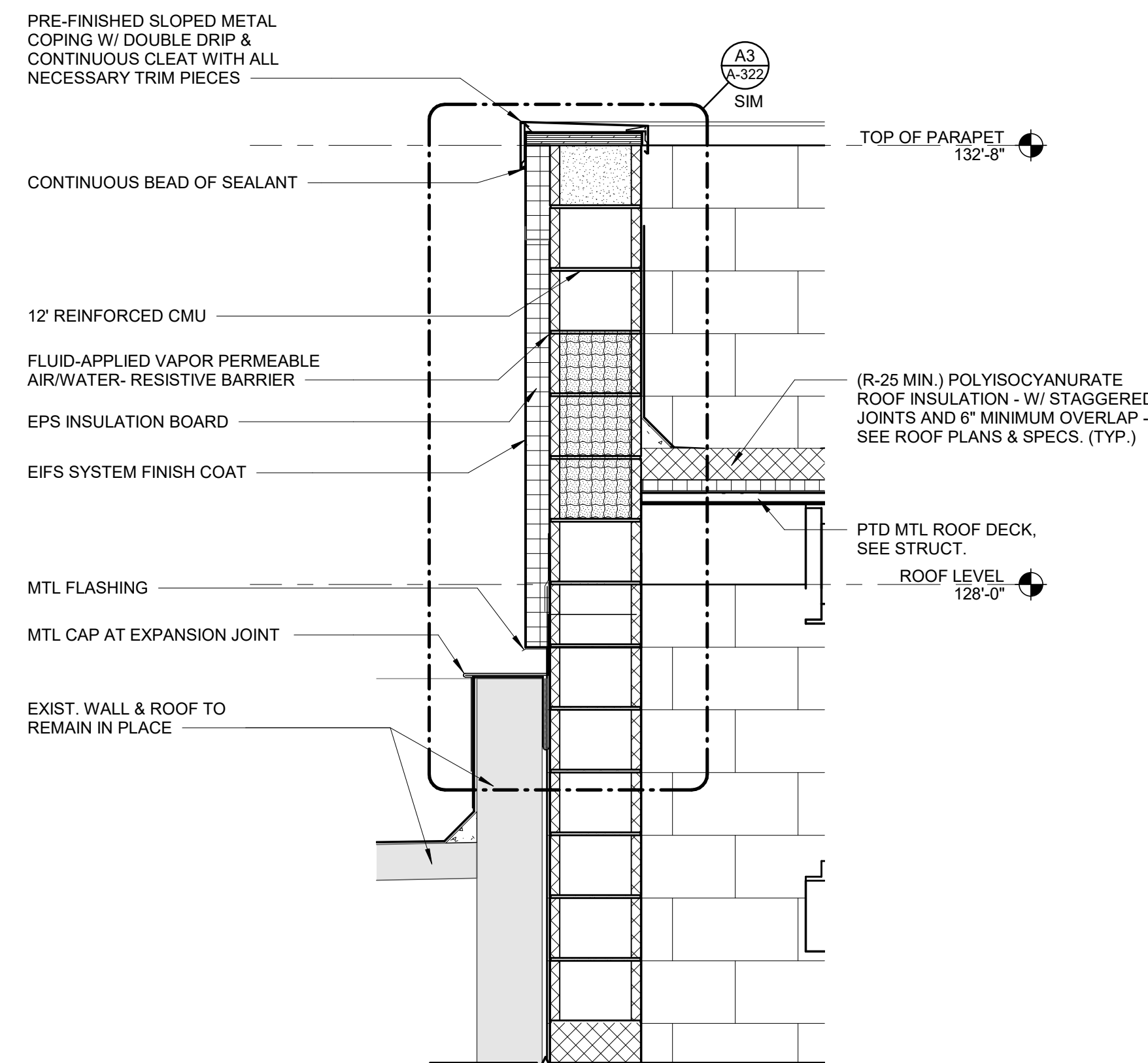
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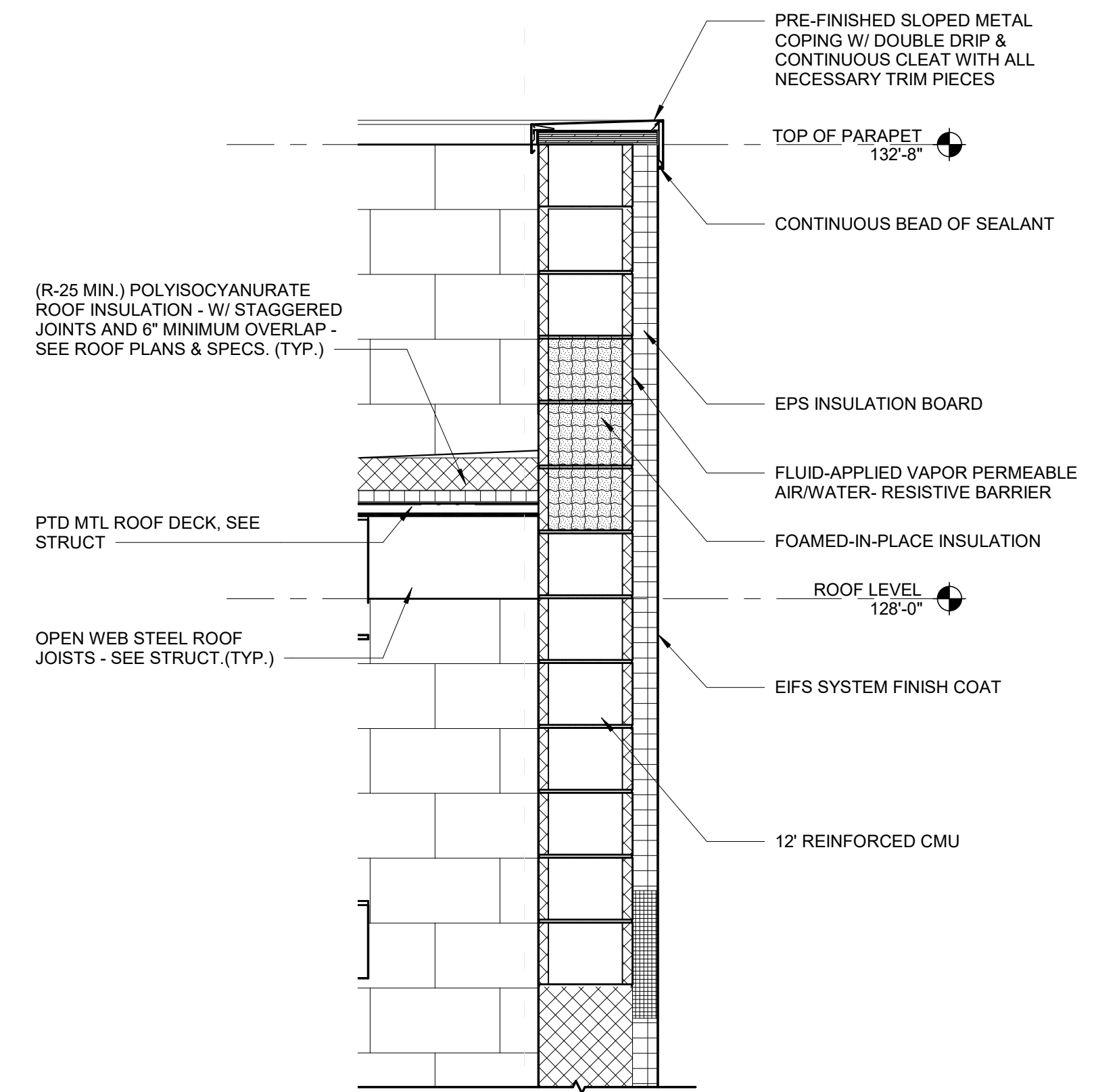
SHEET ISSUE	
1	CONSTRUCTION DOCUMENTS 07/19/21



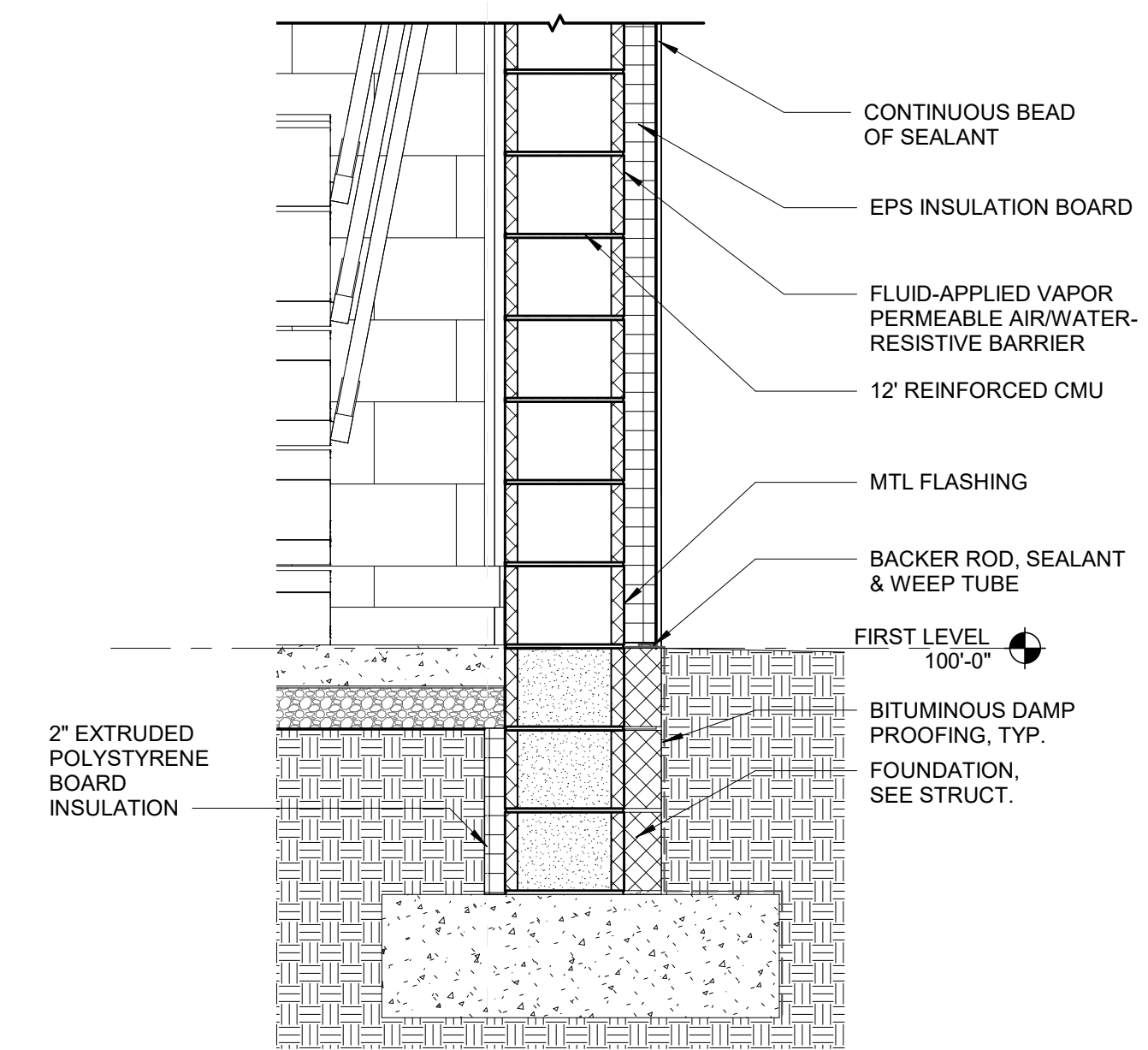
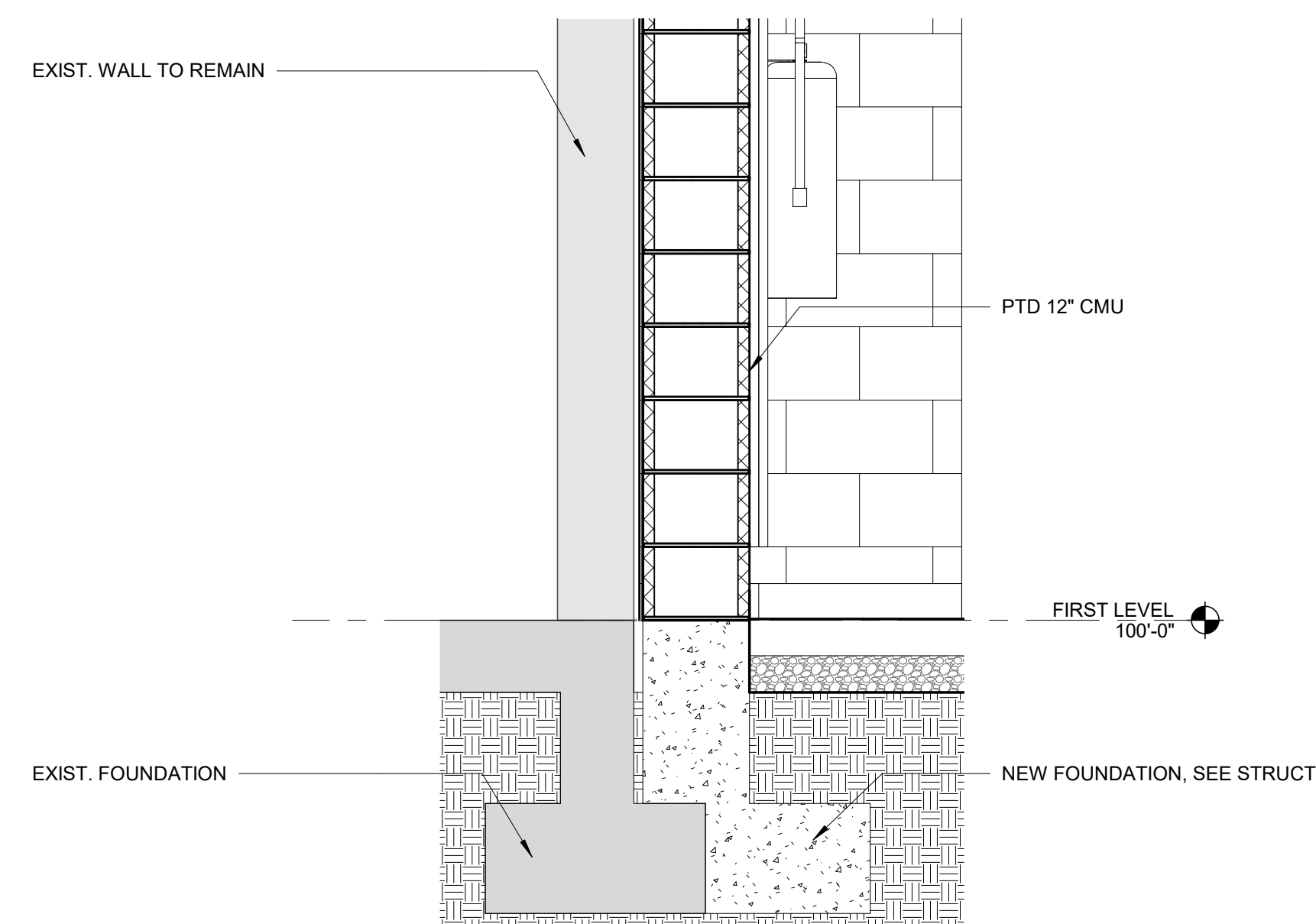
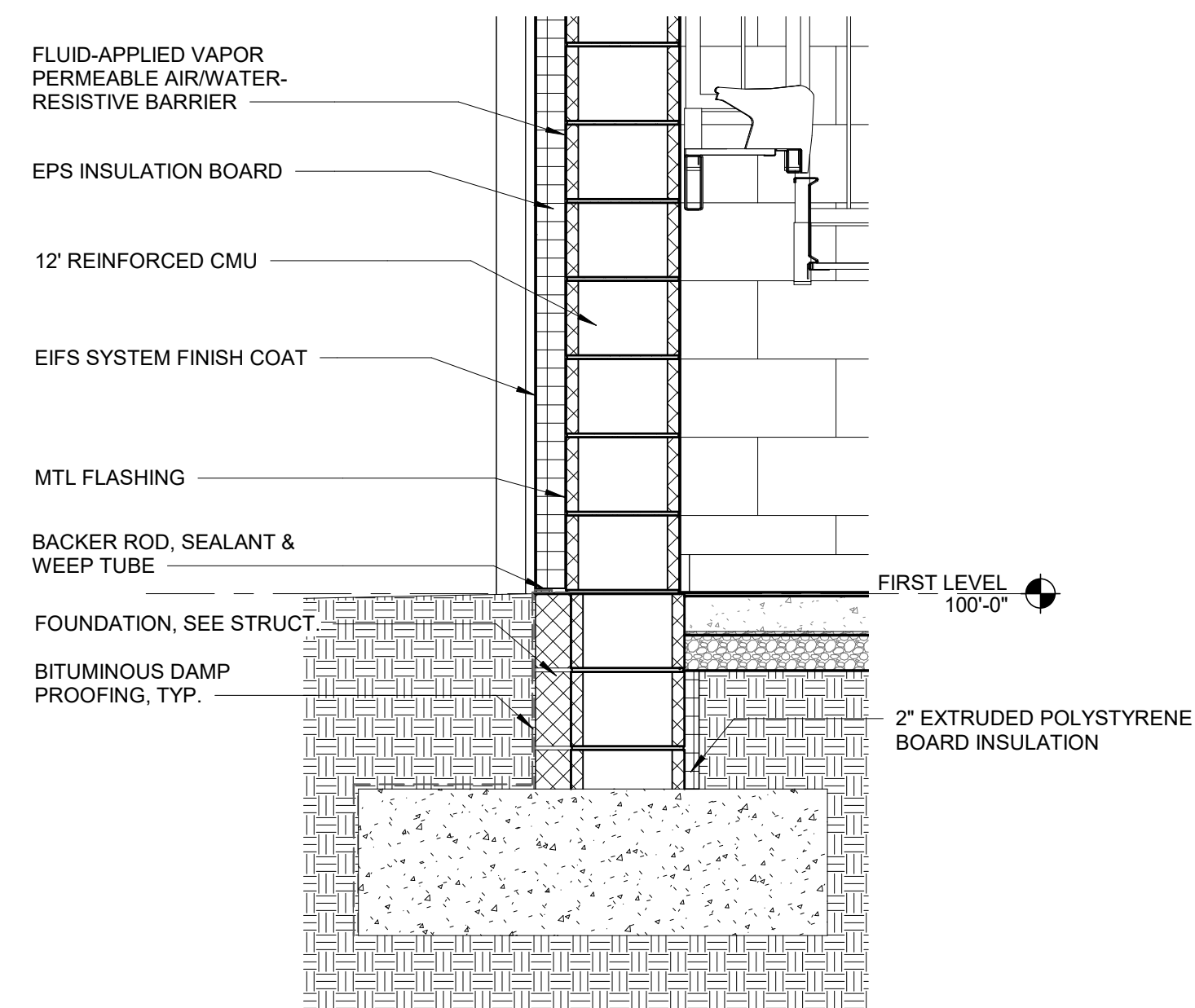
**A3**  
**WALL SECTION AT GYM**  
 3/4" = 1'-0"



**A4**  
**WALL SECTION AT GYM/MULTIPURPOSE**  
 3/4" = 1'-0"



**A6**  
**WALL SECTION AT GYM**  
 3/4" = 1'-0"



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PROJECT NO. 20408

SHEET TITLE  
**WALL SECTIONS**

SHEET NUMBER

**A-321**







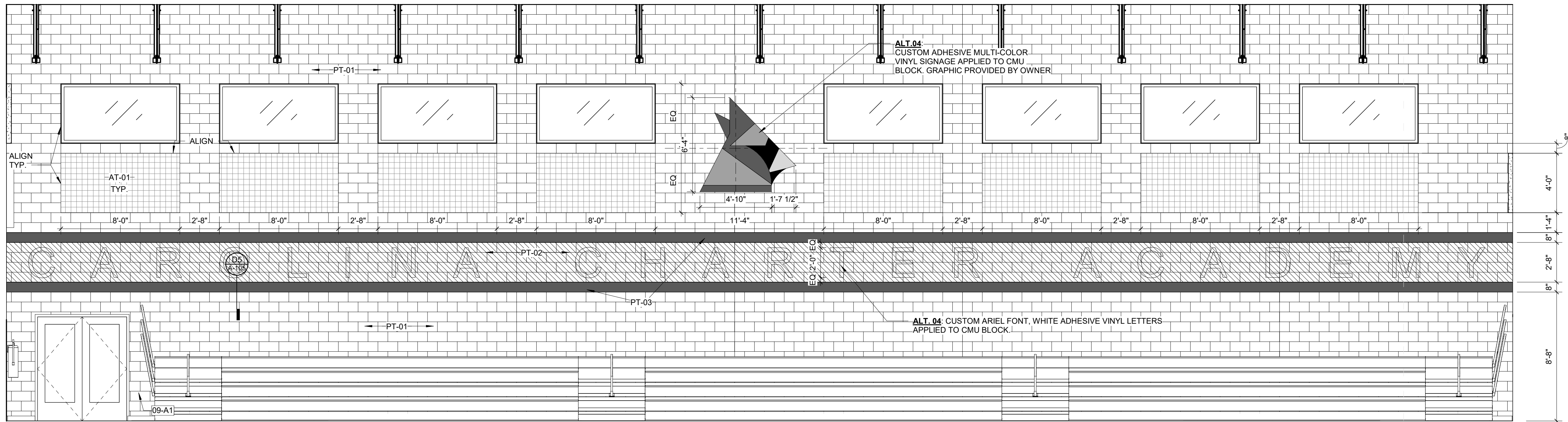
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 Raleigh, North Carolina 27607  
 919-866-4938

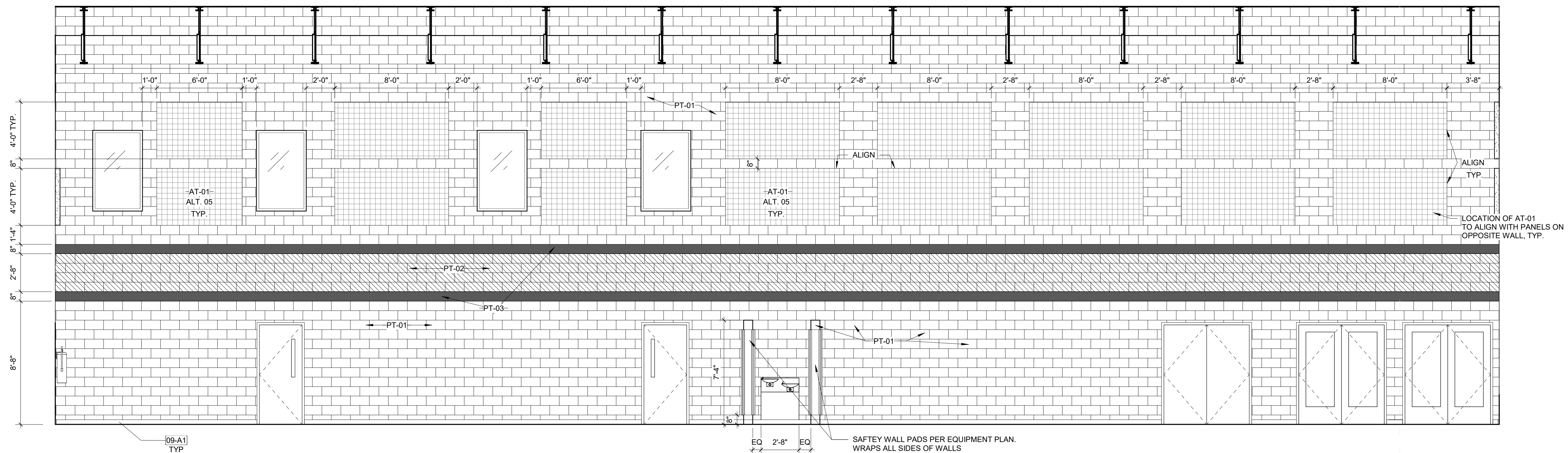


**D1**  
**A-501**  
**INTERIOR ELEVATION - EAST**  
 1/4" = 1'-0"

SEAL | DATE 07/19/21



**SHEET ISSUE**  
 1 CONSTRUCTION DOCUMENTS 07/19/21



**A1**  
**A-501**  
**INTERIOR ELEVATION - WEST**  
 1/4" = 1'-0"

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PROJECT NO. 20408

SHEET TITLE  
**INTERIOR ELEVATIONS**

SHEET NUMBER  
**A-501**



**Carolina Charter Academy GYMNASIUM**  
 8529 Highway 55  
 Angier, North Carolina 27501

**Owner**  
 Highmark School Department  
 746 East Winchester Street, Suite 150  
 Murray, Utah 84107  
 801-256-9550

**Architect**  
 RATIO  
 227 Fayetteville Street, Suite 301  
 Raleigh, North Carolina 27601  
 919-821-0805

**Structural Engineer**  
 Lynch Mykins Structural Engineers, PC  
 301 North West St. Suite 105  
 Raleigh, North Carolina 27603  
 919-782-1833

**Civil Engineer**  
 Timmons Group  
 5410 Trinity Road, Suite 102  
 Raleigh, North Carolina 27607  
 919-866-4938

SEAL | DATE 07/19/21



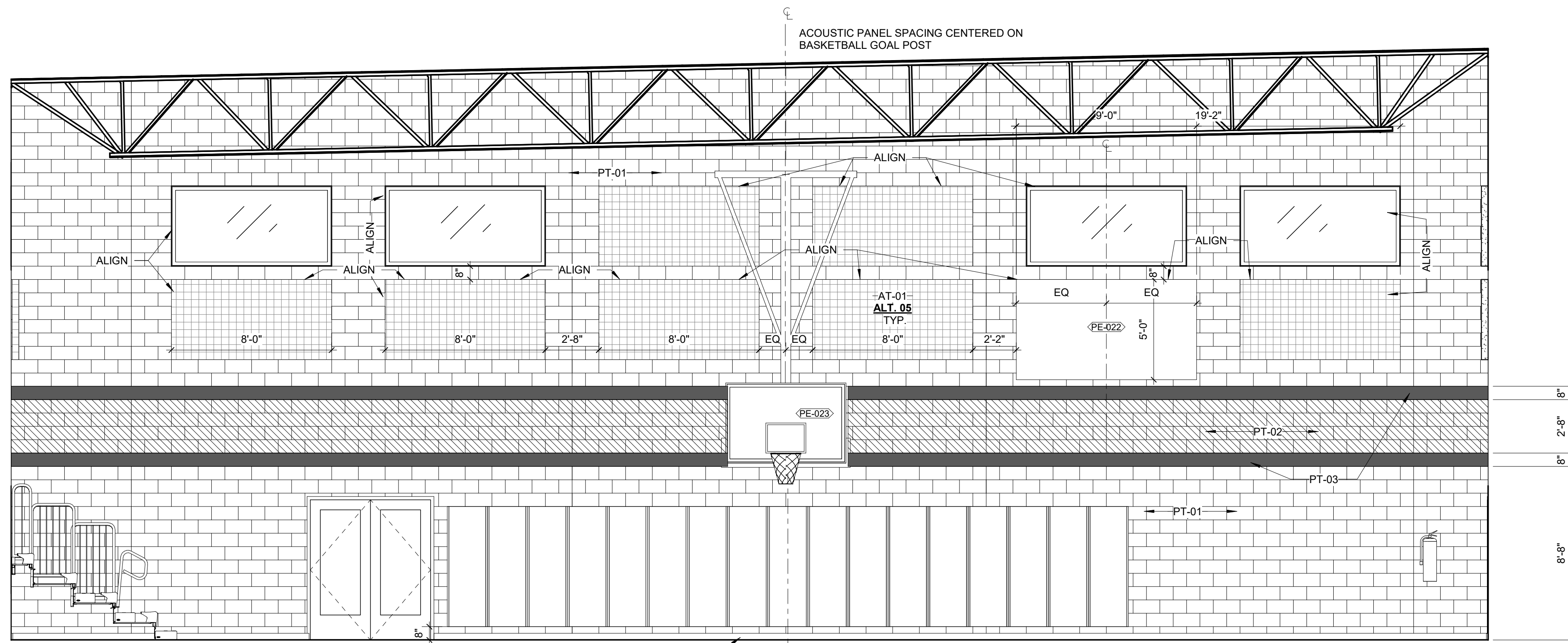
SHEET ISSUE  
 1 CONSTRUCTION DOCUMENTS 07/19/21

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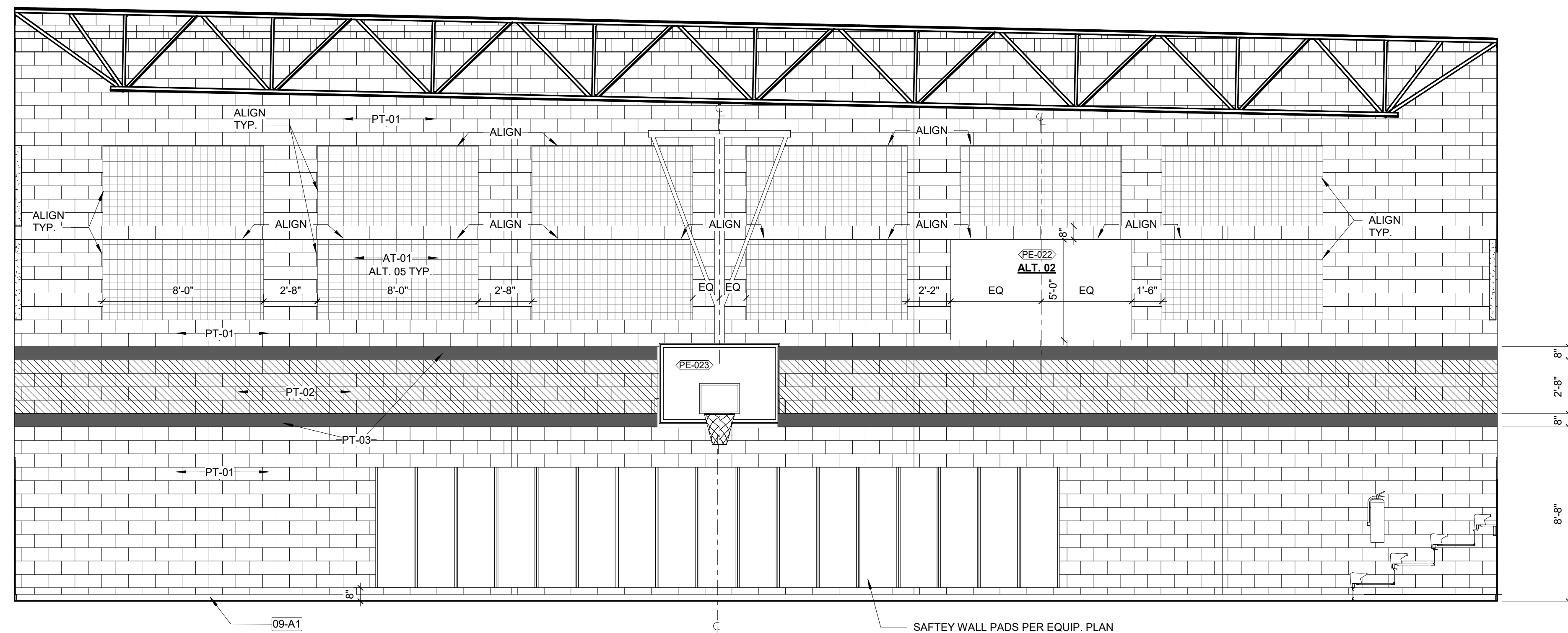
PROJECT NO. 20408

SHEET TITLE  
**INTERIOR ELEVATIONS**

SHEET NUMBER  
**A-502**



**D1 INTERIOR ELEVATION - SOUTH**  
 1/4" = 1'-0"



**A1 INTERIOR ELEVATION - NORTH**  
 1/4" = 1'-0"

7/20/2021 2:46:16 PM

**Carolina Charter Academy GYMNASIUM**  
8529 Highway 55  
Angier, North Carolina 27501

**Owner**  
Highmark School Department  
746 East Winchester Street, Suite 150  
Murray, Utah 84107  
801-256-9550

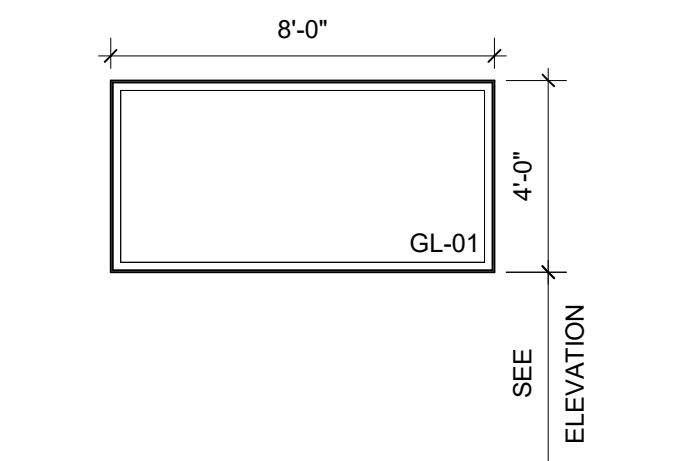
**Architect**  
RATIO  
227 Fayetteville Street, Suite 301  
Raleigh, North Carolina 27601  
919-821-0805

**Structural Engineer**  
Lynch Mykins Structural Engineers, PC  
301 North West St. Suite 105  
Raleigh, North Carolina 27603  
919-782-1833

**Civil Engineer**  
Timmons Group  
5410 Trinity Road, Suite 102  
Raleigh, North Carolina 27607  
919-866-4938

**GENERAL DOOR SCHEDULE NOTES**

- THESE GENERAL NOTES APPLY TO SERIES 600 DOOR SCHEDULE DRAWINGS.
- UNDERCUT DOORS AS REQUIRED BY FINAL FLOOR FINISH.
- PROVIDE SEALANT BETWEEN HOLLOW WALL CONSTRUCTION PERIMETERS AND SURROUNDING WALL CONSTRUCTION UNLESS OTHERWISE INDICATED.
- PROVIDE SEALANT BETWEEN INTERIOR AND EXTERIOR STOREFRONT FRAME PERIMETERS AND SURROUNDING WALL CONSTRUCTION UNLESS OTHERWISE INDICATED.
- GROUT FULL NEW HOLLOW METAL DOOR FRAMES IN MASONRY WALL CONSTRUCTION.
- WHERE ACUSTICAL RATING IS INDICATED ON THE DOOR SCHEDULE, HARDWARE AND DOOR ASSEMBLY COMPONENTS SHALL MEET THE REQUIREMENTS OF THAT RATING.
- INSTALL DOOR GLASS USING WET-GLAZING METHOD.
- REFER TO PROJECT MANUAL DIVISION 08 FOR GLAZING.
- REFER TO PROJECT MANUAL DIVISION 08 FOR HARDWARE SCHEDULE.



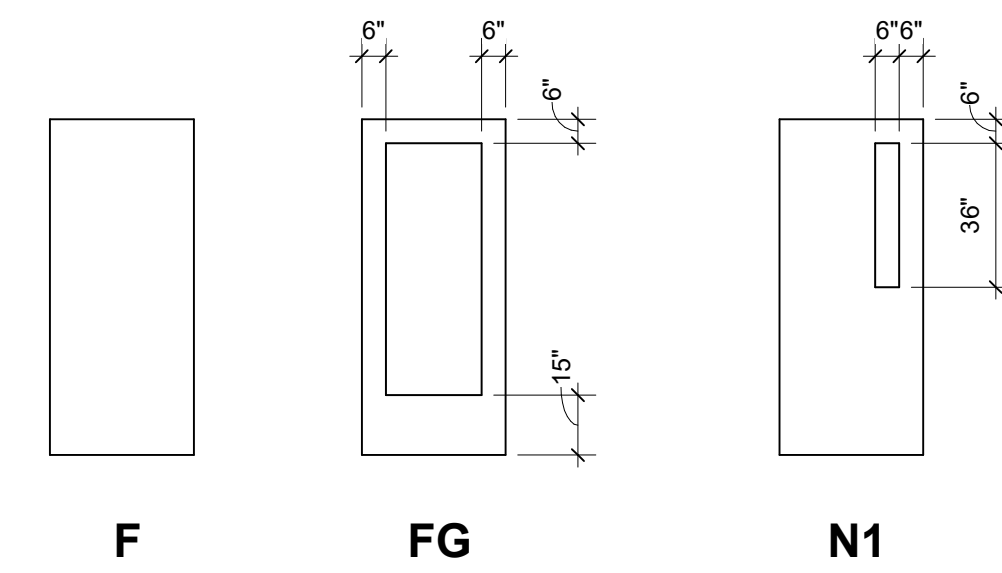
**W01**

**WINDOW TYPE ELEVATIONS**

1/4" = 1'-0"

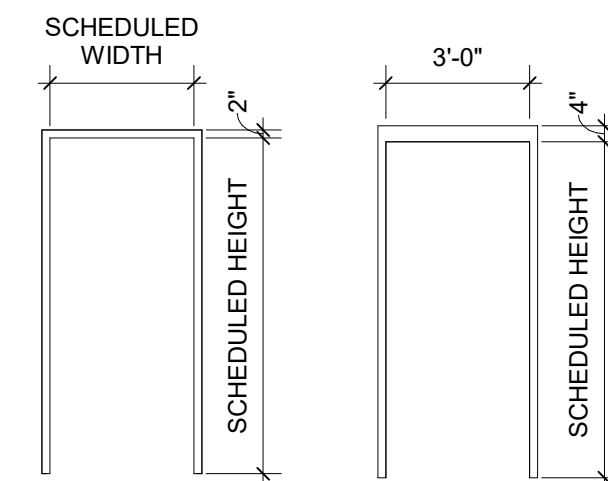
**DOOR SCHEDULE**

DOOR NUMBER	PAIR	DOOR				FRAME							FIRE RATING	REMARKS		
		W	W2	H	T	MTRL.	ELEV.	GLASS	HDWR. SET	MTRL.	ELEV.	HEAD			JAMB	THRESHOLD
FIRST LEVEL																
101-A	Yes	3'-0"	3'-0"	7'-0"	1 3/4"	AL	FG	GL-01	1	AL	F1	A1/A-621	A1/A-601	D5/A-151	NR	KF, PH
101-B	Yes	3'-0"	3'-0"	7'-0"	1 3/4"	AL	FG	GL-01	1	AL	F1	A1/A-621	A1/A-601	D5/A-151	NR	KF, PH
101-C		3'-0"		7'-0"	1 3/4"	WD	N1	GL-02	4	HM	F2	A2/A-621	A2/A-601	E5/A-151	NR	
101-D		3'-0"		7'-0"	1 3/4"	WD	N1	GL-02	4	HM	F2	A2/A-601	A2/A-601	E5/A-151	NR	
101-E	Yes	3'-0"	3'-0"	7'-0"	1 3/4"	WD	F		3	HM	F2	A2/A-601	A2/A-601	E5/A-151	NR	
101-F	Yes	3'-0"	3'-0"	7'-0"	1 3/4"	AL	FG	GL-02	2	AL	F1	A3/A-601	A3/A-601	E5/A-151	NR	PH
101-G	Yes	3'-0"	3'-0"	7'-0"	1 3/4"	AL	FG	GL-02	2	AL	F1	A3/A-601	A3/A-601	E5/A-151	NR	PH



**DOOR PANEL LEGEND**

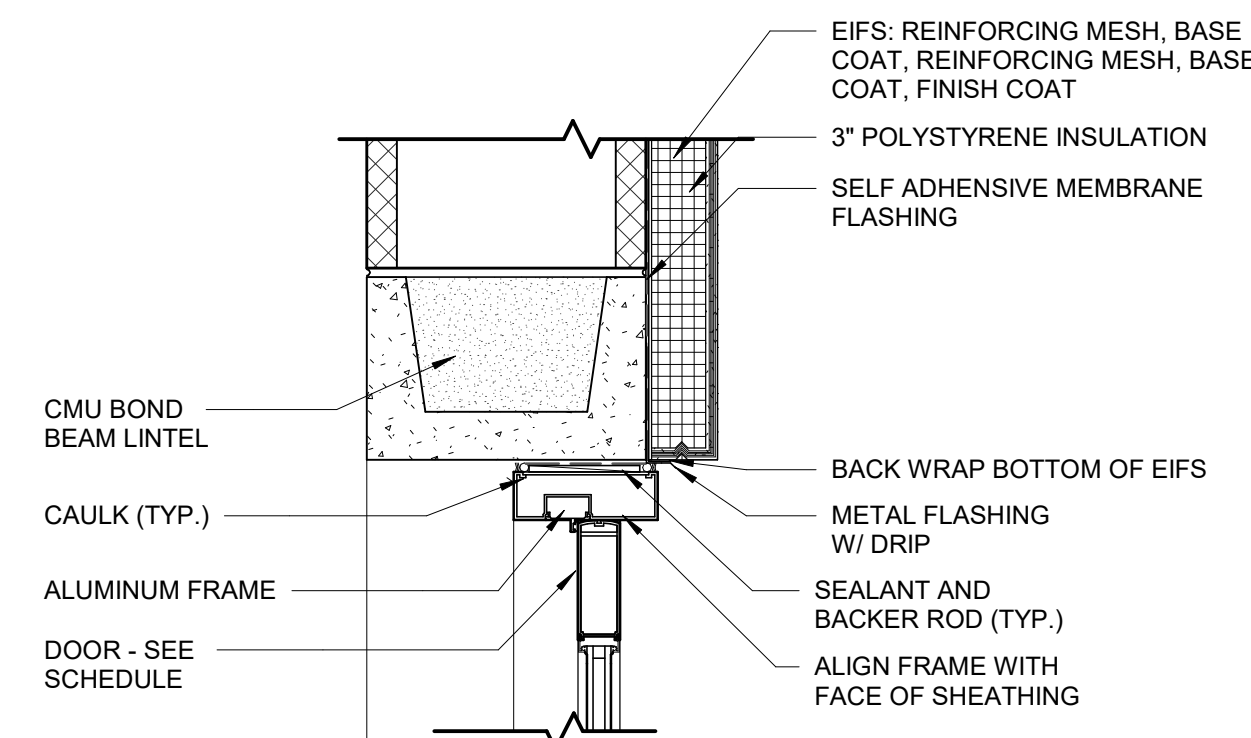
1/4" = 1'-0"



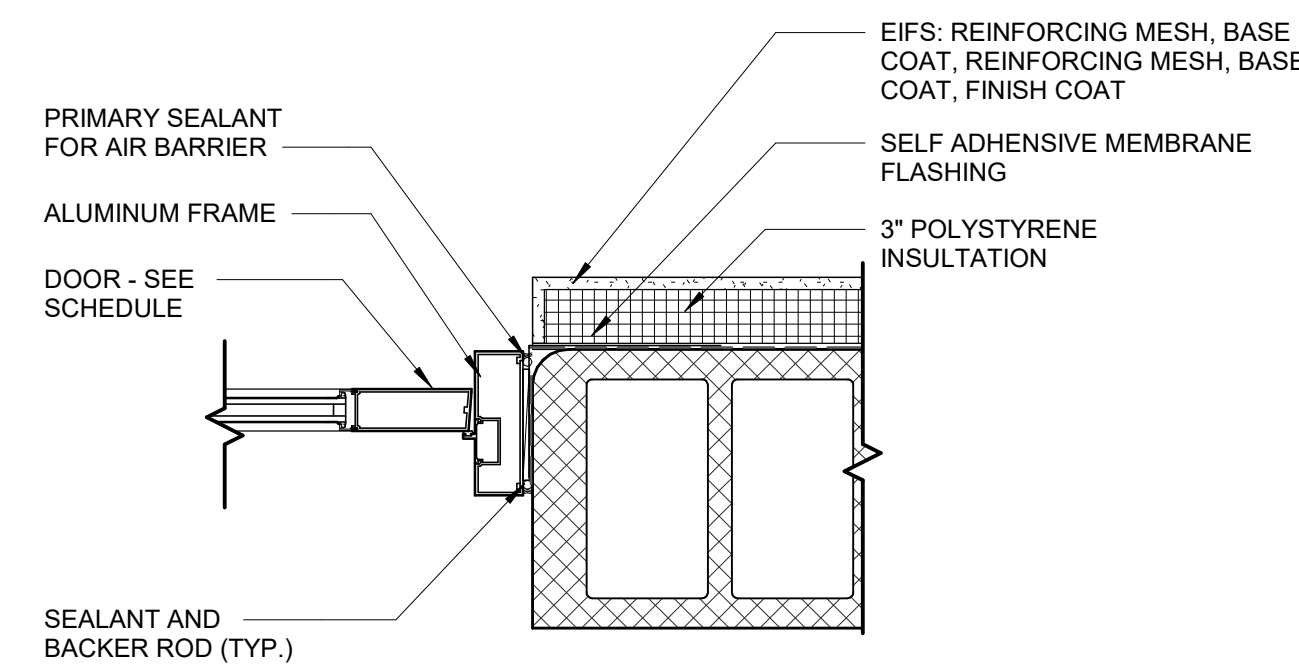
**DOOR FRAME LEGEND**

1/4" = 1'-0"

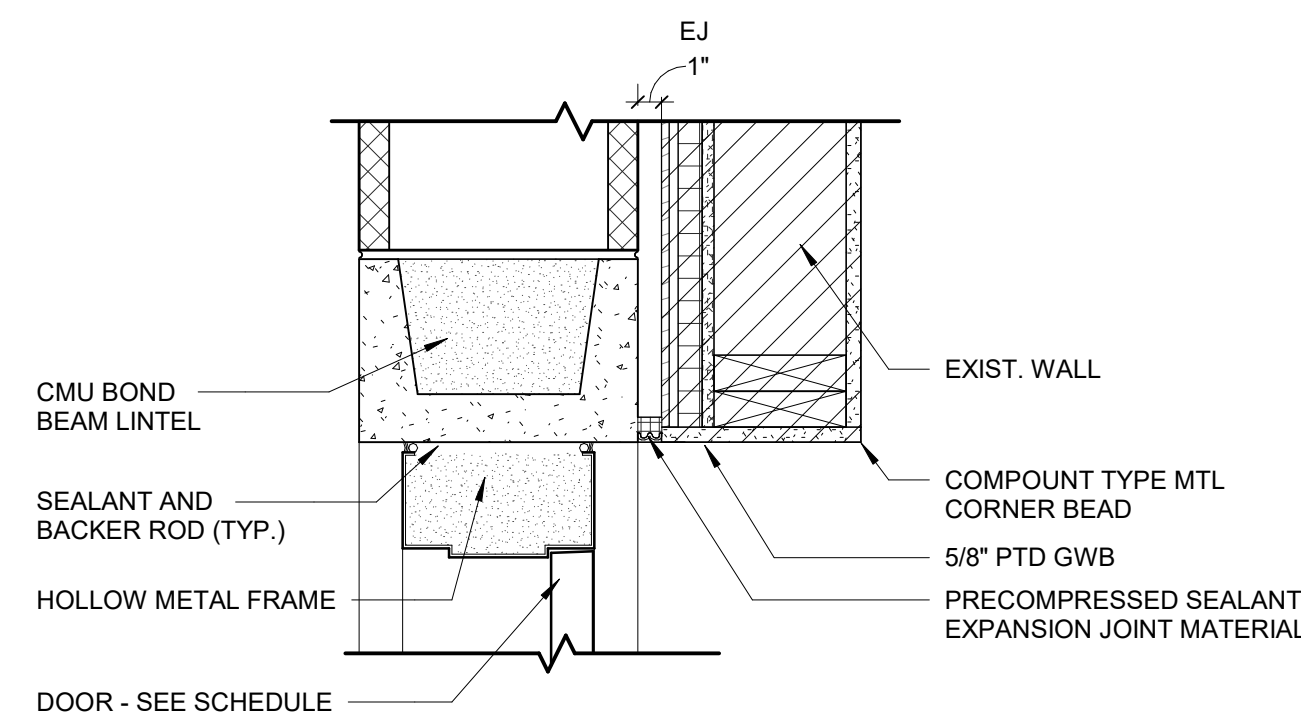
DOOR HARDWARE SCHEDULE									
Door	Hard	Room Type	Hinges	Lockset / Exit Device	Cylinder	Floor Stop	Silencer	Closer	Other Parameters
1	PAIR ALUMINUM EXTERIOR EGRESS DOORS	ROTON, 780-112HD OR MCKINNEY MCK-12HD CONTINUOUS HINGE		DOR-O-MATIC, 1690 EO, US26D	SARGENT, L-SECTION - US26D			LCN, 4110, GRAY	PULLS: ROCKWOOD, BF157, US26D
2	PAIR ALUMINUM INTERIOR DOORS	ROTON, 780-112HD OR MCKINNEY MCK-12HD CONTINUOUS HINGE		NONE	NONE			LCN, 4110, GRAY	PULLS: ROCKWOOD, BF157, US26D OR EQUAL
3	STORAGE	MCKINNEY, T2714 4.5X4.5, US26D		SARGENT, 28-10G04 LL, US26D	SARGENT, L-SECTION - US26D	ROCKWOOD, 442	ROCKWOOD, 608, GRAY	SARGENT 351, EN FINISH	
4	CLASSROOM	MCKINNEY, MP879 4.5X4.5, US26D		SARGENT, 28-10G05 LL, LESS CYLINDER US26D	SARGENT, L-SECTION - KEYPED BY OWNER, US26D	ROCKWOOD, 442	ROCKWOOD, 608, GRAY		



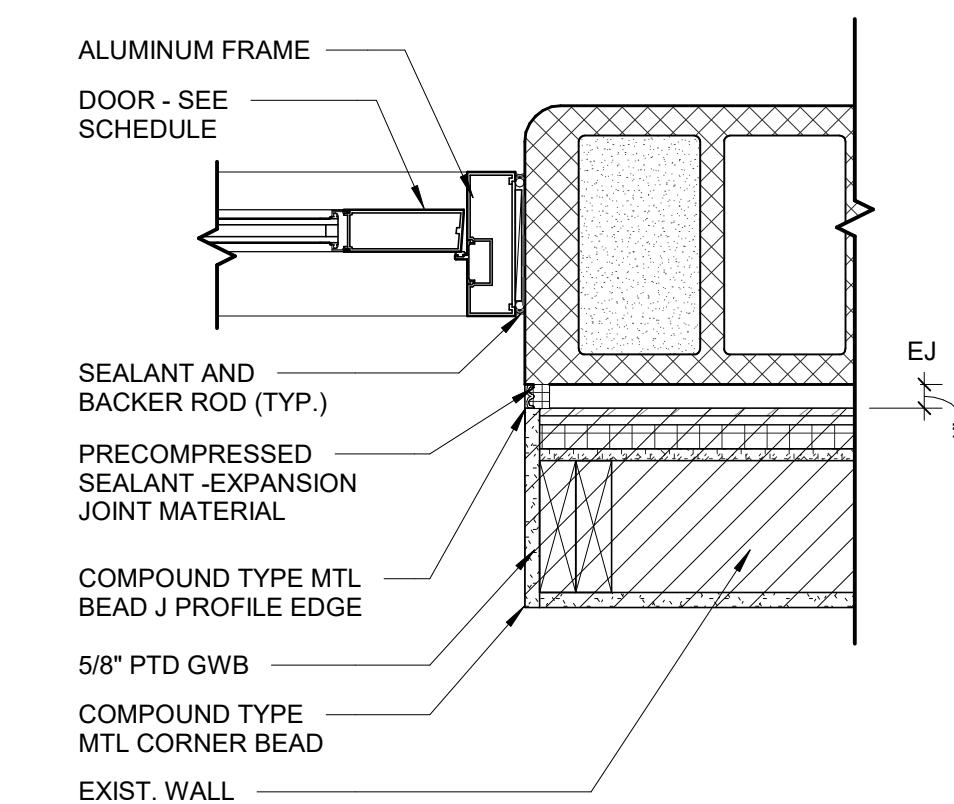
**HEAD DETAIL**



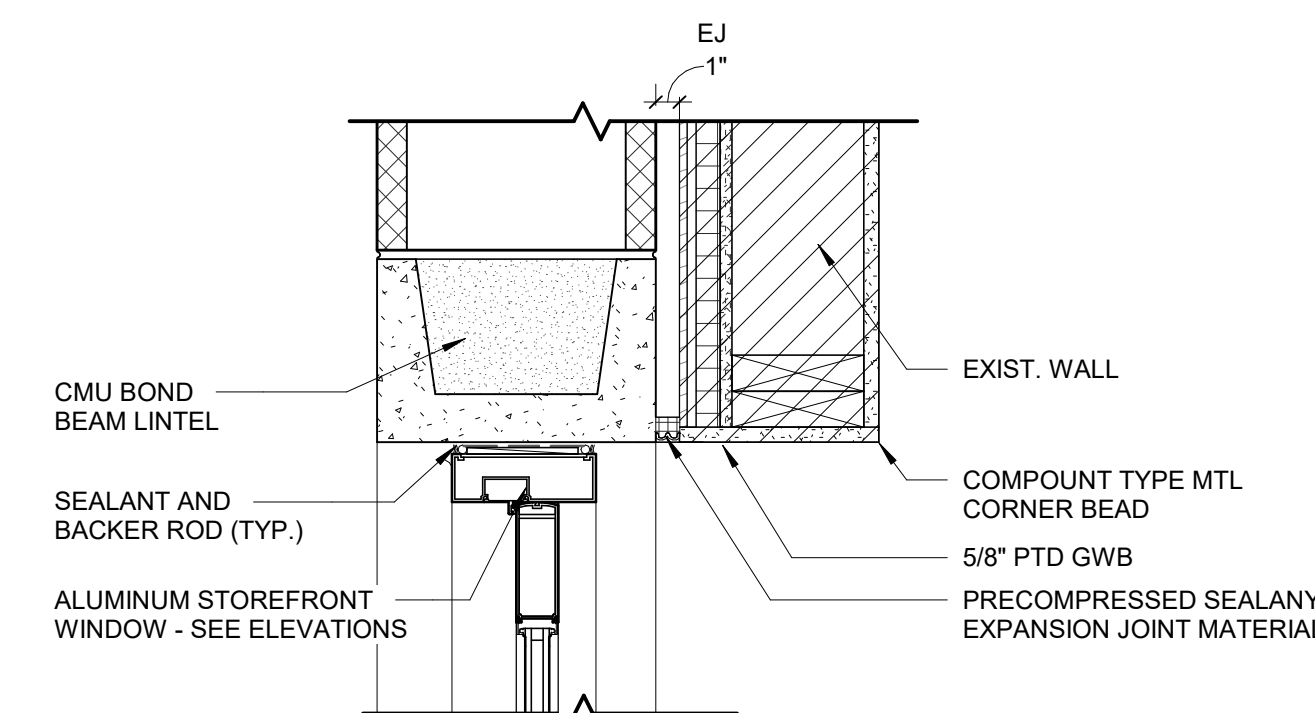
**JAMB DETAIL**



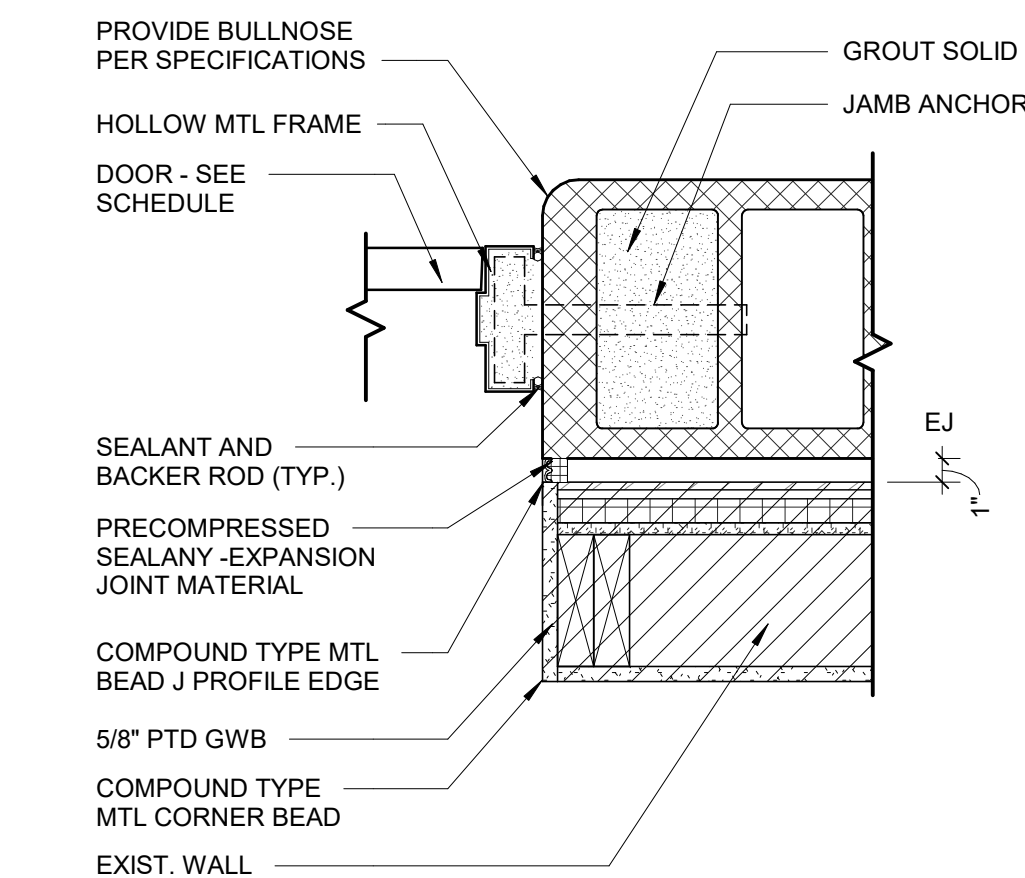
**HEAD DETAIL**



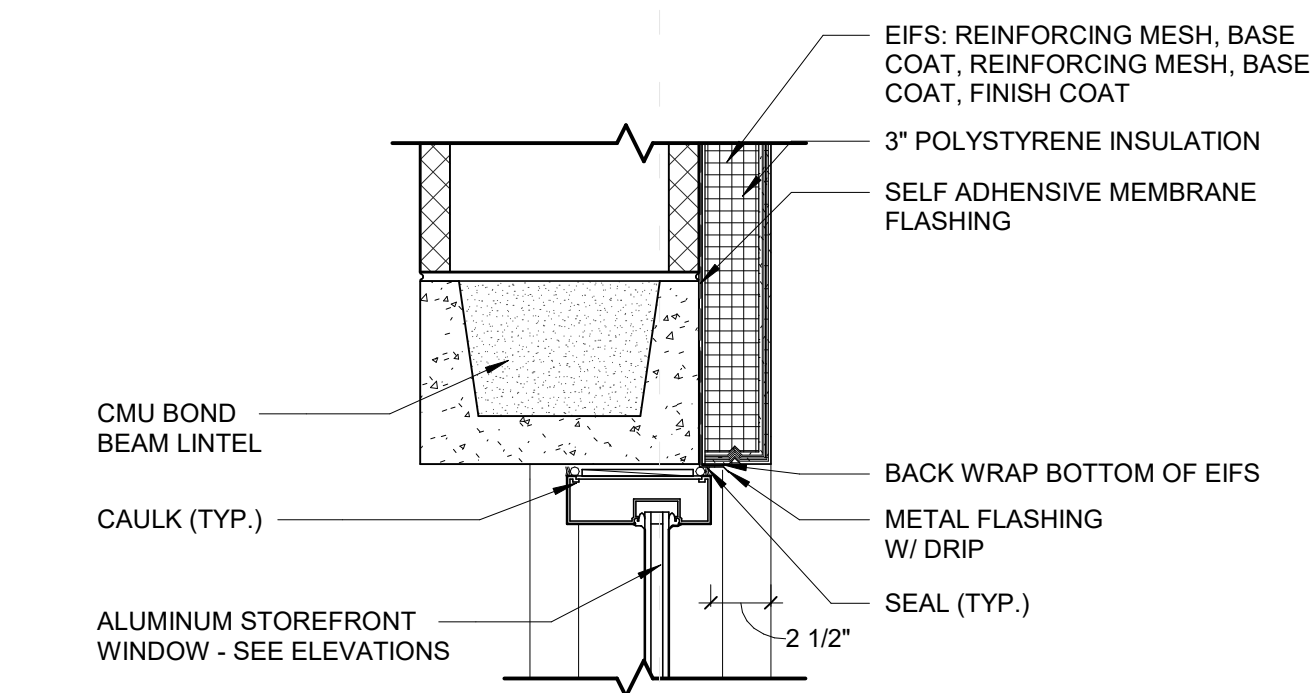
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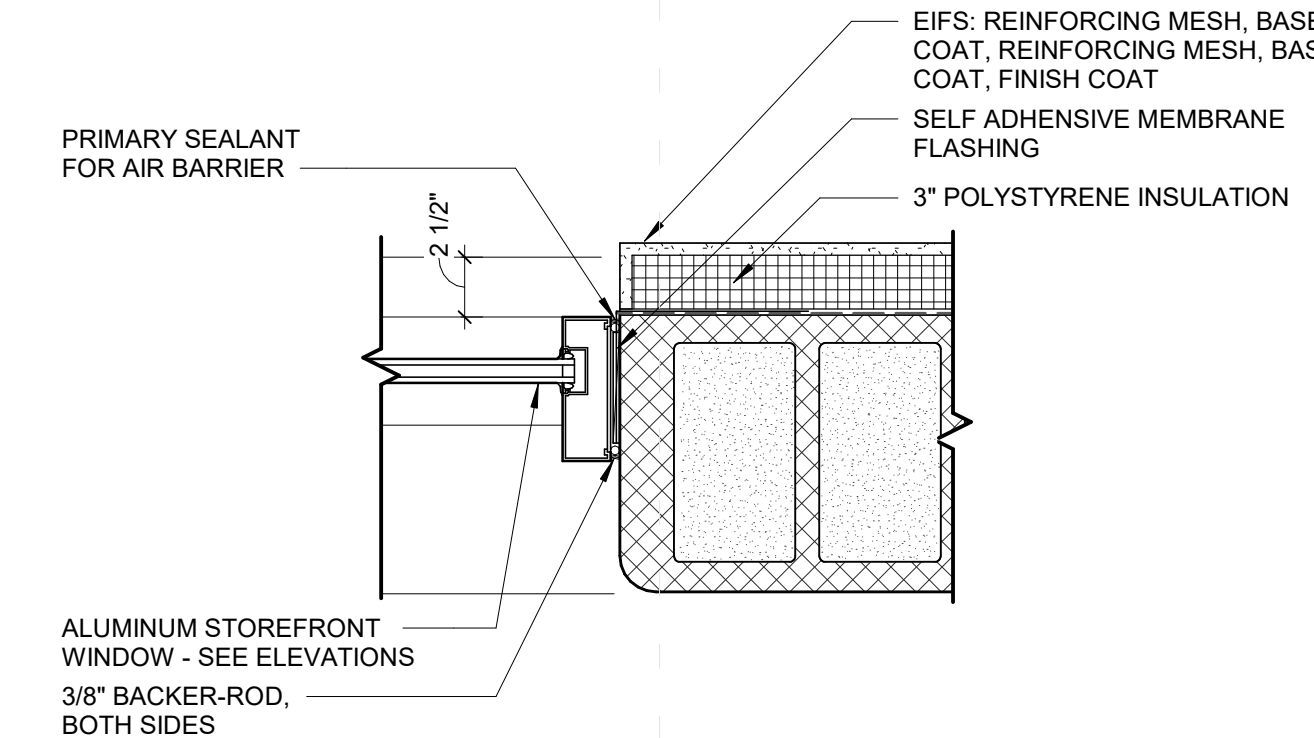
**HEAD DETAIL**



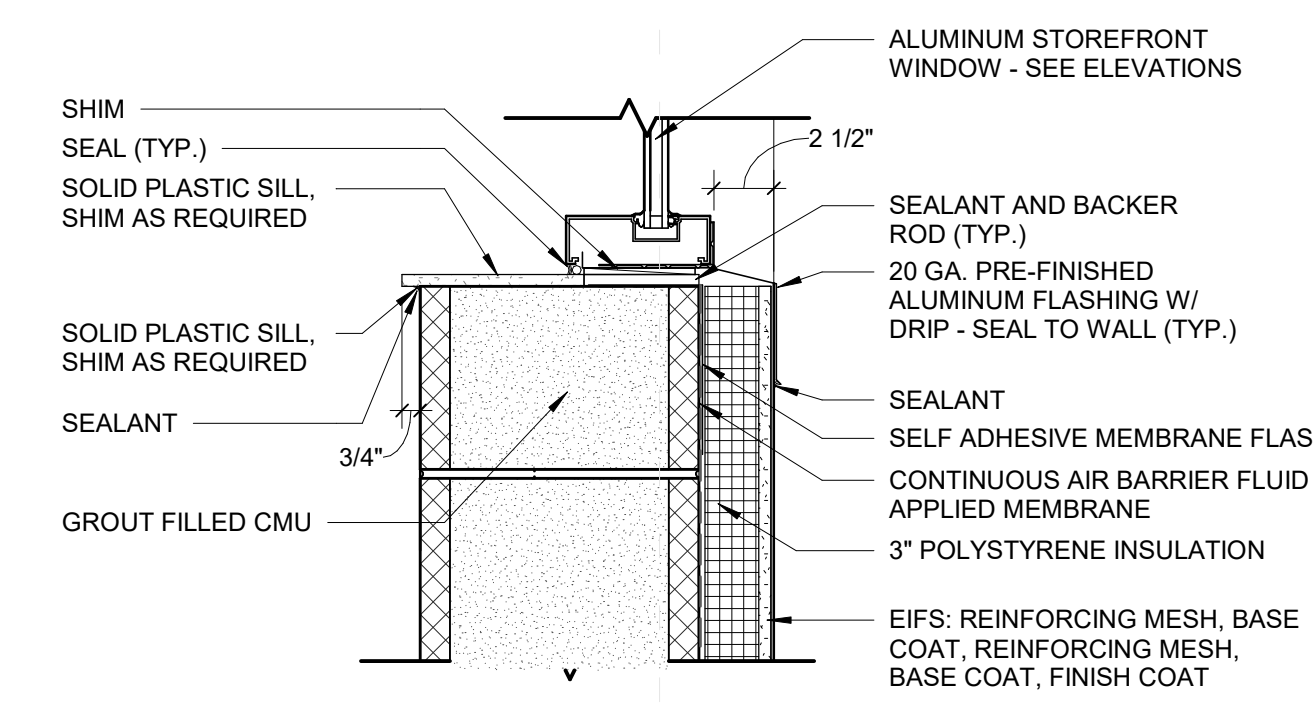
**JAMB DETAIL**



**HEAD DETAIL**



**JAMB DETAIL**



**SILL DETAIL**

**A1**  
A-601  
1 1/2" = 1'-0"

**A2**  
A-601  
1 1/2" = 1'-0"

**A3**  
A-601  
1 1/2" = 1'-0"

**A4**  
A-601  
1 1/2" = 1'-0"

SEAL | DATE 07/19/21



SHEET ISSUE	CONSTRUCTION DOCUMENTS	07/19/21
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**RATIO**  
ARCHITECTS  
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PROJECT NO. 20408

SHEET TITLE  
**WINDOW & DOOR ELEVATIONS AND DETAILS**

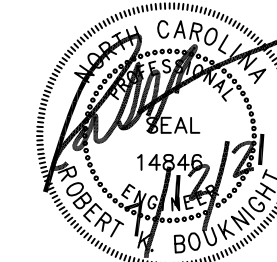
SHEET NUMBER

**A-601**









ROBERT BOUKNIGHT, PE  
 1507 TALBOT RD  
 PLEASANT  
 GARDEN, NC 27313  
 336-420-2686  
 RKB@RKBENG.COM

## VENTILATION CALCULATION

Zone Name / Space Name	Mult.	Supply Air Rate (CFM)	Floor Area (ft <sup>2</sup> )	OA Floor Rate (CFM)	Timed Average Occupancy	People OA Rate (CFM/Person)	Air Dist Eff. (Ez)	Space Required OA (CFM) Vz	Breathing Zone OA (CFM) Vbz	Ventilation Effectiveness
GYM ADDITION										
GYM	1	6659	7512	0.06	200	7.5	0.8	2438		

NOTE: SET BASELINE VENTILATION TO SCHEDULED, CO2 SENSOR TO INCREASE OA DURING HIGH OCCUPANCY PERIODS.

### GENERAL MECHANICAL NOTES:

- ALL PIPING PENETRATIONS THRU SMOKE AND FIRE WALLS SHALL BE SEALED WITH APPROPRIATE UL RATED/LISTED SEALANT.
- ALL OUTSIDE AIR INTAKES SHALL BE LOCATED 10'-0" MIN. FROM ANY VENT/EXHAUST TERMINAL.
- BRANCH DUCT CONNECTION TO DIFFUSER OR GRILLE MAY HAVE 7'-0" LONG MAX. FLEX DUCT CONNECTOR
- COORDINATE DUCTWORK AND PIPING INSTALLATIONS WITH BUILDING ELEMENTS AND OTHER TRADES. DUCT AND PIPING ROUTING ON PLANS ARE DIAGRAMATIC. ADDITIONAL DUCTWORK AND OFFSETS MAY BE REQUIRED TO INSTALL DUCTWORK AND PIPING IN ACTUAL FIELD CONDITIONS. MAINTAIN MANUFACTURERS SERVICE CLEARANCES FOR ALL EQUIPMENT.
- PROVIDE TEST AND BALANCE. BALANCE ALL FAN AND AIR CONDITIONING SYSTEM TO CFM'S INDICATED ON PLANS. PROVIDE NEW SHEAVES AS REQ'D. & FURNISH BALANCE REPORT TO ENGINEER. PROVIDE "COMFORT BALANCE" TO AIRFLOWS TO ACCOMMODATE OCCUPANT COMFORT AFTER OCCUPANCY.
- INSULATE ALL INDOOR SUPPLY DUCTWORK WITH 2.2" FG BLANKET WITH SEALED FSK VAPOR BARRIER. INSUL. NOT REQ'D ON RETURN DUCTS WITHIN BLDG.
- BLANK OFF OPENINGS WHERE DUCTS TRAVEL DOWN TO FIRST LEVEL WITH SHEET METAL AND MINERAL WOOL AT SECOND FLOOR LEVEL.
- INSULATE ALL EXTERIOR SUPPLY DUCTWORK WITH R8.2 CLOSED CELL FOAM WITH ALUM JACKET.

### MECHANICAL SUMMARY

#### MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Method of Compliance  
 2018 Energy Code: Prescriptive: X Performance:  
 2013 ASHRAE 90.1 Prescriptive: X Performance:

Thermal Zone 4A  
 winter dry bulb: 14F  
 summer dry bulb: 94F

Interior design conditions  
 winter dry bulb: 72F  
 summer dry bulb: 75F (CONDITIONED AREAS)  
 relative humidity: 55%

Building heating load: 167 MBH

Building cooling load: 16.7 Tons

#### Mechanical Spacing Conditioning System

##### Unitary

description of unit: SEE SCHEDULES  
 heating efficiency: SEE SCHEDULES  
 cooling efficiency: SEE SCHEDULES  
 size category of unit: SEE SCHEDULES

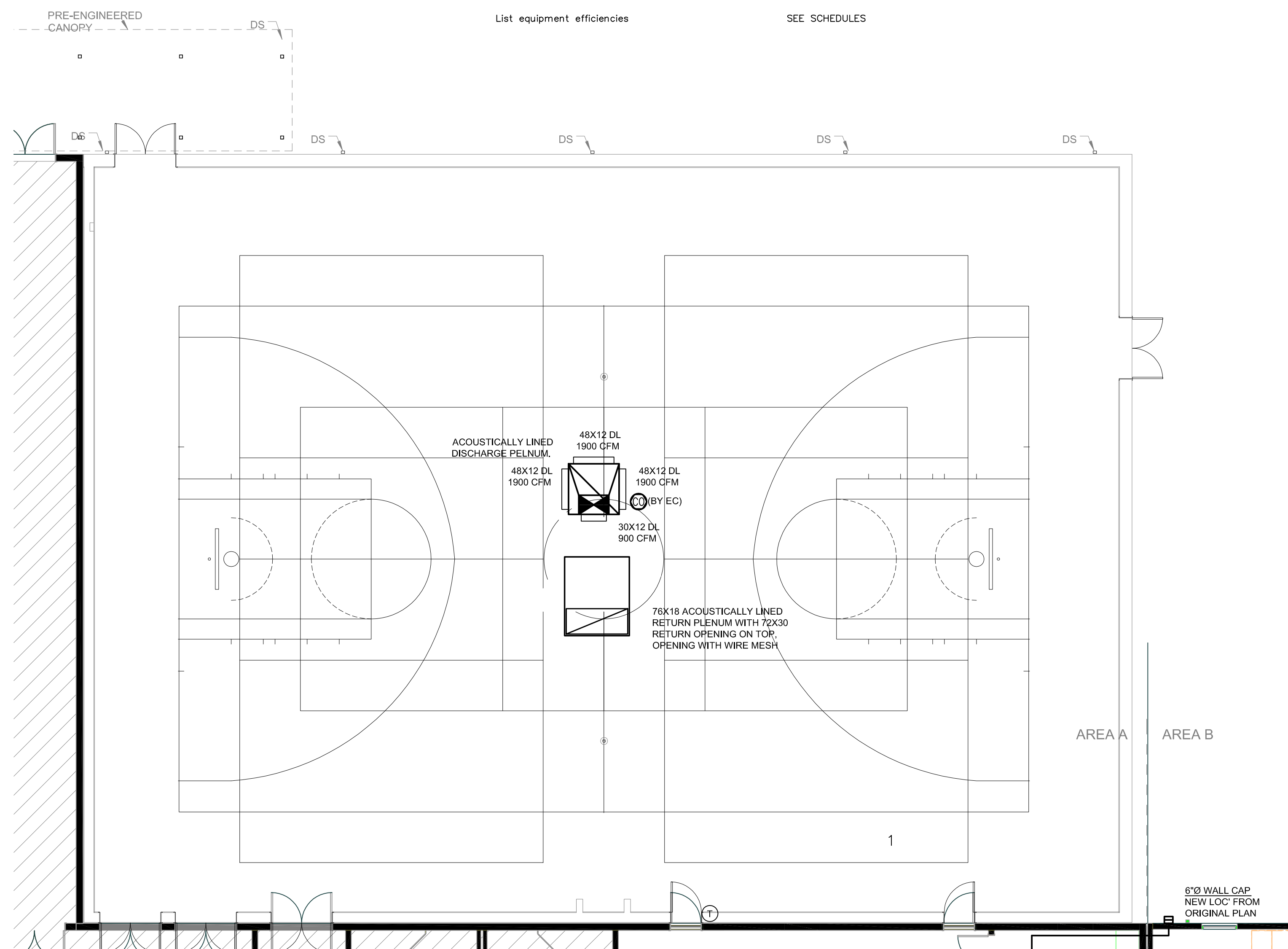
##### Boiler

Size Category, if oversized, state reason: NA

##### Chiller

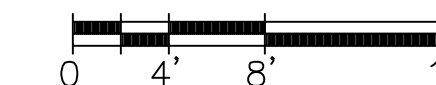
Size category, if oversized, state reason: NA

List equipment efficiencies SEE SCHEDULES



## HVAC GYM ADDITION PLAN

SCALE 1/8" = 1'-0"



DESIGNED BY: RKB  
 DRAWN BY: RKB  
 CHECKED BY:  
 APPROVED BY: RKB  
 DRAWING NUMBER:  
**M1.1**

DATE:  
 DATE:  
 DATE:  
 DATE:  
 DATE:

TITLE: CAROLINA CHARTER ACADEMY  
 2021 GYM ADDITION  
 8529 NC-55  
 ANGIER, NC  
 CUSTOMER: SWINERTON CONSTRUCTION  
 JOB No. | SHEET No. | SCALE |

REV. BY	DATE	DESCRIPTION

REV. BY	DATE	DESCRIPTION

MECHANICAL TECHNOLOGIES & SOLUTIONS, LLC.  
 700 Meigsboro Drive  
 Winston-Salem, NC 27107  
 Phone (336) 394-5166 Fax (336) 862-7112  
 www.mtsinc.com













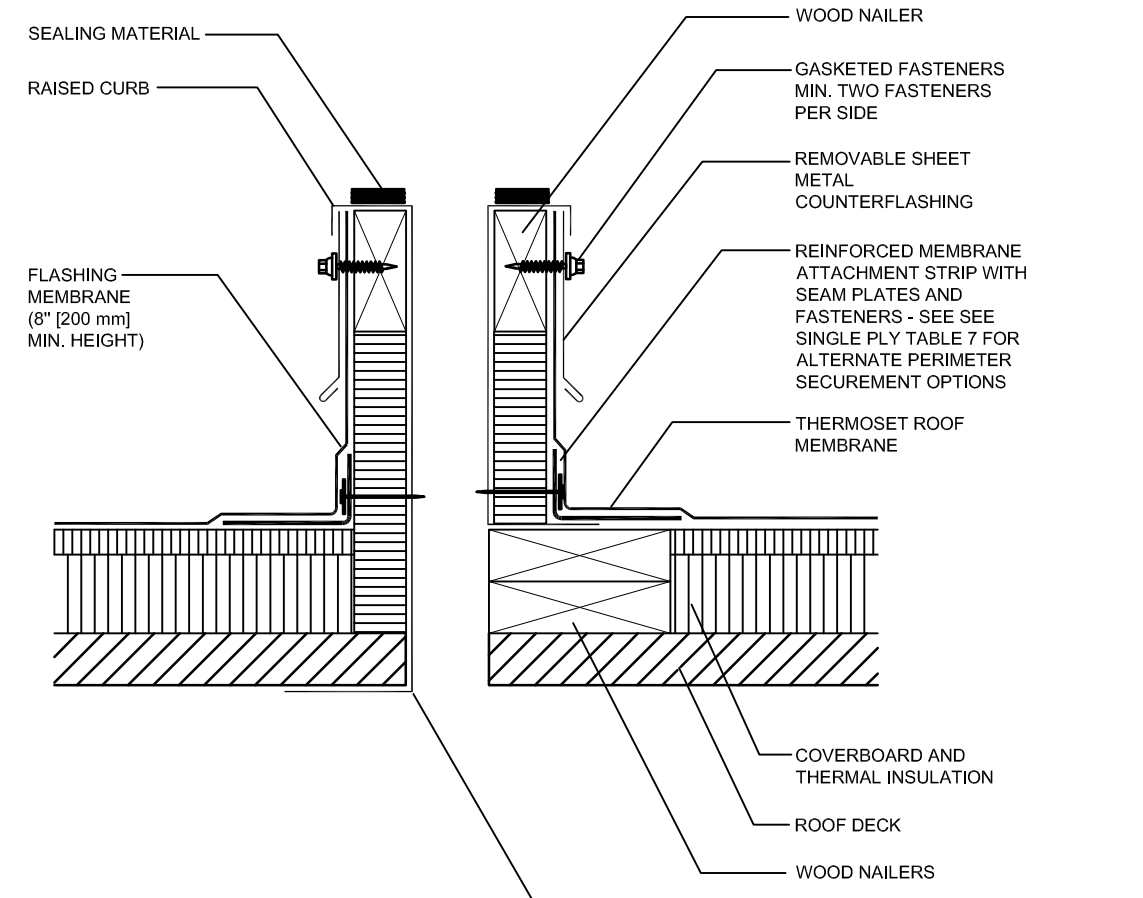
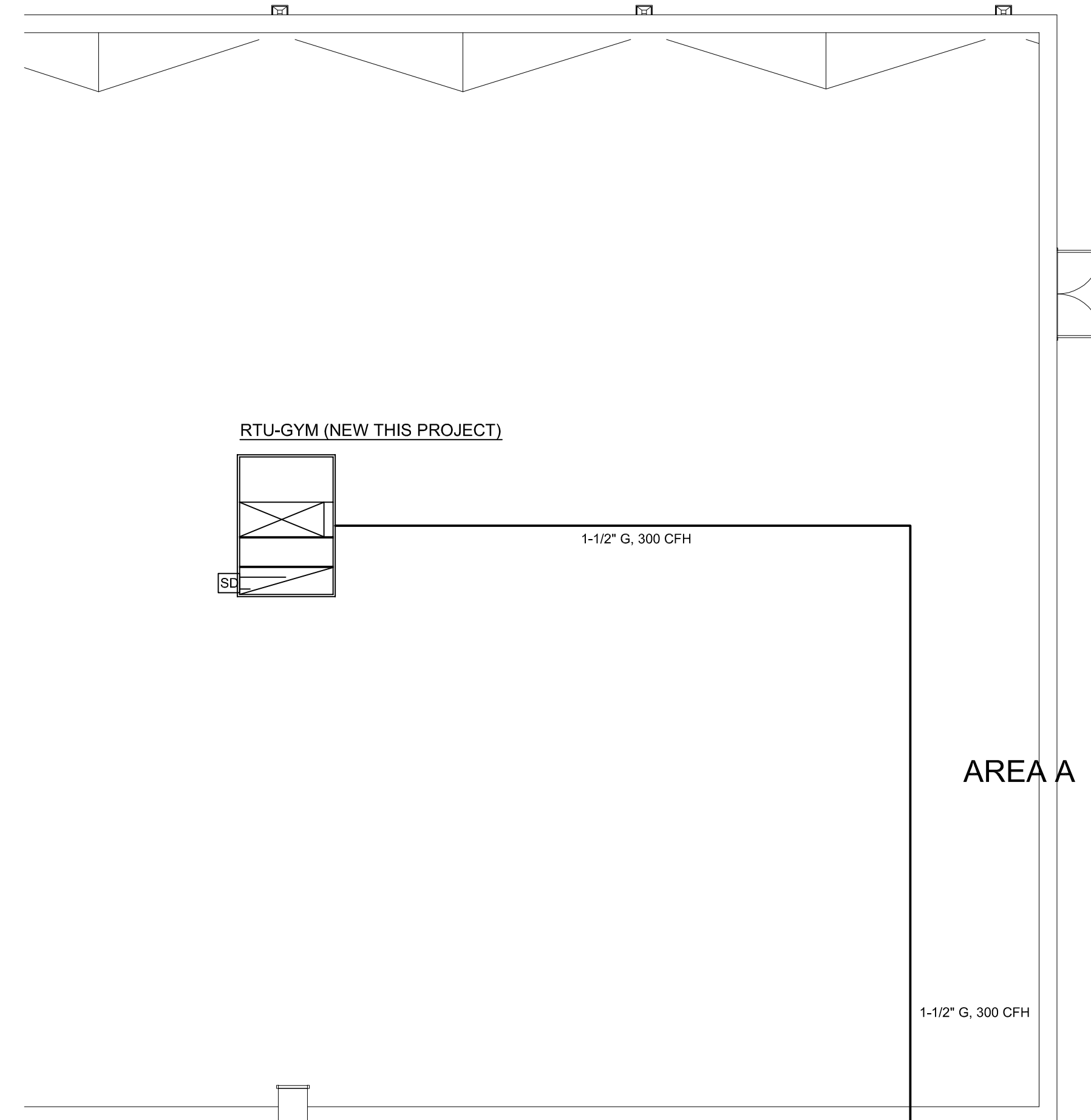
ROBERT BOUKNIGHT, PE  
1507 TALBOT RD  
PLEASANT  
GARDEN, NC 27313  
336-420-2686  
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**MECHANICAL TECHNOLOGIES & SOLUTIONS, LLC.**  
700 Meigsford Drive  
Winston-Salem, NC 27107  
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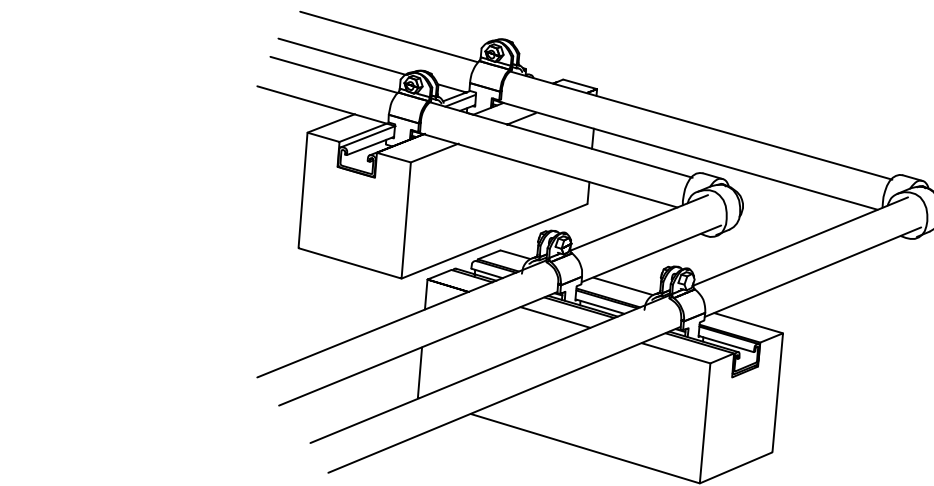
TAG	SUPPLY FAN				MIN. O/A	COOLING COIL			HEATING SECTION			UNIT VOLTAGE	MCA	MOP	MANUF./MODEL	REMARKS	WEIGHTS (APPX)
	CFM	ESP (IN. H <sub>2</sub> O)	BHP	RPM		TOT MBH (MIN)	SENS MBH (MIN)	COIL EAT DB/WB (°F)	TOT MBH INPUT	TOT MBH OUTPUT	COIL EAT DB (°F)						
RTU-GYM	6600	1	X	X	1200	210	170	80/67	300	244	60	480/3P	50	60		1-8	3000

**REMARKS / ACCESSORIES**

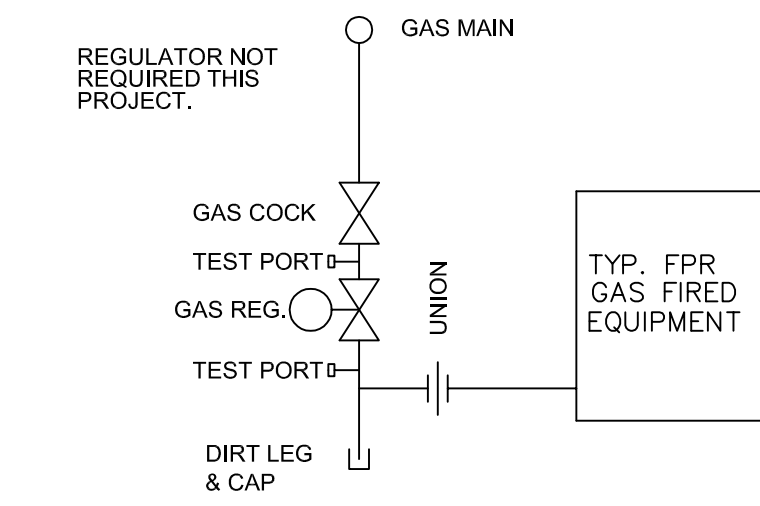
1. PROVIDE INTEGRATED HOT GAS REHEAT COIL AND DEHUMIDIFICATION CYCLE.
2. PROVIDE HUMIDITY SENSORS INTEGRAL TO PROGRAMMABLE THERMOSTATS.
3. PROVIDE NEW SHEAVES AS REQUIRED TO MEET REQUIRED AIRFLOW, CFM'S. PROVIDE TEST & BALANCE REPORT.
4. PROVIDE 30% 2" PLEATED FILTERS.
5. PROVIDE DDC INTERNAL CONTROLS AND PROGRAMMABLE THERMOSTATS. WHERE INDICATED, PROVIDE AN ADDITIONAL SENSOR AND AVERAGE TWO ROOMS.
6. PROVIDE ECONOMIZER WITH FAN POWERED RELIEF. PROVIDE CONDENSATE OVERFLOW SHUTOFF SWITCH.
7. PROVIDE CO2 SENSOR, DEMAND CONTROL VENTILATION OA DAMPER OPERATION. SET OA AIRFLOW AT 75% OA CALCULATED ABOVE.
8. STOP OPERATION IF FIRE ALARM (SMOKE DETECTORS AND CO SENSORS BY EC) DETECTS PRODUCTS OF COMBUSTION OR CO



**3 CURB DETAIL**  
NO SCALE

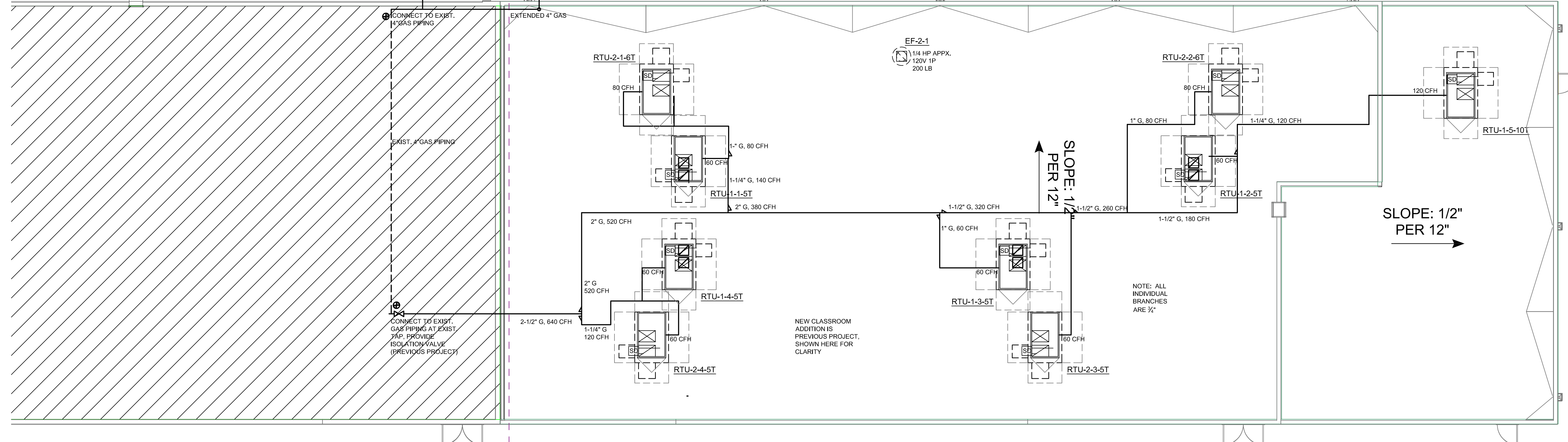


**2 GAS PIPING SUPPORT**  
NO SCALE



**1 TYPICAL GAS CONNECTION**  
NO SCALE

NOTE: PAINT ALL GAS PIPING WITH YELLOW OIL BASED PAINT.

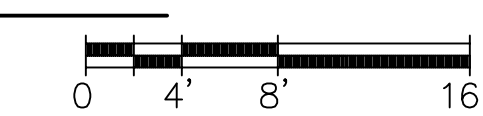


- NOTES:**
1. SMOKE DETECTORS FURNISHED BY EC, MC TO INSTALL. SD TO STOP UNIT OPERATION UPON ALARM.
  2. GAS PIPING REVISED TO SHOW RELOCATED GAS METER AND CONNECTION OF NEW GYM TO EXISTING GAS PIPING SYSTEM.

AREA A AREA B

**HVAC ROOF PLAN**

SCALE 1/8" = 1'-0"



REV. BY	DATE	DESCRIPTION

REV. BY	DATE	DESCRIPTION

DESIGNED BY: RKB	DATE:	
DRAWN BY: RKB	DATE:	
CHECKED BY:	DATE:	
APPROVED BY: RKB	DATE:	
DRAWING NUMBER:		
<b>M2.0</b>		
HVAC ROOF LEV PLAN		

TITLE: CAROLINA CHARTER ACADEMY	
2021 GYM ADDITION	
8529 NC-55	
ANGIER, NC	
CUSTOMER: SWINERTON CONSTRUCTION	
JOB NO.:	
SHEET NO.:	
SCALE:	