2018 - APPENDIX B - BUILDING CODE SUMMARY

GENT: SIEVEN URENA	PHONE # (919) 852-	<u>-2329</u> E-N	MAIL urena.arch@gr	mail.com
SDICTION:				
FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
URENA ARCHITECTURE, PA	STEVEN M. URENA	6688	(919) <u>852–2329</u>	urena.arch@gmail.com
4D SITE SOLUTIONS	C. SCOTT BROWN	027452	<u>(910)</u> <u>426–6777</u>	· angus@angusclarkpe.co
ANGUS CLARK, PE	ANGUS M. CLARK	13/19	(919) 659-2674	angus@angusciarkpe.co
WEST KEY CONSULTING CORP.	DENNIS G. NIELD	20714	919 881-8020	dgnield@westkeyconsult
<u>:</u>	•	<u> </u>	<u>()</u>	•
	THOMAS B. HARRIS	029465	919 556-6032	thomas—hsd@nc.rr.com
AMERICAN BUILDINGS	RAJESH H. BHAGNARI	24064	706 565-1602	<u></u>
	RENA FIRM URENA ARCHITECTURE, PA 4D SITE SOLUTIONS ANGUS CLARK, PE WEST KEY CONSULTING CORP.	RENA FIRM URENA ARCHITECTURE, PA 4D SITE SOLUTIONS ANGUS CLARK, PE WEST KEY CONSULTING CORP. HARRIS STRUCTURAL DESIGN, PA THOMAS B. HARRIS	RENA FIRM URENA ARCHITECTURE, PA 4D SITE SOLUTIONS ANGUS CLARK, PE WEST KEY CONSULTING CORP. HARRIS STRUCTURAL DESIGN, PA THOMAS B. HARRIS DICENSE # UCENSE # LICENSE # LICENSE # LICENSE # A6688 C. SCOTT BROWN 027452 ANGUS M. CLARK 13719 THOMAS B. HARRIS 029465	### RENA FIRM

CONSTRUCTED	(DATE)	CURRENT OCCUPANCY(S) (Ch. 3):
RENOVATED:	(DATE)	PROPOSED OCCUPANCY(S) (Ch. 3):
RISK CATEGORY:	(Table 1604.5): CURRENT: <u> </u>	• • • • • • • • • • • • • • • • • • • •

SPRINKLERS:	; NO			
STANDPIPES:	: NO			
PRIMARY FIR	RE DISTRICT: NO	FLOOD HAZARD AREA: N	0	
SPECIAL INS	PECTIONS REQUIRED: NA			
GROSS E	BUILDING AREA TAE	BLE		
FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUBTOTAL	
3RD FLOOR	<u> </u>	<u> </u>	<u> </u>	
2ND FLOOR				

LOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUBTOTAL
RD FLOOR	<u> </u>	<u> </u>	
ND FLOOR	•	•	· · · · · · · · · · · · · · · · · · ·
IEZZANINE	•	17 170	
ST FLOOR ASEMENT	· · · · · ·	17,178	
OTAL	· · · · · · · · · · · · · · · · · · ·	17,178	· · ·
OTAL			<u> </u>

ALLOWABLE AREA	
PRIMARY OCCUPANCY CLASSIFICATION	ON(S): BUSINESS — B
ACCESSORY OCCUPANCY CLASSIFIC	ATION(S): <u>Na</u>
INCIDENTAL USES (TABLE 509):	NA
SPECIAL USES (CHAPTER 4 - LIST	CODE SECTION): NA

BASIC BUILDING DATA

CONSTRUCTION TYPE: II-B

SPECIAL PROVISIONS: (CHAPTER 5	- LIST CODE SECTION): NA		
MIXED OCCUPANCY: NO	SEPARATION: O HR.	EXCEPTION:	NO
NON-SEPARATED USE (50	08.3)		

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.

(ACTUAL) INCREASE ^{1, 5} U	(D) /ABLE AREA STORY OR ILIMITED ^{2, 3}
1 B 17,178 23,000 NOT USED	23,000

	AND USE	BLDG. AREA PER STORY (ACTUAL)	TABLE 506.2 ⁴ AREA	AREA FOR FRONTAGE INCREASE ^{1, 5}	ALLOWABLE AREA PER STORY OR UNLIMITED ^{2, 3}
1	В	17,178	23,000	NOT USED	23,000
		_			

				•		
RONTAGE AREA INCRE/	ASES FROM SECTION 50	6.2 ARE COMPUTED TH	US:			
	RONTS A PUBLIC WAY	OR OPEN SPACE HAVIN		MINIMUM W	IDTH =	(F)
3. TOTAL BUILDING PE	·····= · · · · · · · · · · · · · · · ·	(P)				
$C. RATIO (F/P) = \underline{}$		4				
D. W = MINIMUM WIDTH		(W)				
E. PERCENT OF FRONT	AGE INCREASE I _f = 100) [F/P - 0.25] X W/30) =	(%)		

 3 Maximum building area = total number of stories in the building x D (maximum 3 stories) (506.2).

⁴THE 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.

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

²UNLIMITED AREA APPLICABLE UNDER CONDITIONS OF SECTION 507.

*INDICATE SECTION NUMBER PERMITTING REDUCTION

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

BUILDING ELEMENT	FIRE		ATING	DETAIL #	DESIGN #	SHEET # FOR	SHEET #
	SEPARATION DISTANCE (FEET)	REQ*D	PROVIDED (W/* REDUCTION)	AND " SHEET #	FOR RATED ASSEMBLY	RATËD PENETRATION	FOR RATED JOINTS
STRUCTURAL FRAME,							
INCLUDING COLUMNS, GIRDERS, TRUSSES							
BEARING WALLS	<u> </u>	•	•	•	<u> </u>		•
EXTERIOR					<u> </u>		<u> </u>
NORTH					<u> </u>		<u> </u>
EAST					<u> </u>		<u> </u>
WEST			i.		† :		<u> </u>
SOUTH			i.		† :		<u> </u>
INTERIOR			i.		† :		
NON BEARING WALLS AND PARTITIONS		•		•			,
EXTERIOR WALLS	l .				1 .		١.
NORTH	> 30	0	0				
EAST	> 30	0	0				
WEST	> 30	0	0		1.		
SOUTH	> 30	0	0		1.		
INTERIOR WALLS & PARTITIONS			-		1.		
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS							
FLOOR CEILING ASSEMBLY		•	•	•	<u> </u>		•
COLUMNS SUPPORTING FLOORS		•	•	•	<u> </u>		•
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 SEPAR	ATION	•		•	†	•	+
PARTY/FIREWALL SEPARATION	in HOIT	•		•	†	•	+
SMOKE BARRIER SEPARATION		•		•	† ·		<u> </u>
SMOKE PARTITION		•		•	† '	•	<u> </u>
TENANT/ DWELLING UNIT/		•	•	•			·
SLEEPING UNIT SEPARATION							
INCIDENTAL USE SEPARATION							

ERCENTAGE OF WALL OF	PENING 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 SYST	TEM DECLUE	EMENTS .				
EMERGENCY LIGHTING : YE		EMENIS:				
EXIT SIGNS : YES	LS					
FIRE ALARM : NO						
SMOKE DETECTION SYSTEM	IS: NO					
PANIC HARDWARE : NO						
LIFE SAFETY PLAN	N REQUIREM	MENTS:				
LIFE SAFETY PLAN SHEET(-					
☐ FIRE AND/OR SMOKE R		ATIONS (CHAPTER	7) (NA)			
☐ ASSUMED AND REAL PR			(10/0)			
☐ EXTERIOR WALL OPENIN			NCE TO ASSUME	PROPERTY LIN	IES (705.8) (N./	٨.)
OCCUPANCY USE FOR E						
OCCUPANT LOADS FOR				•		
X EXIT ACCESS TRAVEL D	DISTANCES (1017)) (SEE LIFE SAFET	Y PLAN 1/T1)			
COMMON PATH OF TRA		(1006.2.1 & 1006	5.3.2(1)) (SEE LIFI	E SAFETY PLAN 1	/T1)	
DEAD END LENGHTS (10	- ·					
CLEAR EXIT WIDTHS FO						
☑ MAXIMUM CALCULATED	OCCUPANT LOAD	CAPACITY EACH	EXIT DOOR CAN		BASED ON EGRE + @ 0.2" PER OC	
ACTUAL OCCUPANT LOA	AD FOR EACH EX	KIT DOOR (43 OC	CUP.)	(UZ CLIN. WIDTI	I & U.Z FLIN UC	. – 100 000
A SEPARATE SCHEMATI	C PLAN INDICATI	ING WHERE FIRE		ILING AND/OR F	ROOF STRUCTUR	E IS PROVIDED
_ PURPOSES OF OCCUPAI	NCY SEPARATION	I (N.A.)	•	•		
\square location of doors w \square location of doors w				E DELAY (1010	107) (NA)	
LOCATION OF DOORS W					1.3.7) (N.A.)	
			-	(11./1.)		
_	QUIPPED WITH H	OLD-OPFN DEVIC	FS (N.A.)			
LOCATION OF DOORS E			, ,			
LOCATION OF DOORS E	CY ESCAPE WINE	OOWS (1030) (N.A	4.)			
□ LOCATION OF DOORS E □ LOCATION OF EMERGEN □ THE SQUARE FOOTAGE	CY ESCAPE WIND OF EACH FIRE A	OOWS (1030) (N.A. AREA (202) (N.A.) A.)	CLASSIFICATION	I I−2 (407.5) (N.A.)
☐ LOCATION OF DOORS ED LOCATION OF EMERGEN ☐ THE SQUARE FOOTAGE ☐ THE SQUARE FOOTAGE	CY ESCAPE WIND OF EACH FIRE A OF EACH SMOKE	DOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT	A.)) FOR OCCUPANCY		• • •	,
□ LOCATION OF DOORS EDUCATION OF EMERGENUME TOOTAGE □ THE SQUARE FOOTAGE □ NOTE ANY CODE EXCEPTION	CY ESCAPE WIND OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE	OOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M.	A.)) FOR OCCUPANCY AY HAVE BEEN U	ITILIZED REGARD	• • •	•
LOCATION OF DOORS EDUCATION OF EMERGENT THE SQUARE FOOTAGE THE SQUARE FOOTAGE NOTE ANY CODE EXCEPTION TO THE SQUARE DWELL	CY ESCAPE WINE OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS	DOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M.	A.)) FOR OCCUPANCY AY HAVE BEEN U	TILIZED REGARD	ING THE ITEMS	ABOVE (N.A.)
□ LOCATION OF DOORS ED LOCATION OF EMERGEN IN THE SQUARE FOOTAGE IN THE SQUARE FOOTAGE IN NOTE ANY CODE EXCEPT	CY ESCAPE WIND OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE	OOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A UNITS	A.)) FOR OCCUPANCY AY HAVE BEEN U	ITILIZED REGARD	• • •	ABOVE (N.A.)
LOCATION OF DOORS EDUCATION OF EMERGENG THE SQUARE FOOTAGE NOTE ANY CODE EXCEP ACCESSIBLE DWEL TOTAL ACCESSIBLE UNITS REQUIRED	OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS ACCESSIBLE	DOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A	A.) FOR OCCUPANCY AY HAVE BEEN U (SECTION TYPE A	1107) TYPE B	TYPE B	ABOVE (N.A.) TOTAL ACCESSIBLE U
LOCATION OF DOORS EDUCATION OF EMERGENING THE SQUARE FOOTAGE THE SQUARE FOOTAGE NOTE ANY CODE EXCEP ACCESSIBLE DWEL TOTAL ACCESSIBLE UNITS UNITS	CY ESCAPE WIND OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS ACCESSIBLE UNITS	OOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A UNITS	A.) FOR OCCUPANCY AY HAVE BEEN U (SECTION TYPE A UNITS	1107) TYPE B UNITS	TYPE B UNITS	ABOVE (N.A.) TOTAL ACCESSIBLE U
LOCATION OF DOORS EDUCATION OF EMERGENING THE SQUARE FOOTAGE THE SQUARE FOOTAGE NOTE ANY CODE EXCEPTION TO THE SQUARE TO THE SQU	CY ESCAPE WINE OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS ACCESSIBLE UNITS PROVIDED	OOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A UNITS	(SECTION TYPE A UNITS PROVIDED	1107) TYPE B UNITS REQUIRED	TYPE B UNITS	ABOVE (N.A.) TOTAL ACCESSIBLE U
LOCATION OF DOORS EDUCATION OF EMERGENING THE SQUARE FOOTAGE THE SQUARE FOOTAGE NOTE ANY CODE EXCEPTION TO THE SQUARE TO THE SQU	CY ESCAPE WINE OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS ACCESSIBLE UNITS PROVIDED	OOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A UNITS	(SECTION	1107) TYPE B UNITS REQUIRED .	TYPE B UNITS PROVIDED	ABOVE (N.A.) TOTAL ACCESSIBLE U
LOCATION OF DOORS EDUCATION OF EMERGENG THE SQUARE FOOTAGE NOTE ANY CODE EXCEP ACCESSIBLE DWEL TOTAL ACCESSIBLE UNITS REQUIRED NA ACCESSIBLE PARK LOT OR	OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS ACCESSIBLE UNITS PROVIDED TOTAL # OF P	DOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A UNITS REQUIRED	SECTION (SECTION TYPE A UNITS PROVIDED (SECTION	1107) TYPE B UNITS REQUIRED 1106)	TYPE B UNITS PROVIDED	ABOVE (N.A.) TOTAL ACCESSIBLE U PROVIDED
LOCATION OF DOORS EDUCATION OF EMERGENG THE SQUARE FOOTAGE NOTE ANY CODE EXCEPTION TOTAL UNITS REQUIRED NA ACCESSIBLE DWEL TOTAL ACCESSIBLE UNITS REQUIRED NA ACCESSIBLE PARK	CY ESCAPE WINE OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS ACCESSIBLE UNITS PROVIDED CING	OOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A UNITS REQUIRED	(SECTION TYPE A UNITS PROVIDED (SECTION TYPE A UNITS PROVIDED (SECTION # OF ACC REGULAR WITH 5'	1107) TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED ACES WITH	ABOVE (N.A.) TOTAL ACCESSIBLE U PROVIDED TOTAL # ACCESSIBL
LOCATION OF DOORS EDUCATION OF EMERGENG THE SQUARE FOOTAGE NOTE ANY CODE EXCEP ACCESSIBLE DWEL TOTAL ACCESSIBLE UNITS REQUIRED NA ACCESSIBLE PARK LOT OR	CY ESCAPE WINE OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS ACCESSIBLE UNITS PROVIDED TOTAL # OF P REQUIRED	DOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A UNITS REQUIRED	SECTION (SECTION TYPE A UNITS PROVIDED (SECTION	1107) TYPE B UNITS REQUIRED 1106)	TYPE B UNITS PROVIDED	ABOVE (N.A.)
LOCATION OF DOORS EDUCATION OF EMERGENING THE SQUARE FOOTAGE THE SQUARE FOOTAGE NOTE ANY CODE EXCEP ACCESSIBLE DWEL TOTAL ACCESSIBLE UNITS REQUIRED NA ACCESSIBLE PARK LOT OR	CY ESCAPE WINE OF EACH FIRE A OF EACH SMOKE PTIONS OR TABLE LING UNITS ACCESSIBLE UNITS PROVIDED TOTAL # OF P REQUIRED	DOWS (1030) (N.A. AREA (202) (N.A. E COMPARTMENT E NOTES THAT M. TYPE A UNITS REQUIRED	(SECTION TYPE A UNITS PROVIDED (SECTION TYPE A UNITS PROVIDED (SECTION # OF ACC REGULAR WITH 5'	1107) TYPE B UNITS REQUIRED . 1106) ESSIBLE SPACE: VAN SP/ 132" ACCESS	TYPE B UNITS PROVIDED S PROVIDED ACES WITH 8' ACCESS	ABOVE (N.A.) TOTAL ACCESSIBLE U PROVIDED TOTAL # ACCESSIBLI

WATERCLOSETS URINALS LAVATORIES

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

WIND BASE SHEARS (FOR MWFRS) Vx = 24.0k Vy = 66.0k

SPECTRAL RESPONSE ACCELERATION S_S $\frac{20.6}{N/A}$ % g S $\frac{9.4}{10}$ % G S $\frac{9.4}{10}$

DATA SOURCE: N/A FIELD TEST PRESUMPTIVE HISTORICAL DATA BASIC STRUCTURAL SYSTEM

SEISMIC DESIGN CATEGORY: \(\text{N/A} \) \(\text{D} \) B \(\text{D} \) C \(\text{D} \) PROVIDE THE FOLLWING SEISMIC DESIGN PARAMETERS: \(\text{L} \) OCCUPANCY CATEGORY (TABLE 1604.5)

SEISMIC BASE SHEAR Vx = 33.3k Vy = 33.3k

ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE

ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? NO

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

SPECIAL APPROVALS

STRUCTURAL DESIGN

BUILDING FRAME

LATERAL DESIGN CONTROL:

SOIL BEARING CAPACITIES:

PILE SIZE, TYPE, AND CAPACITY ____

PRESUMPTIVE BEARING CAPACTY 2,000 PSF.

DESIGN LOADS:

LIVE LOADS :

CAMERON COMMERCIAL SHELL BUILDING

2285 NC HWY 24-87 CAMERON, NC

REQUIRED TO MEET THE ENERGY COD FURNISH THE REQUIRED PORTIONS OF SHEET. IF PERFORMANCE METHOD, ST	IARY ISIDERED MINIMUM AND ANY SPECIAL ATTRIBUTE DE SHALL ALSO BE PROVIDED. EACH DESIGNER SHALL F THE PROJECT INFORMATION FOR THE PLAN DATA TATE THE ANNUAL ENERGY COST FOR THE STANDARD RGY COST FOR THE PROPOSED DESIGN.	
Existing building envelope complies w	rith code: YES (The remainder of this section is not applicab	ole.)
Exempt Building: YES X NO	_ NO	
Climate Zone: 4A		
Method of Compliance: PRESCIPT	1VE	
•	r" specify source here)	
U-VALUE OF TOTAL ASSEMBLY: R-VALUE OF INSULATION: SKYLIGHTS IN EACH ASSEMBLY: U-VALUE OF SKYLIGHT:	METAL ROOF W/ ENERGY SAVER INSULATION SYSTEM 0.037 . NA	
Exterior Walls (each assembly):		
DESCRIPTION OF ASSEMBLY: U-VALUE OF TOTAL ASSEMBLY:		
_	R-19 IN STUDS, R-7.5 CONT. INSUL.	
OPENINGS (WINDOWS OR DOORS W U-VALUE OF ASSEMBLY: <u>0.4</u> SOLAR HEAT GAIN COEFFICE	50, 0.70	
PROJECTION FACTOR: 0.38		
LOW-e REQUIRED, IF APPLI		
DOOR R-VALUES:		
Walls below grade (each assemb	••	
	NA 	
R-VALUE OF INSULATION:		
Floors over unconditioned space	<u> </u>	
U-VALUE OF TOTAL ASSEMBLY:	·	
Floors slab on grade (each asse DESCRIPTION OF ASSEMBLY:	embly): 4" CONC W/ VAPOR BARRIER	
U-VALUE OF TOTAL ASSEMBLY:	<u> </u>	
R-VALUE OF INSULATION:		
•	24" OR TO TOP FOOTING NA	
DESIGNER STATEMENT: 1		
	AND BELIEF, THE DESIGN OF THIS BUILDING VELOPE REQUIREMENTS OF THE NORTH CAROLINA (-ENERGY.	
SIGNED:		
NAME: STEVEN M. URENA TITLE. ARCHITECT		

ELECTRICAL SYSTEM AND EQUIPMENT:

METHOD OF COMPLIANCE: N.A.

METHOD OF COMPLIANCE: SEE ELECTRICAL DRAWINGS

MECHANICAL SYSTEMS, SERVICE AND EQUIPMENT:

INDEX OF DRAWINGS

T1 - TITLE & BUILDING CODE SUMMARY

T2 U.L. DETAIL

A1 FLOOR PLAN & ROOF PLAN A2 DETAILS & WINDOW ELEVATIONS A3 EXTERIOR ELEVATIONS A4 WALL SECTIONS

ARCHITECTURAL DRAWINGS

A6 WALL SECTIONS

A5 WALL SECTIONS

PLUMBING DRAWINGS P1 PLUMBING FLOORPLANS P2 PLUMBING DETAILS

ELECTRICAL DRAWINGS

E1 ELECTRICAL COVER SHEET E2 ELECTRICAL PLAN E3 RISER & SCHEDULES

STRUCTURAL FOUNDATION DRAWINGS

SO GENERAL NOTES S1 FOUNDATION PLAN & DETAILS S2 WALL FRAMING PLAN

S3 WALL SECTIONS

S4 WALL SECTIONS S5 WALL SECTIONS

STRUCTURAL STEEL DRAWINGS SEE AMERICAN BUILDINGS STEEL DWGS.

SITE DRAWINGS

SEE SITE PLAN DWGS.

REVISIONS

BUILDING CODE SUMMARY

JUNE 7 - 2022

2116-T-HC

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FIRE AREA 'A' = 10,830 S.F. FIRE AREA 'B' = 6,348 S.F. (B) 17,178 S.F. 1 OCCUP./ 100 GROSS S.F = 171 OCCUP. 171 TOTAL OCCUPANTS

galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly 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. ALLSTEEL & GYPSUM PRODUCTS INC Type SUPREME D24/30EQD and CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV Type QUAIL RUN BUILDING MATERIALS INC Type SUPREME D24/30EQD and SCAFCO STEEL STUD MANUFACTURING CO Type SUPREME D24/30EQD STEEL CONSTRUCTION SYSTEMS INC Type SUPREME D24/30EQD and UNITED METAL PRODUCTS INC Type SUPREME D24/30EQD and Type

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) galvo steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than CLARKDIÉTRICH BUILDING SYSTEMS - CD ProSTUD DMFCWBS L L C - 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 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 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. ELLING INDUSTRIES L L C - TRUE-STUD

21. Framing Members∗ – Steel Studs – (As an alternate to Item 2, For use with Items 50 or 51 or 5K) - Proprietary channel shaped study 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 hment of gypsum board only. TELLING INDUSTRIES L L C - Viper25 2J. Framing Members* - Metal Studs - Not Shown - In lieu of Item 2

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 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

- proprietary channel shaped steel studs, min depth as indicated under

a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than EB METÁL 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

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 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

STEEL INVESTMENT GROUP L L C — AlphaSTUD 20. 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 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 gths 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 10, 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 4. Batts and Blankets* (Required as indicated under Item 5) Mineral

wool batts, friction fitted between studs and runners. Min nom thickness See Batts and Blankets (BKNV or BZJZ) Categories for names of 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

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 Burnina Characteristics and/or Fire See Batts and Blankets (BKNV or BZJZ) Categories for names of 4C. Fiber, Sprayed* (Optional) and as an alternate to Batts and ankets (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** (CCA AMERICAN ROCKWOOL MANUFACTURING, LLC Type Rockwool Premium 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. ioints and horizontal butt joints on opposite sides of study 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

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

USG BORAL DRYWALL SFZ LLC 1/2 in. Type C; 5/8 in. Types C, SCX, 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 escribed 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 **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 mbly. 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 stee 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 avosum 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

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 beyeled, square or capered 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 penetrate through both the stud and the track at the same time Vertical joints are to be centered over study and staggered one stud

(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 utlined under section VI of Volume 1 in the Fire Resistive Directory. UNITED STATES GYPSUM CO - Type SCX, SGX.

USG MEXICO S A DE C V - Type SCX **5D.** Gypsum Board* - (As an alternate to Item 5) - 5/8 in. thick, 48 wide, applied vertically or horizontally. Secured as described in Item . For use with Items 1 and 2 only. **JNITED STATÉS GYPSUM CO** - Type USGX

USG BORAL DRYWALL SFZ LLC - Type USGX **JSG MEXICO S A DE C V** - Type ÚŠGX **5E.** Gypsum Board∗ - (Not Shown) - (As an alternate to Item 5 when sed 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 avosum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud avity on opposite sides of studs. Wallboard secured to studs with -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

NEW ENGLAND LEAD BURNING CO INC, DBA NELCO - Nelco **5F.** Gypsum Board∗ - (As an alternate to Item 5) - For use with Items 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. l stud depth shall be a minimum 3—5/8 in

UNITED STATES GYPSUM CO - 5/8 in. thick Type SCX, SGX JSG BORAL DRYWALL SFZ LLC - 5/8 in. thick Type SCX, SGX iG. Gypsum Board∗ - (As an alternate to Item 5) - For use with tems 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. he thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings

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

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 JSG 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

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 eveled, 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. JNITED STATES GYPSUM CO - 5/8 in. thick Type SCX, SGX JSG 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 study as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides o studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing.

he thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings 51. Gypsum Board* (As an alternate to Item 5) Nom. 5/8 in. thick

gypsum panels with beveled, square or tapered edges installed as scribed in Item 5. Steel stud minimum depth shall be as indicated in UNITED STATES GYPSUM CO Type ULX

Horizontal edgé 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.

USG MEXICO S A DE C V Type ULX **5J.** Gypsum Board* (Not Shown) (As an alternate to Item 5 when ed 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 study and staggered min 1 stud avity on opposite sides of studs. Wallboard secured to studs with -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%

RADIATION PROTECTION PRODUCTS INC Type RPP - Lead Lined Drywall **5K.** Gypsum Board* (Not Shown) (As an alternate to Item 5) Nom. /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 djacent 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

rs (multilayer systems) need not be staggered. The number of layers the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows: Gypsum Board Protection on Each Side of Wall						
Min Stud Depth, in. ing, Hr. Items 2E Min Thkns Insulation (Item 4)						
	3-5/8	1 layer, 5/8 in. thick	3-1/2 in.			
	1-5/8	2 layers, 5/8 in. thick	Optional			
	1-5/8	3 layers, 5/8 in. thick	Optional			
	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 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, D-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, 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 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 n thick products aré 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, /allboard 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 o 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 MAYCO INDUSTRIES INC Type X-Ray Shielded Gypsum6. 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 r 1/2 in., 5/8 in. thick panels, spaced 24 in. OĆ. Third layer- 2 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 pelow. **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 n., 5/8 in. thick panels, spaced 24 in. OĆ. Third láyer— 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

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-12steel 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:

i. 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 study. Channels secured to study as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use 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 study 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 study 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), **7B.** Framing Members* (Optional, Not Shown) As an alternate to Item ', 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 em 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 study with two No. 8 \times 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction 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 ing 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

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

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 study. Channels secured to study as described in tem 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 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. urring channels are friction fitted into clips STUDCO BUILDING SYSTEMS RESILMOUNT Sound Isolation Clips — Type

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 advanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with 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 iming Members as described below: Resilient Channels Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described 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 illient channels as described in Item 5. Not for use with Item 5A and

Steel Framing Members* Used to attach resilient channels (Item 'Fa) to studs. Clips spaced 48 in. OC., and secured to studs with No. $8 \times 2-1/2$ in coarse drywall screw through the center hole Resilient

channels are secured to clips with one No. 10 x 1/2 in. pan-head KEENE BUILDING PRODUCTS CO INC Type RC+ Assurance Clip 8. Joint Tape and Compound Vinyl or casein, dry or premixed joint ompound 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

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 par 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 ptional 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. 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 ptional at remaining stud locations. **12. Lead Discs or Tabs** (Not Shown, For Use With Item 5B) Used in ieu 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 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. 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 from 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-201

Grade "C". Lead tabs may be held in place with standard adhesive tape * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada),

respectively.

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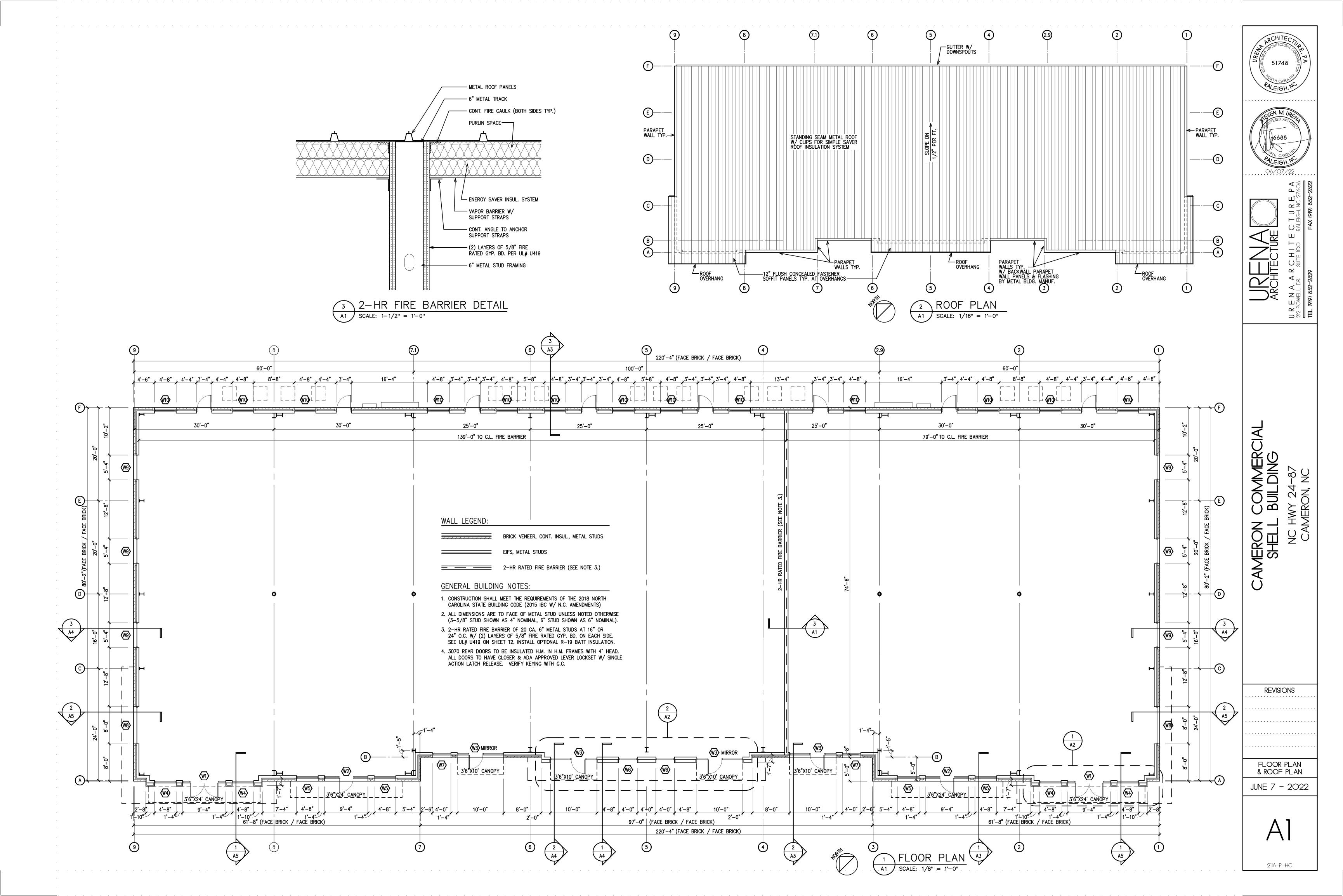
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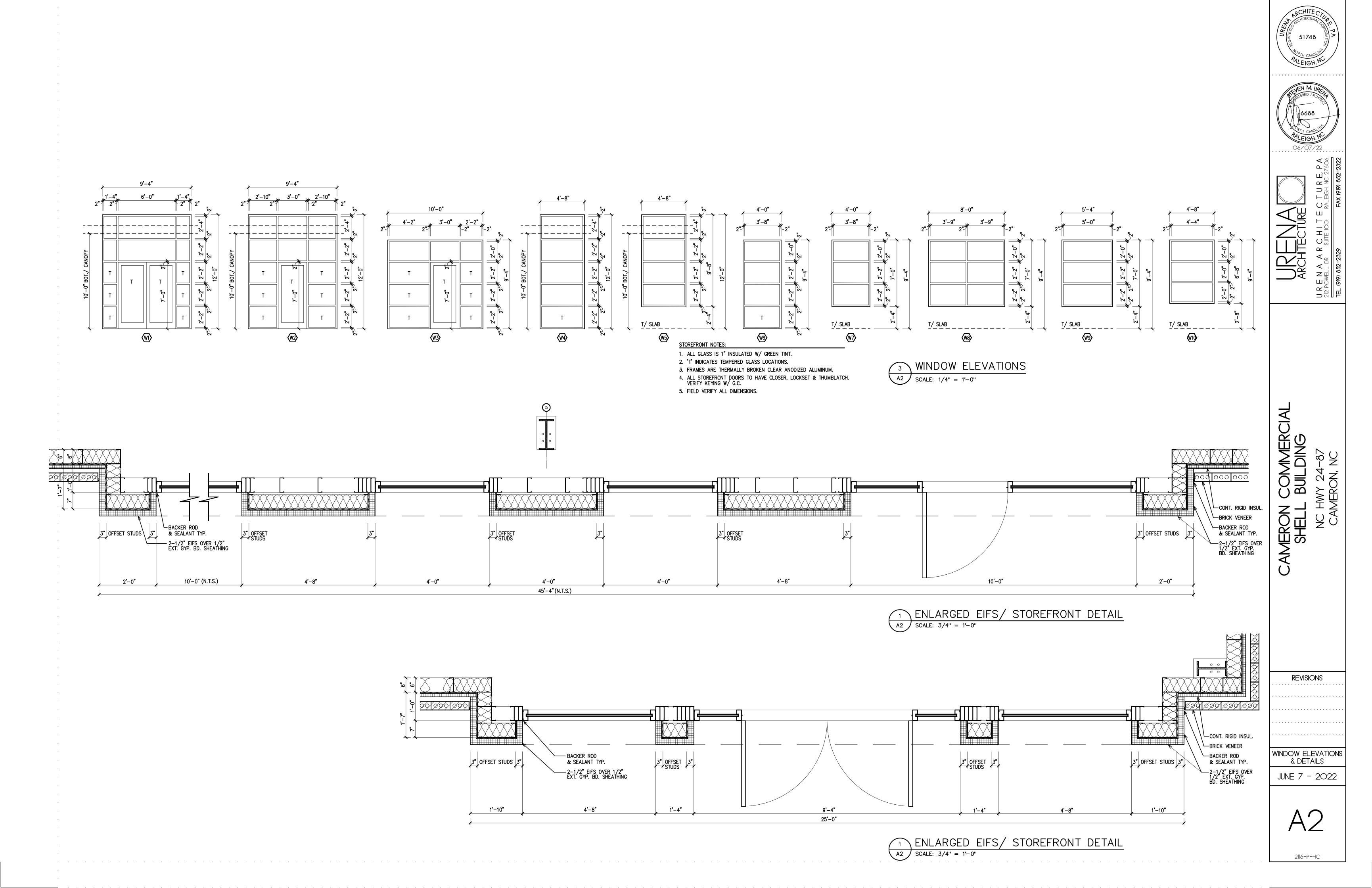
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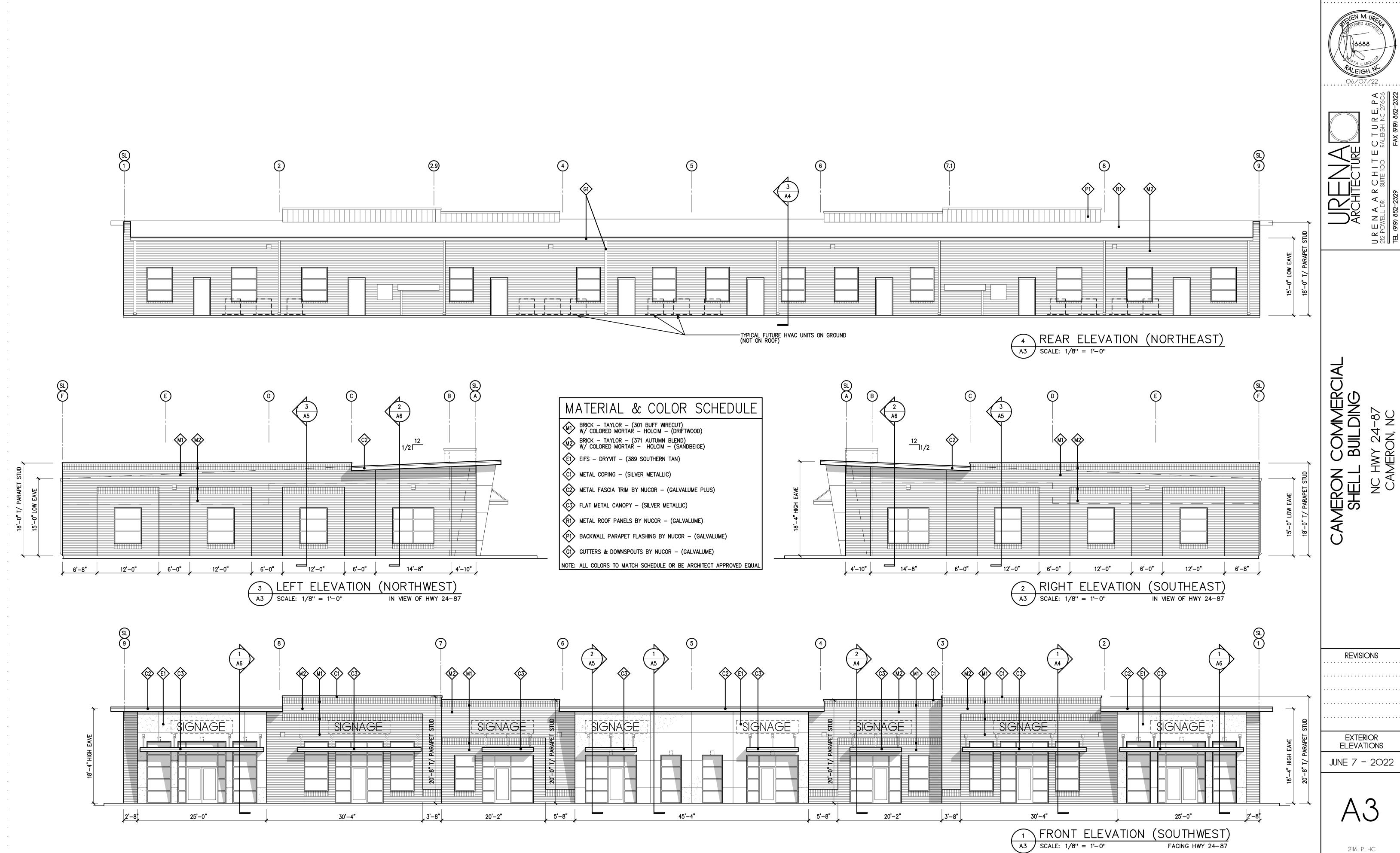
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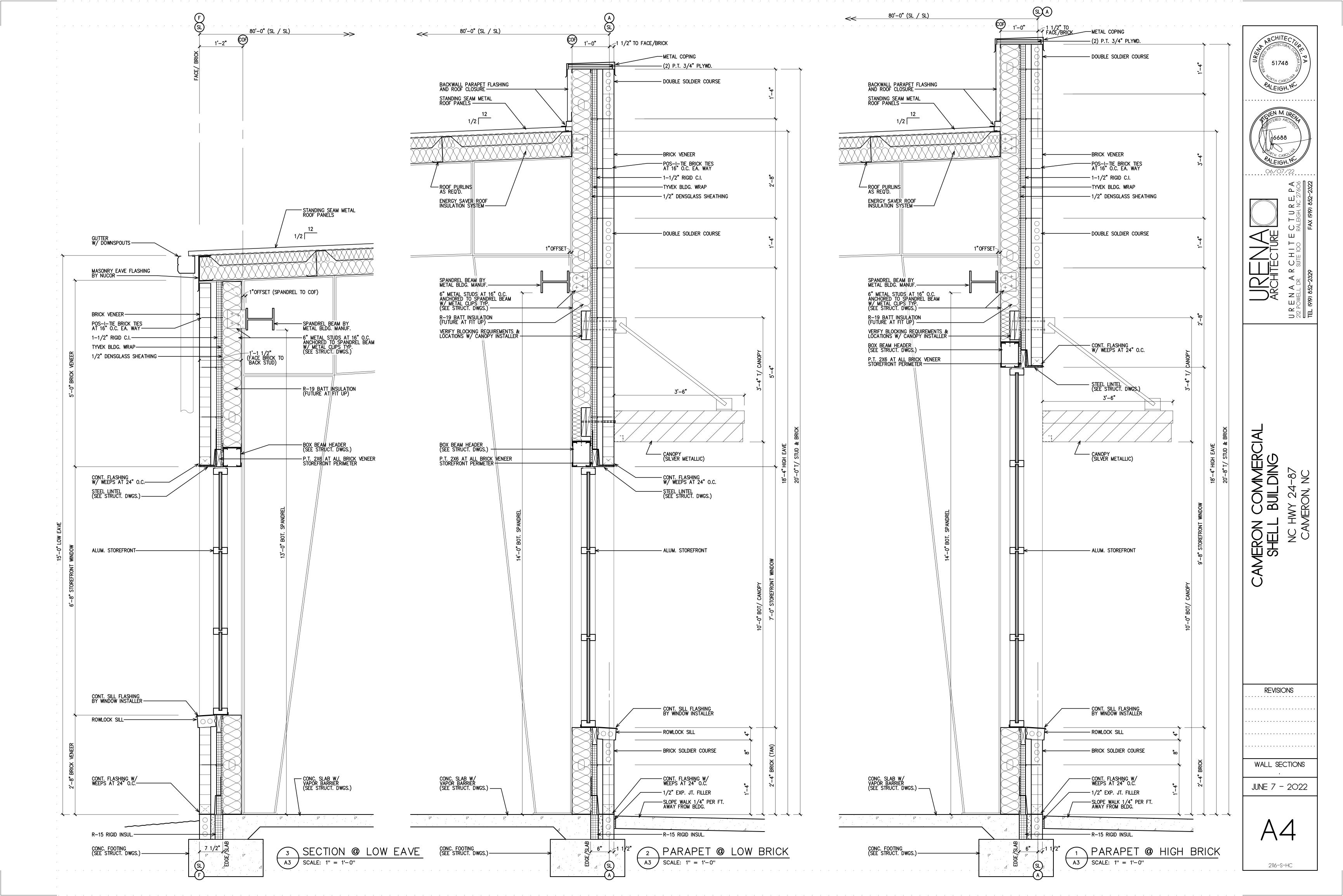


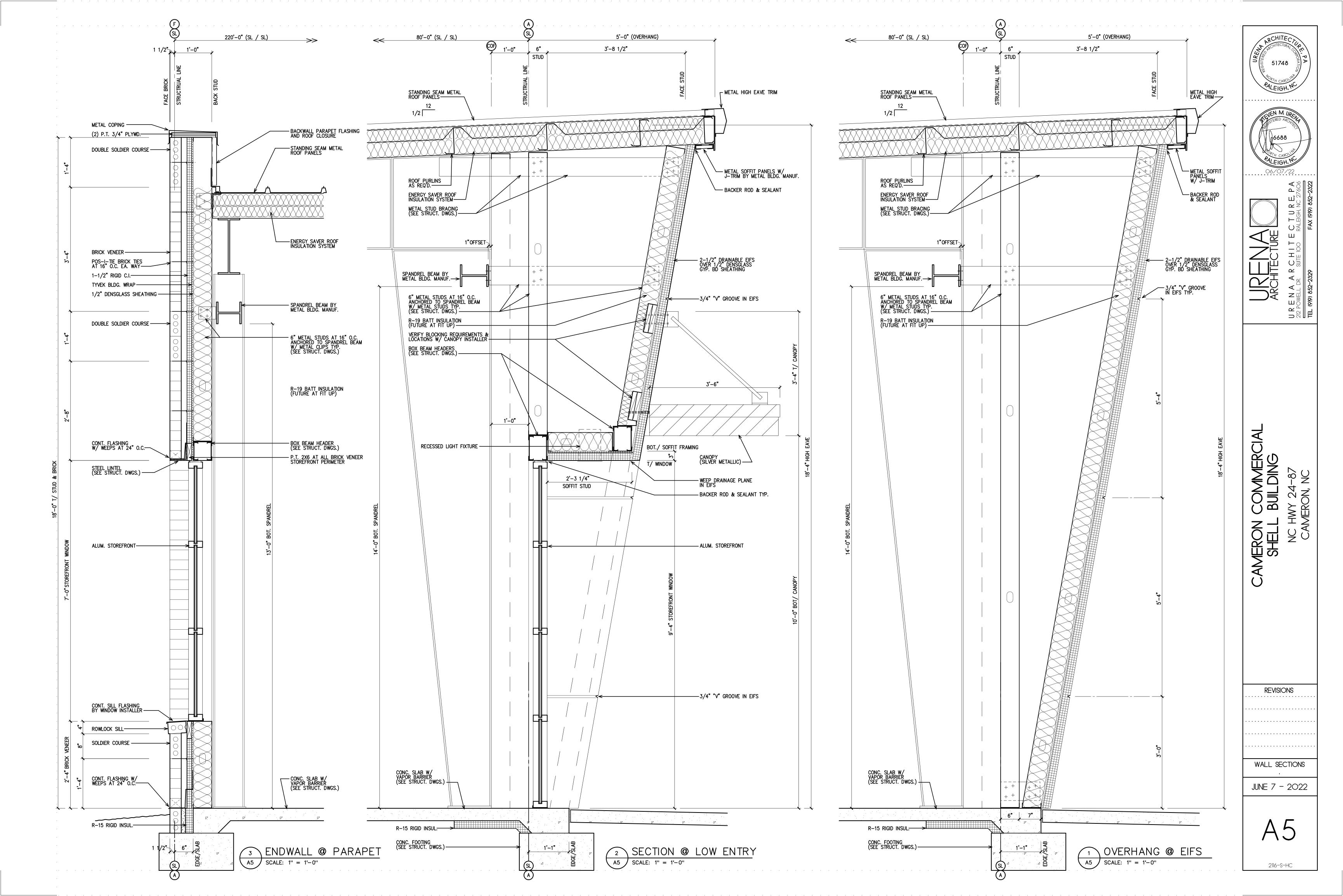


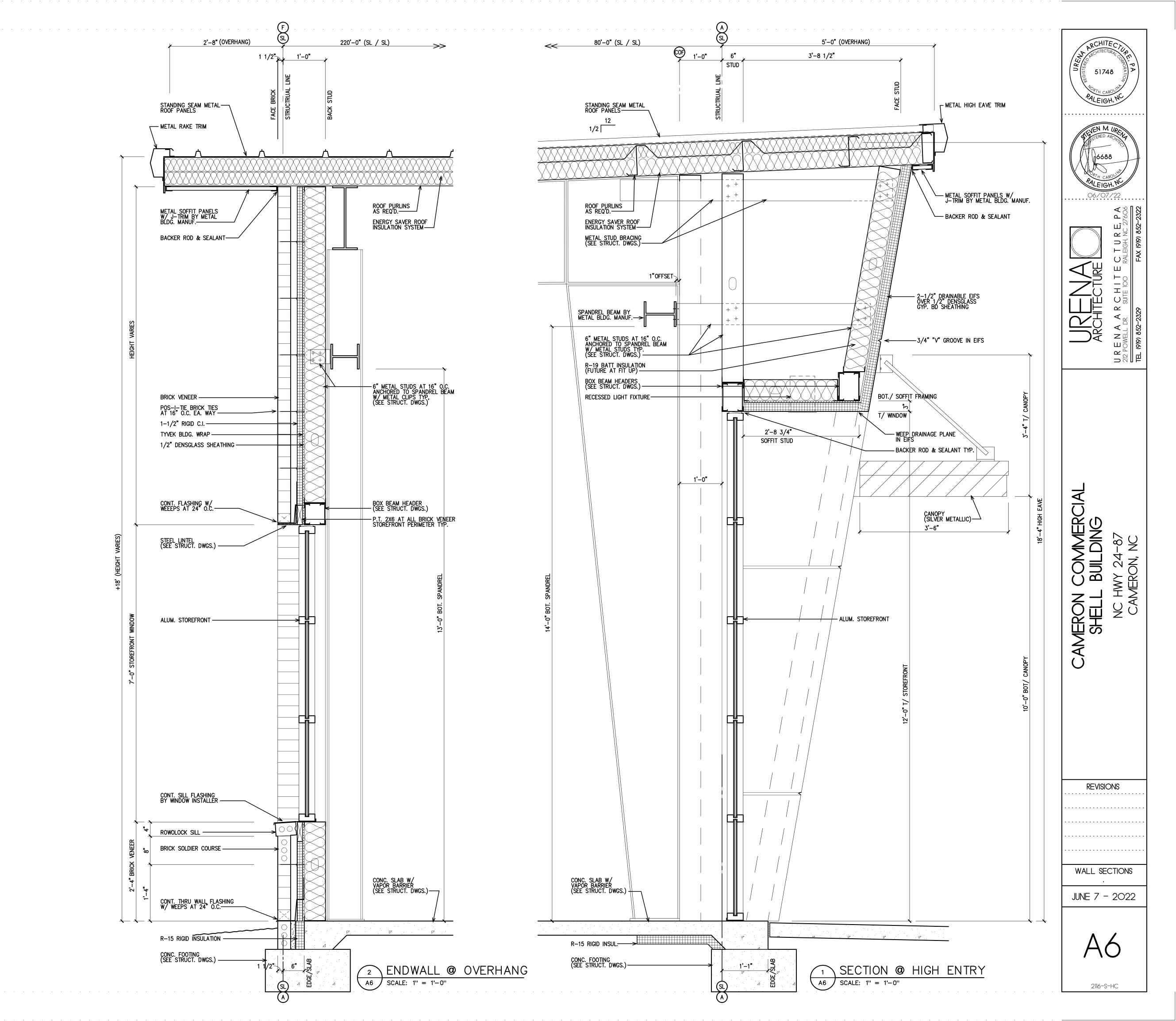


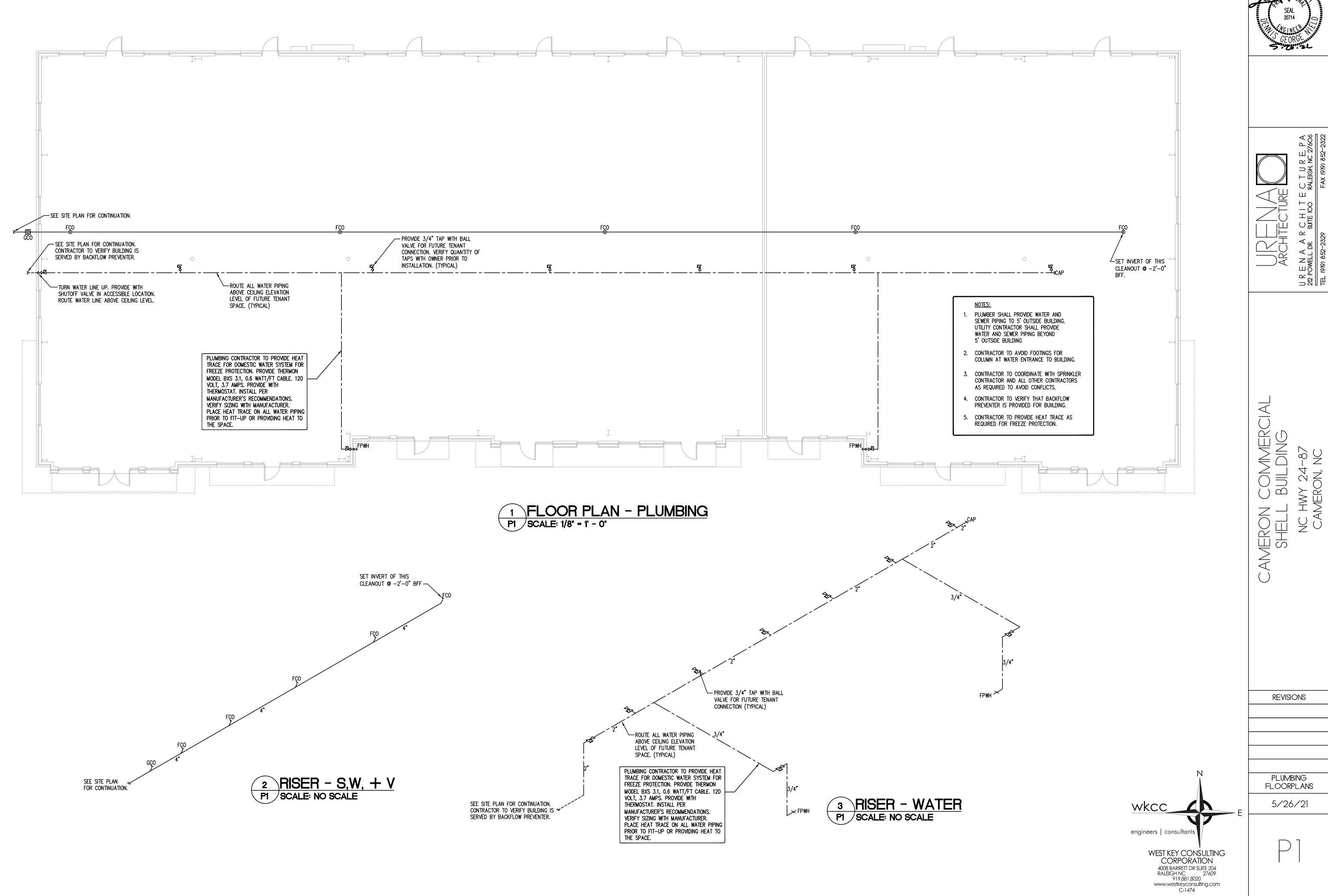


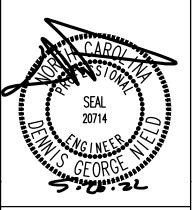












PLUMBING SPECIFICATIONS

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 PLÚMBING 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 VALVË 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.

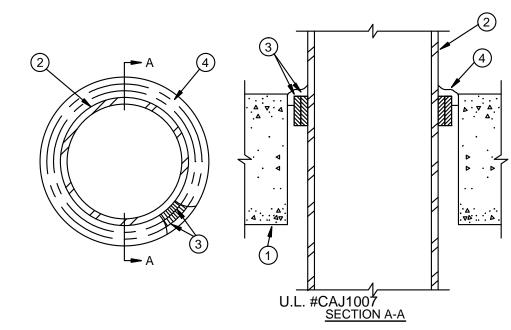
20.) THE ENTIRE DOMESTIC WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH 2018 NORTH CAROLINA PLUMBING CODE.

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 FIXTURES AND EQUIPMENT						
	PIPE SERVICE AND CONN. SIZE						
MARK	DESCRIPTION	CW HW WASTE		WASTE	FIXTURE SPECIFICATIONS		
FPWH	FREEZE PROOF WALL HYDRANT	$1 \ \lambda / \Delta \ 1$					



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+

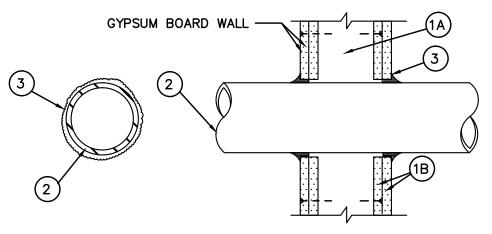
CMU WALLS AND FLOORS ONLY 1 2,3 OR 4 HOUR PENETRATION FIRESTOP P2 SCALE: NONE

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 FLOOR DRAIN - TYPE (SEE SCHEDULE) FD - A H.B. HOSE BIBB FREEZE PROOF WALL HYDRANT H.D. HUB DRAIN INV. ELEV. OR I.E INVERT ELEVATION PLUMBING CONTRACTOR VENT THROUGH ROOF V.T.R. COMMON VENT <u>EOCV</u> END OF CIRCUIT VENT <u>BOCV</u> BEGINNING OF CIRCUIT VENT CONNECT TO EXISTING

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				
FC0	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					

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

<u>Wall Assembly</u> — 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. <u>Through-Penetrant</u> - 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. <u>Iron Pipe</u> — 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.

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

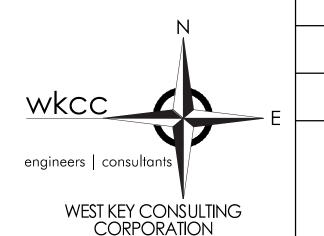
Fill, Void or Cavity Material* - Caulk or Sealant - Min 5/8., 1-1/4,1-7/8 and 2-1/2 in. (16, 32, 48 and 64 mm) thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. (6 mm) diam bead of caulk applied to gypsum board/penetrant 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	Γ	I
or Conduit	Rating	Rating
Diam In (mm)	Hr	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

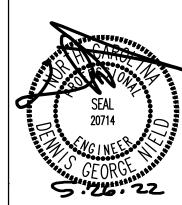
+When copper pipe is used, T Rating is 0 h.

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

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



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



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-87 N C HWY 24-AMERON, 1 AMERON SHELL

REVISIONS

PLUMBING DETAILS 5/26/21

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
- 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.
- 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.

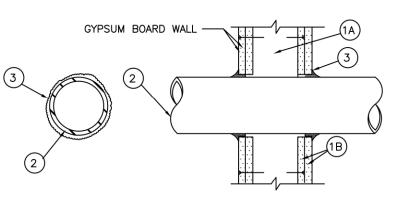
SWITCHGEAR, PANELS, ETC.

- 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
- 33. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 3 COPIES OF SHOP DRAWINGS FOR LIGHTS,
- 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).

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.

E1 SCALE: NTS



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	

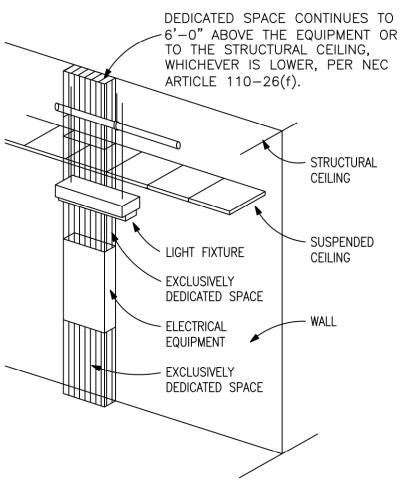
When copper pipe is used, T Rating is 0 h # 0 to 1-1/2 in. annular space applies only when Type CP-25 WB+ caulk is used.

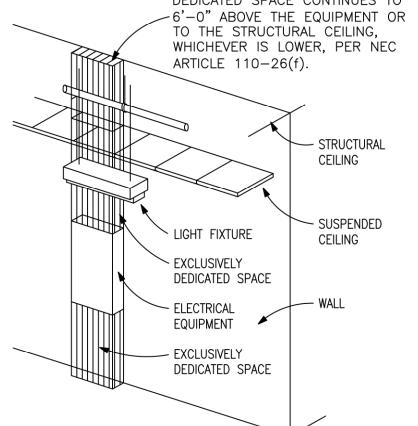
*Bearing the UL Classification Marking

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).

4 RATED WALL PENETRATION DETAIL E1 /SCALE: NTS

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





DEDICATED SPACE FOR ELECTRICAL EQUIPMENT

HP HORSEPOWER

IMC INTERMEDIATE METAL CONDUIT

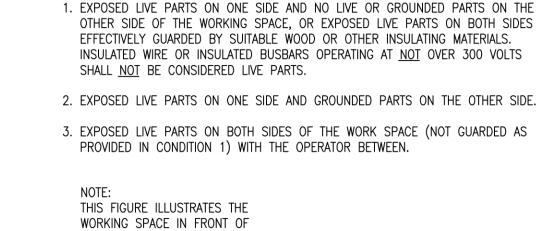


TABLE "A"

WORKING CLEARANCES

CONDITION:

VOLTAGE TO GROUND, NOMINAL

WHERE THE "CONDITIONS" ARE AS FOLLOWS:

ELECTRIC EQUIPMENT REQUIRED

BY SECTION 110.16 OF THE

NATIONAL ELECTRICAL CODE.

0 - 150

151-600

MINIMUM CLEAR DISTANCE (FEET)

3 1/2

30" MINIMUM OR WIDTH OF EQUIPMENT WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT \setminus E1 ig/SCALE: NTS

ELECTRICAL SYSTEM AND EQUIPMENT (SECTION C405)

LAMP TYPE REQUIRED IN FIXTURE

NUMBER OF LAMPS IN FIXTURE

TOTAL WATTAGE PER FIXTURE

ADDITIONAL EFFICIENCY PACKAGE OPTIONS

BALLAST TYPE USED IN FIXTURE

NUMBER OF BALLASTS IN FIXTURE

SECTION C405.1

TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED: N/A-FUTURE

☐ C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE

☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

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

ANGUS M. CLARK PE

ELECTRICAL ENGINEER

☐ C406.3 REDUCED LIGHTING POWER DENSITY

☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM

☐ C406.5 ON—SITE RENEWABLE ENERGY

☐ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS

TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED: 0.8kW VS 1.7kW

SEE LIGHTING

FIXTURE SCHEDULE

METHOD OF COMPLIANCE

LIGHTING SCHEDULE

DESIGNER STATEMENT:

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

WALL MOUNTED DUAL TECH OCCUPANCY SENSOR SWITCH (LINE VOLTAGE)

1"C TELEPHONE/DATA STUB-UP

PHOTOCELL, MOUNT WITH SENSOR FACING NORTH, EXACT LOCATION TO BE DETERMINED

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.



CARY NORTH CAROLINA 27518

NCBEES C-2726

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CEILING

SUSPENDED

CEILING

LIGHT FIXTURE

EQUIPMENT

· EXCLUSIVELY

EQUIPMENT

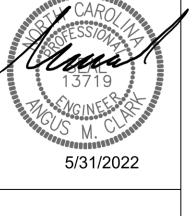
DEDICATED SPACE

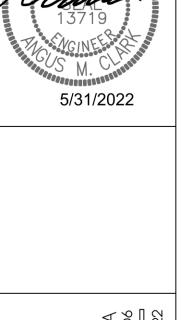
PLANE OF FRONT

EDGE OF ELECTRIC



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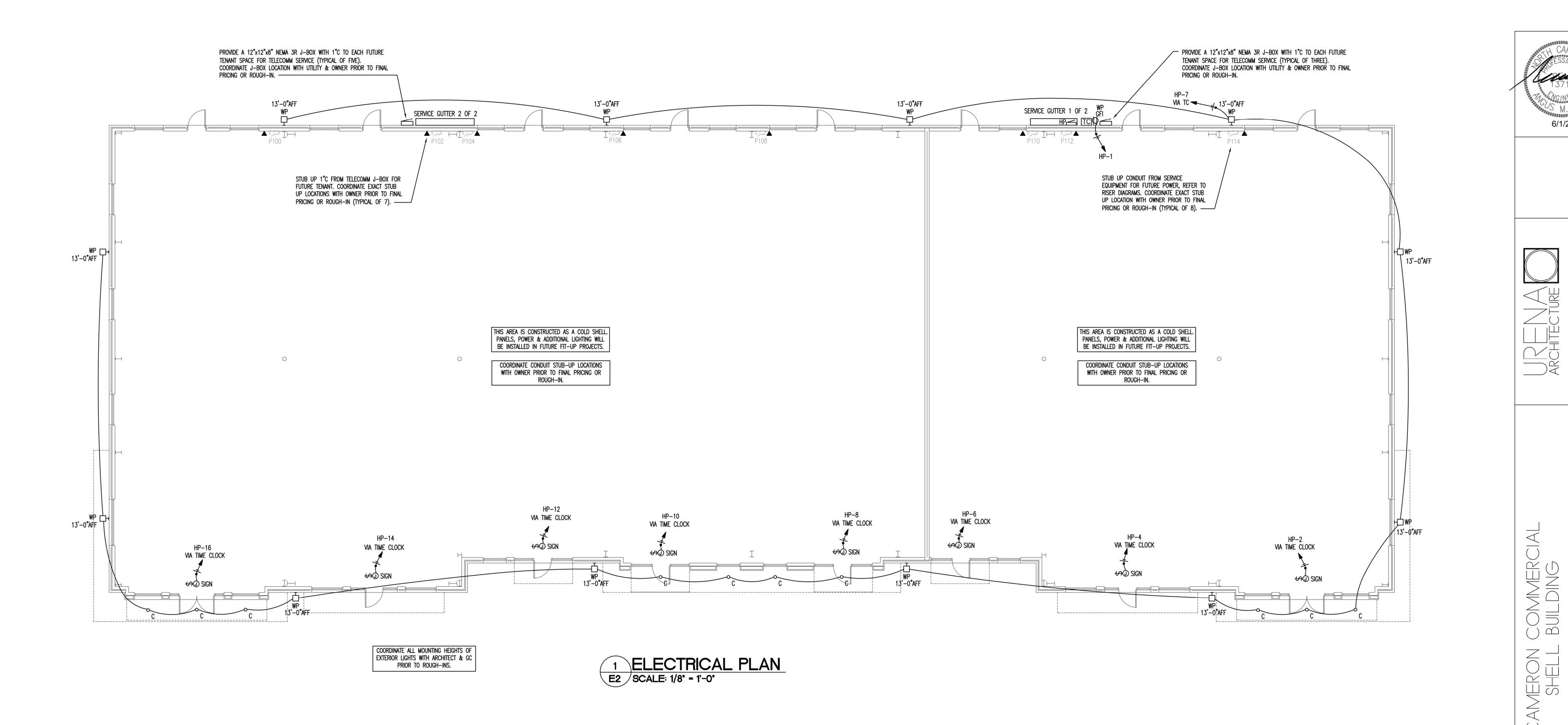
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REVISIONS

ELECTRICAL COVER SHEET 5/31/21

2007-P

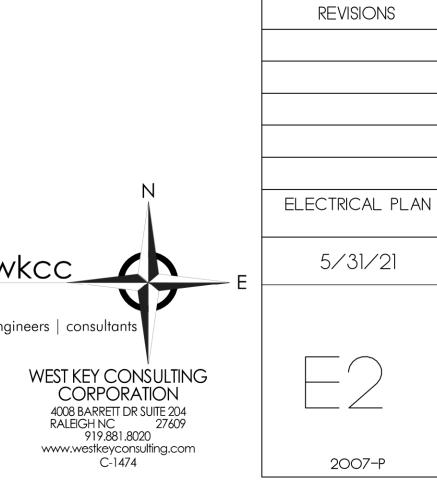


LUMINAIRE SCHEDULE								
CALLOUT	SYMBOL	DESCRIPTION	MODEL	LAMP	INPUT WATTS	VOLTS	MOUNTING	NOTE 1
С	0	6" ROUND LED DOWNLIGHT	HEW 6DR-L20-8-35-DIM-UNV-0-W-CS-MWT	LED	19	120V 1P 2W	RECESSED	IN FLAT EIFS SOFFIT (SEE ARCHITECTURAL WALL SECTIONS)
WP	-	WALL MOUNTED LIGHT	LITHONIA WSQLED-P2-40K-SR3-MVOLT-DNAXD *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.

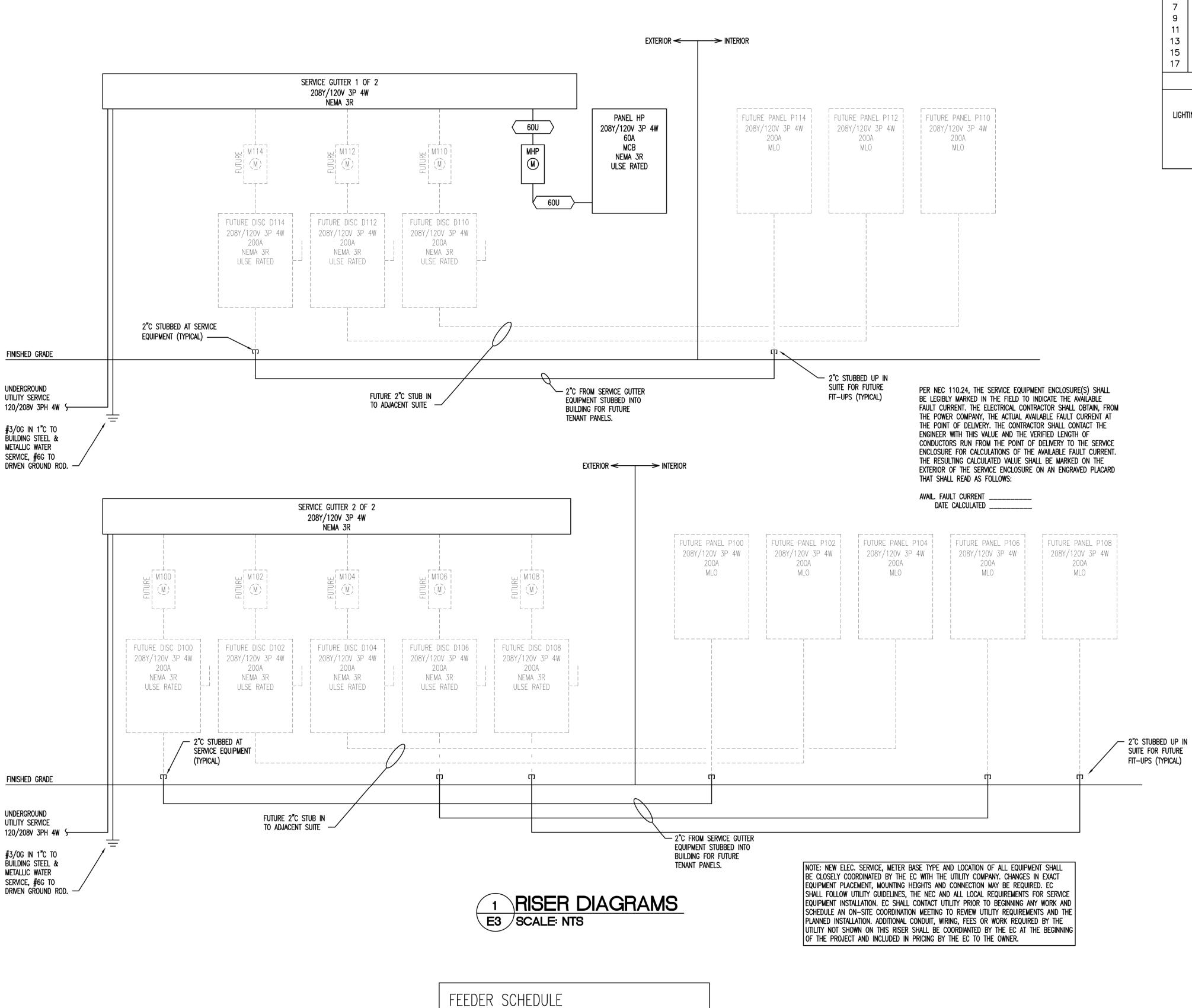






6/1/2022

R C H I T SUITE 100



CONDUIT AND FEEDER

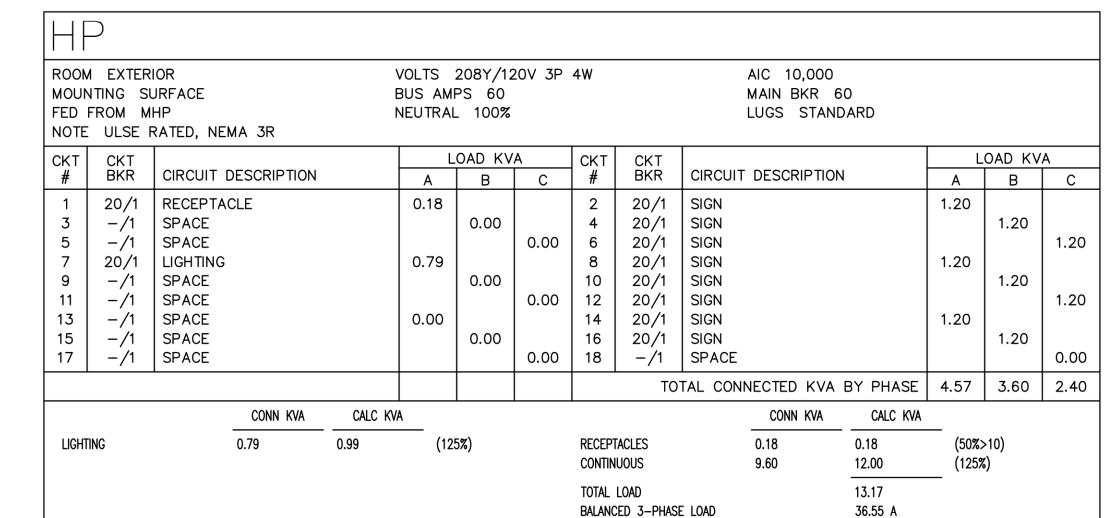
1"C,3#4,#4N

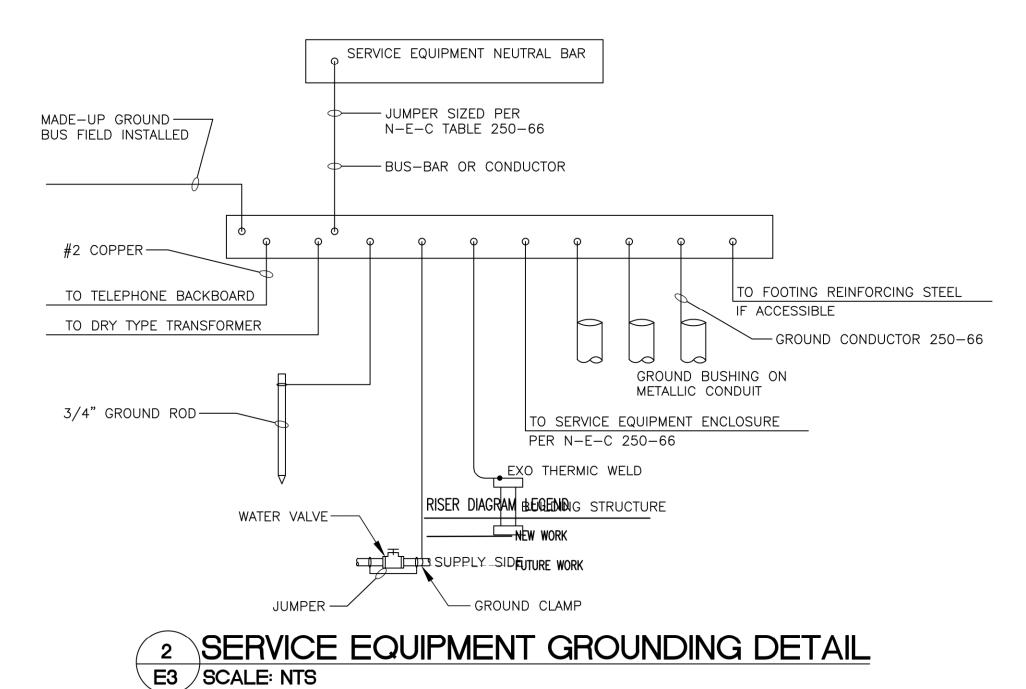
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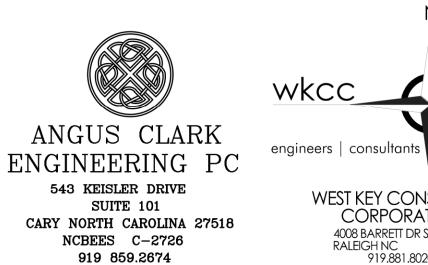
60U

FEEDER AMPS

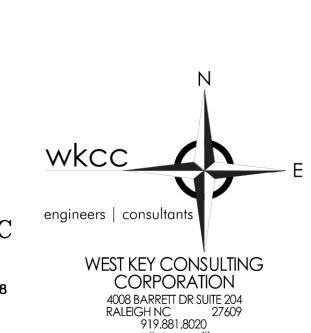
SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE





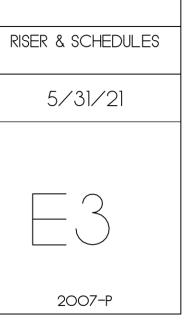


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REVISIONS

5/31/2022

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C H SUITE

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COMMERCIAL Building

-87 NC

GENERAL NOTES

- I. 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

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

Analysis Procedure Simplified X Equivalent Laterial Force Modal

Architectural, Mechanical, Components anchored? No

Seismic base shear $Vx = \overline{33.3K}$ Vy = 33.3K

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

I. 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

- I. 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-3 | 8: "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" ± "	ASTM C33	3
SLAB ON GRADE	3000	145	4" ± "	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
- 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
- 7. UNLESS SPECIFIED OTHERWISE IN THE SPECIFCATION, TESTING OF CONCRETE SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF ACI 3 | 8 SECTION 5.6 "EVALUATION AND ACCEPTANCE OF CONCRETE."
- 8. THE FOLLOWING PROCEDURES SHALL MEET THE REQUIREMENTS OF THE REFERENCED CODE SECTIONS

STRUCTURAL CONCRETE MEMBER SUCH AS BEAMS, WALLS, SLABS, COLUMNS OR FOOTINGS.

PROCEDURE	REFERENCE SECTION
PREPARATION	ACI 304 - "GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"
CONVEYING	ACI 3 8 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

- I. REINFORCING STEEL SHALL BE NEW BILLET STEEL, DEFORMED BARS CONFORMING TO ASTM AG I 5, 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 3 | 8 AND "THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES." ACI 3 | 5.
- 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

	IIMUM CONCRETE COVERAGE SHALL BE AS FOLLOWS. ALL BE THE OUTERMOST FACE OF THE ELEMENTS.	IF STIRRUPS,	TIES OR SPIRALS ARE USED, COVERAG
	FOOTINGS, CAISSONS, AND OTHER MEMBERS WHERE CONCRETE IS DEPOSITED AGAINST SOIL (EXCEPT SLABS ON GRADE.)		3"
В.	CONCRETE EXPOSED TO WEATHER OR SOIL #6 BAR AND LARGER: #5 BAR AND SMALLER:		2" 1 ½"
C.	CONCRETE NOT EXPOSED TO WEATHER OR SOIL (SLABS, WALLS, JOISTS) #14 BAR AND LARGER #11 BAR AND SMALLER		½" 3" 4

- 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

- I. 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. I "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. I 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
М	N/A	2500 PSI
5	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 AG I 5 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

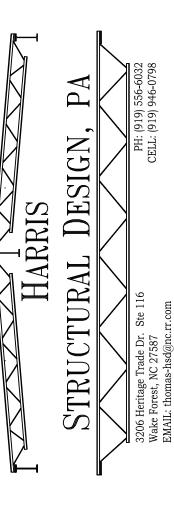
I. ALL STRUCTURAL MEMBERS SHALL BE FORMED FROM CORRISION-RESISTANT STEEL CORRESPONDING TO THE REQUIREMENTS OF ASTM-AG53, WELDS SHALL BE TOUCHED UP WITH A ZINC RICH PROTECTIVE PAINT FOR CORROSION RESISTANCE. STRUCTURAL STEEL STUDS SHALL HAVE A MINIMUM THICKNESS OF 33 MILS AND SHALL HAVE A MINIMUM YIELD STRENGTH 33 KSI

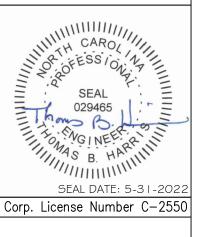
COLD-FORMED STEEL STRUCTURAL MEMBERS		
THICKNESS (MILS)	GAUGE	
33	20	
43	18	
54	16	
68	14	
97	12	
118	0	

- 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) 1/240 C. STUCCO 1/240
- 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 $\frac{2}{4}$ ", MINIMUM EDGE DISTANCE SHALL BE $\frac{2}{6}$ ".
- 7. METAL STUD BRIDGING IS REQUIRED @ 48" O.C. MAXIMUM UNLESS WALLS ARE SHEATHED ON





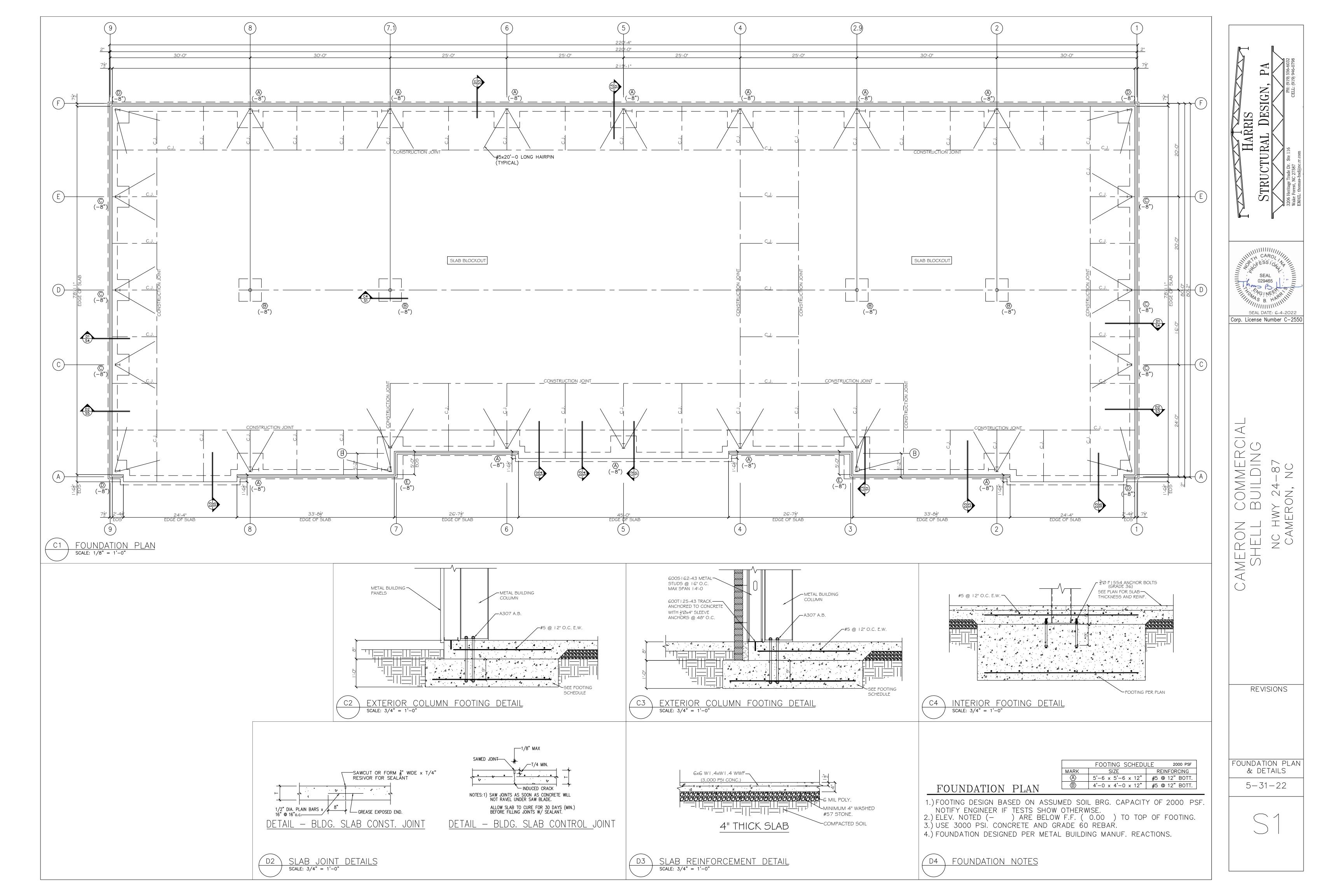
AMERON COMMERCIAL SHELL BUILDING NC HWY 24-87

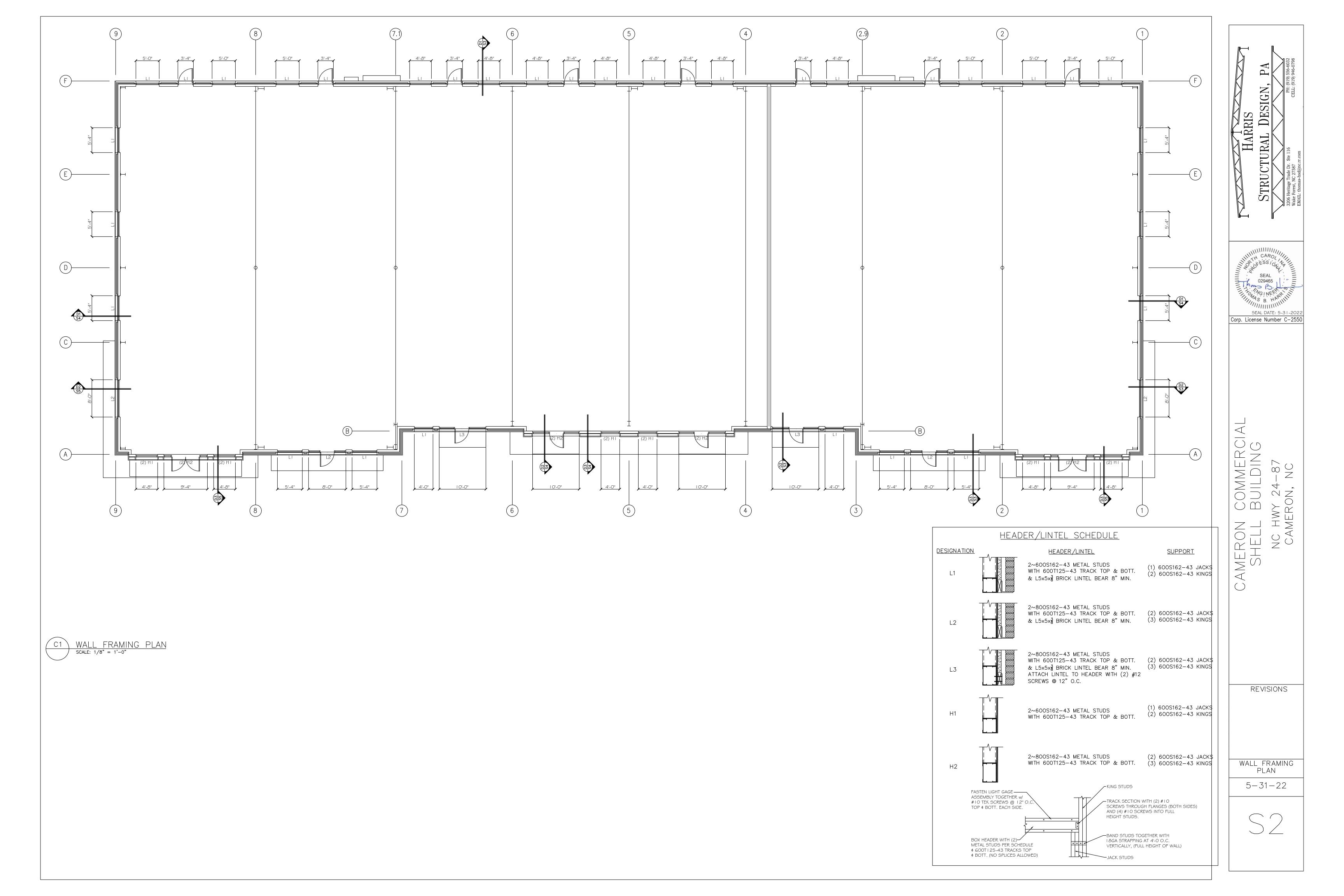
REVISIONS

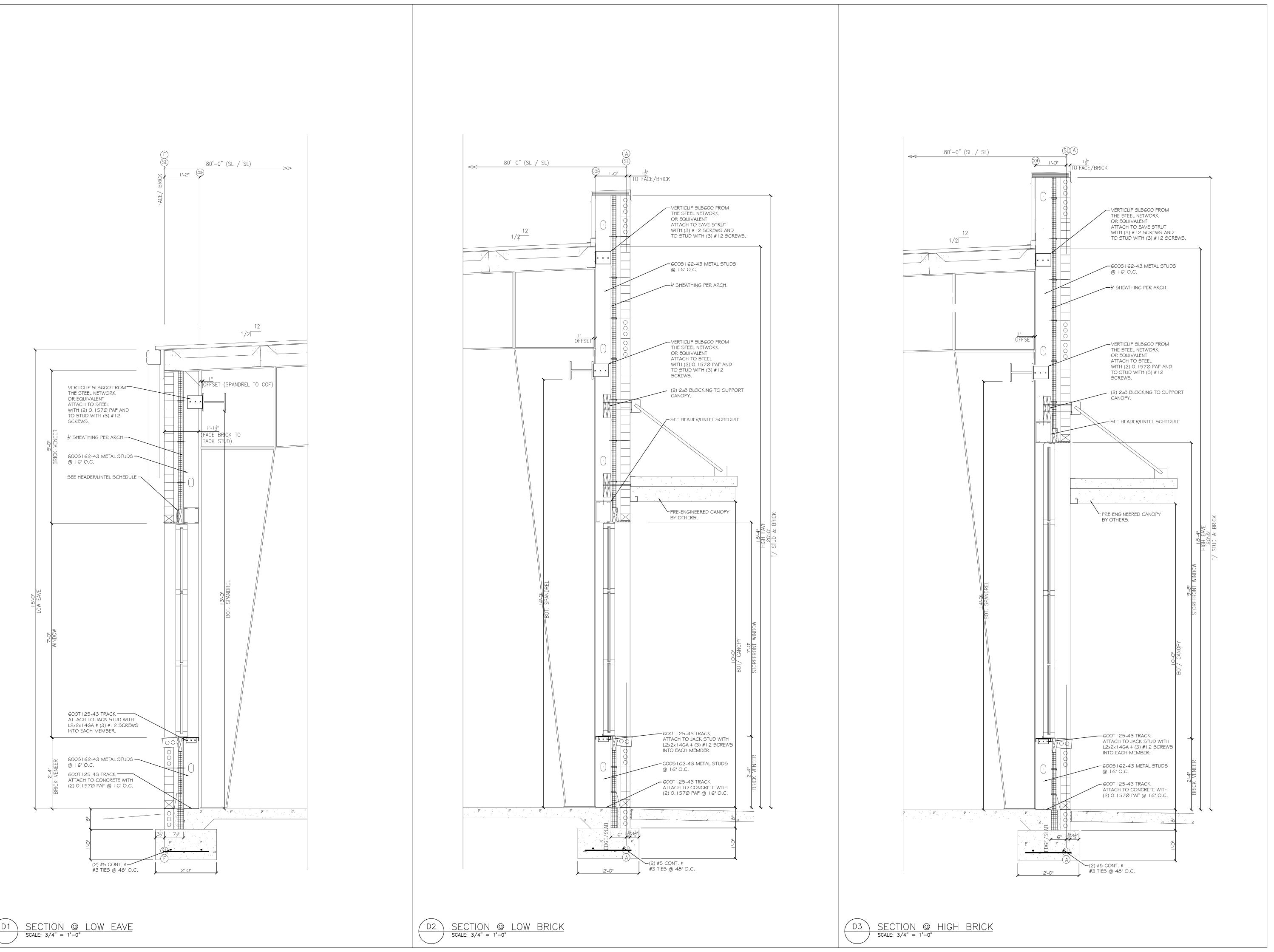
GENERAL NOTES

5-31-22

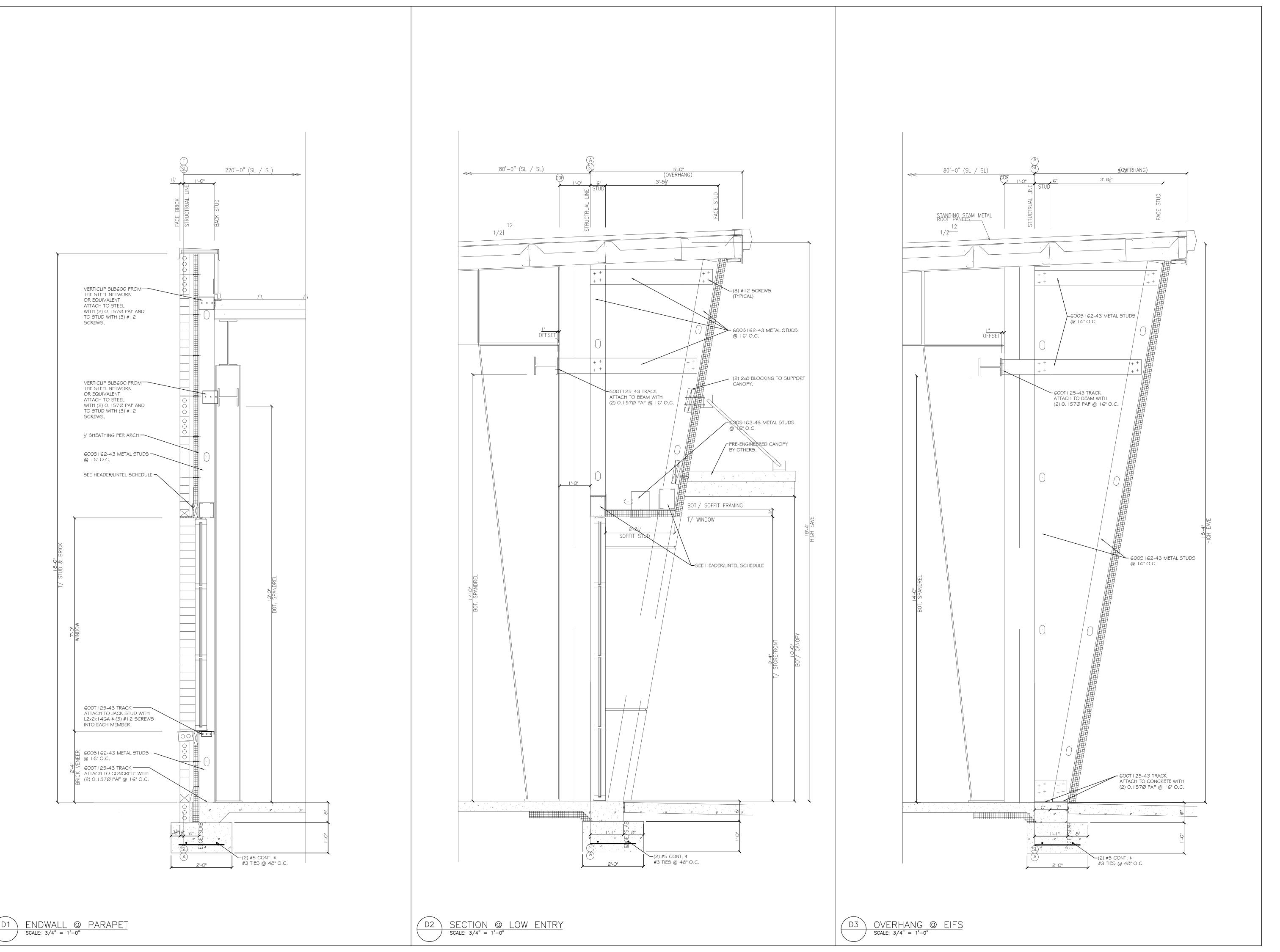
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SEAL DATE: 5-31-2022 Corp. License Number C-2550 CAMERON REVISIONS WALL SECTIONS 5-31-22

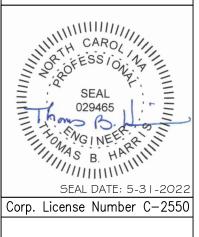


STRUCTURAL DESIGN, PA

3206 Heritage Trade Dr. Ste 116

Wake Forest, NC 27587

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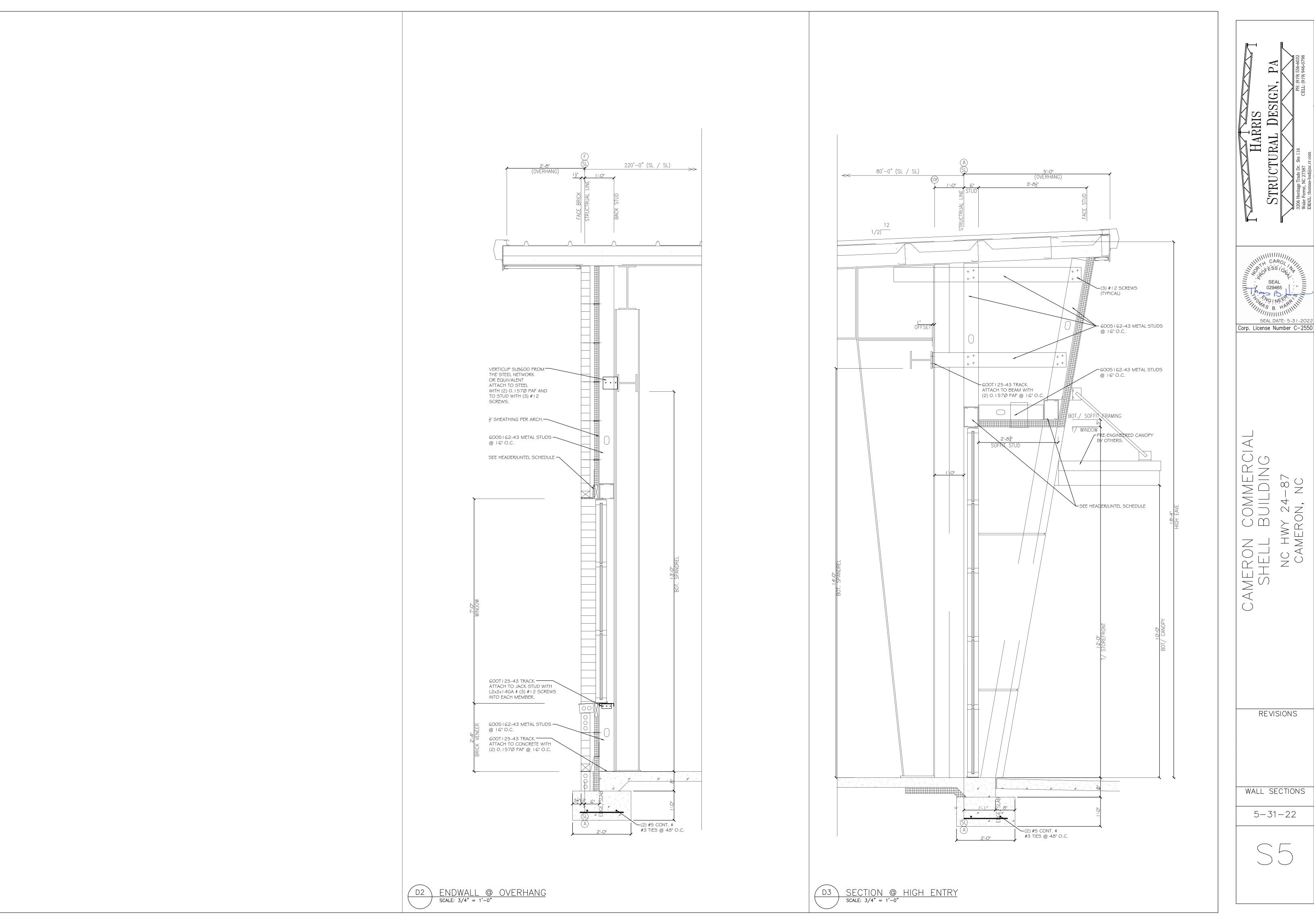
CAMERON COMMERCIA SHELL BUILDING NC HWY 24-87

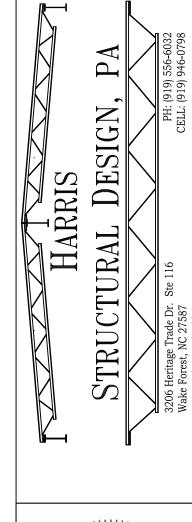
REVISIONS

WALL SECTIONS

5-31-22

54





SEAL DATE: 5-31-2022

REVISIONS