2018 – APPENDIX B – BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

NAME OF PROJECT : CAMERON COMMERCIAL – SHELL BUILDING
ADDRESS : 2285 NC HWY 24–87 **ZIP CODE:** _____
OWNER OR AUTHORIZED AGENT : STEVEN URENA **PHONE #** (919) 852–2329 **E-MAIL** urena.arch@gmail.com
OWNED BY: PRIVATE
CODE ENFORCEMENT JURISDICTION : .

CONTACT: STEVEN URENA

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
ARCHITECTURAL	URENA ARCHITECTURE, PA	STEVEN M. URENA	6688	(919) 852–2329	urena.arch@gmail.com
CIVIL	4D SITE SOLUTIONS	C. SCOTT BROWN	027452	(910) 426–6777	
ELECTRICAL	ANGUS CLARK, PE	ANGUS M. CLARK	13719	(919) 859–2674	angus@angusclarkpe.com
FIRE ALARM				( )	
PLUMBING	WEST KEY CONSULTING CORP.	DENNIS C. NIELD	20714	(919) 881–8020	dgnield@westkeyconsulting.com
MECHANICAL				( )	
SPRINKLER–STANDPIPE				( )	
STRUCTURAL FOUNDATION	HARRIS STRUCTURAL DESIGN, PA	THOMAS B. HARRIS	029465	(919) 556–6032	thomas–hsd@nc.rr.com
RETAINING WALLS>5' HIGH				( )	
PRE–ENGINEERED STEEL	AMERICAN BUILDINGS	RAJESH H. BHAGNARI	24064	(706) 565–1602	

("OTHER" should include firms and individuals such as truss, precast, pre–engineered, interior designers, etc.)

2018 NC BUILDING CODE: NEW SHELL BUILDING

2018 NC EXISTING BUILDING CODE: NA

CONSTRUCTED: (DATE) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): _____
RENOVATED: (DATE) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): _____
RISK CATEGORY: (Table 1604.5): **CURRENT** II **PROPOSED:** II

BASIC BUILDING DATA
CONSTRUCTION TYPE: II–B
SPRINKLERS: NO
STANDPIPES: NO
PRIMARY FIRE DISTRICT: NO **FLOOD HAZARD AREA:** NO
SPECIAL INSPECTIONS REQUIRED: NA

GROSS BUILDING AREA TABLE

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUBTOTAL
3RD FLOOR	.	.	.
2ND FLOOR	.	.	.
MEZZANINE	.	.	.
1ST FLOOR	.	17,178	.
BASEMENT	.	.	.
TOTAL	.	17,178	.

ALLOWABLE AREA
PRIMARY OCCUPANCY CLASSIFICATION(S): BUSINESS – B
ACCESSORY OCCUPANCY CLASSIFICATION(S): NA
INCIDENTAL USES (TABLE 509): NA
SPECIAL USES (CHAPTER 4 – LIST CODE SECTION): NA
SPECIAL PROVISIONS: (CHAPTER 5 – LIST CODE SECTION): NA
MIXED OCCUPANCY: NO **SEPARATION:** 0 HR. **EXCEPTION:** NO

☒ 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 AREA FOR CALCULATIONS
FOR EACH STORY, THE AREA OF 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.

$$\frac{\text{ACTUAL AREA OF OCCUPANCY A}}{\text{ALLOWABLE AREA OF OCCUPANCY A}} + \frac{\text{ACTUAL AREA OF OCCUPANCY B}}{\text{ALLOWABLE AREA OF OCCUPANCY B}} \leq 1$$

$$\frac{\quad}{\quad} + \frac{\quad}{\quad} + \cdots\cdots = \quad \leq 1.00$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE [1, 5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED [2, 3]
1	B	17,178	23,000	NOT USED	23,000
.	.	.	.	.	.
.	.	.	.	.	.

[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 = _____ (F)
B. TOTAL BUILDING PERIMETER = _____ (P)
C. RATIO (F/P) = _____ (F/P)
D. W = MINIMUM WIDTH OF PUBLIC WAY = _____ (W)
E. PERCENT OF FRONTAGE INCREASE I_f = 100 [F/P – 0.25] X W/30 = _____ (%)

[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 406.3.5. THE MAXIMUM AREA OF AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH 412.1.2.

[5] FRONTAGE INCREASE IS BASED ON THE UNSPRINKLERED AREAL VALUE IN TABLE 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET (TABLE 504.3)	.	.	.
BUILDING HEIGHT IN STORIES (TABLE 504.4)	.	.	.

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

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/_____ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES	.	.	.	.	.	.	.
BEARING WALLS	.	.	.	.	.	.	.
EXTERIOR	.	.	.	.	.	.	.
NORTH	.	.	.	.	.	.	.
EAST	.	.	.	.	.	.	.
WEST	.	.	.	.	.	.	.
SOUTH	.	.	.	.	.	.	.
INTERIOR	.	.	.	.	.	.	.
NON BEARING WALLS AND PARTITIONS							
EXTERIOR WALLS	.	.	.	.	.	.	.
NORTH	> 30	0	0	.	.	.	.
EAST	> 30	0	0	.	.	.	.
WEST	> 30	0	0	.	.	.	.
SOUTH	> 30	0	0	.	.	.	.
INTERIOR WALLS & PARTITIONS	.	.	.	.	.	.	.
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	.	.	.	.	.	.	.
FLOOR CEILING ASSEMBLY	.	.	.	.	.	.	.
COLUMNS SUPPORTING FLOORS	.	.	.	.	.	.	.
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	.	.	.	.	.	.	.
ROOF CEILING ASSEMBLY	.	.	.	.	.	.	.
COLUMNS SUPPORTING ROOF	.	.	.	.	.	.	.
SHAFT ENCLOSURES – EXIT	.	.	.	.	.	.	.
SHAFT ENCLOSURES – OTHER (ELEVATOR)	.	.	.	.	.	.	.
CORRIDOR SEPARATION	.	.	.	.	.	.	.
OCCUPANCY/FIRE BARRIER SEPARATION	.	.	.	.	.	.	.
PARTY/FIREWALL SEPARATION	.	.	.	.	.	.	.
SMOKE BARRIER SEPARATION	.	.	.	.	.	.	.
SMOKE PARTITION	.	.	.	.	.	.	.
TENANT/ DWELLING UNIT/ SLEEPING UNIT SEPARATION	.	.	.	.	.	.	.
INCIDENTAL USE SEPARATION	.	.	.	.	.	.	.

* INDICATE SECTION NUMBER PERMITTING REDUCTION

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
> 30	0	NO LIMIT	.
.	.	.	.
.	.	.	.
.	.	.	.

LIFE SAFETY SYSTEM REQUIREMENTS :
EMERGENCY LIGHTING : YES
EXIT SIGNS : YES
FIRE ALARM : NO
SMOKE DETECTION SYSTEMS : NO
PANIC HARDWARE : NO

LIFE SAFETY PLAN REQUIREMENTS :
LIFE SAFETY PLAN SHEET(S) # T1

☐ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7) (N.A.)
☐ ASSUMED AND REAL PROPERTY LINE LOCATIONS (N.A.)
☐ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8) (N.A.)
☒ OCCUPANCY USE FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2) (SEE LIFE SAFETY PLAN 1/T1)
☒ OCCUPANT LOADS FOR EACH AREA (SEE LIFE SAFETY PLAN 1/T1)
☒ EXIT ACCESS TRAVEL DISTANCES (1017) (SEE LIFE SAFETY PLAN 1/T1)
☒ COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(1)) (SEE LIFE SAFETY PLAN 1/T1)
☒ DEAD END LENGHTS (1020.4) (0 FEET)
☒ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR (32" CLEAR)
☒ MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMODATE BASED ON EGRESS WIDHT (1005.3) (32" CLR. WIDTH @ 0.2" PER OCCUP. = 160 OCCUP.)
☒ ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR (43 OCCUP.)
☐ A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION (N.A.)
☐ LOCATION OF DOORS WITH PANIC HARDWARE (1010.1.10) (N.A.)
☐ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1010.1.9.7) (N.A.)
☐ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.8) (N.A.)
☐ LOCATION OF DOORS EQUIPPED WITH HOLD–OPEN DEVICES (N.A.)
☐ LOCATION OF EMERGENCY ESCAPE WINDOWS (1030) (N.A.)
☐ THE SQUARE FOOTAGE OF EACH FIRE AREA (202) (N.A.)
☐ THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT FOR OCCUPANCY CLASSIFICATION I–2 (407.5) (N.A.)
☐ NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE (N.A.)

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
NA	.	.	.	.	.	.	.

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	
SEE APPROVED SITE PLAN	SEE SITE PLAN	SEE SITE PLAN	.	.	.	.
TOTAL	.	.	.	.	.	.

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS/ TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXISTING	.	.	.	.	.	.	.	.	.	.
.	NEW	*	*	*	.	*	*	*	.	.	.
	REQUIRED	*	*	*	.	*	*	*	.	.	.

* PLUMBING FIXTURE REQUIREMENTS TO BE DETERMINED AT TIME OF FIT–UPS.

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

STRUCTURAL DESIGN

DESIGN LOADS :
IMPORTANCE FACTORS : WIND (I_w) 1.0; SNOW (I_s) 1.0; SEISMIC (I_E) 1.0

LIVE LOADS : ROOF 20 PSF; MEZZANINE NA PSF; FLOOR 125 PSF

GROUND SNOW LOAD : 10 PSF

WIND LOAD : BASIC WIND SPEED 110 MPH (ASCE–7); EXPOSURE CATEGORY B; WIND BASE SHEARS (FOR MWFRS) V_x = 24.0k V_y = 66.0k

SEISMIC DESIGN CATEGORY : ☐ N/A ☐ A ☒ B ☐ C ☐ D
PROVIDE THE FOLLWING SEISMIC DESIGN PARAMETERS :
OCCUPANCY CATEGORY (TABLE 1604.5) ☐ I ☒ II ☐ III ☐ IV
SPECTRAL RESPONSE ACCELERATION S_S 20.5 % g S_1 9.4 % g
SITE CLASSIFICATION (ASCE–7) ☐ N/A ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F
DATA SOURCE: ☐ N/A ☐ FIELD TEST ☐ PRESUMPTIVE ☐ HISTORICAL DATA
BASIC STRUCTURAL SYSTEM
BUILDING FRAME
SEISMIC BASE SHEAR V_x = 33.3k V_y = 33.3k
ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE
ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? NO

LATERAL DESIGN CONTROL :

SOIL BEARING CAPACITIES :
PRESUMPTIVE BEARING CAPACITY 2,000 **PSF.**
PILE SIZE, TYPE, AND CAPACITY _____

CAMERON COMMERCIAL SHELL BUILDING
2285 NC HWY 24–87
CAMERON, NC

ENERGY SUMMARY
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 envelope complies with code: ☐ YES (The remainder of this section is not applicable.) ☐ NO
Exempt Building: ☐ YES ☒ NO
Climate Zone: 4A
Method of Compliance: PRESCIPTIVE
(If "Other" specify source here) _____

THERMAL ENVELOPE (Prescriptive method only)
Roof/ceiling Assembly (each assembly):
DESCRIPTION OF ASSEMBLY: METAL ROOF W/ ENERGY SAVER INSULATION SYSTEM
U–VALUE OF TOTAL ASSEMBLY: 0.037
R–VALUE OF INSULATION: .
SKYLIGHTS IN EACH ASSEMBLY: NA
U–VALUE OF SKYLIGHT: _____
TOTAL SQUARE FOOTAGE OF SKYLIGHTS IN EACH ASSEMBLY: _____

Exterior Walls (each assembly):
DESCRIPTION OF ASSEMBLY: METAL STUDS, SHEATHING, CONT. INSULATION, VENEER
U–VALUE OF TOTAL ASSEMBLY: _____
R–VALUE OF INSULATION: R–19 IN STUDS, R–7.5 CONT. INSUL.
OPENINGS (WINDOWS OR DOORS WITH GLAZING)
U–VALUE OF ASSEMBLY: 0.50, 0.70
SOLAR HEAT GAIN COEFFICIENT: 0.33
PROJECTION FACTOR: 0.38
LOW–e REQUIRED, IF APPLICABLE: _____
DOOR R–VALUES: _____

Walls below grade (each assembly):
DESCRIPTION OF ASSEMBLY: NA
U–VALUE OF TOTAL ASSEMBLY: _____
R–VALUE OF INSULATION: _____

Floors over unconditioned space (each assembly):
DESCRIPTION OF ASSEMBLY: NA
U–VALUE OF TOTAL ASSEMBLY: _____
R–VALUE OF INSULATION: _____

Floors slab on grade (each assembly):
DESCRIPTION OF ASSEMBLY: 4" CONC W/ VAPOR BARRIER
U–VALUE OF TOTAL ASSEMBLY: _____
R–VALUE OF INSULATION: R–15
HORIZONTAL/VERTICAL REQUIREMENT: 24" OR TO TOP FOOTING
SLAB HEATED: NA

DESIGNER STATEMENT: [1]
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE THERMAL ENVELOPE REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE, VOLUME X–ENERGY.

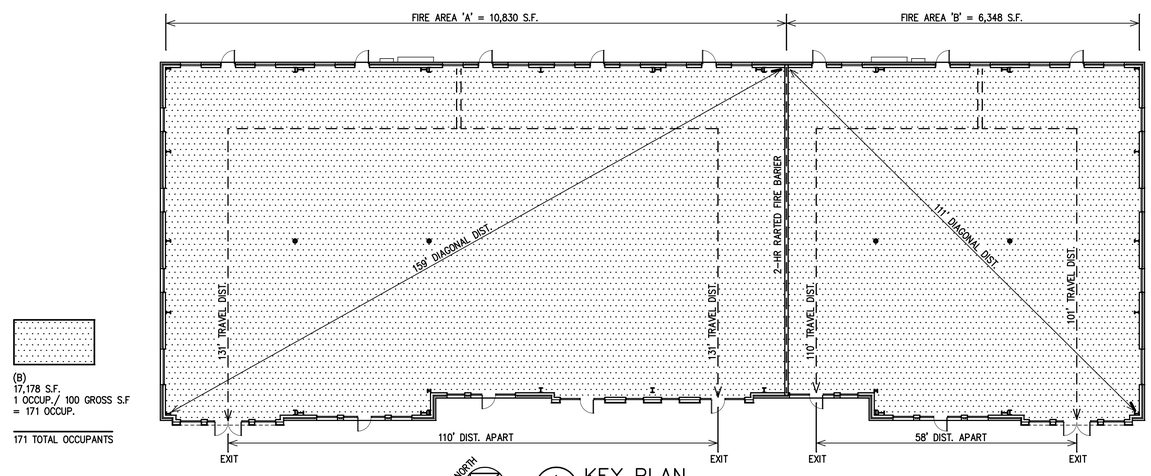
SIGNED: _____
NAME: STEVEN M. URENA
TITLE: ARCHITECT

ELECTRICAL SYSTEM AND EQUIPMENT:
METHOD OF COMPLIANCE: SEE ELECTRICAL DRAWINGS

MECHANICAL SYSTEMS, SERVICE AND EQUIPMENT:
METHOD OF COMPLIANCE: N.A.

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.
Reviewed for Code Compliance
07/05/2022
Harnett COUNTY NORTH CAROLINA

INDEX OF DRAWINGS



(B)
17,178 S.F.
1 OCCUP./ 100 GROSS S.F
= 171 OCCUP.

171 TOTAL OCCUPANTS

1 / T1 KEY PLAN
SCALE: 1/16" = 1'–0"

URENA ARCHITECTURE, P.A.
REGISTERED ARCHITECTURAL CORPORATION
51748
NORTH CAROLINA
RALEIGH, NC

STEVEN M URENA
REGISTERED ARCHITECT
6688
NORTH CAROLINA
RALEIGH, NC

06/07/22

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27603
TEL (919) 852–2329 FAX (919) 852–2322

CAMERON COMMERCIAL SHELL BUILDING
2285 NC HWY 24–87
CAMERON, NC

REVISIONS

BUILDING CODE SUMMARY

JUNE 7 – 2022

T1

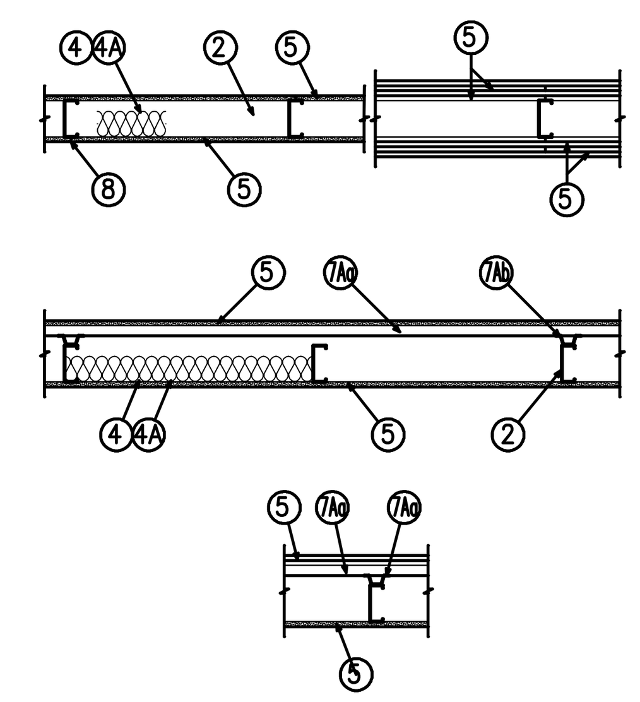
2116–T–HC

Design No. U419

September 28, 2018

Nonbearing Wall Ratings 1, 2, 3 or 4 Hr (See Items 4 & 5 through 5K)

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



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 Runner 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.
CALIFORNIA EXPANDED METAL PRODUCTS CO Viper25 Track
CRACO MFG INC SmartTrack25
MARINO/WARE, DIV OF WARE INDUSTRIES INC Viper25 Track
FUSION BUILDING PRODUCTS Viper25 Track
IMPERIAL MANUFACTURING GROUP INC Viper25 Track
1B. Framing Members* Floor and Ceiling Runner 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.
CALIFORNIA EXPANDED METAL PRODUCTS CO Viper20 Track
MARINO/WARE, DIV OF WARE INDUSTRIES INC Viper20 Track
FUSION BUILDING PRODUCTS Viper20 Track
IMPERIAL MANUFACTURING GROUP INC Viper20 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.
ALLSTEEL & GYPSUM PRODUCTS INC Type SUPREME D24/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV Type SUPREME D24/30EQD and Type SUPREME D20
QUAIL RUN BUILDING MATERIALS INC Type SUPREME D24/30EQD and Type SUPREME D20
SCAFCO STEEL STUD MANUFACTURING CO Type SUPREME D24/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC 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, 5F or 5G or 5I 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.
CLARKDIETRICH BUILDING SYSTEMS CD ProTRAK
DMFCWBS 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.
STUDCO BUILDING SYSTEMS CROCSTUD Track
1H. Floor and Ceiling Runners (Not Shown) Channel shaped, fabricated from min 0.02 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.
MARINO/WARE, DIV OF WARE INDUSTRIES INC Viper20 Track VT100
FUSION BUILDING PRODUCTS 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 Items 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 2I, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.
TELLING INDUSTRIES L L C Viper25 Track
1K. 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.
TELLING INDUSTRIES L L C Viper20 Track
1L. Framing Members* Floor and Ceiling Runner Not Shown In lieu of Item 1 For use with Item 2N, proprietary channel shaped runners, 1-1/4 in. wide by min. 3-1/2 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
STEEL INVESTMENT GROUP 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 PTY 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.
OEG BUILDING MATERIALS OEG 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.
CALIFORNIA EXPANDED METAL PRODUCTS CO Viper X Track
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, 5J and 5K) Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 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 5C, 5I or 5K) 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.
CALIFORNIA EXPANDED METAL PRODUCTS CO Viper25
CRACO MFG INC SmartStud25
MARINO/WARE, DIV OF WARE INDUSTRIES INC Viper25
FUSION BUILDING PRODUCTS Viper25
IMPERIAL MANUFACTURING GROUP INC Viper25
2C. Framing Members* Steel Studs Not Shown In lieu of Item 2 proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CALIFORNIA EXPANDED METAL PRODUCTS CO Viper20
MARINO/WARE, DIV OF WARE INDUSTRIES INC Viper20
FUSION BUILDING PRODUCTS Viper20
IMPERIAL MANUFACTURING GROUP INC Viper20
2D. Framing Members* Steel Studs In lieu of Item 2 Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
ALLSTEEL & GYPSUM PRODUCTS INC Type SUPREME D24/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV Type SUPREME D24/30EQD and Type SUPREME D20
QUAIL RUN BUILDING MATERIALS INC Type SUPREME D24/30EQD and Type SUPREME D20
SCAFCO STEEL STUD MANUFACTURING CO Type SUPREME D24/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC Type SUPREME D24/30EQD and Type SUPREME D20
UNITED METAL PRODUCTS INC Type SUPREME D24/30EQD and Type SUPREME D20

1 / T2 UL# U419
2-HR RATED FIRE BARRIER

2E. Framing Members* – Steel Studs – (Not Shown, As an alternate to Item 2) – For use with Items 5F or 5G or 5I or 5K only, channel shaped studs, min depth as indicated under Item 5F, 5G or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
CLARKDIETRICH BUILDING SYSTEMS – CD ProSTUD
DMFCWBS L L C – ProSTUD
MBA METAL FRAMING – ProSTUD
RAM SALES L L C – Ram ProSTUD
STEEL STRUCTURAL PRODUCTS L L C – Tri-S ProSTUD

2F. Framing Members* – Steel Studs – Not Shown – In lieu of Item 2 – proprietary channel shaped steel studs, minimum width indicated under Item 5, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights.
SUPER STUD BUILDING PRODUCTS – The Edge
2G. Framing Members* – Steel Studs – Not Shown – In lieu of Item 2 – proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in less than the assembly height.
STUDCO BUILDING SYSTEMS – CROCSTUD
2H. Framing Members* – Steel Studs – (Not Shown, As an alternate to Item 2) – Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
TELLING INDUSTRIES L L C – TRUE-STUD
2I. Framing Members* – Steel Studs – (As an alternate to Item 2, For use with Items 5C or 5L or 5K) – 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.
TELLING INDUSTRIES L L C – Viper25
2J. Framing Members* – Metal Studs – Not Shown – In lieu of Item 2 – proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights
TELLING INDUSTRIES L L C – Viper20
2K. Framing Members* – Steel Studs – As an alternate to Item 2 – For use with Item 1, channel shaped studs, 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.
EB METAL INC – NITROSTUD
2L. Framing Members* – Steel Studs – As an alternate to Item 2 – For use with Item 1, channel shaped studs, 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.
OLMAR SUPPLY INC – PRIMESTUD
2M. Framing Members* – Steel Studs – As an alternate to Item 2 – For use with Item 1, channel shaped studs, 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.
MARINO/WARE, DIV OF WARE INDUSTRIES INC – StudRite
2N. Framing Members*– Steel Studs – As an alternate to Item 2 – proprietary channel shaped steel studs, min depth 3-1/2 in. and as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in length than assembly height.
STEEL INVESTMENT GROUP L L C – AlphaSTUD
2O. Framing Members* – Steel Studs – As an alternate to Item 2 – proprietary channel shaped steel studs, min width as indicated under Item 5, galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max.
RONDO BUILDING SERVICES PTY LTD – Rondo Lipped Wall Stud
2P. Framing Members* – Steel Studs – As an alternate to Item 2 – proprietary channel shaped steel studs, min width as indicated under Item 5, min 25 MSG galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max.
OEG BUILDING MATERIALS – OEG Stud
2Q. Framing Members* – Steel Studs – Not Shown – In lieu of Item 2 – For use with Item 1O, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CALIFORNIA EXPANDED METAL PRODUCTS CO – Viper X

3. Wood Structural Panel Sheathing (Optional, For use with Item 5 Only) (Not Shown) 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, gypsum panels attached over OSB or plywood panels and fastener lengths for gypsum panels increased by min. 1/2 in.
4. Batts and Blankets* (Required as indicated under Item 5) Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 5.
See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.
4A. Batts and Blankets* (Optional) Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance.
See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.
4B. Batts and Blankets* For use with Item 5K. Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance.
See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.
4C. Fiber, Sprayed* (Optional) and as an alternate to Batts and Blankets (Item 4B) where insulation is required – Spray applied granulated mineral fiber material. The fiber is applied with adhesive at a minimum density of 4.0 pcf to completely fill the wall cavity in accordance with the application instructions supplied with the product.
See **Fiber, Sprayed** (CCAZ).
AMERICAN ROCKWOOL MANUFACTURING, LLC Type Rockwool Premium Plus
5. Gypsum Board* Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr.	Min Stud Depth, in. Items 2, 2C, 2D, 2F, 2O	No. of Layers & Thkns of Panels	Min Thkns of Insulation (Item 4)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.
1	1-5/8	1 layer, 3/4 in. thick	Optional
~~2~~	~~1-5/8~~	~~2 layers, 1/2 in. thick~~	~~Optional~~
* 2	1-5/8	2 layers, 5/8 in. thick	Optional *
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	2 layers, 3/4 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

CGC INC 1/2 in. thick Type C, IP-X2 or IPC-AR; WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX or WRC; 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, SGX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR; 3/4 in. thick Types IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE
USG MEXICO S A DE C V 1/2 in. thick 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, WRX, WRC or; 3/4 in. thick Types IP-X3 or ULTRACODE
When Item 7B, **Steel Framing Members***, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item 6.
5A. Gypsum Board* (As an alternate to Item 5) 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6.
CGC INC Type SHX.
UNITED STATES GYPSUM CO Type FRX-G, SHX.
USG MEXICO S A DE C V Type SHX.
5B. Gypsum Board* (Not Shown) As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 in or 3/4 in. thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) Nom 5/8 in. or 3/4 in. may be used as alternate to all 5/8 in. or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to 20 MSG steel studs Item 2A with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 11) or Lead Discs or Tabs (see Item 12).
RAY-BAR ENGINEERING CORP Type RB-LBG
5C. 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 S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs.
(Horizontal Application) – The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section VI of Volume 1 in the Fire Resistive Directory.
CGC INC – Type SCX.
UNITED STATES GYPSUM CO – Type SCX, SGX.
USG BORAL DRYWALL SFZ LLC – Type SCX
USG MEXICO S A DE C V – Type SCX
5D. Gypsum Board* – (As an alternate to Item 5) – 5/8 in. thick, 48 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.
CGC INC – Type USGX
UNITED STATES GYPSUM CO – Type USGX
USG BORAL DRYWALL SFZ LLC – Type USGX
USG MEXICO S A DE C V – Type USGX
5E. Gypsum Board* – (Not Shown) – (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.
NEW ENGLAND LEAD BURNING CO INC, DBA NELCO – Nelco
5F. Gypsum Board* – (As an alternate to Item 5) – For use with Items 1E and 2E and limited to 1 Hour Rating only, Gypsum panels with beveled, square or tapered edges, applied vertically, and fastened to the steel studs with 1 in. long Type S screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.
UNITED STATES GYPSUM CO – 5/8 in. thick Type SCX, SGX
USG BORAL DRYWALL SFZ LLC – 5/8 in. thick Type SCX, SGX
5G. Gypsum Board* – (As an alternate to Item 5) – For use with Items 1E and 2E only, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr.	Min Stud Depth, in. Items 2E	No. of Layers & Thkns of Panels	Min Thkns of Insulation (Item 4)
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional

5D. Gypsum Board* – (As an alternate to Item 5) – 5/8 in. thick, 48 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.
CGC INC – Type USGX
UNITED STATES GYPSUM CO – Type USGX
USG BORAL DRYWALL SFZ LLC – Type USGX
USG MEXICO S A DE C V – Type USGX
5E. Gypsum Board* – (Not Shown) – (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.
NEW ENGLAND LEAD BURNING CO INC, DBA NELCO – Nelco
5F. Gypsum Board* – (As an alternate to Item 5) – For use with Items 1E and 2E and limited to 1 Hour Rating only, Gypsum panels with beveled, square or tapered edges, applied vertically, and fastened to the steel studs with 1 in. long Type S screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.
UNITED STATES GYPSUM CO – 5/8 in. thick Type SCX, SGX
USG BORAL DRYWALL SFZ LLC – 5/8 in. thick Type SCX, SGX
5G. Gypsum Board* – (As an alternate to Item 5) – For use with Items 1E and 2E only, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings are as follows:
5I. Gypsum Board* (As an alternate to Item 5) Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5.
CGC INC Type ULX
UNITED STATES GYPSUM CO Type ULX
USG MEXICO S A DE C V Type ULX
5J. Gypsum Board* (Not Shown) (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC Type RPP – Lead Lined Drywall
5K. Gypsum Board* (Not Shown) (As an alternate to Item 5) Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) need not be staggered. The number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr.	Min Stud Depth, in. Items 2E	No. of Layers & Thkns of Panels	Min Thkns of Insulation (Item 4)
1	3-5/8	1 layer, 5/8 in. thick	3-1/2 in.
2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional

CGC INC 1/2 in. thick Type C, IP-X2 or IPC-AR;, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, 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; 5/8 in. thick Type SCX, SGX, SHX, IP-X1, AR, C, , FRX-G, IP-AR, IP-X2, IPC-AR, ULIX; 3/4 in. thick Types IP-X3 or ULTRACODE
USG BORAL DRYWALL SFZ LLC 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE
USG MEXICO S A DE C V 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or; 3/4 in. thick Types IP-X3 or ULTRACODE
5H. Gypsum Board* (Not Shown) (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) – Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter 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).
MAYCO INDUSTRIES INC Type X-Ray Shielded Gypsum**6. Fasteners** – (Not Shown) – For use with Items 2 and 2F – Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. **Two layer systems:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer.**Three-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.

7. Furring Channels (Optional, Not Shown, for single or double layer systems) Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 5A.
7A. Framing Members* (Optional on one or both sides, not shown, for single or double layer systems) As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. **Furring Channels** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. **Steel Framing Members*** Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).
7B. Framing Members* (Optional, Not Shown) As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below:
a. **Furring Channels** Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A.
b. **Steel Framing Members*** Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.
KINETICS NOISE CONTROL INC Type Isomax
7C. Framing Members* (Not Shown) (Optional on one or both sides, not shown, for single or double layer systems) As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. **Furring Channels** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. **Steel Framing Members*** Used to attach furring channels (Item 7Ca) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
PLITEQ INC Type GENIECLIP
7D. Steel Framing Members* (Optional on one or both sides, not shown, for single or double layer systems) Furring channels and Steel Framing Members as described below:
a. **Furring Channels** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.
b. **Steel Framing Members*** Used to attach furring channels (Item 7Da) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips
STUDCO BUILDING SYSTEMS RESILMOUNT Sound Isolation Clips – Type A237 or A237R
7E. Steel Framing Members* (Optional on one or both sides, not shown, for single or double layer systems) Furring channels and Steel Framing Members as described below:
a. **Furring Channels** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 7Eb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.
b. **Steel Framing Members*** Used to attach furring channels (Item 7Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA Type SonusClip
7F. Steel Framing Members* (Optional on one or both sides, not shown, for single or double layer systems) Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5. Not for use with Item 5A and 5E.
b. **Steel Framing Members*** Used to attach resilient channels (Item 7Fa) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC Type RC+ Assurance Clip
8. Joint Tape and Compound Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Paper tape and joint compound may be omitted when gypsum panels are supplied with a square edge.
9. Siding, Brick or Stucco (Optional, Not Shown) Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.
10. Caulking and Sealants* (Optional, Not Shown) A bead of acoustical sealant applied around the partition perimeter for sound control.
UNITED STATES GYPSUM CO Type AS
11. Lead Batten Strips (Not Shown, For Use With Item 5B) Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5B) and optional at remaining stud locations. Required behind vertical joints.
11A. Lead Batten Strips (Not Shown, For Use With Item 5H) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations.
12. Lead Discs or Tabs (Not Shown, For Use With Item 5B) Used in lieu of or in addition to the lead batten strips (Item 11) or optional at other locations – Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5B) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
12A. Lead Discs (Not Shown, for use with Item 5H) Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".
13. Lead Batten Strips (Not Shown, For Use With Item 5E) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations.
14. Lead Tabs (Not Shown, For Use With Item 5E) 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

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

URENA ARCHITECTURE, PA
REGISTERED ARCHITECTURAL CORPORATION
51748
NORTH CAROLINA
RALEIGH, NC

STEVEN M. URENA
REGISTERED ARCHITECT
6688
NORTH CAROLINA
RALEIGH, NC
06/07/22

URENA ARCHITECTURE

URENA ARCHITECTURE, PA
212 POWELL DR. SUITE 100 RALEIGH, NC 27606
TEL (919) 852-2329 FAX (919) 852-2322

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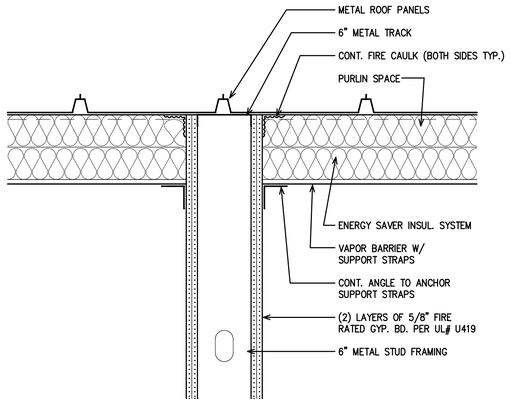
REVISIONS

U.L. DETAIL

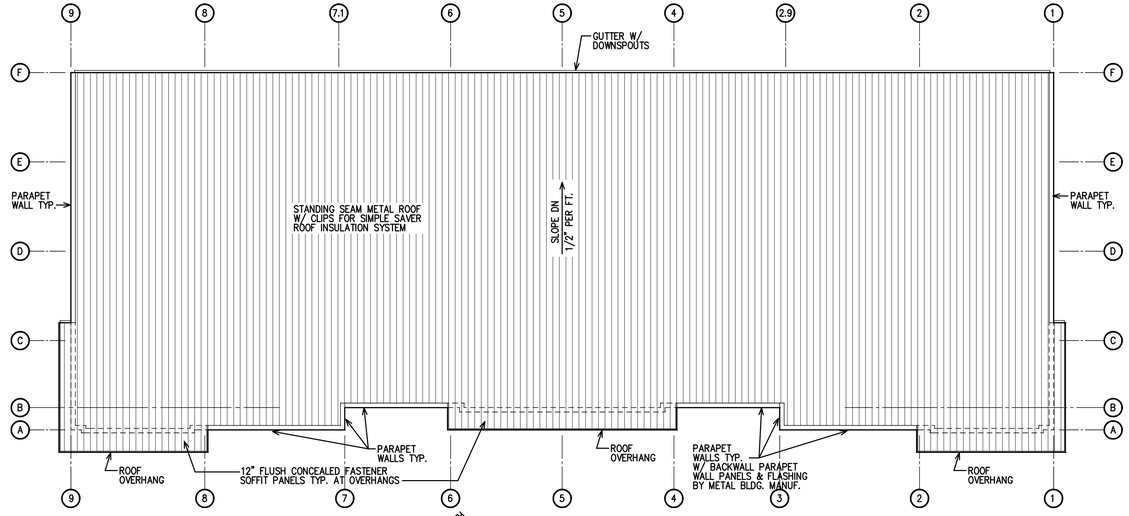
JUNE 7 - 2022

T2

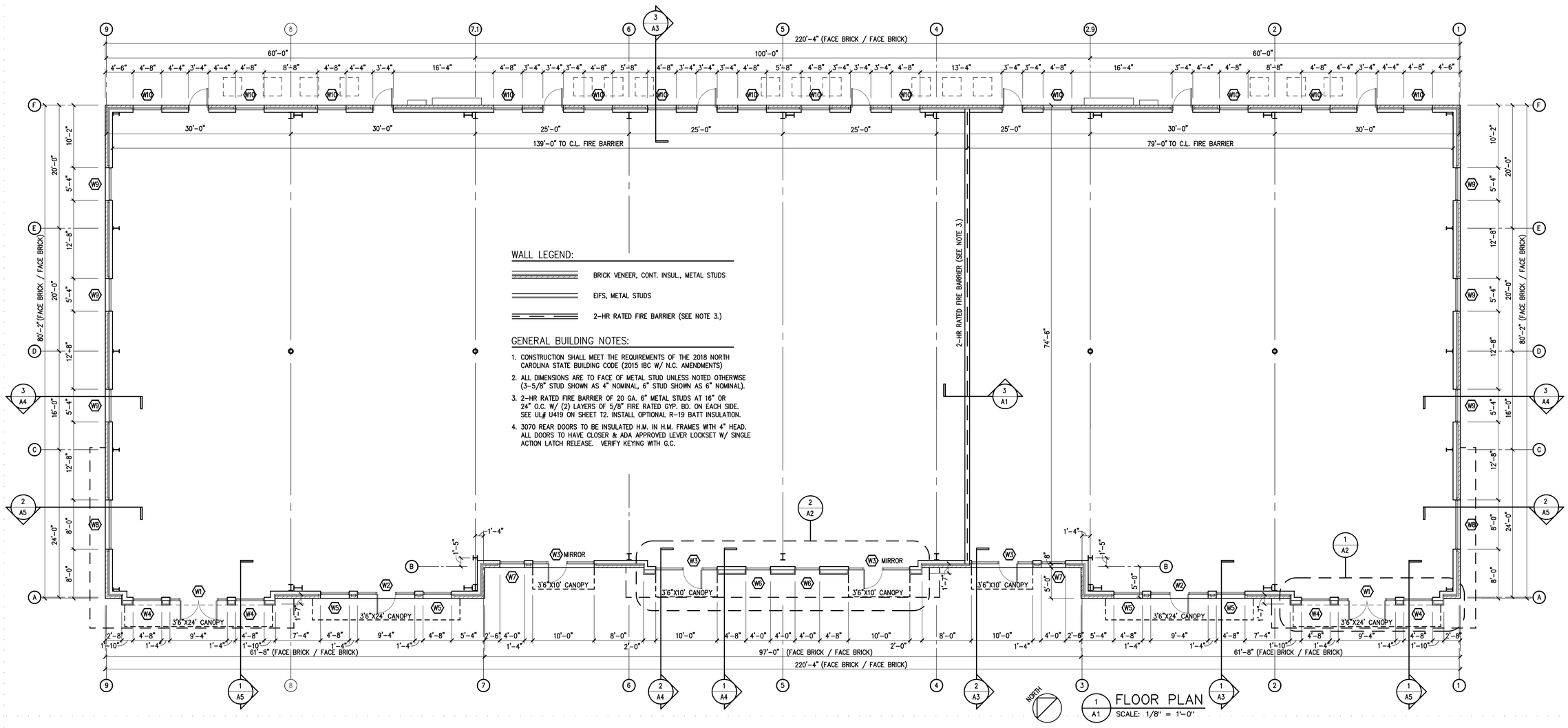
2116-T-HC



3 / A1 2-HR FIRE BARRIER DETAIL
SCALE: 1-1/2" = 1'-0"



2 / A1 ROOF PLAN
SCALE: 1/16" = 1'-0"



WALL LEGEND:

- BRICK VENEER, CONT. INSUL., METAL STUDS
- EIFS, METAL STUDS
- 2-HR RATED FIRE BARRIER (SEE NOTE 3.)

GENERAL BUILDING NOTES:

1. CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE (2015 IBC W/ N.C. AMENDMENTS)
2. ALL DIMENSIONS ARE TO FACE OF METAL STUD UNLESS NOTED OTHERWISE (3-5/8" STUD SHOWN AS 4" NOMINAL, 6" STUD SHOWN AS 6" NOMINAL).
3. 2-HR RATED FIRE BARRIER OF 20 GA. 6" METAL STUDS AT 16" OR 24" O.C. W/ (2) LAYERS OF 5/8" FIRE RATED GYP. BD. ON EACH SIDE. SEE UL# U419 ON SHEET T2. INSTALL OPTIONAL R-19 BATT INSULATION.
4. 3070 REAR DOORS TO BE INSULATED H.M. IN H.M. FRAMES WITH 4" HEAD. ALL DOORS TO HAVE CLOSER & ADA APPROVED LEVER LOCKSET W/ SINGLE ACTION LATCH RELEASE. VERIFY KEYING WITH G.C.

1 / A1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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STEVEN M URENA REGISTERED ARCHITECT 16688 NORTH CAROLINA RALEIGH, NC

06/07/22

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27603
TEL (919) 852-2329 FAX (919) 852-2322

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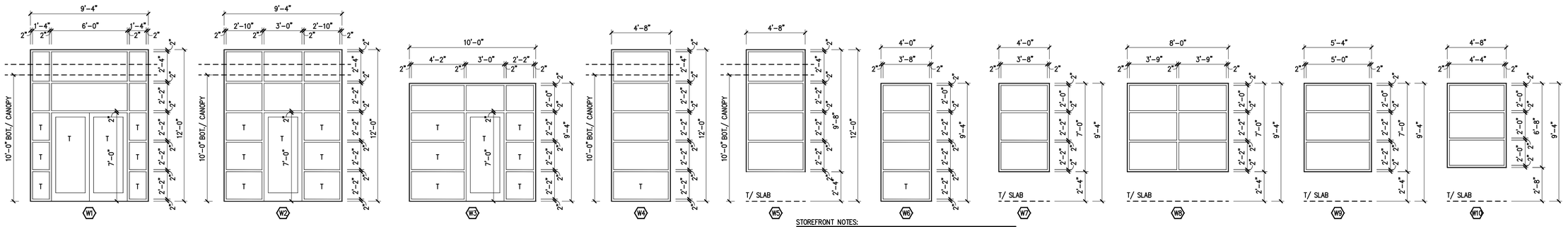
FLOOR PLAN & ROOF PLAN

JUNE 7 - 2022

A1

2116-P-HC

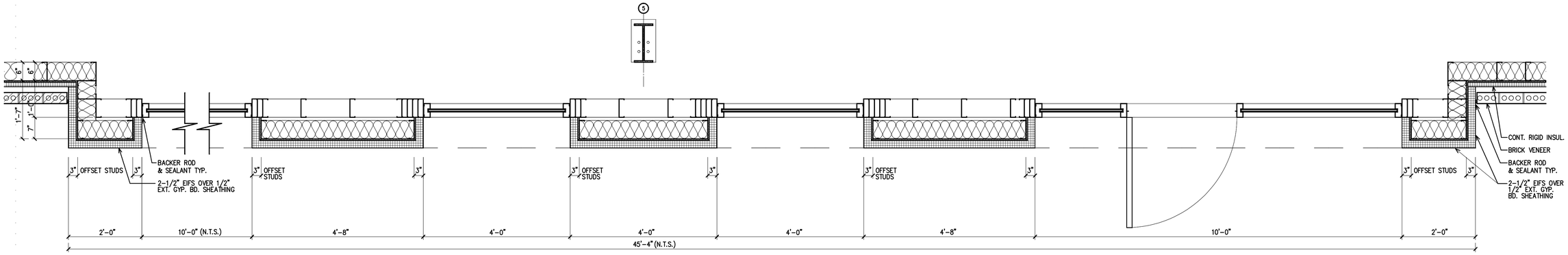


STOREFRONT NOTES:

1. ALL GLASS IS 1" INSULATED W/ GREEN TINT.
2. "T" INDICATES TEMPERED GLASS LOCATIONS.
3. FRAMES ARE THERMALLY BROKEN CLEAR ANODIZED ALUMINUM.
4. ALL STOREFRONT DOORS TO HAVE CLOSER, LOCKSET & THUMBLATCH. VERIFY KEYING W/ G.C.
5. FIELD VERIFY ALL DIMENSIONS.

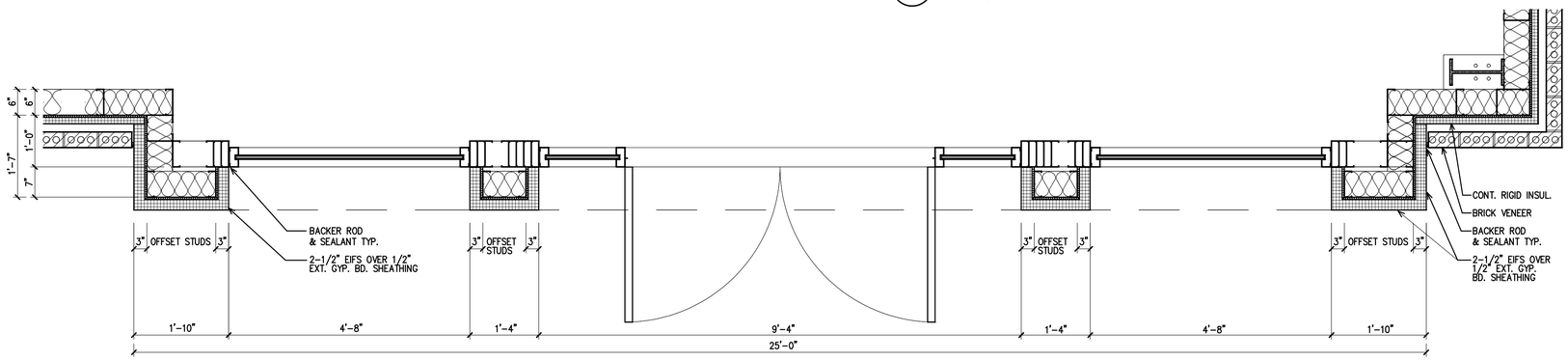
3 / A2 WINDOW ELEVATIONS

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



1 / A2 ENLARGED EIFS/ STOREFRONT DETAIL

SCALE: 3/4" = 1'-0"



1 / A2 ENLARGED EIFS/ STOREFRONT DETAIL

SCALE: 3/4" = 1'-0"

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REGISTERED ARCHITECTURAL CORPORATION
51748
NORTH CAROLINA
RALEIGH, NC

STEVEN M URENA
REGISTERED ARCHITECT
6688
NORTH CAROLINA
RALEIGH, NC
06/07/22

URENA ARCHITECTURE

URENA ARCHITECTURE P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27603
TEL (919) 852-2329 FAX (919) 852-2322

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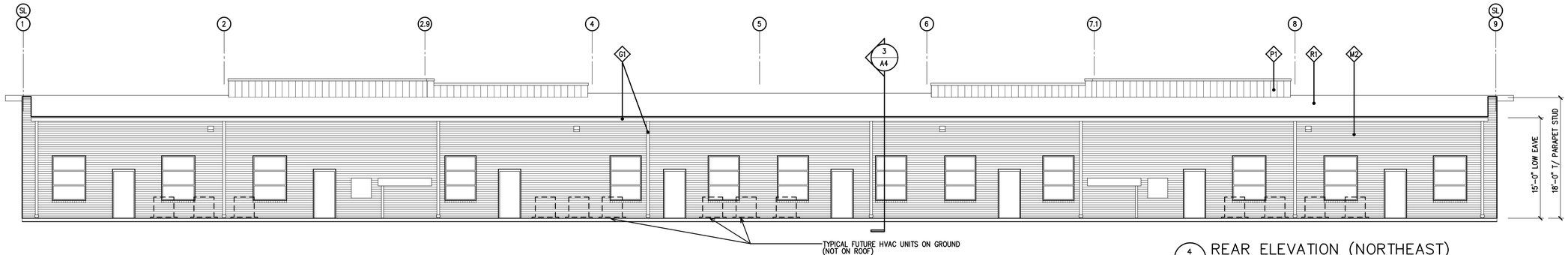
REVISIONS

WINDOW ELEVATIONS & DETAILS

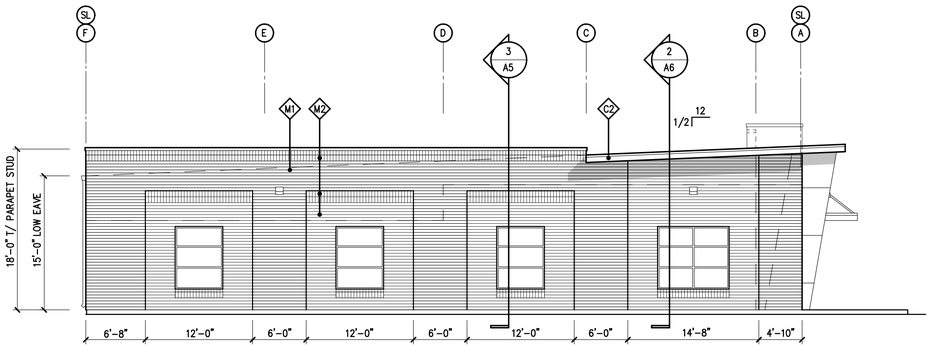
JUNE 7 - 2022

A2

2116-P-HC



4 / A3 REAR ELEVATION (NORTHEAST)
SCALE: 1/8" = 1'-0"

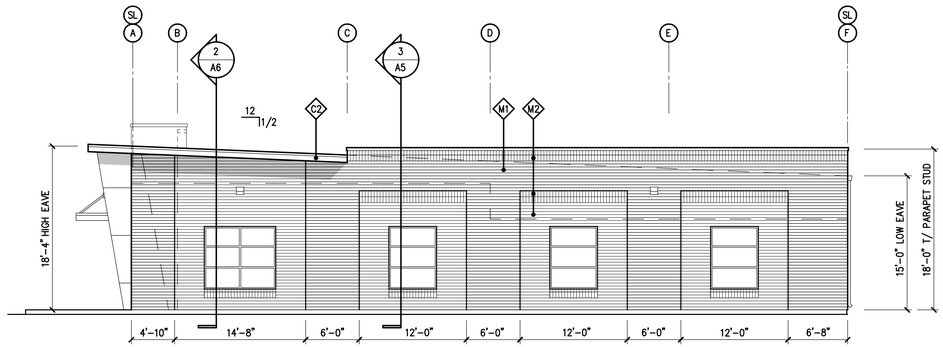


3 / A3 LEFT ELEVATION (NORTHWEST)
SCALE: 1/8" = 1'-0" IN VIEW OF HWY 24-87

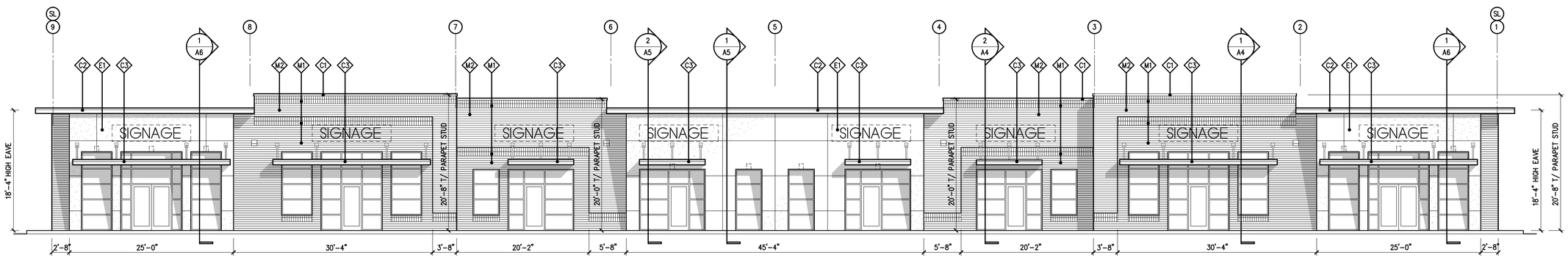
MATERIAL & COLOR SCHEDULE

- M1 BRICK – TAYLOR – (301 BUFF WIRECUT) W/ COLORED MORTAR – HOLCIM – (DRIFTWOOD)
- M2 BRICK – TAYLOR – (371 AUTUMN BLEND) W/ COLORED MORTAR – HOLCIM – (SANDBEIGE)
- E1 EIFS – DRYVIT – (389 SOUTHERN TAN)
- C1 METAL COPING – (SILVER METALLIC)
- C2 METAL FASCIA TRIM BY NUCOR – (GALVALUME PLUS)
- C3 FLAT METAL CANOPY – (SILVER METALLIC)
- R1 METAL ROOF PANELS BY NUCOR – (GALVALUME)
- P1 BACKWALL PARAPET FLASHING BY NUCOR – (GALVALUME)
- G1 GUTTERS & DOWNSPOUTS BY NUCOR – (GALVALUME)

NOTE: ALL COLORS TO MATCH SCHEDULE OR BE ARCHITECT APPROVED EQUAL



2 / A3 RIGHT ELEVATION (SOUTHEAST)
SCALE: 1/8" = 1'-0" IN VIEW OF HWY 24-87



1 / A3 FRONT ELEVATION (SOUTHWEST)
SCALE: 1/8" = 1'-0" FACING HWY 24-87

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STEVEN M URENA REGISTERED ARCHITECT 16688 NORTH CAROLINA RALEIGH, NC

06/07/22

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27603
TEL (919) 852-2329 FAX (919) 852-2322

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REVISIONS

EXTERIOR ELEVATIONS

JUNE 7 - 2022

A3

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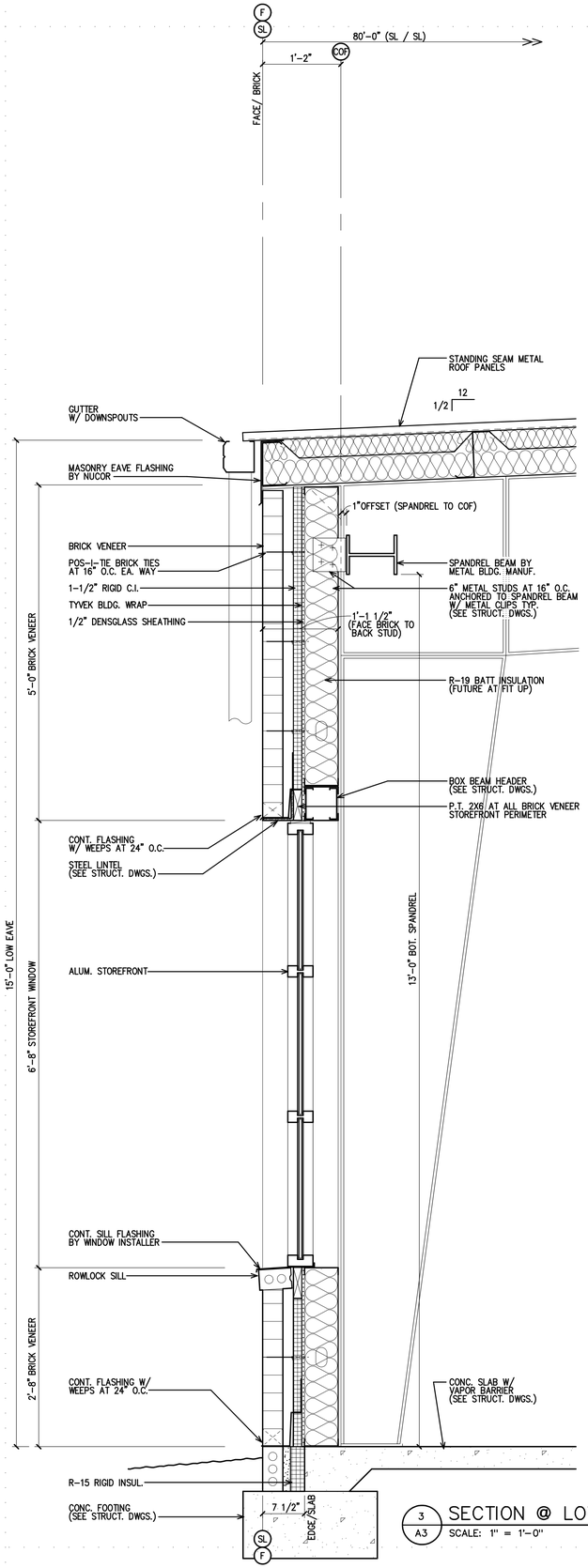
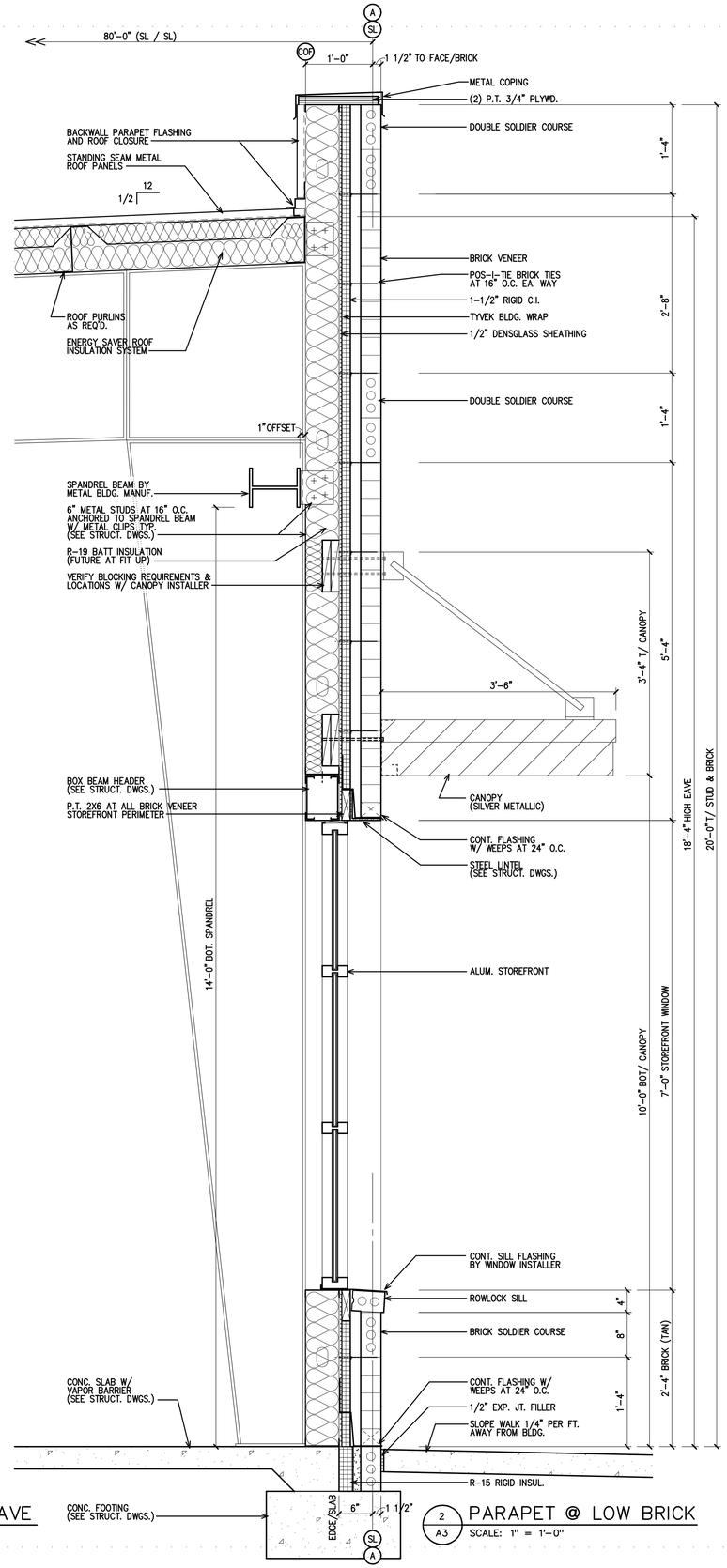
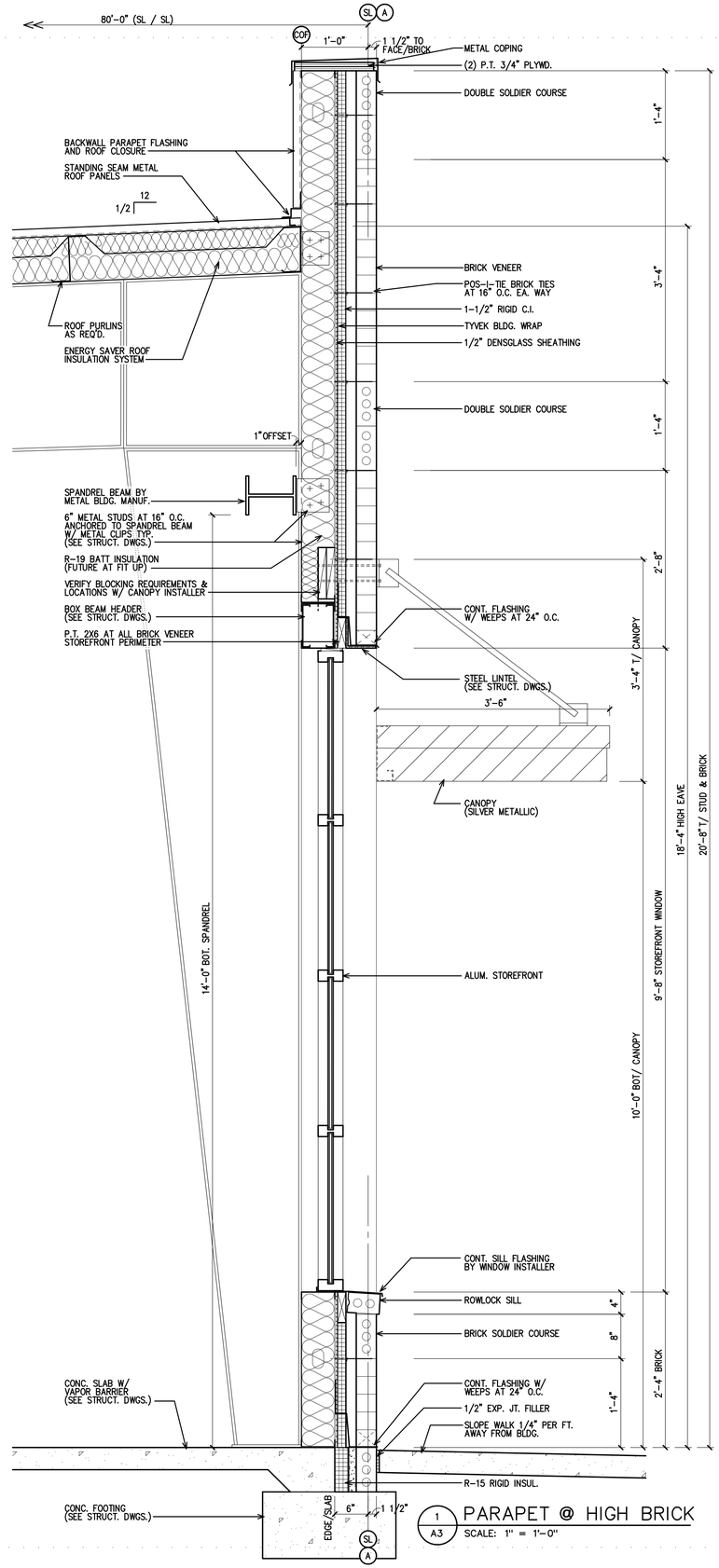


3 / A3 SECTION @ LOW EAVE
SCALE: 1" = 1'-0"



2 / A3 PARAPET @ LOW BRICK
SCALE: 1" = 1'-0"



1 / A3 PARAPET @ HIGH BRICK
SCALE: 1" = 1'-0"

URENA ARCHITECTURE, P.A.
REGISTERED ARCHITECTURAL CORPORATION
51748
NORTH CAROLINA
RALEIGH, NC

STEVEN M URENA
REGISTERED ARCHITECT
6688
NORTH CAROLINA
RALEIGH, NC

06/07/22

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH NC 27603
TEL (919) 852-2329 FAX (919) 852-2322

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REVISIONS

WALL SECTIONS

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A4

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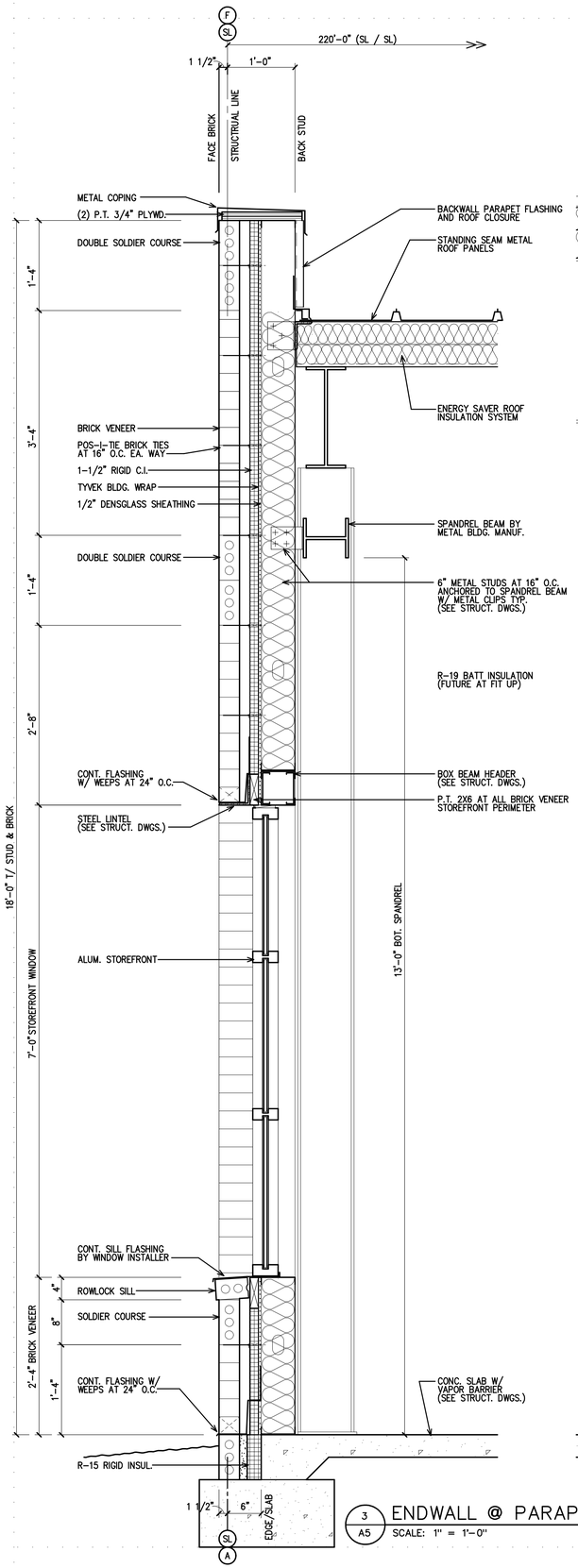
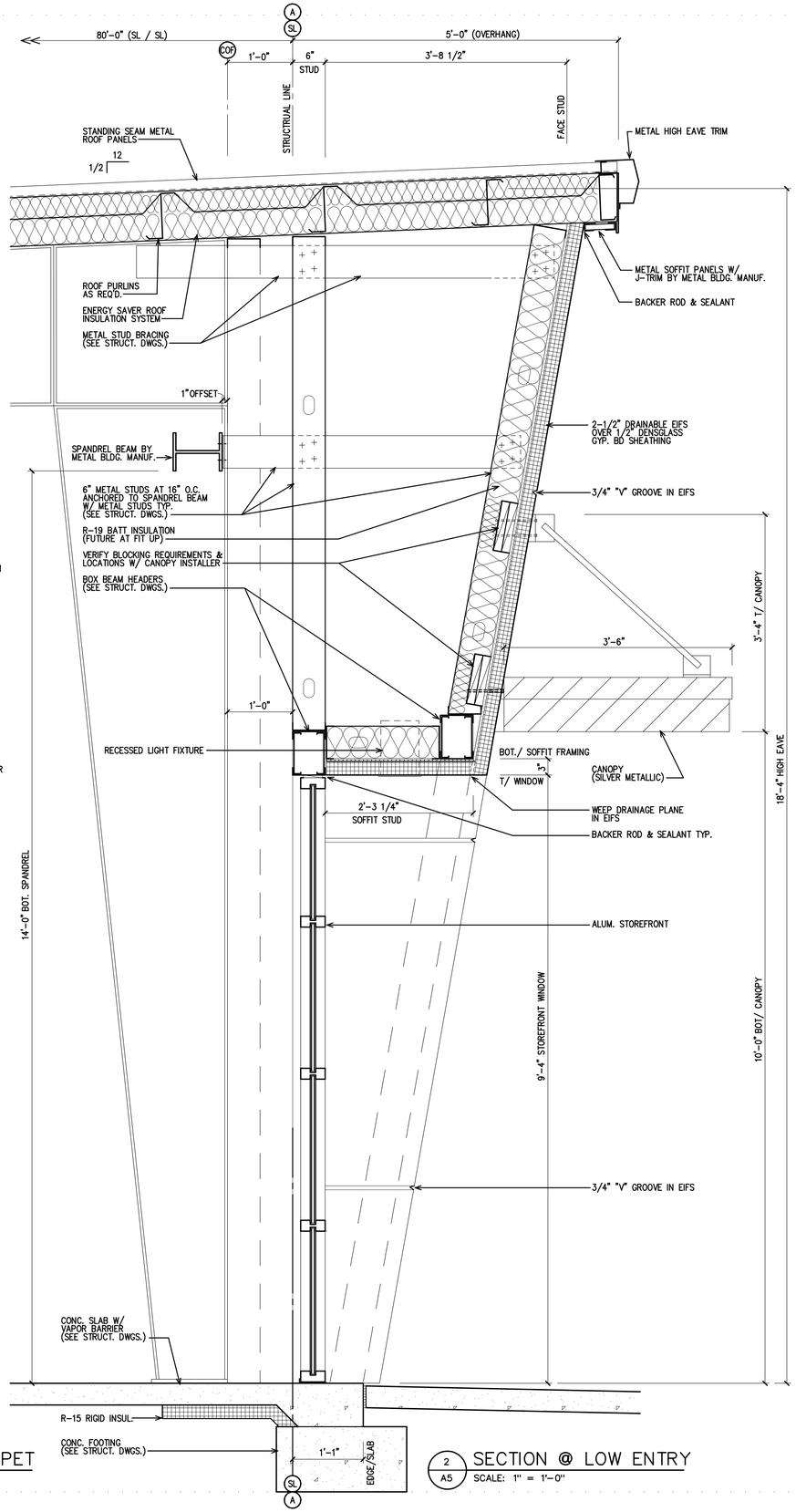


3 / A5 ENDWALL @ PARAPET
SCALE: 1" = 1'-0"



2 / A5 SECTION @ LOW ENTRY
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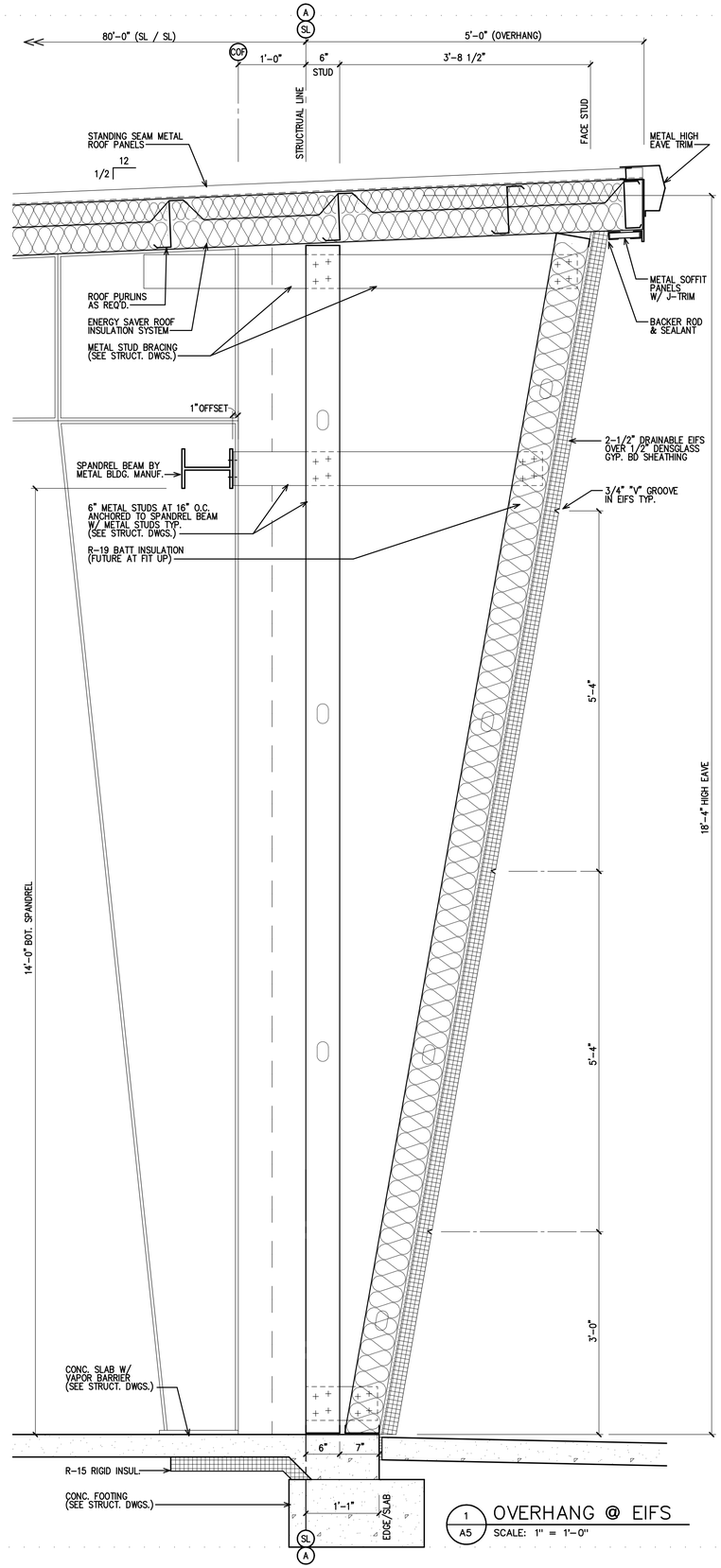

1 / A5 OVERHANG @ EIFS
SCALE: 1" = 1'-0"

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REGISTERED ARCHITECTURAL CORPORATION
51748
NORTH CAROLINA
RALEIGH, NC

STEVEN M URENA
REGISTERED ARCHITECT
16688
NORTH CAROLINA
RALEIGH, NC

06/07/22

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27603
TEL (919) 852-2329 FAX (919) 852-2322

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WALL SECTIONS

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A5

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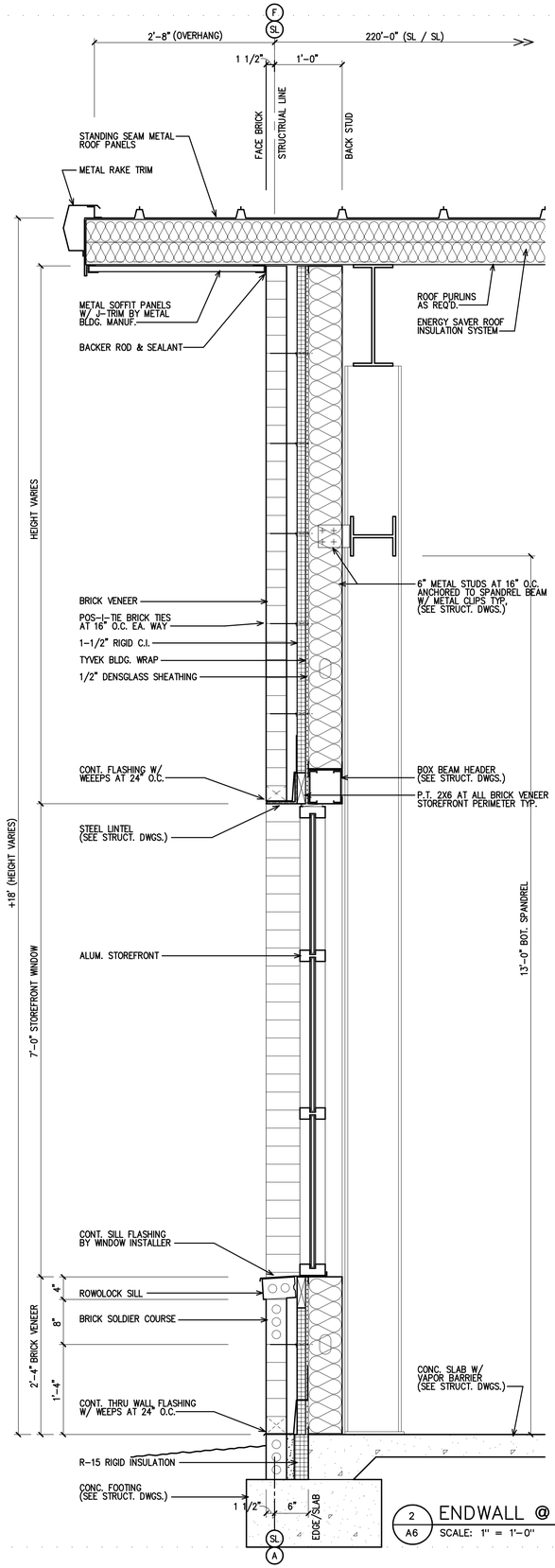
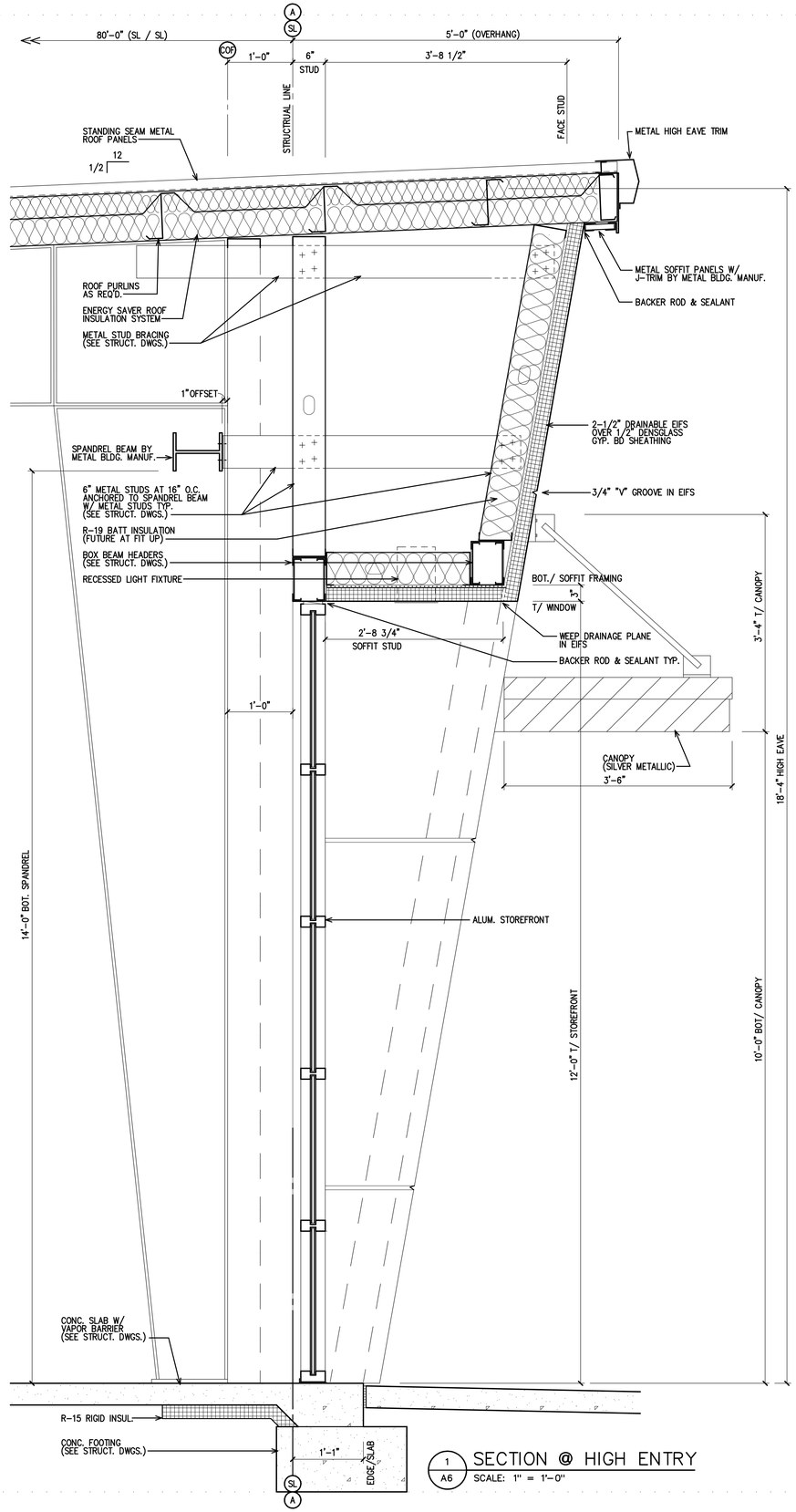


2 A6 ENDWALL @ OVERHANG
SCALE: 1" = 1'-0"



1 A6 SECTION @ HIGH ENTRY
SCALE: 1" = 1'-0"

URENA ARCHITECTURE, P.A.
REGISTERED ARCHITECTURAL CORPORATION
51748
NORTH CAROLINA
RALEIGH, NC

STEVEN M URENA
REGISTERED ARCHITECT
6688
NORTH CAROLINA
RALEIGH, NC
06/07/22

URENA ARCHITECTURE

URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27603
TEL (919) 852-2329 FAX (919) 852-2322

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WALL SECTIONS

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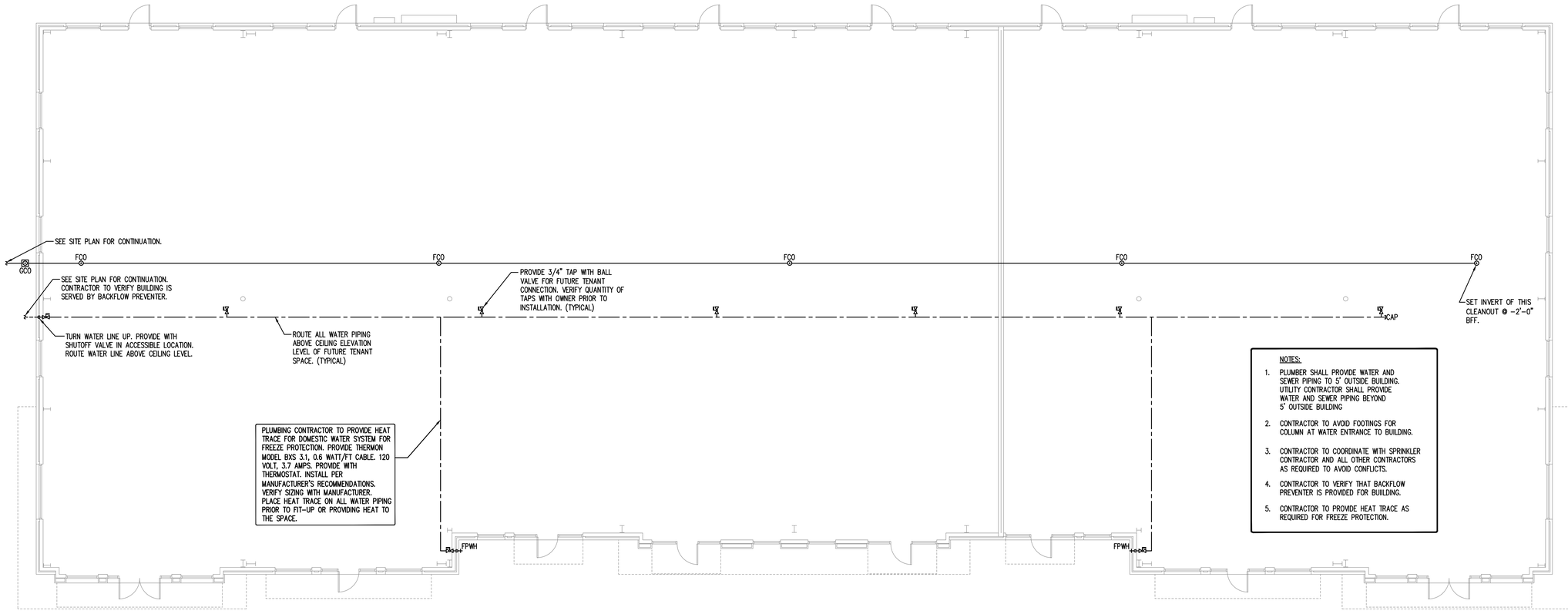
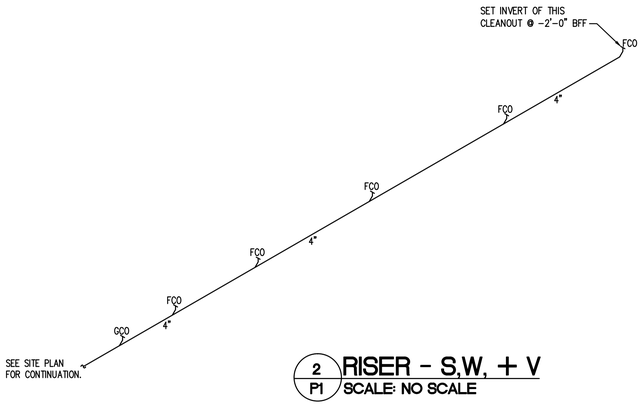
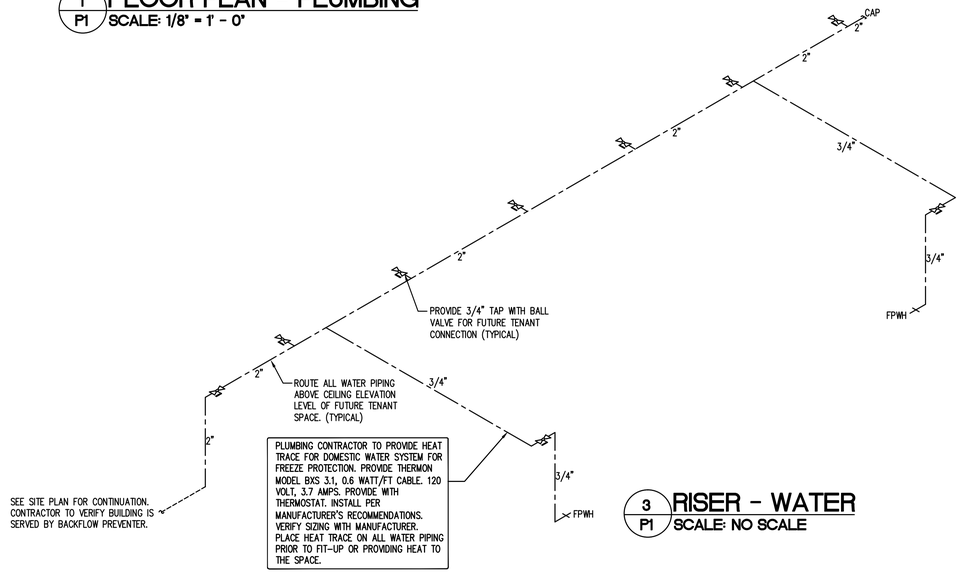


1 P1 FLOOR PLAN - PLUMBING
SCALE: 1/8" = 1' - 0"



2 P1 RISER - S,W, + V
SCALE: NO SCALE



3 P1 RISER - WATER
SCALE: NO SCALE

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URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR SUITE 100 RALEIGH NC 27606
TEL (919) 852-2329 FAX (919) 852-2322

wkcc engineers | consultants
WEST KEY CONSULTING CORPORATION
4008 BARRETT DR SUITE 204
RALEIGH NC 27609
919.881.8020
www.westkeyconsulting.com
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CAMERON, NC

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PLUMBING FLOORPLANS

5/26/21

P1

PLUMBING SPECIFICATIONS

PLUMBING SPECIFICATIONS:

1.) THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH 2018 NORTH CAROLINA PLUMBING CODE AND LOCAL PLUMBING INSPECTOR.

2.) ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND SHALL PROVIDE ANY NECESSARY OFFSETS, REROUTING, ETC. REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.

3.) THESE PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSET, TEES, ELBOWS, ETC. FOR A COMPLETE WORKING PLUMBING SYSTEM.

4.) THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, INSPECTIONS, TAPS, ETC.

5.) CONTRACTOR SHALL COORDINATE ANY PLUMBING SYSTEM REQUIRING SHUTDOWN WITH THE OWNER 48 HOURS PRIOR TO BEGINNING WORK.

6.) ALL DOMESTIC WATER PIPING SHOWN IS ABOVE CEILING/WITHIN WALLS UNLESS NOTED OTHERWISE.

7.) ALL DOMESTIC WATER PIPING (ABOVE SLAB) SHALL BE TYPE "L" COPPER WITH 95/5 LEAD FREE SOLDER. ABOVE SLAB, OUTSIDE OF PLENUM SPACES, PEX PIPING IS ACCEPTABLE. ALL WATER PIPING (BELOW SLAB) SHALL BE TYPE "K" SOFT COPPER. COMPLY W/ ASTM B-88-88A.

8.) ALL WATER PIPING SHALL BE INSULATED WITH CLOSED CELL (ARMAFLEX) TYPE INSULATION WITH THE FLAME DENSITY RATING NOT EXCEEDING 25 & THE SMOKE DENSITY RATING NOT EXCEEDING 50. THICKNESS FOR COLD WATER PIPING SHALL BE 1/2" THICK. THICKNESS FOR HOT WATER & RETURN PIPING SHALL BE 1" THICK.

9.) ALL BRANCH LINES SHALL HAVE SHUT-OFF VALVES. ALL DOMESTIC WATER BALL VALVES SHALL BE BRASS BODY. FULL PORT, CHROME PLATED BALL, TEFLON SEATS, 150# WSP, FOR SIZES 1/2" THRU 2". SIZES ABOVE 2" SHALL BE BRONZE GATE VALVE, NRS SOLID DISC, SCREW OVER BONNET, 125# WSP. PROVIDE VALVE HANDLE EXTENSIONS AS REQUIRED FOR INSULATION.

10.) ALL PLUMBING FIXTURES AND KITCHEN EQUIPMENT SHALL HAVE A PISTON TYPE WATER HAMMER ARRESTOR SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS & PDI STANDARDS.

11.) ALL SANITARY SEWER PIPING SHOWN IS BELOW SLAB/WITHIN WALLS UNLESS NOTED OTHERWISE. ALL SANITARY VENT PIPING SHOWN IS ABOVE CEILING/WITHIN WALLS UNLESS NOTED OTHERWISE.

12.) ALL WASTE & VENT PIPING (ABOVE SLAB) SHALL BE PVC-DWV WITH PIPING AND FITTINGS CONFORMING TO ASTM D-2665. PLENUM SPACE WASTE & VENT PIPING (ABOVE SLAB) SHALL BE SERVICE WEIGHT CAST IRON WITH NO-HUB FITTINGS CONFORMING TO CISPI 301. JOINTS SHALL BE ONE-PIECE NEOPRENE GASKET WITH STAINLESS STEEL BAND AND BOLTS CONFORMING TO ASTM C564-85.

13.) ALL WASTE & VENT PIPING (BELOW SLAB) SHALL BE PVC-DWV WITH PIPING AND FITTINGS CONFORMING TO ASTM D-2665.

14.) ALL PIPING SYSTEMS SHALL BE SUPPORTED AS REQUIRED BY 2018 NORTH CAROLINA PLUMBING CODE & MANUFACTURER'S RECOMMENDATIONS.

15.) ALL PIPING PENETRATIONS THRU NEW/EXISTING WALLS/FLOORS SHALL BE SEALED TO EQUAL THE RATING OF THE NEW/EXISTING WALL OR FLOOR.

16.) ALL PLUMBING SYSTEMS SHALL BE TESTED AS REQUIRED BY 2018 NORTH CAROLINA PLUMBING CODE.

17.) THE PLUMBING CONTRACTOR SHALL COORDINATE ALL UNDERSLAB PLUMBING PIPING WITH ALL STRUCTURAL FOUNDATIONS. P.C. SHALL COORDINATE ALL UNDERSLAB PLUMBING PIPING ELEVATION INVERTS WITH SITE UTILITY ELEVATION INVERTS.

18.) P.C. SHALL COORDINATE ALL KITCHEN EQUIPMENT REQUIRING PLUMBING CONNECTIONS WITH KITCHEN EQUIPMENT VENDOR. PROVIDE ALL NECESSARY P-TRAPS, SUPPLY STOPS, INDIRECT PIPING, ETC. REQUIRED FOR COMPLETE HOOK-UP OF KITCHEN EQUIPMENT REQUIRING PLUMBING CONNECTIONS.

19.) THE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED AS REQUIRED PER LOCAL AUTHORITY.

20.) THE ENTIRE DOMESTIC WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH 2018 NORTH CAROLINA PLUMBING CODE.

21.) ALL VENT THRU THE ROOF PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND SHALL BE CONCEALED BEHIND ROOF RIDGE WHERE POSSIBLE. P.C. SHALL PROVIDE ALL FLASHING MATERIAL REQUIRED FOR VENT THRU ROOF. ALL VTR'S SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ALL OUTSIDE AIR INTAKES.

22.) ALL GAS PIPING AND GAS FLUE TO GAS WATER HEATER BY PLUMBING CONTRACTOR.

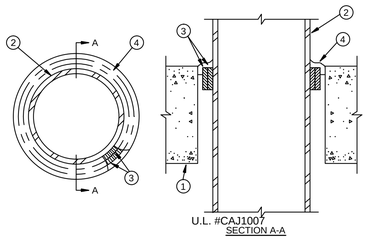
23.) PLUMBING CONTRACTOR SHALL HAVE RECEIVED APPROVED SHOP DRAWINGS FROM THE ENGINEER PRIOR TO BEGINNING NEW WORK.

PLUMBING LEGEND AND ABBREVIATIONS

———————	SANITARY SEWER PIPING (W)
- - - - - - - - - - - -	VENT PIPING (V)
——— - ———	COLD WATER PIPING (CW)
——— - - ———	HOT WATER PIPING (HW)
——— - - - ———	HOT WATER RETURN PIPING (HWR)
——→○	ELL TURNS UP
——+○	ELL TURNS DOWN
——▷|———	CHECK VALVE
——⋈———	BALL VALVE
——⋈———	GATE VALVE IN HORIZONTAL POSITION
◎	CLEANOUT IN GROUND (GCO)
⊙	CLEANOUT IN FLOOR OR SLAB (FCO)
A.F.F.	ABOVE FINISH FLOOR
FD - A	FLOOR DRAIN - TYPE (SEE SCHEDULE)
H.B.	HOSE BIBB
FPWH	FREEZE PROOF WALL HYDRANT
H.D.	HUB DRAIN
INV. ELEV. OR I.E.	INVERT ELEVATION
P.C.	PLUMBING CONTRACTOR
V.T.R.	VENT THROUGH ROOF
CV	COMMON VENT
EOCV	END OF CIRCUIT VENT
BOCV	BEGINNING OF CIRCUIT VENT
◔	CONNECT TO EXISTING

PLUMBING FIXTURES AND EQUIPMENT

MARK	DESCRIPTION	PIPE SERVICE AND CONN. SIZE CW	HW	WASTE	FIXTURE SPECIFICATIONS
FPWH	FREEZE PROOF WALL HYDRANT	3/4"			WOODFORD MODEL 65, NON-FREEZE, AUTOMATIC DRAINING WALL HYDRANT WITH ANTI-SIPHON VACUUM BREAKER, AND LOOSE TEE KEY OPERATION.



U.L. #CAJ1007
SECTION A-A

1. Floor or Wall Assembly - Lightweight or normal weight (100-150 pcf) concrete. Min. thickness of concrete floor or wall assembly is 4-1/2 in. for 2 and 3 hr F Ratings and 5-1/2 in. for 4 hr F Rating. Wall may also be constructed of any UL Classified Concrete Blocks*. Max. diam. of circular opening is 13-1/2 in.
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Steel Pipe or Conduit - Nom. 12 in. diam, (or smaller) Schedule 10 (or heavier) steel pipe, nom. 6 in. diam, (or smaller) steel conduit or nom. 4 in, diam, (or smaller) steel EMT. Max, one pipe or conduit per opening, centered in opening. Min. clearance between pipe or conduit and sides of through opening is 1/4 in. Max. clearance between pipe or conduit and sides of through opening is 1-3/4 in. for 2 hr F Rating and 3/4 in. for 3 and 4 hr F Ratings. Pipe or conduit to be rigidly supported on both sides of floor or wall assembly.

3. Fill, Void or Cavity Materials* - Wrap Strip - Nom. 1/4 in. thick intumescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. wide strips. For the 2 and 3 hr F Ratings, min. 1 in. wide strip(s) wrapped around pipe/conduit (foil side exposed) until OD of wrap strip is equal to or max. 3/16 in. less than ID of circular through opening. Wrap strip tightly bound with steel tie wire or pressure-sensitive tape and slid into through opening such that the top edge of the wrap strip(s) is recessed 1/4 in. from top surface of floor or, in wall assemblies, such that the wrap strip(s) is centered in the wall thickness. For the 4 hr F Rating, nom 2 in. wide strip(s) wrapped around pipe/conduit (foil side exposed) on each side of the floor or wall assembly until OD of wrap strip is equal to or max 3/16 in. less than ID of circular through opening. Wrap strip tightly bound with steel tie wire or pressure-sensitive tape and slid into through opening on each side of floor or wall assembly such that the exposed edges are recessed 1/4 in. from the floor or wall surfaces.

4. Fill, Void Or Cavity Materials* - Caulk - Nom 1/4 in. thickness of caulk to be applied to the exposed edge(s) of the wrap strip and to fill all voids between the pipe/conduit and the periphery of the through opening. For 2 and 3 hr F Rating in floor assemblies, caulk to be installed flush with top surface of floor. For wall assemblies and for the 4 hr F Rating in floor assemblies, caulk to be applied on both sides of assembly.

Minnesota Mining & Mfg. Co. - Types CP-25 S/L, CP-25 N/S, CP-25 WB, CP-25 WB+. (Note: L Ratings apply only when Type CP-25 WB+ caulk is used.)

*Bearing the UL Classification Marking

Minnesota Mining & Mfg. Co. - Types FS-195, FS-195+

CMU WALLS AND FLOORS ONLY
1,2,3, OR 4 HOUR PENETRATION FIRESTOP
1/P2 SCALE: NONE

PLUMBING ACCESSORIES

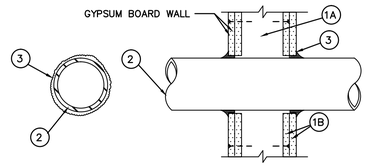
SYMBOL	SPECIFICATION
FS-A	PLASTIC ODDITIES PFS SERIES 12"x12"x10" DEEP, PVC, 1/2 GRATE, WITH PLASTIC, REMOVABLE SECONDARY STRAINER.
FS-B	ZURN Z1907 CAST IRON BODY, 12"X12"X8" DEEP, BOTTOM DOME STRAINER WITH REMOVABLE SECONDARY STRAINER.
FD-A	ZURN ZN-415 DURACOATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEBRANE CLAMP AND ADJUSTABLE COLLAR WITH 6" TYPE " B " POLISHED NICKEL BRONZE STRAINER. DEEP SEAL P-TRAP WITH TRAP PRIMER CONNECTION
FD-B	ZURN ZN-415 DURACOATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEBRANE CLAMP AND ADJUSTABLE COLLAR WITH 7" TYPE " I " POLISHED NICKEL BRONZE STRAINER WITH RAISED FLANGE. DEEP SEAL P-TRAP WITH TRAP PRIMER CONNECTION
FCO	ZURN ZN-1400 "LEVELTROL" ADJUSTABLE FLOOR CLEANOUT, DURACOATED CAST IRON BODY WITH GAS AND WATERTIGHT ABS TAPERED THREAD PLUG AND ROUND SCORIATED POLISHED NICKEL BRONZE TOP ADJUSTABLE TO FINISH FLOOR.
WCO	ZURN ZN-1441 WALL CLEANOUT, DURACOATED CAST IRON BODY WITH GAS AND WATERTIGHT ABS TAPERED THREAD PLUG AND ROUND SMOOTH STAINLESS STEEL ACCESS COVER WITH SECURING SCREW.
SA	WATTS SERIES 15 WATER HAMMER ARRESTOR TO MEET ALL REQUIREMENTS OF ASSE 1010 AS REQUIRED BY 2018 NCSBC, PLUMBING CODE, SECTION 604.9.
VB	ZURN MODEL VACUUM BREAKER TO MEET ALL REQUIREMENTS OF ASSE 1011 AS REQUIRED BY 2018 NCSBC, PLUMBING CODE, SECTION 608.13.6.

PLUMBING SUMMARY

SYSTEM & MATERIAL	FIXTURE UNITS	MAIN SIZE
WASTE AND VENT SYSTEM SCHEDULE 40 PVC-DWV CONFORMING TO ASTM D-2665	-	4"
DOMESTIC WATER SYSTEM BELOW SLAB: TYPE "K" SOFT COPPER WITH NO JOINTS BELOW SLAB ABOVE SLAB: TYPE "L" ANNEALED COPPER WITH 95/5 SOLDER JOINTS.	-	2" - GPM

NOTE:

ALL MINIMUM FACILITIES CALCULATIONS AND ACCESSIBILITY CODE REQUIREMENTS WILL BE PROVIDED AT TIME OF FIT-UP



System No. W-L-1001

June 15, 2005

F Ratings - 1, 2, 3 and 4 Hr (See Items 2 and 3)
T Ratings - 0, 1, 2, 3, and 4 Hr (See Item 3)
L Rating At Ambient - less than 1 CFM/sq ft
L Rating At 400 F - less than 1 CFM/sq ft

1. Wall Assembly - The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or 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 (max 2 h fire rated assemblies) 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 with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. Gypsum Board* - Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard 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 26 in. (660 mm).

2. Through-Penetrant - One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min of 0 in / (0 mm), (point contact) to max 2 in. (51 mm) 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 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe - Nom 24 in. (610 mm) diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in (305 mm) diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

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

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.

F. Through Penetrating Product* - Flexible Metal Piping The following types of steel flexible metal gas piping may be used:

1. Nom 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

2. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

GASTITE, DIV OF TITEFLEX

3. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

WARD MFG INC

3. Fill, Void or Cavity Material* - Caulk or Sealant - Min 5/8. , 1-1/4,1-7/8 and 2-1/2 in. (16, 32, 48 and 64 mm) thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. (6 mm) diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam In (mm)	F Rating Hr	T Rating Hr
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

+When copper pipe is used, T Rating is 0 h.

3M COMPANY - CP 25WB+ or FB-3000 WT.

FOR FRAMED WALL ONLY
1,2,3, OR 4 HOUR PENETRATION FIRESTOP DETAIL
2/P2 SCALE: NTS

wkcc engineers | consultants
WEST KEY CONSULTING CORPORATION
4008 BARRETT DR SUITE 204
RALEIGH NC 27609
919.881.8020
www.westkeyconsulting.com
C-1474

NORTH CAROLINA PROFESSIONAL SEAL 20714 ENGINEER DENNIS GEORGE NIELD
5.26.22

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A
222 POWELL DR SUITE 100 RALEIGH, NC 27606
TEL (919) 852-2329 FAX (919) 852-2322

CAMERON COMMERCIAL
SHELL BUILDING
NC HWY 24-87
CAMERON, NC

REVISIONS

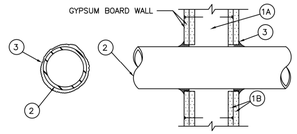
PLUMBING DETAILS

5/26/21

P2

GENERAL NOTES AND REQUIREMENTS.

1. WORKMANSHIP SHALL CONFORM TO NECA PUBLICATION "STANDARDS OF INSTALLATION".
2. INSTALLATION SHALL COMPLY WITH NATIONAL ELECTRICAL CODE, STATE BUILDING CODE, AND ALL REQUIREMENTS OF THE LOCAL INSPECTOR (FURNISH INSPECTION CERTIFICATE). ALL WORK SHALL BE BY LICENSED ELECTRICAL CONTRACTOR.
3. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO INSTALLATION OF ELEC. EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
5. ALL BRANCH CIRCUITS SHALL BE IN ZINC-COATED EMT, OR RIGID CONDUIT AS PERMITTED OR REQUIRED BY THE NATIONAL ELECTRICAL CODE. TYPE MC CABLE MAY BE USED AS PERMITTED BY THE NATIONAL ELECTRICAL CODE. SCHEDULE 40 PVC CONDUIT MAY BE USED ONLY FOR THE SECONDARY UNDERGROUND SERVICE, THE UNDERGROUND TELEPHONE SERVICE CONDUIT, AND BRANCH TELEPHONE SYSTEM CONDUITS LOCATED BELOW THE FLOOR SLAB ON GRADE OR BURIED ON THE EXTERIOR OF THE BUILDING, OR IN CONCRETE BLOCK WALLS. ALL CONDUIT SHALL BE A 1/2" MINIMUM SIZE. EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE.
6. PROVIDE 4"WIDE PLASTIC TAPE, MAGNETIC DETECTABLE TYPE, COLORED RED WITH SUITABLE WARNING LEGEND DESCRIBING BURIED ELECTRICAL LINES OR ORANGE DESCRIBING BURIED TELEPHONE LINES.
7. ALL CONDUCTORS SHALL BE COPPER TYPE THHN, OR XHHW, SOLID FOR #10 AWG OR #12 AWG, AND STRANDED FOR ALL LARGER SIZES.
8. ALL WIRING SHALL BE CONCEALED IN WALLS, UNDER SLAB, OR ABOVE SUSPENDED CEILING SPACE.
9. ALL WIRE AND CONDUIT SIZES ARE BASED ON 75°C THHN WIRE UNLESS OTHERWISE NOTED.
10. CONDUITS MAY BE RUN EXPOSED IN MECHANICAL AREAS. CONDUITS SHALL BE RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS AND SHALL BE RUN IN GROUPS. SEAL ALL PENETRATIONS TIGHT AROUND ALL CONDUITS WHEN PASSING INTO MECHANICAL ROOMS.
11. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING SYSTEM.
12. WHERE FIRST OUTLET ON BRANCH CIRCUIT IS GREATER THAN FIFTY (50) FEET FROM THE PANELBOARD, USE #10 AWG MINIMUM TO THE FIRST OUTLET.
13. ALL MOUNTING HEIGHTS ARE GIVEN TO THE CENTERLINE OF THE DEVICE UNLESS OTHERWISE NOTED. RECEPTACLES, DATA AND TELEPHONE OUTLET TO BE MOUNTED 18"AFF UNLESS OTHERWISE NOTED. LIGHT SWITCHES TO BE MOUNTED 48"AFF UNLESS OTHERWISE NOTED.
14. THE LOCATION OF ALL WALL MOUNTED DEVICES, INCLUDING MOUNTING HEIGHTS, SHALL BE FIELD VERIFIED WITH THE ARCHITECT PRIOR TO INSTALLATION.
15. ALL FUSES, DISCONNECT SWITCHES, AND BREAKER SIZES, SHOWN FOR MECHANICAL EQUIPMENT, SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND THE MECHANICAL CONTRACTOR.
16. ALL DISCONNECT SWITCHES ARE TO BE FUSIBLE TYPE. FUSE IN ACCORDANCE WITH THE NAMEPLATE DATA WITH DUAL ELEMENT TYPE FUSES BY BUSSMAN OR EQUAL.
17. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, AND RECEPTACLES UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS TO AND FINAL CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES. COORDINATE CLOSELY.
18. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED SO THAT ALL CODE-REQUIRED AND MANUFACTURER-RECOMMENDED SERVICING CLEARANCES ARE MAINTAINED. INSTALLATIONS SHALL FULLY COMPLY WITH NEC 110-16(A) AND NEC 384-4 FOR CLEARANCE REQUIREMENTS.
19. COORDINATE LOCATIONS OF ALL LIGHT FIXTURES WITH THE REFLECTED CEILING PLANS. LIGHT FIXTURES INSTALLED IN MECHANICAL AREAS SHALL AVOID MECHANICAL PIPING, EQUIPMENT, DUCTWORK, ETC.
20. GROUND SHALL BE PER N.E.C. PROVIDE SEPARATE GROUNDING CONDUCTOR FOR ALL CIRCUITS. PROVIDE DRIVEN AND COLD WATER GROUND FOR MAIN SERVICE.
21. GROUND TELEPHONE EQUIPMENT PER NEC.
22. THE ELECTRICAL CONTRACTOR SHALL PATCH ANY WALL, CEILING, OR FLOOR OPENING AND PENETRATIONS RESULTING FROM DEMOLITION OR NEW WORK IN EXISTING AREAS.
23. ALL WIRING SHALL BE CONCEALED IN METALLIC CONDUIT.
24. COMBINE HOMERUNS IN CONDUIT AS DESIRED (3 ON 3-PHASE, 2 ON SINGLE PHASE). DO NOT OVERLOAD NEUTRALS.
25. ALL CIRCUITS SHALL BE TESTED WITH 500 VOLT TESTER PRIOR TO ENERGIZING.
26. ALL WALL OUTLET BOXES SHALL BE STEEL CITY OR RACO
27. RECEPTACLES, SWITCHES, COVERPLATES, ETC. SHALL BE HUBBELL, LEVITON, OR LEGRAND EXCEPT AS SPECIFIED. COLOR SPECIFIED BY ARCHITECT, VERIFY COLOR PRIOR TO PURCHASE.
28. PROVIDE PULL WIRE IN ALL EMPTY CONDUIT.
29. CONDUIT SHALL BE LABELED EVERY TEN FEET.
30. ALL RECEPTACLE AND SWITCH PLATES SHALL BE LEGIBLY MARKED WITH LABEL MARKER TO CLEARLY INDICATE PANELBOARD ORIGIN AND CIRCUIT NUMBER. LABEL SHALL BE ON THE BACKSIDE OF PLATES.
31. PROVIDE PHENOLIC LABELS ON ALL MAJOR EQUIPMENT INCLUDING SWITCHBOARDS, MOTOR CONTROL CENTERS, PANELBOARDS, INDIVIDUAL STARTERS, SAFETY SWITCHES, AND TRANSFORMERS. PROVIDE ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON BLACK BACKGROUND.
32. ALL CIRCUIT BREAKERS IN PANEL SHALL BE SERIES RATED WITH MAIN BREAKER OR FULLY RATED FOR THE SYSTEM.
33. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 3 COPIES OF SHOP DRAWINGS FOR LIGHTS, SWITCHGEAR, PANELS, ETC.
34. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE W/ ALL OTHER TRADES REGARDING VOLTAGES, LOADS, CIRCUIT BREAKERS, ETC. PRIOR TO BEGINNING ANY WORK.
35. AS USED ON THESE DOCUMENTS, THE WORD "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL THE ITEM OR EQUIPMENT AND MAKE THE FINAL CONNECTION AS REQUIRED.
36. PANELS SHALL BE BY SQUARE "D", G.E. AND SIEMENS. PANELS SHALL BE SQUARE "D" TYPE NQOD OR "I-LINE" AS REQUIRED.
37. FOR NEW OR MODIFIED SERVICES: PRIOR TO ENERGIZATION AND AFTER UTILITY FAULT CURRENT CONFIRMATION AT THE DELIVERY POINT, PROVIDE PLAQUE AT SERVICE EQUIPMENT STATING MAXIMUM AVAILABLE FAULT CURRENT AND DATE OF CALCULATION PER NEC 110.24.
38. OPERABLE DEVICES SHALL BE ACCESSIBLE IN COMPLIANCE WITH ANSI A117.1, SECTION 309, OPERABLE PARTS. WHERE GFI RECEPTACLES ARE NOT ACCESSIBLE, PROVIDE GFI BREAKER.
39. RECESSED LIGHTING FIXTURES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE IC RATED AND LABELED AS MEETING ASTM E283. OR SHALL BE TENTED TO REMOVE THEM FROM THE THERMAL ENVELOPE
40. BRANCH CIRCUITS SERVING EXIT & EMERGENCY FIXTURES SHALL BE CLEARLY LABELED ON THE PANELBOARD DIRECTORY PER NEC 110.22(A), 408.4 & 700.12(F).
41. UPON PROJECT COMPLETION, THE EC SHALL PROVIDE TYPED CIRCUIT DIRECTORIES FOR ALL NEW AND ALTERED PANELBOARDS WITH CIRCUIT DESIGNATIONS COMPLYING WITH THE REQUIREMENTS OF NEC 408.4(A).
42. ALL EXIT AND EMERGENCY LIGHTING SHALL BE FED FROM LOCAL BRANCH CIRCUIT AND HAVE A MINIMUM OF 90 MINUTE BATTERY BACKUP PER NEC 700.12(F)(2).



U.L. #WL1001

1. Wall Assembly - The 1,2,3, or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or 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 (max 2 h fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plateds and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.

B. Wallboard,Gypsum* - Nom 1/2 or 5/8 in. thick, 4ft. wide with square or tapered edges. The gypsum wallboard 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 13-1/2 in.

2. Pipe or Conduit - Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe, nom 12 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) Class 50 (or heavier) ductile iron pressure pipe, nom 6 in. diam (or smaller) steel conduit, nom 4 in. diam (or smaller) steel electrical metallic tubing or Type L or (or heavier) copper tubing or nom 1 in. (or smaller) flexible steel conduit. When copper pipe or flexible steel conduit is used, max F Rating of firestop system (Item 3) is 2h. Steel pipes or conduits larger than nom 4 in. diam may only be used in wall constructed using steel channel studs. A max of one pipe or conduit is permitted in the firestop system. Pipe or conduit to be installed near center of stud cavity width and to be rigidly supported on both sides of wall assembly.

3. Fill, Void or Cavity Material* - Caulk - Caulk fill material installed to completely fill annular space between pipe or conduit and gypsum wallboard and with a min 1/4 in. diam bead of caulk applied to perimeter of pipe or conduit at its egress from the wall. Caulk installed symmetrically on both sides of wall assembly. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam, In	Annular Space, In	F Rating, Hr	T Rating, Hr
1	0 to 3/16	1 or 2	0+, 1 or 2
1	1/4 to 1/2	3 or 4	3 or 4
4	0 to 1/4	1 or 2	0
4	0 to 1-1/2#	1 or 2	0
6	1/4 to 1/2	3 or 4	0
12	3/16 to 3/8	1 or 2	0

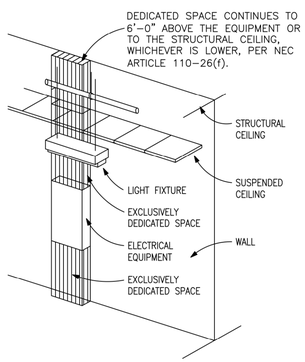
\+ When copper pipe is used, T Rating is 0 h
\# 0 to 1-1/2 in. annular space applies only when Type CP-25 WB+ caulk is used.

Minnesota Mining & Mfg. Co. - Types CP-25 S/L, CP-25 N/S, CP-25 WB, CP-25 WB+. (NOTE: L Rating apply only when Type CP-25 WB+ caulk is used).
*Bearing the UL Classification Marking

4 / E1 RATED WALL PENETRATION DETAIL
SCALE: NTS

ABBREVIATIONS

A AMPS, AMPERES	JB JUNCTION BOX
AIC AMPS INTERRUPTING CURRENT	KW KILOWATT
ATS AUTOMATIC TRANSFER SWITCH	KVA KILOVOLT-AMPERES
AF AMP FUSE	LTG LIGHTING
AFF ABOVE FINISHED FLOOR	MC METAL CLAD CABLE
AFG ABOVE FINISHED GRADE	MCB MAIN CIRCUIT BREAKER
AHJ AUTHORITY HAVING JURISDICTION	MLO MAIN LUGS ONLY
BRK RCIRCUIT BREAKER	NCSBC NORTH CAROLINA STATE BUILDING CODE
BLDG BUILDING	NEC NATIONAL ELECTRICAL CODE
C CONDUIT	NEMANATIONAL ELECTRICAL MANUFACTURER'S ASSOC.
CKT CIRCUIT	NIC NOT IN CONTRACT
CLG CEILING	NTS NOT TO SCALE
DISC DISCONNECT SWITCH	PNL PANELBOARD
EC ELECTRICAL CONTRACTOR	SW SHOW WINDOW RECEP, 18"MAX ABOVE WINDOW
EF EXHAUST FAN	UL UNDERWRITER'S LABORATORIES
EM EMERGENCY	ULSEUL SERVICE ENTRANCE
EMT ELECTRICAL METALLIC TUBING	UON UNLESS OTHERWISE NOTED
EX EXISTING	V VOLTS
FA FIRE ALARM	W/ WITH
GC GENERAL CONTRACTOR	W/O WITHOUT
GFCI GROUND FAULT CURRENT INTERRUPTER	WP WEATHERPROOF
G GROUND	
HP HORSEPOWER	
IMC INTERMEDIATE METAL CONDUIT	



NOTE:
THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE ELECTRICAL EQUIPMENT FOR THE CABLES, RACEWAYS, ETC... TO AND FROM THE ELECTRICAL EQUPMENT REQUIRED BY SECTION 110.26(F) OF THE NATIONAL ELECTRICAL CODE.

1 / E1 DEDICATED SPACE FOR ELECTRICAL EQUIPMENT
SCALE: NTS

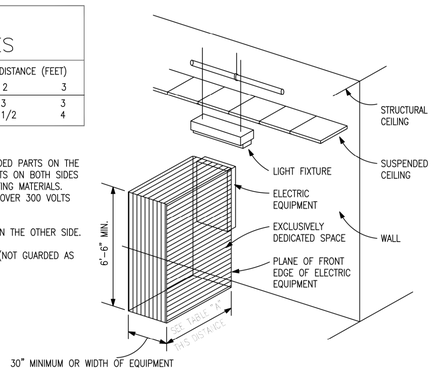
TABLE "A"
WORKING CLEARANCES

VOLTAGE TO GROUND, NOMINAL	MINIMUM CLEAR DISTANCE (FEET) CONDITION: 1	2	3
0-150	3	3	3
151-600	3	3 1/2	4

WHERE THE "CONDITIONS" ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300 VOLTS SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

NOTE:
THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF ELECTRIC EQUIPMENT REQUIRED BY SECTION 110.16 OF THE NATIONAL ELECTRICAL CODE.



2 / E1 WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT
SCALE: NTS

ELECTRICAL SYSTEM AND EQUIPMENT (SECTION C405)

METHOD OF COMPLIANCE SECTION C405.1 ■

LIGHTING SCHEDULE
LAMP TYPE REQUIRED IN FIXTURE
NUMBER OF LAMPS IN FIXTURE
BALLAST TYPE USED IN FIXTURE
NUMBER OF BALLASTS IN FIXTURE
TOTAL WATTAGE PER FIXTURE
} SEE LIGHTING FIXTURE SCHEDULE
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED: N/A-FUTURE
TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED: 0.8kW VS 1.7kW

ADDITIONAL EFFICIENCY PACKAGE OPTIONS
☐ 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

DESIGNER STATEMENT:

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE, ENERGY CODE 2018 EDITION

NAME: ANGUS M. CLARK PE

TITLE: ELECTRICAL ENGINEER

ELECTRICAL LEGEND

(ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT)

- HOMERUN TO POWER SOURCE, 2#12,#12G 1/2"C UON
- BRANCH CIRCUIT WIRING CONCEALED IN WALLS AND CEILINGS
- BRANCH CIRCUIT WIRING CONCEALED UNDER FLOOR OR UNDERGROUND
- RECESSED LIGHT FIXTURE
- DOWNLIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- SURFACE MOUNTED LIGHT FIXTURE
- EXIT SIGN, DIRECTIONAL ARROWS AS INDICATED.
- EMERGENCY LIGHT
- EXIT/EMERGENCY LIGHT COMBINATION
- DUPLEX RECEPTACLE
- QUADRUPLEX RECEPTACLE
- SIMPLEX RECEPTACLE, AMP RATING AS NOTED
- GFCI RECEPTACLE
- WEATHERPROOF WHILE N USE GFCI RECEPTACLE
- TAMPERPROOF RECEPTACLE
- SHOW WINDOW RECEPTACLE MOUNTED 18"MAX ABOVE WINDOW
- FLUSH MOUNTED FLOOR RECEPTACLE
- FLUSH MOUNTED RECEPTACLE AND DATA
- JUNCTION BOX FOR POWER CONNECTION
- EQUIPMENT POWER CONNECTION
- FUSED DISCONNECT SWITCH
- NON-FUSED DISCONNECT SWITCH
- PANELBOARD
- $OS WALL MOUNTED DUAL TECH OCCUPANCY SENSOR SWITCH (LINE VOLTAGE)
- ◀ 1"C TELEPHONE/DATA STUB-UP
- PC PHOTOCELL, MOUNT WITH SENSOR FACING NORTH, EXACT LOCATION TO BE DETERMINED
- TC TORK OR EQUAL, DIGITAL, ASTRONOMICAL, 7-DAY PROGRAMMABLE, 20A, 120V. PROVIDE 20A/12P LIGHTING CONTACTOR IN ADJACENT TO TIME CLOCK AND EXTERIOR PHOTOCELL FACING NORTH. ALL EQUIPMENT SHALL BE RATED NEMA 3R OR LOCATED IN A NEMA 3R ENCLOSURE.

ANGUS CLARK ENGINEERING PC
543 KEISLER DRIVE
SUITE 101
CARY NORTH CAROLINA 27518
NCBEES C-2726
919 859.2674
919 573.0323 FAX

WEST KEY CONSULTING CORPORATION
4008 BARRETT DR SUITE 204
RALEIGH NC 27609
919.881.8020
www.westkeyconsulting.com
C-1474

NORTH CAROLINA PROFESSIONAL ENGINEER 13719 ANGUS M. CLARK
5/31/2022

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27605
TEL (919) 852-2329 FAX (919) 852-2322

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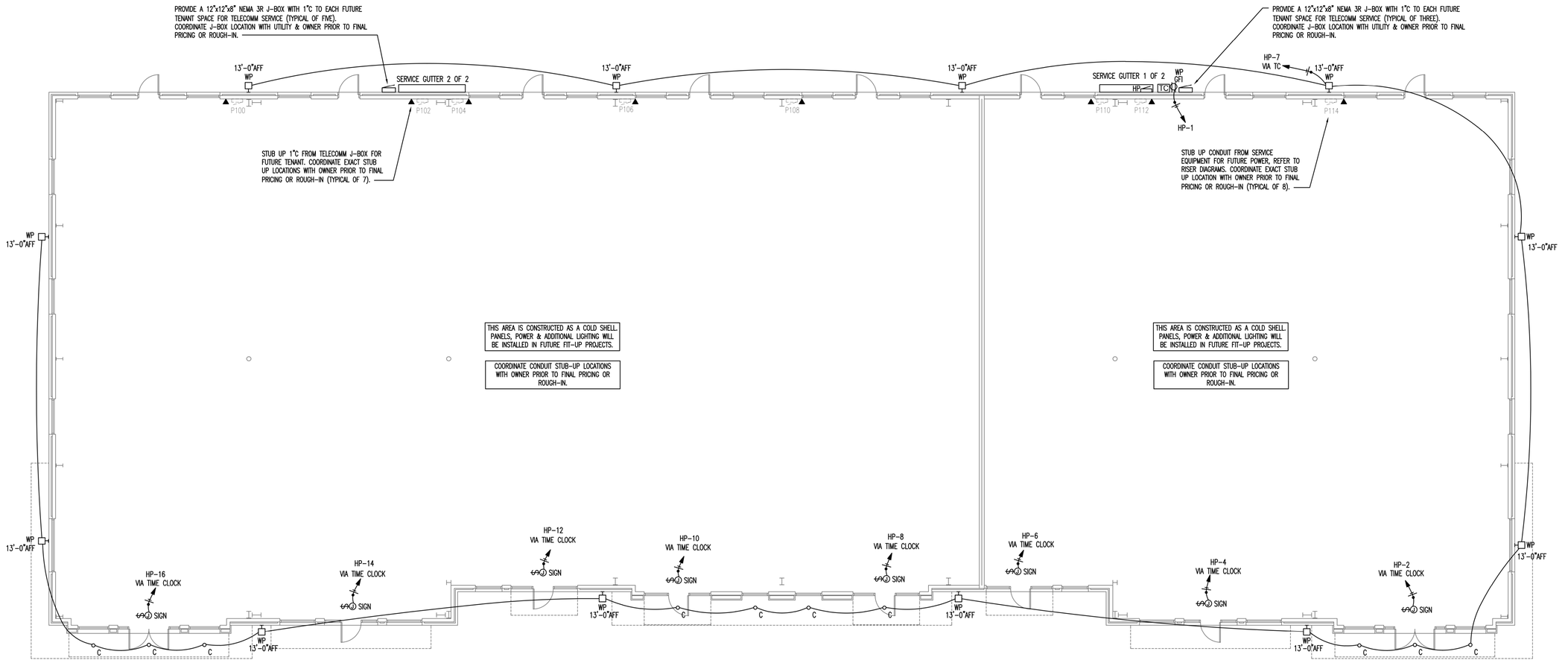
ELECTRICAL COVER SHEET

5/31/21

E1

2007-P



COORDINATE ALL MOUNTING HEIGHTS OF EXTERIOR LIGHTS WITH ARCHITECT & GC PRIOR TO ROUGH-INS.

1/E2 ELECTRICAL PLAN

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

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	MODEL	LAMP	INPUT WATTS	VOLTS	MOUNTING	NOTE 1
C	○	6" ROUND LED DOWNLIGHT	HEW 6DR-L20-8-35-DIM-UNV-O-W-CS-MWT	LED	19	120V 1P 2W	RECESSED	IN FLAT EIFS SOFFIT (SEE ARCHITECTURAL WALL SECTIONS)
WP	⊢□	WALL MOUNTED LIGHT	LITHONIA WSQLED-P2-40K-SR3-MVOLT-DNAXD *NATURAL ALUMINUM	LED	50	120V 1P 2W	WALL	CENTER AT 13'-0"AFF

GENERAL NOTES: ALL FINAL FINISHES SHALL BE REVIEWED/APPROVED BY ARCHITECT PRIOR TO RELEASE.

ANGUS CLARK ENGINEERING PC
543 KEISLER DRIVE
SUITE 101
CARY NORTH CAROLINA 27518
NCBEES C-2726
919 859.2674
919 573.0323 FAX

WEST KEY CONSULTING CORPORATION
4008 BARRETT DR SUITE 204
RALEIGH NC 27609
919.881.8020
www.westkeyconsulting.com
C-1474

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27606
TEL (919) 652-2329 FAX (919) 652-2322

NORTH CAROLINA PROFESSIONAL ENGINEER 13719 ANGUS M. CLARK

6/1/2022

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ELECTRICAL PLAN

5/31/21

E2

2007-P

HP

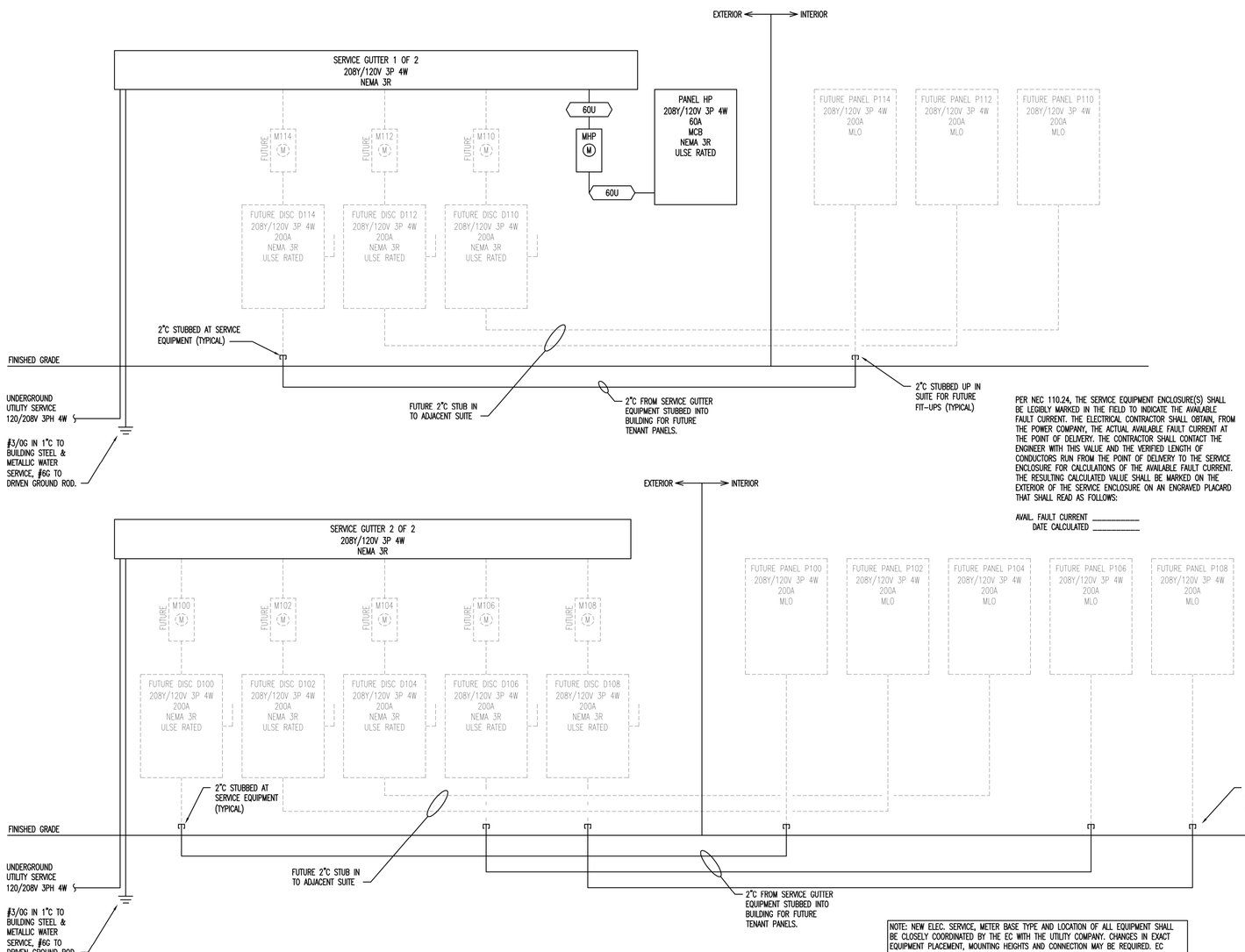
ROOM EXTERIOR
MOUNTING SURFACE
FED FROM MHP
NOTE ULSE RATED, NEMA 3R

VOLTS 208Y/120V 3P 4W
BUS AMPS 60
NEUTRAL 100%

AIC 10,000
MAIN BKR 60
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	20/1	RECEPTACLE	0.18			2	20/1	SIGN	1.20		
3	−/1	SPACE		0.00		4	20/1	SIGN		1.20	
5	−/1	SPACE			0.00	6	20/1	SIGN			1.20
7	20/1	LIGHTING	0.79			8	20/1	SIGN	1.20		
9	−/1	SPACE		0.00		10	20/1	SIGN		1.20	
11	−/1	SPACE			0.00	12	20/1	SIGN			1.20
13	−/1	SPACE	0.00			14	20/1	SIGN	1.20		
15	−/1	SPACE		0.00		16	20/1	SIGN		1.20	
17	−/1	SPACE			0.00	18	−/1	SPACE			0.00
								TOTAL CONNECTED KVA BY PHASE	4.57	3.60	2.40

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	0.79	0.99	(125%)	RECEPTACLES	0.18	0.18	(50%>10)
				CONTINUOUS	9.60	12.00	(125%)
				TOTAL LOAD		13.17	
				BALANCED 3-PHASE LOAD		36.55 A	

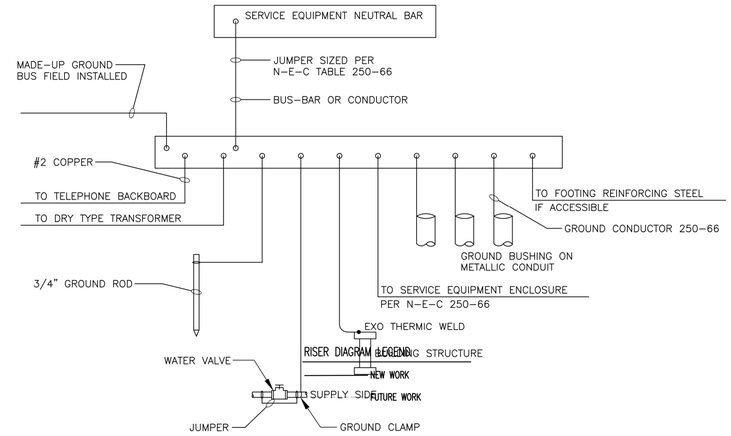


PER NEC 110.24, THE SERVICE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE AVAILABLE FAULT CURRENT. THE ELECTRICAL CONTRACTOR SHALL OBTAIN, FROM THE POWER COMPANY, THE ACTUAL AVAILABLE FAULT CURRENT AT THE POINT OF DELIVERY. THE CONTRACTOR SHALL CONTACT THE ENGINEER WITH THIS VALUE AND THE VERIFIED LENGTH OF CONDUCTORS RUN FROM THE POINT OF DELIVERY TO THE SERVICE ENCLOSURE FOR CALCULATIONS OF THE AVAILABLE FAULT CURRENT. THE RESULTING CALCULATED VALUE SHALL BE MARKED ON THE EXTERIOR OF THE SERVICE ENCLOSURE ON AN ENGRAVED PLACARD THAT SHALL READ AS FOLLOWS:

AVAIL. FAULT CURRENT _____
DATE CALCULATED _____

1 / E3 RISER DIAGRAMS
SCALE: NTS

NOTE: NEW ELEC. SERVICE, METER BASE TYPE AND LOCATION OF ALL EQUIPMENT SHALL BE CLOSELY COORDINATED BY THE EC WITH THE UTILITY COMPANY. CHANGES IN EXACT EQUIPMENT PLACEMENT, MOUNTING HEIGHTS AND CONNECTION MAY BE REQUIRED. EC SHALL FOLLOW UTILITY GUIDELINES, THE NEC AND ALL LOCAL REQUIREMENTS FOR SERVICE EQUIPMENT INSTALLATION. EC SHALL CONTACT UTILITY PRIOR TO BEGINNING ANY WORK AND SCHEDULE AN ON-SITE COORDINATION MEETING TO REVIEW UTILITY REQUIREMENTS AND THE PLANNED INSTALLATION. ADDITIONAL CONDUIT, WIRING, FEES OR WORK REQUIRED BY THE UTILITY NOT SHOWN ON THIS RISER SHALL BE COORDIANTED BY THE EC AT THE BEGINNING OF THE PROJECT AND INCLUDED IN PRICING BY THE EC TO THE OWNER.



2 / E3 SERVICE EQUIPMENT GROUNDING DETAIL
SCALE: NTS

FEEDER SCHEDULE

ID	FEEDER AMPS	CONDUIT AND FEEDER
60U	60	1"C,3#4,#4N

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE

ANGUS CLARK ENGINEERING PC
543 KEISLER DRIVE
SUITE 101
CARY NORTH CAROLINA 27518
NCBEES C-2726
919 859.2674
919 573.0323 FAX

wkcc engineers | consultants
WEST KEY CONSULTING CORPORATION
4008 BARRETT DR SUITE 204
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NORTH CAROLINA PROFESSIONAL ENGINEER 13719 ANGUS M. CLARK
5/31/2022

URENA ARCHITECTURE
URENA ARCHITECTURE, P.A.
212 POWELL DR. SUITE 100 RALEIGH, NC 27606
TEL (919) 652-2329 FAX (919) 652-2322

CAMERON COMMERCIAL
SHELL BUILDING
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RISER & SCHEDULES

5/31/21

E3

2007-P

GENERAL NOTES

1. THE GENERAL CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND THE ENGINEER OF ANY DISCREPANCIES WITHIN THE CONSTRUCTION DOCUMENTS.

2. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2018 NORTH CAROLINA BUILDING CODE.

3. DESIGN LOADS:

Importance Factor: Wind (Iw) 1.0
Snow (Is) 1.0
Seismic (Ie) 1.0

Live Loads: Roof 20 psf
Second Floor N/A
First Floor 125 psf

Ground Snow Load: 10 psf

Wind Load: Basic Wind Speed 116 mph (ASCE-7-10)
Exposure Category B
Wind Base Shears (for MWFRS)Vx =24.0K Vy = 66.0K

SEISMIC DESIGN CATEGORY B
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) II
Spectral Response Acceleration Ss 20.6% g S1 9.4% g
Site Classification D (Field Test)
Basic structural system (check one)
_____ Bearing Wall_____ Dual w/ Special Moment Frame
__X__ Building Frame _____ Dual w/ Intermediate R/C or Special Steel
_____ Moment Frame _____ Inverted Pendulum
Seismic base shear Vx = 33.3K Vy = 33.3K
Analysis Procedure ___ Simplified _X_ Equivalent Laterial Force ___ Modal
Architectural, Mechanical, Components anchored? No

LATERAL DEISGN CONTROL: Earthquake _____ Wind __X__

SOIL BEARING CAPABILITIES:
Field Test (provide copy of test report) __________ psf
Presumptive Bearing Capacity ___2000______ psf
Pile size, type and capacity ______________________________

4. ALL SAFETY REGULATIONS, METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIAL SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE SHORING, BRACING AND FORMWORK, ETC. AS REQUIRED.

5. THE GENERAL CONTRACTOR PRIOR TO CONSTRUCTION SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, THE SIZE AND LOCATION OF ALL SLEEVES, PADS, DEPRESSIONS, OPENINGS, ETC.

6. DIMENSIONS ARE NOT TO BE DERIVED BY SCALING THESE DRAWINGS. IF THERE IS ANY QUESTION ABOUT DETAILS OR DIMENSIONS, CONTACT THE ARCHITECT AND ENGINEER FOR CLARIFICATION.

7. IF ANY BIDDER IS IN DOUBT AS TO THE TRUE MEANING OF ANY PART OF THE DOCUMENTS, THEY SHALL REQUEST AN INTERPRETATION FROM THE ARCHITECT IN WRITING.

SUBMITTALS

1. THE CONTRACT DOCUMENTS ARE THE STRUCTURAL ENGINEER'S INSTRUMENTS OF SERVICE TO CONVEY DESIGN INTENT. THEY ARE NOT TO BE CONSIDERED FABRICATION OR LAYOUT DRAWINGS.

2. THE FOLLOWING ARE REQUIRED SUBMITTALS:
   A. CONCRETE MIX DESIGNS
   B. REINFORCING BAR DRAWINGS
   C. STRUCTURAL STEEL
   D. METAL DECK
   E. STEEL JOISTS
   F. ROOF TRUSSES

3. FOR REVIEW OF EACH SUBMITTAL, THE SCHEDULE SHALL ALLOW FOR TEN BUSINESS DAYS FOLLOWING ENGINEER'S RECEIPT.

4. SUBMITTALS TO BE REVIEWED BY THE ENGINEER SHALL BE SUBMITTED TO THE ARCHITECT. THE STRUCTURAL ENGINEER WILL NOT ACCEPT SUBMITTALS DIRECTLY FROM CONTRACTORS WITHOUT THE ENGINEER'S PRIOR APPROVAL.

5. UPON COMPLETION OF THE ENGINEER'S REVIEW, SUBMITTALS WILL BE RETURNED TO THE ARCHITECT FOR THEIR REVIEW.

6. ANY DEVIATION IN DESIGN, DETAILS, DIMENSIONS, ETC. FROM THE CONSTRUCTION DOCUMENTS SHALL BE CLOUDED ON THE SUBMITTAL AND VERIFICATION OF THE CHANGE SHALL BE REQUESTED. "VERIFY" MARKS NOT ADDRESSED SHALL NOT BE ASSUMED CORRECT AND SHALL BE RESUBMITTED TO THE ENGINEER OR CLARIFIED BY A REQUEST FOR INFORMATION. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ANY DEVIATIONS UNLESS ENGINEER REVIEWS AND ACKNOLEDGES THE CHANGES IN WRITING.

7. THE ENGINEER WILL NOT REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.

FOUNDATIONS

1. ALLOWABLE SOIL BEARING IS STATED ON THE FOUNDATION PLANS.

2. BACKFILLING SHALL BE PERFORMED IN EQUAL LIFTS AROUND THE BUILDING PERIMETER TO BALANCE LATERAL EARTH PRESSURE ON THE BUILDING. WALK BEHIND COMPACTION EQUIPMENT IS REQUIRED WITHIN A DISTANCE OF TWO TIMES THE WALL HEIGHT.

3. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL IN WRITING. THE CONTRACTOR SHALL LOCATE ANY EXISTING UNDERGROUND UTILITIES PRIOR TO ANY CONSTRUCTION.

CONCRETE

1. ALL CONCRETE WORK TO BE DONE IN ACCORDANCE WITH THE CODE REFERENCED EDITION OF ACI-318: "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"

2. CONCRETE MIX DESIGN REQUIREMENTS AND COMPRESSIVE STRENGTH AT 28 DAYS:

DESCRIPTION	28 DAY STENGTH (PSI)	WEIGHT PER CUBIC FOOT (PCF)	SLUMP AT POINT OF PLACEMENT	AGGREGATE	% AIR
FOOTINGS	3000	145	4" ± 1"	ASTM C33	3
SLAB ON GRADE	3000	145	4" ± 1"	ASTM C33	3
COMPOSITE FLOOR TOPPING (LIGHT WEIGHT)	3500	110	5" ± 1"	ASTM C330	3
BASEMENT WALLS	5000	145	5" ± 1"	ASTM C33	3

FLY ASH SHALL BE LIMITED TO 20% OF THE TOTAL CEMENTITIOUS MATERIAL WEIGHT, WATER REDUCING ADMIXTURES MAY BE USED TO ACHIEVE SLUMP REQUIREMENTS.

3. SEE ARCHITECTURAL DOCUMENTS FOR JOINT SIZES AND FILLER MATERIALS.

4. LOCATION OF ALL CONSTRUCTION JOINTS, EXCLUDING SLABS ON GRADE, SHALL BE COORDINATED WITH STRUCTURAL ENGINEER.

5. ALL EXPOSED CONCRETE CORNERS SHALL HAVE A $\frac{3}{4}$" CHAMFER, UNLESS NOTED OTHERWISE BY THE ARCHITECT.

6. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER SHOWING PROPOSED LOCATIONS OF ANY MATERIAL SUCH AS BUT NOT LIMITED TO CONDUITS, EMBEDMENTS, OR FIXTURES TO BE PLACED INSIDE ANY STRUCTURAL CONCRETE MEMBER SUCH AS BEAMS, WALLS, SLABS, COLUMNS OR FOOTINGS.

7. UNLESS SPECIFIED OTHERWISE IN THE SPECIFCATION, TESTING OF CONCRETE SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF ACI 318 SECTION 5.6 "EVALUATION AND ACCEPTANCE OF CONCRETE."

8. THE FOLLOWING PROCEDURES SHALL MEET THE REQUIREMENTS OF THE REFERENCED CODE SECTIONS

PROCEDURE	REFERENCE SECTION
PREPARATION	ACI 304 - "GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"
CONVEYING	ACI 318 SECTION 5.9 - "CONVEYING"
DEPOSITING	ACI 318 SECTION 5.10 - "DEPOSITING"
CONSOLIDATION	ACI 309 - "GUIDE FOR CONSOLIDATION OF CONCRETE"
CURING	ACI 308 - "STANDARD PRACTICE FOR CURING CONCRETE"
HOT WEATHER CONCRETING	ACI 305 - "HOT WEATHER CONCRETING"
COLD WEATHER CONCRETING	ACI 306 - "COLD WEATHER CONCRETING"

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE NEW BILLET STEEL, DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.

2. WELDED WIRE FABRIC SHALL BE SHEETS OF NEW BILLET STEEL COLD DRAWN, CONFORMING TO ASTM SPECIFICATION A82, GRADE 60.

3. BAR SUPPORTS, DESIGN, DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI 318 AND "THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES." ACI 315.

4. SPLICES FOR CONTINUOUS BARS SHALL BE CLASS B, UNLESS NOTED OTHERWISE, WELDED WIRE FABRIC SHALL BE LAPPED 12" MINIMUM.

5. MINIMUM CONCRETE COVERAGE SHALL BE AS FOLLOWS. IF STIRRUPS, TIES OR SPIRALS ARE USED, COVERAGE SHALL BE THE OUTERMOST FACE OF THE ELEMENTS.
   A. FOOTINGS, CAISSONS, AND OTHER MEMBERS WHERE CONCRETE IS DEPOSITED AGAINST SOIL (EXCEPT SLABS ON GRADE.) 3"

   B. CONCRETE EXPOSED TO WEATHER OR SOIL
   #6 BAR AND LARGER: 2"
   #5 BAR AND SMALLER: $1\frac{1}{2}$"

   C. CONCRETE NOT EXPOSED TO WEATHER OR SOIL (SLABS, WALLS, JOISTS)
   #14 BAR AND LARGER $1\frac{1}{2}$"
   #11 BAR AND SMALLER $\frac{3}{4}$"

   BEAMS AND COLUMNS $1\frac{1}{2}$"

6. WALL FOOTING REINFORCEMENT SHALL BE CONTINUOUS THROUGH COLUMN FOOTING.

7. PROVIDE DOWELS IN WALL FOOTING TO MATCH WALL VERTICALS UNLESS NOTED OTHERWISE ON DRAWINGS. PROVIDE CLASS B SPLICE. USE STANDARD ACI 90° HOOK WITH 3" CLEAR TO BOTTOM OF FOOTING UNLESS NOTED OTHERWISE.

STRUCTURAL MASONRY

1. ALL MASONRY WORK TO BE DONE IN ACCORDANCE WITH THE CODE- REFERENCED EDITION OF ACI-530 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AND ACI-530.1 "SPECIFICATION FOR MASONRY STRUCTURES."

2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 AND HAVE A MINIMUM NET COMPRESSIVE STRENGTH 1900 PSI. THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF MASONRY (F'm) SHALL BE 1500 PSI, AS DETERMINED BY THE UNIT STRENGTH METHOD (REFERENCE ACI 530.1 SECTION 1.4B). PRISM TESTING IS REQUIRED IF THE ABOVE REQUIREMENTS ARE NOT MET.

3. CLAY MASONRY UNITS SHALL HAVE A MINIMUM UNIT COMPRESSIVE STRENGTH OF 8000 PSI. REFER TO ARCHITECTURAL DOCUMENTS FOR ASTM DESIGNATIONS.

4. MORTAR SHALL BE PORTLAND CEMENT-LIME AND CONFORM TO ASTM C270. WHEN CMU IS IN CONTACT WITH SOIL USE TYPE M MORTAR.

AVERAGE MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS		
MORTAR TYPE	CLAY MASONRY	CONCRETE UNIT MASONRY
M	N/A	2500 PSI
S	N/A	1800 PSI
N	750 PSI	N/A

5. BLOCK FILL FOR REINFORCED MASONRY SHALL BE FINE GROUT IN CONFORMANCE WITH ASTM C476 MINIMUM COMPRESSIVE STRENGTH METHOD. GROUT SHALL BE 3000 PSI AT 28 DAYS AS SAMPLED AND TESTED IN ACCORDANCE WITH ASTM C1019. GROUT SLUMP SHALL BE 8 TO 11 INCHES.

6. REINFORCING: ASTM A615 - GRADE 60. SEE CHART BELOW FOR MINIMUM LAP SPLICE LENGTH AND EMBEDMENT OF REINFORCING BARS.

MASONRY REINFORCING LAP SPLICES AND EMBED LENGTH		
BAR SIZE	LAP SPLICE LENGTH (IN)	EMBEDMENT
#4	24	18
#5	30	24
#6	36	28
#7	42	32
#8	48	36
#9	54	42

7. ALL MASONRY SHALL BE PLACED IN RUNNING BOND UNLESS SPECIFICALLY NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

8. MASONRY PREPARAQTION, CONSTRUCTION AND PROTECTION IN HOT OR COLD WEATHER (GREATER THAN 90°F OR LESS THAN 40°F) SHALL BE IN CONFORMANCE WITH ACI 530.1 SECTION 1.8.

9. EMBEDDED CONDUITS, PIPES AND SLEEVES SHALL BE COMPATIBLE WITH MASONRY AND SHALL NOT BE LOCATED IN GROUTED CELLS. PIPES CONTAINING WATER SUBJECT TO FREEZING, MATERIALS IN EXCESS OF 150°F OR PIPES UNDER PRESSURE IN EXCESS OF 55 PSI SHALL NOT BE EMBEDDED IN MASONRY. GENERAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL EMBEDDED ITEMS WITH THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.

COLD-FORMED STEEL STUD FRAMING

1. ALL STRUCTURAL MEMBERS SHALL BE FORMED FROM CORRISION-RESISTANT STEEL CORRESPONDING TO THE REQUIREMENTS OF ASTM-A653, WELDS SHALL BE TOUCHED UP WITH A ZINC RICH PROTECTIVE PAINT FOR CORROSION RESISTANCE. STRUCTURAL STEEL STUDS SHALL HAVE A MINIMUM THICKNESS OF 33 MILS AND SHALL HAVE A MINIMUM YIELD STRENGTH 33 KSI

COLD-FORMED STEEL STRUCTURAL MEMBERS	
THICKNESS (MILS)	GAUGE
33	20
43	18
54	16
68	14
97	12
118	10

2. PROVIDE VERTICAL DEFLECTION CONNECTION WITH MECHANICAL ATTACHMENT TO THE WEB OF ALL STUDS WHICH PASS BY THE STRUCTURE (FLOOR AND ROOF) OR ATTACH TO THE BOTTOM OF THE STRUCTURE.

3. UNLESS SUPERSEDED BY FINISH OR GLAZING SYSTEM MANUFACTURER'S MORE STRINGENT REQUIREMENTS (GENERAL CONTRACTOR TO COORDINATE), STUDS HAVE BEEN DESIGNED TO THE FOLLOWING MINIMUM REQUIREMENTS:
   A. BRICK VENEER L/600
   B. EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) L/240
   C. STUCCO L/240

4. "C" SHAPED STUDS AND JOISTS SHALL HAVE A MINIMUM FLANGE WIDTH OF $1\frac{3}{8}$" WITH A MINIMUM RETURN LIP OF $\frac{3}{8}$". TRACKS SHALL HAVE A MINIMUM OUTSTANDING LEG OF $1\frac{1}{4}$".

5. ALL STRUCTURAL MEMBERS SHALL BE CONTINUOUS FULL LENGTH, SPLICING OF MEMBERS IS NOT PERMITTED UNLESS SPECIFICALLY DETAILED BY ENGINEER.

6. SCREWS SHALL BE SELF DRILLING WITH A LENGTH THAT ENSURES THREE EXPOSED THREADS BEYOND PENETRATION OF THE JOINED MATERIAL. MINIMUM SCREW SPACING SHALL BE $\frac{3}{4}$", MINIMUM EDGE DISTANCE SHALL BE $\frac{3}{8}$".

7. METAL STUD BRIDGING IS REQUIRED @ 48" O.C. MAXIMUM UNLESS WALLS ARE SHEATHED ON BOTH SIDES.

HARRIS
STRUCTURAL DESIGN, PA
3206 Heritage Trade Dr. Ste 116
Wake Forest, NC 27587
EMAIL: thomas-hsd@nc.rr.com
PH: (919) 556-6032
CELL: (919) 946-0798

NORTH CAROLINA PROFESSIONAL SEAL 029465 ENGINEER THOMAS B. HARRIS
SEAL DATE: 5-31-2022
Corp. License Number C-2550

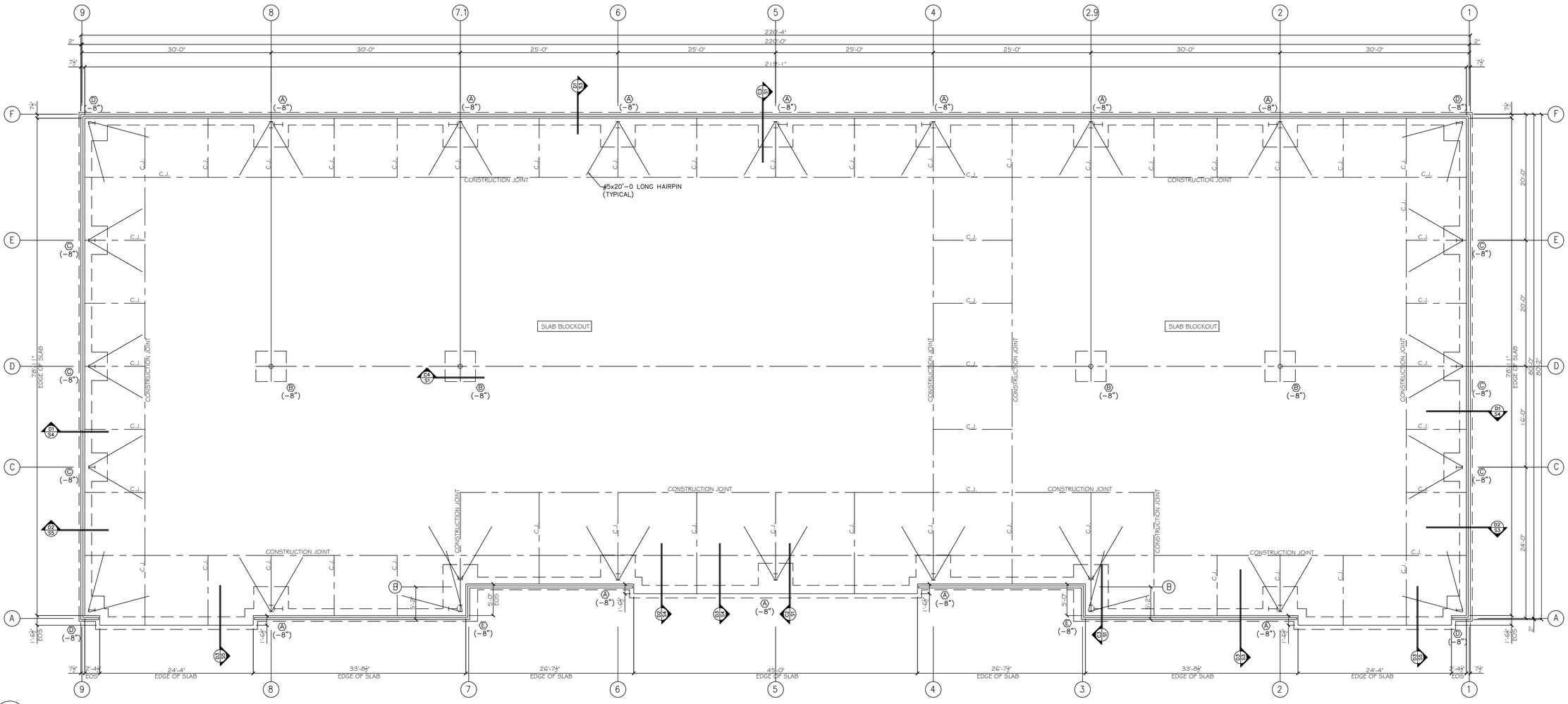
CAMERON COMMERCIAL SHELL BUILDING
NC HWY 24-87
CAMERON, NC

REVISIONS

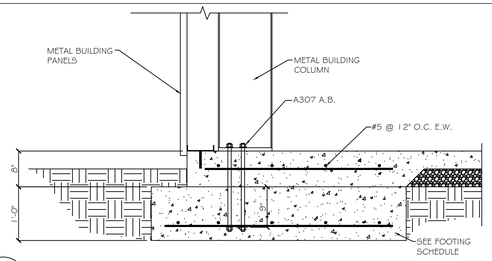
GENERAL NOTES

5-31-22

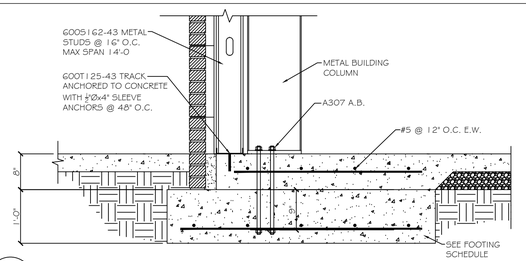
S0



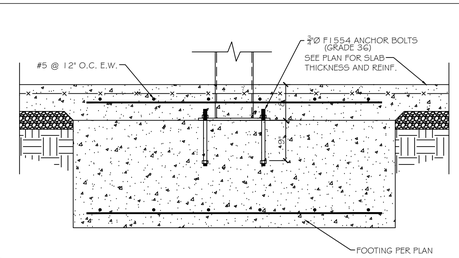
C1 FOUNDATION PLAN
SCALE: 1/8" = 1'-0"



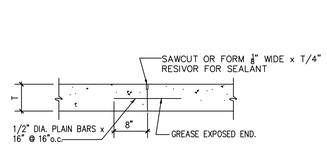
C2 EXTERIOR COLUMN FOOTING DETAIL
SCALE: 3/4" = 1'-0"



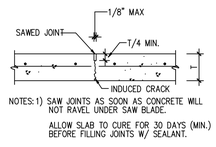
C3 EXTERIOR COLUMN FOOTING DETAIL
SCALE: 3/4" = 1'-0"



C4 INTERIOR FOOTING DETAIL
SCALE: 3/4" = 1'-0"

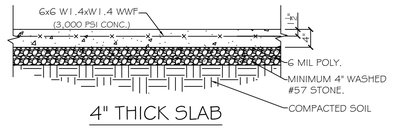


DETAIL – BLDG. SLAB CONST. JOINT



DETAIL – BLDG. SLAB CONTROL JOINT

D2 SLAB JOINT DETAILS
SCALE: 3/4" = 1'-0"



4" THICK SLAB

D3 SLAB REINFORCEMENT DETAIL
SCALE: 3/4" = 1'-0"

FOUNDATION PLAN

FOOTING SCHEDULE 2000 PSF		
MARK	SIZE	REINFORCING
Ⓐ	5'-6 x 5'-6 x 12"	#5 @ 12" BOTT.
Ⓑ	4'-0 x 4'-0 x 12"	#5 @ 12" BOTT.

1.) FOOTING DESIGN BASED ON ASSUMED SOIL BRG. CAPACITY OF 2000 PSF. NOTIFY ENGINEER IF TESTS SHOW OTHERWISE.
2.) ELEV. NOTED (–) ARE BELOW F.F. (0.00) TO TOP OF FOOTING.
3.) USE 3000 PSI. CONCRETE AND GRADE 60 REBAR.
4.) FOUNDATION DESIGNED PER METAL BUILDING MANUF. REACTIONS.

D4 FOUNDATION NOTES

HARRIS STRUCTURAL DESIGN, PA
3206 Heritage Trade Dr. Ste 116
Wake Forest, NC 27587
PH: (919) 556-6032
CELL: (919) 946-0798
EMAIL: tomas@hsdpa.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029465 THOMAS B. HARRIS
SEAL DATE: 6-4-2022
Corp. License Number C-2550

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REVISIONS

FOUNDATION PLAN & DETAILS

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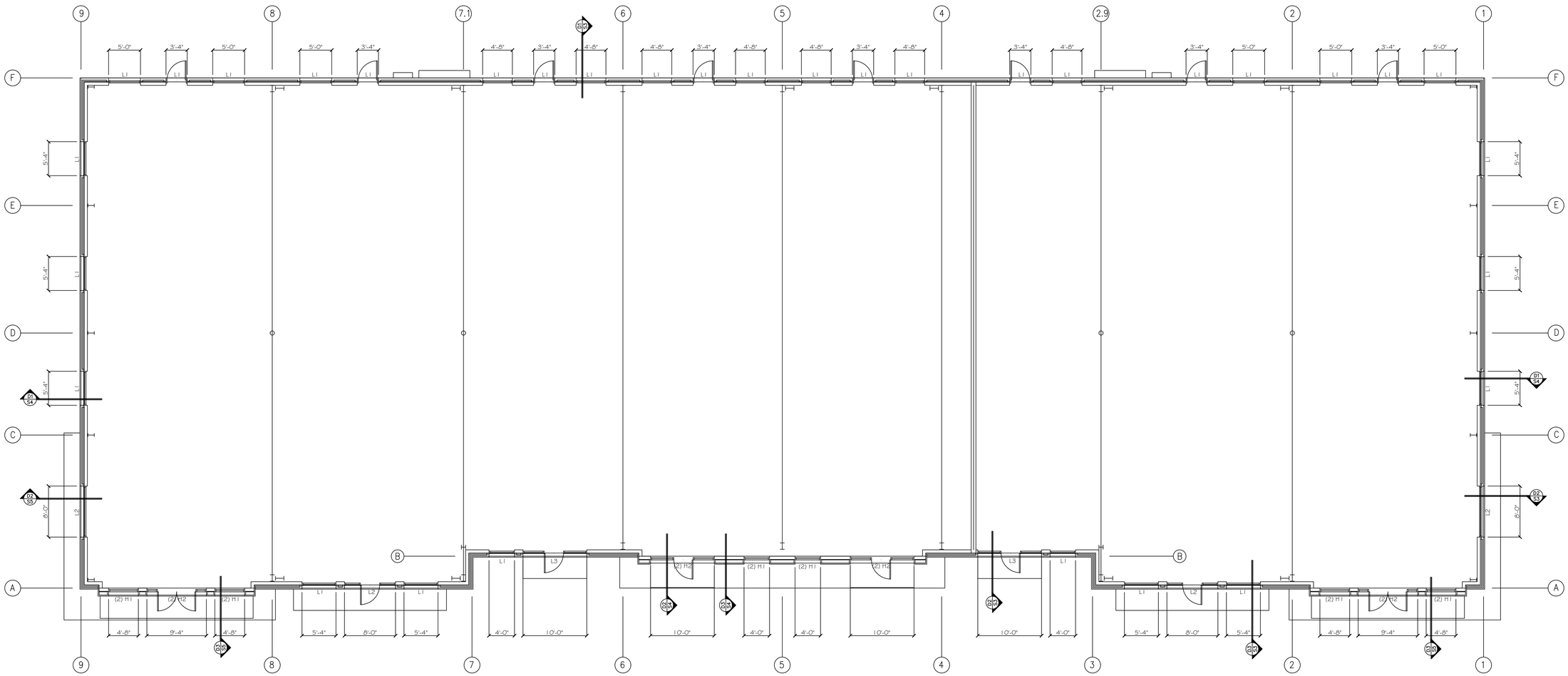
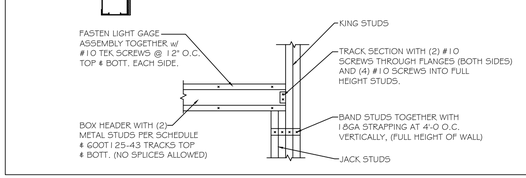
S1



C1 WALL FRAMING PLAN
SCALE: 1/8" = 1'-0"

HEADER/LINTEL SCHEDULE

DESIGNATION	HEADER/LINTEL	SUPPORT
L1	2~600S162-43 METAL STUDS WITH 600T125-43 TRACK TOP & BOTT. & L5x5x⅜ BRICK LINTEL BEAR 8" MIN.	(1) 600S162-43 JACKS (2) 600S162-43 KINGS
L2	2~800S162-43 METAL STUDS WITH 600T125-43 TRACK TOP & BOTT. & L5x5x⅜ BRICK LINTEL BEAR 8" MIN.	(2) 600S162-43 JACKS (3) 600S162-43 KINGS
L3	2~800S162-43 METAL STUDS WITH 600T125-43 TRACK TOP & BOTT. & L5x5x⅜ BRICK LINTEL BEAR 8" MIN. ATTACH LINTEL TO HEADER WITH (2) #12 SCREWS @ 12" O.C.	(2) 600S162-43 JACKS (3) 600S162-43 KINGS
H1	2~600S162-43 METAL STUDS WITH 600T125-43 TRACK TOP & BOTT.	(1) 600S162-43 JACKS (2) 600S162-43 KINGS
H2	2~800S162-43 METAL STUDS WITH 600T125-43 TRACK TOP & BOTT.	(2) 600S162-43 JACKS (3) 600S162-43 KINGS



HARRIS
STRUCTURAL DESIGN, PA
3206 Heritage Trade Dr. Ste 116
Wake Forest, NC 27587
EMAIL tommas.b@aol.com
PH: (919) 556-6032
CELL: (919) 946-0798

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029465 THOMAS B. HARRIS
SEAL DATE: 5-31-2022
Corp. License Number C-2550

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WALL FRAMING PLAN

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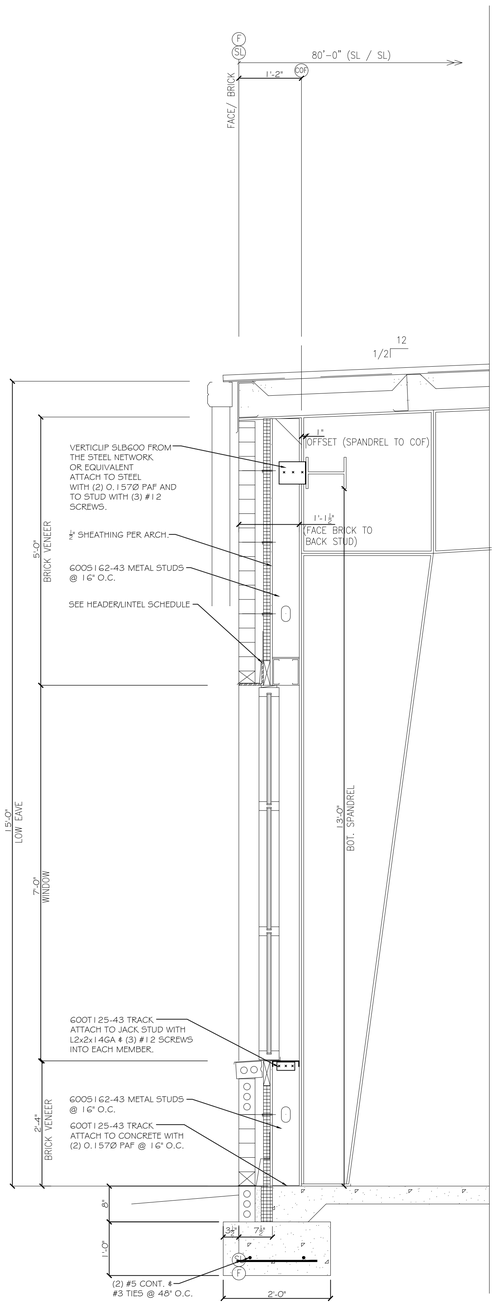
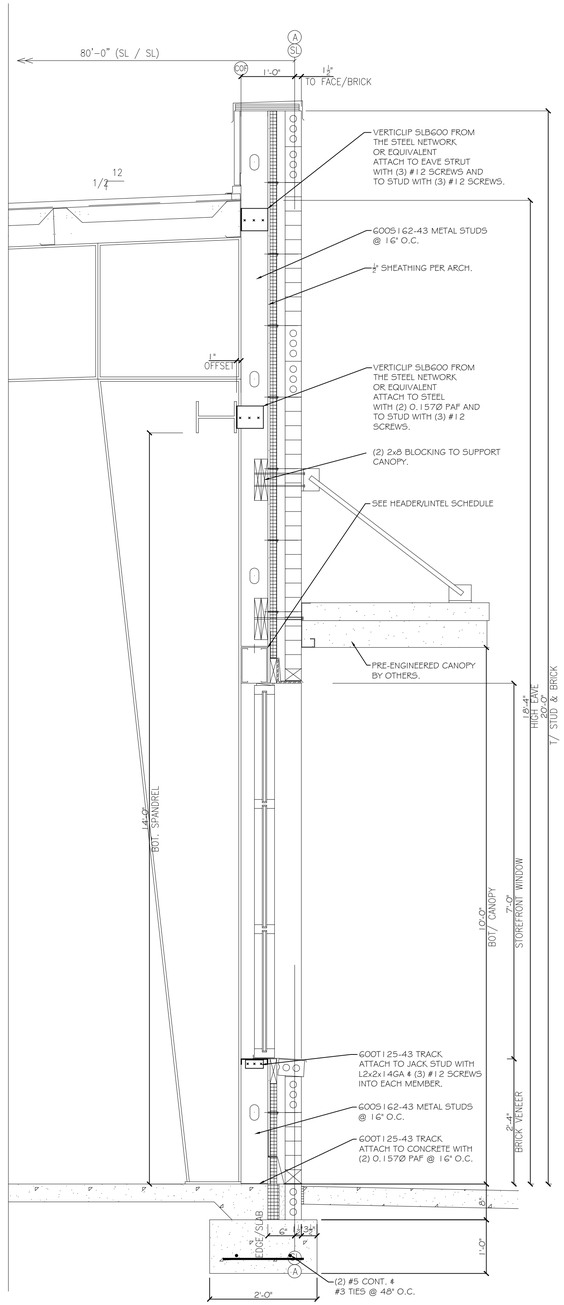
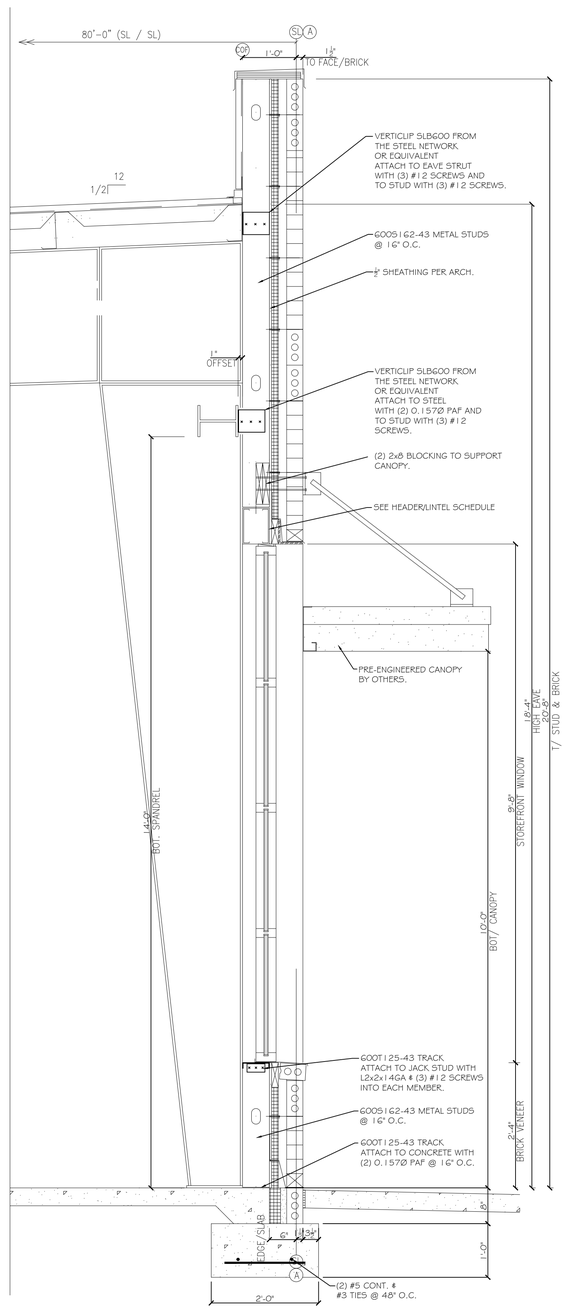
S2



D1 SECTION @ LOW EAVE
SCALE: 3/4" = 1'-0"



D2 SECTION @ LOW BRICK
SCALE: 3/4" = 1'-0"



D3 SECTION @ HIGH BRICK
SCALE: 3/4" = 1'-0"

HARRIS
STRUCTURAL DESIGN, PA
3206 Heritage Trade Dr. Ste 116
Wake Forest, NC 27587
EMAIL: tommas.b@bellsouth.net
PH: (919) 556-6032
CELL: (919) 946-0598

NORTH CAROLINA PROFESSIONAL SEAL 029465 ENGINEER THOMAS B. HARRIS

SEAL DATE: 5-31-2022

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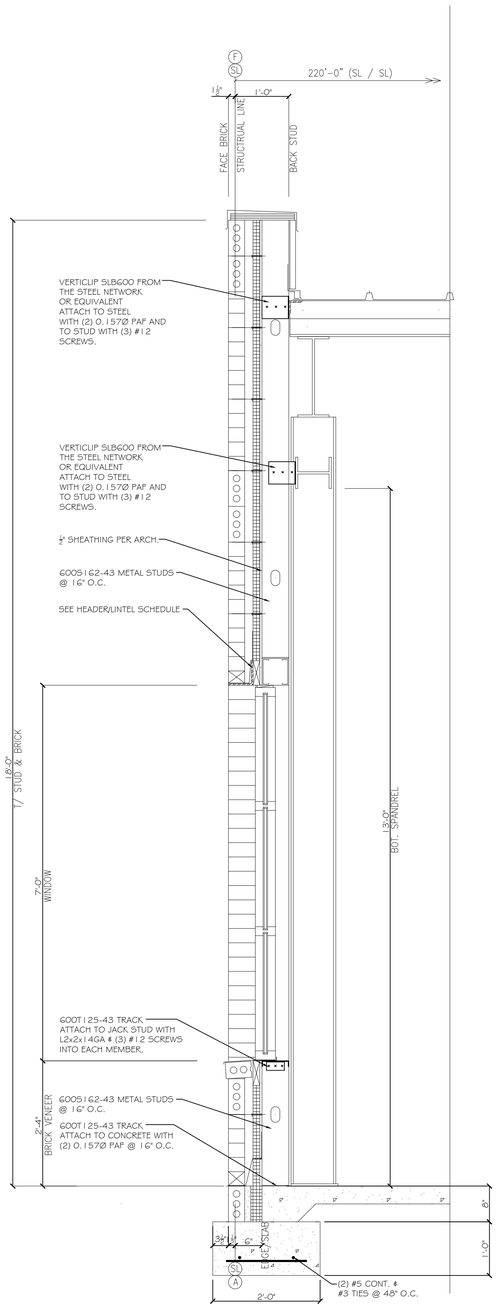
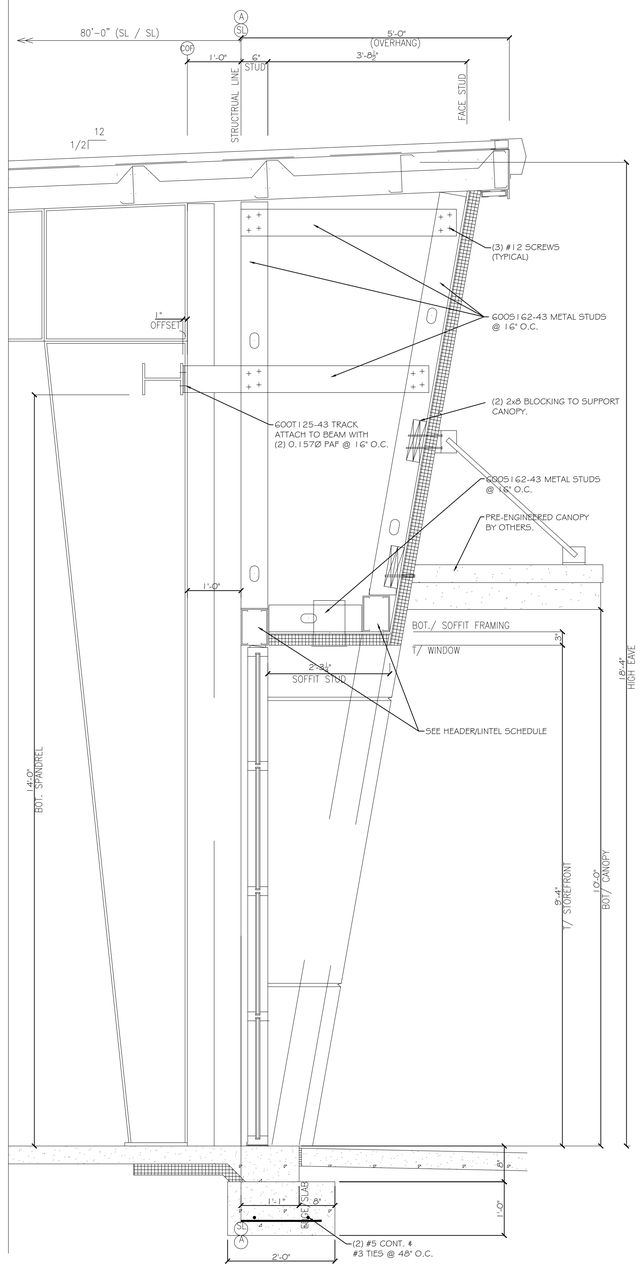
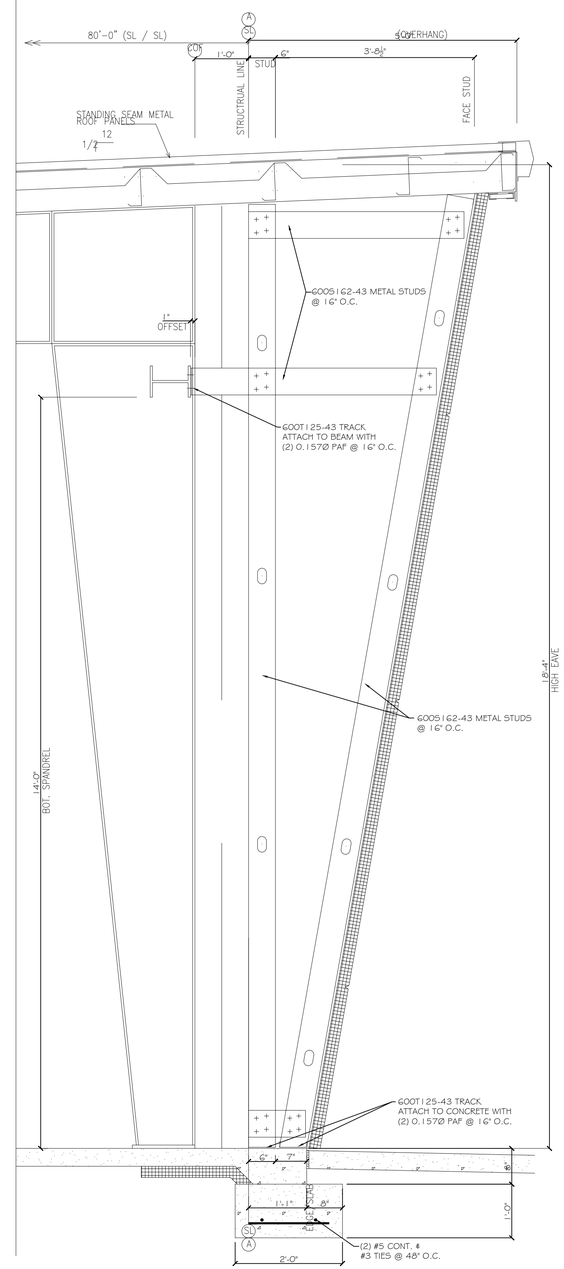


D1 ENDWALL @ PARAPET
SCALE: 3/4" = 1'-0"



D2 SECTION @ LOW ENTRY
SCALE: 3/4" = 1'-0"



D3 OVERHANG @ EIFS
SCALE: 3/4" = 1'-0"

HARRIS
STRUCTURAL DESIGN, PA
3206 Heritage Trade Dr. Ste 116
Wake Forest, NC 27587
PH: (919) 556-6032
CELL: (919) 946-0798
EMAIL: thomas.b@sbcglobal.net

NORTH CAROLINA PROFESSIONAL SEAL 029465 ENGINEER THOMAS B. HARRIS
SEAL DATE: 5-31-2022
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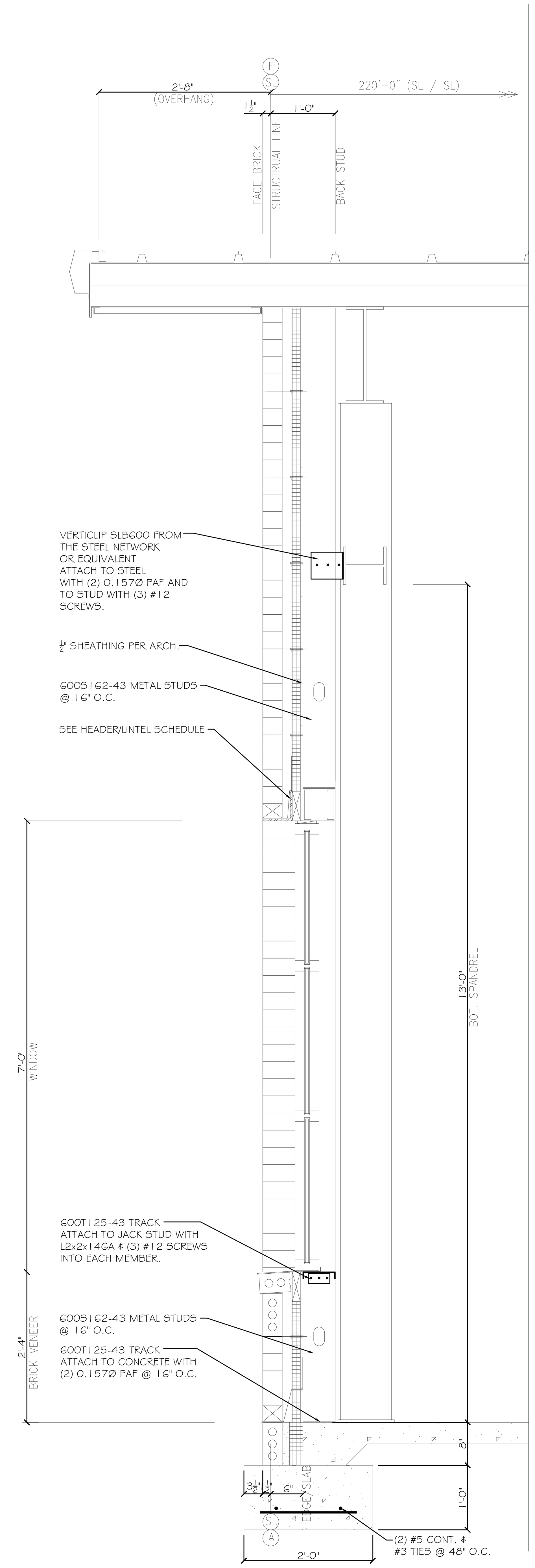
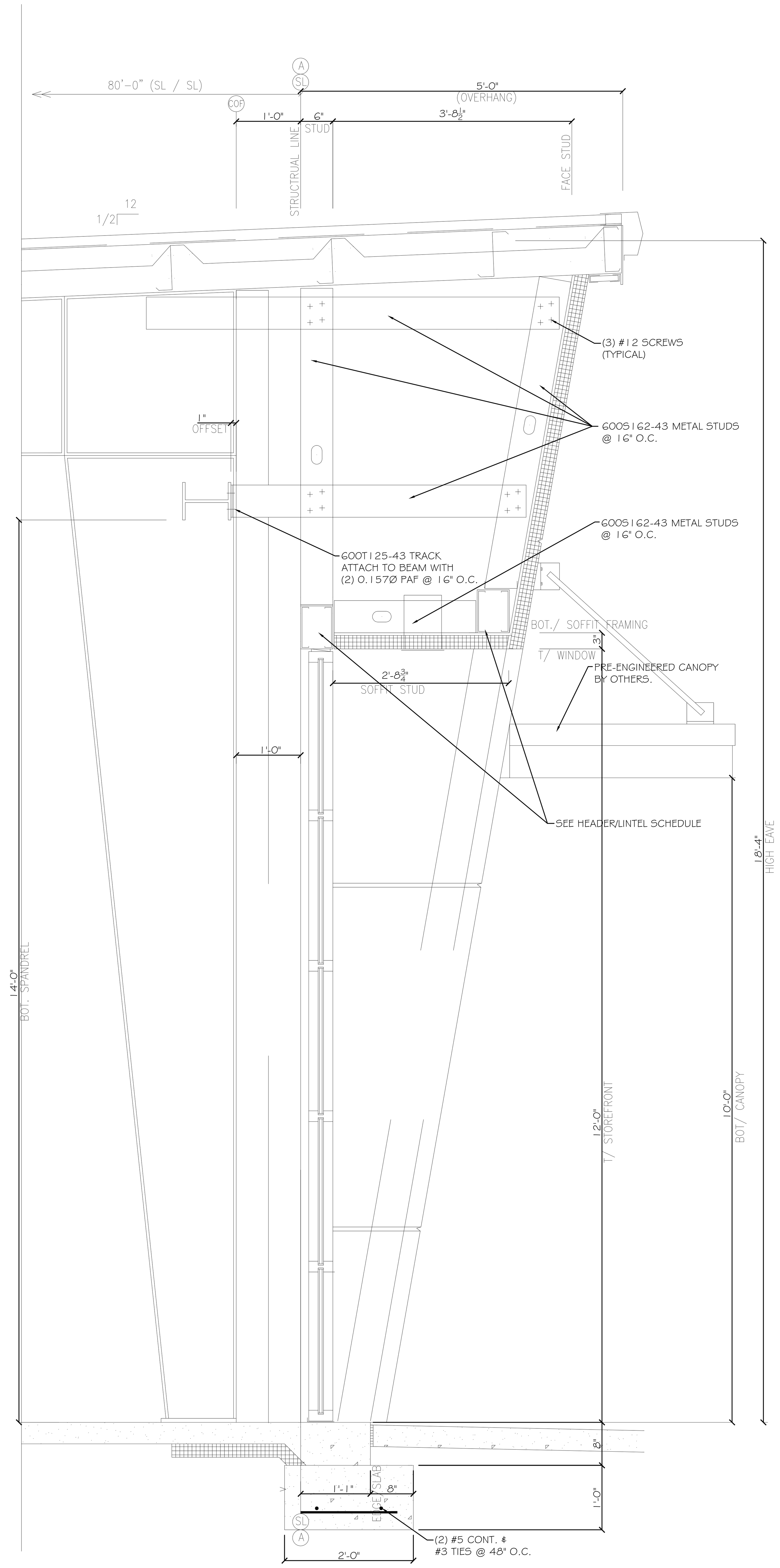


D2 ENDWALL @ OVERHANG
SCALE: 3/4" = 1'-0"



D3 SECTION @ HIGH ENTRY
SCALE: 3/4" = 1'-0"

HARRIS STRUCTURAL DESIGN, PA
3206 Heritage Trade Dr. Ste 116
Wake Forest, NC 27587
EMAIL: thomas-hsd@nc.rr.com
PH: (919) 556-6032
CELL: (919) 946-0798

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