MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

APPLICABLE BUILDING CODES

BUILDING	2018 NORTH CAROLINA STATE BUILDING CODE (NCBC) WITH AMENDMENTS
FIRE SAFETY	2018 INTERNATIONAL FIRE CODE (IFC) WITH NORTH CAROLINA STATE FIRE PREVENTION CODE AMENDMENTS
PLUMBING	2018 NORTH CAROLINA STATE BUILDING CODE (NCBC): PLUMBING CODE WITH AMENDMENTS
MECHANICAL	2018 NORTH CAROLINA STATE BUILDING CODE (NCBC): MECHANICAL CODE WITH AMENDMENTS
GAS PIPING	2018 NORTH CAROLINA STATE BUILDING CODE (NCBC): FUEL GAS CODE WITH AMENDMENTS
ELECTRICAL	2020 NORTH CAROLINA STATE ELECTRICAL CODE WITH AMENDMENTS
ENERGY	2018 NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE WITH AMENDMENTS
ACCESSIBILITY	2009 NORTH CAROLINA ACCESSIBILITY CODE - REFERENCING ANSI A117.1

BUILDING INFORMATION

BUILDING DESCRIPTION -
TRAVEL DISTANCE - 100FT SPRINKLER
DEAD END - 50FT
ORDINARY HAZARAD PER LSC

BUILDING CONSTRUCTION TYPE (per IBC): TYPE IIB

OCCUPANCY CLASSIFICATION (per LSC Ch. 6): S-1 (MODERATE HAZARD STORAGE)

FIRE PROTECTION: FULLY SPRINKLERED

GENERATOR: N/A

HIGH-RISE: N/A

NUMBER OF STORIES: 2

TYPICAL FLOOR AREA: 1ST FLR: 12,774 SF 2ND FLR: 12,774 SF

ARCHITECT'S SCOPE OF SERVICE

HENDRICK, AS THE REGISTERED DESIGN PROFESSIONAL OF WORK, IS ALSO RETAINED TO PERFORM THE DUTIES OF THE REGISTERED PROFESSIONAL AS REQUIRED BY CODE DURING THE CONSTRUCTION ADMINISTRATION PHASE OF THIS WORK.
BUILDING OFFICIAL SHALL BE NOTIFIED IN WRITING BY THE OWNER IF THE REGISTERED DESIGN PROFESSIONAL IS CHANGED OR IS UNABLE TO CONTINUE TO PERFORM THE DUTIES.

PROJECT DESCRIPTION

PROJECT CONSISTS OF A CLIMATE-CONTROLLED TWO STORY PRE-ENGINEERED METAL SELF-STORAGE BUILDING, AN OFFICE SPACE, AND ON-SITE MANAGER APARTMENT. CONSTRUCTION INCLUDES NEW LIGHTING, PLUMBING, ELECTRICAL, AND NEW MECHANICAL AS INDICATED.

DRAWING INDEX

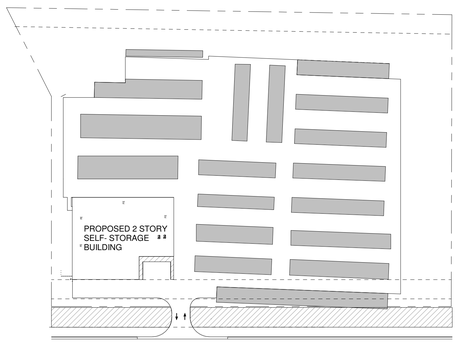
ABBREVIATIONS

A.B.	ANCHOR BOLT	F.A.	FIRE ALARM	N	NORTH	T.	TREAD
ACC.	ACCESS	F.D.	FLOOR DRAIN	N.I.C.	NOT IN CONTRACT	T & G	TONGUE & GROOVE
ACOUS.	ACOUSTIC (AL)	F.E.	FIRE EXTINGUISHER	NO.	NUMBER	TEL.	TELEPHONE
ADJ.	ADJUSTABLE	F.E.C.	EXTINGUISHER CABINET	NOM.	NOMINAL	TEMP.	TEMPERED
ADJT.	ADJACENT	F.H.C.	FIRE HOSE CABINET	N.T.S.	NOT TO SCALE	THK.	THICK(NESS)
A.F.F.	ABOVE FINISH FLOOR	FIN.	FINISH	O.C.	ON CENTER	THRESH.	THRESHOLD
A.H.U.	AIR HANDLING UNIT	FIXT.	FIXTURE	O.D.	OUTSIDE DIAMETER	TYP.	TYPICAL
AL.	ALUMINUM	FLR.	FLOOR(ING)	OFF.	OFFICE	U.L.	UNDERWRITER'S LABORATORY
ANOD.	ANODIZED	FLUOR.	FLUORESCENT	O.F.C.I.	OWNER FURNISHED CONTRATOR INSTALLED	U.N.O.	UNLESS NOTED OTHERWISE
APPROX.	APPROXIMATE(LY)	FP.	FIREPROOF				
BD.	BOARD	FT.	FOOT OR FEET				
BLDG.	BUILDING	FUR.	FURRING				
BLKG.	BLOCKING	FURN.	FURNISH(ING)	O.F.O.I.	OWNER FURNISHED OWNER INSTALLED	V.C.T.	VINYL COMPOSITION TILE
BOT.	BOTTOM	GA.	GAUGE	O.H.	OPPOSITE HAND		
B.S.	BUILDING STANDARD	GALV.	GALVANIZED	OPNG.	OPENING	VERT.	VERTICAL
B.O.	BY OWNER	GL.	GLASS OR GLAZING	PARTN.	PARTITION	VEST.	VESTIBULE
		GND.	GROUND	PERIM.	PERIMETER	VOL.	VOLUME
CAB.	CABINET	G.W.B.	GYPSUM WALL BOARD	PERP.	PERPENDICULAR		
CEM.	CEMENT	GYP.	GYPSUM	PREFAB.	PREFABRICATED	W.	WIDE
CER.	CERAMIC			PREFIN.	PREFINISHED	W/	WITH
CLG.	CEILING	H.	HIGH	PG.	PAGE	WC	WALLCOVERING
CLKG.	CAULKING	H.C.	HOLLOW CORE	P.LAM.	PLASTIC LAMINATE	WD.	WOOD
CLO.	CLOSET	HDW.	HARDWARE	PLAS.	PLASTER	W.H.	WATER HEATER
CLR.	CLEAR(ANCE)	HDWD.	HARDWOOD	PLYWD.	PLYWOOD	W/I	WITHIN
C.M.U.	CONCRETE MASONARY UNIT	H.M.	HOLLOW METAL	PNL.	PANEL(ING)	W/O	WITHOUT
COL.	COLUMN	HORZ.	HORIZONTAL	PT.	PAINT(ED)	WOM.	WOMEN
CONC.	CONCRETE	HR.	HOUR	POL.	POLISHED	WSCT.	WAINSCOT
CONT.	CONTINUOUS	HTR.	HEATER	Q.T.	QUARRY TILE	WT.	WEIGHT
CORR.	CORRIDOR	H.V.A.C.	HEATING, VENTILATING, AIR CONDITIONING	QTY.	QUANTITY		
CPT.	CARPET(ED)			QUAD.	QUADRAPLEX		
CNTR.	CENTER TO CENTER	H.W.		R.	RISER,RANGE		
C.T.	CERAMIC TILE			R.A.	RETURN AIR		
C.W.	COLD WATER	I.D.	INSIDE DIAMETER	RAD.	RADIUS		
D.	DEEP	INCL.	INCLUDE(D),(ING)	RCP	REFLECTED CLG. PLAN		
DBL.	DOUBLE	INFO.	INFORMATION	REFR.	REFRIGERATOR		
D.D.	DOUBLE DUPLEX	INSUL.	INSULATE(D),(ING)	RELOC.	RELOCATE(D)		
DEPT.	DEPARTMENT	INT.	INTERIOR	REQ.	REQUIRE(D),(ING)		
DET.	DETAIL	JAN.	JANITOR	RES.	RESILIENT		
D.F.	DRINKING FOUNTAIN	J.B.	JUNCTION BOX	REV.	REVISE(D),REVISION		
DIA.	DIAMETER	JT.	JOINT	REFLECT(ED),(IVE)			
DIAG.	DIAGONAL			R.H.	RIGHT-HAND		
DIFF.	DIFFUSER	KIT.	KITCHEN	RLG.	RAILING		
DIM.	DIMENSION			RM.	ROOM		
DISP.	DISPENSER	L.	LENGTH				
DN.	DOWN	LAM.	LAMINATE(D)	S.	SOUTH		
DO.	DITTO	LAV.	LAVATORY	SCHED.	SCHEDULE		
DR.	DOOR	LBL.	LABEL	S.C.	SOLID CORE		
DS.	DOWNSPOUT	LBS.	POUNDS	S.C.F.W.	FLUSH WOOD JOIN		
DW.	DISHWASHER	LG.	LONG	SECT.	SECTION		
DWG.	DRAWING	L.H.	LEFT-HAND	SHT.	SHEET		
DWR.	DRAWER	LT.	LIGHT	SIM.	SIMILAR		
				SK.	SINK		
E.	EAST	MATL.	MATERIAL(S)	SPEC.	SPECIFICATION		
EA.	EACH	MAX.	MAXIMUM	SPKR.	SPEAKER		
E.F.	EXHAUST FAN	MECH.	MECHANICAL	SPRK.	SPRINKLER		
EL.	ELEVATOR	MED.	MEDIUM	SQ.	SQUARE		
ELEC.	ELECTRIC(AL)	MET.	METAL	S.S.	STAINLESS STEEL		
ELEV.	ELEVATION	MEZZ.	MEZZANINE	STD.	STANDARD		
EMER.	ENCLODE(D), (ENCLOSURE)	MFG.	MANUFACTURER	STL.	STEEL		
ENCL.		MIN.	MINIMUM	STN.	STAIN		
EQ.	EQUAL	MISC.	MISCELLANEOUS	STOR.	STORAGE		
EQPT.	EQUIPMENT	M.O.	MASONRY OPENING	SUSP.	SUSPEND(ED)		
E.W.C.	ELECTRICAL WATER COOLER	MT.	MOUNT(ED),(ING)	SW.	SWITCH		
		MULL.	MULLION				
EX.	EXISTING						
EXP.	EXPANSION						
EXT.	EXTERIOR						

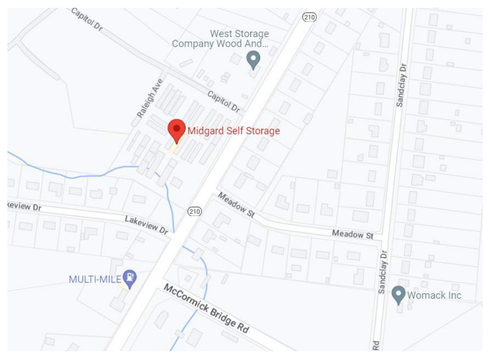
GENERAL NOTES

1. THESE DRAWINGS ARE THE PROPERTY OF HENDRICK, INC., AND ARE NOT TO BE REPRODUCED OR COPIED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION OF HENDRICK, INC., THESE DRAWINGS ARE TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN AND ARE NOT TO BE USED ON ANY OTHER PROJECT OR LOCATION.
2. THESE WORKING DRAWINGS INDICATE MATERIALS AND METHODS OF CONSTRUCTION TO SET STANDARDS OF QUALITY AND/OR PERFORMANCE. OTHER MATERIALS AND/OR METHODS WILL BE CONSIDERED BY HENDRICK, INC. (HEREINAFTER REFERRED TO AS "ARCHITECT(S)") FOR ACCEPTANCE PROVIDED THEY DO NOT AFFECT THE VISUAL APPEARANCE FROM THAT INDICATED IN ANY WAY.
3. THE ARCHITECT'S SEAL, AFFIXED HEREON, CERTIFIES THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE DRAWINGS HAVE BEEN PREPARED IN CONFORMITY WITH THE LOCAL ACCESSIBILITY CODES (LISTED ABOVE) FOR BUILDINGS AND FACILITIES, AS WELL AS THE ANSI SPECIFICATION A 117.1, 1998 EDITION, SECTIONS 3 & 4 AND THE ADA (AMERICANS WITH DISABILITIES ACT). IT IS THE RESPONSIBILITY OF THE OWNER (CLIENT), HIS AGENT OR THE CONTRACTOR TO REVIEW THESE PLANS WITH THE LOCAL GOVERNING AUTHORITY DURING THE BUILDING PERMIT PROCESS AND PRIOR TO BEGINNING CONSTRUCTION. THE ARCHITECT SHOULD BE NOTIFIED IMMEDIATELY OF ANY ITEMS IN CONFLICT WITH THESE ACCESSIBILITY REQUIREMENTS.
4. THESE DRAWINGS DO NOT PURPORT TO SHOW ALL OBJECTS EXISTING AT THE SITE. PRIOR TO COMMENCEMENT THE CONTRACTOR MUST VERIFY ALL SITE CONDITIONS AS WELL AS EXISTING UTILITIES TO DETERMINE ALL REQUIREMENTS FOR DISCONNECTING, CAPPING OR PROTECTING ALL SUCH WORK IN ACCORDANCE WITH THE UTILITY COMPANY OR OWNER.
5. THE CONTRACTOR WILL BE PRESUMED TO HAVE INSPECTED THE SITE AND TO HAVE READ AND TO BE THOROUGHLY FAMILIAR WITH THE PLANS, SPECIFICATIONS AND DOCUMENTS. THE FAILURE OR OMISSION OF ANY CONTRACTOR TO EXAMINE ANY FORM OF DOCUMENT SHALL RESULT IN NO WAY RELIEVE THE CONTRACTOR FROM ANY OBLIGATION IN RESPECT TO HIS/HER WORK.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS SHOWN AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE ORDERING OF MATERIALS, BEGINNING FABRICATION AND/OR STARTING CONSTRUCTION.
7. FOR ANY CONFLICT BETWEEN THE FIELD CONDITIONS AND THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND REQUEST CLARIFICATION OR DIRECTION PRIOR TO THE START OF WORK AND IN SUFFICIENT TIME FOR THE INTERIO DESIGNER TO RENDER A DECISION WITHOUT DELAYING PROGRESS.
8. UPON AWARDING CONTRACTS TO SUBCONTRACTORS; THE GENERAL CONTRACTOR SHALL SUBMIT TO THE ARCHITECT AND THE OWNER, A SCHEDULE FOR ALL LONG LEAD TIME ITEMS ON THE PROJECT (I.E. MATERIALS, HARDWARE, FABRICS, ETC.) AND SHALL BE RESPONSIBLE FOR NOTIFYING THE ARCHITECT AND OWNER AS TO ANY ITEM WHICH MAY CAUSE THE PROJECT TO BE DELAYED, PRIOR TO ORDERING THAT ITEM.
9. THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN
A BUILDING PERMIT AS WELL AS SEPARATE MECHANICAL, ELECTRICAL AND PLUMBING PERMITS, PRIOR TO THE START OF CONSTRUCTION. THE COMMUNICATIONS VENDOR IS RESPONSIBLE FOR OBTAINING THE 'LOW VOLTAGE' PERMIT.
10. THE CONTRACTOR SHALL SUBMIT TO THE OWNER ONE (1) COPY OF ALL BUILDING PERMITS, INSPECTION AND OCCUPANCY CERTIFICATES.
11. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL BUILDING CODES AND LOCAL ORDINANCES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE WHICH MAY OCCUR DURING CONSTRUCTION TO EXISTING EQUIPMENT, BUILDING FEATURES, OR ANY OTHER RELATED PROPERTY OF THE LANDLORD OR OWNER.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE FIRE EXTINGUISHERS IN THE WORK SPACE TO COMPLY WITH ALL FIRE REGULATIONS THROUGHOUT THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL AND LOCAL SAFETY REGULATIONS IN THE EXECUTION OF THE WORK.
14. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL LEAVE ALL WORK AREAS AND FINISHED SPACES IN A CLEAN AND ACCEPTABLE CONDITION.
15. DIMENSIONS NOTED AS "CLEAR" SHALL BE FROM FINISHED FACE TO FINISHED FACE.
16. ALL WOOD BLOCKING IN WALLS OR ABOVE CEILINGS SHALL BE FIRE TREATED TO MEET LOCAL CODES. DIMENSIONS FOR BLOCKING SHALL BE MEASURED TO THE CENTERLINE OF THE BLOCKING.
17. ALL FIRE RATED/SMOKE BARRIER WALL CONSTRUCTION SHALL BE PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING ABOVE FINISHED CEILINGS OR IN CONCEALED SPACES, WHICH READ AS FOLLOWS: "FIRE and SMOKE BARRIER - PROTECT ALL OPENINGS".
18. THE ARCHITECT HAS NOT CONDUCTED ANY INVESTIGATION AS TO THE PRESENCE OF ANY HAZARDOUS MATERIAL, INCLUDING ASBESTOS, WITHIN THE LIMITS OF THE PROJECT. THE ARCHITECT WILL NOT ACCEPT RESPONSIBILITY FOR THE IDENTIFICATION AND REMOVAL OF ANY HAZARDOUS MATERIAL OR FOR ANY EFFECT FROM ITS PRESENCE. IF ANY SUCH MATERIAL IS FOUND IN THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARCHITECT IMMEDIATELY.

KEY PLAN



VICINITY MAP



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NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.
Reviewed for Code Compliance
11/01/2023
Harnett COUNTY NORTH CAROLINA

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CHRISTOPHER J. HEARD REGISTERED ARCHITECT 13274 NORTH CAROLINA ATLANTA GEORGIA

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION
1	10/24/23	PERMIT COMMENTS

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

COVER SHEET

Author	
Drawn	
Checker	
Checked	
As indicated	
Scale	
247-001-01	
Project No.	

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Drawing Number

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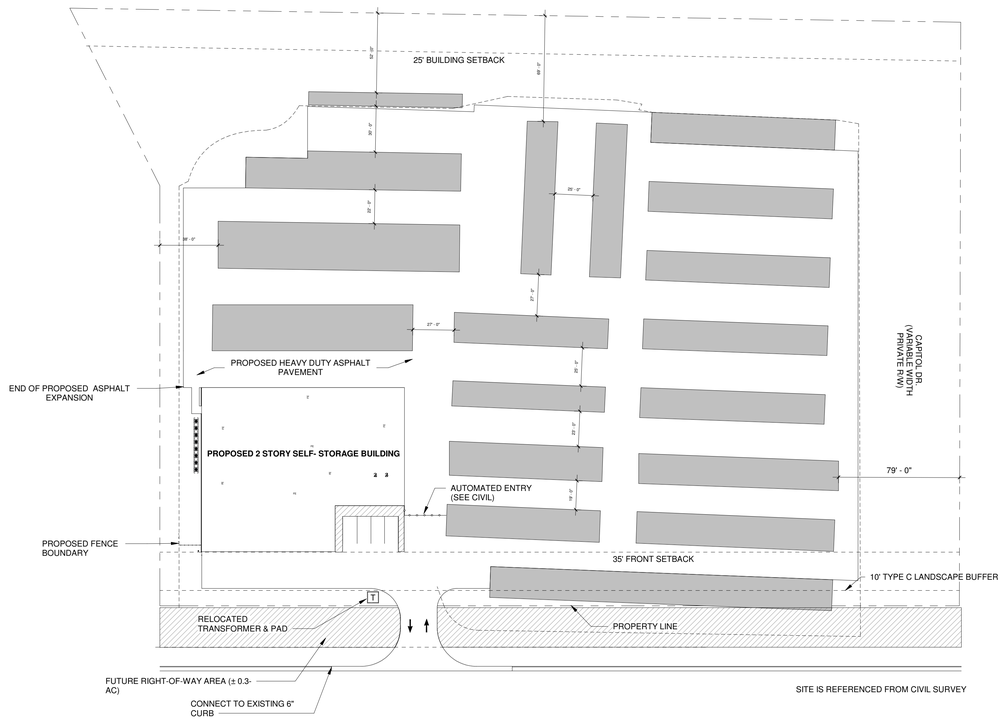
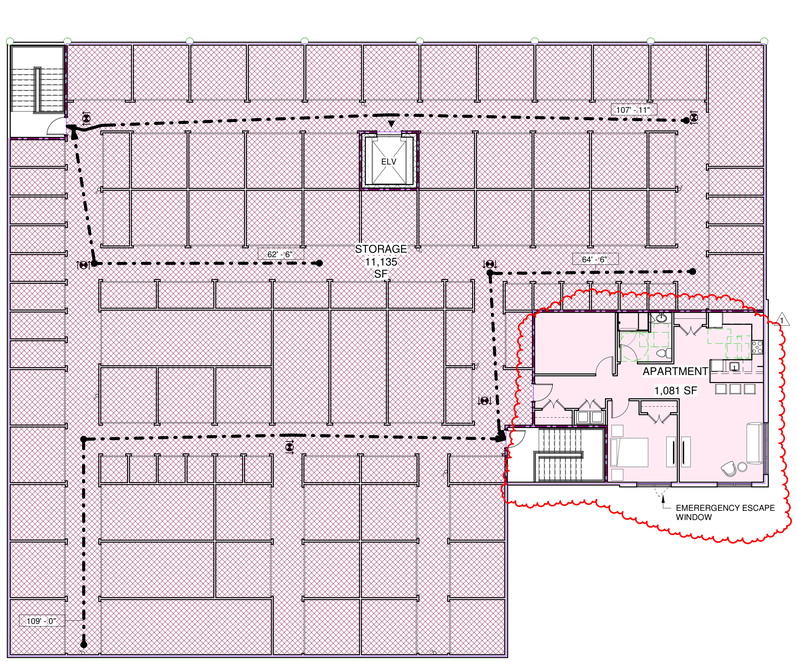
SITE PLAN

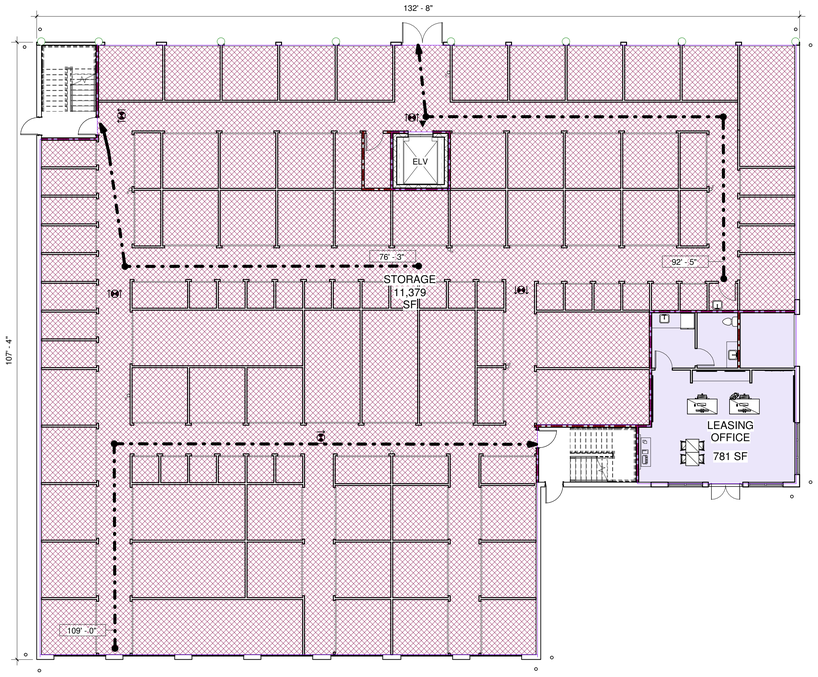


3 SITE PLAN
1" = 40'-0"

LIFE SAFETY PLAN



2 LIFE SAFETY PLAN SECOND FLOOR
3/32" = 1'-0"



1 LIFE SAFETY PLAN FIRST FLOOR
3/32" = 1'-0"

OCCUPANT LOAD SCHEDULE

OCCUPANT LOAD - SUMMARY

USAGE TYPE	AREA	SF PER PERSON	CALCULATED LOAD (PER NCBC)	COMMENTS
LEVEL 1				
LEASING OFFICE	781 SF	100	8	
STORAGE	11,379 SF	300	38	
LEVEL 2				
APARTMENT	1,081 SF	200	6	
STORAGE	11,135 SF	300	38	
	24,376 SF		90	

PROJECT CODE SUMMARY

OCCUPANCY USE AND CLASSIFICATION PER 2018 NORTH CAROLINA STATE FIRE PREVENTION BUILDING CODE:
CHAPTER 10, SECTION 1004.12 S-1 STORAGE OCCUPANCY, ORDINARY HAZARD
B - BUSINESS AREAS
RESIDENTIAL

OCCUPANCY LOAD FOR THE FLOOR:
REFER TO OCCUPANT LOAD SCHEDULE

OCCUPANT LOAD CALCUATION FOR THE FLOOR PER 2018 NORTH CAROLINA STATE FIRE PREVENTION BUILDING CODE (NC SFPC):

FLOOR X

DOORS: X DOORS @ XX" EACH (EFFECTIVE WIDTH) = X x (X"/0.2) = XXX

STAIRS: STAIR #1 & #2: XX" WIDE EACH - PER NC SFPC = 2 x (XX"/0.3) = XXX

MAXIMUM OCCUPANT LOAD / FLOOR = **XXX**

EMERGENCY ESCAPE AND RESUCE OPENNGS; NCBC, SECTION 1030

1030.2.1 MINIMUM DIMENSIONS
THE MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 24 INCHES (610 MM). THE MINIMUM NET CLEAR OPENING WIDTH DIMENSION SHALL BE 20 INCHES (508 MM). THE NET CLEAR OPENING DIMENSIONS SHALL BE THE RESULT OF NORMAL OPERATION OF THE OPENING.

EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT GREATER THAN 44 INCHES (1118 MM) MEASURED FROM THE FLOOR.

1030.2 MINIMUM SIZE
EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET (0.53 M2).

LIFE SAFETY LEGEND

CEILING HEIGHT GYP BOARD PARTITION

2 HOUR FIRE RATED BARRIER

EXIT SIGN

EXIT SIGN WITH DIRECTIONAL ARROW

WALL MOUNTED 10 lbs. A/B/C TYPE FIRE EXTINGUISHER - HANDLE OF EXTINGUISHER AT 48"AFF.

LONGEST TRAVEL DISTANCE TO EXIT: 109'-0" < 250'-0"

LONGEST COMMON PATH OF TRAVEL: 00'-0" < 100'-0"

SPRINKLERED BUILDING
TRAVEL DISTANCE: 250 FEET MAXIMUM DISTANCE TO EXIT
COMMON PATH OF TRAVEL: 100 FEET MAXIMUM DISTANCE OF COMMON PATH
DEAD-END CORRIDOR: 50 FEET MAXIMUM

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CHRISTOPHER J. HEARD REGISTERED ARCHITECT 13274 NORTH CAROLINA ATLANTA, GEORGIA

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION
1	10/24/23	PERMIT COMMENTS

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

SITE & LIFE SAFETY PLAN

Author Drawn	
Checker Checked	
As indicated Scale	**A-0.1.1**
247-001-01 Project No.	Drawing Number

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UL Product iQ®

UL Solutions

BXUV.U419 - Fire-resistance Ratings - ANSI/UL 263

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

Fire-resistance Ratings - ANSI/UL 263

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

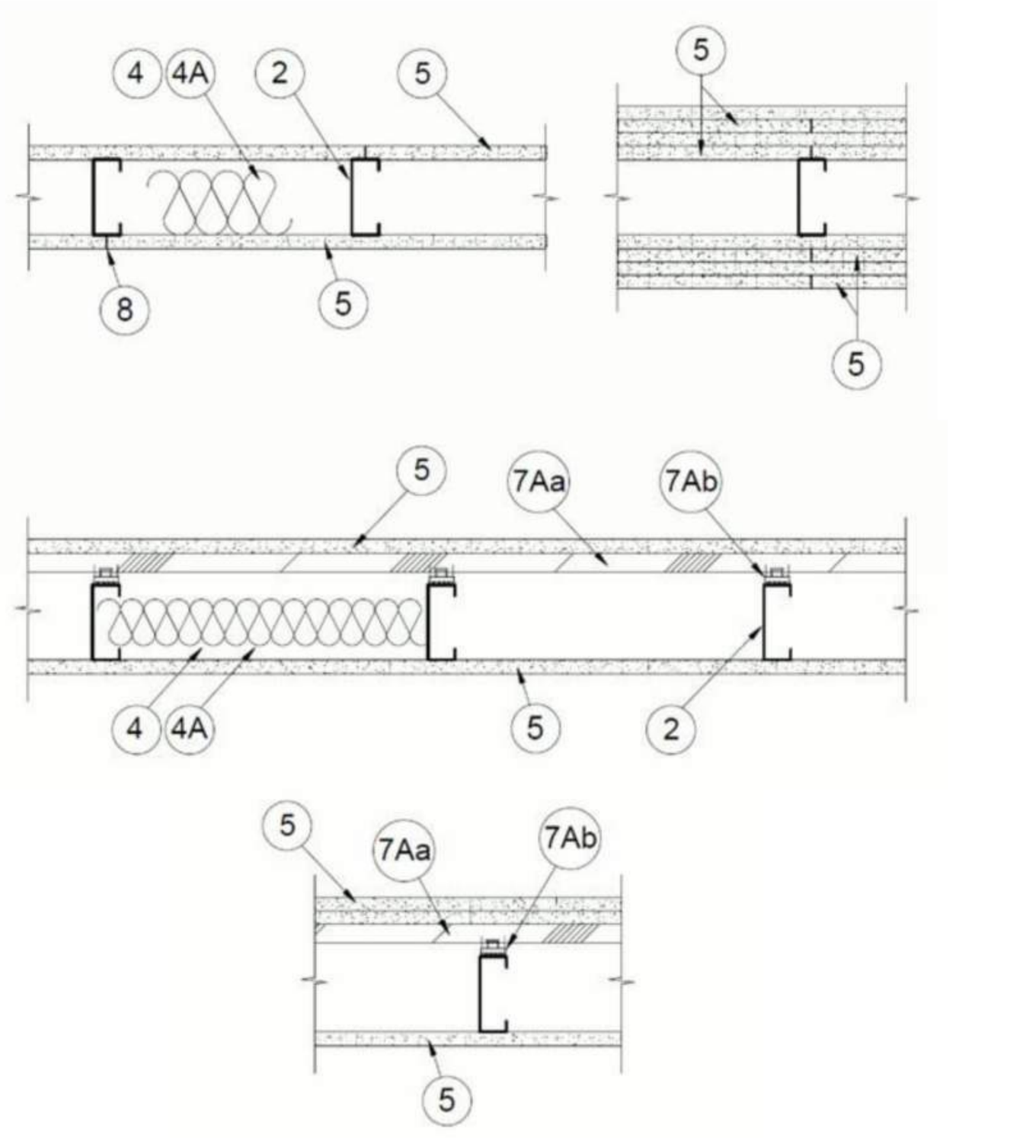
See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. **U419**

September 5, 2022

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



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

1A. **Framing Members* — Floor and Ceiling Runner —** Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™ Track

CRACO MFG INC — SmartTrack25™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track

IMPERIAL MANUFACTURING GROUP INC — Viper25™ Track

1B. **Framing Members* — Floor and Ceiling Runner —** Not Shown — In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™ Track

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track

IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track

1C. **Framing Members* — Floor and Ceiling Runners —** (Not Shown) — In lieu of Item 1 — Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20

TELLING INDUSTRIES L L C — Type SUPREME D24/30EQD and Type SUPREME D20

UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

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

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

DMFCWBS L L C — ProTRAK

MBA METAL FRAMING — ProTRAK

RAM SALES L L C — Ram ProTRAK

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK

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

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

1H. **Floor and Ceiling Runners —** (Not Shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.018 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC.
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track VT100

IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track VT100

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

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

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

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

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

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

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

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

2A. **Steel Studs —** (As an alternate to Item 2, For use with Items 5B, 5E, 5H, 5J or Type ULIX) — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

2B. **Framing Members* - Steel Studs —** (As an alternate to Item 2, For use with Items 5C, 5I or Type ULIX) — Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™

CRACO MFG INC — SmartStud25™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™

IMPERIAL MANUFACTURING GROUP INC — Viper25™

2C. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

IMPERIAL MANUFACTURING GROUP INC — Viper20™

2D. **Framing Members* — Steel Studs —** In lieu of Item 2 — Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME D24/30EQD and Type SUPREME D20

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME D24/30EQD and Type SUPREME D20

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME D24/30EQD and Type SUPREME D20

TELLING INDUSTRIES L L C — Type SUPREME D24/30EQD and Type SUPREME D20

UNITED METAL PRODUCTS INC — Type SUPREME D24/30EQD and Type SUPREME D20

2E. **Framing Members* — Steel Studs —** (Not Shown, As an alternate to Item 2) — For use with Items 5F or 5G or 5I or Type ULIX only, channel shaped studs, min depth as indicated under Item 5F, 5G or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD

DMFCWBS L L C — ProSTUD

MBA METAL FRAMING — ProSTUD

RAM SALES L L C — Ram ProSTUD

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD

2F. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, minimum width indicated under Item 5, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights.
SUPER STUD BUILDING PRODUCTS — The Edge

2G. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in less than the assembly height.
STUDCO BUILDING SYSTEMS — CROCSTUD

2H. **Framing Members* — Steel Studs —** (Not Shown, As an alternate to Item 2) — Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
TELLING INDUSTRIES L L C — TRUE-STUD™

2I. **Framing Members* — Steel Studs —**

2J. **Framing Members* — Metal Studs —** Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max if 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights

2K. **Framing Members* — Steel Studs —** As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
EB METAL INC — NITROSTUD

2L. **Framing Members* — Steel Studs —** As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
OLMAR SUPPLY INC — PRIMESTUD

2M. **Framing Members* — Steel Studs —** As an alternate to Item 2 — For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
MARINO/WARE, DIV OF WARE INDUSTRIES INC — StudRite™

2N. **Framing Members*— Steel Studs —** As an alternate to Item 2 — proprietary channel shaped steel studs, min depth 3-1/2 in. and as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in length than assembly height.
RESCUE METAL FRAMING, L L C — AlphaSTUD

2O. **Framing Members* — Steel Studs —** As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated under Item 5, galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max.
RONDO BUILDING SERVICES PTY LTD — Rondo Lipped Wall Stud

2P. **Framing Members* — Steel Studs —** As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated under Item 5, min 25 MSG galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max.
OEG BUILDING MATERIALS — OEG Stud

2Q. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — For use with Item 1O, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper X

3. **Wood Structural Panel Sheathing —** (Optional, For use with Item 5 Only) — (Not Shown) — 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, gypsum panels attached over OSB or plywood panels and fastener lengths for gypsum panels increased by min. 1/2 in.

4. **Batts and Blankets* —** (Required as indicated under Item 5) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 5.
See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

4A. **Batts and Blankets* —** (Optional) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance.
See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

4B. **Fiber, Sprayed* —** (Optional, for use with Type ULIX) Where insulation is required - Spray applied granulated mineral fiber material. The fiber is applied with adhesive at a minimum density of 4.0 pcf to completely fill the wall cavity in accordance with the application instructions supplied with the product. See **Fiber, Sprayed** (CCAZ).
AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

4C. **Foamed Plastic* —** (Where Batts and Blankets*, Item 4, are optional, for use with Item 5K) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity, for 2 hour rated assemblies only. When foamed plastic is used, minimum stud depth shall be 3-1/2 in.

CARLISLE SPRAY FOAM INSULATION — Types SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero, Foamsulate Closed Cell, Foamsulate OCX, Foamsulate 70, and Foamsulate HFO.

4D. **Foamed Plastic* —** (Where Batts and Blankets*, Item 4, are optional, for use with Item 5L) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity, for up to 2 hour rated assemblies only. When foamed plastic is used, minimum stud depth shall be 3-1/2 in. with minimum 20 MSG steel thickness.

BASF CORP - Enertite® NM, Enertite® G, FE178®, Spraytite® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, Walltite HP+, FE137®, FE158®, Spraytite® 158, Spraytite® SP and Spraytite® 81205

5. **Gypsum Board* —** Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) with Type ULIX need not be staggered. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, in. Items 2, 2C, 2D, 2F, 2G, 2O	No. of Layers & Thkns of Panel	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, ULIX, WRX or WRC; 3/4 in. thick Types IP-X3 or ULTRACODE

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Type C and 5/8 in. thick Type SCX

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type SCX, SGX, SHX, ULIX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR; 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX, WRC or; 3/4 in. thick Types IP-X3 or ULTRACODE

When Item 7B, **Steel Framing Members***, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item 6.

5A. **Gypsum Board* —** (As an alternate to Item 5) — 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6.
CGC INC — Type SHX.

UNITED STATES GYPSUM CO — Type FRX-G, SHX.

USG MEXICO S A DE C V — Type SHX.

5B. **Gypsum Board* —** (Not Shown) — As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 in or 3/4 in. thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) — Nom 5/8 in. or 3/4 in. may be used as alternate to all 5/8 in. or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to 20 MSG steel studs Item 2A with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 11) or Lead Discs or Tabs (see Item 12).
RAY-BAR ENGINEERING CORP — Type RB-LBG

5C. **Gypsum Board* —** (For Use With Item 2B) — Rating Limited to 1 Hour. 5/8 in. thick, 48 in. wide, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs. (Horizontal Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section VI of Volume 1 in the Fire Resistive Directory.

CGC INC — Type SCX, ULIX.

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type SCX

UNITED STATES GYPSUM CO — Type SCX, SGX, ULIX.

USG BORAL DRYWALL SFZ LLC — Type SCX

USG MEXICO S A DE C V — Type SCX

5D. **Gypsum Board* —** (As an alternate to Item 5) — 5/8 in. thick, 48 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.
CGC INC — Type USGX

UNITED STATES GYPSUM CO — Type USGX

USG BORAL DRYWALL SFZ LLC — Type USGX

USG MEXICO S A DE C V — Type USGX

5E. **Gypsum Board* —** (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.
NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Nelco

5F. **Gypsum Board* —** (As an alternate to Item 5) — For use with Items 1E and 2E and limited to 1 Hour Rating only, Gypsum panels with beveled, square or tapered edges, applied vertically, and fastened to the steel studs with 1 in. long Type S screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.
THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type SCX

UNITED STATES GYPSUM CO — 5/8 in. thick Type SCX, SGX, ULIX

USG BORAL DRYWALL SFZ LLC — 5/8 in. thick Type SCX, SGX

5G. **Gypsum Board* —** (As an alternate to Item 5) — For use with Items 1E and 2E only, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, in. Item 2E	No. of Layers & Thickness of Panel	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

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, ULIX or 3/4 in. thick Types IP-X3 or ULTRACODE

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Types C and 5/8 in. thick SCX

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type SCX, SGX, SHX, IP-X1, AR, C, , FRX-G, IP-AR, IP-X2, IPC-AR, ULIX; 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or; 3/4 in. thick Types IP-X3 or ULTRACODE

5H. **Gypsum Board* —** (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) - Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A).
MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

5I. **Gypsum Board* —** (As an alternate to Item 5) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5.
CGC INC — Type ULIX, ULX

UNITED STATES GYPSUM CO — Type ULIX, ULX

USG MEXICO S A DE C V — Type ULX

5J. **Gypsum Board* —** (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

5K. **Gypsum Board* —** (As an alternate to Item 5 when Foam Plastic insulation (Item 4C) is used) **—** Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 5 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1 in. long Type S steel screws spaced 8 in. OC at perimeter and in the field. For 2 layer assemblies outer layer will be attached to studs over inner layer with the 1-5/8 in. long steel screws spaced 8 in. OC.

5L. **Gypsum Board* —** (As an alternate to Item 5 when Foam Plastic insulation (Item 4D) is used) **—** Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 5 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1-1/4 in. long Type S steel screws spaced 8 in. OC at perimeter and in the field. For 2 layer assemblies outer layer will be attached to studs over inner layer with the 1-7/8 in. long steel screws spaced 8 in. OC.

6. **Fasteners —** (Not Shown) — For use with Items 2 and 2F - Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. **Single layer system with Type ULIX:** 1 in. long, spaced 12 in. OC in the field and perimeter, when panels are applied horizontally or vertically. **Two layer systems:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. **Three-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.

7. **Furring Channels —** (Optional, Not Shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 5A.

7A. **Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.

b. **Steel Framing Members* —** Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

7B. **Framing Members* —** (Optional, Not Shown) — As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A.

b. **Steel Framing Members* —** Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.
KINETICS NOISE CONTROL INC — Type Isomax

7C. **Framing Members* —** (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.

b. **Steel Framing Members* —** Used to attach furring channels (Item 7Ca) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
PLITEQ INC — Type GENIECLIP

7D. **Steel Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.

b. **Steel Framing Members* —** Used to attach furring channels (Item 7Da) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

7E. **Steel Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 7Eb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.

b. **Steel Framing Members* —** Used to attach furring channels (Item 7Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

7F. **Steel Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5. Not for use with Item 5A and 5E.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 7Fa) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

7G. **Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A.

b. **Steel Framing Members* —** Used to attach furring channels (Item 7Ga) to studs (Item 2). Clips spaced max. 48 in. OC. Clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips.
CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

8. **Joint Tape and Compound —** Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Paper tape and joint compound may be omitted when gypsum panels are supplied with a square edge.

9. **Siding, Brick or Stucco —** (Optional, Not Shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.

10. **Caulking and Sealants* —** (Optional, Not Shown) — A bead of acoustical sealant applied around the partition perimeter for sound control.
UNITED STATES GYPSUM CO — Type AS

11. **Lead Batten Strips —** (Not Shown, For Use With Item 5B) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5B) and optional at remaining stud locations. Required behind vertical joints.

11A. **Lead Batten Strips —** (Not Shown, For Use With Item 5H) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations.

12. **Lead Discs or Tabs —** (Not Shown, For Use With Item 5B) — Used in lieu of or in addition to the lead batten strips (Item 11) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5B) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

12A. **Lead Discs —** (Not Shown, for use with Item 5H) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

13. **Lead Batten Strips —** (Not Shown, For Use With Item 5E) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations.

14. **Lead Tabs —** (Not Shown, For Use With Item 5E) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

15. **Barrier Mesh —** (Optional, Not Shown) - Attached to steel studs on one or both sides of the wall using Barrier Mesh Clips spaced at maximum 12 inches on center vertically, using a flat head type screw penetrating through the steel at least 3/8 of an inch. For Steel Studs less than 0.033 inches in thickness, use self-piercing screws. For Steel Studs equal to or greater than 0.033 inches in thickness, use steel drill screws (self-tapping). Gypsum Board (Item 5) to be installed directly over the Barrier Mesh using prescribed screw patterns with lengths increased by a minimum 1/8 in. Barrier Mesh may be installed with the long dimension of the diamond pattern positioned vertically or horizontally. Barrier Mesh joints may occur as butt joints at the framing members and secured using the Barrier Mesh Clips or occur in between framing members as overlapping joints secured using 18 SWG wire ties spaced a maximum 12 in. on center.
CLARKDIETRICH BUILDING SYSTEMS — Barrier Mesh, Barrier Mesh Clips

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

Last Updated on 2022-09-05

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ATLANTA, GEORGIA

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

UL PRODUCT IQ

Author
Drawn

Checker
Checked

Scale

247-001-01
Project No.

A-0.1.2
Drawing Number

10/25/2023 7:17:45 AM

UL Product iQ™

BXUV.U415 - Fire-resistance Ratings - ANSI/UL 263

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

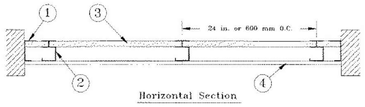
Design No. U415

December 22, 2020

Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr

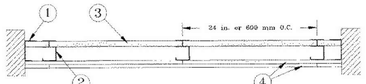
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

System A — 1 Hr.



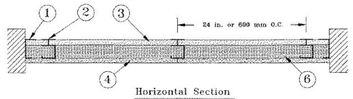
Horizontal Section

System B — 2 Hr.



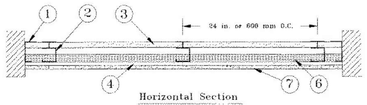
Horizontal Section

System C — 2 Hr.



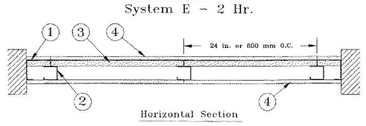
Horizontal Section

System D — 2 Hr.



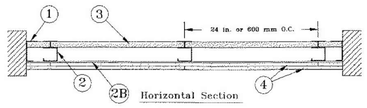
Horizontal Section

System E — 2 Hr.



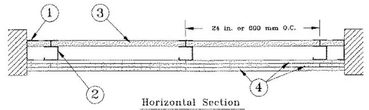
Horizontal Section

System F — 2 Hr.



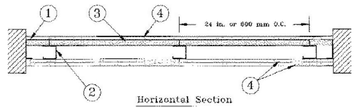
2B Horizontal Section

System G — 3 Hr.



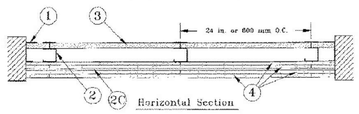
Horizontal Section

System H — 3 Hr.



Horizontal Section

System I — 4 Hr.



Horizontal Section

1. **Floor, Side and Ceiling Runners —** "J" - shaped runner, min 2-1/2 in. deep (min 4 in. deep when System C is used), with unequal legs of 1 in. and 2 in., fabricated from min 24 MSG (min 20 MSG when Item 4A, 4B, 4C, 4D or 7 are used) galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC. "E" - shaped studs (Item 2A) may be used as side runners in place of "J" - shaped runners.

2. **Steel Studs —** "C-H" - shaped studs, min 2-1/2 in. deep (min 4 in. deep when System C is used), fabricated from min 25 MSG (min 20 MSG when Items 2D, 4A, 4B, 4C, 4D or 7 is used) galv steel. Cut to lengths 3/8 to 1/2 in. less than floor-to-ceiling height and spaced 24 in. or 600 mm OC (max 16 in. OC when Items 4A, 4B, 4C, or 4D are used).

2A. **Steel Studs —** (Not Shown) — "E" - shaped studs installed back to back in place of "C-H" - shaped studs (Item 2) "E" - shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when Item 2D, 4A, 4B or 7 is used) galv steel, min 2-1/2 in. deep (min 4 in. deep when System C is used), with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 to 1/2 in. less than floor to ceiling heights.

2B. **Furring Channels —** (Optional, Not Shown) — For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "C-H" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan head steel screws. When furring channels are used, wallboard to be installed vertically only. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

2C. **Furring Channels —** For use with System I - "Hat" - shaped, 25 MSG galv steel furring channels attached directly over the inner layers of wallboard to each stud with 2 in. long Type S pan head steel screws. Screws alternate from top flange to bottom flange at each stud intersection. Furring channels spaced vertically max 24 in. OC.

2D. **Steel Framing Members* —** (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 4.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75)

2E. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Ea) to studs. Clips spaced 24 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

2F. **Steel Framing Members* —** (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

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 installed vertically only and attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
PLITEQ INC — Type GENIECLIP

2G. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

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 2Gb. 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 4.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Ga) to studs. Clips spaced 24 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

2H. **Steel Framing Members* —** (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 4.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 2Ha) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

2I. **Steel Framing Members* —** (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum board, lead backed gypsum boards (Items 4A-4D), or cementitious backer units (Item 7).

a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. or 1-1/2 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 4.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Ia) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

3. **Gypsum Board* —** Gypsum liner panels, nom 1 in. thick, 24 in. or 600 mm (for metric spacing) wide. Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted in "H" portion of "C-H" studs or the gap between the two 3/4 in. legs of the "E" studs. Free edge of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and secured to liner panels with six 1-1/2 in. long Type G steel screws, three screws along the 22 in. dimension at the top and bottom of the strips.
CGC INC — Type SLX

UNITED STATES GYPSUM CO — Type SLX

USG BORAL DRYWALL SFZ LLC — Type SLX

USG MEXICO S A DE C V — Type SLX

4. **Gypsum Board* —**

System A — 1 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in OC when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, USGX, WRC, WRX

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, WRC, WRX, USGX.

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

System B — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in.

CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, USGX, WRC, WRX

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX

UNITED STATES GYPSUM CO — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

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. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

System C — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field when installed vertically or 8 in. OC along the vertical edges and in the field when installed horizontally. Horizontal joints need not be backed by steel framing. Screws along side joints offset 4 in. Requires min 4 in. deep framing per Items 1, 2 and 3. Requires min 3 in. thick mineral wool batts per Item 6.

CGC INC — Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO — Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — Type ULTRACODE

USG MEXICO S A DE C V — Types IP-X3 or ULTRACODE

System D — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 6.

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

System E — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX

UNITED STATES GYPSUM CO — 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

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. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

System F — 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers, Inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. Outer or face layer attached to resilient furring channels (Item 2B) with 1-5/8 in. long Type S steel screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered 24 in.

CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Types C and SCX

UNITED STATES GYPSUM CO — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, USGX, WRC, WRX.

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. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, USGX, WRC, WRX

System G — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in OC when installed horizontally. Middle layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in.. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, ULIX, WRC

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, ULIX, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System H — 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC — Types C, IP-X2, IPC-AR, ULIX, WRC

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, ULIX, WRC

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR, WRC

System I — 4 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 4 ft wide (or 1200 mm for metric spacing) wallboard with square or tapered edges. Total of four layers to be used. First and second (inner) layers applied vertically or horizontally over the steel studs. Horizontal joints need not be backed by steel framing. When applied vertically, joints centered over studs and staggered min 24 in., otherwise all joints staggered min 12 in. First layer secured to studs with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 24 in. OC. Second layer secured to studs with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Third layer applied vertically over the furring channels (Item 2C) with a 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Fourth layer applied vertically or horizontally with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. When applied vertically, joints to be staggered min 24 in. from third layer, otherwise all joints staggered min 12 in.

CGC INC — Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO — Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — Type ULTRACODE

USG MEXICO S A DE C V — Types IP-X3 or ULTRACODE

4A. **Gypsum Board* —** (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. 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. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9) or Lead Discs or Tabs (see Item 10).
RAY-BAR ENGINEERING CORP — Type RB-LBG

4B. **Gypsum Board* —** (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — 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 #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.
NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Type Nelco

4C. **Gypsum Board* —** (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — 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. See Items 1, 2, 2A, 2B and 2D. 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. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9A) or Lead Discs (see Item 10A). 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 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip.
MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

4D. **Gypsum Board* —** (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

5. **Joint Tape and Compound —** (Not Shown)

Systems A, B, C, E, F, G, H, I

Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered with joint compound.

6. **Batts and Blankets* —**

Systems A, B, E, F, G, H, I

(Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt mineral bearing the UL Classification Marking as to Fire Resistance.

Systems C & D

Min 3 in. (System C) and min 1-1/2 in. (System D) thick mineral wool batts, friction fitted between the studs and floor and ceiling runners.

ROCKWOOL — Type AFB, min. density 1.8 pcf / 28.8 kg/m^3

THERMAFIBER INC — Type SAFB, SAFB FF

7. **Cementitious Backer Units* —** (System D) — Nom 1/2 or 5/8 in. thick panels, square edge, attached to studs over gypsum wallboard with 1-5/8 in. long, Type S-12, corrosion resistant steel screws spaced 8 in. OC and staggered 8 in. from gypsum wall board screws. Joints covered with glass fiber mesh tape. Vertical joints staggered one stud cavity from gypsum wallboard joints. Horizontal joints staggered a min of 12 in. from the gypsum wallboard joints.
UNITED STATES GYPSUM CO — Type DCB

8. **Laminating Adhesive* —** (Optional, Not Shown) — Used to bond outer layer of Cementitious Backer Units (Item 7) to inner layers of Gypsum Board (Item 4) in System D. ANSI A136.1 Type 1 organic adhesive applied with 1/4 in. square notched trowel. See Adhesives (BYWR) in the Fire Resistance Directory or Adhesives (BJLZ) in the Building Materials Directory for names of Classified companies.

9. **Lead Batten Strips —** (Not Shown, For Use With Item 4A) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Required behind vertical joints.

9A. **Lead Batten Strips —** (Not Shown, for use with Item 4C) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at remaining stud locations.

10. **Lead Discs or Tabs —** (Not Shown, For Use With Item 4A) — Used in lieu of or in addition to the lead batten strips (Item 9) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4A) 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".

10A. **Lead Discs —** (Not Shown, for use with Item 4C) — 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".

11. **Lead Batten Strips —** (Not Shown, For Use With Item 4B) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4B) and optional at remaining stud locations.

12. **Lead Tabs —** (Not Shown, For Use With Item 4B) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 4B) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

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

Last Updated on 2020-12-22

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CHRISTOPHER J. HEARD REGISTERED ARCHITECT 13274 NORTH CAROLINA ATLANTA, GEORGIA

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

UL ELEVATOR SHAFT

Author	
Drawn	
Checker	
Checked	
Scale	
247-001-01 Project No.	

A-0.1.3

Drawing Number

10/25/2023 7:17:50 AM

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: MIDGARD SELF STORAGE SPRING LAKE, NC LLC
Address: 14396 NC 210 S SPRING LAKE, NC Zip Code 23890
Owner/Authorized Agent: MATT GARCIA Phone # (404) 909 - 1443 E-Mail mgarcia@reliant-mgmt.com
Owned By: ☐ City/County ☒ Private ☐ State
Code Enforcement Jurisdiction: ☐ City_____ ☒ County CUMBERLAND ☐ State

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	HENDRICK	CHRISTOPHER J HEARD	13274	404.081.9383	cheard@hendrickinc.com
Civil	CONTINEO GROUP	RON CRUMP	037214	404-556.7721	ronc@theconteneogroup.com
Electrical	MEP + FP ENGINEER			( )	
Fire Alarm	BARRETT	WILL KELLY	053853	(770.810.8800	wkelly@barrettwoodyard.com
Plumbing	WOODYARD &			( )	
Mechanical	ASSOCIATES, INC.			( )	
Sprinkler-Standpipe				( )	
Structural				( )	
Retaining Walls >5' High				( )	
Other	RAPID BUILDING SOLUTIONS			(407)347.9614	info@rapidbuildingsolutions.com

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

2018 NC BUILDING CODE: ☒ New Building ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
☐ Phased Construction - Shell/Core- Contact the local inspection jurisdiction for possible additional procedures and requirements

2018 NC EXISTING BUILDING CODE: EXISTING: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level I ☐ Level II ☐ Level III
☐ Historic Property ☐ Change of Use

CONSTRUCTED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): _____
RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): STORAGE (S1) BUINSESS (B) RESIDENTIAL (R3)
RISK CATEGORY (Table 1604.5): **Current:** ☐ I ☐ II ☐ III ☐ IV
Proposed: ☒ I ☐ II ☐ III ☐ IV

BASIC BUILDING DATA
Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
(check all that apply) ☐ I-B ☒ II-B ☐ III-B ☐ V-B
Sprinklers: ☐ No ☐ Partial ☒ Yes ☒ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☒ No ☐ Yes **Flood Hazard Area:** ☒ No ☐ Yes
Special Inspections Required: ☒ No ☐ Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		0	0				
Bearing Walls							
Exterior							
North	35ft						
East	15 ft						
West	27ft						
South	12 ft						
Interior							
Nonbearing Walls and Partitions		0	0				
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions		0	0				
Floor Construction Including supporting beams and joists		0	0				
Floor Ceiling Assembly		0	0				
Columns Supporting Floors		0	0				
Roof Construction, including supporting beams and joists		0	0				
Roof Ceiling Assembly		0	0				
Columns Supporting Roof		N/A	N/A				
Shaft Enclosures - Exit		1	1				
Shaft Enclosures - Other		1	1				
Corridor Separation		0	0				
Occupancy/Fire Barrier Separation		1	1				
Party/Fire Wall Separation		2	N/A				
Smoke Barrier Separation		1	N/A				
Smoke Partition		1	N/A				
Tenant/Dwelling Unit/ Sleeping Unit Separation		1	1				
Incidental Use Separation		1	1				

* Indicate section number permitting reduction

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☐ No ☐ Yes (Provide code or statutory reference): _____

Climate Zone: ☒ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☒ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive
(If "Other" specify source here) _____

THERMAL ENVELOPE (Prescriptive method only)

IE] 1301.1.1 Criteria
Buildings shall be designed and constructed in accordance with the International Energy Conservation Code.

Exception: Per G.S. 143-138 (b18), no energy conservation code provisions shall apply to any structure for which the primary occupancy classification is Group F, S, or U. This exclusion shall apply to the entire building area.

Roof/ceiling Assembly (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Skylights in each assembly: _____
U-Value of skylight: _____
total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
projection factor: _____
Door R-Values: _____

Walls below grade (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/vertical requirement: _____
slab heated: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code ☒ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive

Lighting schedule (each fixture type) **SEE E0.1**
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient HVAC Equipment Performance
☒ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor			
2nd Floor		12,536 SF	
Mezzanine			
1st Floor		12,536 SF	
Basement			
TOTAL		25,072 SF	

ALLOWABLE AREA

Primary Occupancy Classification(s):
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous: ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ 1 ☐ 2
☐ I-2 Condition ☐ 1 ☐ 2
☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☒ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): B (BUSINESS) AND R-3 (APARTMENT)
Incidental Uses (Table 509): N/A
Special Uses (Chapter 4 – List Code Sections): N/A
Special Provisions: (Chapter 5 – List Code Sections): N/A
Mixed Occupancy: ☐ No ☒ Yes Separation: 1 Hr. Exception: SPRINKLERED

☒ Non-Separated Use (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$

_____ + _____ + ... = _____ ≤ 1.00

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
27 ft	UP, S	NO LIMIT	15%

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ No ☒ Yes
Exit Signs: ☐ No ☒ Yes
Fire Alarm: ☒ No ☐ Yes
Smoke Detection Systems: ☐ No ☐ Yes ☒ Partial RESIDENTIAL
Carbon Monoxide Detection: ☐ No ☒ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: A-0.1.1

☒ Fire and/or smoke rated wall locations (Chapter 7)
☒ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☒ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
☒ Occupant loads for each area
☒ Exit sign locations (1013)
☒ Exit access travel distances (1017)
☒ Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
☒ Dead end lengths (1020.4)
☒ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☒ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (I_S) 1.0
Seismic (I_E) 1.0

Live Loads: Roof 20 psf
Mezzanine 0 psf
Floor 125 psf

Ground Snow Load: 10 psf

Wind Load: Ultimate Wind Speed 119 mph (ASCE-7)
Exposure Category B

SEISMIC DESIGN CATEGORY: ☐ A ☒ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) ☒ I ☐ II ☐ III ☐ IV
Spectral Response Acceleration S_S 0.147 %g S_1 0.069 %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F
Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data
Basic structural system ☐ Bearing Wall ☐ Dual w/Special Moment Frame
☒ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☒ Yes ☐ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☒

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity 2,000 psf
Pile size, type, and capacity _____

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[2] AREA	(C) AREA FOR FRONTAGE INCREASE[1,2]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
2	SELF-STORAGE	12,536 SF	52,500	7.2%	78,000 SF

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = 161' (F)
b. Total Building Perimeter = 474' (P)
c. Ratio (F/P) = .34 (F/P)
d. W = Minimum width of public way = 24' (W)
e. Percent of frontage increase I_f = 100[F/P – 0.25] x W/30 = 7.2 (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3) [2]	75FT	35FT	TABLE 504.3
Building Height in Stories (Table 504.4) [3]	4	2	TABLE 504.4

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

UNIT CLASSIFICATION	TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
N/A								

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED		TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	96" SPACES	132" SPACES	
	4	4	1		1
TOTAL					

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATER CLOSETS			URINALS	LAVATORIES			SHOWERS /TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G										
S-2	NEW	0	0	1	0	0	0	1	0	0	0
	REQ'D	1 PER 100		-	-	1 PER 100		-	-	-	-

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)

USE		WATER CLOSETS			URINALS	LAVATORIES			SHOWERS /TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G										
R-2	NEW	0	0	1	0	0	0	1	1	0	0
	REQ'D	3 PER DWELLING UNIT		-	-	3 PER DWELLING UNIT		-	1	-	-

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone 3A
winter dry bulb: 18
summer dry bulb: 94

Interior design conditions
winter dry bulb: 70
summer dry bulb: 75
relative humidity: 50%

Building heating load: 128 MBH

Building cooling load: 192 MBH

Mechanical Spacing Conditioning System
Unitary
description of unit: N/A
heating efficiency: N/A
cooling efficiency: N/A
size category of unit: N/A
See schedule on sheet M0.1.
Boiler
Size category. If oversized, state reason.: N/A
Chiller
Size category. If oversized, state reason.: N/A

List equipment efficiencies: N/A

Architect
Atlanta, Georgia 30361

Heard

T: 404.240.9383

Christopher Jerome Heard
1201 Peachtree Street NE, Suite 1900

CHRISTOPHER J HEARD REGISTERED ARCHITECT 13274 NORTH CAROLINA ATLANTA GEORGIA

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION
1	10/24/23	PERMIT COMMENTS

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

1 APPENDIX B 2018 BUILDING SUMMARY

Author
Drawn
Checker
Checked
Scale
247-001-01
Project No.

A-0.1.4
Drawing Number

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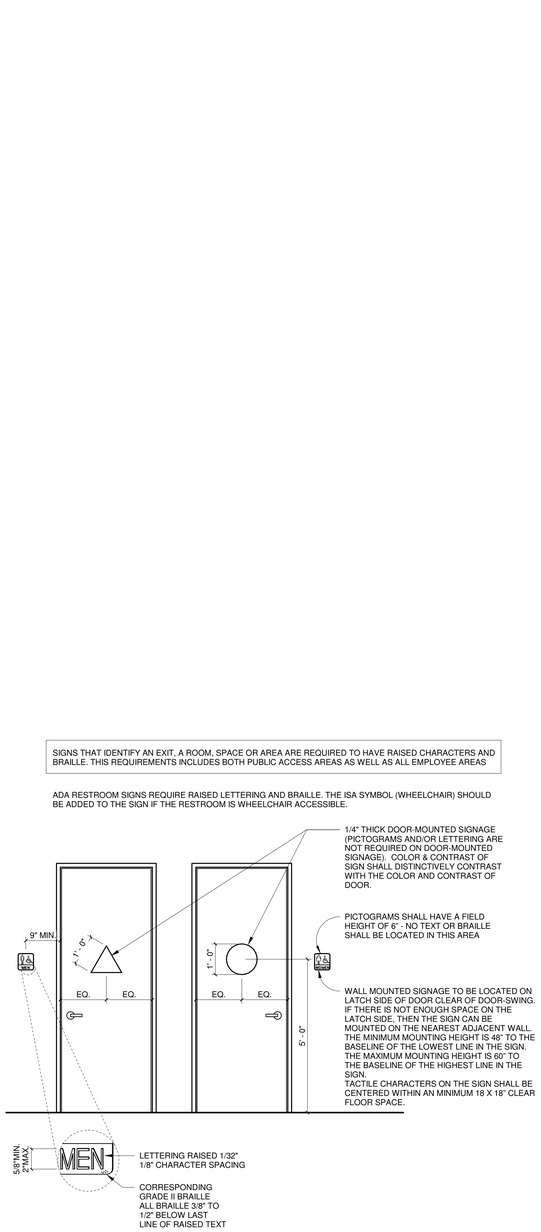
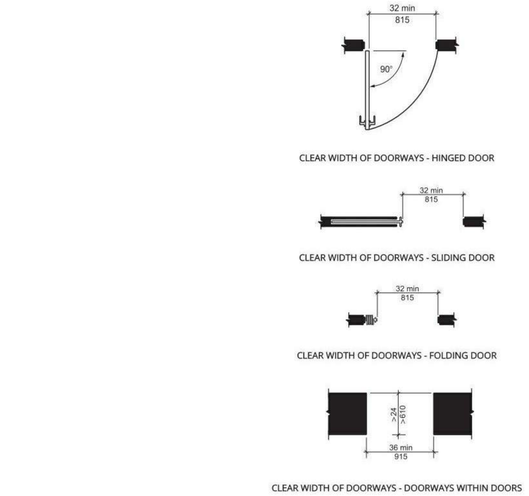
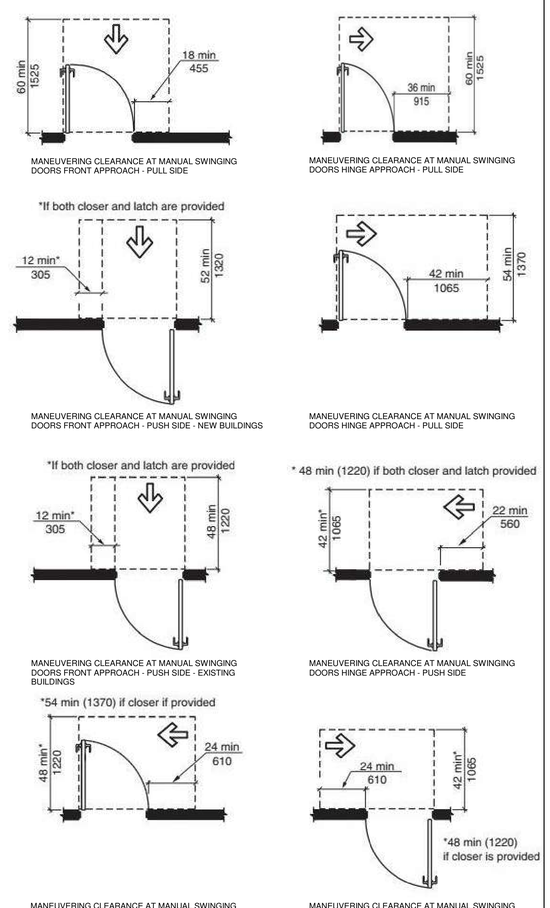
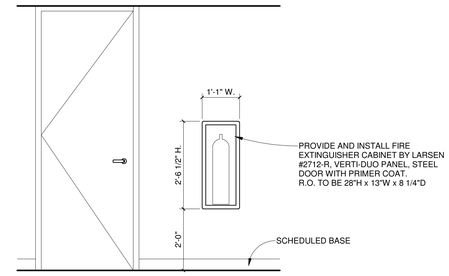


4 RESTROOM SIGNAGE DIAGRAM
1/2" = 1'-0"

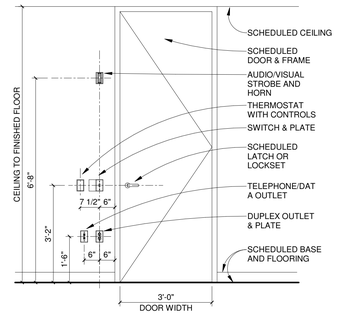


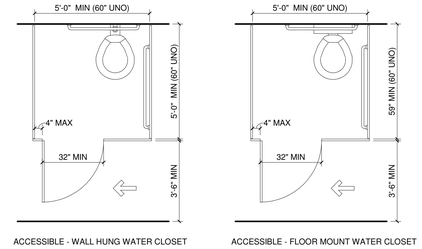


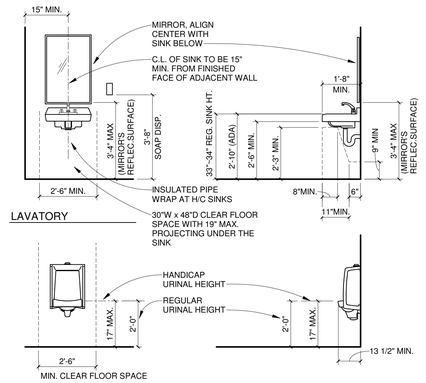
3 DOOR CLEARANCES
3/8" = 1'-0"

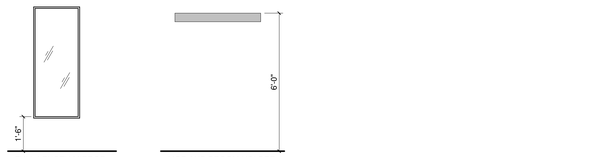


2 TYPICAL FIRE EXTINGUISHER CABINET
1/2" = 1'-0"

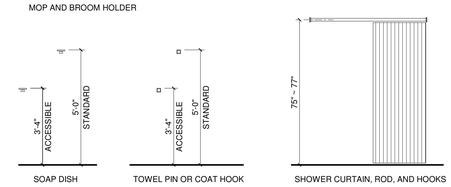


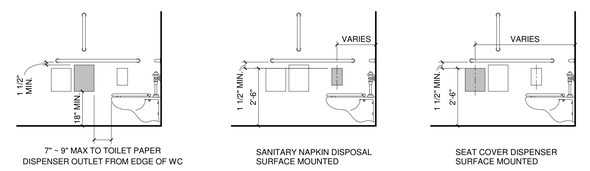


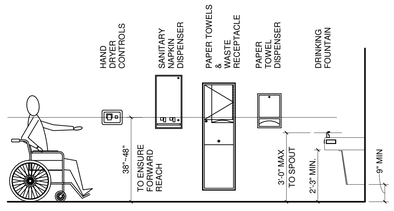




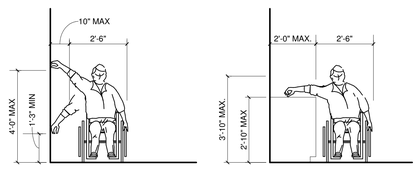
WASHROOM ACCESSORIES







ACCESSORY HEIGHTS



1 TYPICAL REACH & HEIGHT
3/8" = 1'-0"

Heard
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Christopher Jerome Heard
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T: 404.240.9383

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

ADA AND TYPICAL MOUNTING HEIGHTS

Author	
Drawn	
Checker	
Checked	
As indicated	A-0.2.1
Scale	
247-001-01	Drawing Number
Project No.	

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SECTION 01340 - SUBMITTALS

1. GENERAL PROVISIONS:
A. PROVISIONS IN THIS SECTION ARE MANDATORY PROCEDURES FOR PREPARING AND SUBMITTING SAMPLES, SHOP DRAWINGS AND PRODUCT DATA.
B. SUBMITTALS WILL BE IN ORDERLY SEQUENCE AND TIMED TO CAUSE NO DELAY IN THE WORK.
C. JOB DELAYS OCCASIONED BY REQUIREMENT OF RESUBMISSION OF SAMPLES, SHOP DRAWINGS AND PRODUCT DATA NOT IN ACCORDANCE WITH CONTRACT DOCUMENTS ARE CONTRACTOR'S RESPONSIBILITY AND WILL NOT BE CONSIDERED VALID JUSTIFICATION FOR EXTENSION OF CONTRACT TIME.
D. COMMENCE NO PORTION OF WORK REQUIRING SUBMITTALS UNTIL SUBMITTAL HAS BEEN APPROVED.

2. SAMPLE PREPARATION:
A. PREPARE SAMPLES IN SIZES, SHAPES AND FINISHES IN ACCORDANCE WITH PROVISIONS OF INDIVIDUAL SPECIFICATION SECTIONS.
B. SAMPLES SUBMITTED FOR COLOR, SHEEN OR TEXTURE SELECTION FOR APPROVAL SHALL BE ACTUAL SAMPLES OF THE REQUIRED MATERIAL. WHERE A RANGE OF COLOR, SHEEN OR TEXTURE IS ANTICIPATED OR PROPOSED, SAMPLES SHALL INDICATE FULL RANGE PROPOSED, FROM WHICH ARCHITECT MAY SELECT THE EXACT RANGE TO BE PROVIDED.
C. THE NUMBER OF SAMPLES SUBMITTED SHALL BE THE NUMBER REQUIRED BY CONTRACTOR, PLUS ONE WHICH WILL BE RETAINED BY ARCHITECT, UNLESS OTHERWISE INDICATED.
D. ATTACH A TAG TO EACH SAMPLE, SIZED TO ACCEPT CONTRACTOR'S AND ARCHITECT'S STAMPS. SAMPLES SUBMITTED TO ARCHITECT SHALL HAVE TAG STAMPED WITH CONTRACTOR'S STAMP AND APPROPRIATE ACTION SHALL BE INDICATED THEREON.
E. SIZE OF THE ARCHITECT'S STAMP IS 3"X5".

3. SHOP DRAWING PREPARATION:
A. FORM: SUBMIT ONE COPY (PDF FORMAT OR PAPER) OF EACH SHOP DRAWING.
B. SUBMIT ALL RELATED SHOP DRAWING ITEMS TOGETHER. (FOR EXAMPLE, DOORS, FRAMES, HARDWARE AND SPECIFIED SAMPLES ARE TO BE WITHIN THE SAME SUBMITTAL.)

4. CONTRACTOR'S REVIEW:
A. REVIEW, STAMP WITH APPROVAL AND SUBMIT TO THE ARCHITECT SUBMITTALS REQUIRED BY THE CONTRACT DOCUMENTS WITH REASONABLE PROMPTNESS AND IN SUCH SEQUENCE AS TO CAUSE NO DELAY IN THE WORK OR IN THE ACTIVITIES OF THE OWNER OR OF SEPARATE CONTRACTORS.
B. BY APPROVING AND SUBMITTING SUBMITTALS, THE CONTRACTOR REPRESENTS THAT HE HAS DETERMINED AND VERIFIED MATERIALS, FIELD MEASUREMENTS, AND RELATED FIELD CONSTRUCTION CRITERIA, AND HAS CHECKED AND COORDINATED THE INFORMATION CONTAINED WITHIN SUCH SUBMITTAL WITH THE REQUIREMENTS OF THE WORK AND OF THE CONTRACT DOCUMENTS.
C. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS BY THE ARCHITECT'S APPROVAL THEREOF.
D. THE PURPOSE OF SUBMITTALS BY CONTRACTOR IS TO DEMONSTRATE HIS UNDERSTANDING OF THE PROJECT BY INDICATING WHICH EQUIPMENT AND MATERIAL HE INTENDS TO FURNISH AND INSTALL AND BY DETAILING FABRICATION AND INSTALLATION METHODS HE INTENDS TO USE.

5. ARCHITECT'S REVIEW AND APPROVAL:
A. THE ARCHITECT WILL REVIEW EACH SUBMITTAL, MARK IT WITH APPROPRIATE ACTION, AND RETURN IT TO CONTRACTOR WITH REASONABLE PROMPTNESS. SUBMITTALS WILL BE MARKED BY ARCHITECT AS FOLLOWS:
1. "NO EXCEPTIONS" INDICATES THE DRAWINGS HAVE BEEN REVIEWED FOR CONFORMANCE WITH DESIGN AND NO EXCEPTIONS ARE TAKEN. PROCEED WITH THE WORK.
2. "EXCEPTIONS AS NOTED" INDICATES CONTRACTOR MAY PROCEED WITH THE WORK AS NOTED.
3. "RESUBMIT" OR INDICATES DRAWING TO BE REVISED AND RESUBMITTED FOR REVIEW PRIOR TO PROCEEDING WITH THE WORK OR THAT SUBMITTAL DOES NOT COMPLY WITH CONTRACT DOCUMENTS.
B. THE ARCHITECT'S REVIEW AND APPROVAL IS ONLY FOR CHECKING FOR CONFORMANCE WITH INFORMATION GIVEN AND THE DESIGN CONCEPT EXPRESSED IN THE CONTRACT DOCUMENTS.
C. THE ARCHITECT WILL RETURN ONE COPY OF REVIEWED SHOP DRAWINGS FOR PRINTING AND DISTRIBUTION BY CONTRACTOR.
D. MAKE CORRECTIONS AND CHANGES INDICATED FOR UNAPPROVED SUBMITTALS, AND RESUBMIT IN SAME MANNER AS SPECIFIED ABOVE UNTIL ARCHITECT'S APPROVAL IS OBTAINED.

SECTION 01630 - PRODUCT OPTIONS AND SUBSTITUTIONS

1. PRODUCT OPTIONS AND SUBSTITUTIONS:
A. IF IT IS DESIRED TO USE PRODUCTS DIFFERENT FROM THOSE INDICATED IN THE CONTRACT DOCUMENTS, THE PARTY REQUESTING THE SUBSTITUTION SHALL MAKE WRITTEN APPLICATION. THE BURDEN OF PROVING EQUIVALENCY OF PROPOSED SUBSTITUTIONS RESTS WITH THE CONTRACTOR.
1. REQUESTS FOR SUBSTITUTION WILL BE CONSIDERED BY ARCHITECT IN ACCORDANCE WITH THE FOLLOWING:
A. REQUESTS WILL BE CONSIDERED FROM CONTRACTOR ONLY, FOLLOWING CONTRACT AWARD.
B. CONTRACT SUM SHALL BE BASED ONLY ON PRODUCTS AND SYSTEMS SPECIFIED IN THE CONTRACT DOCUMENTS.
C. REQUESTS FOR SUBSTITUTION SHALL BE MADE IN A TIMELY MANNER SUCH THAT PROGRESS OF THE WORK WILL NOT BE ADVERSELY AFFECTED IF SUBSTITUTION IS UNACCEPTABLE.
D. SUBSTITUTION REQUESTS SHALL PRECEDE AND SHALL NOT BE MADE AS A PART OF SHOP DRAWINGS OR PRODUCT DATA SUBMITTALS.
2. REQUESTS FOR SUBSTITUTION SHALL BE ACCOMPANIED BY SUCH TECHNICAL DATA AND SAMPLES AS THE PARTY MAKING THE REQUEST DESIRES TO SUBMIT AND SHALL INDICATE IN WHAT RESPECTS PROPOSED MATERIALS OR PRODUCTS DIFFER FROM THOSE SPECIFIED AND THE EFFECT ON INTERFACING OR RELATED WORK.
3. REQUESTS FOR SUBSTITUTION SHALL BE ACCOMPANIED BY COMPLETE COST DATA INDICATING MATERIAL COST, INSTALLED COST AND SAVINGS, IF ANY, RESULTING FROM PROPOSED SUBSTITUTION.
4. DETERMINATION AS TO ACCEPTABILITY OF PROPOSED SUBSTITUTIONS WILL BE MADE BASED ONLY ON DATA SUBMITTED.
5. CONTRACTOR SHALL COORDINATE INSTALLATION OF ACCEPTED SUBSTITUTIONS WITH INTERFACING WORK, BEARING RE-DESIGN COSTS AND MAKING APPROVED CHANGES IN THE WORK TO PROPERLY INCORPORATE THE SUBSTITUTIONS, AND SHALL WAIVE ALL CLAIMS FOR ADDITIONAL COSTS RELATED TO USE OF ACCEPTABLE SUBSTITUTIONS WHICH BECOME APPARENT FOLLOWING ACCEPTANCE.
A. IN THE EVENT THAT SPECIFIED ITEMS CANNOT BE DELIVERED TO THE JOB SITE AND INCORPORATED INTO THE WORK AT SUCH TIMES AND IN SUCH QUANTITIES AS TO CAUSE NO DELAY, THEN CONTRACTOR MAY REQUEST A SUBSTITUTION IN THE MANNER DESCRIBED ABOVE. SHOULD THE ACCEPTED SUBSTITUTION PROVIDE A COST SAVINGS, THE CONTRACT PRICE WILL BE ADJUSTED BY CHANGE ORDER, WITH OWNER RECEIVING THE BENEFIT OF THE NET SAVINGS. NO INCREASE IN THE CONTRACT PRICE WILL BE ALLOWED ON SUBSTITUTIONS MADE AFTER THE AWARD OF CONTRACT, EXCEPT WHERE THE CONTRACTOR CAN VERIFY A TIMELY PLACEMENT OF ORDERS APPROPRIATE TO THE MATERIALS AND CONDITIONS INVOLVED.
B. INABILITY TO OBTAIN SPECIFIED ITEMS DUE TO CONTRACTOR'S FAILURE TO PLACE TIMELY ORDERS WILL NOT BE CONSIDERED REASON FOR AUTHORIZING SUBSTITUTIONS.

SECTION 06110 - ROUGH CARPENTRY

1. TREATED WOOD PRODUCTS:
A. ALL BLOCKING SHALL BE FIRE-RETARDANT-TREATED WOOD. PRESSURE-IMPREGNATED WITH A CHEMICAL RETARDANT TESTED AND LISTED BY UNDERWRITERS LABORATORIES, INC., (UL) TO PROVIDE A MINIMUM FLAME SPREAD WHEN TESTED IN ACCORDANCE WITH ASTM 384-91A.
B. INSTALL IN CONTINUOUS HORIZONTAL ROW IN MIDDLE THIRD OF STUD HEIGHT. COORDINATE BLOCKING WITH LOCATIONS OF FINISHING MATERIAL, MILLWORK, FIXTURES, SPECIALTY ITEMS AND TRIM.
C. ANY COMPOSITE WOOD PRODUCT MUST CONTAIN NO ADDED UREA FORMALDEHYDE

SECTION 07250 - FIRESTOPPING

1. PROVIDE FIRESTOPPING AS REQUIRED BY APPLICABLE CODE.

SECTION 08100 - METAL DOORS AND FRAMES

1. FRAME INSTALLATION:
A. INSTALL HOLLOW METAL FRAMES IN ACCORDANCE WITH ANSI/SDI-119-83. CLEARANCE BETWEEN FRAME AND INTERFACING WALL SURFACES SHALL BE 1/16" MAXIMUM.
B. WELDED FRAMES:
1. SET WELDED FRAMES IN POSITION PRIOR TO BEGINNING PARTITION WORK. BRACE FRAMES UNTIL PERMANENT ANCHORS ARE SET.
2. SET ANCHORS FOR FRAMES AS WORK PROGRESSES. INSTALL ANCHORS AT HINGE AND STRIKE LEVELS.
3. REMOVE TEMPORARY BRACES AND SPREADERS AFTER WALL CONSTRUCTION IS COMPLETE.
4. INSTALL WELDED FRAMES IN PREPARED OPENINGS IN CONCRETE AND MASONRY WALLS USING COUNTERSUNK BOLTS AND EXPANSION SHIELDS.
5. WELD FIELD SPLICES IN BORROWED LITE FRAMES AND GRIND SMOOTH.
C. DRYWALL (KD) FRAMES: SECURE USING ADJUSTABLE JAMB AND BASE ANCHORS. COMPLETE INSTALLATION SHALL HAVE TIGHT-FITTING JOINTS, WITHOUT GAPS OR OFFSETS.

2. DOOR INSTALLATION:
A. INSTALL HOLLOW METAL DOORS IN FRAMES IN ACCORDANCE WITH SDI-100-85 AND ANSI A151.1-87, USING HARDWARE INDICATED.
B. EDGE CLEARANCES AT DOORS:
1. BETWEEN DOOR AND FRAME, AT HEAD AND JAMBS: 1/8".
2. AT MEETING EDGES OF PAIRS OF DOORS AND AT MULLIONS: 1/8".
3. AT TRANSOM PANELS, WITHOUT TRANSOM BARS: 1/8".
4. AT SILLS WITHOUT THRESHOLDS: 3/8" MAXIMUM ABOVE FINISH FLOOR.
5. AT SILLS WITH THRESHOLDS: 3/8" MAXIMUM ABOVE TOP OF THRESHOLD.
C. FIRE-RATED DOORS: INSTALL IN ACCORDANCE WITH REQUIREMENTS OF NFPA #80.

SECTION 083323 - OVERHEAD COILING DOORS

1.1 SECTION REQUIREMENTS
SUBMITTALS: PRODUCT DATA, SHOP DRAWINGS, MANUFACTURER'S COLOR CHARTS, AND MAINTENANCE DATA.
1.2 DOOR ASSEMBLY
MANUFACTURERS: BASIS OF DESIGN: JANUS MODEL 650, SUBJECT TO COMPLIANCE WITH REQUIREMENTS
1.3 DESCRIPTION TYPE:
CONTINUOUS SHEET ROLLING DOOR MODEL 650 AS MANUFACTURED BY JANUS INTERNATIONAL CORPORATION, TEMPLE, GA. 1.01.02. MOUNTING: TO BE INTERIOR OR EXTERIOR FACE MOUNTED ON A PREPARED JAMB.
1.4 RELATED WORK
PREPARATION OF OPENING, MISCELLANEOUS OR STRUCTURAL STEEL, IRON WORK, ACCESS PANELS, MASTER KEYING CYLINDERS, FINISH OR FIELD PAINTING, ELECTRICAL WIRING, CONDUIT, DISCONNECTING SWITCHES ARE IN THE SCOPE OF THE WORK OF OTHER SECTIONS OR TRADES.
1.5 QUALITY ASSURANCE
QUALIFICATIONS OF MANUFACTURER: PRODUCTS UTILIZED IN THIS SECTION SHALL BE MANUFACTURED BY AN ORGANIZATION WHO REGULARLY ENGAGES IN THE PRODUCTION OF SIMILAR PRODUCTS AND HAS A PROVEN HISTORY OF SUCCESSFUL MANUFACTURED PRODUCTS ACCEPTABLE TO THE ARCHITECT, SUCH AS JANUS INTERNATIONAL CORPORATION.
1.6 GUARANTEE: ALL DOORS AND COMPONENTS SPECIFIED HEREIN SHALL BE GUARANTEED TO BE FREE OF WORKMANSHIP AND DEFECT FOR A PERIOD OF 3 YEARS.
2.1 CURTAIN SHEETS: CONTINUOUS 20" CORRUGATED SHEETS ROLL FORMED FROM 26 GAUGE ASTM A653 GRADE 80 FULL HARD STEEL AND LOCK SEAMED TOGETHER.
2.2 FINISH — GALVANIZED AND PRE-PAINTED WITH SUPER DURABLE POLYESTER PAINT GUARANTEED WITH A 40 YEAR FILM INTEGRITY WARRANTY TO NOT CRACK, PEEL, FLAKE, SPLIT, DELAMINATE OR BLISTER. ADDITIONAL GUARANTEE UP TO 25 YEARS AGAINST FADING OR CHANGING COLOR BASED ON COLOR
2.3 BOTTOM BAR — ROLL FORMED CLEAR ACRYLIC COATED GALVANIZED STEEL REINFORCED WITH A 1-1/2" X 1-1/2" X 12 GAUGE GALVANIZED ANGLE THAT EXTENDS FULLY INTO THE GUIDES. EXTERIOR MOUNTED LIFT HANDLE(S) AND #6 ANGOLA ROPE ATTACHED TO INTERIOR ANGLE.
2.4 WEATHERSTRIPPING:
BLACK PVC BULB-TYPE ASTRAGAL AFFIXED TO THE BOTTOM BAR ASSEMBLY PROVIDES POSITIVE CONTACT WITH THE FLOOR.
2.5 BARREL ASSEMBLY — GALVANIZED COIL STEEL FABRICATED IN A 9-1/2" DIAMETER SPIRAL FORMATION TO ENCLOSE SPRING COUNTERBALANCE SYSTEM AND PROVIDE FULL SPAN CURTAIN WEIGHT SUPPORT. ATTACHED GALVANIZED DRUMS ARE FURNISHED WITH GREASE-FILLED, SHIELDED RADIAL BALL BEARINGS AT ROTATING POINTS AROUND THE AXLE.

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SECTION 083323 - OVERHEAD COILING DOORS (CONTINUED)

2.6 SPRING COUNTERBALANCE — FACTORY LUBRICATED, OIL TEMPERED, HELICAL TORSION SPRINGS LOCATED INSIDE THE BARREL AND MADE OF WIRE CONFORMING TO ASTM A229. SPRINGS ARE ATTACHED TO THE STEEL AXLE TUBE BY MEANS OF A WELDED SPRING CLIP. AXLE TUBE PROVIDED IS SUFFICIENT SIZE TO CARRY CURTAIN LOAD AND SPRING TORQUE.
2.7 SUPPORT BRACKETS — GALVANIZED AND REINFORCED ONE-PIECE 12 GAUGE FORMED STEEL BRACKETS ARE FACTORY INSTALLED TO THE DOOR ASSEMBLY.
2.8 SPRING TENSIONER — LEFT END EXTERNAL MOUNTED RATCHET TENSIONER DEVICE ALLOWS FOR FIELD ADJUSTMENT OF SPRING TENSION ON ALL SPRINGS.
2.9 GUIDE ASSEMBLY — UNIVERSAL MOUNTED GUIDES ROLL FORMED FROM 18 GAUGE GALVANIZED STEEL AND FITTED WITH LEG WEAR STRIPS. 1-5/8" GUIDE DEPTH FURNISHED FOR SUFFICIENT CURTAIN ENGAGEMENT. REMOVABLE GALVANIZED DOOR STOP AT TOP OF EACH GUIDE.
2.10 LOCKING MECHANISM — SINGLE YELLOW ZINC OR OPTIONAL STAINLESS STEEL MINI LATCH FACTORY INSTALLED ON RIGHT SIDE OF DOOR (OUTSIDE LOOKING IN) WITH FOUR BOLTS. SLIDE EXHIBITS MAGNETIC PROPERTIES THAT CAN ACTIVATE GUIDE MOUNTED SECURITY SENSORS. ACCEPTS ALL INDUSTRY PADLOCKS, INCLUDING 7/16" DIAMETER SHANKS. PROVISIONS FOR CYLINDER LOCK INCLUDED.
2.11 FINISH — NON-GALVANIZED SURFACES, EXCLUDING AXLE TUBE, TO CONSIST OF SHOP COAT OF RUST INHIBITOR PRIMER.
3.1 INSTALLATION
A. INSTALL DOOR, TRACK, AND OPERATING EQUIPMENT COMPLETE WITH NECESSARY HARDWARE, ANCHORS, INSERTS, HANGERS, AND EQUIPMENT SUPPORTS.
B. ACCESSIBILITY: INSTALL DOORS, SWITCHES, AND CONTROLS ALONG ACCESSIBLE ROUTES IN COMPLIANCE WITH REGULATORY REQUIREMENTS FOR ACCESSIBILITY.
D. TEST AND ADJUST CONTROLS AND SAFETIES.

SECTION 09250 - GYPSUM DRYWALL

1. QUALITY ASSURANCE:
A. PROVIDE FIRE-RESISTANCE-RATED ASSEMBLIES IDENTICAL TO DESIGN DESIGNATIONS IN UL. "FIRE RESISTANCE DIRECTORY" OR IN LISTING OF OTHER TESTING AGENCIES ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

2. STEEL FRAMING FOR WALLS AND PARTITIONS:
A. STEEL STUDS AND RUNNERS: ASTM C 645, WITH FLANGE EDGES OF STUDS BENT BACK 90° AND DOUBLED OVER TO FORM 3/16" MINIMUM LIP (RETURN) AND COMPLYING WITH THE FOLLOWING REQUIREMENTS FOR MINIMUM THICKNESS OF BASE (UNCOATED) METAL AND FOR DEPTH:
1. THICKNESS: AS INDICATED ON DRAWINGS. (TO MATCH BUILDING STANDARD CONSTRUCTION.)
2. DEPTH: 11/4"
3. INSTALL AS PER ASTM C754 & ASTM C840
4. MAXIMUM STUD SPACING 24 O.C.

3. GYPSUM BOARD:
A. GENERAL: PROVIDE GYPSUM BOARD OF TYPES INDICATED IN MAXIMUM LENGTHS AVAILABLE TO MINIMIZE END-TO-END JOINTS.
B. GYPSUM WALLBOARD: ASTM C 36, AND AS FOLLOWS:
1. TYPE: REGULAR, UNLESS OTHERWISE INDICATED.
2. TYPE: TYPE X FOR FIRE-RESISTANCE-RATED ASSEMBLIES.
3. EDGES: TAPERED.
4. THICKNESS: AS INDICATED ON DRAWINGS.

4. MISCELLANEOUS MATERIALS:
A. CONCEALED ACOUSTICAL SEALANT: NONDRYING, NONHARDENING, NONSKINNING, NONSTAINING, NONBLEEDING, GUNNABLE SEALANT. ALL SEALANT SHOULD MEET THE SCAQMD RULE #1168 REQUIREMENTS FOR VOC LIMIT OF 250 G/L.
B. SOUND ATTENUATION BLANKETS: UNFACED, FORMALDEHYDE FREE GLASS/MINERAL FIBER BLANKET INSULATION WITHOUT MEMBRANE FACING.

SECTION 09900 - PAINTING

1. SUBMITTALS:
A. (2) TWO 8 1/2" X 11" BRUSH OUTS ON COVERSTOCK FOR EACH COLOR AND SPECIFIED SHEEN IS REQUIRED. SUBMIT LABELED DRY SAMPLES TO ARCHITECT FOR APPROVAL.

2. MANUFACTURERS:
A. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS OF ONE OF THE FOLLOWING: PPG; SHERWIN WILLIAMS; BENJAMIN MOORE.

3. PAINT SCHEDULE: USE ONLY LOW ODOR; MINIMAL VOC EMITTING PRODUCTS:
1. GYPSUM DRYWALL (FLAT FINISH AT CEILINGS AND SOFFITS, MAX 50g/L VOC):
A. PRIMER:
1. PPG: 6-2 SPEEDHIDE INTERIOR LATEX PRIMER SEALER
2. SHERWIN WILLIAMS: PRO-MAR 200 ZERO VOC INT. LATEX PRIMER B28W02600
3. BENJAMIN MOORE: SUPER SPEC LATEX ENAMEL UNDERCOATER & PRIMER 253
B. FIRST AND SECOND COATS:
1. PPG: 6-70 SERIES SPEEDHIDE INTERIOR LATEX FLAT WALL PAINT
2. SHERWIN WILLIAMS: PRO-MAR 200 INTERIOR FLAT LATEX WALL PAINT B30W251
3. BENJAMIN MOORE: SUPER SPEC INTERIOR FLAT LATEX WALL PAINT 275

2. GYPSUM WALLBOARD (EGGSHELL FINISH FOR WALLS, MAX 150g/L VOC):
A. PRIMER:
1. PPG: 6-1 SPEEDHIDE MAXBUILD, HIGH BUILD DRYWALL SURFACER
2. SHERWIN WILLIAMS: BUILDERS SOLUTION INTERIOR LATEX PRIMER/SURFACER #A63W00100
3. BENJAMIN MOORE: SUPER SPEC PREP COAT HIGH BUILD LATEX INTERIOR PRIMER 270
B. FIRST AND SECOND COATS:
1. PPG: 6-411 SPEEDHIDE INTERIOR LATEX EGGSHELL ENAMEL
2. SHERWIN WILLIAMS: PRO-MAR 200 LATEX EGG-SHELL ENAMEL B20W2251
3. BENJAMIN MOORE: MOORECRAFT SUPER SPEC LATEX EGGSHELL ENAMEL 274

3. STEEL DOORS & FRAMES (SEMI-GLOSS FINISH, MAX 150g/L VOC):
A. PRIMER:
1. PPG: 90-712 PITT TECH INTERIOR EXTERIOR DTM ACRYLIC PRIMER FINISH
2. SHERWIN WILLIAMS: PRO-CRYL UNIVERSAL ACRYLIC PRIMER B66 SERIES
3. BENJAMIN MOORE: SUPER SPEC HP ACRYLIC METAL PRIMER P04
B. FIRST AND SECOND COATS:
1. PPG: PP919 ADVANTAGE 900 INTERIOR EXTERIOR ACRYLIC SEMI-GLOSS ENAMEL
2. SHERWIN WILLIAMS: PROCLASSIC SEMI-GLOSS ACRYLIC ENAMEL B31 SERIES
3. BENJAMIN MOORE: MOORE'S KITCHEN & BATH ACRYLIC ENAMEL 322

4. WOOD DOORS, WOOD FRAMES AND TRIM (SEMI GLOSS FINISH, MAX 150g/L VOC):
A. PRIMER:
1. PPG: 17-951 SEAL GRIP INTERIOR ACRYLIC PRIMER/FINISH
2. SHERWIN WILLIAMS: PREPRITE PRO BLOCK LATEX PRIMER/SEALER: B51-600
3. BENJAMIN MOORE: FRESH START ALL PURPOSE ACRYLIC PRIMER 023
B. FIRST AND SECOND COATS:
1. PPG: PP919 ADVANTAGE 900 INTERIOR EXTERIOR ACRYLIC SEMI-GLOSS ENAMEL
2. SHERWIN WILLIAMS: PROCLASSIC SEMI-GLOSS ACRYLIC ENAMEL B31 SERIES
3. BENJAMIN MOORE: MOORE'S KITCHEN & BATH ACRYLIC ENAMEL 322

4. EXAMINATION AND INSTALLATION:
A. EXAMINE SUBSTRATES AND CONDITIONS UNDER WHICH PAINTING WILL BE PERFORMED FOR COMPLIANCE WITH PAINT APPLICATION REQUIREMENTS. SURFACES RECEIVING PAINT MUST BE THOROUGHLY DRY BEFORE PAINT IS APPLIED. START OF PAINTING WILL BE CONSTRUED AS THE APPLICATOR'S ACCEPTANCE OF SURFACES AND CONDITIONS WITHIN A PARTICULAR AREA.
B. SURFACE PREPARATION: CLEAN AND PREPARE SURFACES TO BE PAINTED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS FOR EACH PARTICULAR SUBSTRATE CONDITION AND AS SPECIFIED.
C. MINIMUM COATING THICKNESS: APPLY MATERIALS NO THINNER THAN THE MANUFACTURER'S RECOMMENDED SPREADING RATE. PROVIDE THE TOTAL DRY FILM THICKNESS OF THE ENTIRE SYSTEM AS RECOMMENDED BY THE MANUFACTURER.

5. CLEAN AND PROTECT:
A. PROTECT WORK OF OTHER TRADES, WHETHER BEING PAINTED OR NOT, AGAINST DAMAGE BY PAINTING. CORRECT DAMAGE BY CLEANING, REPAIRING OR REPLACING, AND REPAINTING, AS ACCEPTABLE TO ARCHITECT.
B. PROVIDE "WET PAINT" SIGNS TO PROTECT NEWLY PAINTED FINISHES. REMOVE TEMPORARY PROTECTIVE WRAPPINGS PROVIDED BY OTHERS TO PROTECT THEIR WORK AFTER COMPLETING PAINTING OPERATIONS.
1. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

SECTION 10522 - FIRE EXTINGUISHERS, CABINETS AND ACCESSORIES

1. QUALITY ASSURANCE:
A. UL-LISTED PRODUCTS: FIRE EXTINGUISHERS UL-LISTED AND BEAR UL "LISTING MARK" FOR TYPE, RATING, AND CLASSIFICATION OF EXTINGUISHER.

2. MANUFACTURERS:
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. LARSEN'S MANUFACTURING CO. 2. J.L. INDUSTRIES. 3. POTTER ROEMER, INC.

3. FIRE EXTINGUISHERS:
A. MULTIPURPOSE DRY CHEMICAL TYPE: UL-RATED 4-A:60-B:C, 10-LB. NOMINAL CAPACITY, IN ENAMELED STEEL CONTAINER.
B. PROVIDE WALL HUNG FIRE EXTINGUISHERS (HANDLE ON EXTINGUISHER AT 48"AFF.) AS INDICATED ON DRAWINGS.

4. FIRE EXTINGUISHER CABINETS:
A. GENERAL: PROVIDE RECESSED FIRE EXTINGUISHER CABINETS WHERE INDICATED, OF SUITABLE SIZE FOR HOUSING FIRE EXTINGUISHERS OF TYPES AND CAPACITIES INDICATED.
B. CABINET TYPE: SUITABLE FOR MOUNTING CONDITIONS INDICATED, OF THE FOLLOWING TYPES:
1. RECESSED: CABINET BOX (TUB) FULLY RECESSED IN WALLS OF SUFFICIENT DEPTH TO SUIT STYLE OF TRIM INDICATED. VERTICAL GLAZED OPENING WITH CLEAR PLEXIGLASS MATERIAL.
2. MANUFACTURER: LARSON ARCHITECTURAL SERIES #2409-R2, VERTICAL DUO STEEL DOOR (DSA GLASS STANDARD) WITH PRIME COAT
3. INSTALLATION: MOUNT BOTTOM OF CABINET AT 30" AFF TO WOOD BLOCKING.

SECTION 13 34 19 METAL BUILDING SYSTEMS

1. SECTION INCLUDES
A. METAL BUILDING SYSTEMS INCLUDING:
1. METAL FRAMING COMPONENTS.
2. METAL WALL PANELS AND TRIM.
3. METAL ROOF PANELS AND TRIM.
4. METAL BUILDING ACCESSORIES.

2. RELATED SECTIONS
A. SECTION 07 92 00 -JOINT SEALANTS.
B. SECTION [03 30 00 -CAST-IN-PLACE CONCRETE:] [__ -_:] CONCRETE SLABS AND FOOTINGS.
C. SECTION [05 12 00 -STRUCTURAL METAL FRAMING:] [_ __-__:] METAL WALL AND ROOF FRAMING.
D. SECTION [05 40 00 -COLD-FORMED METAL FRAMING:] [09 22 00 -METAL SUPPORT ASSEMBLIES:] [___-__:] METAL PARTITION WALL FRAMING.

3. REFERENCES
SPECIFIER: THE STANDARDS REFERENCED BELOW ARE IN GENERAL CHOSEN TO MATCH THOSE REQUIRED BY THE 2015 VERSION OF THE INTERNATIONAL BUILDING CODE. REVIEW AND EDIT AS NECESSARY TO REFLECT THE APPLICABLE BUILDING CODE FOR THE PROJECT.
A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC):
1. AISC 360 -SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, JUNE 22, 2010. METAL
2. AISC 341 - AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, JUNE 22ND, 2010.
3. AISC 303 - CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, APRIL 14TH, 2010.
B. AMERICAN IRON AND STEEL INSTITUTE (AISI):
1. AISI S100 -NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2012 EDITION.
C. AMERICAN WELDING SOCIETY (AWS):
1. AWS D1.1/D1.1M -STRUCTURAL WELDING CODE – STEEL, 2010.
2. AWS D1.3/D1.3M -STRUCTURAL WELDING CODE -SHEET STEEL, 2008
D. AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE):
1. ASHRAE 90.1-2013 -ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS (I-P EDITION).
E. ASTM INTERNATIONAL (ASTM): LATEST VERSIONS OF:
1. ASTM A 36/A 36M -STANDARD SPECIFICATION FOR CARBON STRUCTURAL STEEL.
2. ASTM A 475 -STANDARD SPECIFICATION FOR ZINC-COATED STEEL WIRE STRAND.
3. ASTM A 500/A 500M -STANDARD SPECIFICATION FOR COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES.
4. ASTM A 529/A 529M -STANDARD SPECIFICATION FOR HIGH-STRENGTH CARBON-MANGANESE STEEL OF STRUCTURAL QUALITY.
5. ASTM A 563 -STANDARD SPECIFICATION FOR CARBON AND ALLOY STEEL NUTS.
6. ASTM A 572/A 572M -STANDARD SPECIFICATION FOR HIGH-STRENGTH LOW-ALLOY COLUMBIUM-VANADIUM STRUCTURAL STEEL.
7. ASTM A 653/A 653M -STANDARD SPECIFICATION FOR STEEL SHEET, ZINC-COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS.
8. ASTM A 792/A 792M -STANDARD SPECIFICATION FOR STEEL SHEET, 55 PERCENT ALUMINUM- ZINC ALLOY-COATED BY HOT-DIP PROCESS.
9. ASTM A 992/A 992M -STANDARD SPECIFICATION FOR STRUCTURAL STEEL SHAPES.
10. ASTM A 1011/A 1011M -STANDARD SPECIFICATION FOR STEEL, SHEET AND STRIP, HOT-ROLLED, CARBON, STRUCTURAL, HIGH-STRENGTH, LOW-ALLOY AND HIGH-STRENGTH LOW-ALLOY WITH IMPROVED FORMABILITY AND ULTRA-HIGH STRENGTH
11. ASTM A 1018/A 1018A -STANDARD SPECIFICATION FOR STEEL, SHEET AND STRIP, HEAVY- THICKNESS COILS, HOT-ROLLED, CARBON, COMMERCIAL, DRAWING, STRUCTURAL, HIGH-STRENGTH LOW-ALLOY, HIGH-STRENGTH LOW-ALLOY WITH IMPROVED FORMABILITY, AND ULTRA-HIGH STRENGTH
12. ASTM C 518 -STANDARD TEST METHOD FOR STEADY-STATE THERMAL TRANSMISSION PROPERTIES BY MEANS OF THE HEAT FLOW METER APPARATUS.
13. ASTM C 1363 -STANDARD TEST METHOD FOR THERMAL PERFORMANCE OF BUILDING MATERIALS AND ENVELOPE ASSEMBLIES BY MEANS OF A HOT BOX APPARATUS.
14. ASTM D 635 -STANDARD TEST METHOD FOR RATE OF BURNING AND/OR EXTENT AND TIME OF BURNING OF PLASTICS IN A HORIZONTAL POSITION.
15. ASTM D 1003 -STANDARD TEST METHOD FOR HAZE AND LUMINOUS TRANSMITTANCE OF TRANSPARENT PLASTICS.
16. ASTM D 1494 -STANDARD TEST METHOD FOR DIFFUSE LIGHT TRANSMISSION FACTOR OF REINFORCED PLASTICS PANELS.
17. ASTM D 1929 -STANDARD TEST METHOD FOR DETERMINING IGNITION TEMPERATURE OF PLASTICS.
18. ASTM D 2240 -STANDARD TEST METHOD FOR RUBBER PROPERTY—DUROMETER HARDNESS.
19. ASTM D 2244 -STANDARD PRACTICE FOR CALCULATION OF COLOR TOLERANCES AND COLOR DIFFERENCES FROM INSTRUMENTALLY MEASURED COLOR COORDINATES.
20. ASTM D 4214 -STANDARD TEST METHODS FOR EVALUATING THE DEGREE OF CHALKING OF EXTERIOR PAINT FILMS.
21. ASTM E 84 -STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS.
22. ASTM E 72 -STANDARD TEST METHODS OF CONDUCTING STRENGTH TESTS OF PANELS FOR BUILDING CONSTRUCTION.
23. ASTM E 283 -STANDARD TEST METHOD FOR DETERMINING RATE OF AIR LEAKAGE THROUGH EXTERIOR WINDOWS, CURTAIN WALLS, AND DOORS UNDER SPECIFIED PRESSURE DIFFERENCES ACROSS SPECIMEN.
24. ASTM E 331 -STANDARD TEST METHOD FOR WATER PENETRATION OF EXTERIOR WINDOWS, SKYLIGHTS, DOORS, AND CURTAIN WALLS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE.
25. ASTM E 1592 -STANDARD TEST METHOD FOR STRUCTURAL PERFORMANCE OF SHEET METAL ROOF AND SIDING SYSTEMS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE.
26. ASTM E 1646 -STANDARD TEST METHOD FOR WATER PENETRATION OF EXTERIOR METAL ROOF PANEL SYSTEMS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE.
27. ASTM E 1680 -STANDARD TEST METHOD FOR RATE OF AIR LEAKAGE THROUGH EXTERIOR METAL ROOF PANEL SYSTEMS.
28. ASTM E 1980 -STANDARD PRACTICE FOR CALCULATING SOLAR REFLECTANCE INDEX OF HORIZONTAL AND LOW-SLOPED OPAQUE SURFACES.
29. ASTM F 436 -STANDARD SPECIFICATION FOR HARDENED STEEL WASHERS
30. ASTM F 1941 -STANDARD SPECIFICATION FOR ELECTRODEPOSITED COATINGS ON THREADED FASTENERS (UNIFIED INCH SCREW THREADS (UN/UNR))
31. ASTM F 3125 -STANDARD SPECIFICATION FOR HIGH STRENGTH STRUCTURAL BOLTS, STEEL AND ALLOY STEEL, HEAT TREATED, 120 KSI (830 MPA) AND 150 KSI (1040 MPA) MINIMUM TENSILE STRENGTH, INCH AND METRIC DIMENSIONS.
F. COOL ROOF RATING COUNCIL (CRRC):
1. ANSI/CRRC S100 -STANDARD TEST METHODS FOR DETERMINING RADIATIVE PROPERTIES OF MATERIALS, APRIL 26TH, 2016.
G. FACTORY MUTUAL APPROVALS (FM APPROVALS):
1. FM 4471 -APPROVAL STANDARD FOR CLASS 1 PANEL ROOFS.
2. FM 4880 -APPROVAL STANDARD FOR CLASS 1 FIRE RATING OF INSULATED WALL OR WALL AND ROOF/ROOF/CEILING PANELS, INTERIOR FINISH MATERIALS OR COATINGS AND EXTERIOR WALL SYSTEMS.
3. FM 4881 -APPROVAL STANDARD FOR CLASS 1 EXTERIOR WALL SYSTEMS.
H. FM GLOBAL:
1. FM 1-28 – PROPERTY LOSS PREVENTION DATA SHEET 1-28, WIND DESIGN, OCTOBER 2015.
I. INTERNATIONAL ACCREDITATION SERVICE (IAS):
1. ACCREDITATION CRITERIA 472 (AC472) -ACCREDITATION CRITERIA FOR INSPECTION PROGRAMS FOR MANUFACTURERS OF METAL BUILDING SYSTEMS, APRIL 2017
J. INTERNATIONAL STANDARDS ORGANIZATION (ISO):
1. ISO 14044 – ENVIRONMENTAL MANAGEMENT -- LIFE CYCLE ASSESSMENT – REQUIREMENTS AND GUIDELINES, 2006
2. ISO 21930 – SUSTAINABILITY IN BUILDING CONSTRUCTION – ENVIRONMENTAL DECLARATION OF BUILDING PRODUCTS, 2007.
K. METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA):
1. METAL BUILDING SYSTEMS MANUAL, 2012 EDITION.
L. NATIONAL FENESTRATION RATING COUNCIL (NFRC):
1. NFRC 100 -PROCEDURE FOR DETERMINING FENESTRATION PRODUCT U-FACTORS, 2014
2. NFRC 200 -PROCEDURE FOR DETERMINING FENESTRATION PRODUCT SOLAR HEAT GAIN COEFFICIENT AND VISIBLE TRANSMITTANCE AT NORMAL INCIDENCE, 2010.
M. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
1. NFPA 285 -STANDARD FIRE TEST METHOD FOR EVALUATION OF FIRE PROPAGATION CHARACTERISTICS OF EXTERIOR NON-LOAD-BEARING WALL ASSEMBLIES CONTAINING COMBUSTIBLE COMPONENTS, 2012 EDITION.
N. RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC):
1. SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS, AUGUST 1, 2014.
O. UNDERWRITERS LABORATORIES (UL):
1. UL-580 -TESTS FOR UPLIFT RESISTANCE OF ROOF ASSEMBLIES.
2. UL-790 -STANDARD TEST METHODS FOR FIRE TESTS OF ROOF COVERINGS.
3. UL-2218 -IMPACT RESISTANCE OF PREPARED ROOF COVERING MATERIALS.
P. UNITED STATES GREEN BUILDING COUNCIL (USGBC):
1. LEED V4 -LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN FOR BUILDING DESIGN AND CONSTRUCTION, JANUARY 27TH, 2017.

4. ADMINISTRATIVE REQUIREMENTS
A. PRE-INSTALLATION MEETING: PRIOR TO ERECTION OF FRAMING, CONDUCT PRE-INSTALLATION MEETING AT SITE ATTENDED BY OWNER, ARCHITECT, MANUFACTURER'S TECHNICAL REPRESENTATIVE, INSPECTION AGENCY AND RELATED TRADE CONTRACTORS.
B. COORDINATE WORK OF DIVISION 07 SECTIONS "ROOF SPECIALTIES" AND "ROOF ACCESSORIES" AND OPENINGS AND PENETRATIONS AND MANUFACTURER'S ACCESSORIES WITH INSTALLATION OF METAL PANELS.

5. DEFINITIONS
A. TRADITIONAL METAL BUILDING SYSTEM: BUILDING SYSTEM USING EITHER CONTINUOUS OR SIMPLE SPAN "Z" PURLINS FOR SUPPORT OF ROOF COVERING MATERIAL.
B. GABLE SYMMETRICAL: CONTINUOUS FRAME BUILDING WITH RIDGE IN CENTER OF BUILDING, CONSISTING OF TAPERED OR STRAIGHT COLUMNS AND TAPERED OR STRAIGHT RAFTERS. SIDEWALL GIRTS MAY BE CONTINUOUS (BY-PASSING COLUMNS) OR SIMPLE SPAN (FLUSH IN COLUMN LINE). RAFTERS MAY OR MAY NOT HAVE INTERIOR COLUMNS.
C. GABLE UNSYMMETRICAL: CONTINUOUS FRAME BUILDING WITH AN OFF-CENTER RIDGE, CONSISTING OF TAPERED OR STRAIGHT COLUMNS, AND TAPERED OR STRAIGHT RAFTERS. EAVE HEIGHT AND ROOF SLOPE MAY DIFFER ON EACH SIDE OF RIDGE. SIDEWALL GIRTS MAY BE CONTINUOUS (BY-PASSING COLUMNS) OR SIMPLE SPAN (FLUSH IN COLUMN LINE). RAFTERS MAY OR MAY NOT HAVE INTERIOR COLUMNS.
D. SINGLE SLOPE: CONTINUOUS FRAME BUILDING WHICH DOES NOT CONTAIN RIDGE BUT CONSISTS OF ONE CONTINUOUS SLOPE FROM SIDE TO SIDE. BUILDING CONSISTS OF STRAIGHT OR TAPERED COLUMNS AND TAPERED OR STRAIGHT RAFTERS. SIDEWALL GIRTS MAY BE CONTINUOUS (BY-PASSING COLUMNS) OR SIMPLE SPAN (FLUSH IN COLUMN LINE). RAFTERS MAY OR MAY NOT HAVE INTERIOR COLUMNS.
E. LEAN-TO (LT): BUILDING EXTENSION, WHICH DOES NOT CONTAIN RIDGE, BUT CONSISTS OF ONE CONTINUOUS SLOPE FROM SIDE TO SIDE, USUALLY WITH SAME ROOF SLOPE AND GIRT DESIGN AS BUILDING TO WHICH ATTACHED.
F. ROOF SLOPE: PITCH EXPRESSED AS INCHES OF RISE FOR EACH 12 INCHES (305 MM) OF HORIZONTAL RUN.
G. ACRYLIC-COATED GALVALUME: ALUMINUM-ZINC COATED STEEL WITH A THIN CLEAR ACRYLIC FINISH COATING ELIMINATING THE NEED FOR ROLL-FORMING OIL AND REDUCING INCIDENCE OF FIELD MARKING BY HANDLING OR FOOT TRAFFIC.
H. BUILDING EAVE HEIGHT: NOMINAL DIMENSION MEASURED FROM FINISHED FLOOR TO TOP FLANGE OF EAVE STRUT.
I. BUILDING WIDTH: MEASURED FROM OUTSIDE TO OUTSIDE OF SIDE WALL SECONDARY STRUCTURAL MEMBER.
J. BUILDING LENGTH: MEASURED FROM OUTSIDE TO OUTSIDE OF END WALL SECONDARY STRUCTURAL MEMBER.
K. AUXILIARY LOADS: DYNAMIC LOADS INDUCED BY CRANES, CONVEYORS, OR MATERIAL HANDLING SYSTEMS.
L. COLLATERAL LOADS: WEIGHT OF ANY NON-MOVING EQUIPMENT OR MATERIAL, SUCH AS CEILINGS, ELECTRICAL OR MECHANICAL EQUIPMENT, SPRINKLER SYSTEMS, PLUMBING, OR CEILINGS.
M. DEAD LOAD: ACTUAL WEIGHT OF BUILDING SYSTEM AS SUPPLIED BY MANUFACTURER SUPPORTED BY GIVEN MEMBER.
N. FLOOR LIVE LOADS: LOADS INDUCED ON FLOOR SYSTEM BY BUILDING OCCUPANTS AND POSSESSIONS INCLUDING BUT NOT LIMITED TO FURNITURE AND EQUIPMENT.
O. ROOF LIVE LOADS: LOADS PRODUCED BY MAINTENANCE ACTIVITIES, RAIN, ERECTION ACTIVITIES, AND OR MOVABLE OR MOVING LOADS BUT NOT INCLUDING WIND, SNOW, SEISMIC, CRANE, OR DEAD LOADS.
P. ROOF SNOW LOADS: GRAVITY LOAD INDUCED BY WEIGHT OF SNOW OR ICE ON ROOF, ASSUMED TO ACT ON HORIZONTAL PROJECTION OF ROOF.
Q. SEISMIC LOADS: LOADS ACTING IN ANY DIRECTION ON STRUCTURAL SYSTEM DUE TO ACTION OF AN EARTHQUAKE.
R. WIND LOADS: LOADS ON STRUCTURE INDUCED BY FORCES OF WIND BLOWING FROM ANY HORIZONTAL DIRECTION.

SECTION 13 34 19 METAL BUILDING SYSTEMS (CONTINUED)

6. DESIGN REQUIREMENTS
A. GOVERNING DESIGN CODE: STRUCTURAL DESIGN FOR THE METAL BUILDING SYSTEM SHALL BE PERFORMED BY THE MANUFACTURER OF THE METAL BUILDING SYSTEM IN ACCORDANCE WITH THE BUILDING CODE PROVIDED IN THE CONTRACT DOCUMENTS.
SPECIFIER: THE STANDARDS REFERENCED BELOW ARE IN GENERAL CHOSEN TO MATCH THOSE REQUIRED BY THE 2015 VERSION OF THE INTERNATIONAL BUILDING CODE. REVIEW AND EDIT AS
B. DESIGN BASIS:
1. USE STANDARDS, SPECIFICATIONS, RECOMMENDATIONS, FINDINGS, AND INTERPRETATIONS OF PROFESSIONALLY RECOGNIZED GROUPS AS BASIS FOR ESTABLISHING DESIGN, DRAFTING, FABRICATION, AND QUALITY CRITERIA, PRACTICES, AND TOLERANCES, INCLUDING THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
2. DESIGN STRUCTURES IN ACCORDANCE WITH MBMA PRACTICES AND MANUAL INCLUDING FABRICATION AND ERECTION TOLERANCES.
3. DESIGN STRUCTURAL MILL SECTIONS AND WELDED PLATE SECTIONS IN ACCORDANCE WITH AISC 360, ASD METHOD.
4. DESIGN THE LATERAL FORCE RESISTING SYSTEMS AND RELATED COMPONENTS FOR SEISMIC LOADS IN ACCORDANCE WITH AISC 341.
5. DESIGN COLD-FORMED STEEL STRUCTURAL MEMBERS AND PANELS IN ACCORDANCE WITH AISI S-100.
6. DESIGN ALL BOLTED JOINTS IN ACCORDANCE WITH RCSC SPECIFICATION.
C. DESIGN LOADS:
1. IN ACCORDANCE WITH CONTRACT DOCUMENTS AND MANUFACTURER'S STANDARD DESIGN PRACTICES.
2. DESIGN LOADS INCLUDE DEAD LOADS, ROOF LIVE LOADS, WIND LOADS, SEISMIC LOADS, COLLATERAL LOADS, AUXILIARY LOADS, FLOOR LIVE LOADS AND APPLIED OR SPECIFIED LOADS.

7. SUBMITTALS
A. SUBMITTALS FOR REVIEW:
1. SHOP DRAWINGS:
a. COMPLETE ERECTION DRAWINGS WITH IDENTIFICATION AND ASSEMBLY OF BUILDING COMPONENTS.
B. SHOW ANCHOR BOLT SETTINGS, TRANSVERSE CROSS-SECTIONS, SIDEWALL, ENDWALL, AND ROOF FRAMING, FLASHING, AND SHEETING, AND ACCESSORY INSTALLATION DETAILS.
C. BEAR SEAL AND SIGNATURE OF REGISTERED PROFESSIONAL ENGINEER RESPONSIBLE FOR METAL BUILDING SYSTEM DESIGN IN ACCORDANCE WITH STATE LAW.
2. MANUFACTURER INSTALLATION MANUAL SHOWING:
a. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
B. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
C. INSTALLATION METHODS.
3. STRUCTURAL DESIGN CALCULATIONS: [_ SETS] SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN ACCORDANCE WITH APPLICABLE STATE LAW.
SPECIFIER: RETAIN AND MODIFY THE FOLLOWING ITEM FOR PROJECTS REQUIRING DOMESTIC MATERIALS.
4. BUY AMERICAN/ARRA COMPLIANCE LETTER OF CERTIFICATION.
B. SAMPLES:
1. SUBMIT COLOR CHIPS SHOWING MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS AND PATTERNS FOR EACH FINISH PRODUCT.
2. AFTER COLOR SELECTION SUBMIT SAMPLES REPRESENTING ACTUAL PRODUCT, COLOR, AND PATTERNS.
C. QUALITY CONTROL SUBMITTALS:
1. IAS AC472 CERTIFICATE FOR EACH FACILITY INVOLVED IN THE DESIGN AND FABRICATION OF THE METAL BUILDING SYSTEM.
SPECIFIER: RETAIN THIS PARAGRAPH FOR WHEN MTR SUBMITTAL IS REQUIRED IN THE CONTRACT DOCUMENTS.
2. MATERIAL TEST REPORTS (MTR) FOR ALL STEEL MATERIAL USED IN THE MANUFACTURE OF PRIMARY AND SECONDARY FRAMING MEMBERS, PANELS AND BOLTS SPECIFIED IN THIS SECTION AND WHEN REQUIRED BY ASTM A 6/A 6M

8. QUALITY ASSURANCE
A. MANUFACTURER AND FABRICATOR QUALIFICATIONS: PRIMARY PRODUCTS FURNISHED BY SINGLE IAS AC472 ACCREDITED MANUFACTURER/FABRICATOR WITH MINIMUM [5] [__] YEARS OF EXPERIENCE.
B. ERECTOR QUALIFICATIONS:
1. SINGLE INSTALLER WITH MINIMUM [5] [ ] YEARS OF EXPERIENCE IN INSTALLING PRODUCTS OF SAME OR SIMILAR TYPE AND SCOPE.
2. INSTALLER MUST BE CERTIFIED BY THE METAL BUILDING MANUFACTURER.

9. DELIVERY, STORAGE AND HANDLING
A. STORE PACKAGED PRODUCTS IN ORIGINAL, UNOPENED PACKAGING UNTIL READY FOR INSTALLATION.
B. STORE AND DISPOSE OF SOLVENT-BASED MATERIALS AND MATERIALS USED WITH SOLVENT-BASED MATERIALS IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
C. PROTECT STEEL PRODUCTS FROM WEATHER AS SPECIFIED BY MANUFACTURER INSTRUCTIONS.

10. PROJECT CONDITIONS
A. DO NOT INSTALL SYSTEMS WHEN TEMPERATURE, HUMIDITY, OR VENTILATION IS OUTSIDE OF LIMITS RECOMMENDED BY MANUFACTURER.

11. WARRANTIES
A. SPECIAL MANUFACTURER'S WARRANTY: ON MANUFACTURER'S STANDARD FORM, IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE METAL BUILDING SYSTEM COMPONENTS THAT FAIL IN MATERIALS AND WORKMANSHIP WITHIN ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
B. SPECIAL WEATHERTIGHTNESS WARRANTY: ON MANUFACTURER'S STANDARD FORM, IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE METAL BUILDING SYSTEM COMPONENTS THAT FAIL TO REMAIN WEATHERTIGHT, INCLUDING LEAKS, [WITHOUT MONETARY LIMITATION] [UP TO COST LIMITATION OF SEVEN DOLLARS ($7.00) PER SQUARE FOOT OF COVERED AREA] [UP TO COST LIMITATION OF FOURTEEN DOLLARS ($14.00) PER SQUARE FOOT OF COVERED AREA] WITHIN [5] [10] [15] [20] YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
C. SPECIAL PANEL FINISH WARRANTY: ON MANUFACTURER'S STANDARD FORM, IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE METAL PANELS THAT EVIDENCE DETERIORATION OF FACTORY-APPLIED F FINISH WITHIN THE SPECIFIED NUMBER YEARS FROM DATE OF SUBSTANTIAL COMPLETION, INCLUDING:
1. ACRYLIC COATED GALVALUME (GALVALUME® PLUS): PRODUCT WILL NOT RUPTURE, FAIL STRUCTURALLY, OR PERFORATE WITHIN PERIOD OF 20 YEARS DUE TO NORMAL ATMOSPHERIC CORROSION.
2. FLUOROPOLYMER TWO-COAT SYSTEM (PVDF):
SPECIFIER: CONFIRM WARRANTED PERFORMANCE VALUES BELOW FOR CUSTOM COLORS. SECOND OPTIONS IN SUBPARAGRAPHS BELOW ARE FOR VULCAN STEEL STRUCTURES, INC. BRITE RED.
a. COLOR FADING IN EXCESS OF [5] [10] HUNTER UNITS PER ASTM D 2244 FOR [30] [25] YEARS.
B. CHALKING IN EXCESS OF NO. [8] [6] RATING PER ASTM D 4214 FOR [30] [25] YEARS.
C. FAILURE OF ADHESION, PEELING, CHECKING, OR CRACKING FOR 40 YEARS.
3. METALLIC FLUOROPOLYMER TWO-COAT SYSTEM (METALLIC PVDF):
a. CHALKING IN EXCESS OF NO. 6 RATING PER ASTM D 4214 FOR 25 YEARS.
B. FAILURE OF ADHESION, PEELING, CHECKING, OR CRACKING FOR 25 YEARS.
4. MODIFIED SILICONE-POLYESTER TWO-COAT SYSTEM (SMP):
SPECIFIER: CONFIRM WARRANTED PERFORMANCE VALUES BELOW FOR CUSTOM COLORS. SECOND OPTIONS IN SUBPARAGRAPHS BELOW ARE FOR VULCAN STEEL STRUCTURES, INC. CRIMSON RED. VULCAN STEEL STRUCTURES, INC. POLAR WHITE POLYESTER DOES NOT CARRY A WARRANTY AGAINST CHALKING.
a. COLOR FADING IN EXCESS OF [5] [7] HUNTER UNITS PER ASTM D 2244, FOR VERTICAL APPLICATIONS FOR [30] [25] YEARS.
B. COLOR FADING IN EXCESS OF [7] [10] HUNTER UNITS PER ASTM D 2244, FOR NON-VERTICAL APPLICATIONS FOR [30] [25] YEARS.
C. CHALKING IN EXCESS OF NO. [8] [7] RATING PER ASTM D 4214, FOR VERTICAL APPLICATIONS FOR [30] [25] YEARS.
D. CHALKING IN EXCESS OF NO. [6] [5] RATING PER ASTM D 4214, FOR NON-VERTICAL APPLICATIONS FOR [30] [25] YEARS.
E. FAILURE OF ADHESION, PEELING, CHECKING, OR CRACKING FOR 40 YEARS.
PART 2- PRODUCTS

12.1 MANUFACTURERS
A. BASIS OF DESIGN MANUFACTURER: VULCAN STEEL STRUCTURES, INC. HYPERLINK "HTTP://WWW.VULCANSTEEL.COM/"WWW.VULCANSTEEL.COM.
B. SUBSTITUTIONS: [UNDER PROVISIONS OF DIVISION 01] [NOT PERMITTED].

12.2 MATERIALS
SPECIFIER: RETAIN AND MODIFY THE FOLLOWING SECTION WHEN PROJECT HAS DOMESTIC CONTENT REQUIREMENTS, WHICH WOULD BE ALL FEDERAL GOVERNMENT WORK AND MOST STATE GOVERNMENT WORK. ALSO NOTE THAT THERE WAS A SIGNIFICANT CHANGE IN HOW FERROUS PRODUCTS APPLY MADE TO THE BUY AMERICAN ACT BY THE AMERICAN REINVESTMENT AND RECOVERY ACT OF 2009. SPECIFICALLY, MANY OF THE COST LIMITATIONS AND EXCEPTIONS PROVIDED TO FOREIGN MATERIALS PROCESSED IN AMERICA IN THE ORIGINAL ACT WERE DISALLOWED FOR FERROUS PRODUCTS, REQUIRING THEM TO BE 100% DOMESTIC STEEL.
A. BUY AMERICAN ACT/AMERICAN REINVESTMENT AND RECOVERY ACT (ARRA) REQUIREMENTS: PROVIDE MATERIALS IN COMPLIANCE WITH THE FOLLOWING REQUIREMENTS:
1. BUY AMERICAN ACT OF 1933 BAA-41 U.S.C §§ 10A – 10D FOR NON-FERROUS PRODUCTS.
2. BUY AMERICAN PROVISIONS OF SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA), FOR FERROUS PRODUCTS.
B. PRIMARY FRAMING STEEL:
SPECIFIER: RECYCLED CONTENT IS REQUIRED FOR SOME SUSTAINABLE BUILDING PROGRAMS AND STANDARDS. RETAIN AS NECESSARY HERE AND ELSEWHERE. PRIMARY FRAMING RECYCLED CONTENT IS BASED ON THE STEEL RECYCLING INSTITUTE (SRI) DATA FOR ELECTRIC ARC FURNACE (EAF) METHOD. SECONDARY FRAMING AND PANEL RECYCLED CONTENT IS BASED ON SRI DATA FOR BASIC OXYGEN FURNACE (BOF) METHOD.
1. RECYCLED CONTENT: POST-CONSUMER RECYCLED CONTENT PLUS ONE-HALF OF PRE-CONSUMER RECYCLED CONTENT NOT LESS THAN 75 PERCENT.
2. HOT-ROLLED SHAPES: ASTM A 36 OR ASTM A 992, MINIMUM YIELD OF 36 KSI (248 MPA) OR 50 KSI (345 MPA).
3. BUILT-UP SECTIONS:
a. WEBS:
1. ASTM A 1011 OR ASTM A1018, SS OR HSLAS, GRADE 55 (380) FOR WEBS 3/16 INCH (4.76 MM) THICK AND THINNER.
2) ASTM A 572 GRADE 50 (340) OR ASTM A572 GRADE 55 (380) OR ASTM A 529 GRADE 55 FOR WEBS THICKER THAN 3/16 INCH (4.76 MM).
B. FLANGES: ASTM A 529 GRADE 55 (380) OR ASTM A 572 GRADE 50 (340) OR 55 (380).
4. ROUND TUBE: ASTM A 500, GRADE B OR C WITH MINIMUM YIELD STRENGTH OF 42 KSI (290 MPA).
5. SQUARE AND RECTANGULAR TUBE: ASTM A 500, GRADE B OR C, MINIMUM YIELD STRENGTH OF 42 KSI (290 MPA).
6. COLD-FORMED C SECTIONS: ASTM A 1011, GRADE 55 (380), OR ASTM A 653, GRADE 55 (380).
7. X-BRACING: ASTM A 529 OR A 572 FOR ROD BRACING 36 KSI (248 MPA) OR 50 KSI (345 MPA), ASTM A 36 FOR ANGLE BRACING OR ASTM A 475 FOR CABLE BRACING.
C. SECONDARY FRAMING STEEL:
1. PURLINS, GIRTS, AND EAVE STRUTS: ASTM A 1011 GRADE 55 (380), OR ASTM A 653, GRADE 55 (380).
2. RECYCLED CONTENT: POST-CONSUMER RECYCLED CONTENT PLUS ONE-HALF OF PRE-CONSUMER RECYCLED CONTENT NOT LESS THAN 25 PERCENT.
SPECIFIER: GAUGE IS AN INSUFFICIENT WAY TO SPECIFY THICKNESS FOR COLD-FORMED STEEL COIL MATERIAL DUE TO OUTDATED STANDARDS WHICH HAVE BUILT-IN TOLERANCES GREATER THAN CURRENT COIL STEEL MANUFACTURING TECHNOLOGY REQUIRES. HOWEVER, MUCH OF THE CONSTRUCTION INDUSTRY CONTINUES TO SPECIFY THICKNESS BY GAUGE ALONE, WHICH OPENS UP POSSIBLE GAMESMANSHIP IN MATERIAL THICKNESS SPECIFICATION BY ALLOWING MANUFACTURERS TO INTENTIONALLY USE TOLERANCES TO REDUCE SUPPLIED MINIMUM THICKNESS. IN ORDER TO ENSURE THE MATERIAL PROVIDED MEETS THE INTENDED SPECIFICATION, IT IS RECOMMENDED THAT THE GAUGE DESIGNATIONS BE USED ONLY AS DESCRIPTORS THAT REFERENCE A MINIMUM UNCOATED DECIMAL THICKNESS DEFINED EXPLICITLY IN A COMMON AREA OF THE SPECIFICATION AS SHOWN BELOW. SPECIFYING MATERIAL BY GAUGE ALONE WILL DEFAULT TO OUTDATED STANDARDS BEING USED TO PROVIDE A MINIMUM OR NOMINAL THICKNESS.
3. THICKNESS:
a. 16 GAUGE: 0.056 INCH (1.421 MM) MINIMUM UNCOATED THICKNESS.
B. 14 GAUGE: 0.067 INCH (1.689 MM) MINIMUM UNCOATED THICKNESS.
C. 13 GAUGE: 0.081 INCH (2.051 MM) MINIMUM UNCOATED THICKNESS.
D. 12 GAUGE: 0.100 INCH (2.534 MM) MINIMUM UNCOATED THICKNESS.
4. FINISH: [G-90 PRE-GALVANIZED] [RED OXIDE] [GRAY] SHOP COAT. SHOP COAT ONLY INTENDED TO PROVIDE TEMPORARY PROTECTION DURING TRANSPORTATION AND ERECTION.

SECTION 13 34 19 METAL BUILDING SYSTEMS (CONTINUED)

D. PANELS:
1. MATERIALS: ASTM A 792.
2. RECYCLED CONTENT: POST-CONSUMER RECYCLED CONTENT PLUS ONE-HALF OF PRE-CONSUMER RECYCLED CONTENT NOT LESS THAN 25 PERCENT.
3. THICKNESS AND YIELD STRENGTH:
a. 26 GAUGE: 0.0172 INCH (0.437 MM) MINIMUM UNCOATED THICKNESS, 80 KSI (550 MPA) YIELD STRENGTH.
B. 24 GAUGE: 0.0212 INCH (0.538 MM) MINIMUM UNCOATED THICKNESS, 50 KSI (340 MPA) YIELD STRENGTH.
C. 22 GAUGE: 0.0272 INCH (0.690 MM) MINIMUM UNCOATED THICKNESS, 50 KSI (380 MPA) YIELD STRENGTH.
4. FINISHES:
SPECIFIER: DELETE BRAND NAMES HERE AND REPLACE THEM WITH REFERENCES TO THIS SECTION GOING FORWARD IF REQUIRED.
A. GALVALUME: ALUMINUM-ZINC ALLOY COATING, 55% ALUMINUM, 50% ZINC COATED STEEL PER ASTM A 792 AZ55.
B. GALVALUME® PLUS: ACRYLIC-COATED ALUMINUM-ZINC ALLOY COATING, 55% ALUMINUM, 50% ZINC COATED STEEL PER ASTM A 792 AZ55 WITH ACRYLIC FINISH WITH NO ADDED LUBRICANT.
C. EXTERIOR PAINT:
SPECIFIER: RETAIN ONE OR MORE OF THE FOLLOWING THREE FINISH PARAGRAPHS AS APPLICABLE TO THE PROJECT. COORDINATE WITH WARRANTY ARTICLE IN PART 1.
1. MODIFIED SILICONE-POLYESTER TWO-COAT SYSTEM (SMP): 0.20 – 0.25 MIL PRIMER WITH 0.7 – 0.8 MIL COLOR COAT. BASIS OF DESIGN: STANDARD COLOR.
SPECIFIER: FLUOROPOLYMER COATINGS ARE BASED ON ARKEMA, INC. KYNAR 500 AND SOLVAY SOLEXIS HYLAR 5000 PVF2 RESINS.
2) FLUOROPOLYMER TWO-COAT SYSTEM (PVDF): 0.2 – 0.3 MIL PRIMER WITH 0.7 - 0.8 MIL 70 PERCENT PVDF FLUOROPOLYMER COLOR COAT. BASIS OF DESIGN: KYNAR®.
3) FLUOROPOLYMER TWO-COAT METALLIC SYSTEM (PVDF METALLIC): 0.2 – 0.3 MIL PRIMER WITH 0.7 -0.8 MIL 70 PERCENT PVDF METALLIC FLUOROPOLYMER COLOR COAT. BASIS OF DESIGN: KYNAR® METALLIC.
D. INTERIOR PAINT: 0.5 MIL TOTAL DRY FILM THICKNESS CONSISTING OF PRIMER COAT AND WASH COAT OF MANUFACTURER'S STANDARD LIGHT-COLORED ACRYLIC OR POLYESTER BACKER FINISH.
5. FASTENERS:
a. THROUGH-FASTENED PANELS: SELF-DRILLING WITH SEALING WASHER.
B. STANDING SEAM PANELS: LONG LIFE SELF-DRILLING WITH SEALING WASHER.
C. RIDGE: LONG-LIFE SELF-DRILLING WITH SEALING WASHER.
D. CLIPS TO PURLIN OR BAR JOISTS: LONG-LIFE SELF-DRILLING WITH HEX WASHER HEAD AND WASHER.
6. CLIPS:
a. LOW OR HIGH FIXED CLIPS: USE WHERE MODERATE THERMAL EXPANSION AND CONTRACTION IN ROOF PANEL IS EXPECTED.
B. LOW OR HIGH SLIDING CLIPS: PROVIDE 2 TO 4 INCHES OF TRAVEL FOR PANEL THERMAL EXPANSION AND CONTRACTION.
7. SEALANTS AND CLOSURES:
a. SIDE-LAPS: FACTORY APPLIED, HOT MELT, FOAMABLE MASTIC.
B. END-LAPS, EAVE, RIDGE ASSEMBLY, GABLE FLASHINGS: FIELD-APPLIED NON-SKINNING SEALANT AS SPECIFIED IN SECTION 07 92 00.
C. STANDING SEAM ROOF CLOSURES: 1) OUTSIDE CLOSURES: 24 GAUGE STEEL SHEET. 2) INSIDE CLOSURES: 18 GAUGE GALVALUME OR G-40 GALVANIZED COATED STEEL COMPLYING WITH ASTM A 653/A 653M
D. THROUGH-FASTENED ROOF CLOSURES: PROVIDE CLOSED-CELL POLYETHYLENE INSIDE [AND OUTSIDE] FOAM CLOSURES.
1. BULK DENSITY: 2 POUNDS PER CUBIC FOOT. 2) SERVICE TEMPERATURE: -100 TO 180 DEGREES FAHRENHEIT. 3) SHORE HARDNESS: 7 ON AA SCALE OR 51 ON 00 SCALE WHEN TESTED TO ASTM D 2240.

2.3 PRIMARY FRAMING
A. FRAME DESIGN: [AS INDICATED ON DRAWINGS] [GABLE SYMMETRICAL] [SINGLE SLOPE] [LEAN-TO].
B. SIDEWALL COLUMN PROFILE: [TAPERED OR PRISMATIC] [PRISMATIC] [AS INDICATED ON DRAWINGS].
C. FRAME SPAN: [MODULAR OR CLEAR SPAN AS INDICATED ON DRAWINGS] [MODULAR SPAN AS INDICATED ON DRAWINGS] [CLEAR SPAN].
D. MODULAR FRAME INTERIOR COLUMN PROFILE: H SHAPE, ROUND PIPE, OR TUBE] [H SHAPE] [ROUND PIPE] [TUBE SECTIONS] [AS INDICATED ON DRAWINGS].
E. BRACING: [STANDARD X-BRACING OR PORTAL FRAMES AS ALLOWED BY ACCESSORIES] [X-BRACING] [PORTAL FRAMES] [SHEAR WALLS BY OTHERS].

2.4 SECONDARY FRAMING
A. ROOF ZEE PURLINS:
1. HORIZONTAL STRUCTURAL MEMBERS WHICH SUPPORT ROOF COVERINGS.
2. DEPTH: AS REQUIRED BY DESIGN, [8] [10] [12] INCHES ([203] [216] [254] [305] MM) MINIMUM.
3. THICKNESS: AS REQUIRED BY DESIGN, 16 GAUGE MINIMUM.
4. FINISH: [RED OXIDE] [GRAY] SHOP COAT. SHOP COAT ONLY INTENDED TO PROVIDE TEMPORARY PROTECTION DURING TRANSPORTATION AND ERECTION.
B. WALL ZEE GIRTS:
1. HORIZONTAL STRUCTURAL MEMBERS THAT SUPPORT VERTICAL PANELS.
2. DEPTH: AS REQUIRED BY DESIGN, [8] [10] [12] INCHES ([203] [216] [254] [305] MM) MINIMUM.
3. GAUGE: AS REQUIRED BY DESIGN, 16 GAUGE (0.056 INCH (1.424 MM) MINIMUM UNCOATED THICKNESS).
4. FINISH: [RED OXIDE] [GRAY] SHOP COAT. SHOP COAT ONLY INTENDED TO PROVIDE TEMPORARY PROTECTION DURING TRANSPORTATION AND ERECTION.
C. SPANDREL BEAMS: ASTM A 36/A 36M OR ASTM A 992/A 992M WIDE FLANGE SHAPES, MINIMUM YIELD 50 KSI FOR SUPPORT OF WALL SYSTEMS PROVIDED BY OTHERS, AS REQUIRED BY DESIGN.

2.5 BOLTS
A. RIGID FRAME CONNECTIONS: PROVIDE HIGH STRENGTH BOLTS, NUTS AND WASHERS:
1. BOLTS: ASTM F 3125 GRADE A325 HEAVY HEX STRUCTURAL TYPE I.
2. WASHERS: [ASTM F 436 TYPE 1 HARDENED STEEL] [NOT REQUIRED].
3. NUTS: ASTM A 563 GRADE C HEAVY HEX. NUTS SHALL BE WAX COATED BY EMULSION SUCH THAT THE TORQUE REQUIRED TO COMPLETE A ROTATIONAL CAPACITY (RC) TEST SHALL BE REDUCED BY 40% FROM THE UN-WAXED STATE.
4. COATING: [ASTM F 1941 ELECTRODEPOSITED YELLOW ZINC] [HOT-DIPPED GALVANIZED].
B. OTHER CONNECTIONS: PROVIDE HIGH STRENGTH OR MACHINE BOLTS AS REQUIRED BY MANUFACTURER DESIGN:
1. HIGH STRENGTH BOLTS AND NUTS:
a. BOLTS: ASTM F 3125 GRADE A325 HEAVY HEX STRUCTURAL TYPE I.
B. NUTS: ASTM A 563 GRADE C HEAVY HEX.
C. COATING: ASTM F 1941 ELECTRODEPOSITED YELLOW ZINC.
2. MACHINE BOLTS:
a. BOLTS: ASTM A 307 GRADE CARBON STEEL.
B. NUTS: ASTM A 563 GRADE A HEX NUT.
C. COATING: ASTM F 1941 ELECTRODEPOSITED CLEAR ZINC.

2.6 ROOF SYSTEMS
A. ASSEMBLY PERFORMANCE REQUIREMENTS: PROVIDE ROOF PRODUCTS AND ASSEMBLIES MEETING THE FOLLOWING REQUIREMENTS:
SPECIFIER: COORDINATE THESE REQUIREMENTS WITH APPLICABLE NATIONAL CODES AND STANDARDS. ROOF RADIATIVE PROPERTIES ARE PARTICULAR TO CLIMATE AND STANDARDS AND MAY NOT BE REQUIRED. UL AND/OR FM GLOBAL REQUIREMENTS MAY BE NEEDED FOR INSURANCE PURPOSES.
1. CLASS 90 RATED AND LISTED IN ACCORDANCE WITH UL-580 FOR WIND UPLIFT.
2. CLASS A RATED AND LISTED IN ACCORDANCE WITH UL-790 FOR EXTERNAL FIRE.
3. CLASS 4 RATED AND LISTED IN ACCORDANCE WITH UL-2218 FOR IMPACT RESISTANCE.
B. THROUGH-FASTENED PANELS:
1. TYPE: SINGLE SKIN RIBBED PANELS WITH EXPOSED FASTENERS.
2. STRENGTH: DETERMINE AND CERTIFY ALLOWABLE PANEL STRENGTHS IN ACCORDANCE WITH AISI S100.
3. PANEL PROFILE(S): PBR; 1-1/4 INCH (32 MM) RIBS AT 12 INCH (305 MM) CENTERS, 1/2:12 MINIMUM ROOF SLOPE.
a. THICKNESS: [26 GAUGE] [24 GAUGE] [22 GAUGE]
B. FINISH: [GALVALUME® PLUS] [SMP] [PVDF] [PVDF METALLIC]
SPECIFIER: DELETE COLOR FOR UNPAINTED FINISHES SUCH AS GALVALUME® AND GALVALUME® PLUS.
C. COLOR: [SELECTED FROM MANUFACTURER STANDARD COLORS] [AS SHOWN ON DRAWINGS].
D. AIR INFILTRATION: MAXIMUM AIR INFILTRATION OF 0.04 CUBIC FEET PER MINUTE PER SQUARE FOOT OF SPECIMEN AREA WHEN TESTED TO ASTM E 1680 AT A PRESSURE DIFFERENTIAL OF +/-1.57 PSF (75 PA).
E. WATER INFILTRATION: NO UNCONTROLLABLE WATER LEAKAGE WHEN TESTED TO ASTM E 1646 AT A 20 PSF (955 PA) PRESSURE DIFFERENTIAL WHEN SPRAYED WITH 5 GALLONS OF WATER PER HOUR PER SQUARE FOOT (203 LITERS PER SQUARE METER) OF SPECIMEN AREA.
SPECIFIER: RETAIN FM APPROVALS' LISTING REQUIREMENT FOR FM GLOBAL-INSURED PROJECTS OR WHERE FM GLOBAL REQUIREMENTS ARE USED AS MINIMUM DESIGN STANDARD. SELECT REQUIRED WINDSTORM CLASSIFICATION BASED UPON CALCULATION METHOD IN FM GLOBAL LOSS PREVENTION SHEET 1-28; NOTE THAT FM APPROVALS' WINDSTORM CLASSIFICATION DOES NOT CORRELATE DIRECTLY TO DESIGN WIND SPEED.
F. FM APPROVALS RATING: PROVIDE FM 4471 APPROVED ASSEMBLIES ON THE BASIS OF THE FOLLOWING RATINGS. IDENTIFY MATERIALS WITH FM APPROVALS MARKINGS:
1. EXTERNAL FIRE: CLASS A.
2) INTERNAL FIRE: CLASS 1.
3) HAIL: SEVERE.
4) WIND: [1-60] [1-75] [1-90] [1-120] [AS DETERMINED BY FM 1-28]
4. PANEL PROFILE(S): [PBU; 3/4 INCH (19 MM) RIBS AT 6 INCH (152 MM) CENTERS, 1:12 MINIMUM ROOF SLOPE.] [7.2; (1-1/2 INCH (39 MM) RIBS AT 7.2 INCH CENTERS, 1/2:12 MINIMUM ROOF SLOPE.]
a. THICKNESS: [26 GAUGE] [24 GAUGE] [22 GAUGE]
B. FINISH: [GALVALUME® PLUS] [SMP] [PVDF] [PVDF METALLIC]
SPECIFIER: DELETE COLOR FOR UNPAINTED FINISHES SUCH AS GALVALUME® AND GALVALUME® PLUS.
C. COLOR: [SELECTED FROM MANUFACTURER STANDARD COLORS] [AS SHOWN ON DRAWINGS].
5. PANEL FASTENERS: [LONG-LIFE FINISH.] [410 SERIES STAINLESS STEEL] [300 SERIES STAINLESS STEEL].
6. SIDELAP MASTIC: [1 INCH X 3/32 INCH (25 MM X 2.4 MM)] [1/2 INCH X 3/32 INCH (13 MM X 2.4 MM)].
C. STANDING SEAM PANELS:
1. TYPE: SINGLE SKIN PANELS WITH CONCEALED CLIPS.
2. PANEL STRENGTH: DETERMINE AND CERTIFY PANEL STRENGTH AS FOLLOWS:
a. POSITIVE LOADING (TOWARD PANEL SUPPORTS): DETERMINE IN ACCORDANCE WITH AISI S100.
B. NEGATIVE LOADING (AWAY FROM PANEL SUPPORTS): DETERMINE IN ACCORDANCE WITH ASTME 1592.
3. PANEL PROFILE: DL324®:
a. PANEL TYPE: TRAPEZOIDAL MACHINE SEAMED, 1/4:12 MINIMUM ROOF SLOPE.
B. PANEL WIDTH: [24 INCHES WIDE X 3 INCHES HIGH (610 MM WIDE X 76 MM HIGH)] [24 INCHES WIDE X 3 INCHES HIGH (610 MM WIDE X 76 MM HIGH)] [18 INCHES WIDE X 3 INCHES HIGH (457 MM WIDE X 76 MM HIGH)] [12 INCHES WIDE X 3 INCHES HIGH (305 MM WIDE X 76 MM HIGH)].
C. THICKNESS: [24 GAUGE] [22 GAUGE].
D. FINISH: [GALVALUME® PLUS] [PVDF] [SMP] [PVDF METALLIC].
SPECIFIER: DELETE COLOR FOR UNPAINTED FINISHES SUCH AS GALVALUME® AND GALVALUME® PLUS.
E. COLOR: [SELECTED FROM MANUFACTURER STANDARD COLORS] [AS SHOWN ON DRAWINGS].
F. AIR INFILTRATION: MAXIMUM AIR INFILTRATION OF 0.04 CUBIC FEET PER MINUTE PER SQUARE FOOT OF SPECIMEN AREA WHEN TESTED TO ASTM E 1680 AT A PRESSURE DIFFERENTIAL OF +/-1.57 PSF (75 PA).
G. WATER INFILTRATION: NO UNCONTROLLABLE WATER LEAKAGE WHEN TESTED TO ASTM E 1646 AT A 20 PSF (955 PA) PRESSURE DIFFERENTIAL WHEN SPRAYED WITH 5 GALLONS OF WATER PER HOUR PER SQUARE FOOT (203 LITERS PER SQUARE METER) OF SPECIMEN AREA.
SPECIFIER: RETAIN FM APPROVALS' LISTING REQUIREMENT FOR FM GLOBAL-INSURED PROJECTS OR WHERE FM GLOBAL REQUIREMENTS ARE USED AS MINIMUM DESIGN STANDARD. SELECT REQUIRED WINDSTORM CLASSIFICATION BASED UPON CALCULATION METHOD IN FM GLOBAL LOSS PREVENTION SH

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CHRISTOPHER J HEARD REGISTERED ARCHITECT 13274 NORTH CAROLINA ATLANTA, GEORGIA

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

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PROJECT SPECIFICATIONS

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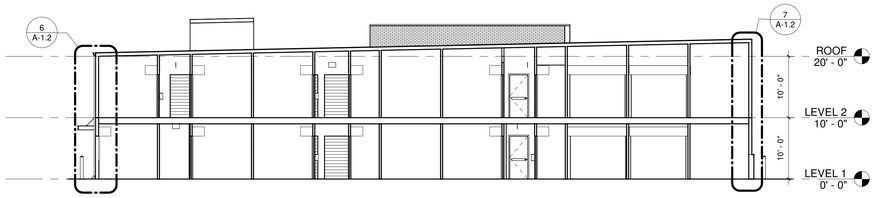
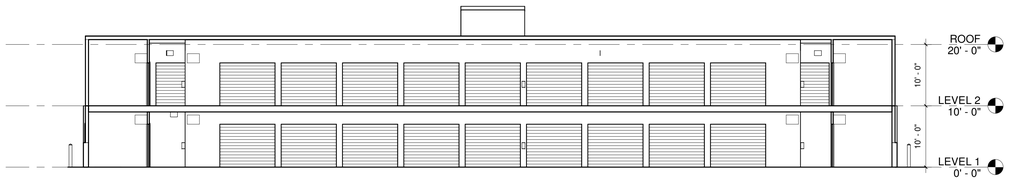
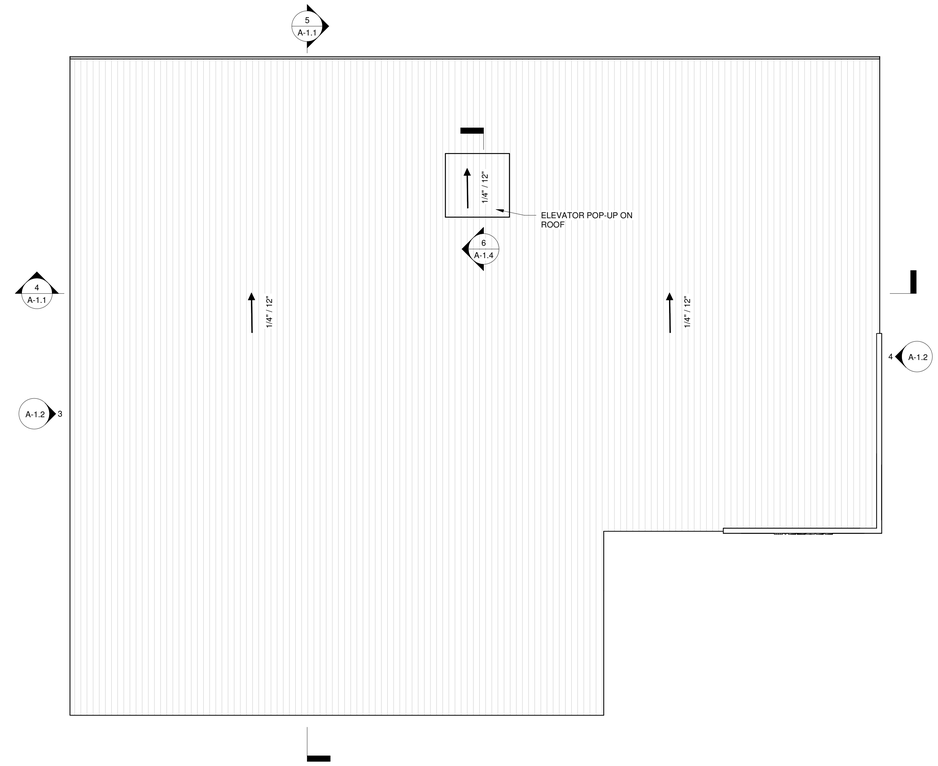
1/8" = 1'-0" Scale	A-0.3.0
247-001-01 Project No.	Drawing Number



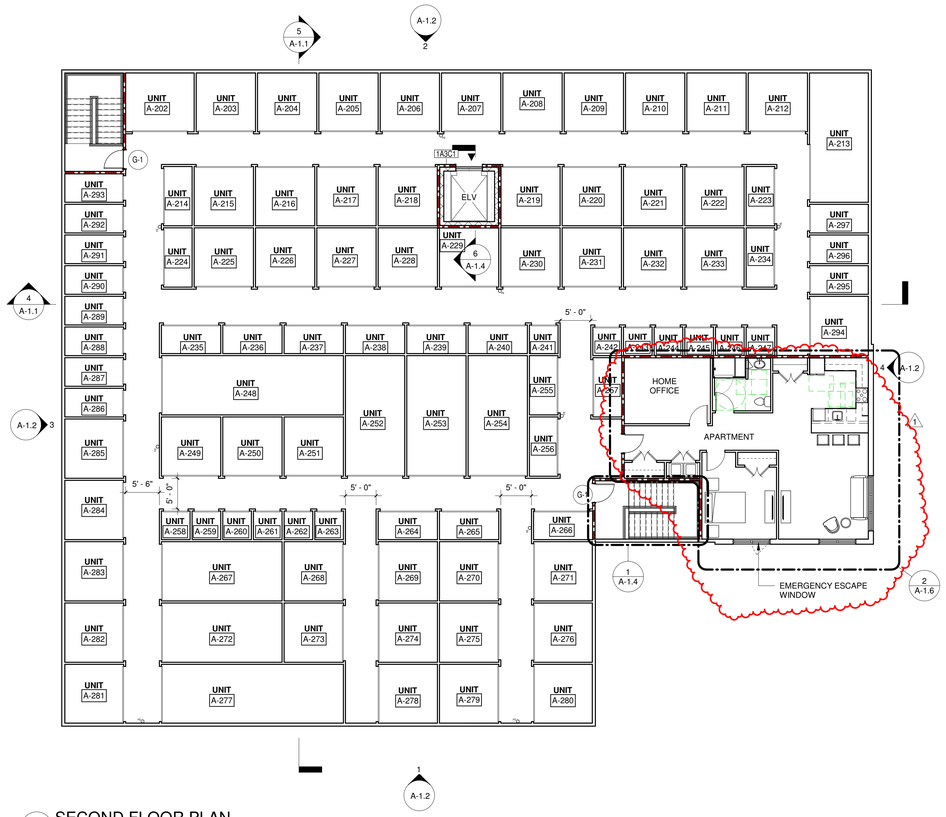
5 TRANSVERSE SECTION
1" = 10'-0"



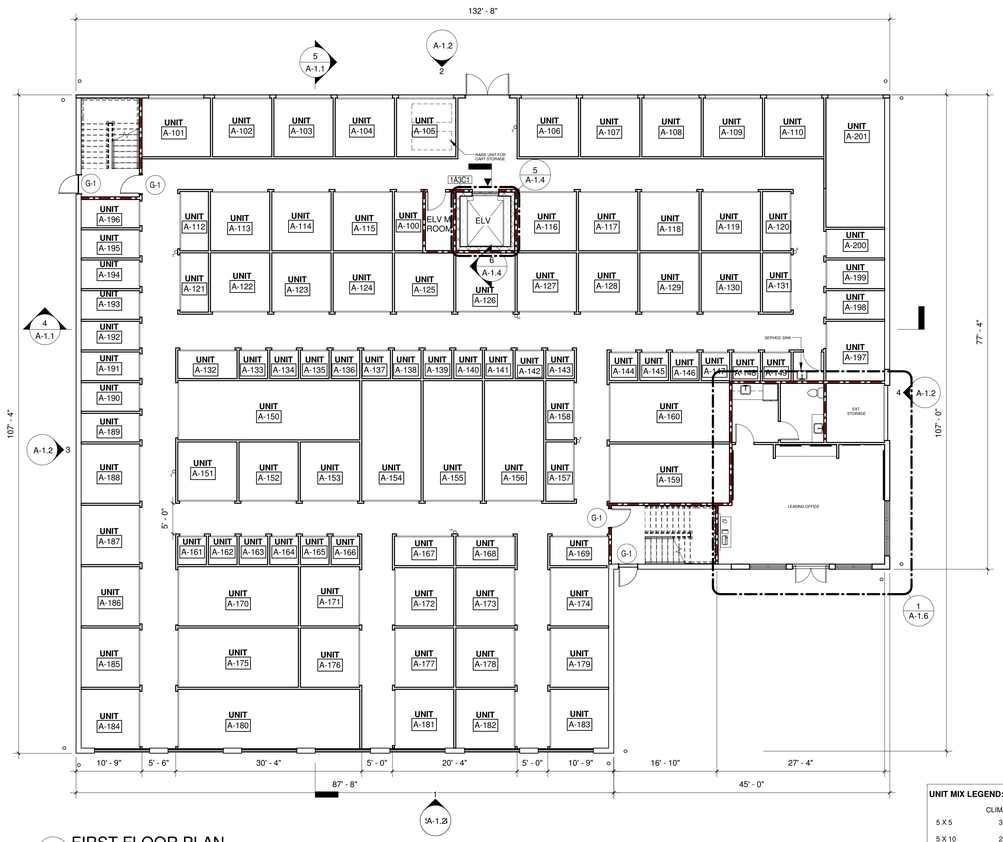
4 LONGITUDINAL SECTION
1" = 10'-0"



3 ROOF PLAN
1" = 10'-0"



2 SECOND FLOOR PLAN
1" = 10'-0"



1 FIRST FLOOR PLAN
1" = 10'-0"

UNIT MIX LEGEND:

	CLIMATE	NON-CLIMATE	TOTAL
5 X 5	36	0	36
5 X 10	22	0	22
10 X 5	26	0	26
10 X 10	93	0	93
10 X 20	14	0	14
10 X 30	4	0	4
	195	**0**	**195**

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No.	Date	Description
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1	10/24/23	PERMIT COMMENTS

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MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

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PARTITION PLANS, ROOF PLAN, SECTIONS

Author Drawn	
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As indicated Scale	**A-1.1**
247-001-01 Project No.	Drawing Number

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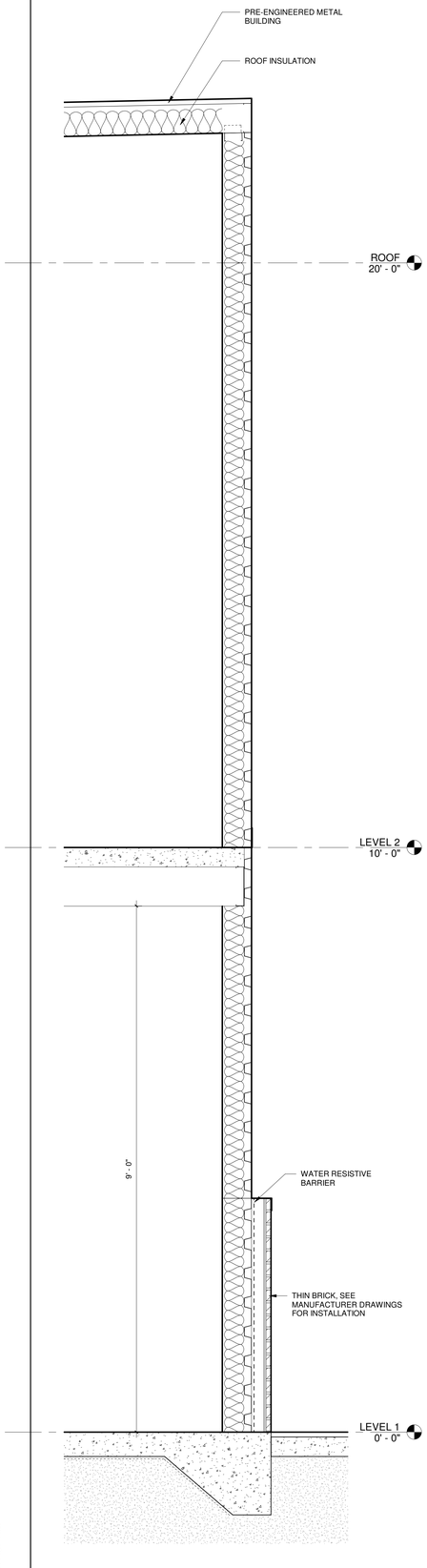
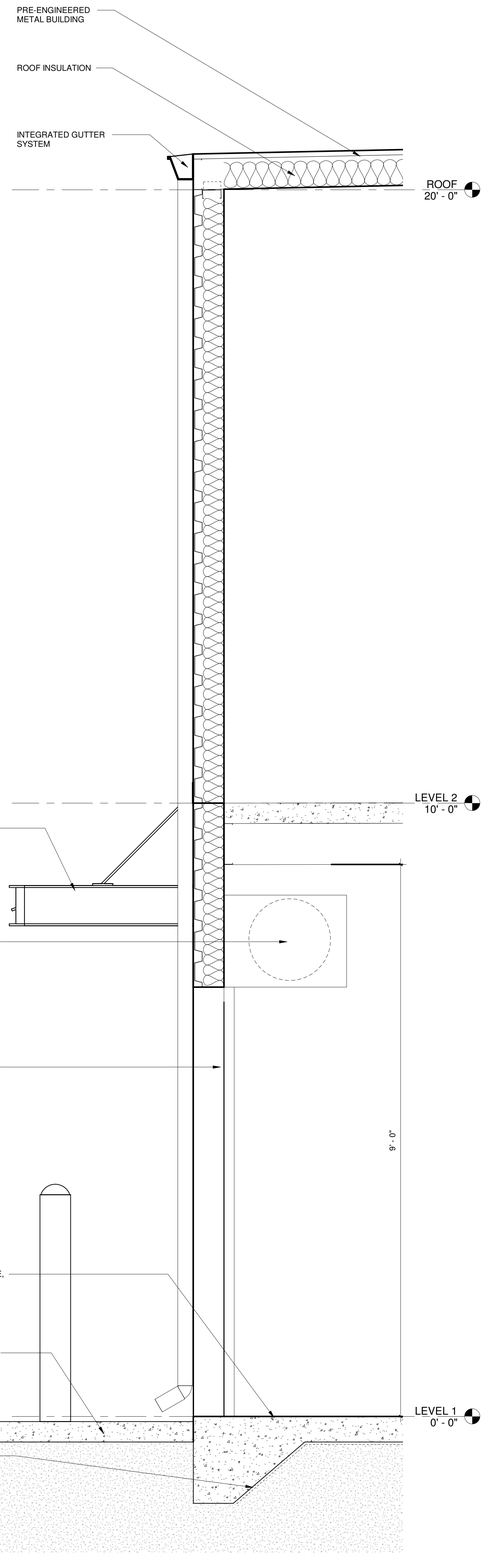
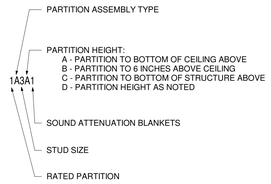


7 TYP STACKED WALL SECTION
1" = 1'-0"



6 TYP WALL SECTION
1" = 1'-0"

PARTITION TAG LEGEND

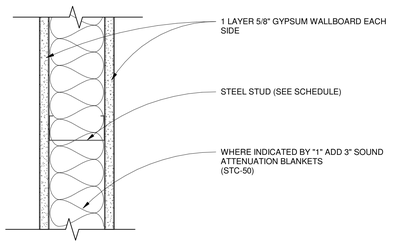


STANDARD PARTITION TYPE			
	STRUCTURAL ASSEMBLY		
TYPE	SHEATHING	STUD	SHEATHING
A	1-Layer	Metal C-Stud	1-Layer
B	2-Layers	Metal C-Stud	2-Layers
C	1-Layer	Metal C-Stud	None
D	1-Layer	Furring Channel	None

RATED PARTITION DESIGNATIONS	
DESIGNATOR	PARTITION RATED
0	Smoke Rated
1	1 Hour Rated
2	2 Hours Rated

SOUND ATTENUATION BLANKETS DESIGNATIONS	
DESIGNATOR	METAL STUD SIZE
0	No Sound Attenuation Blankets
1	Sound Attenuation Blankets

STANDARD METAL STUD SIZE DESIGNATIONS	
SIZE DESIGNATOR	METAL STUD SIZE
0	7/8" Furring Channel
1	1 5/8" Stud
2	2 1/2" Stud
3	3 5/8" Stud
4	4" Stud
6	6" Stud

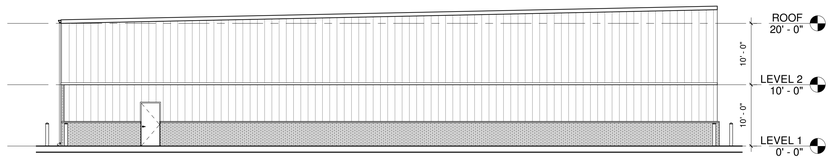


5 TYP 1HR PARTITION TYPE
3" = 1'-0"

PARTITION SCHEDULE - TYPE A

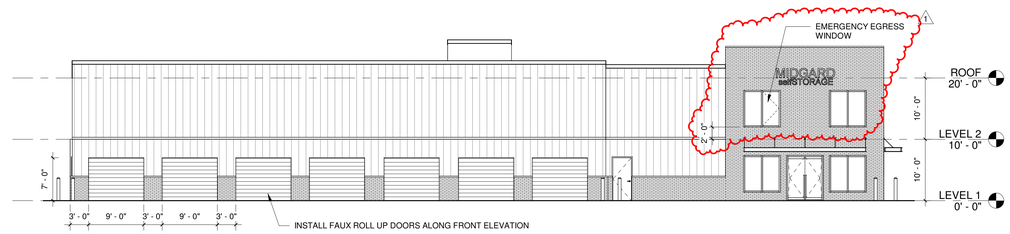
PARTITION TYPE	STUD SIZE	STUD GAUGE	STUD SPACING	GYP BD THICKNESS	ATTENUATION THICKNESS	FIRE RATING	TESTED ASSEMBLY NUMBER	STC RATING	HEAD DETAIL	BASE DETAIL	REMARKS
1A3C1	3 5/8"	25	16"	5/8"	3"	1HR	U.L. U419	-			

4 EAST ELEVATION
1" = 10'-0"



3 WEST ELEVATION
1" = 10'-0"

2 REAR ELEVATION
1" = 10'-0"



1 FRONT ELEVATION
1" = 10'-0"

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1	10/24/23	PERMIT COMMENTS

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

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EXTERIOR ELEVATIONS & WALL SECTIONS

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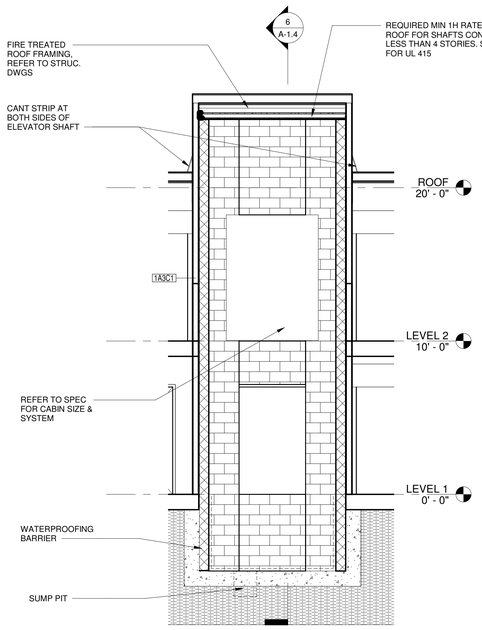
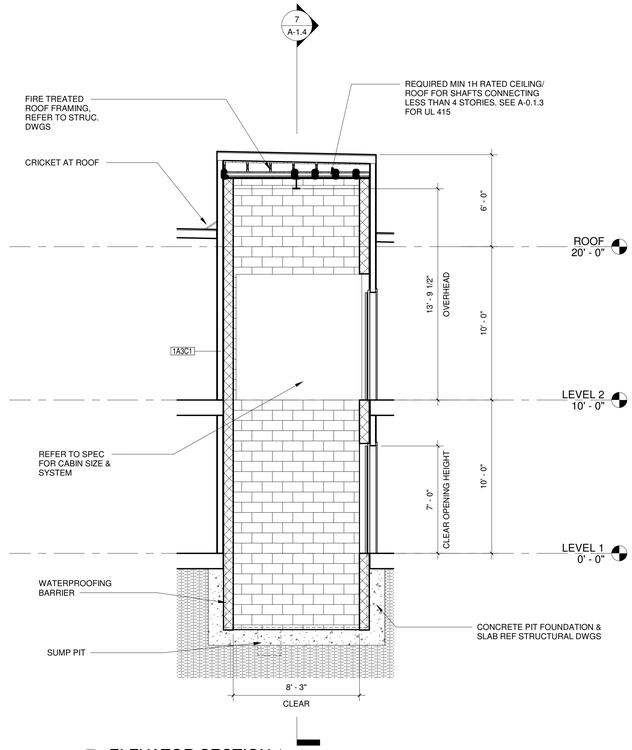
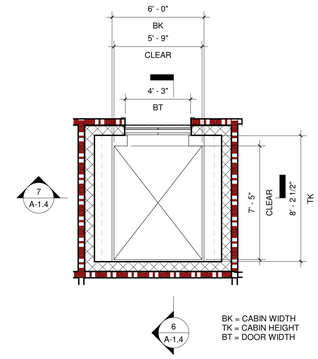


7 ELEVATOR SECTION 2
1/4" = 1'-0"

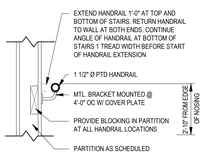


6 ELEVATOR SECTION 1
1/4" = 1'-0"

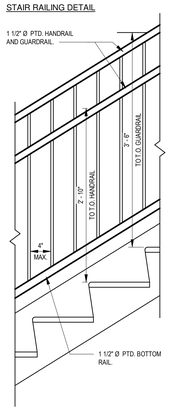


5 ELEVATOR ENLARGED PLAN
1/4" = 1'-0"

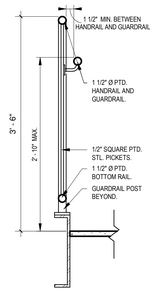
STAIR HANDRAIL SECTION



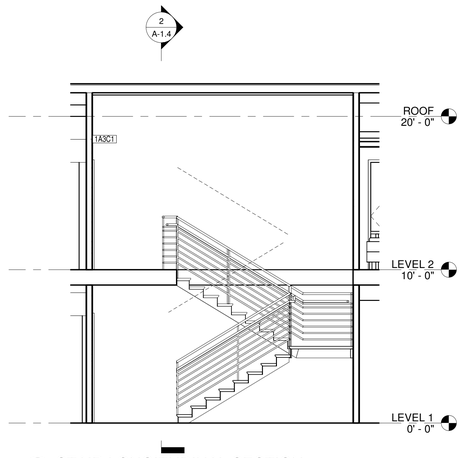
STAIR RAILING DETAIL



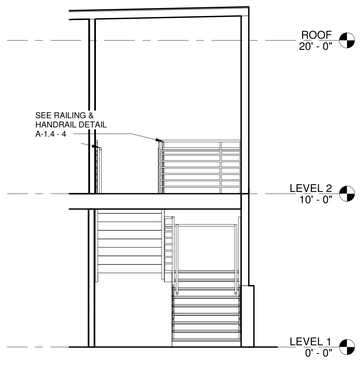
RAILING SECTION



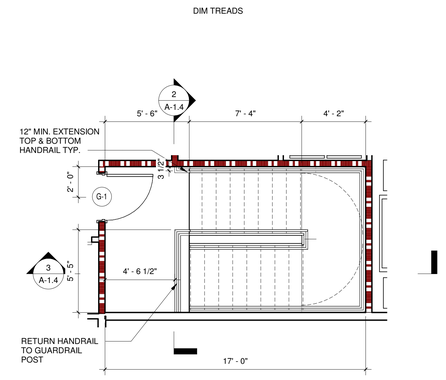
4 RAILING DETAIL SECTION
1" = 1'-0"



3 STAIR LONGITUDINAL SECTION
1/4" = 1'-0"



2 STAIR CROSS SECTION
1/4" = 1'-0"



1 STAIR ENLARGED PLAN
1/4" = 1'-0"

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CHRISTOPHER J HEARD REGISTERED ARCHITECT 13274 NORTH CAROLINA ATLANTA GEORGIA

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

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VERT CIRCULATION PLANS, SECTIONS AND DETAILS

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Project No.	

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Drawing Number

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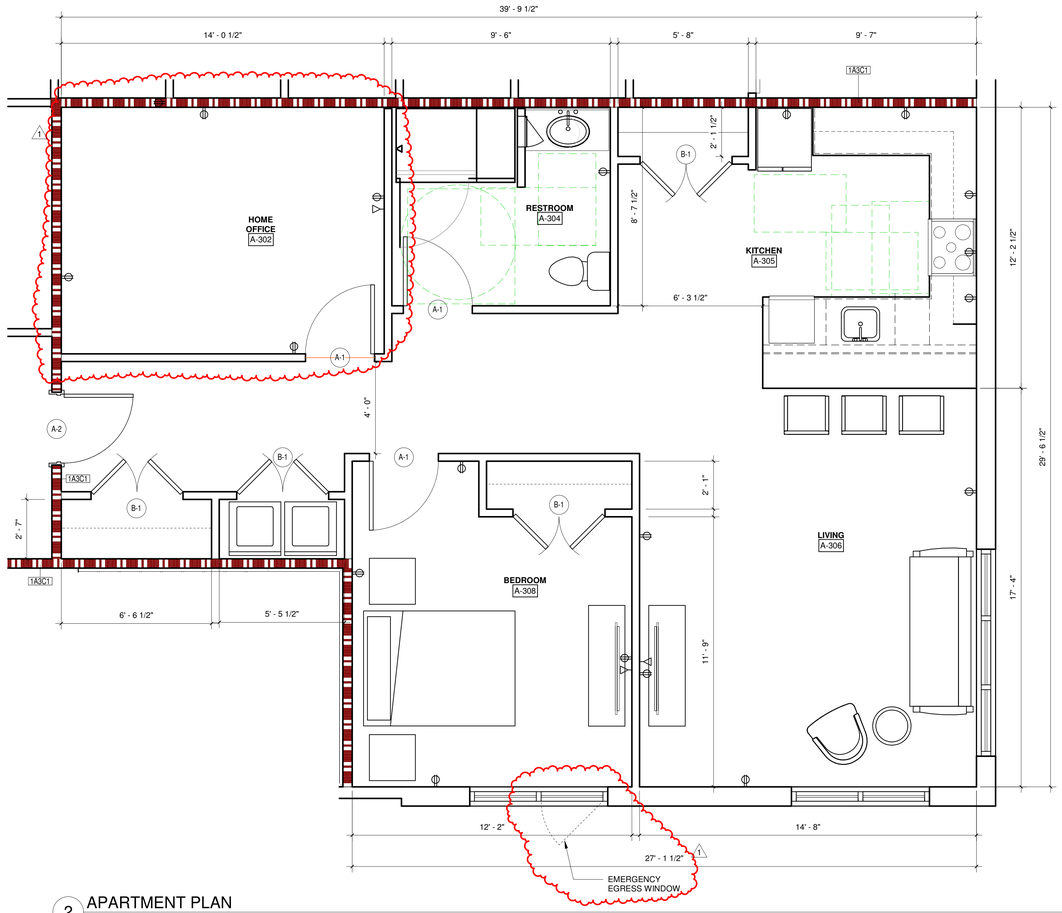
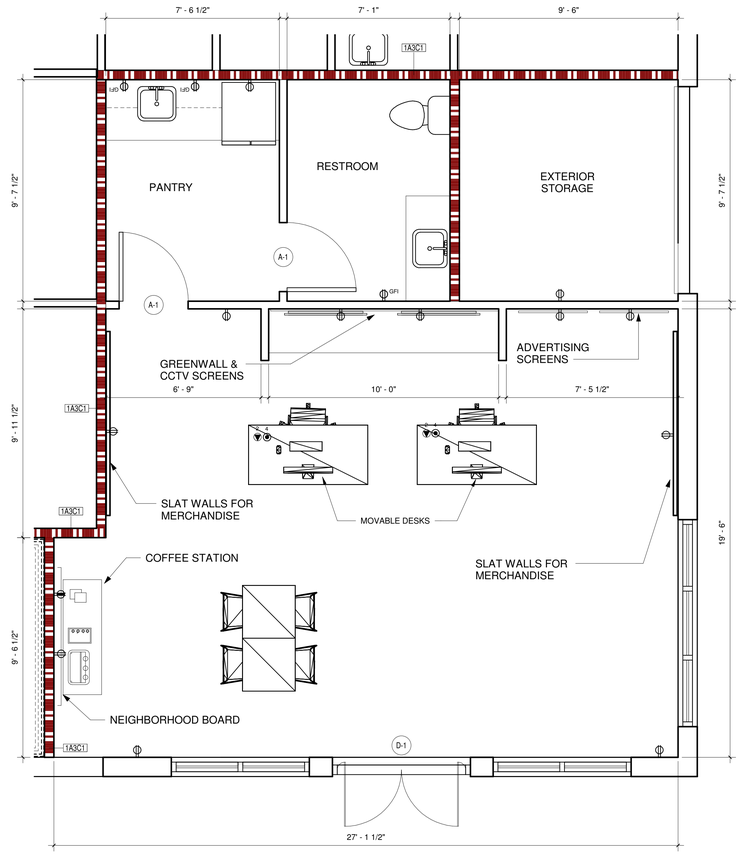


2 APARTMENT PLAN
3/8" = 1'-0"



1 LEASING OFFICE PLAN
3/8" = 1'-0"

PROJECT NORTH

SYMBOLS

- CEILING HEIGHT GYP BOARD PARTITION - REFER TO TAG FOR FULL DETAILS
- 6" ABOVE CEILING HEIGHT GYP BOARD PARTITION WITH SOUND ATTENUATION BLANKETS - REFER TO TAG FOR FULL DETAILS
- 1 HOUR RATED GYP BOARD PARTITION FULL HT. TO DECK ABOVE - REFER TO TAG FOR FULL DETAILS
- NEW PARTITION/DOOR CONSTRUCTION
- WALL MOUNTED 10 lbs. A/B/C TYPE FIRE EXTINGUISHER . HANDLE OF EXTINGUISHER AT 48"AFF.
- 1A3A1 — PARTITION TAG (REFER TO SHEET ID-8.1 FOR FURTHER INFORMATION) — *PARTITION ASSEMBLY TYPE*, *PARTITION HEIGHT*, *SOUND ATTENUATION BLANKETS*, *STUD SIZE*, *RATED PARTITION*
- 5'-0" CLR — CLEAR DIMENSION
- N.I.C.

GENERAL NOTES (U.N.O. = UNLESS NOTED OTHERWISE)

A. CONTRACTOR TO NOTIFY DESIGNER OF ANY DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL FIELD DIMENSIONS PRIOR TO CONSTRUCTION.

B. DIMENSIONS ARE TO FINISHED FACE OF PARTITION U.N.O.

C. WALLS ARE LAID OUT AT 90 DEGREE ANGLES U.N.O.

D. ALL WALLS ARE CONSTRUCTED TO UNDERSIDE OF CEILING U.N.O.

E. INSIDE FACE OF DOOR FRAMES T OBEGIN 6" FROM WALL U.N.O.

F. THOROUGHLY CLEAN THE SPACE, INCLUDING EXTERIOR GLASS/BLINDS AT THE COMPLETION OF CONSTRUCTION.

KEY NOTES

NOTE: NOT ALL KEY NOTES APPLY TO ALL SHEETS.

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No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION
1	10/24/23	PERMIT COMMENTS

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

LEASING OFFICE & APARTMENT PLANS

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DOOR SCHEDULE

DOOR NUMBER	ROOM NAME	TYPE	WIDTH	HEIGHT	THICKNESS	DOOR		FRAME		DETAILS			FIRE RATING	HARDWARE SET	COMMENTS
						MATERIAL	FINISH	MATERIAL	FINISH	HEAD	JAMB	SILL			
LEVEL 1															
A-1		A	3' - 0"	7' - 0"	2"	WD	PT	WD	PT						WOOD DOOR
C-1		C	7' - 0"	7' - 0"	1 3/4"	AL / GL	-	HM	-						STORAGE BUILDING REAR ENTRANCE
D-1		D	5' - 7"	7' - 0"	1 3/4"	AL / GL	-	HM	-						LEASING OFFICE ENTRANCE DOOR
E-1	<varies>	E	4' - 0"	7' - 0"	2"	AL	PT	HM	PT						OVERHEAD COILING DOOR
F-1	<varies>	F	9' - 0"	7' - 0"	2"	AL	PT	HM	PT						OVERHEAD COILING DOOR
G-1		A	3' - 0"	7' - 0"	1 3/4"	AL	PT	HM	PT				90 min		HOLLOW METAL DOOR AT STAIRCASE
LEVEL 2															
A-1	<varies>	A	3' - 0"	7' - 0"	2"	WD	PT	WD	PT						WOOD DOOR
A-2	KITCHEN	A	3' - 0"	7' - 0"	1 3/4"	AL	PT	HM	PT				90 min		APARTMENT ENTRY
B-1	<varies>	B	4' - 0"	7' - 0"	2"	WD	PT	WD	PT						CLOSET DOORS
E-1	<varies>	E	4' - 0"	7' - 0"	2"	AL	PT	HM	PT						OVERHEAD COILING DOOR
F-1	<varies>	F	9' - 0"	7' - 0"	2"	AL	PT	HM	PT						OVERHEAD COILING DOOR
G-1		A	3' - 0"	7' - 0"	1 3/4"	AL	PT	HM	PT				90 min		HOLLOW METAL DOOR AT STAIRCASE

HARDWARE SETS

1 LATCHSET (SINGLE DOOR)
4 - BUTT HINGES
1 - MORTISE LATCHSET WITH LEVER
3 - DOOR SILENCERS
1 - FLOOR STOP

2 LATCHSET (SINGLE DOOR)
4 - BUTT HINGES
1 - MORTISE LATCHSET WITH LEVER
1 - SURFACE MOUNTED CLOSER (INSIDE OF ROOM)
3 - DOOR SILENCERS
1 - FLOOR STOP

3 LOCKSET (SINGLE DOOR)
4 - BUTT HINGES
1 - MORTISE LOCKSET WITH LEVER (OFFICE FUNCTION)
3 - DOOR SILENCERS
1 - FLOOR STOP

4 LOCKSET (SINGLE DOOR)
4 - BUTT HINGES
1 - MORTISE LOCKSET WITH LEVER (STORAGE FUNCTION)
1 - SURFACE MOUNTED CLOSER (INSIDE OF ROOM)
3 - DOOR SILENCERS
1 - FLOOR STOP

11 LOCKSET (DOUBLE DOOR)
ACTIVE LEAF
4 - BUTT HINGES
1 - MORTISE LOCKSET WITH LEVER
1 - SURFACE MOUNTED CLOSER WITH HOLD OPEN (INSIDE OF ROOM)
3 - DOOR SILENCERS
1 - FLOOR STOP

INACTIVE LEAF
4 - BUTT HINGES
1 - AUTO FLUSH BOLT (TOP AND BOTTOM)
1 - SURFACE MOUNTED CLOSER WITH HOLD OPEN (INSIDE OF ROOM)
1 - DUST PROOF STRIKE
1 - DOOR COORDINATOR
3 - DOOR SILENCERS
1 - FLOOR STOP

HARDWARE SPECIFICATION

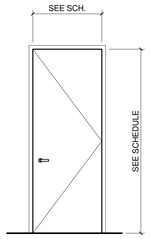
BUTT HINGE:	IVES, 5BB1 4.5" X 4.5" NRP, US26D
ELECTRIFIED BUTT HINGE:	IVES, 5BB1 4.5" X 4.5" CON TW8, US26D
CENTER PIVOT:	IVES, 7255, BHMA 626
OFFSET PIVOT:	IVES, 7226, BHMA 626
MORTISE LOCKSET:	SCHLAGE, L-SERIES, LEVER LATITUDE, US26D
MORTISE LATCHSET:	SCHLAGE, L-SERIES, LEVER LATITUDE, US26D
SURFACE MOUNTED CLOSER:	LCN, 4110 SERIES, BHMA 689
SURFACED MOUNTED HOLD OPEN:	GLYNN-JOHNSON, 450 SERIES, US32D
OVERHEAD STOP:	GLYNN-JOHNSON, 90S, BHMA 630
SILENCER:	IVES, SR64 GRAY
FLOOR STOP:	DOUG MOCKETT, D52 2-3/8" DIAMETER - DOOR STOP, SSS
ELECTRIC STRIKE:	DORMA, ES62, US26D
DOOR CONTACT:	SCHLAGE, 679-05HM, BLACK
KICK PLATE:	IVES, 8400, BHMA 630
CARD READER:	PROVIDED BY SECURITY VENDOR
EXIT MOTION SENSOR:	SECURITRON, XMS
PUSH TO EXIT BUTTON:	DORTRONICS, 5276-HD, N-SERIES, ENGRAVING XE-1
ALL GLASS ENTRANCE PIVOT WITH PATCH FITTING:	DORMA, UNIVERSAL, US26D
ALL GLASS ENTRANCE PIVOT WITH FULL RAILS:	DORMA, UNIVERSAL, US26D
ALL GLASS ENTRANCE SLIDING SYSTEM:	DORMA, AGILE 150, US26D
PULL SET:	ROCKWOOD, MEGATEK RM3301, BHMA 630
CONCEALED OVER CLOSER:	DORMA, RTS88 SERIES, CENTER HUNG
GLASS DOOR OVERHEAD STOP:	DORMA, 233-989, US26D
DUST PROOF STRIKE:	IVES, DP2, BHMA 626
AUTO FLUSH BOLT:	IVES, FB41P, BHMA 630
DOOR COORDINATOR:	IVES, COR SERIES, US26D
ANGLE STOP:	IVES, AS18, US26D
ROLLER LATCH ANGLE STOP:	IVES, RL1152, US26D
ROLLER LATCH:	IVES, RL30, US26D
EXIT DEVICE:	SARGENT, 80 SERIES, US26D

DOOR & HARDWARE GENERAL NOTES

A. CONTRACTOR SHALL COORDINATE ALL SECURITY DEVICE REQUIREMENTS WITH THE TENANT'S SECURITY CONSULTANT/VENDOR.
B. ALL DOORS TO BE PAINTED, COLOR TBD, U.N.O.

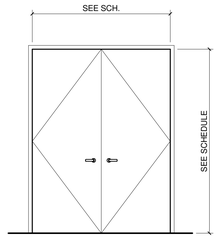
DOORS & FRAMES TYPES

NOTE: ALL INTERIOR GLASS PANELS SHALL MEET THE TEST REQUIREMENTS OF CPSC 16 CFR 1201 AND SHALL DISPLAY THE MANUFACTURERS MARK DESIGNATING TYPE & THICKNESS OF GLASS



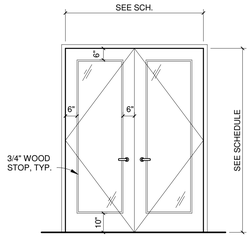
SINGLE HOLLOW METAL OR FLUSH WOOD DOOR IN HOLLOW METAL OR WOOD FRAME

A



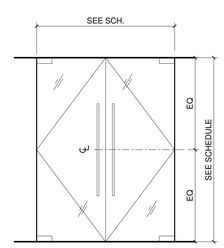
PAIR HOLLOW METAL OR SOLID CORE, FLUSH WOOD DOORS IN HOLLOW METAL OR WOOD FRAME

B



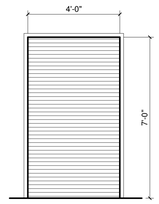
DOUBLE SOLID CORE, FLUSH WOOD DOOR WITH 3/8" THICK TEMPERED GLASS INSERT. HOLLOW METAL OR WOOD FRAME

C



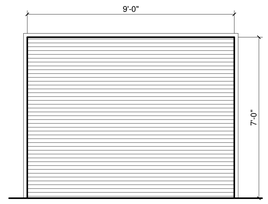
PAIR 1/2" THICK TEMPERED GLASS DOOR

D



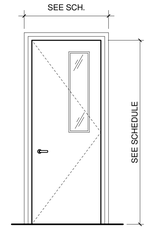
OVERHEAD COILING DOOR
(TYPICAL FOR 5FT WIDE UNITS)

E



OVERHEAD COILING DOOR
(TYPICAL FOR ALL UNITS, UNO)

F



HOLLOW METAL FLUSH DOOR IN HOLLOW METAL FRAME

G

Heard

Architect
Atlanta, Georgia 30361

Christopher Jerome Heard
1201 Peachtree Street NE, Suite 1900

T: 404.240.9383

CHRISTOPHER J HEARD REGISTERED ARCHITECT 13274 NORTH CAROLINA ATLANTA GEORGIA

No.	Date	Description
	05/26/23	PERMIT & CONSTRUCTION

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

DOOR & FRAME SCHEDULES

Author	
Drawn	
Checker	
Checked	
As indicated	
Scale	
247-001-01	
Project No.	

A-1.7

Drawing Number

10/25/2023 7:18:00 AM

7 TYPS WALL SECTION - CC EXTERIOR
1/2" = 1'-0"

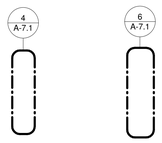
5 TYP DOOR SECTION - CC EXTERIOR
1/2" = 1'-0"

2 SECTION - BUILDING A - SOUTH
1" = 10'-0"

3 TYP WINDOW SECTION - CC EXTERIOR
1/2" = 1'-0"

4 TYP UNIT WALL SECTION - CC INTERIOR
1/2" = 1'-0"

6 TYP UNIT DOOR SECTION - CC EXTERIOR
1/2" = 1'-0"



1 SECTION - BUILDING A - EAST
1" = 10'-0"

10/25/2023 7:18:02 AM

Hendrick

1201 Peachtree Street, NE
Suite 1900
Atlanta, GA 30361

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F: 404.240.9398
www.hendrickinc.com

STATE OF GEORGIA
CHRISTOPHER J. HEARD
CERTIFICATE NO. 031424
REGISTERED ARCHITECT

No.	Date	Description

Project Name

MIDGARD - SPRING LAKE

14396 NC-210 S SPRING LAKE 28390

ISSUE
FOR CONSTRUCTION

BUILDING SECTIONS + DETAILS - CC UNITS

Author	
Drawn	
Checker	
Checked	
As indicated	
Scale	
247-001-01	
Project No.	

A-7.1

Drawing Number

"This entire set, signed and sealed by the structural engineer on 08-31-23 is fully approved for production.

RELIANT DEVELOPMENT LLC
MIDGARD SELF STORAGE
14396 NC 210 SOUTH
SPRING LAKE, NC 28390

ABBREVIATIONS

C-FNL	C-PANEL
R-FNL	R-PANEL
U-FNL	U-PANEL
RRU	REVERSED ROLLED U-PANEL
RUL	REVERSED ROLLED U-PANEL (LINER)
PBC	PURLIN BEARING C-PANEL
PBU	PURLIN BEARING U-PANEL
PBR	PURLIN BEARING R-PANEL
7.2-FNL	7.2-PANEL
S.SEAM	STANDING SEAM
A.D.A.	AMERICANS WITH DISABILITIES ACT
A.F.F.	AFTER FINISHED FLOOR
B.L.	BRICK LEDGE
BOM	BILL OF MATERIALS
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BT	BASE TYPE
CMU	CONCRETE MASONRY UNIT
CONC.	CONCRETE
CONT'S	CONTINUOUS
DBL	DOUBLE
EL	ELEVATION
E.HT.	EAVE HEIGHT
GA	GAUGE
G.C.	GENERAL CONTRACTOR
F.F. / FFLOOR	FINISHED FLOOR
FMG	FRAMING
F.W.	FIRE WALL
INSL	INSULATION
MFGR	MANUFACTURER
N.T.S.	NOT TO SCALE
O.C. / O/C	ON CENTER
PNL	PANEL
QTY	QUANTITY
REF	REFERENCE
REQ'D	REQUIRED
R.T.S	RAKE TRIM STANDARD
S.D. / S.D.S.	SELF DRILLING SCREW
S.L.	SHEET LEDGE
TOS	TOP OF STEEL
TS	TUBE STEEL
TYP	TYPICAL
U.N.	UNLESS NOTED
W.A.	WEDGE ANCHOR
℄	CENTER LINE
℗	PLATE
L-	ANGLE

PAGE INDEX

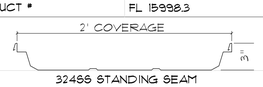
TYPICAL PANELS

FLOOR DECKING:	HORIZONTALLY MOUNTED W/ (4) S.D. W/O WASHERS @ EVERY BOTTOM FLUTE @ EVERY MEMBER
LOCATION:	ALL ELEVATED SLABS
SUPPLIER PRODUCT #	

ROOF DECKING:	HORIZONTALLY MOUNTED W/ (4) TEK W/O WASHERS @ EVERY BOTTOM FLUTE @ EVERY MEMBER
LOCATION:	ROOF DECK
SUPPLIER PRODUCT #	

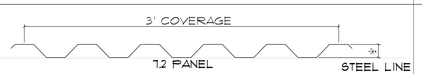
WALL SHEETING	VERTICALLY MOUNTED W/ S.D. W/ WASHERS
LOCATION:	EXTERIOR SHEETING
SUPPLIER PRODUCT #	FL 15998.3

WALL SHEETING	HORIZONTALLY MOUNTED W/ S.D. W/ WASHERS
LOCATION:	INTERIOR SHEETING
SUPPLIER PRODUCT #	FL 15998.3

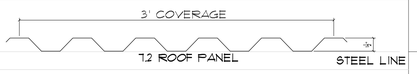


ROOF SHEETING	HORIZONTALLY MOUNTED W/ FIXED ROOF CLIPS & (2) S.D. W/O WASHERS
LOCATION:	MAIN ROOF
SUPPLIER PRODUCT #	FL 15997.2

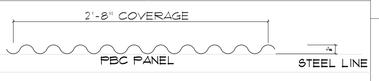
TYPICAL PANELS



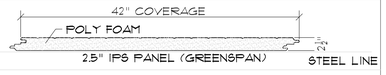
WALL SHEETING	HORIZONTALLY OR VERTICALLY MOUNTED W/ TEK SCREWS W/ WASHERS
LOCATION:	EXTERIOR SHEETING
SUPPLIER PRODUCT #	FL 15998.1



WALL SHEETING	HORIZONTALLY OR VERTICALLY MOUNTED W/ TEK SCREWS W/ WASHERS
LOCATION:	EXTERIOR ROOFING
SUPPLIER PRODUCT #	FL 15998.1



WALL SHEETING	VERTICALLY MOUNTED W/ S.D. W/ WASHERS
LOCATION:	EXTERIOR SHEETING
SUPPLIER PRODUCT #	FL 10680.1

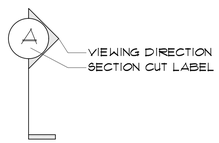


WALL SHEETING	VERTICALLY MOUNTED W/ TEK SCREWS W/O WASHERS
LOCATION:	EXTERIOR SHEETING
SUPPLIER PRODUCT #	FL 16327.1-R3

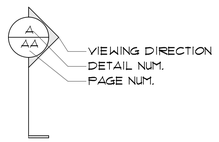
WALL SHEETING	VERTICALLY MOUNTED W/ TEK SCREWS W/O WASHERS
LOCATION:	EXTERIOR SHEETING
SUPPLIER PRODUCT #	FL 16327.1-R3

TYPICAL NOMENCLATURE

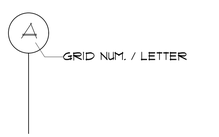
TYPICAL SECTION CUT



TYPICAL DETAIL FLAG



TYPICAL GRID BUBBLE



	CS.18	C4.12	C4.14	C4.16	C6.14	C6.16	BC4.14	BC4.16	BC6.14	BC6.16	TC4.12	TC4.14	TC4.16	TC6.14	TC6.16	H6.12	H6.14	H6.16	H8.12	H8.14	H8.16	H12.12	H12.14	H12.16	L1	L2	RC4.16	Z4.16	Z6.16	Z8.16	BB12.12	BB12.14	SH.18	SP.16	UP.26	UP.29	2FD36	ES4.16	A316	A2416	G4.16	G6.16	SG1.16	SG2.16	GC4	GC6	CL1	DOUBLE CEE	TRIPLE CEE	QUAD CEE
SHAPE	C	C	C	C	C	C	U	U	U	U	U	U	U	U	U	C	C	C	C	C	C	C	C	C	L	L	U	Z	Z	Z			C	C	PBU	PBU	2VL	U	L	L	C	C	L	L	L	L	◇	◈	◎
WEB	15/8"	4"	4"	4"	6"	6"	4"	4"	6"	6"	4"	4"	4"	6"	6"	6"	6"	6"	8"	8"	8"	12"	12"	12"	4"	4 1/2"	4"	4"	6"	8"	12"	12"	VARIES	VARIES	36"	36"	36"	4"	3	2	4"	6"	6"	6"	4"	6"	6"			
FLNG.	15/8"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2	2"	2"	2"	2"	3"	3"	3"	3"	3"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	4"	4 1/2"	3"	2 1/2	2 1/2	2 1/2	N/A	N/A	3 3/4"	4 3/4"	N/A	N/A	N/A	2 1/2"	3	4	2 1/2"	2 1/2"	1"	1"	N/A	N/A	3"			
GA.	18	12	14	16	14	16	14	16	14	16	12	14	16	14	16	12	14	16	12	14	16	12	14	16	3/8	12	16	16	16	16	12	14	18	16	26	29	18	16	16	16	16	16	16	16	12	12	12			
USAGE	CHNL. SECTION	STUDS	STUDS	STUDS	STUDS	STUDS	BOT. CHNL.	BOT. CHNL.	BOT. CHNL.	BOT. CHNL.	TOP CHNL.	TOP CHNL.	TOP CHNL.	TOP CHNL.	TOP CHNL.	HDR.	HDR.	HDR.	HDR.	HDR.	HDR.	HDR.	HDR.	HDR.	LEDGER	POUR STOP	RECEIV. CHNL.	PURLIN	PURLIN	PURLIN	BOX BEAM	BOX BEAM	STRC. HDR.	STRC. PIER	PART. PANEL	PART. PANEL	FLOOR DEK.	EAVE STRUT	RAKE SUPPT.	RAKE SHTG.	GIRT	GIRT	SUB GT.	SUB GT.	GIRT CLIP	GIRT CLIP	MASNRY CLIP			

bennett&pless

BENNETT & PLESS INC.
JENNIFER ZABIK, P.E. S.E.
1024 N FULLERS CROSS ROAD
WINTER GARDEN, FL. 34787
JZABIK@BENNETT-PLESS.COM
P-1294

SEALS

RAPID BUILDING SOLUTIONS
350 E CROWN POINT RD. SUITE 1080
WINTER GARDEN, FL. 34787
PHONE: (407) 347-9614
INFO@RAPIDBUILDINGSOLUTIONS.COM

JOB NUMBER: 527-23-SPR-NC

RELIANT DEVELOPMENT LLC
MIDGARD SELF STORAGE
14396 NC 210 SOUTH
SPRING LAKE, NC 28390

REV.	DATE	DESCRIPTION	BY
Ø1	Ø8-24-23	ARCH'S COMMENTS	AB

SHEET TITLE

COVER SHEET

DATE	Ø7-28-23
DESIGNED BY	RBS
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	RBS-CS

SPECIFICATIONS:

DESIGN CRITERIA: ALL STRUCTURAL WORK SHALL CONFORM TO THE STRUCTURAL DRAWINGS AND SPECIFICATIONS AND MEET THE REQUIREMENTS OF THE 2021 INTERNATIONAL BUILDING CODE (IBC) AND THE APPLICABLE CODE AMENDMENTS. THE ARCHITECTURAL DRAWINGS SHALL GOVERN ALL DIMENSIONS.

DESIGN LOADS:

ROOF DEAD LOAD	5 PSF
ROOF LIVE LOAD	20 PSF
FLOOR DEAD LOAD	45 PSF 4.5" TOTAL
FLOOR LIVE LOAD	125 PSF STORAGE
	100 PSF CORRIDORS
	100 PSF STAIR & EXITS
GROUND SNOW LOAD, Pg	10 PSF
WIND VELOCITY,	VULT = 119 MPH
	VASD = 92.17 MPH

RISK CATEGORY II
IMPORTANCE FACTOR 1.00
EXPOSURE B
BUILDING IS DESIGNED AS FULLY ENCLOSED

IMPORTANCE FACTOR 1.00	Ss = 0.147%g, S1 = 0.069%g
RISK CATAGORY II	Sds = 0.15%g, Sd1 = 0.111%g
SEISMIC CATAGORY B	
SITE CLASS D (ASSUMED)	
(Fa 1.6 Fv 2.4)	DESIGN BASE SHEAR (KIPS) = 62.72 (2-STORY)
RESPONSE COEFF = 0.063	RESPONSE MOD FACTOR, R = 2.5

ANALYSIS: EQUIVALENT LATERAL FORCE PROCEDURE

ALLOWABLE BEARING PRESSURE = 2000 PSF (ASSUMED)

STRUCTURAL NOTES

1. TEMPORARY BRACING SHALL BE PROVIDED TO RESIST WIND LOADING ON STRUCTURAL COMPONENTS AND STRUCTURAL ASSEMBLIES DURING ERECTION AND CONSTRUCTION PHASE.
2. NEVER ALLOW YOUR ROOF TO COME IN CONTACT WITH, OR WATER RUNOFF FROM, ANY DISSIMILAR METAL INCLUDING BUT NOT LIMITED TO COPPER, LEAD OR GRAPHITE. THIS INCLUDES COPPER AND ARSENIC SALTS USED IN TREATED LUMBER, CALCIUM USED IN CONCRETE, MORTAR AND GROUT.
3. SCOPES OF WORK BY OTHERS WHOSE LATERAL LOADS WILL BE TRANSFERRED INTO STEEL MEMBER PROVIDED BY SELLER SUBCONTRACTOR SHALL BE TEMPORARILY BRACED BY OTHERS IN A METHOD THAT DOES NOT INTERFERE WITH ERECTION OF STEEL, UNTIL STEEL ERECTION IS COMPLETE.
4. THE UNCOATED MINIMUM STEEL THICKNESS OF THE COLD-FORMED PRODUCTS AS DELIVERED SHALL NOT BE LESS THAN 95% PERCENT OF THE DESIGN THICKNESS. THICKNESS MEASUREMENTS MAY BE MADE ANYWHERE ACROSS THE WIDTH OF THE SHEET, BUT NOT CLOSER TO THE EDGES THAN THE MINIMUM DISTANCES SPECIFIED IN THE RELEVANT ASTM SPECIFICATIONS. THICKNESS AT BENDS, SUCH AS CORNERS, MAY BE LESS THAN 95 PERCENT OF DESIGN THICKNESS, DUE TO COLD-FORMING EFFECTS, AND STILL BE ACCEPTABLE.
5. RECESSED ENTRIES AND BREEZEWAYS MUST BE RECESSED BELOW FINISHED FLOOR TO AVOID POTENTIAL WATER PROBLEMS. ROLL UP LOCATED IN BREEZEWAY MUST BE INSTALLED IN RECESSED AREA IF A CHANGE IS MADE BY OWNER/CONTRACTOR SELLER/SUBCONTRACTOR MUST BE NOTIFIED IMMEDIATELY.
6. ALL ERECTION, FABRICATION, WORKMANSHIP AND INSTALLATION SHALL BE IN ACCORDANCE WITH INSTALLATION PROCEDURES MANUAL AND / OR INDUSTRY STANDARDS APPROVED BY SELLER / SUBCONTRACTOR AND THE ENGINEER OF RECORD.

ROOF SYSTEMS: MBCI OR EQUAL

1. ROOF SHEETS SHOULD BE INSTALLED FROM THE LOWEST STEP-DOWN TO HIGHEST ELEVATION.
2. ROOFING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SPECS, ALONG WITH SELLER SUBCONTRACTOR INSTALL. PROCEDURES MANUAL.

FASTENERS AND ANCHORS

1. THE FOLLOWING OUTLINES THE MECHANICAL ANCHORS THAT ARE APPROVED FOR USE ON THIS PROJECT.
   A. EXPANSION ANCHORS - "KWIK BOLT TZ" BY HILTI OR EQUAL. DRILL HOLE IN CONCRETE OR GROUT FILLED CMU AND REMOVE DUST. THE MIN. HOLE DEPTH MUST EXCEED THE ANCHOR EMBEDMENT PRIOR TO TORQUING BY ONE HOLE DIAMETER. DRIVE THE ANCHOR INTO THE HOLE USING A HAMMER. A MIN. OF SIX THREADS MUST BE BELOW THE SURFACE OF THE FIXTURE. TIGHTEN THE NUT TO THE RECOMMENDED INSTALLATION TORQUE (1/2" = 40 lbs/ft.).
   B. ADHESIVE ANCHORS IN CONCRETE - "HIT HY-200" BY HILTI OR EQUAL.
   A. ADHESIVE ANCHORS IN GROUT FILLED BLOCK - "HIT HY-20" BY HILTI OR EQUAL.
   B. ADHESIVE ANCHORS IN HOLLOW BLOCK - "HIT HY-20" WITH SCREEN TUBES BY HILTI OR EQUAL.
   C. CONCRETE/MASONRY SCREWS - "KWIK-HUS EZ BY HILTI OR EQUAL.
   D. FOINDER-ACTUATED FASTENERS (PAF) - "DX" BY HILTI OR EQUAL.
2. ALL FASTENERS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.

COLD FORM STEEL: LGSI SECTIONS OR EQUAL

1. COLD FORM STEEL SECTIONS SHALL CONFORM TO APPLICABLE PROVISIONS OF ASTM A572, ASTM A607 AND/OR ASTM A611.
2. MIN. DELIVERED THICKNESS OF COLD FORMED STEEL C'S & Z'S GAGE

GAGE	DESIGN THICKNESS	FINISH
12	0.105	RED-OXIDE U.N.O ON PLANS
14	0.07	RED-OXIDE U.N.O ON PLANS
16	0.059	RED-OXIDE U.N.O ON PLANS
18	0.0468	GALVANIZED
20	0.0352	GALVANIZED

3. MIN. DELIVERED THICKNESS OF COLD FORMED STEEL

GAGE	DESIGN THICKNESS	FINISH
14	0.07	TEX-COTE FINISH APPLIED IN FILED
16	0.059	TEX-COTE FINISH APPLIED IN FIELD
16	0.055	PRE-FINISHED
18	0.0468	TEX-COTE FINISH APPLIED IN FIELD

4. LOAD BEARING STUD TO TRACK CONNECTIONS: THE ENDS OF THE LOAD BEARING STUDS MUST BE INSTALLED INTO THE TOP AND BOTTOM TRACKS SO THAT THE GAP BETWEEN THE ENDS OF THE STUD AND THE WEB OF THE TRACK IS AS SMALL AS PRACTICABLE AND IN NO CASE GREATER THAN 3/16" AT THE TIME OF INSTALLATION. THE GAP MUST BE LESS THAN 1/16" AFTER THE DEAD LOAD OF THE STRUCTURE IS IN PLACE.
5. ALL COLD FORMED STEEL SHALL BE 50 KSI MIN.

HOT ROLLED STEEL:

1. DESIGN OF STRUCTURAL STEEL ELEMENTS WAS COMPLETED UNDER THE REQUIREMENTS SET FORTH IN THE "MANUAL OF STEEL CONSTRUCTION - ALLOWABLE STRESS DESIGN (LATEST EDITION)".
2. MATERIAL SPECIFICATIONS
   A. ALL STEEL SHALL BE DOMESTICALLY PRODUCED.
   B. ASTM A36 - ROLLED SHAPES, PLATES AND BARS.
   C. ASTM A992 - WIDE FLANGE SECTIONS.
   D. ASTM A53, TYPE E, GRADE B - PIPE
   E. ASTM A500 GRADE B - TUBES.
   F. ASTM F1554 (A36) - ANCHOR BOLTS, RODS, NUTS & WASHERS.
   G. ASTM A108 GRADE 1015 THROUGH 1020, COLD FINISHED CARBON STEEL, AWS D1.1, TYPE B - HEADED STUDS.
   H. ASTM A325, TYPE N - BOLTED STRUCTURAL CONNECTION
   I. ASTM A307 - FOR BOLTED CONN. OF LESS THAN 5/8" DIA.
   J. E70XX ELECTRODE (LOW HYDROGEN) - WELDED CONN. (U.N.O)
   K. BOLTED CONN. SHALL BE MADE WITH A MIN. OF 3/4" DIA BOLTS (U.N.O.)
   L. WELDED CONN. SHALL BE A MIN. OF 3/16" FILLET WELD ALL AROUND FOR CONN. MEMBERS OF UP TO 1/4" FILLET WELD FOR ALL OTHER MEMBERS THICKNESS (U.N.O.)
3. ALL BOLTED CONNECTIONS SHALL BE "SNUG-TIGHT" AS DEFINED IN THE "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" BY RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC). (U.N.O.)
4. BOLTED CONNECTIONS INDICATED TO BE "SLIP CRITICAL" (SC) SHALL BE INSTALLED, TIGHTENED, TESTED AND INSPECTED AS OUTLINED IN THE "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" BY RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC). (U.N.O.)
5. BRACE AND MAINTAIN ALL STEEL IN ALIGNMENT UNTIL OTHER PARTS OF CONSTRUCTION NECESSARY FOR PERMANENT SUPPORT ARE COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TEMPORARY SHORING AS REQUIRED FOR THE STABILITY OF THE STEEL FRAME UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN COMPLETED AND BUILDING IS ENCLOSED.
6. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF "THE STANDARD CODE FOR WELDING IN BUILDING CONSTRUCTION" OF THE AMERICAN WELDING SOCIETY.
7. GROUT FOR COLUMN BASE PLATES AND PRESET BEARING PLATES SHALL BE NON-SHRINK, NON-METALLIC GROUT (5000PSI MIN.)
8. ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF ASTM A123.
9. STRUCTURAL STEEL SHALL RECEIVE SHOP COAT OF PRIMER (COLOR AS DIRECTED BY ARCHITECT) EXCEPT AREAS THAT WILL RECEIVE SPRAY-ON FIRE PROTECTION.
10. BEAM TO BEAM AND BEAM TO COLUMN CONNECTIONS SHALL BE DESIGNED BY THE STEEL FABRICATORS FOR THE REACTIONS SHOWN ON THE FRAMING PLANS. SIGNED AND SEALED SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW, WHICH CLEARLY INDICATE THE ALLOWABLE LOAD CAPACITY OF EACH UNIQUE CONNECTION WHERE REACTION IS NOT INDICATED ON THE PLANS, THE CONNECTION SHALL BE DESIGNED FOR THE MAXIMUM SHEAR CAPACITY OF THE BEAM, FOR THE GIVEN SPAN.

STEEL DECKING

1. THE REQUIREMENTS OF THE LATEST ADOPTED EDITION OF THE A151 SECTION A3, SHALL GOVERN FABRICATION OF THE SPECIFIED STEEL DECK.
2. THE MINIMUM YIELD STRENGTH OF THE STEEL USED SHALL BE 33KSI (230MPa).
3. ALL FIELD WELDING OF DECK SHALL BE IN STRICT CONFORMANCE WITH ANSI 1 AWSD1.3 STRUCTURAL WELDING CODE.
4. GALVANIZING SHALL CONFORM TO ASTM-A653-94, STRUCTURAL QUALITY, AND FEDERAL SPEC. QQ-S-775.
5. THE VALUES LISTED IN THE TABLE SHOWN BELOW IS FROM THE VULCRAFT METAL DECK PRODUCT MANUAL AND REPRESENTS THE MINIMUM ROOF DECK SECTION PROPERTIES THAT ARE REQUIRED BY DESIGN.

ROOF DECK

DECK TYPE	DESIGN THICK	I In 4/FT	Sp In 3/FT	Sn In 3/FT
B22	0.0295	0.169	0.186	0.192
B20	0.0358	0.212	0.234	0.247
B18	0.0474	0.292	0.318	0.327

6. COMPOSITE STEEL FLOOR DECK SHALL BE ATTACHED TO THE SUPPORTING STRUCTURE AS RECOMMENDED BY THE MANUFACTURER, WITH MAX. SPACING NOT TO EXCEED 24" O.C.
7. THE VALUE LISTED IN THE TABLE SHOWN BELOW IS FROM THE VULCRAFT METAL DECK PRODUCT MANUAL AND REPRESENTS THE MINIMUM COMPOSITE FLOOR DECK SECTION PROPERTIES THAT ARE REQUIRED BY DESIGN.

COMPOSITE DECK FLOOR

DECK TYPE	DESIGN THICK	Ip / In In 4/FT	Sp In 3/FT
1.5VL22	0.0295	0.15 / 0.182	0.178 / 0.186
1.5VL20	0.0358	0.195 / 0.222	0.231 / 0.24
1.5VL18	0.0474	0.282 / 0.295	0.315 / 0.327
2.0VL22	0.0295	0.322 / 0.329	0.274 / 0.277
2.0VL20	0.0358	0.418 / 0.415	0.355 / 0.36
2.0VL18	0.0474	0.577 / 0.2557	0.513 / 0.518
3.0VL22	0.0295	0.746 / 0.745	0.429 / 0.422
3.0VL20	0.0358	0.938 / 0.937	0.553 / 0.572
3.0VL18	0.0474	1.251 / 1.251	0.795 / 0.803

8. NON-COMPOSITE STEEL FLOOR DECK SHALL BE ATTACHED TO THE SUPPORTING STRUCTURE AS RECOMMENDED BY THE MANUFACTURER WITH MAX. SPACING NOT TO EXCEED 24" O.C.
9. STEEL USED TO MANUFACTURE THE NON-COMPOSITE METAL FLOOR DECKING SHALL CONFORM TO THE REQUIREMENTS OF ASTM-A611 GRADES C, D, OR E ONIOR A653-94 STRUCTURAL QUALITY.
10. THE VALUES LISTED IN THE TABLE SHOWN BELOW IS FROM THE VULCRAFT METAL DECK PRODUCT MANUAL AND REFRESENTS THE MINIMUM NON-COMPOSITE FLOOR DECK SECTION PROPERTIES THAT ARE REQUIRED BY DESIGN.

NON-COMPOSITE FLOOR DECK

DECK TYPE	DESIGN THICK	I In 4/FT	Sp/ Sn In 3/FT
0.6C26	0.0179	0.015 / 0.015	0.043 / 0.043
0.6C24	0.0239	0.019 / 0.019	0.057 / 0.057
0.6C22	0.0298	0.024 / 0.024	0.07 / 0.07

MINIMUM STANDARDS FOR ELEVATED FLOORS

1. ALL CONCRETE SHALL HAVE THE FOLLOWING MIN. PROPERTIES:

LOCATION	28 DAY STRENGTH	SLUMP	MAX. AGGR.
ELEVATED SLABS FORMED AND POURED	4,000 psi	4" ± 1"	1"
ELEVATED SLABS FORMED W / MTL DECK	3,000 psi	4" ± 1"	1"

   A. SLUMP FOR RAMPS AND SLOPING SURFACES SHALL NOT EXCEED 4".
   B. SEE MASONRY GENERAL NOTED FOR GROUT TESTING REQUIREMENTS.
   C. COLD JOINTS (NOT RECOMMENDED) & CONTROL JOINTS SHOULD BE PLACED A MINIMUM OF 2'-0" OFF CENTERLINE OF COLUMNS.
2. CONCRETE PROPERTIES SHALL BE VERIFIED THROUGH INDUSTRY STANDARD TESTING PROCEDURES BY A CERTIFIED TESTING AGENCY. MIN TEST REQUIRED SHALL INCLUDE SLUMP AND CYLINDER BEAKS FOR COMPRESSIVE STRENGTH. FINDINGS SHALL BE SUBMITTED TO THE ARCH/ENG FOR REVIEW.
3. CONCRETE WORK SHALL CONFORM TO LATEST EDITIONS OF ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED AND ACI 315 DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.
4. CONCRETE MIX DESIGN SHALL MEET THE FOLLOWING CRITERIA:
   A. PROPOSED MIX DESIGN SHALL BE ACCORDANCE WITH ACI 301 METHOD 1
   B. ENTRAPPED AIR CONTENT SHALL NOT EXCEED 3%.
   C. ADMIXTURES USED TO ENTRAIN AIR ARE NOT ACCEPTABLE.
   D. ALL CONCRETE TO BE NORMAL WEIGHT WITH A DESIGN STRENGTH AT 28 DAYS.
6. SITE ADDED WATER IS NOT ACCEPTABLE. ADDING WATER TO THE MIX WILL RESULT IN REJECTION OF THE RESULTS BY THE ENGINEER OF RECORD.
7. CONTRACTOR IS RESPONSIBLE FOR THE ADEQUACY OF THE FORMS AND SHORING AND FOR SAFE PRACTICE IN THEIR USE AND REMOVAL.
8. PLACING OF CONCRETE IN ALL REINFORCED COLUMNS AND WALLS SHALL BE IN LIFTS NOT EXCEEDING 7 1/2 FEET IN HEIGHT. CONCRETE SHALL BE PLACED THROUGH ELEPHANT TRUNK TUBULAR CHUTES LOCATED SUCH THAT THE FREE AIR DROP OF THE MIX DOES NOT EXCEED 6 FEET. ALTERNATE PLACEMENT METHOD OF CONCRETE WITH OR WITHOUT ADMIXTURES SHALL NOT BE USED UNLESS APPROVED BY ENGINEER OF RECORD.
9. THE VALUES IN THE TABLE SHOWN BELOW IS FROM THE VULCRAFT METAL DECK PRODUCT MANUAL AND REPRESENTS THE RECOMMENDED WELDED WIRE FABRIC.

DECK TYPE	TOTAL SLAB DEPTH	RECOMMENDED WELDED WIRE FABRIC
1.5VL, VLI, OR R	≤ 4½"	6x6 - W1.4 x W1.4
1.5VL, VLI, OR R	> 4½"	6x6 - W2.1 x W2.1
2VLI	≤ 5½"	6x6 - W1.4 x W1.4
2VLI	> 5½"	6x6 - W2.1 x W2.1
3VLI	≤ 6¼"	6x6 - W1.4 x W1.4
3VLI	> 6¼"	6x6 - W2.1 x W2.1

FIBER REINFORCED CONCRETE IS AN ALTERNATE TO WELDED WIRE FABRIC (WWF). REINFORCED CONCRETE FIBERS SHALL BE 100% VIRGIN POLPROPYLENE, FIBRILLATED FIBERS AS MANUFACTURED BY FIBER MESH CO, OR APPROVED EQUAL, APPLIED AT A RATE OF 4 LBS/CY.
ELEVATED FLOOR DECKS ARE DESIGNED FOR A 20 PSF CONTRUCTION LIVE LOAD. RIDE ON TROWEL MACHINES SHOULD NOT BE USED UNLESS THE DECK IS SHORED.

CONCRETE WORK

1. MONOLITHIC SLAB FINISHES: THE FOLLOWING REQUIREMENTS ARE BASED ON THE LATEST FLOOR FLATNESS (FF)/ FLOOR LEVELNESS (FL) VALUES/METHODS. BIDS FOR THIS WORK SHALL REFLECT THESE REQUIREMENTS AND ENFORCEMENT THEREOF CAN BE EXPECTED.
   A. NON-CRITICAL FLOOR TOLERANCE
2. FLOAT FINISH (FLT-FN)
3. SPECIFIED OVERALL VALUE: FF25/FL20
4. MINIMUM LOCAL VALUE: FF25/FL20
5. APPLY FLOAT FINISH TO MONOLITHIC SLAB SURFACES THAT ARE TO RECEIVE MUD SET TILE AND OTHER THICK FINISHES, AND TO SLAB SURFACES WHICH ARE TO BE COVERED WITH WATERPROOFING MEMBRANE.
   B. TYPICAL CORRIDOR OR NORMAL SIZED ROOMS (100-600 SF)
6. TROWEL FINISH 1 (TR-FN1)
7. SPECIFIED OVERALL VALUE: FF30/FL23
8. MINIMUM LOCAL VALUE : FF25/FL20
9. APPLY TROWEL FINISH TO MONOLITHIC SLAB SURFACES THAT ARE TO RECEIVE RESILIENT FLOORING, CARPET, PAINT, OR OTHER THIN FILM FINISH COATING SYSTEM. ELEVATED SLABS SHALL HAVE A SPECIFIED OVERALL VALUE OF FF22 TO FF27 AND A MINIMUM LOCAL OF FF20 WITH NO FL NUMBER DEFINED.
10. MINIMUM THICKNESS OF SLAB ON GRADE IS THE GREATER OF 3" OR Ø.8 TIMES ANCHOR EMBEDMENT SPECIFIED IN CONSTRUCTION DOCUMENTS (ASSUMES USE OF HILTI KWIK BOLT TZ)
11. CONTROL JOINT AND CONTROL JOINTS SHOULD BE PLACE AMIN. 2' - Ø" OFF THE CENTERLINE OF COLUMNS. IF THE DISTANCE BETWEEN COLUMNS IS LESS THAN 4' - Ø" BUT GREATER THAN 2' - 6" THEN PLACE AT MID-POINT OTHERWISE CONTACT ENGR OF RECORD.

SITE REQUIREMENT NOTES:

1. OWNER \ CONTRACTOR SHALL ENSURE THAT SITE IS STABILIZED AND MAINTAINED DURING HEAVY PRECIPITATION.
2. OWNER \ CONTRACTOR SHALL PROVIDE MATERIAL STORAGE AREA ON SITE OTHER THAN BUILDING BEING ERECTED.
3. OWNER \ CONTRACTOR SHALL PROVIDE A CONSTRUCTION DUMPSTER UNIT ON THE JOBSITE AT NO COST TO SELLER SUBCONTRACTOR.
4. OWNER \ CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO ALLOW FOR A MAXIMUM POWER LEAD RUN OF 200 FEET TO EACH STRUCTURE BEING ERECTED.
5. TEMPORARY POWER MUST MEET ALL APPLICABLE CODES AND SAFETY REQUIREMENTS.
6. OWNER \ CONTRACTOR MUST ENSURE THAT BUILDING PADS ARE BROOM CLEAN AND FREE OF DEBRIS PRIOR TO SELLER SUBCONTRACTOR CREW BEGINNING INSTALLATION SEQUENCE AS AGREED.
7. OWNER / CONTRACTOR SHALL ENSURE THAT THE SITE AND ALL SIDES OF BUILDING ARE ACCESSIBLE WITH EQUIPMENT, AND FREE FROM ANY OBSTRUCTIONS TO DELIVERY OR ERECTION.
8. CLEANING OF MATERIALS, INCLUDING BUT NOT LIMITED TO, WALL PANELS AND STRUCTURAL MATERIALS, IS NOT RESPONSIBILITY OF SELLER/SUBCONTRACTOR.
9. THE OWNER \ CONTRACTOR SHALL PROPERLY PROTECT THE WORK FOR PUBLIC SAFETY AND AGAINST ACCIDENTS, WEATHER OR ANY OTHER HAZARDS WITH LIGHTS, GUARDRAILS OR BARRICADES AS APPLICABLE (INCLUDES FALL PROTECTION ON MULTI-STORY BUILDINGS).

CONCRETE SUB AND GENERAL CONTRACTOR RESPONSIBILITY FOR THE BELOW

1. WALK BEHIND CONCRETE FINISHING MACHINES SHOULD KEEP A MINIMUM SEPARATION OF 20 FEET. WALL BEHIND MACHINES SHALL NOT EXCEED 300 LBS IN WEIGHT.
2. RIDE ON FINISHING MACHINES ARE NOT ALLOWED
3. ALL MACHINES LOADED ONTO DECK TO BE PLACED ABOVE BEARING WALLS AND NOT IN THE DECK MID-SPANS.
4. CONCRETE PUMP HOSES SHALL PUMP NO MORE THAN 2' ABOVE METAL DECK WHILE POURING.
5. CONCRETE SHALL BE SPREAD ON THE DECK IMMEDIATELY AS IT IS PUMPED TO ENSURE THERE IS NO PILE UP OF THE CONCRETE THAT WILL OVERLOAD THE DECK.
6. CONTRACTOR AND TESTING COMPANY ARE RESPONSIBLE TO MONITOR EACH TRUCK TO ENSURE WATER IS NOT ADDED TO THE MIX. CONCRETE CYLINDER SAMPLES SHALL BE TAKEN OF THE MIX ENTERING THE CONCRETE PUMP TO ENSURE WATER WAS NOT ADDED. CONCRETE CYLINDER TEST BREAK REPORTS SHALL BE PROVIDED TO THE ENGINEER TO VERIFY THE MIX INSTALLED MEETS THE COMPRESSIVE STRENGTH REQUIREMENTS.
7. CONTRACTOR IS RESPONSIBLE TO ENSURE THE CONCRETE IS CURED PROPERLY BASED ON THE WEATHER CONDITIONS. THE SLAB MUST CURE FOR A MINIMUM OF 3 DAYS PRIOR TO ANY WORK BEING COMPLETED ON THE NEW DECK. CONTRACTOR SHALL OBTAIN A 3 DAY CONCRETE SAMPLE BREAK TO ENSURE THE DECK HAS REACHED 70% COMPRESSIVE STRENGTH TO PROCEED.
8. SUBMITTAL OF CONCRETE MIX AND REINFORCING OPTION IS REQUIRED. COMPLETE SUBMITTALS MUST BE SUBMITTED AND LABELED FOR EACH LOCATION (I.E. SLAB ON GRADE, SLAB ON DECK.) IT MUST BE CLEARLY INDICATED WHICH SUBMITTALS ARE FOR EACH LOCATION IF THEY ARE SUBMITTED AS ONE PACKAGE.

CMU:

CMU IS BY OTHERS & ANY CMU BOND BEAM MUST BE FILLED WITH CONCRETE. MORTAR IS NOT ACCEPTABLE. IF BOND BEAM IS NOT PRESENT OR IS IMPROPERLY CONSTRUCTED THE METAL BUILDING COMPANY WILL NOT BE RESPONSIBLE FOR COSTS INCURRED BY USING ANOTHER ANCHOR SYSTEM OTHER THAN WHAT IS SPECIFIED ON PLANS. CONTRACTOR IS ALSO RESPONSIBLE FOR VERIFYING ALL MASONRY WALL HEIGHTS. THE METAL BUILDING COMPANY WILL NOT BE RESPONSIBLE FOR COST INCURRED DUE TO INCORRECT MASONRY WALL HEIGHTS. BEFORE CONSTRUCTION CONTRACTOR NEEDS TO VERIFY DIMENSIONS WITH RAPID BUILDING SOLUTIONS.

PARAPET CAPPING:

RAPID BUILDING SOLUTIONS IS NOT RESPONSIBLE FOR TEMPORARILY DRYING PARAPET WALLS THIS IS THE SOLE RESPONSIBILITY OF THE OWNER/GC. ONCE THE EXTERIOR OF THE BUILDING IS 100% COMPLETE RAPID BUILDING SOLUTIONS WILL FIELD MEASURE AND CUSTOM ORDER THE PARAPET CAPPING

OFFICE:

ALL BUILD-OUTS, BATHROOMS, MECHANICAL ROOMS, & ELECTRICAL ROOM FRAMING ARE NOT INCLUDED.

INSULATION:

WALL INSULATION IS PROVIDED BUT NOT INSTALLED AT PERIMETER AT BRICK, EFS, & DENS GLASS LOCATIONS

BRICK VENEER:

BRICK VENEER & LINTELS ARE ALL BY OTHERS. RAPID BUILDING SOLUTIONS IS NOT RESPONSIBLE FOR SUPPLYING MATERIALS

STRUCTURAL STEEL EMBED PLATES

STRUCTURAL EMBED PLATES ARE TO BE SUPPLIED & INSTALLED BY GENERAL CONTRACTOR

ELEVATORS:

ALL ELEVATOR DIMENSIONS & HEIGHTS NEED TO BE CHECKED WITH ELEVATOR MANUFACTURE BEFORE STARTING ANY FOUNDATION OR MASONRY WORK. RAPID BUILDING SOLUTIONS IS NOT RESPONSIBLE FOR COST INCURRED DUE TO INCORRECT SIZE &/OR HEIGHTS.

bennett&pless

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JOB NUMBER:
527-23-SPR-NC

RELIANT DEVELOPMENT LLC
MIDGARD SELF STORAGE
14396 NC 210 SOUTH
SPRING LAKE, NC 28390

REV.	DATE	DESCRIPTION	BY
Ø1	Ø8-24-23	ARCH'S COMMENTS	AB

SHEET TITLE

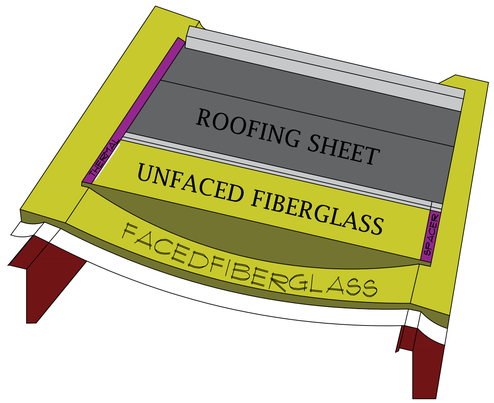
STRUCTURAL SPECIFICATIONS

DATE	Ø7-28-23
DESIGNED BY	RBS
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-Ø.1

SAG AND BAG

INSULATION SYSTEM



THERM • ALL

Sag and Bag Instructions

"Sag and Bag" is a double-layer insulation system that is used to comply with the newer energy codes and is designated in *ASHRAE* Table A2.3 as "Double Layer".

As illustrated in the previous pages, the Sag and Bag System consists of one layer of faced fiberglass insulation draped across, and allowed to sag between, the purlins in a metal building roof, followed above by a second layer of unfaced fiberglass insulation that is field cut in to pieces that fit between the purlins so as to avoid having two layers of insulation between the purlins and the roof panels, which situation would cause problems with the roof.

The roof insulation roll lengths for the first, faced, layer of fiberglass are derived by starting with the length of the slope, in feet, taking roof pitch in to consideration, and adding 6" for each purlin space, plus another two feet for "pull", one foot at each end of the roof roll. **Remember that you also need to take in to consideration that the insulation rolls on the first side of the roof you will install need to be 2' to 3' longer than the rolls for the second side of the roof because when you do the first side of a roof the insulation needs to reach across to the first, topmost, purlin on the other side of the roof.** The width of the first layer (faced) insulation rolls is up to the discretion of the builder.

Take note that both *ASHRAE* and *NAIMA* tables dictate that the bottom layer of the Sag and Bag System will be the thinner of the two layers, when there is a difference.

The unfaced fiberglass for the second layer can be 4', 5' or 6' wide, depending on your erector's preference, and must be field cut to fit between the purlins.

When installing the first layer of fiberglass (faced) across the purlins, the rolls should be rolled out as normally done, with the exception that they should not be pulled tight from end to end. Rather, the roll should be installed loosely so that is sags down between the purlins, leaving space for the unfaced second layer. Care must be taken to create as equal as possible the sag between all the purlin spaces. This can be done by having a number of roofing crew members lift and shake out the insulation after it is unrolled. **Pulling the bottom layer of insulation tight defeats the purpose of Sag and Bag, by reducing the space in to which the insulation can expand to achieve its maximum effectiveness.** Subsequent rolls of insulation should be installed such that they sag to the same depth as prior rolls to better seal the seams between adjacent rolls and to attain a relatively uniform appearance from the bottom side.

Although many contractors are now using one 6" tab to create the seams between adjacent rolls of insulation, *Therm-All* recommends against that practice when installing using the Sag and Bag system. Since adjacent rolls need to conform to the rolls next to them, and because this is an imprecise practice, using one 6" tab would not seal the adjacent rolls sufficiently to prevent moisture migration through the seams. Therefore, Therm-All highly recommends that you use two 3" tabs on each roll of insulation and fold and staple the seams as recommended by the *National Insulation Association* on their website insulation.org in the section entitled *Condensation Fact Sheet for Metal Buildings*.

Since the second layer of insulation, which is unfaced, cannot go over the top of the purlins (which already have one layer of insulation over them because of the faced bottom layer), it must be field-cut to fit between the purlins.

Code requires that thermal blocks be used over the purlins with the Sag and Bag system.

EcoTouch® Insulation with PureFiber® Technology for Certified R Metal Building

Product Data Sheet

performance which provides the capability of obtaining nominal thermal resistance (R-values) after laminating. The actual thermal performance obtained from the laminated product will depend primarily on the recovered thickness. Note that these nominal R-values are for the insulation only and do not include the effects of facings, air films, compression of insulation at framing members, conductance through fasteners, or other heat transfer paths particular to an installation.

The recovered thickness achieved will depend on a number of variables determined in the laminating process and hence are outside of Owens Corning's control. To address these issues, a number of leading metal building insulation laminators produce products which meet the National Insulation Association's "Certified Faced Insulation Standard" (NIA 404). Samples of faced products are periodically tested by a nationally recognized laboratory and determined to meet the NIA standard.

Standards, Codes Compliance

- ASTM C991-08, Flexible Fibrous Glass Insulation for Metal Buildings; Type I.
- NAIMA 202-96 (Rev. 2000) Standard for Flexible Fiber Glass Insulation to be Laminated for Use in Metal Buildings.

Certifications and Sustainable Features of EcoTouch® Insulation with PureFiber® Technology for Certified R Metal Building

- EcoTouch® insulation is the only fiberglass insulation product listed in the USDA BioPreferred℠ Catalog.
- Certified by Scientific Certification Systems to contain a minimum of 65% recycled glass content
- Certified to meet indoor air quality standards under the stringent GREENGUARD Indoor Air Quality Certification Program℠, and the GREENGUARD Children & Schools Certification Program℠

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at http://sustainability.owenscorning.com.

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www.lamtec.com

LAMTEC®
CORPORATION

WMP-VR-R PLUS

POLYPROPYLENE / SCRIM / POLYESTER

Meets ASTM C1136, Type II, IV

FACING COMPOSITION	DESCRIPTION	VALUES (ENGLISH)	VALUES (METRIC)
White Film	Polypropylene	0.0015 inch	38.1 micron
Adhesive	Flame Resistant		
Reinforcing	Tri-directional Fiberglass	4 / inch (MD) 4 / inch (XD)	16 / 100 mm (MD) 16 / 100 mm (XD)
Film	Metallized Polyester	0.0005 inch	12.7 micron

PHYSICAL PROPERTIES	TEST METHOD	VALUES (ENGLISH)	VALUES (METRIC)
Basis Weight	Scale	14 lbs / 1000 ft²	68 g / m²
Permeance (WVTR)	ASTM E96 Procedure A	0.02 perm (grains/hr.ft².in Hg)	1.15 ng / N.s
Bursting Strength	ASTM D774	100 psi	7.0 kg / cm²
Tensile Strength	ASTM C1136	35 lbs/inch width (MD) 35 lbs/inch width (XD)	6.1 kN / m (MD) 6.1 kN / m (XD)
Caliper / Thickness	Micrometer	0.007 inch	178 micron
Accelerated Aging	30 Days @ 95% RH, 120°F (49°C)	No Corrosion No Delamination	No Corrosion No Delamination
Low Temperature Resistance	ASTM D1790 -40°F (-40°C)	Remains Flexible No Delamination	Remains Flexible No Delamination
High Temperature Resistance	4 hours @ 240°F (116°C)	Remains Flexible No Delamination	Remains Flexible No Delamination
Water Immersion	24 hours @ 73°F (23°C)	No Delamination	No Delamination
Mold Resistance	ASTM C665 / C1338	No Growth	No Growth
Dimensional Stability	ASTM D1204	0.25%	0.25%
Light Reflectance	ASTM C523	85%	85%

FIRE TESTING	ASTM E84 / UL 723		CAN/ULC-S102M	
	Polypropylene Side	Polyester Side	Polypropylene Side	Polyester Side
Flame Spread	10	10	10	10
Smoke Developed	35	40	40	50

Physical Properties based upon statistical averages, Weight / Thickness +/- 10%

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Phone: (570) 897-8200 Fax: (570) 897-6081 Web: www.lamtec.com

8/10

EcoTouch® Insulation with PureFiber® Technology for Certified R Metal Building

Product Data Sheet

Typical Physical Properties

Property	Test Method	Result
Thermal Resistance	ASTM C177/C518	(see "Description")
Surface Burning	UL 723ASTM E84	Flame spread index < 25 Smoke developed index < 50
Combustion Characteristics	ASTM E136	Non-combustible
Water Vapor Sorption	ASTM C1104	≤ 0.2% by volume
Fungi Resistance	ASTM C1338	Passes – no growth exhibited
Corrosiveness	ASTM C665	Passes
Odor Emission	ASTM C1304	Passes – no odor detected

1.The surface burning characteristics of these products have been determined in accordance with UL 723. The standard should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use. Values are reported to the nearest 5 rating.

☐ R-10, 3.4"
☐ R-11, 3.7"
☐ R-13, 4.3"
☐ R-16, 5.3"
☐ R-19, 6.3"
☐ R-25, 8.0"
☐ R-30, 9.25"

Description

Owens Corning EcoTouch® Insulation with PureFiber® Technology for Certified R Metal Building is a light density fi brous glass blanket designed to be laminated with a variety of appropriate facings. Certified R is available in standard R-values of 10, 11, 13, 16, 19, 25 and 30. Standard roll widths are 36", 48", 60" and 72". Selected Made-to-Order widths are also available.

Key Features

- EcoTouch® insulation is the only fi berglass insulation product listed in the USDA BioPreferredSM Catalog.
- Formaldehyde-free2
- Made with 99% natural3 materials—not acrylic.
- Made in the U.S.A.1

1. Meets requirements of the Buy American Act.
2. Applies to the insulation component only.
3. Unfaced insulation made with a minimum of 99% by weight natural materials consisting of minerals and plant-based compounds.

- Uses a minimum of 65% recycled content—41% being post-consumer.
- GREENGUARD Children & Schools CertifiedSM
- Easy to handle.
- Excellent recovery provides outstanding thermal and acoustical performance.

Product Applications

EcoTouch® Insulation with PureFiber® Technology for Certified R Metal Building is used as part of the insulation system in the roofs and side walls of metal buildings. It is designed to be laminated with a variety of facings to provide attractive interior finishes, abuse resistance, and assistance in control of moisture.

Owens Corning EcoTouch® Insulation with PureFiber® Technology for Certified R Metal Building are fabricated and distributed by a nation wide network of independent laminators assuring prompt service and delivery. Contact your Owens Corning Sales Representative for the names of insulation laminators servicing your area.

Installation

Several methods are used to insulate metal buildings. The usual method is to apply the insulation over the structural members (purlins and girts) and inside the exterior panels. This method generally accommodates single layer installations. Methods are also available to apply insulation between purlins so as to accommodate greater insulation thicknesses and better thermal performance.

Technical Information

Owens Corning EcoTouch® Insulation with PureFiber® Technology for Certified R Metal Building is regularly tested to ensure compliance to the NAIMA 202-96 (Rev. 2000) Standard. Sampling and testing is performed by the National Association of Home Builders Research Center (NAHB-RC). The product is labeled on the top surface of each roll with the nominal R-value and the "NAIMA 202-96" (Rev. 2000) to indicate compliance. The NAIMA 202-96 (Rev. 2000) standard specifi es thermal

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SEALS

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JOB NUMBER:
527-23-SPR-NC

RELIANT DEVELOPMENT LLC
MIDGARD SELF STORAGE
14396 NC 210 SOUTH
SPRING LAKE, NC 28390

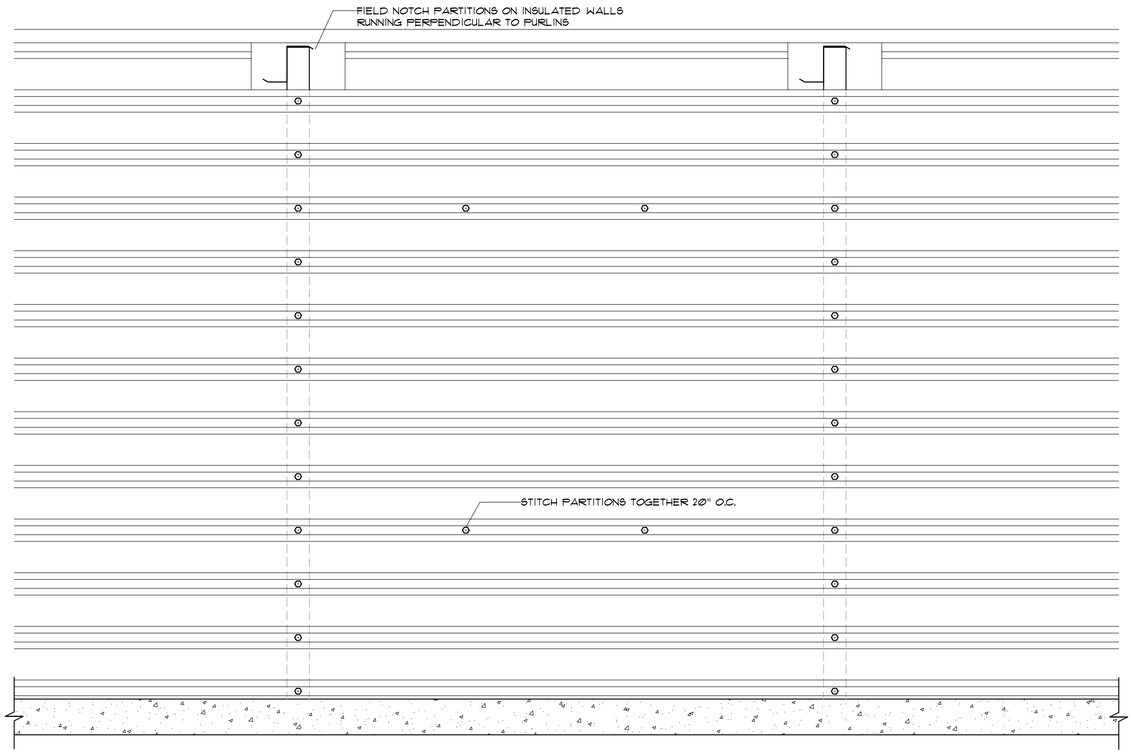
REV.	DATE	DESCRIPTION	BY
Ø1	Ø8-24-23	ARCH'S COMMENTS	AB

SHEET TITLE

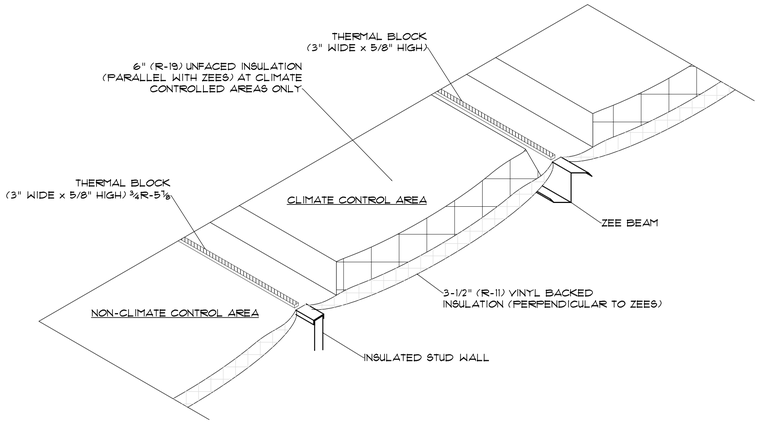
INSULATION DETAILS

DATE	Ø7-28-23
DESIGNED BY	RBS
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-IN1.0

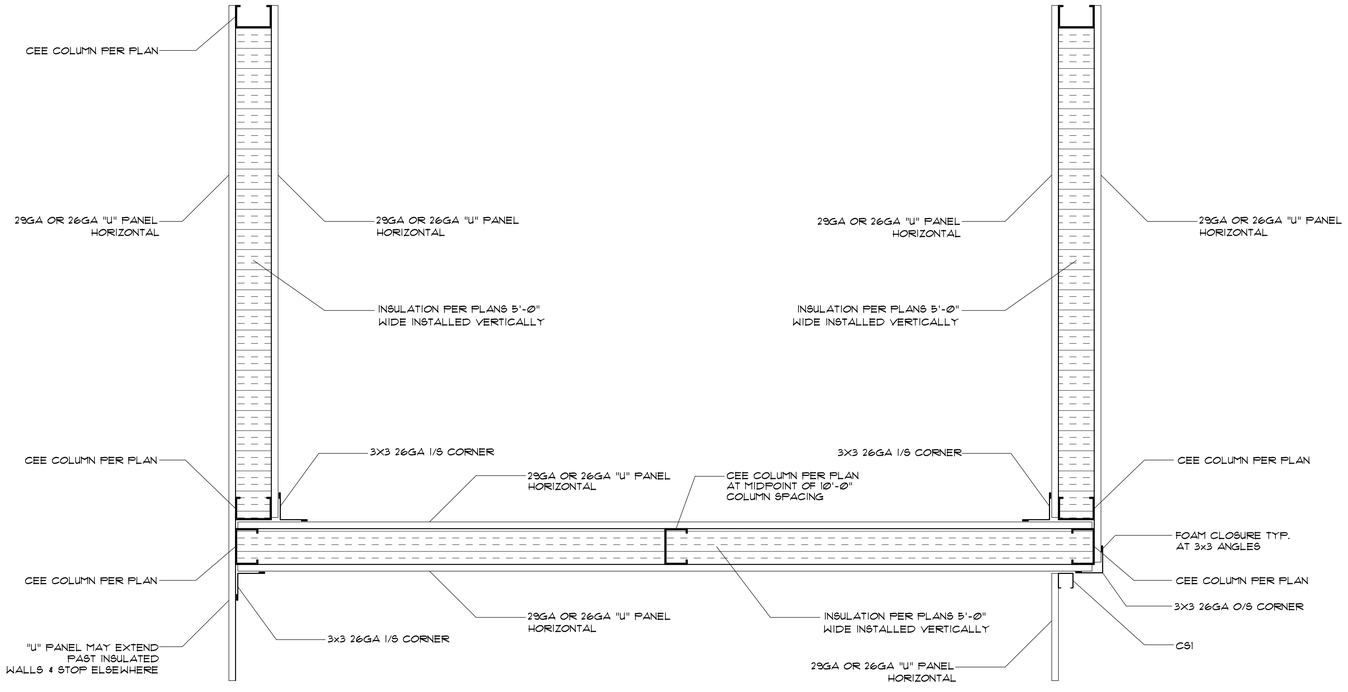


INTERIOR INSULATED WALL RUNNING PERPENDICULAR TO PURLINS

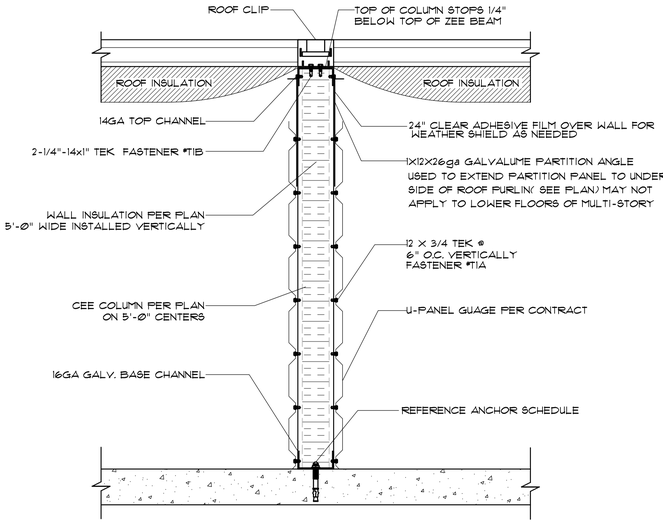


NOTE:
DO NOT INSTALL 3-1/2" UN-FACED INSULATION OVER EXTERIOR NON CLIMATE CONTROL UNITS.

SECTION - ROOF INSULATION
FOR CLIMATE CONTROLLED BUILDING



GENERIC INSULATION WALL LAYOUT
(NOTE: INSULATED WALLS SHEETED LEFT TO RIGHT)



INTERIOR INSULATED WALL RUNNING WITH PURLINS

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SHEET TITLE

INSULATION DETAILS

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SCALE	AS NOTED
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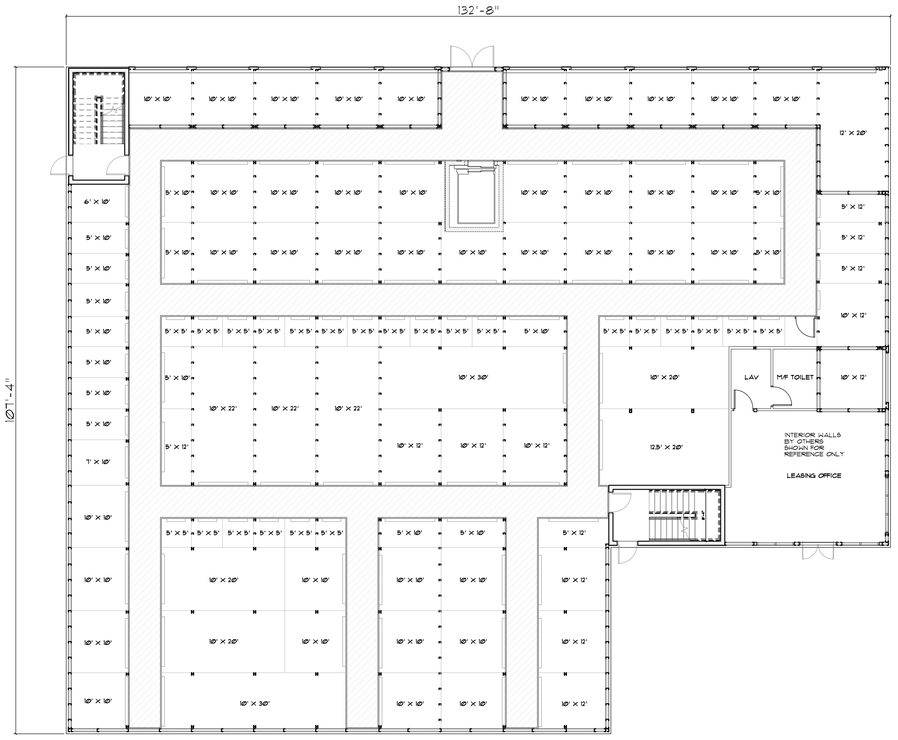
RBS-IN1.1



BLDG 1ST FLOOR PLAN

N.T.S.

BLDG 2ND FLOOR PLAN

N.T.S.

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SHEET TITLE

SITE LAYOUT

DATE	Ø7-28-23
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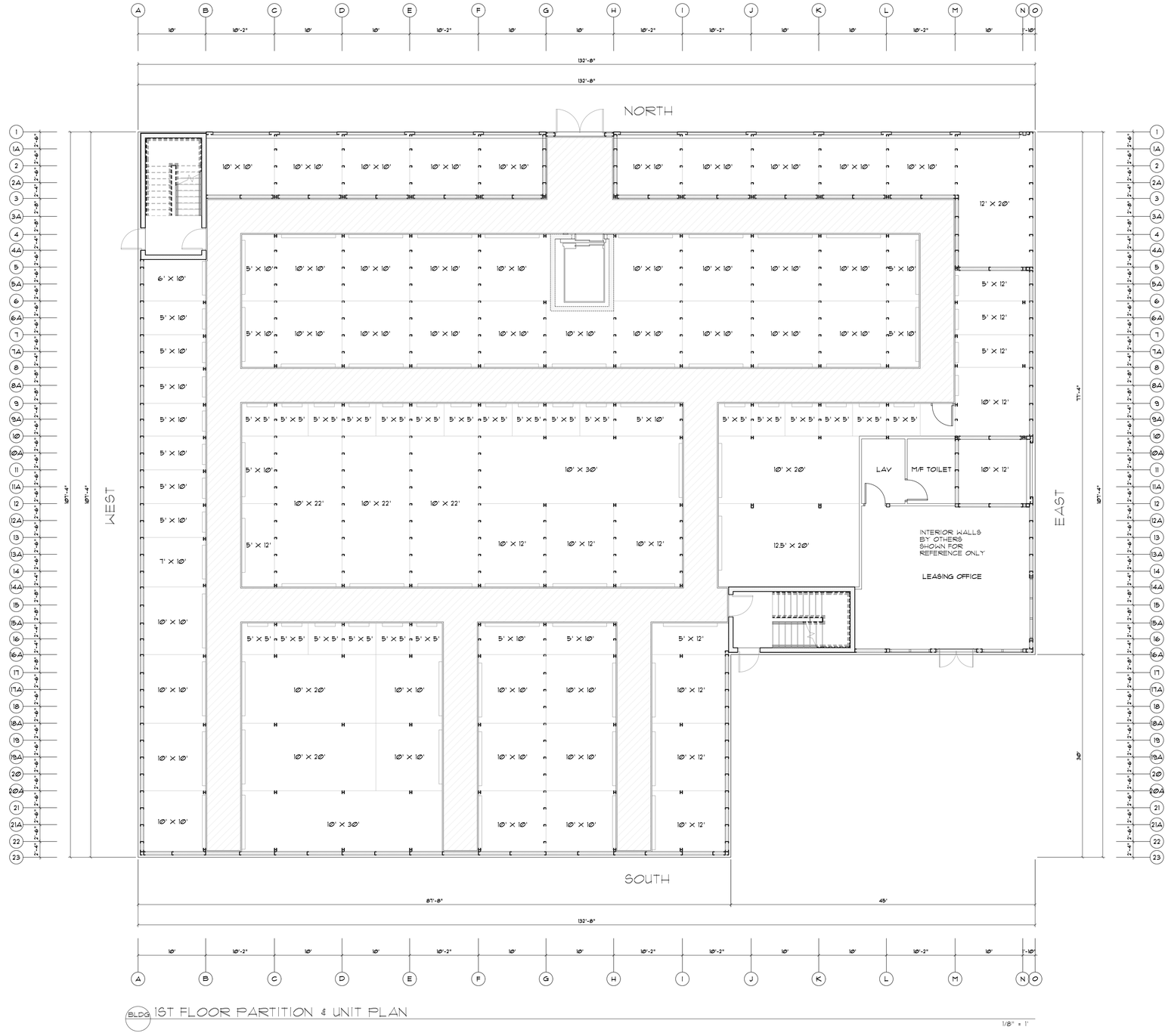
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-SL1

LINE KEY	
	PIER, HEADER, PIER
	6" R-19 INSULATION IN PERIMETER WALL 29GA LINER PANEL INTERIOR AND BRICK VENEER EXTERIOR BY OTHERS
	6" R-19 INSULATION IN WALL WITH 29GA LINER PANEL BOTH SIDES
	RRPBU, 24GA VERTICAL PERIMETER WALL PANEL
	BRICK VENEER EXTERIOR BY OTHERS
	HEADER BEAMS NEED MORE THAN 5' BAY
	HORIZONTAL PARTITION PANEL 29GA GALVALUME TYPE "U"
	HALL WAY SYSTEM
	COLUMNS
	TWO HOUR RATED CMU WALL @ STAIR UL # U905
	TWO HOUR RATED CMU WALL @ ELEVATOR UL # U905

ANCHOR SCHEDULE UNLESS NOTED OTHERWISE
BOTTOM FLOOR (MULTI)
BASE TRACK INSTALLATION 1/2"X3 3/4" WEDGE ANCHORS 30" O.C.
PIER INSTALLATION 1/2"X3 3/4" WEDGE ANCHORS
SPECIAL MASONRY TRACK ATTACHMENT 12GA. GALV. (TO CMU) 3/4"X5 1/2" WEDGE ANCHORS
STEEL DECK SUPPORT ANGLE (TO CMU) 3/4"X5 1/2" WEDGE ANCHORS 24" O.C.

BOTTOM FLOOR PLAN NOTES (2 STORY)
SEE FOUNDATION PLAN FOR SLAB ON GRADE
TYPICAL INTERIOR SUPPORTING COLUMN SHALL BE C4.14 (4"X2.5"X14GA W/ CONT. 16GA BASE CHANNEL & CONT. 14GA TOP CHANNEL.) TYPICAL EXTERIOR SUPPORTING COLUMN SHALL BE C6.16 (6"X2.5"X16GA W/ CONT. 16GA BASE CHANNEL & CONT. 14GA TOP CHANNEL.)
PARTITION PANEL SHALL BE 29GA HORIZONTAL PARTITION PANEL W/ #10 TEK SCREW SIDELAP FASTENERS @ 20" O.C. MAX.
H6.12 = DOUBLE H6.12 (6X2.5X12GA CEE HEADER) FOR 5'-7.5' SPANS (COLUMNS SUPPORTING HEADERS ARE DOUBLE C4.12 4X2.5"X12GA CEE EACH END OF HEADER)
H8.12 = DOUBLE H8.12 (8X2.5X12GA CEE HEADER) FOR 7.5'-10' SPANS (COLUMNS SUPPORTING HEADER ARE DOUBLE C4.12 4X2.5"X12GA CEE EACH END OF HEADER)
H12.12 = DOUBLE H12.12 (12X2.5X12GA CEE HEADER) FOR 15' SPANS (COLUMNS SUPPORTING HEADER ARE TRIPLE C4.12 4X2.5"X12GA CEE EACH END OF HEADER)
SG1.16 (1"X16GA SUBGIRT AT 5' O.C. MAX.)



BLDG 1ST FLOOR PARTITION & UNIT PLAN

1/8" = 1'

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SHEET TITLE

1ST FLOOR
PARTITION & UNIT PLAN

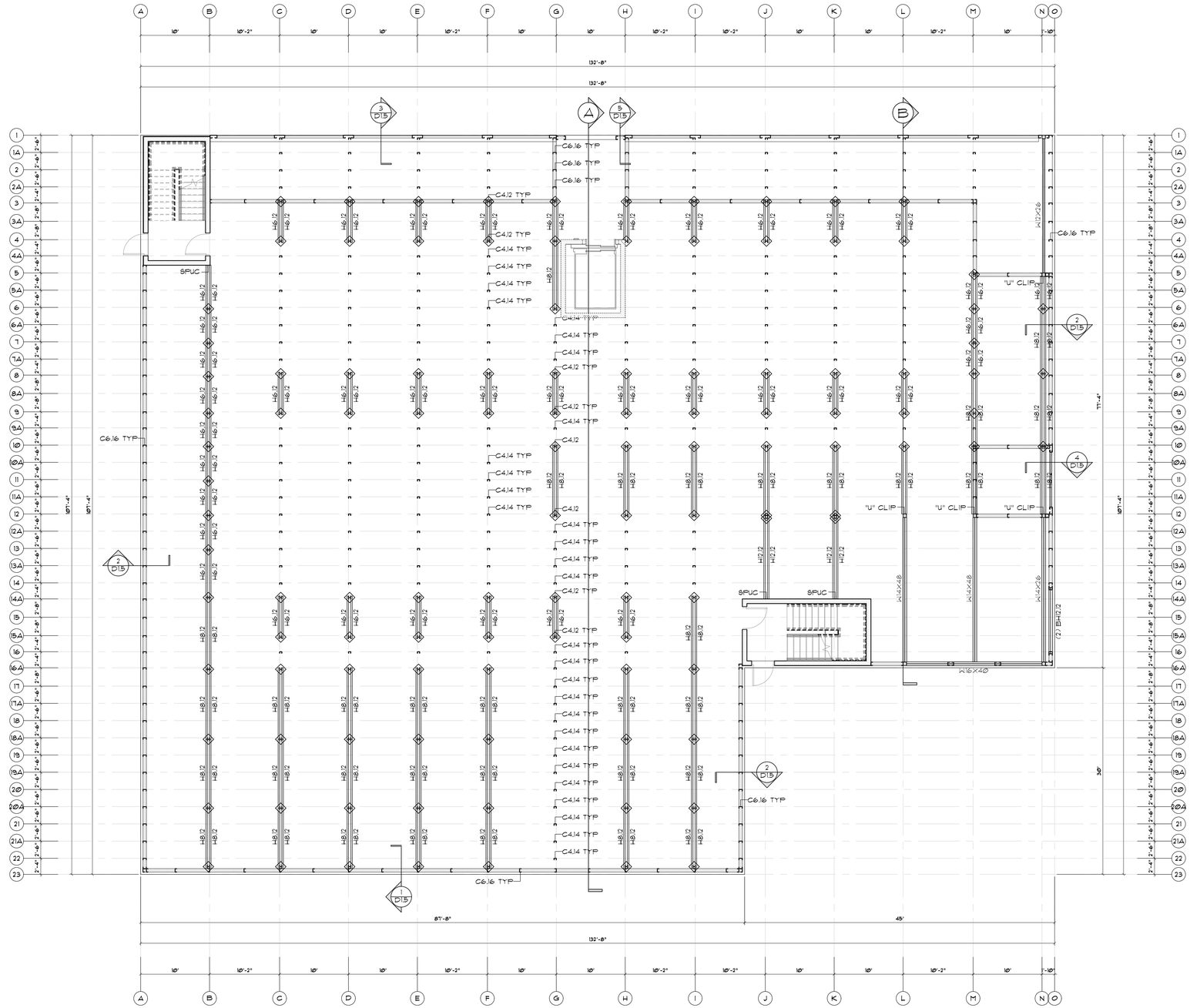
DATE	07-28-23
DESIGNED BY	RBS
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-S1.0

LINE KEY	
	PIER, HEADER, PIER
	6" R-19 INSULATION IN PERIMETER WALL 29GA LINER PANEL INTERIOR AND BRICK VENEER EXTERIOR BY OTHERS
	6" R-19 INSULATION IN WALL WITH 29GA LINER PANEL BOTH SIDES
	RRPBU, 24GA VERTICAL PERIMETER WALL PANEL
	BRICK VENEER EXTERIOR BY OTHERS
	HEADER BEAMS NEED MORE THAN 5' BAY
	HORIZONTAL PARTITION PANEL 29GA GALVALUME TYPE "U"
	HALL WAY SYSTEM
	COLUMNS
	TWO HOUR RATED CMU WALL # STAIR UL # U905
	TWO HOUR RATED CMU WALL # ELEVATOR UL # U905

ANCHOR SCHEDULE UNLESS NOTED OTHERWISE
BOTTOM FLOOR (MULTI)
BASE TRACK INSTALLATION 1/2"X3 3/4" WEDGE ANCHORS 30" O.C.
PIER INSTALLATION 1/2"X3 3/4" WEDGE ANCHORS
SPECIAL MASONRY TRACK ATTACHMENT 12GA. GALV. (TO CMU) 3/4"X5 1/2" WEDGE ANCHORS
STEEL DECK SUPPORT ANGLE (TO CMU) 3/4"X5 1/2" WEDGE ANCHORS 24" O.C.

BOTTOM FLOOR PLAN NOTES (2 STORY)
SEE FOUNDATION PLAN FOR SLAB ON GRADE
TYPICAL INTERIOR SUPPORTING COLUMN SHALL BE C4.14 (4"X2.5"X14GA W/ CONT. 16GA BASE CHANNEL & CONT. 14GA TOP CHANNEL.) TYPICAL EXTERIOR SUPPORTING COLUMN SHALL BE C6.16 (6"X2.5"X16GA W/ CONT. 16GA BASE CHANNEL & CONT. 14GA TOP CHANNEL.)
PARTITION PANEL SHALL BE 29GA HORIZONTAL PARTITION PANEL W/ #10 TEK SCREW SIDELAP FASTENERS @ 20" O.C. MAX.
H6.12 = DOUBLE H6.12 (6X2.5X12GA CEE HEADER) FOR 5'-7.5" SPANS (COLUMNS SUPPORTING HEADERS ARE DOUBLE C4.12 4X2.5"X12GA CEE EACH END OF HEADER)
H8.12 = DOUBLE H8.12 (8X2.5X12GA CEE HEADER) FOR 7.5'-10" SPANS (COLUMNS SUPPORTING HEADER ARE DOUBLE C4.12 4X2.5"X12GA CEE EACH END OF HEADER)
H12.12 = DOUBLE H12.12 (12X2.5X12GA CEE HEADER) FOR 15' SPANS (COLUMNS SUPPORTING HEADER ARE TRIPLE C4.12 4X2.5"X12GA CEE EACH END OF HEADER)
SG1.16 (1"X16GA SUBGIRT AT 5' O.C. MAX.)



BLDG 1ST FLOOR STUD & CHANNEL PLAN

1/8" = 1'

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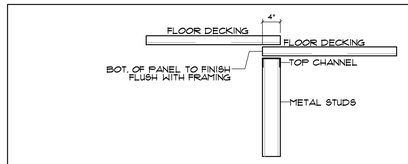
1ST FLOOR
STUD & CHANNEL PLAN

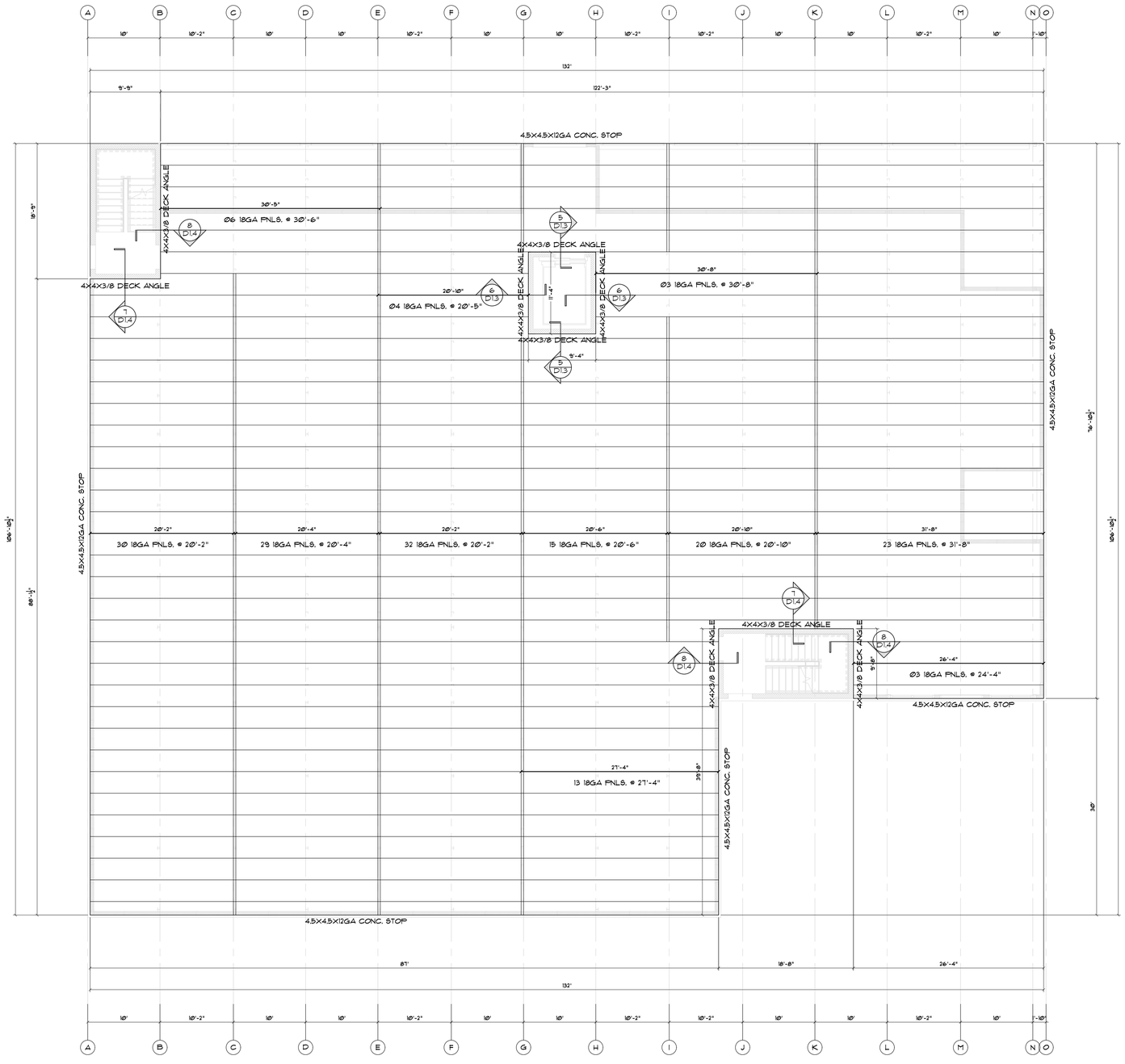
DATE	07-28-23
DESIGNED BY	RBS
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-S1.1



NOTE TO THE GENERAL CONTRACTOR:
ALL LAP SEAMS AND EDGE CONDITIONS OF DECKING ARE TO BE SEALED PRIOR TO THE POURING OF CONCRETE AND IS NOT THE RESPONSIBILITY OF RAPID BUILDING SOLUTIONS (RBS). FAILURE TO SEAL THE SEAMS AND EDGE CONDITIONS WILL ALLOW LEAKAGE OF CONCRETE. ANY CLEANUP OR DAMAGES TO MATERIALS CAUSED WILL NOT BE THE RESPONSIBILITY OF RBS.

TYPICAL ELEVATED FLOOR CONSTRUCTION
4 1/2" (2 1/2" CLEAR) REGULAR WEIGHT CONCRETE 3000 PSI OVER VULCRAFT 2VL118 GALV COMPOSITE METAL DECK. REINFORCE SLAB W/ 6x6-W1.4xW1.4 FLAT SHEETS SUPPORTED ON BOLSTER CHAIRS. SET FLAT SHEETS 1 1/2" ABOVE DECK. FASTEN DECK TO SUPPORT STRUCTURE WITH #2 TEK SELF-DRILLING SCREWS AT EA FLUTE, 36/4 PATTERN WITH (4) SIDELAP FASTENERS.
ELEVATED FLOOR DECKS ARE DESIGNED FOR A 20 PSF CONSTRUCTION LIVE LOAD.
RIDE ON TROWEL MACHINES SHOULD NOT BE USED UNLESS THE DECK IS SHORED.



BLDG FIRST FLOOR DECKING PLAN
1/8" = 1'

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REV.	DATE	DESCRIPTION	BY
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SHEET TITLE
1ST FLOOR
FLOOR DECKING PLAN

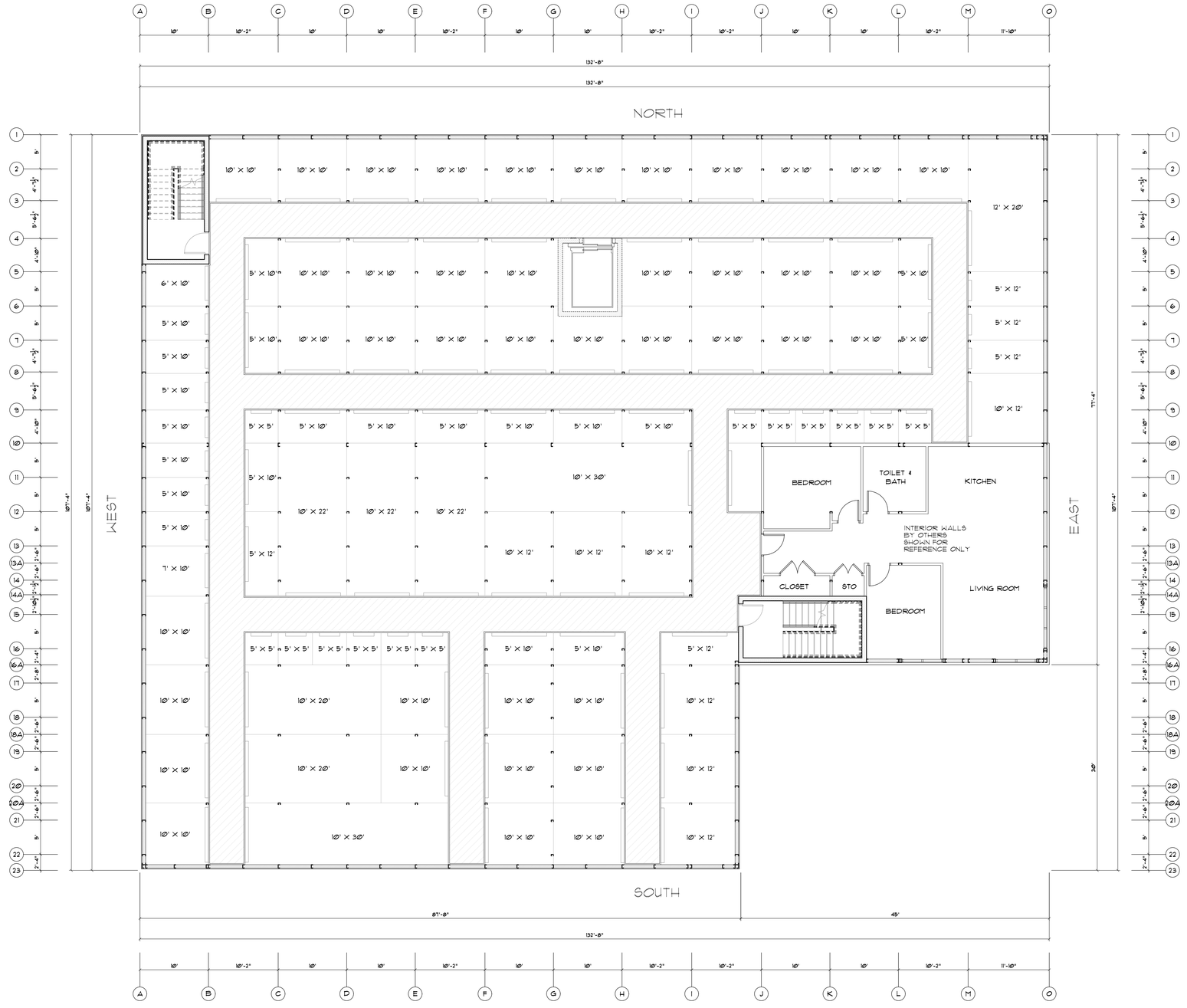
DATE	Ø7-28-23
DESIGNED BY	RBS
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-S1.2

LINE KEY	
	6" R-19 INSULATION IN PERIMETER WALL 29GA LINER PANEL INTERIOR AND 24GA RRPBU VERTICAL PANEL EXTERIOR
	HEADER BEAMS NEED MORE THAN 5' BAY
	HORIZONTAL PARTITION PANEL 29GA GALVALUME TYPE "U"
	HALL WAY SYSTEM
C	COLUMNS
	TWO HOUR RATED CMU WALL @ STAIR UL # U305
	TWO HOUR RATED CMU WALL @ ELEVATOR UL # U305
	ZEE BEAMS

ANCHOR SCHEDULE UNLESS NOTED OTHERWISE
TOP FLOOR (MULTI)
BASE CLIP INSTALLATION
1/2"X2 3/4" WEDGE ANCHORS
BASE TRACK INSTALLATION
1/2"X2 3/4" WEDGE ANCHORS 30" O.C.
12GA. GALV. ANGLE INSTALLATION (TO CMU)
1/2"X3 3/4" WEDGE ANCHORS
LINTEL AND EAVE STRUT INSTALLATION (TO CMU)
1/4X1 1/4 TAPCONS 12" O.C.

TOP FLOOR PLAN NOTES (2 STORY)
T/SECOND FLOOR SLAB = 10'-0"
TYPICAL ELEVATED FLOOR CONSTRUCTION BETWEEN 1ST AND 2ND FLOORS SHALL BE 4 1/2". (2 1/2" CLEAR) REGULAR WEIGHT CONCRETE 3000 PSI OVER VULCRAFT 2VL1.18 GALVANIZED COMPOSITE METAL DECK. REINFORCE SLAB WITH 6X6-W1.4XW1.4 FLAT SHEETS SUPPORTED ON BOLSTER CHAIRS. SET FLAT SHEETS 1 1/2" ABOVE DECK. FASTEN DECK TO SUPPORT STRUCTURE WITH #12 TEK SELF-DRILLING SCREWS AT EA FLUTE, 36/4 PATTERN WITH (4) SIDELAP FASTNERS. ELEVATED FLOOR DECKS ARE DESIGNED FOR A 20 PSF CONSTRUCTION LIVE LOAD. RIDE ON TROWEL MACHINES SHOULD NOT BE USED UNLESS THE DECK IS SHORED
TYPICAL INTERIOR SUPPORTING COLUMN SHALL BE C4.16 (4X2.5X16GA CEE) TYPICAL EXTERIOR SUPPORTING COLUMN SHALL BE C6.16 (6X2.5X16GA CEE)
TYPICAL PURLIN SHALL BE Z4.16 (4X2 1/8"X2 3/8"X16GA ZEE)
H6.16 = SINGLE H6.16 (6X2.5X16GA CEE HEADER) FOR 10' SPANS (COLUMNS SUPPORTING HEADERS ARE SINGLE C4.16 4X2.5"X16GA CEE EACH END OF HEADER)
H8.14 = SINGLE H8.14 (8X2.5X14GA CEE HEADER) FOR 15' SPANS (COLUMNS SUPPORTING HEADERS ARE SINGLE C4.14 4X2.5"X14GA CEE EACH END OF HEADER)
PARTITION PANEL SHALL BE 29GA HORIZONTAL PARTITION PANEL W/ #10 TEK SCREW SIDELAP FASTENERS @ 20" O.C. MAX.
ROOF PLAN NOTES:
24GA STANDING SEAM ROOF - GALVALUME



BLDG 2ND FLOOR PARTITION & UNIT PLAN

1/8" = 1'

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SHEET TITLE

2ND FLOOR
PARTITION & UNIT PLAN

DATE	Ø7-28-23
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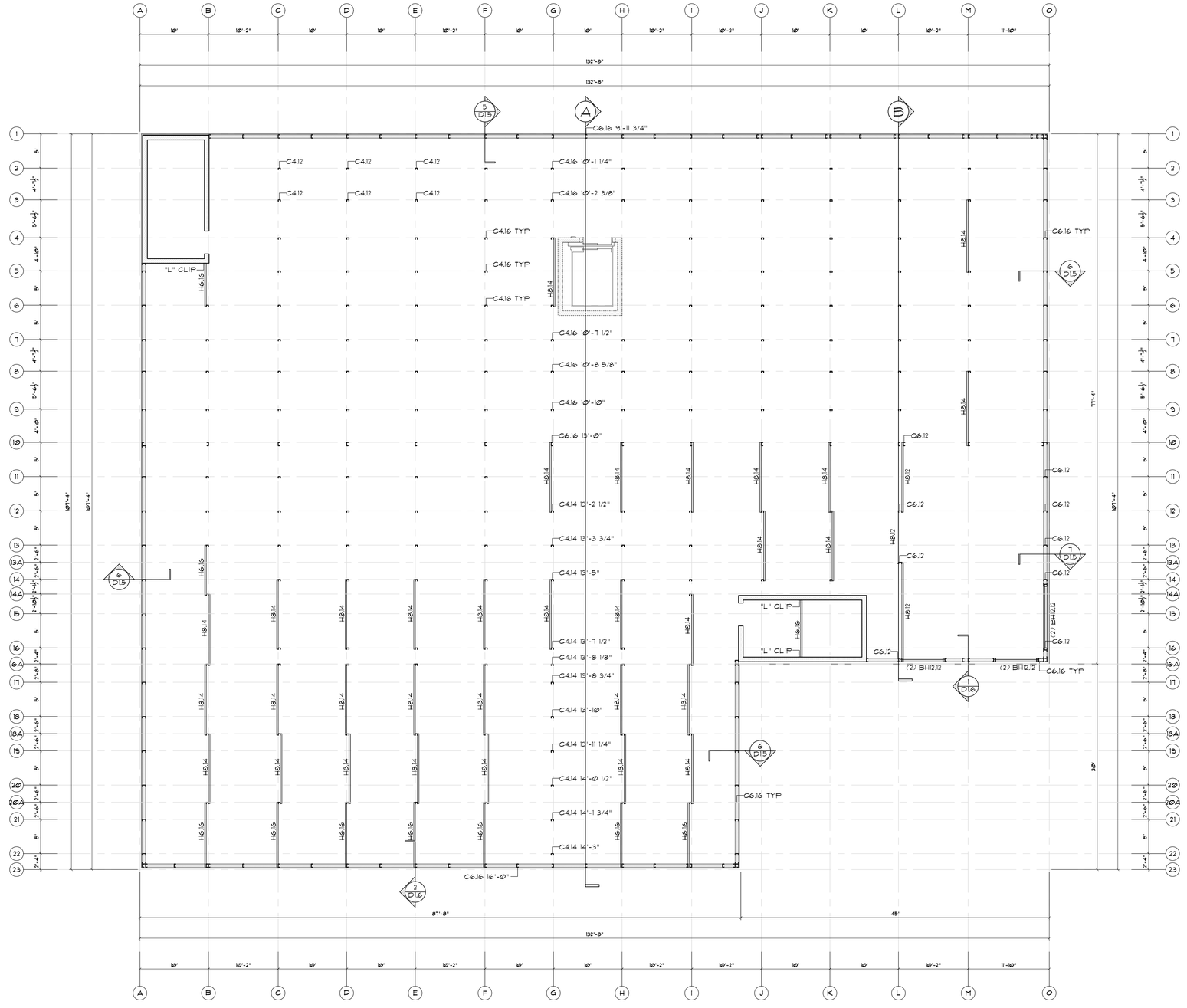
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-S1.3

LINE KEY	
	6" R-19 INSULATION IN PERIMETER WALL 29GA LINER PANEL INTERIOR AND 24GA RRPBU VERTICAL PANEL EXTERIOR
	HEADER BEAMS NEED MORE THAN 5' BAY
	HORIZONTAL PARTITION PANEL 29GA GALVALUME TYPE "U"
	HALL WAY SYSTEM
C	COLUMNS
	TWO HOUR RATED CMU WALL @ STAIR UL # U905
	TWO HOUR RATED CMU WALL @ ELEVATOR UL # U905
	ZEE BEAMS

ANCHOR SCHEDULE UNLESS NOTED OTHERWISE
TOP FLOOR (MULTI)
BASE CLIP INSTALLATION 1/2"X2 3/4" WEDGE ANCHORS
BASE TRACK INSTALLATION 1/2"X2 3/4" WEDGE ANCHORS 30" O.C.
12GA GALV. ANGLE INSTALLATION (TO CMU) 1/2"X3 3/4" WEDGE ANCHORS
LINTEL AND EAVE STRUT INSTALLATION (TO CMU) 1/4X1 1/4 TAPCONS 12" O.C.

TOP FLOOR PLAN NOTES (2 STORY)
T/SECOND FLOOR SLAB = 10'-0"
TYPICAL ELEVATED FLOOR CONSTRUCTION BETWEEN 1ST AND 2ND FLOORS SHALL BE 4 1/2". (2 1/2" CLEAR) REGULAR WEIGHT CONCRETE 3000 PSI OVER VULCRAFT 2VL18 GALVANIZED COMPOSITE METAL DECK. REINFORCE SLAB WITH 6X6-W1.4XW1.4 FLAT SHEETS SUPPORTED ON BOLSTER CHAIRS. SET FLAT SHEETS 1 1/2" ABOVE DECK. FASTEN DECK TO SUPPORT STRUCTURE WITH #12 TEK SELF-DRILLING SCREWS AT EA. FLUTE, 36/4 PATTERN WITH (4) SIDELAP FASTNERS. ELEVATED FLOOR DECKS ARE DESIGNED FOR A 20 PSF CONSTRUCTION LIVE LOAD. RIDE ON TROWEL MACHINES SHOULD NOT BE USED UNLESS THE DECK IS SHORED
TYPICAL INTERIOR SUPPORTING COLUMN SHALL BE C4.16 (4X2.5X16GA CEE) TYPICAL EXTERIOR SUPPORTING COLUMN SHALL BE C6.16 (6X2.5X16GA CEE)
TYPICAL PURLIN SHALL BE Z4.16 (4X2 1/8"X2 3/8"X16GA ZEE)
H6.16 = SINGLE H6.16 (6X2.5X16GA CEE HEADER) FOR 10' SPANS. (COLUMNS SUPPORTING HEADERS ARE SINGLE C4.16 4X2.5"X16GA CEE EACH END OF HEADER)
H8.14 = SINGLE H8.14 (8X2.5X14GA CEE HEADER) FOR 15' SPANS (COLUMNS SUPPORTING HEADERS ARE SINGLE C4.14 4X2.5"X14GA CEE EACH END OF HEADER)
PARTITION PANEL SHALL BE 29GA HORIZONTAL PARTITION PANEL W/ #10 TEK SCREW SIDELAP FASTENERS @ 20" O.C. MAX.
ROOF PLAN NOTES:
24GA STANDING SEAM ROOF - GALVALUME



BLDG 2ND FLOOR STUD & CHANNEL PLAN

1/8" = 1'

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527-23-SPR-NC

RELIANT DEVELOPMENT LLC
MIDGARD SELF STORAGE
14396 NC 210 SOUTH
SPRING LAKE, NC 28390

REV.	DATE	DESCRIPTION	BY
01	08-24-23	ARCH'S COMMENTS	AB

SHEET TITLE

2ND FLOOR
STUD & CHANNEL PLAN

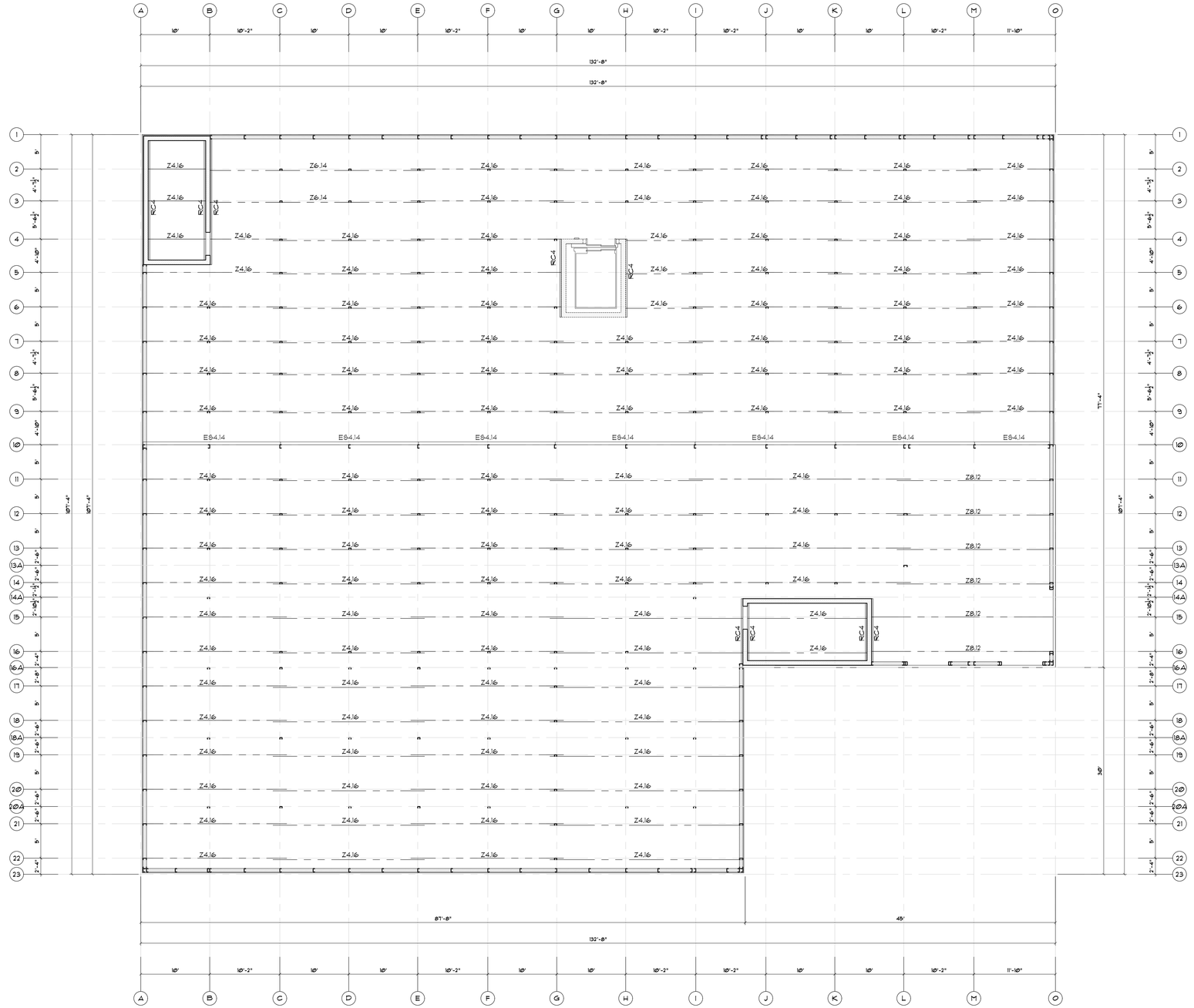
DATE	07-28-23
DESIGNED BY	RBS
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-S1.4

LINE KEY	
	6" R-19 INSULATION IN PERIMETER WALL 29GA LINER PANEL INTERIOR AND 24GA RRPBU VERTICAL PANEL EXTERIOR
	HEADER BEAMS NEED MORE THAN 5' BAY
	HORIZONTAL PARTITION PANEL 29GA GALVALUME TYPE "U"
	HALL WAY SYSTEM
C	COLUMNS
	TWO HOUR RATED CMU WALL @ STAIR UL # U305
	TWO HOUR RATED CMU WALL @ ELEVATOR UL # U305
	ZEE BEAMS

ANCHOR SCHEDULE UNLESS NOTED OTHERWISE
TOP FLOOR (MULTI)
BASE CLIP INSTALLATION 1/2"X2 3/4" WEDGE ANCHORS
BASE TRACK INSTALLATION 1/2"X2 3/4" WEDGE ANCHORS 30" O.C.
12GA. GALV. ANGLE INSTALLATION (TO CMU) 1/2"X3 3/4" WEDGE ANCHORS
LINTEL AND EAVE STRUT INSTALLATION (TO CMU) 1/4X1 1/4 TAPCONS 12" O.C.

TOP FLOOR PLAN NOTES (2 STORY)
T/SECOND FLOOR SLAB = 10'-0"
TYPICAL ELEVATED FLOOR CONSTRUCTION BETWEEN 1ST AND 2ND FLOORS SHALL BE 4 1/2". (2 1/2" CLEAR) REGULAR WEIGHT CONCRETE 3000 PSI OVER VULCRAFT 2VL1.18 GALVANIZED COMPOSITE METAL DECK. REINFORCE SLAB WITH 6X6-W1.4XW1.4 FLAT SHEETS SUPPORTED ON BOLSTER CHAIRS. SET FLAT SHEETS 1 1/2" ABOVE DECK. FASTEN DECK TO SUPPORT STRUCTURE WITH #12 TEK SELF-DRILLING SCREWS AT EA. FLUTE, 36/4 PATTERN WITH (4) SIDELAP FASTNERS. ELEVATED FLOOR DECKS ARE DESIGNED FOR A 20 PSF CONSTRUCTION LIVE LOAD. RIDE ON TROWEL MACHINES SHOULD NOT BE USED UNLESS THE DECK IS SHORED
TYPICAL INTERIOR SUPPORTING COLUMN SHALL BE C4.16 (4X2.5X16GA CEE) TYPICAL EXTERIOR SUPPORTING COLUMN SHALL BE C6.16 (6X2.5X16GA CEE)
TYPICAL PURLIN SHALL BE Z4.16 (4X2 1/8"X2 3/8"X16GA ZEE)
H6.16 = SINGLE H6.16 (6X2.5X16GA CEE HEADER) FOR 10' SPANS (COLUMNS SUPPORTING HEADERS ARE SINGLE C4.16 4X2.5"X16GA CEE EACH END OF HEADER)
H8.14 = SINGLE H8.14 (8X2.5X14GA CEE HEADER) FOR 15' SPANS (COLUMNS SUPPORTING HEADERS ARE SINGLE C4.14 4X2.5"X14GA CEE EACH END OF HEADER)
PARTITION PANEL SHALL BE 29GA HORIZONTAL PARTITION PANEL W/ #10 TEK SCREW SIDELAP FASTENERS @ 20" O.C. MAX.
ROOF PLAN NOTES:
24GA STANDING SEAM ROOF - GALVALUME



BLDG ROOF FRAMING PLAN

1/8" = 1'

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SEALS

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SUITE 1080
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2ND FLOOR
ROOF FRAMING PLAN

DATE	07-28-23
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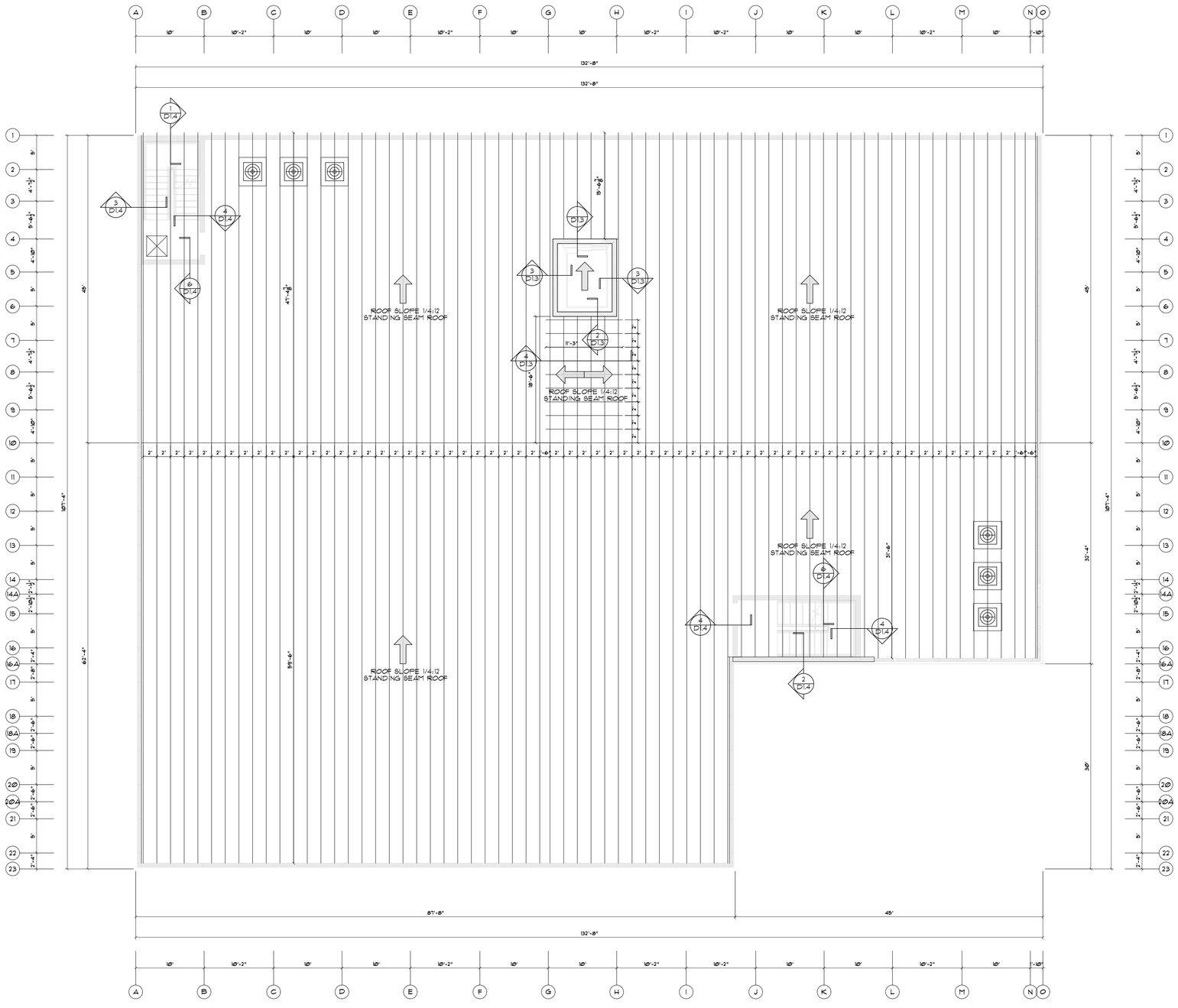
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-S1.5



BLDG ROOF SHEETING PLAN

1/8" = 1'

LEGEND:	
⊠	ROOF HATCH (BY OTHERS)
◎	CONDENSER UNIT (BY OTHERS)

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ROOF SHEETING PLAN

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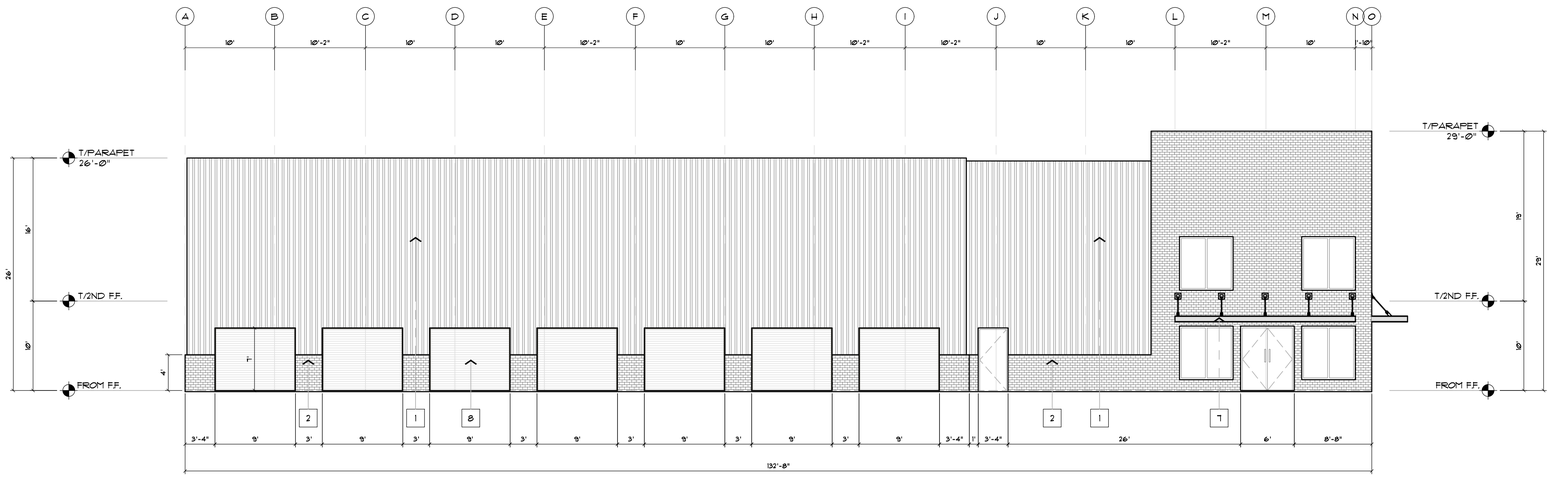
SCALE	AS NOTED
SHEET	

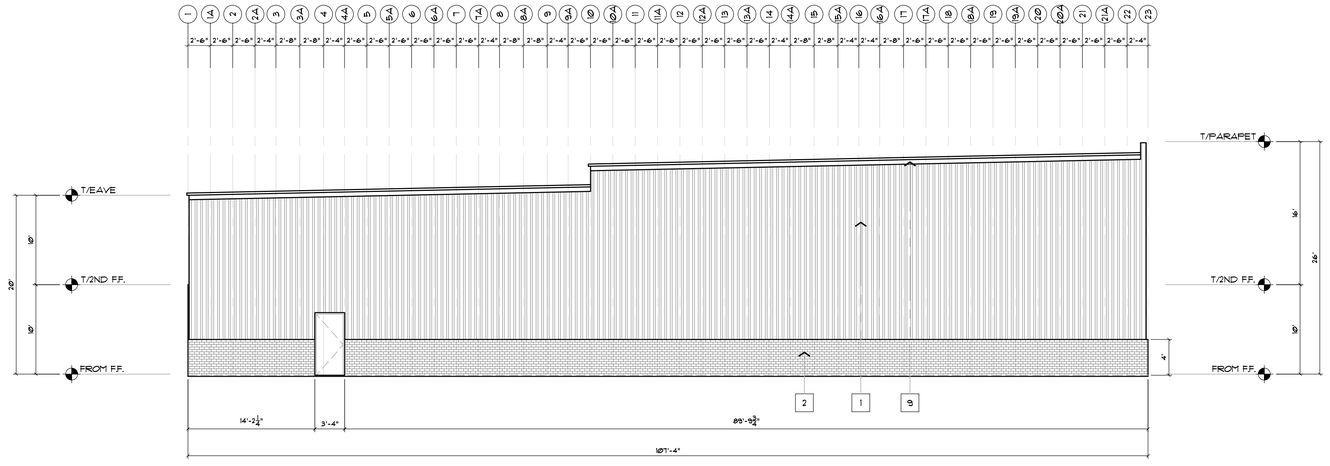
RBS-S1.6



BLDG. SOUTH ELEVATION

1/8" = 1'

NOTE: ALL EXTERIOR DIMENSIONS THAT ARE SHOWN ON THE ELEVATIONS ARE PULLED FROM OUTSIDE TO OUTSIDE OF THE FOUNDATION SLAB. ANY OTHER EXTERIOR MATERIAL DIMENSION MAY VARY DEPENDING ON FINISH.



BLDG. WEST ELEVATION

1/8" = 1'

NOTE: ALL EXTERIOR DIMENSIONS THAT ARE SHOWN ON THE ELEVATIONS ARE PULLED FROM OUTSIDE TO OUTSIDE OF THE FOUNDATION SLAB. ANY OTHER EXTERIOR MATERIAL DIMENSION MAY VARY DEPENDING ON FINISH.

ELEVATION NOTES	
EXTERIOR FINISH SCHEDULE	
1	24GA VERTICAL RRIPBU PANEL (COLOR T.B.D.)
2	BRICK EXTERIOR FINISH BY OTHERS (COLOR T.B.D.)
3	STRUCTURAL PIER HEADER (COLOR T.B.D.)
4	STRUCTURAL PIER COLUMN (COLOR T.B.D.)
5	LARGE GUTTERS (COLOR T.B.D.)
6	LARGE DOWNSPOUTS 20' O.C. MAX. (COLOR T.B.D.)
7	ROOF CANOPY BY OTHERS
8	FAUX DECORATIVE ROLL UP DOORS BY OTHERS
9	SIDE RAKE (COLOR T.B.D.)
10	ROLL UP DOORS

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SHEET TITLE

ELEVATIONS

DATE	Ø7-28-23
DESIGNED BY	RBS
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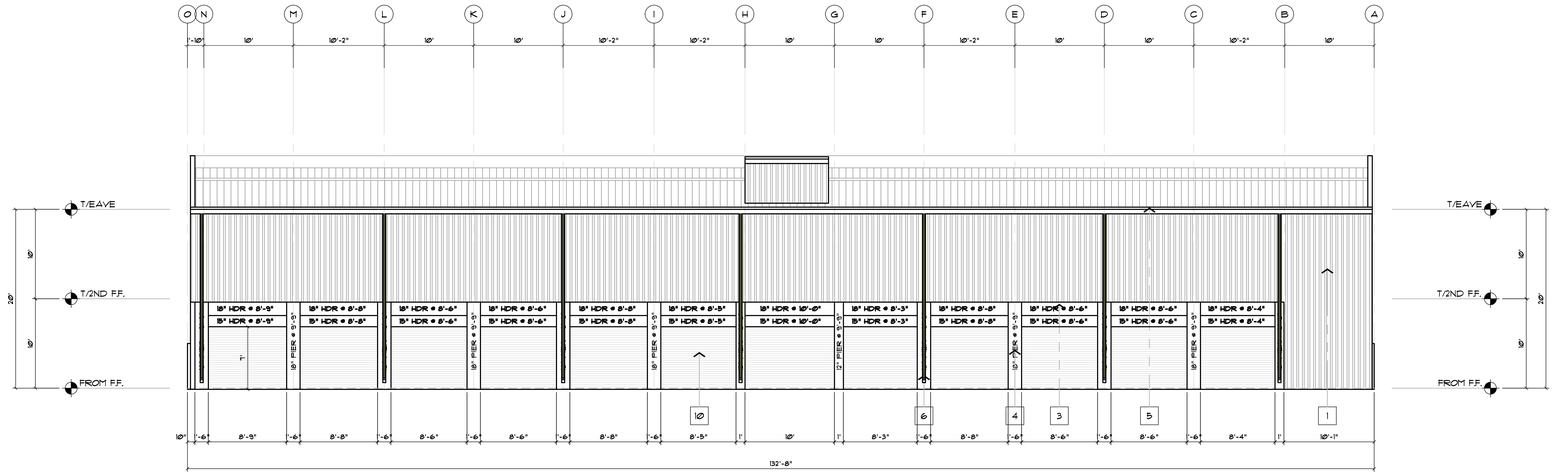
SCALE	AS NOTED
SHEET	

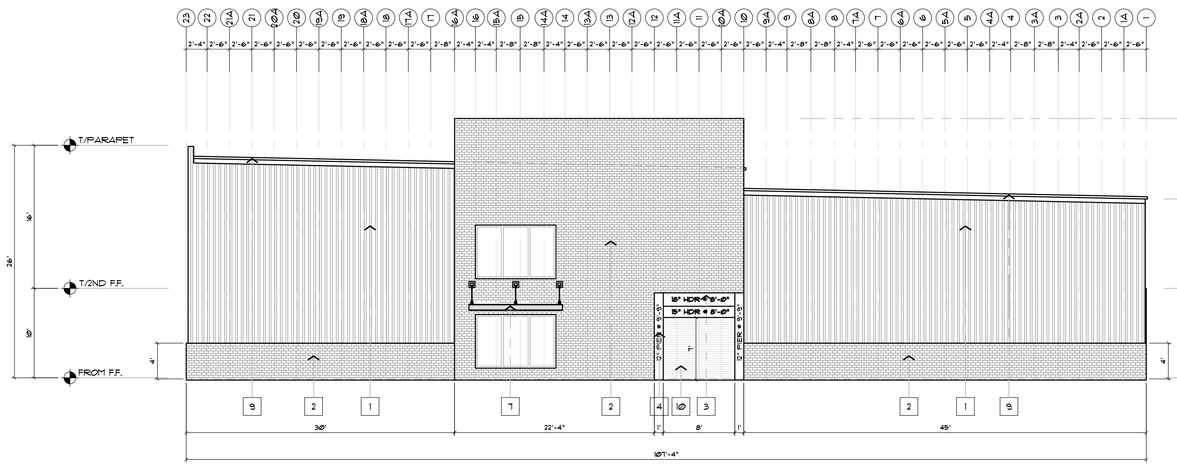
RBS-E1.Ø



BLDG NORTH ELEVATION

1/8" = 1'

NOTE: ALL EXTERIOR DIMENSIONS THAT ARE SHOWN ON THE ELEVATIONS ARE PULLED FROM OUTSIDE TO OUTSIDE OF THE FOUNDATION SLAB. ANY OTHER EXTERIOR MATERIAL DIMENSION MAY VARY DEPENDING ON FINISH.



BLDG EAST ELEVATION

1/8" = 1'

NOTE: ALL EXTERIOR DIMENSIONS THAT ARE SHOWN ON THE ELEVATIONS ARE PULLED FROM OUTSIDE TO OUTSIDE OF THE FOUNDATION SLAB. ANY OTHER EXTERIOR MATERIAL DIMENSION MAY VARY DEPENDING ON FINISH.

ELEVATION NOTES	
EXTERIOR FINISH SCHEDULE	
1	24GA VERTICAL RRPBU PANEL (COLOR T.B.D.)
2	BRICK EXTERIOR FINISH BY OTHERS (COLOR T.B.D.)
3	STRUCTURAL PIER HEADER (COLOR T.B.D.)
4	STRUCTURAL PIER COLUMN (COLOR T.B.D.)
5	LARGE GUTTERS (COLOR T.B.D.)
6	LARGE DOWNSPOUTS 20' O.C. MAX. (COLOR T.B.D.)
7	ROOF CANOPY BY OTHERS
8	FAUX DECORATIVE ROLL UP DOORS BY OTHERS
9	SIDE RAKE (COLOR T.B.D.)
10	ROLL UP DOORS

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ELEVATIONS

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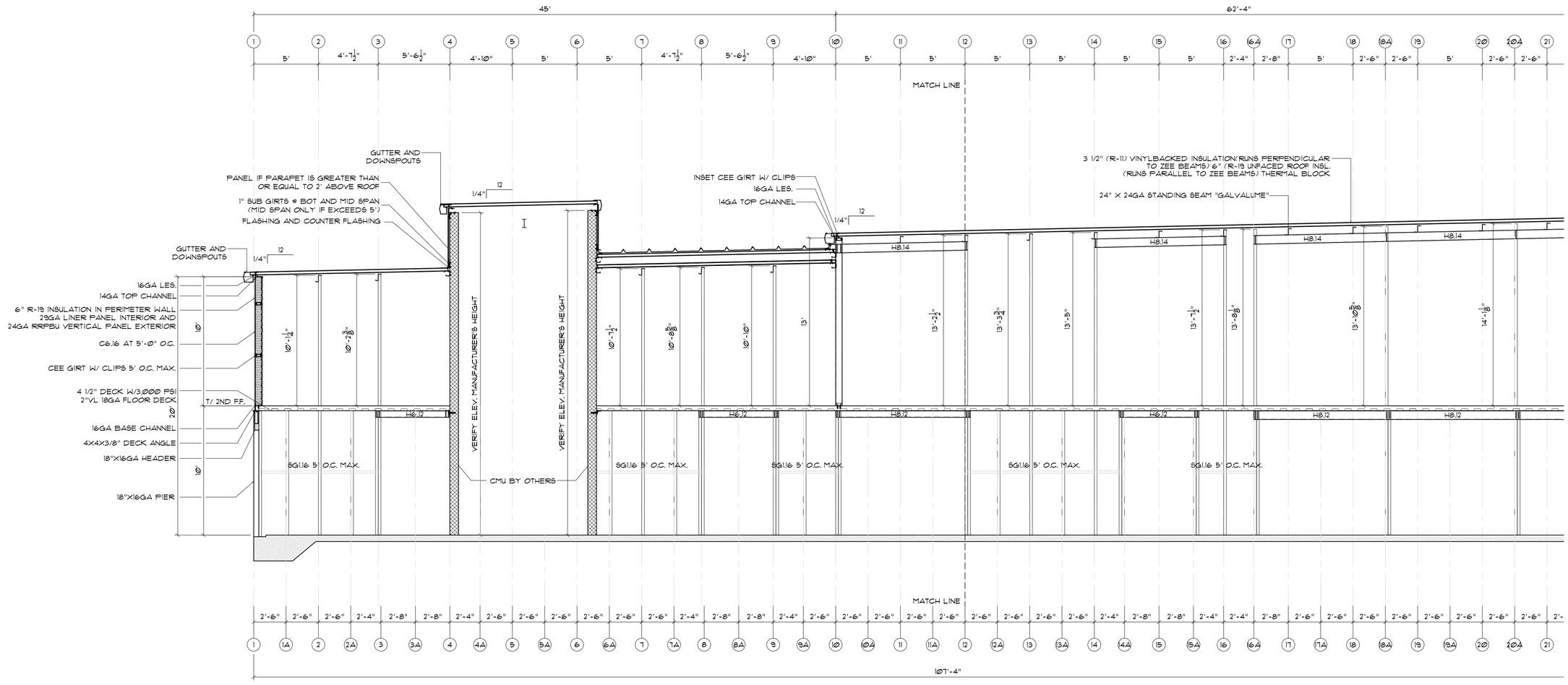
SHEET	

RBS-E1.1



BLDG SECTION "A"

1/4" = 1'

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SHEET TITLE

SECTION CUT

DATE	07-28-23
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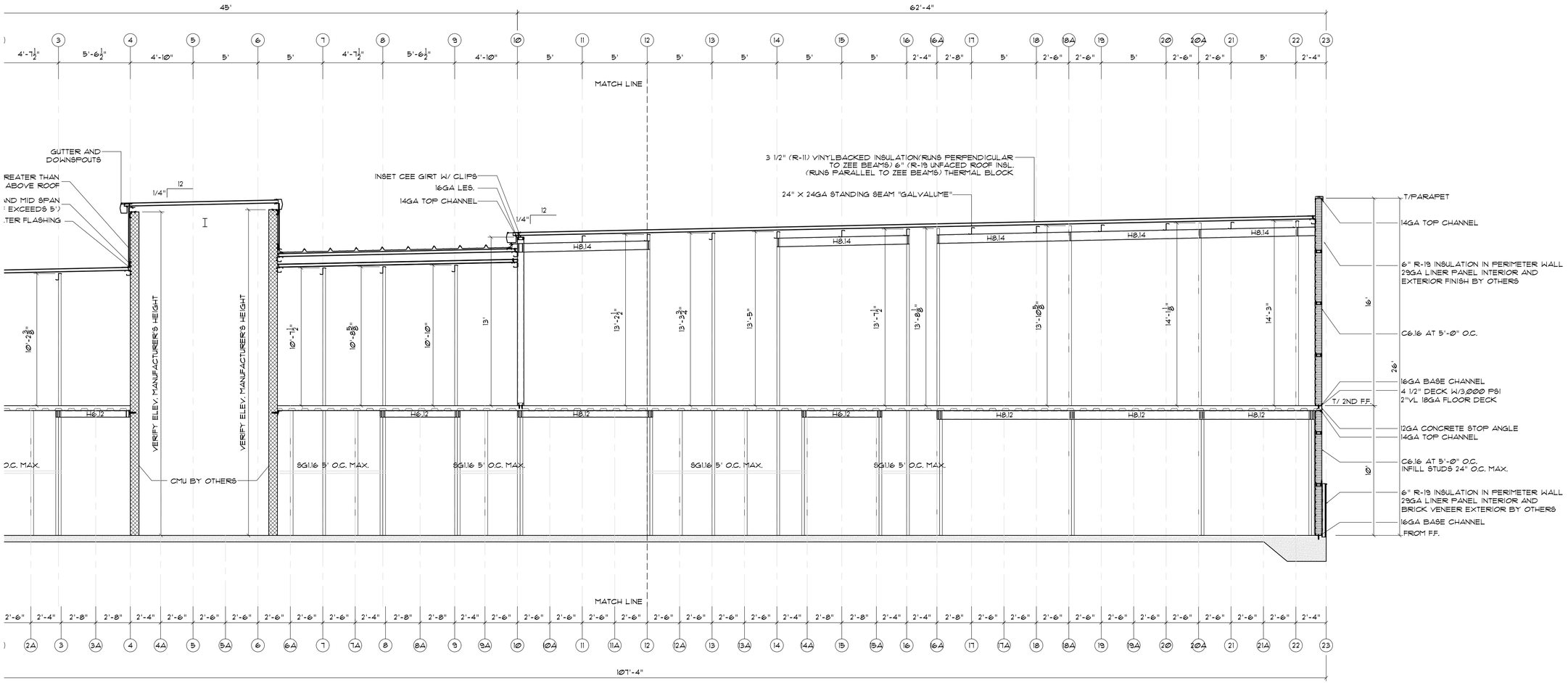
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-E1.2



SECTION "A"

1/4" = 1'

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SHEET TITLE

SECTION CUT

DATE	Ø7-28-23
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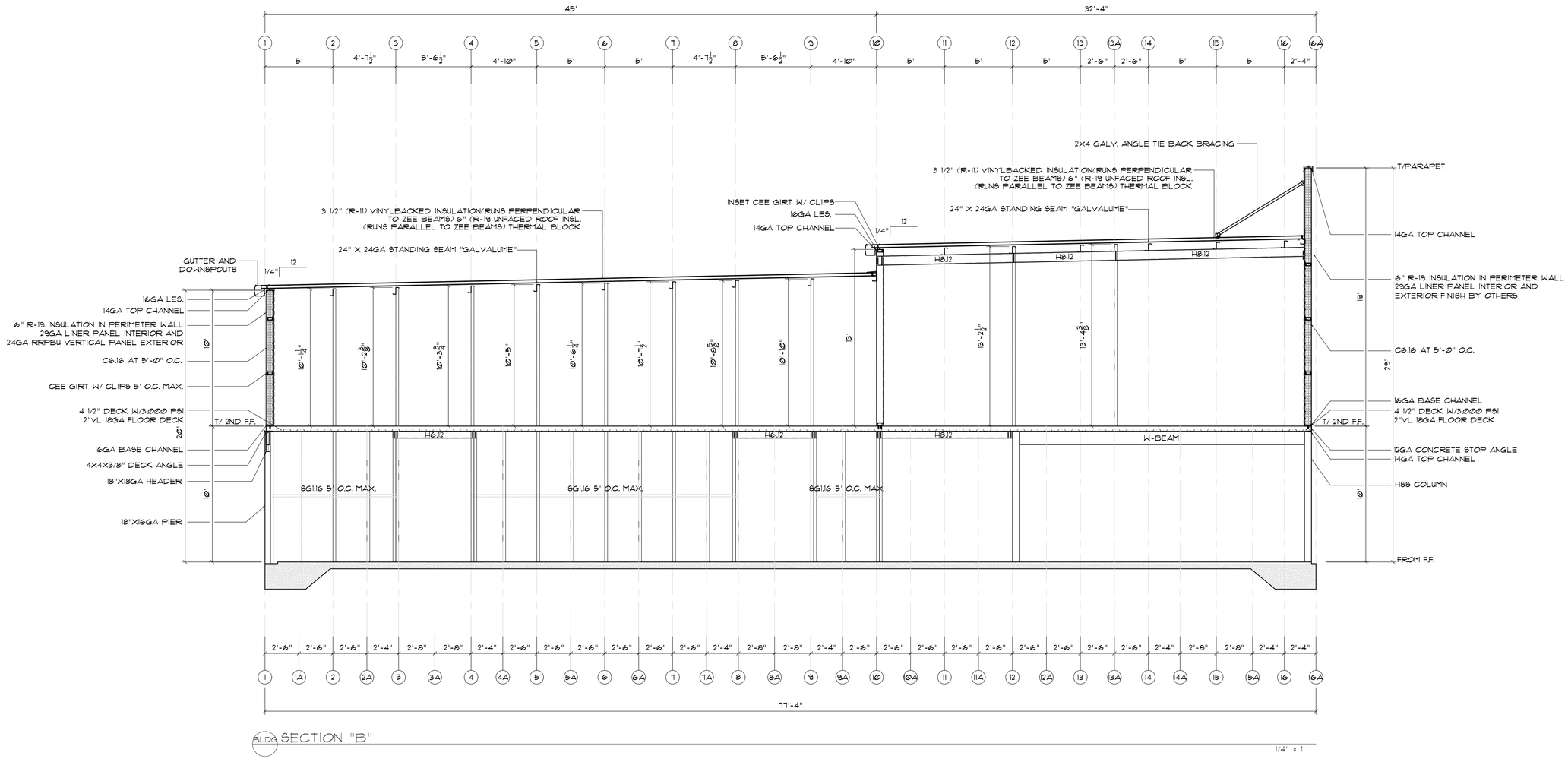
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-E1.3



BLDG SECTION "B"

1/4" = 1'

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SHEET TITLE

SECTION CUT

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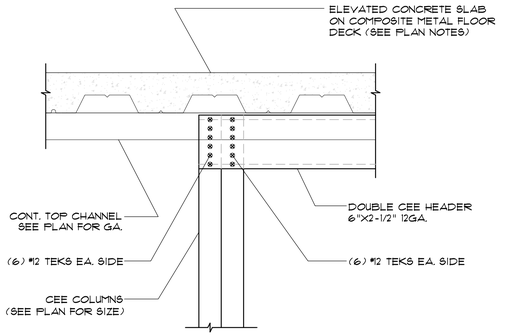
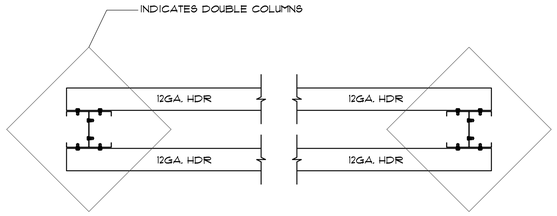
SHEET	

RBS-E1.4

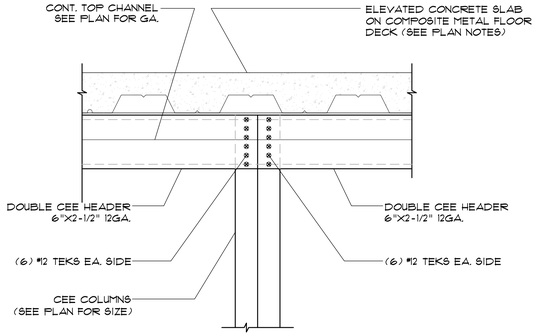


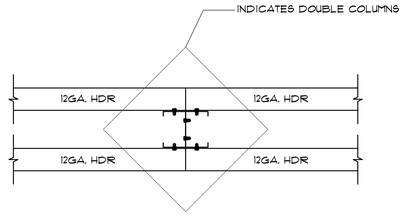


TOP VIEW OF CONNECTION
TEK BACK TO BACK COLUMNS TOGETHER
WITH #12 TEKS 1" O.C. STAGGERED

H6.12 HEADER DETAIL WITH A DISCONTINUOUS END

SCALE: 1 1/2" = 1'



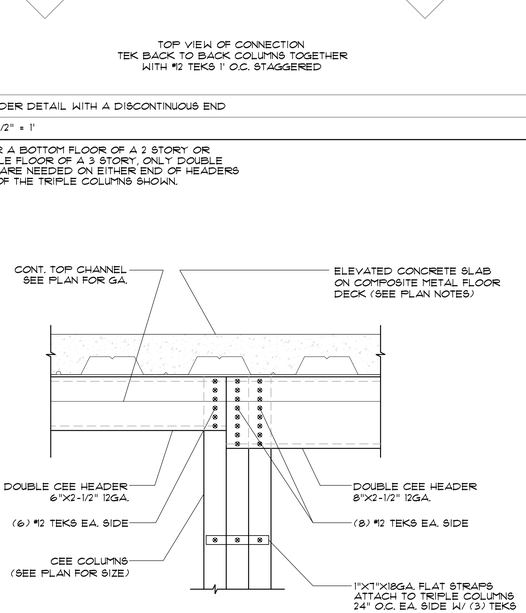


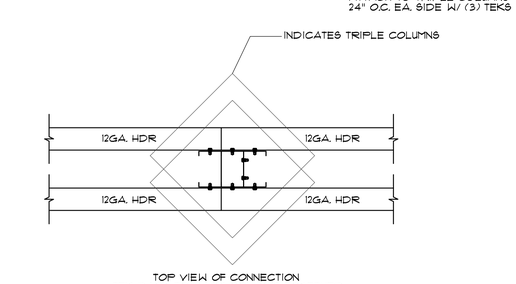
TOP VIEW OF CONNECTION
TEK BACK TO BACK COLUMNS TOGETHER
WITH #12 TEKS 1" O.C. STAGGERED

H6.12 HEADER DETAIL WITH A HEADER EACH SIDE OF COLUMN

SCALE: 1 1/2" = 1'

NOTE: FOR A BOTTOM FLOOR OF A 2 STORY OR
THE MIDDLE FLOOR OF A 3 STORY, ONLY DOUBLE
COLUMNS ARE NEEDED ON EITHER END OF HEADERS
INSTEAD OF THE TRIPLE COLUMNS SHOWN.





TOP VIEW OF CONNECTION
TEK BACK TO BACK COLUMNS TOGETHER
WITH #12 TEKS 1" O.C. STAGGERED

H6.12 TO H8.12 HEADER DETAIL WITH A DISCONTINUOUS END

SCALE: 1 1/2" = 1'

NOTE: FOR A BOTTOM FLOOR OF A 2 STORY OR
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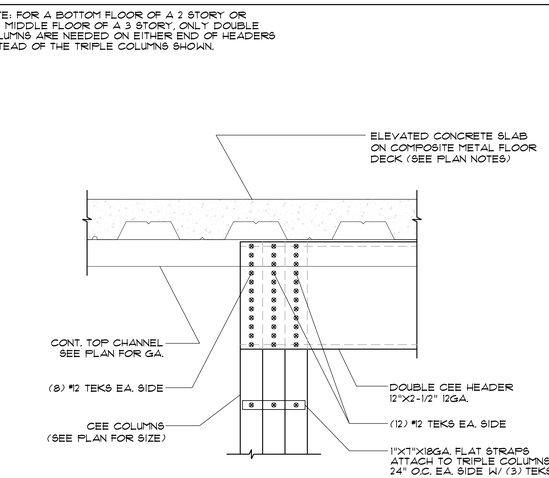

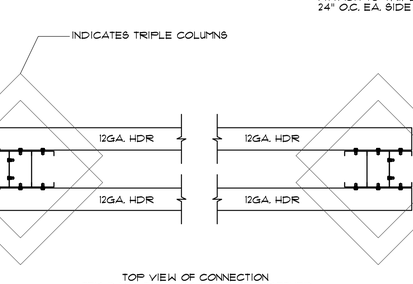

TOP VIEW OF CONNECTION
TEK BACK TO BACK COLUMNS TOGETHER
WITH #12 TEKS 1" O.C. STAGGERED

H12.12 HEADER DETAIL WITH A DISCONTINUOUS END

SCALE: 1 1/2" = 1'

NOTE: FOR A BOTTOM FLOOR OF A 2 STORY OR
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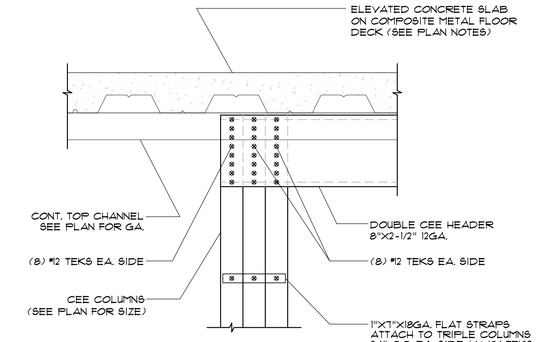
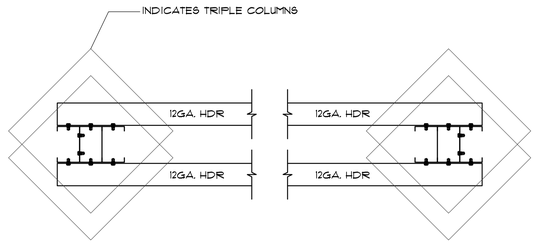
COLUMNS ARE NEEDED ON EITHER END OF HEADERS
INSTEAD OF THE TRIPLE COLUMNS SHOWN.





TOP VIEW OF CONNECTION
TEK BACK TO BACK COLUMNS TOGETHER
WITH #12 TEKS 1" O.C. STAGGERED

H8.12 HEADER DETAIL WITH A DISCONTINUOUS END

SCALE: 1 1/2" = 1'

NOTE: FOR A BOTTOM FLOOR OF A 2 STORY OR
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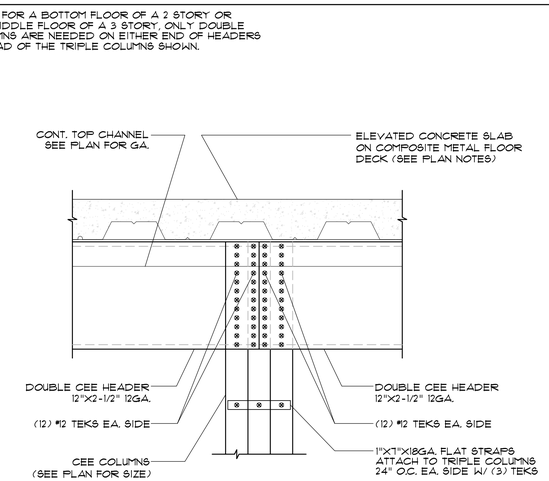
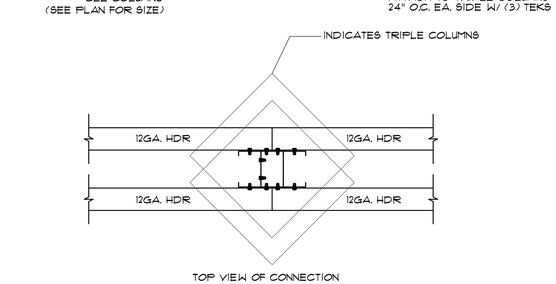
INSTEAD OF THE TRIPLE COLUMNS SHOWN.



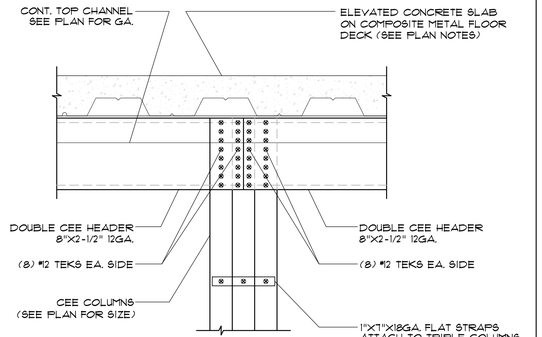


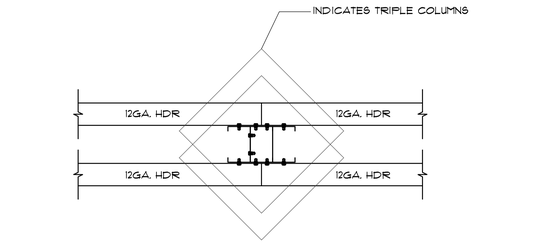
TOP VIEW OF CONNECTION
TEK BACK TO BACK COLUMNS TOGETHER
WITH #12 TEKS 1" O.C. STAGGERED

H12.12 HEADER DETAIL WITH A CONTINUOUS END

SCALE: 1 1/2" = 1'

NOTE: FOR A BOTTOM FLOOR OF A 2 STORY OR
THE MIDDLE FLOOR OF A 3 STORY, ONLY DOUBLE
COLUMNS ARE NEEDED ON EITHER END OF HEADERS
INSTEAD OF THE TRIPLE COLUMNS SHOWN.



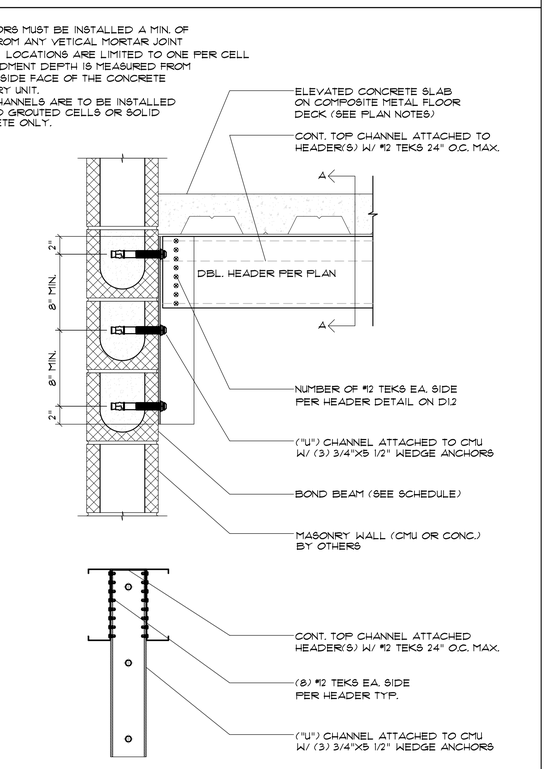


TOP VIEW OF CONNECTION
TEK BACK TO BACK COLUMNS TOGETHER
WITH #12 TEKS 1" O.C. STAGGERED

H8.12 HEADER DETAIL WITH A CONTINUOUS END

SCALE: 1 1/2" = 1'

NOTES:
1. ANCHORS MUST BE INSTALLED A MIN. OF
1 3/8" FROM ANY VETICAL MORTAR JOINT
2. BOLT LOCATIONS ARE LIMITED TO ONE PER CELL
3. EMBEDMENT DEPTH IS MEASURED FROM
THE OUTSIDE FACE OF THE CONCRETE
MASONRY UNIT.
4. "U" CHANNELS ARE TO BE INSTALLED
IN SOLID GROUTED CELLS OR SOLID
CONCRETE ONLY.



TYPICAL HEADER TO CMU DETAIL

SCALE: 1 1/2" = 1'

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RELIANT DEVELOPMENT LLC
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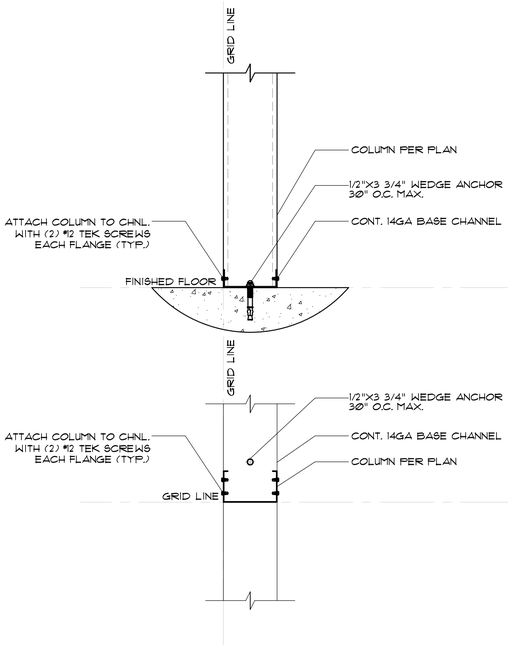
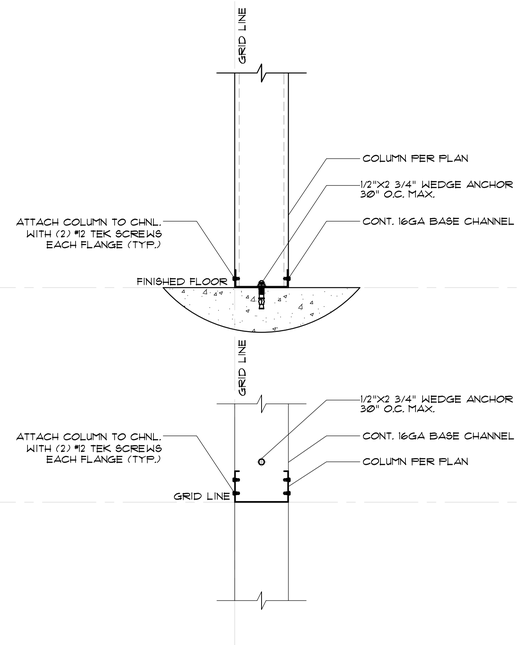
RBS-D1.0

1ST FLOOR (S.O.B.)



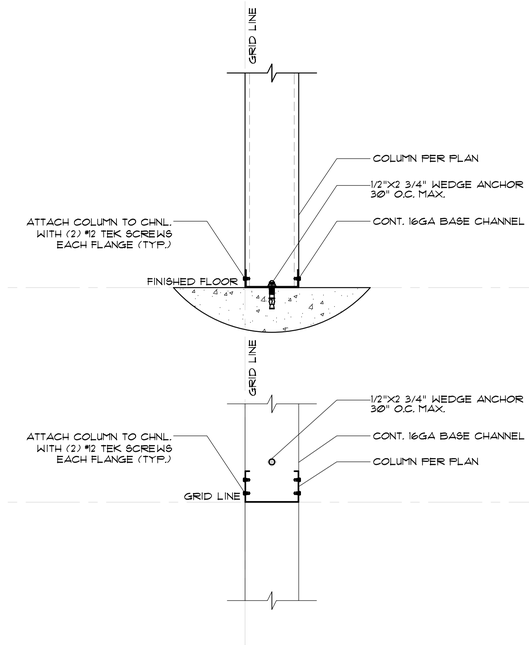
1ST FLOOR (S.O.B.)

MIDDLE FLOOR (ELEVATED SLAB)



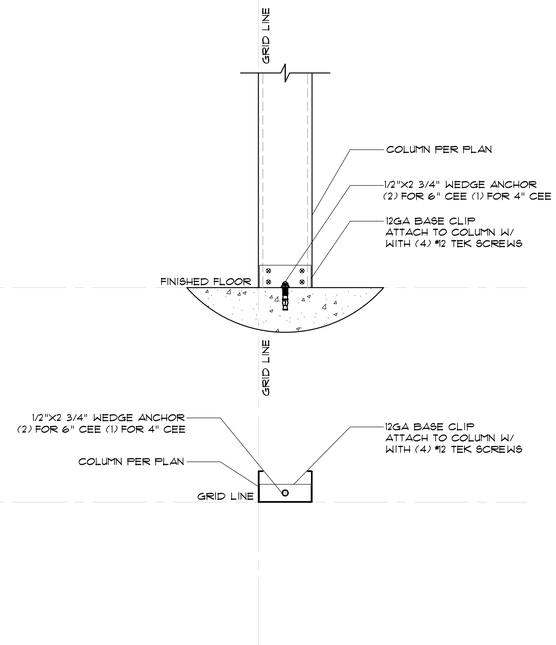
MIDDLE FLOOR (ELEVATED SLAB)

TOP FLOOR @ EXTERIOR WALL (ELEVATED SLAB)



TOP FLOOR @ EXTERIOR WALL (ELEVATED SLAB)

TOP FLOOR @ INTERIOR COLUMNS (ELEVATED SLAB)

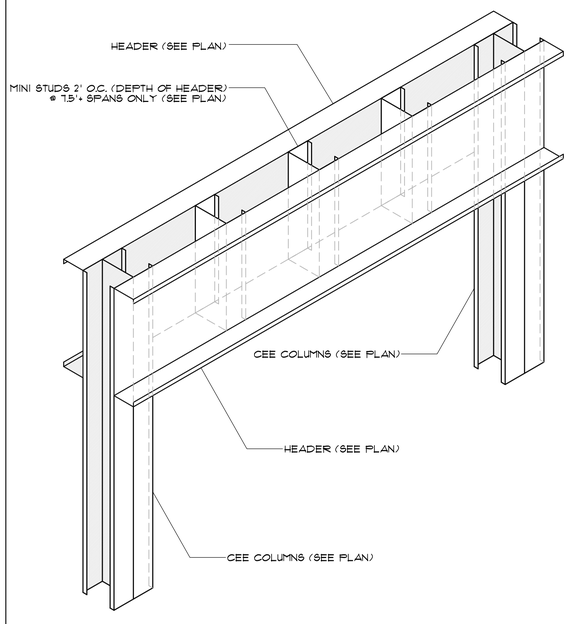


TOP FLOOR @ INTERIOR COLUMNS (ELEVATED SLAB)

TYPICAL COLUMN TO SLAB ANCHORING (MULTI-STORY)

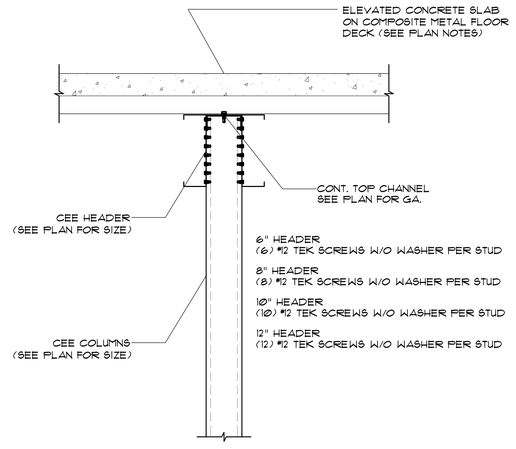
SCALE: 1 1/2" = 1'

NOTE: MINI STUDS ARE TO BE INSERTED 2' O.C. IN BETWEEN THE HEADERS @ SPANS GREATER THAN 7.5'. SEE PAGE D1.2 FOR TYP. SCREW COUNTS



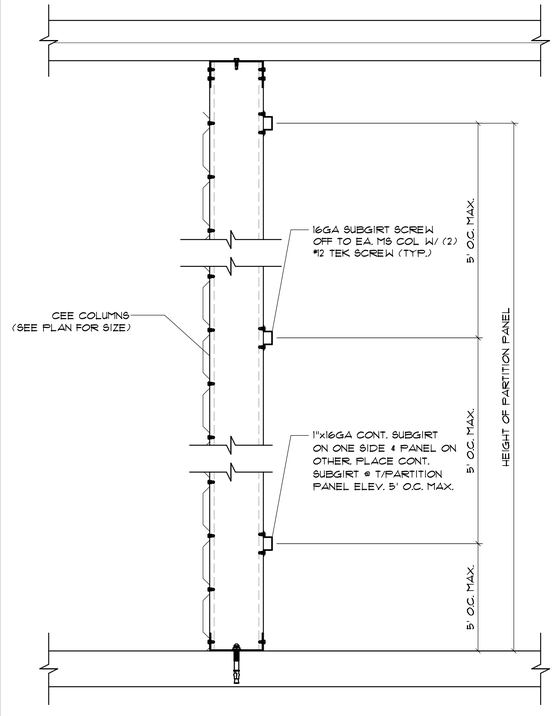
TYPICAL HEADER TO COLUMN W/ MINI STUDS 2' O.C.

SCALE: 1 1/2" = 1'



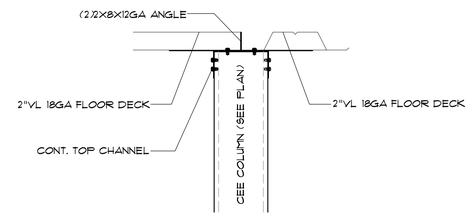
TYPICAL HEADER SCREW COUNT ATTACHMENT

SCALE: 1 1/2" = 1'



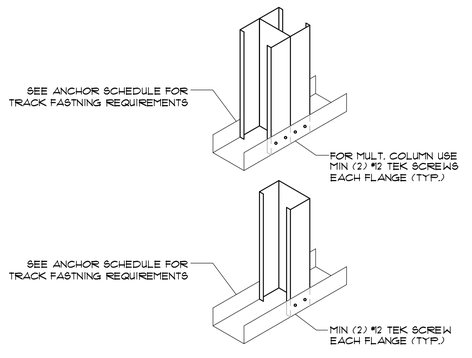
SEE PLAN NOTES FOR REQUIRED BRACING LOCATIONS

SCALE: 1 1/2" = 1'



TURNED DECK TRANSITION

SCALE: 1 1/2" = 1'



STUD TO CHANNEL CONNECTION DETAIL

SCALE: 1 1/2" = 1'

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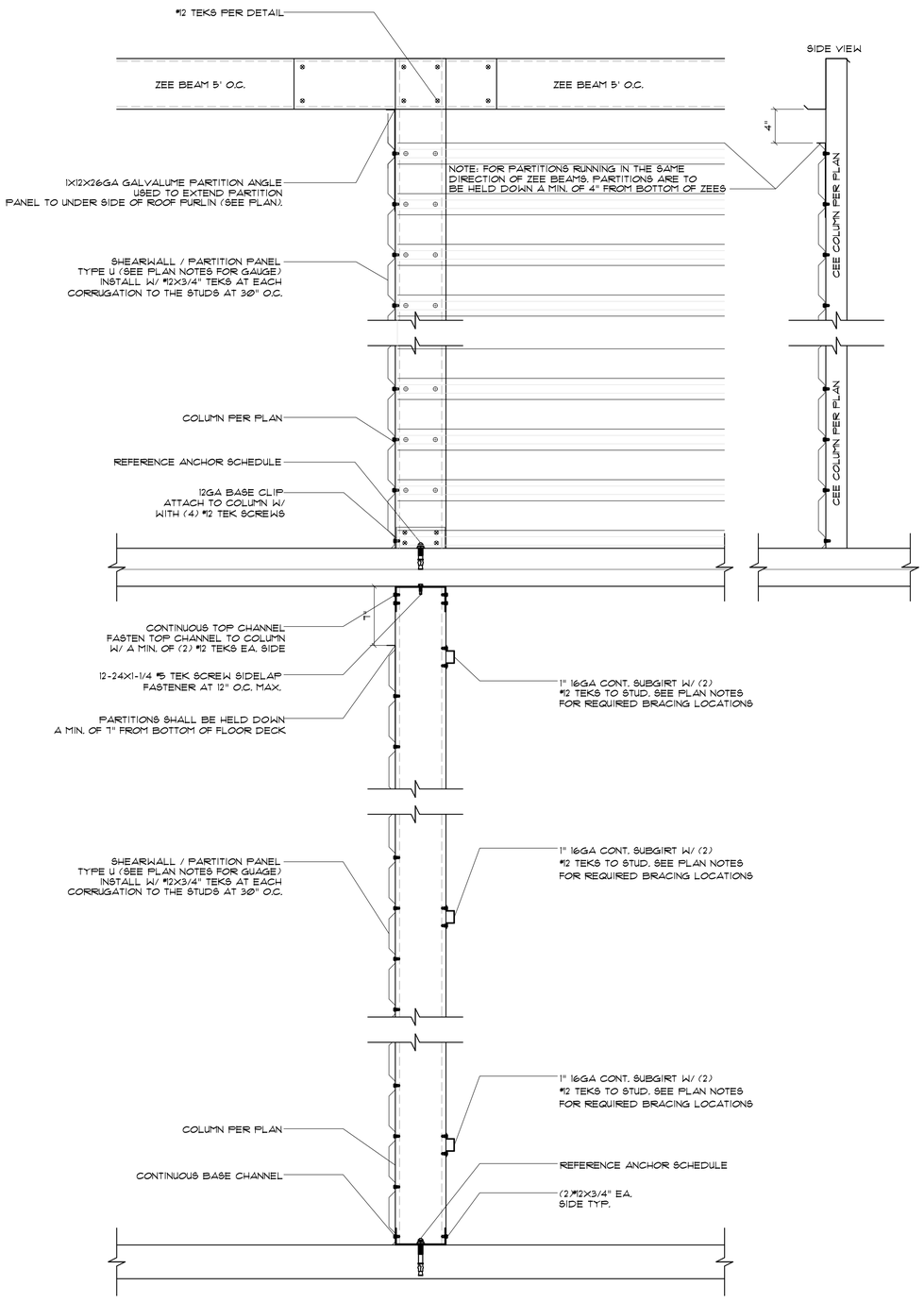
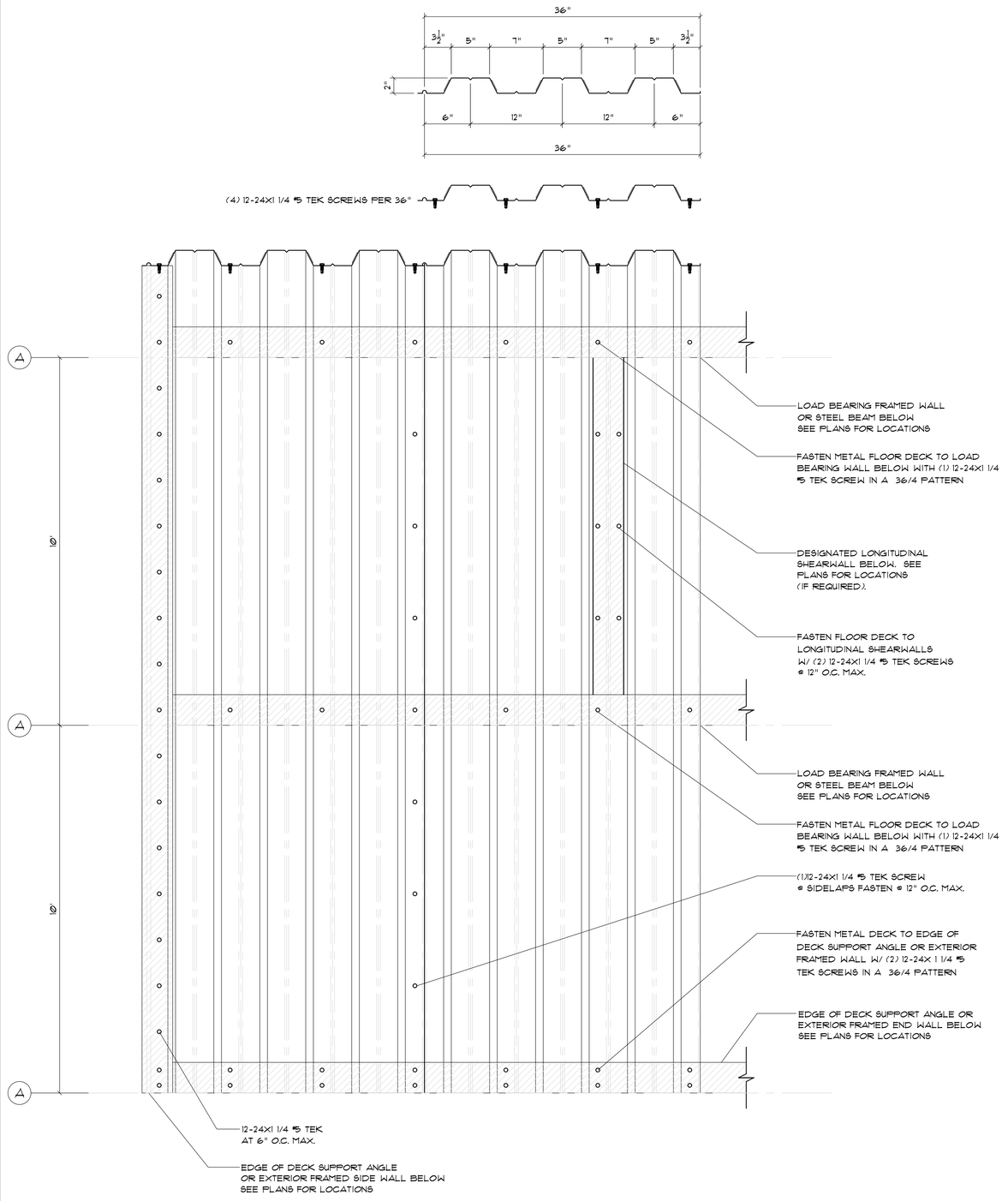


TYPICAL SECTION AT HORIZONTAL PARTITIONING

SCALE: 1 1/2" = 1'

NOTE:

1. MULTIPLE COLUMNS SHOWN ON THE SECOND FLOOR FRAMING PLAN SHALL BE SUPPORTED BY EQUIVALENT MULTIPLE COLUMNS FROM FLOOR BELOW.
2. FASTEN CONT. MS TRACK TO MS HEADER BEAMS W/ #12 TEK SCREWS @ 12" O.C. MAX. (STAGGERED 12" TO EACH HEADER BEAM).



2VL1 OR 3VL1 COMPOSITE METAL FLOOR DECK ATTACHMENT DETAIL

SCALE: 1 1/2" = 1'

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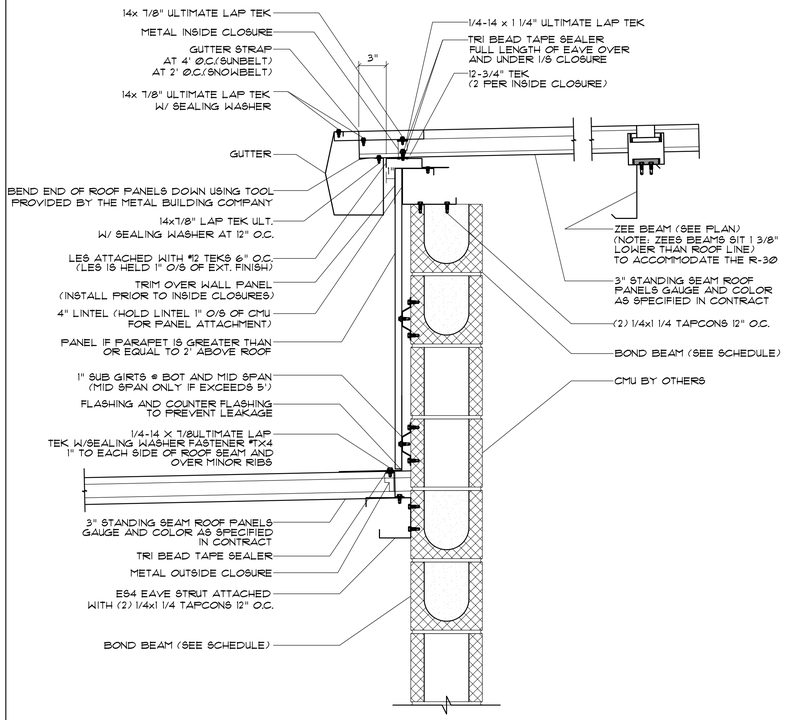
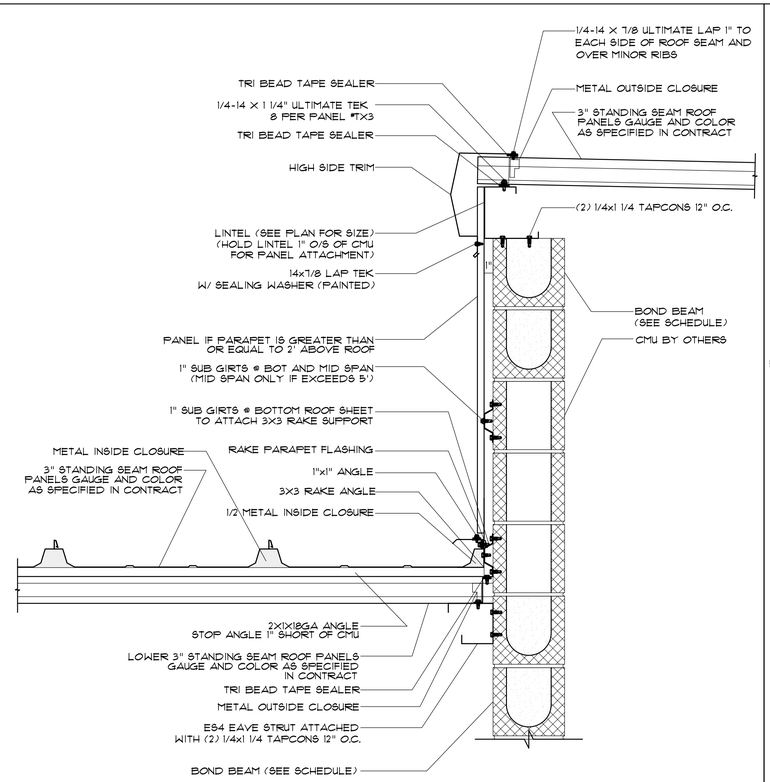
RBS-D1.2



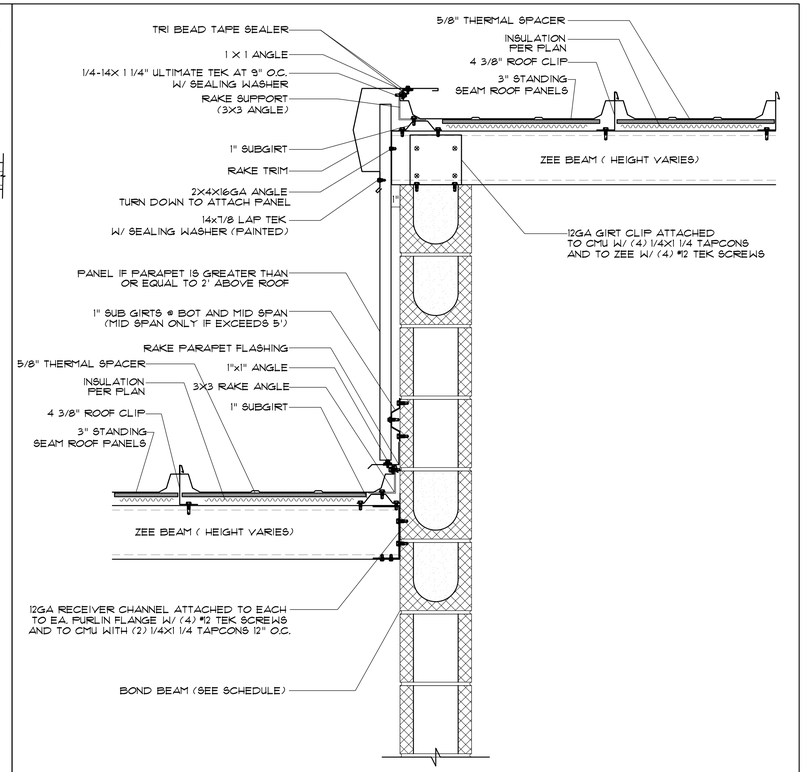
1 D1.3 LOWSIDE EAVE @ ELEVATOR

SCALE: 1 1/2" = 1'



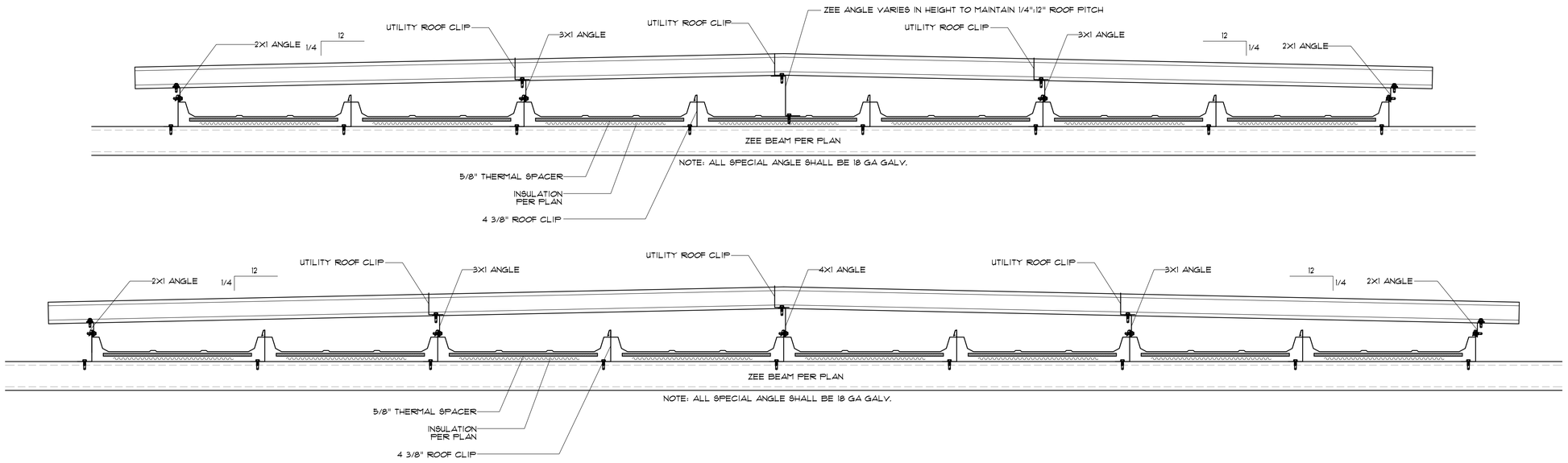
2 D1.3 HIGHSIDE EAVE @ TURNED ROOF BEHIND ELEVATOR

SCALE: 1 1/2" = 1'



3 D1.3 ENDWALL (RAKE) @ ELEVATOR WITH R-30 ROOF INSULATION

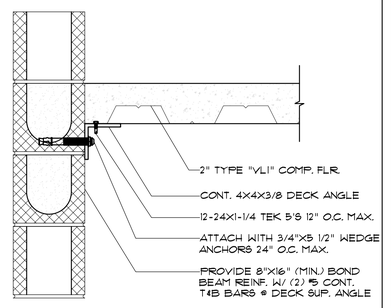
SCALE: 1 1/2" = 1'



NOTE: FRAMING BEHIND ELEVATOR WILL VARY FROM JOB TO JOB. THESE ARE JUST TYPICAL EXAMPLES.

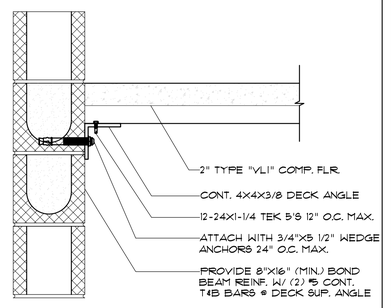
4 D1.3 DETAIL AT TURNED ROOF BEHIND ELEVATOR

SCALE: 1 1/2" = 1'



5 D1.3 DECK SUPPORT ANGLE TO CMU (SIDEWALL)

SCALE: 1 1/2" = 1'



6 D1.3 DECK SUPPORT ANGLE TO CMU (ENDWALL)

SCALE: 1 1/2" = 1'

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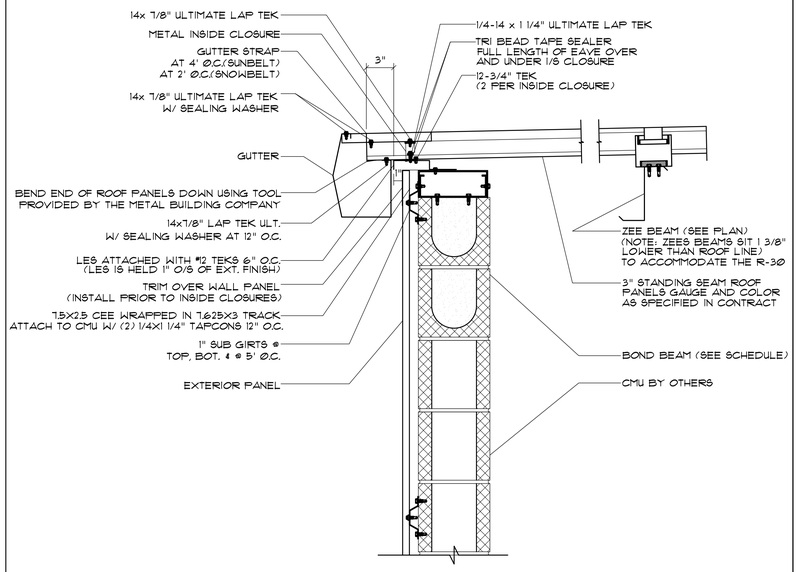
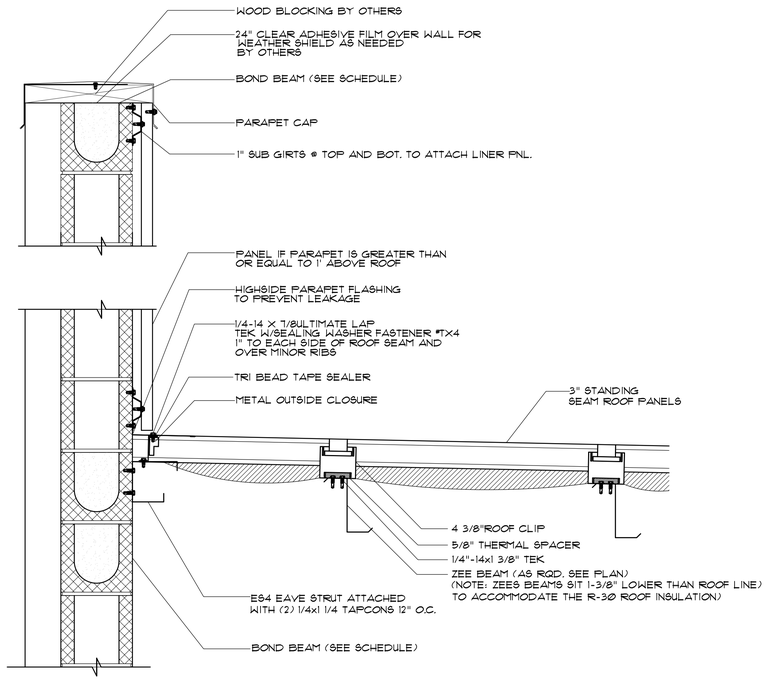
RBS-D1.3

NOTE: TOP OF CMU TO SIT 3" BELOW TOP OF PURLIN LINE. SLOPE CMU TO MATCH THE PITCH OF THE ROOF.

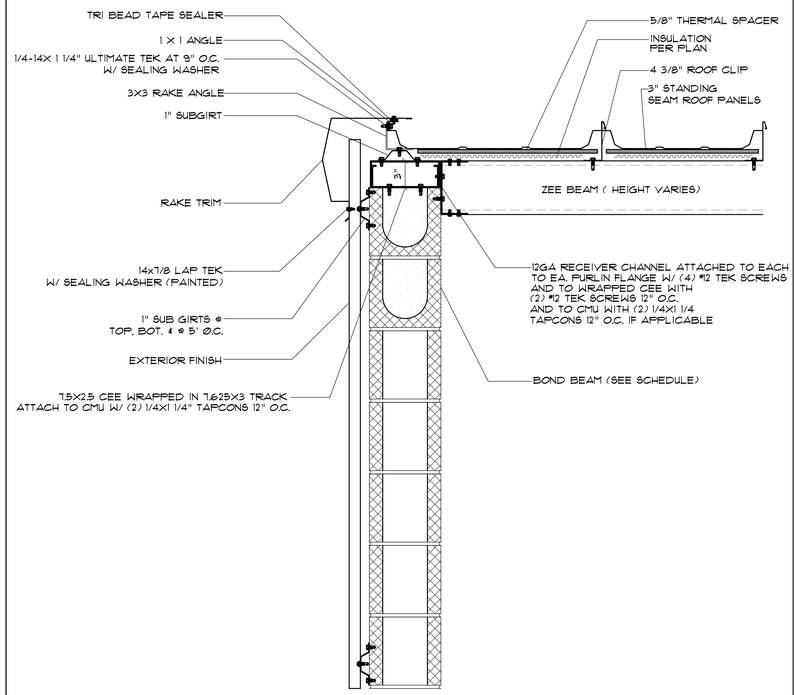


1 D1.4 EXT. STAIR DETAIL @ LOWSIDE EAVE
SCALE: 1 1/2" = 1'



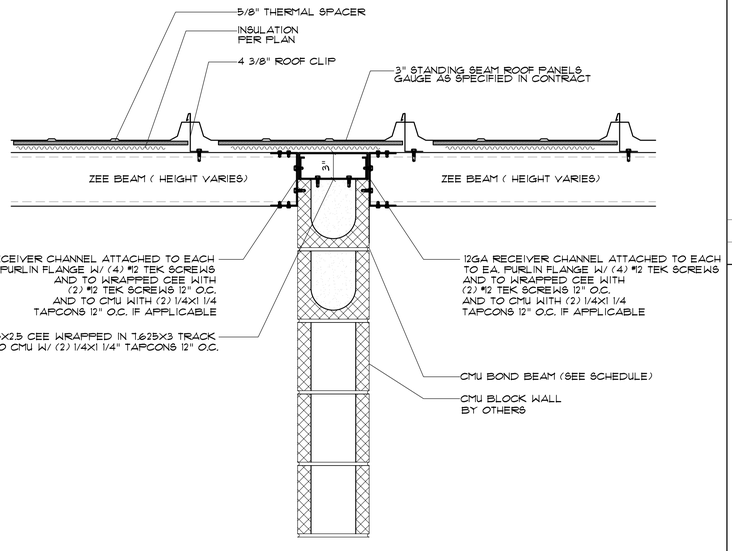
2 D1.4 EXT. STAIR DETAIL @ HIGHSIDE PARAPET
SCALE: 1 1/2" = 1'

NOTE: TOP OF CMU TO SIT 3" BELOW TOP OF PURLIN LINE. SLOPE CMU TO MATCH THE PITCH OF THE ROOF.

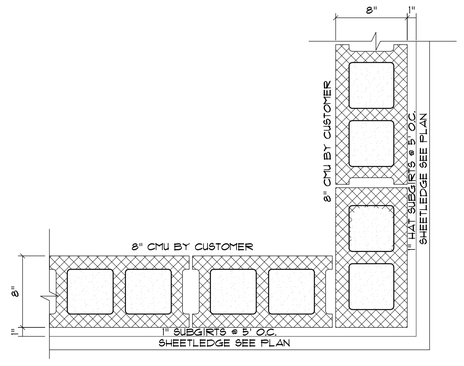


3 D1.4 EXT. STAIR DETAIL @ RAKE ENDWALL
SCALE: 1 1/2" = 1'

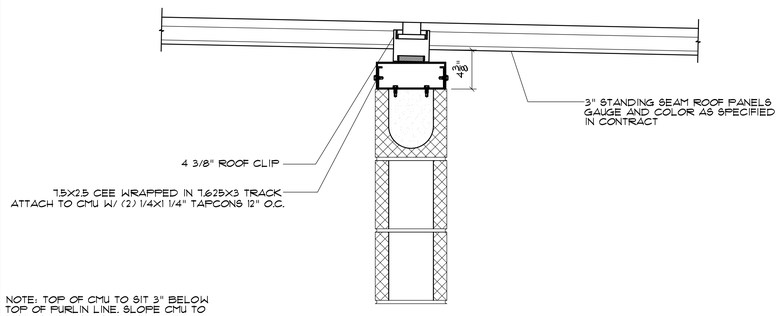
NOTE: TOP OF CMU TO SIT 3" BELOW TOP OF PURLIN LINE. SLOPE CMU TO MATCH THE PITCH OF THE ROOF.



4 D1.4 INT. STAIR DETAIL W/ R-30 ROOF INSULATION
SCALE: 1 1/2" = 1'

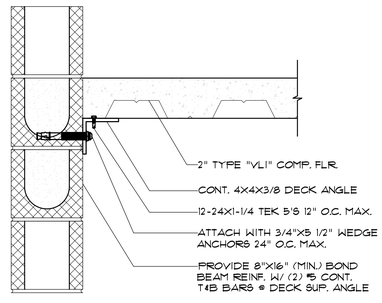


5 D1.4 DETAIL @ EXTERIOR STAIR WALLS
SCALE: 1 1/2" = 1'

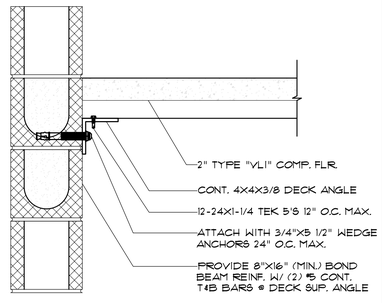


NOTE: TOP OF CMU TO SIT 3" BELOW TOP OF PURLIN LINE. SLOPE CMU TO MATCH THE PITCH OF THE ROOF.

6 D1.4 INT. STAIR DETAIL
SCALE: 1 1/2" = 1'



7 D1.4 DECK SUPPORT ANGLE TO CMU (SIDEWALL)
SCALE: 1 1/2" = 1'



8 D1.4 DECK SUPPORT ANGLE TO CMU (ENDWALL)
SCALE: 1 1/2" = 1'

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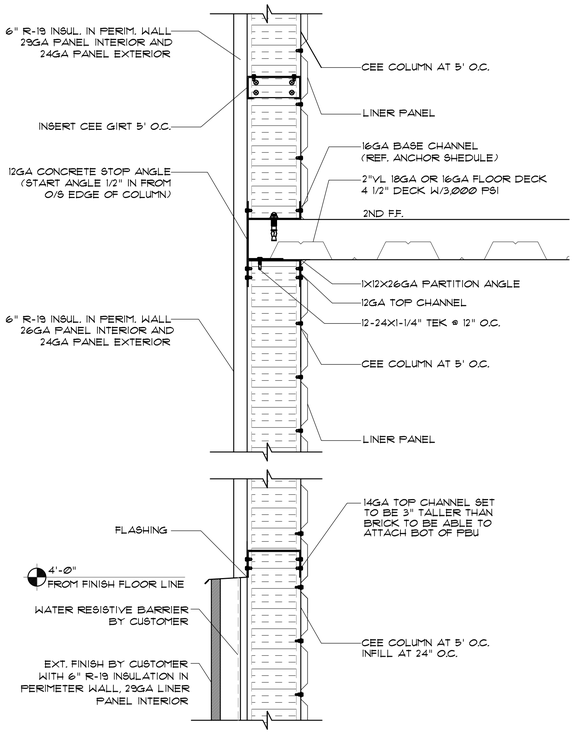
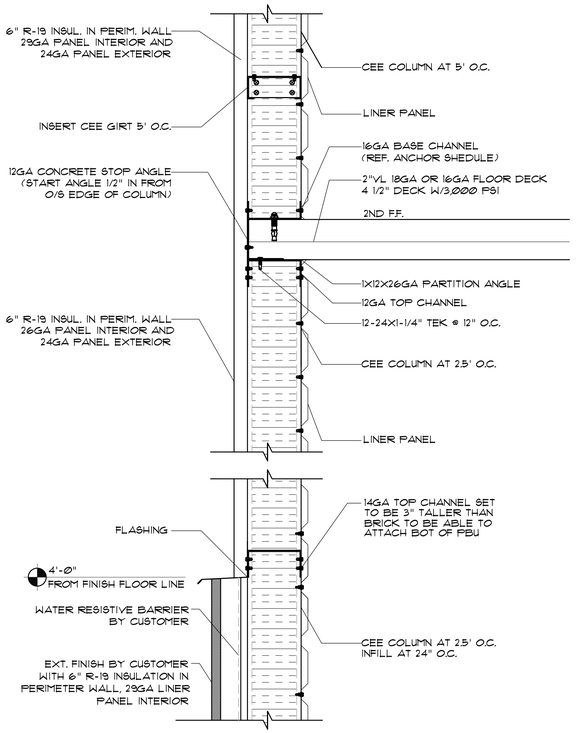
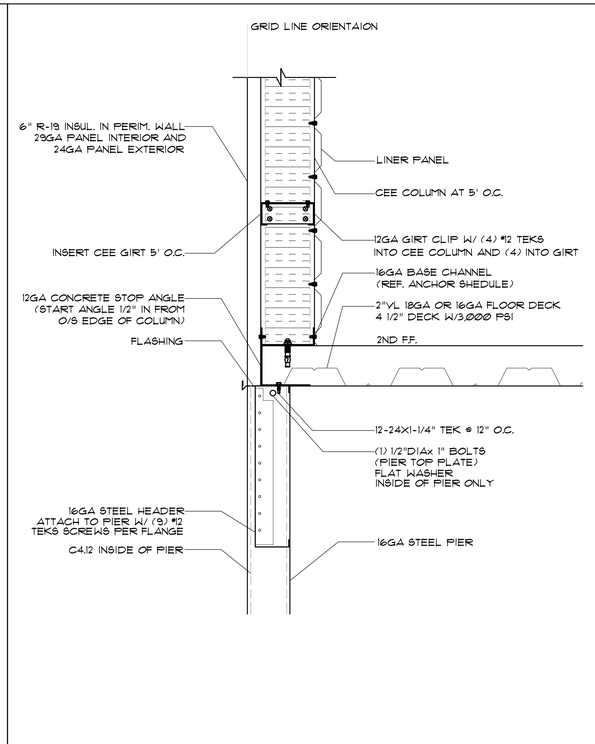


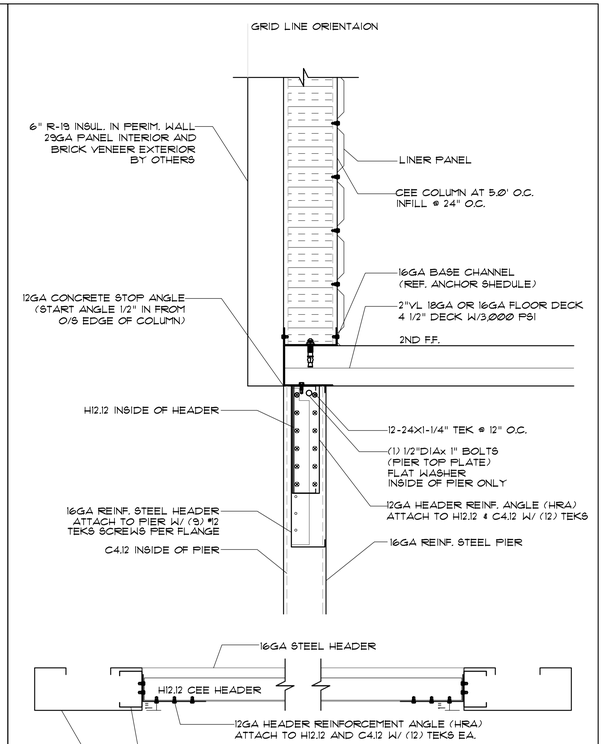
1 D1.5 TYP. WALL SECTION @ SIDE WALLS @ BRICK BY OTHERS
SCALE: 1 1/2" = 1'



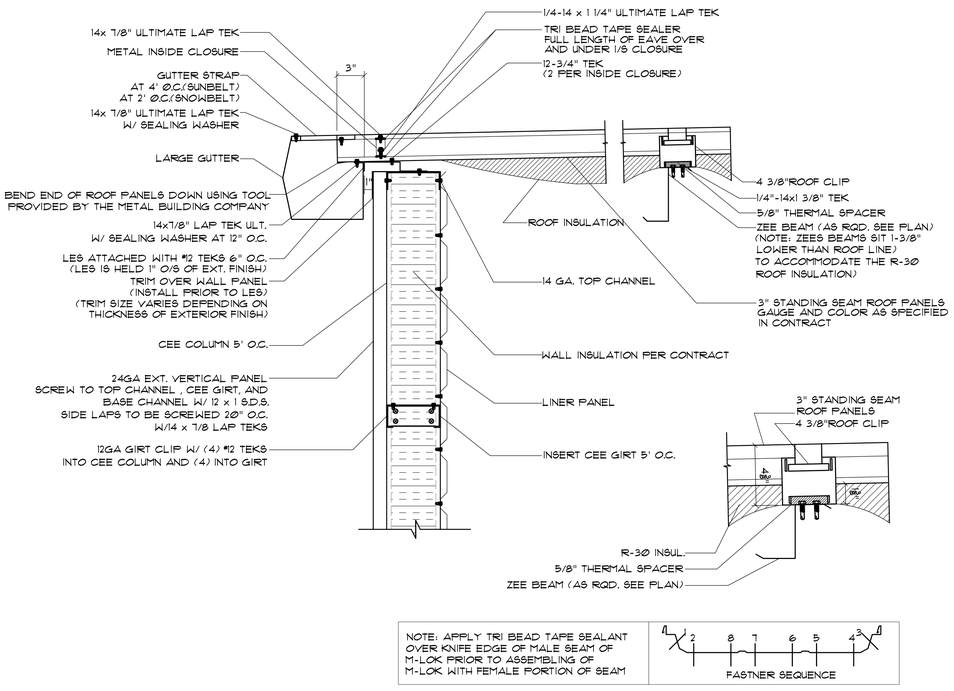
2 D1.5 TYP. WALL SECTION @ END WALLS @ BRICK BY OTHERS
SCALE: 1 1/2" = 1'



3 D1.5 TYP. WALL SECTION @ SIDE WALLS @ PIERS AND HEADERS
SCALE: 1 1/2" = 1'

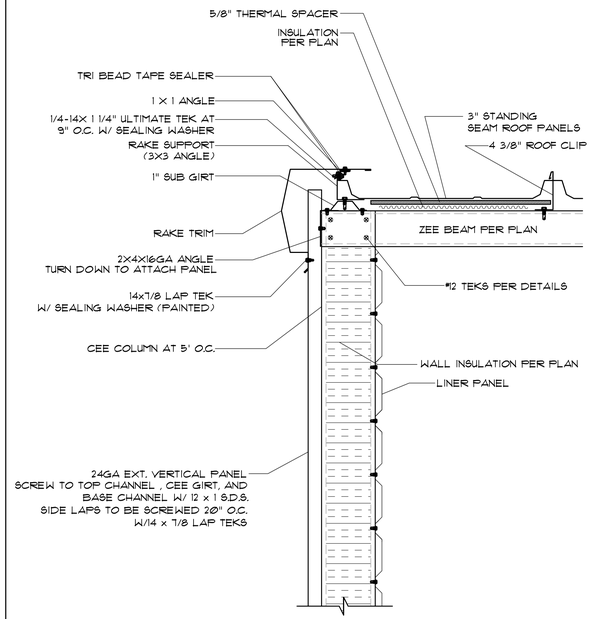


4 D1.5 TYP. WALL SECTION @ END WALLS @ REINFORCED PIERS AND HEADERS
SCALE: 1 1/2" = 1'

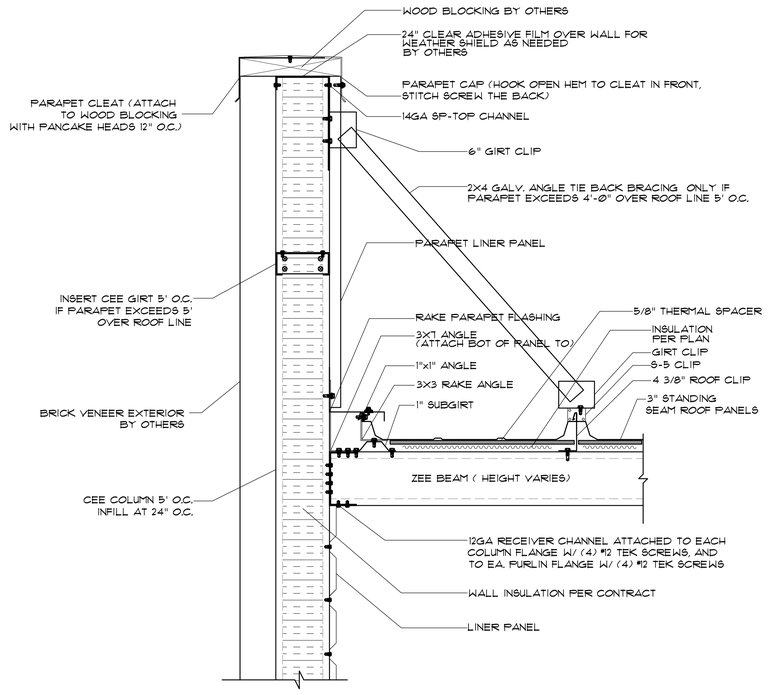


NOTE: APPLY TRI BEAD TAPE SEALANT OVER KNIFE EDGE OF MALE SEAM OF M-LOK PRIOR TO ASSEMBLING OF M-LOK WITH FEMALE PORTION OF SEAM

5 D1.5 ROOF LOWSIDE EAVE PANEL WALL @ GUTTER WITH R-30 ROOF INSULATION
SCALE: 1 1/2" = 1'



6 D1.5 ROOF PANELED ENDWALL WITH R-30 ROOF INSULATION
SCALE: 1 1/2" = 1'



7 D1.5 ENDWALL PARAPET WALL SECTION WITH R-30 ROOF INSULATION @ TIE BACK PARAPET
SCALE: 1 1/2" = 1'

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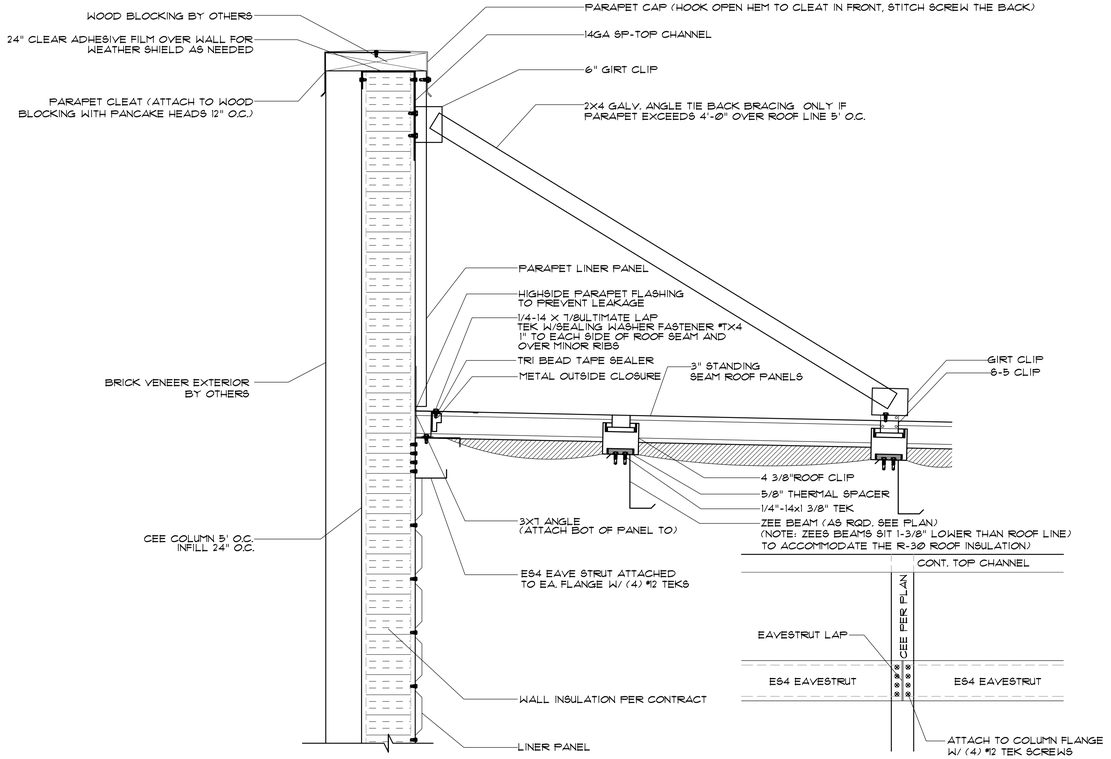
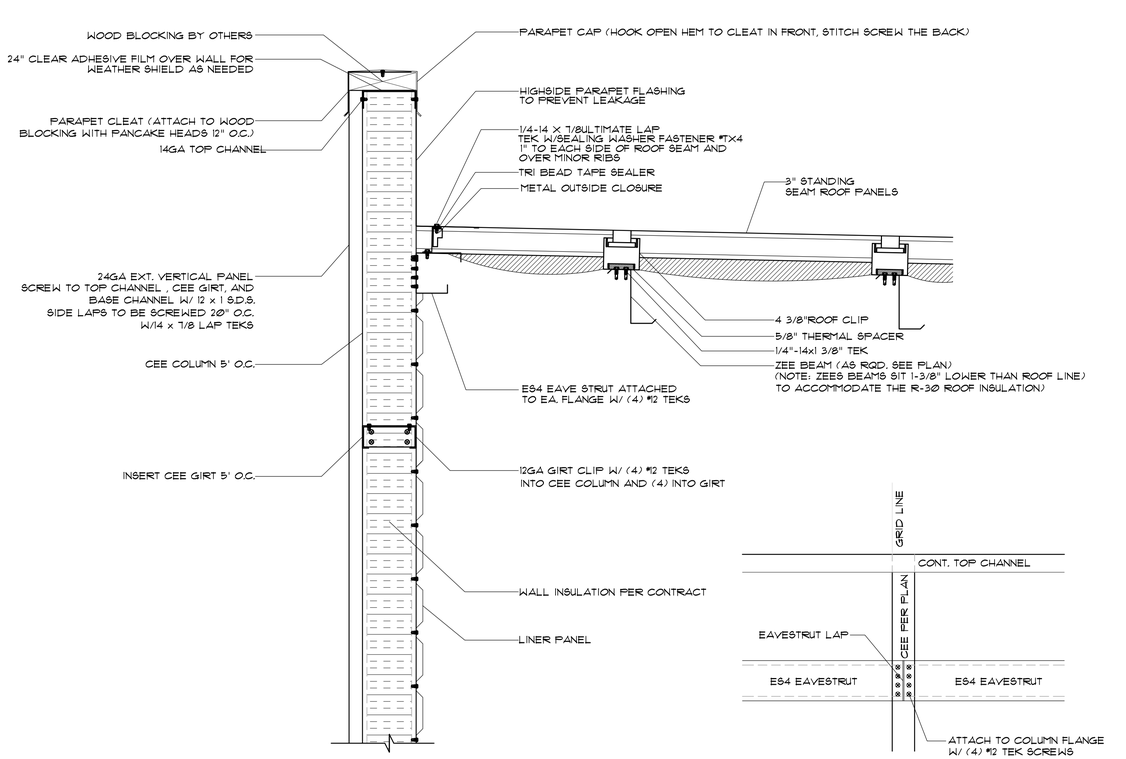


TYP. DETAIL FRONT VIEW @ EAVE STRUT LAP

1 D16 HIGHSIDE PARAPET WALL SECTION WITH R-30 ROOF INSULATION @ TIE BACK PARAPET

SCALE: 1 1/2" = 1'



TYP. DETAIL FRONT VIEW @ EAVE STRUT LAP

2 D16 HIGHSIDE PARAPET WALL SECTION WITH R-30 ROOF INSULATION

SCALE: 1 1/2" = 1'

INSTALLATION PROCEDURE

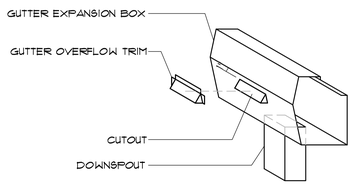
(1) CENTER THE G.E.B. ON THE PIER AND ATTACH REAR FLANGE TO THE ROOF PAN WITH (2) 1/4-14X7/8 EXTENDED LIFE STICH SCREWS 3-4" FROM EACH END FASTENER #TX4. WHEN ATTACHING THE G.E.B. BE SURE THE REAR OF THE G.E.B. IS AGAINST THE FACE OF THE PIER. (EXCEPT ON SHURGARD PROJECTS WHERE THE SPECS REQUIRE A 2" GAP BETWEEN THE REAR OF THE GUTTER AND PIER)

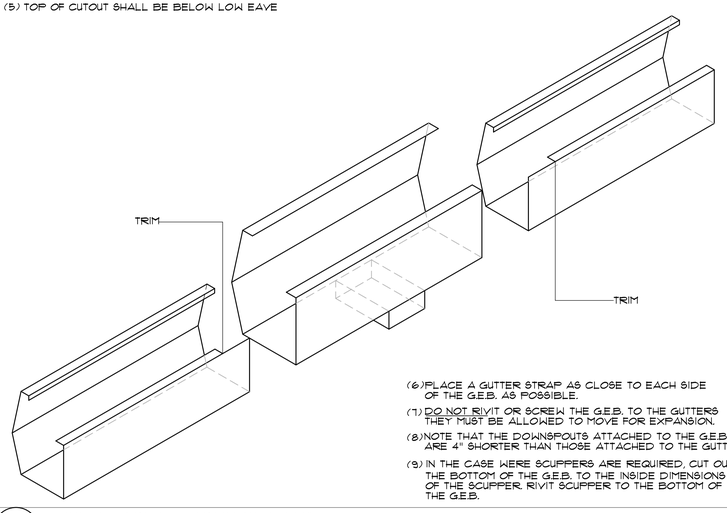
(2) TRIM THE 1" FLANGE OFF BOTH GUTTERS 1" BEYOND WHAT WOULD EXTEND INTO THE EXPANSION BOX.

(3) SLIDE GUTTERS INTO G.E.B. ON BOTH SIDES AND ATTACH TO ROOF SHEETS PER INSTALLATION PROCEDURES.

(4) A 5"x1.5" CUTOUT SHALL BE CUT AT EVERY DOWNSPOUT AND EXPANSION BOX LOCATION FOR PLACEMENT OF GUTTER OVERFLOW TRIM.

(5) TOP OF CUTOUT SHALL BE BELOW LOW EAVE





(6) PLACE A GUTTER STRAP AS CLOSE TO EACH SIDE OF THE G.E.B. AS POSSIBLE.

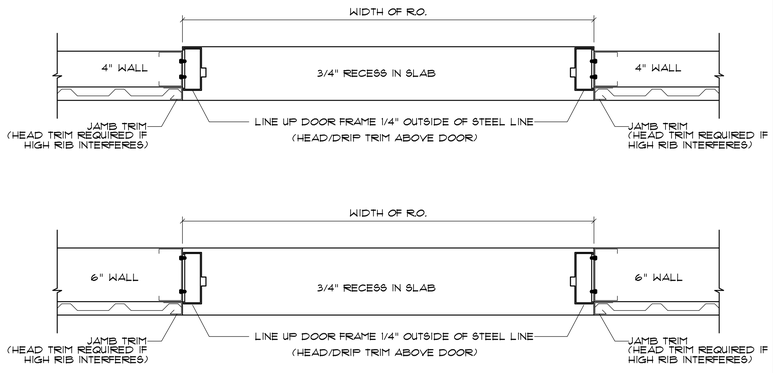
(7) DO NOT RIVIT OR SCREW THE G.E.B. TO THE GUTTERS THEY MUST BE ALLOWED TO MOVE FOR EXPANSION.

(8) NOTE THAT THE DOWNSPOUTS ATTACHED TO THE G.E.B. ARE 4" SHORTER THAN THOSE ATTACHED TO THE GUTTERS.

(9) IN THE CASE WERE SCUPPERS ARE REQUIRED, CUT OUT THE BOTTOM OF THE G.E.B. TO THE INSIDE DIMENSIONS OF THE SCUPPER. RIVIT SCUPPER TO THE BOTTOM OF THE G.E.B.

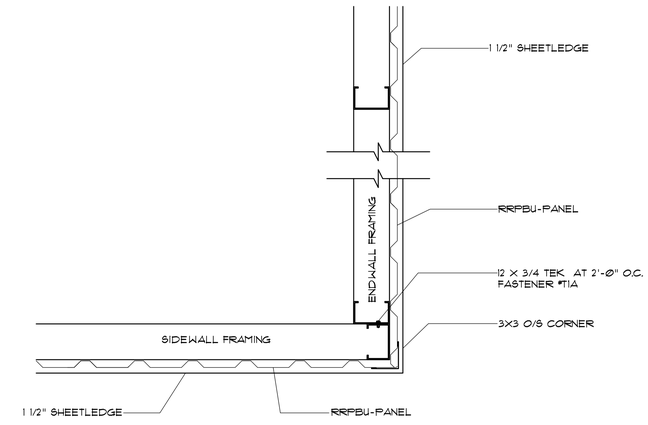
3 D16 GUTTER EXPANSION BOX INSTALLATION DETAIL

SCALE: 1 1/2" = 1'



4 D16 EXTERIOR 4 RECESSED ENTRY PERSONNEL DOOR DETAIL

SCALE: 1 1/2" = 1'



5 D16 WALL FRAMING VERTICAL EXTERIOR R-PANEL

SCALE: 1 1/2" = 1'

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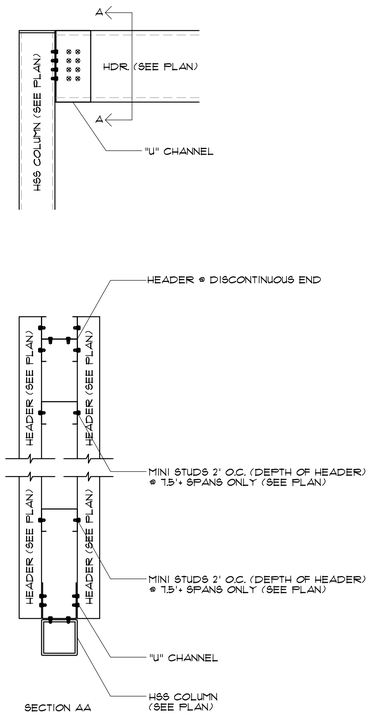
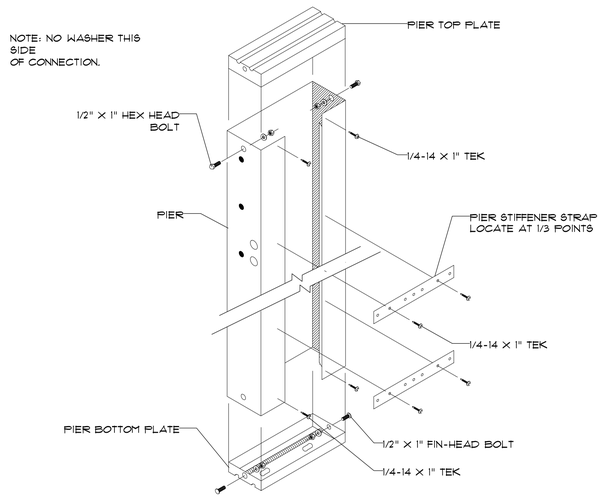


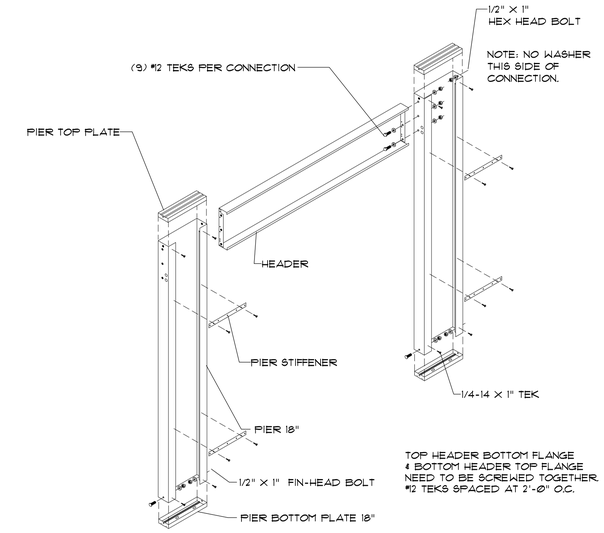
TYPICAL DOUBLE HEADER TO HSS COLUMN CONNECTION

SCALE: 1 1/2" = 1'



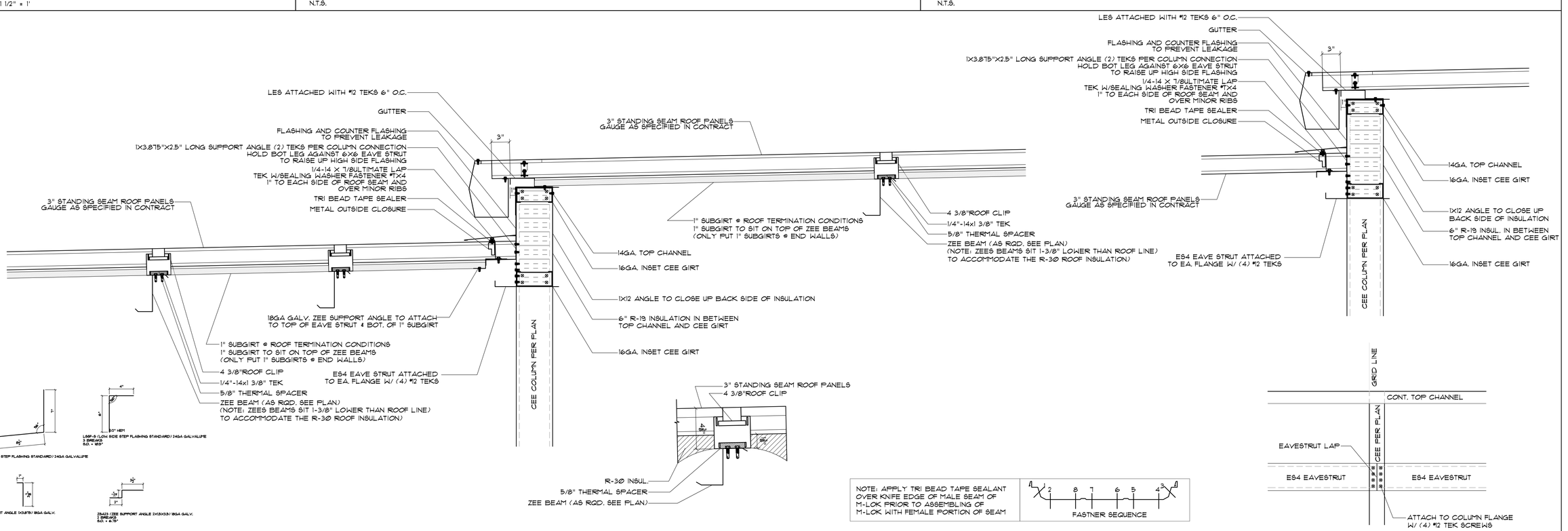
PIER ASSEMBLY

N.T.S.



PIER AND HEADER ASSEMBLY

N.T.S.



TYP. DETAIL @ ROOF STEP @ ENDWALL TERMINATION SHOWING 1" SUBGIRTS WITH R-30 ROOF INSULATION

SCALE: 1 1/2" = 1'

TYP. DETAIL FRONT VIEW @ EAVE STRUT LAP

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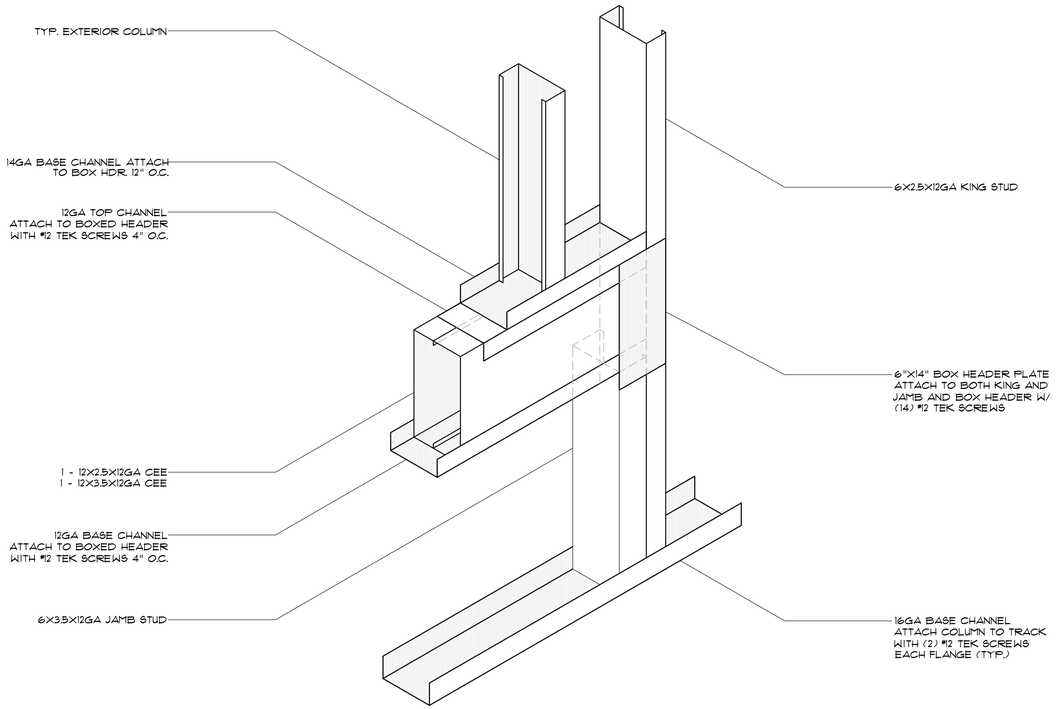
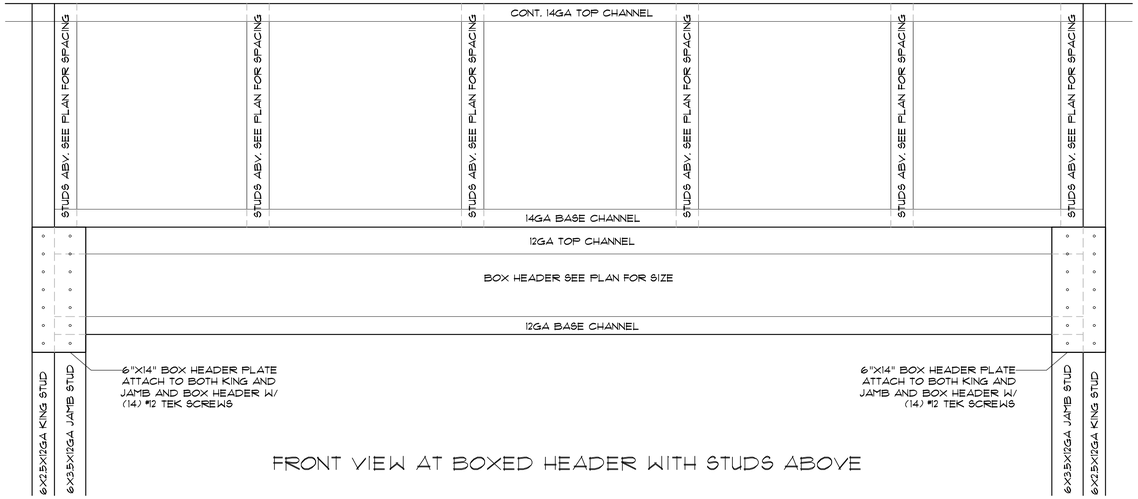
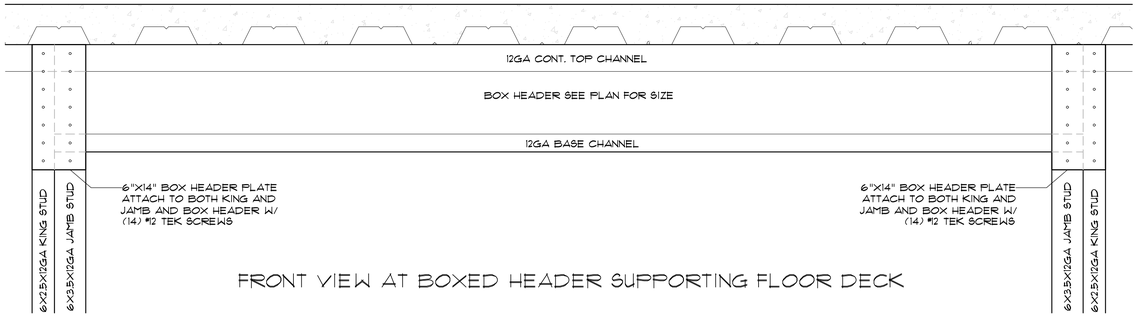


TYPICAL BOXED HEADER DETAILS WITH STUDS ABOVE

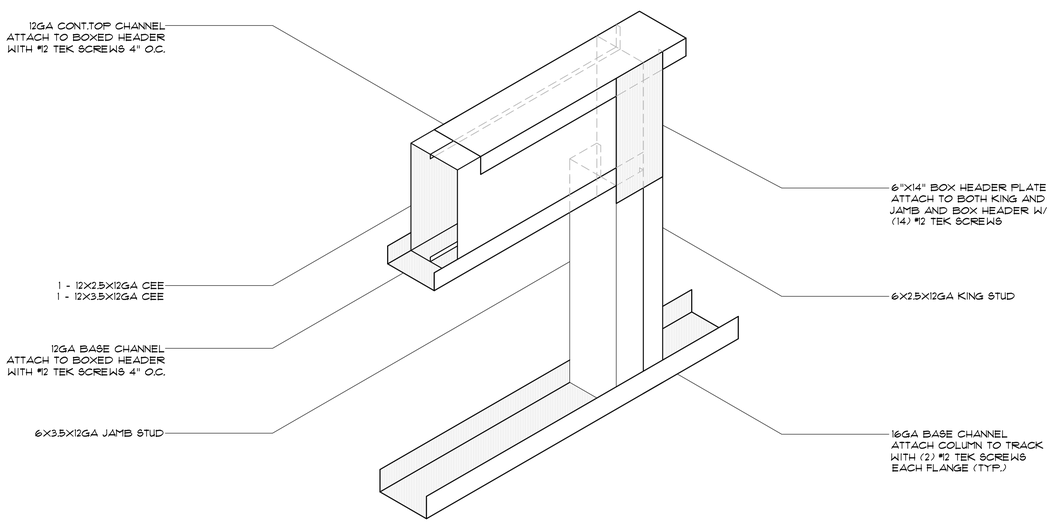
SCALE: 1 1/2" = 1'



FRONT VIEW AT BOXED HEADER WITH STUDS ABOVE

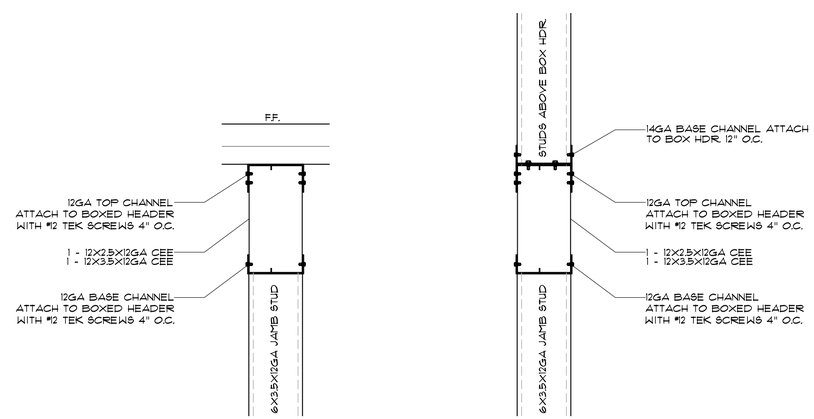


FRONT VIEW AT BOXED HEADER SUPPORTING FLOOR DECK



TYPICAL BOXED HEADER DETAILS SUPPORTING FLOOR DECK

SCALE: 1 1/2" = 1'



SIDE VIEW AT BOXED HEADERS

TYPICAL BOXED HEADER DETAILS

SCALE: 1 1/2" = 1'

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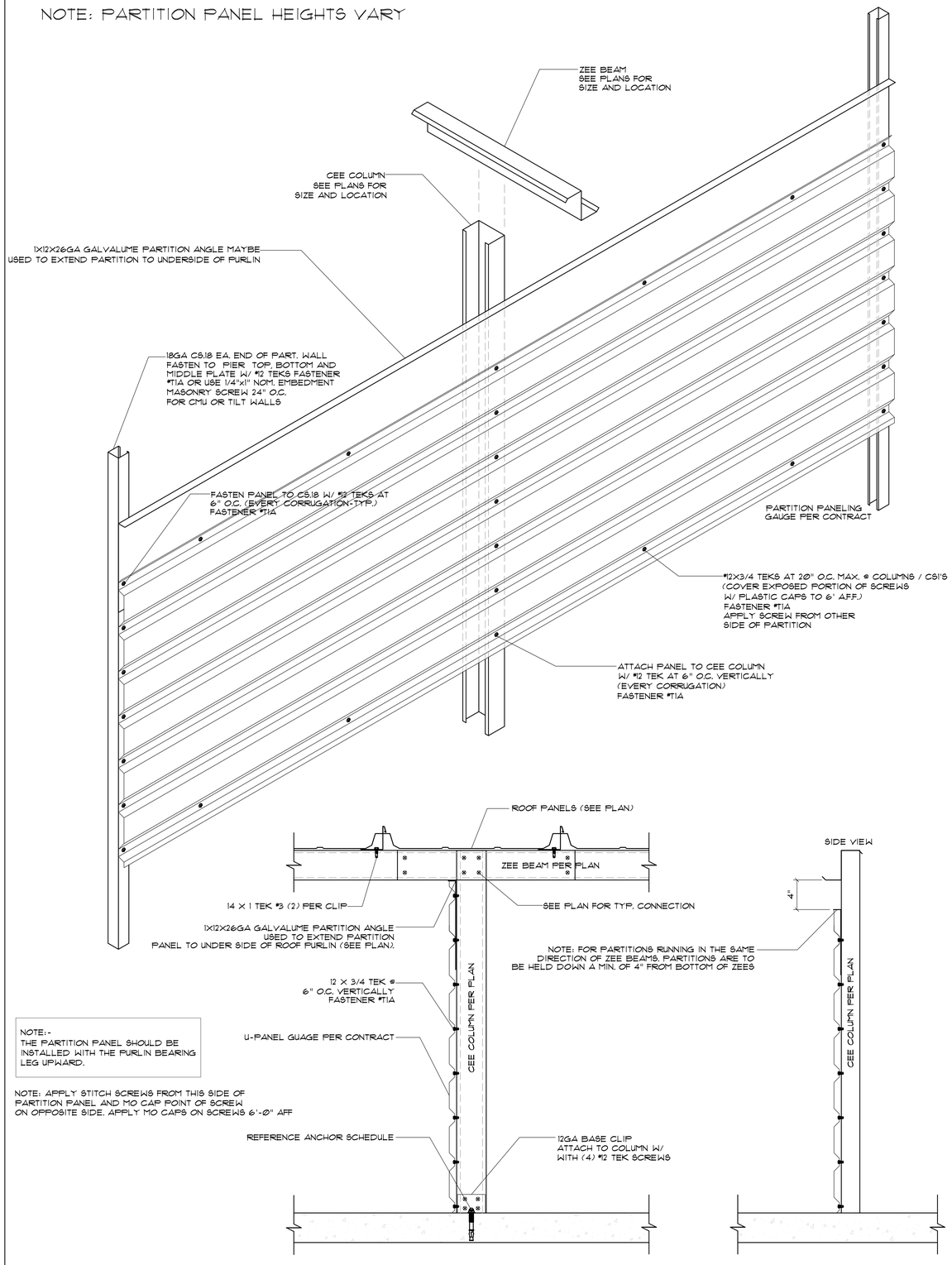
NOTE: PARTITION PANEL HEIGHTS VARY



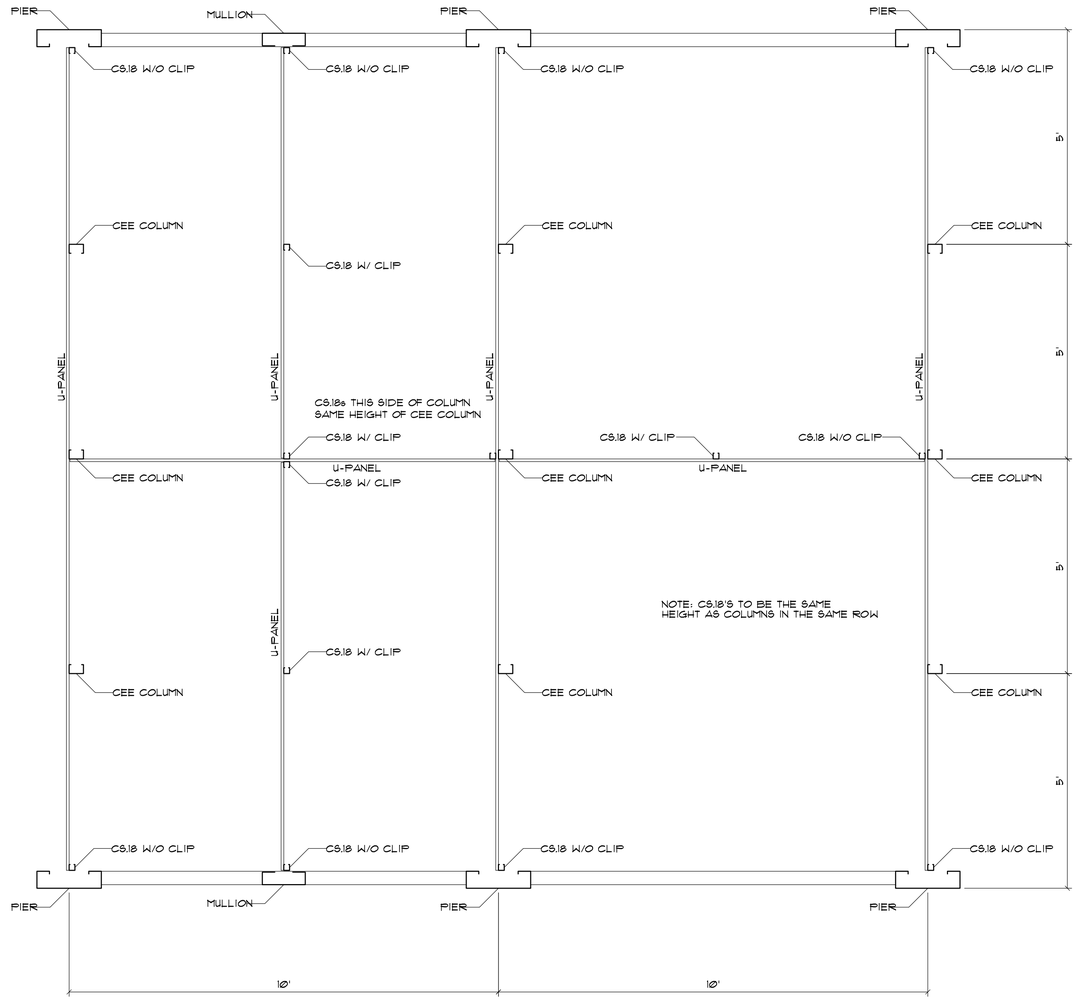
NOTE:-
THE PARTITION PANEL SHOULD BE INSTALLED WITH THE PURLIN BEARING LEG UPWARD.

NOTE, APPLY STITCH SCREWS FROM THIS SIDE OF PARTITION PANEL AND MO CAP POINT OF SCREW ON OPPOSITE SIDE. APPLY MO CAPS ON SCREWS 6'-Ø" AFF

BOTTOM OF ROOF TO FINISHED FLOOR
= TO OR LESS THAN 9'-8" 3 SHEETS ¢ PARTION ANGLE
GREATER THAN 9'-8" LESS THAN 10'-2" 3 SHEETS ¢ PARTITION ANGLE
GREATER THAN 10'-2" LESS THAN 11'-8" 3.5 SHEETS ¢ PARTITION ANGLE
GREATER THAN 11'-8" LESS THAN 13'-2" 4 SHEETS ¢ PARTITION ANGLE

PARTITION WALL DETAIL PARTITION PANELING - TYPE "U"

SCALE: 1 1/2" = 1'



GENERIC FRAMING FOR PARTITIONS

WITH CROSS PARTITIONS (N.T.S.)

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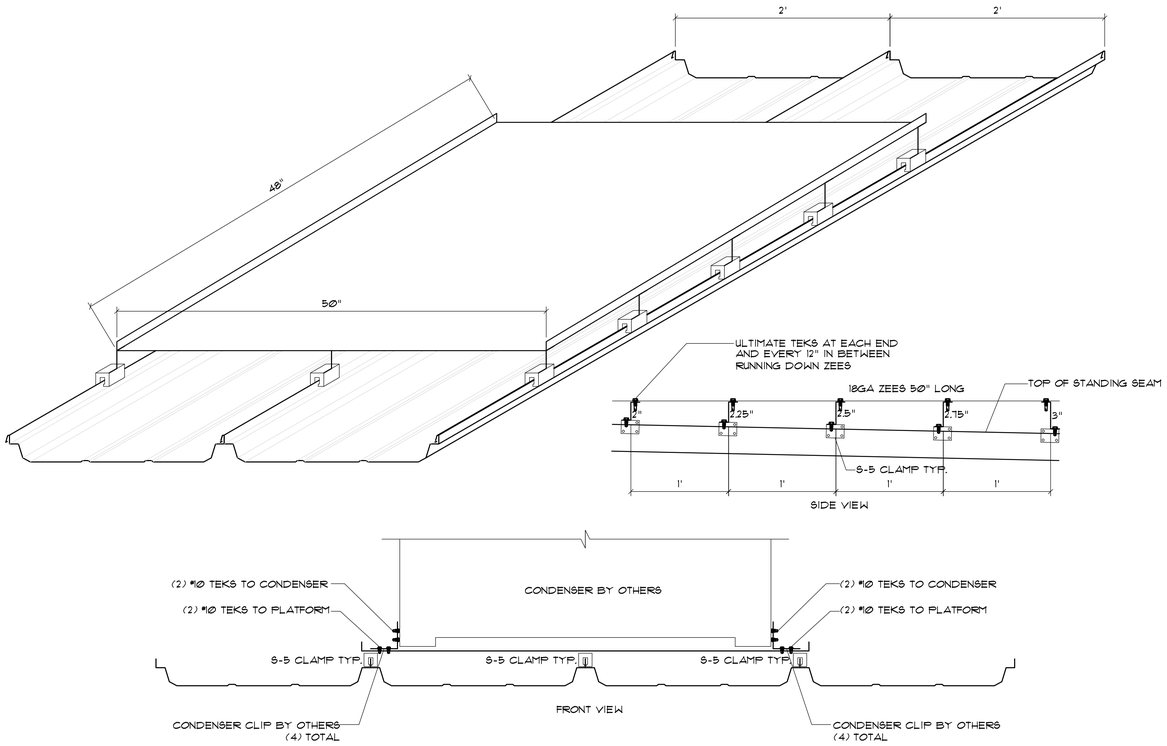
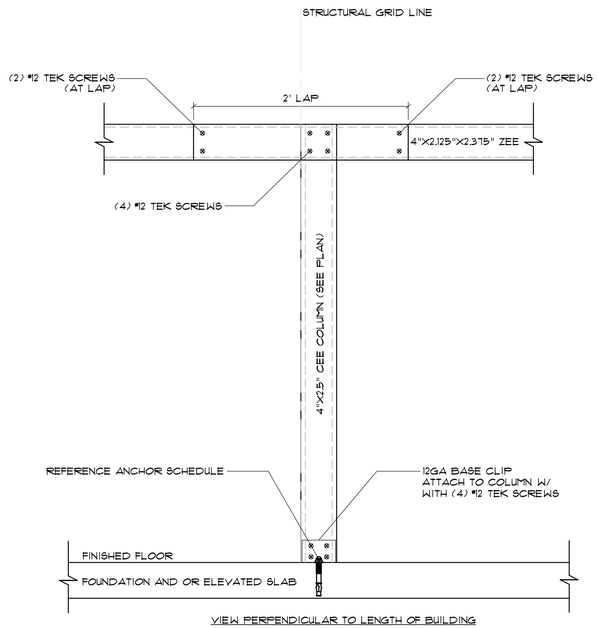


TYPICAL ROOF PLATFORM DETAIL FOR 24" ROOF SHEETS @ CONDENSER UNITS

SCALE: 1/2" = 1'

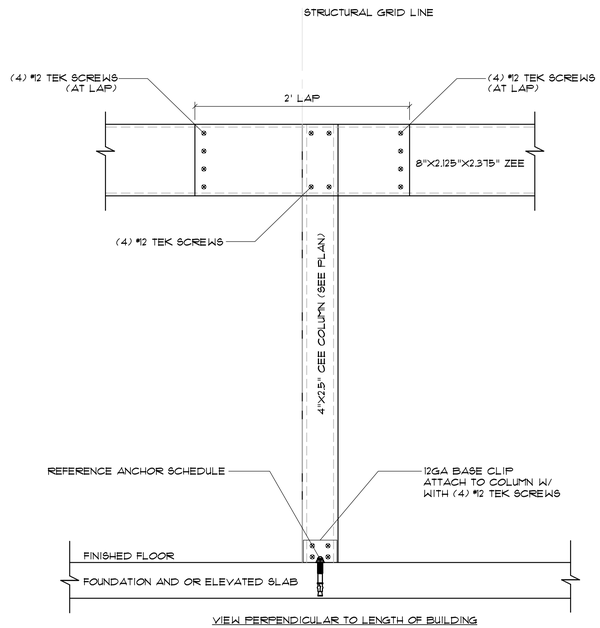


VIEW PERPENDICULAR TO LENGTH OF BUILDING

NOTE: GAUGES MAY CHANGE DUE TO LOAD CONDITIONS

ZEE BEAM COLUMN CONNECTION 4" CEE AND 4" ZEE

SCALE: 1 1/2" = 1'



VIEW PERPENDICULAR TO LENGTH OF BUILDING

NOTE: GAUGES MAY CHANGE DUE TO LOAD CONDITIONS

ZEE BEAM COLUMN CONNECTION 4" CEE AND 8" ZEE

SCALE: 1 1/2" = 1'

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FOUNDATION NOTES

GENERAL

1. THESE PLANS AND THE INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF METAL BUILDING COMPANY, UNAUTHORIZED COPYING, DISCLOSURE OR OTHER UNAUTHORIZED USES ARE PROHIBITED.
2. OWNER / CONTRACTOR IS RESPONSIBLE TO PROVIDE METAL BUILDING COMPANY WITH APPROVED PLANS PRIOR TO FABRICATION.
3. OWNER / CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY AND REQUIRED PERMITS, FEES, DEPOSITS, ECT.
4. THE OWNER AND/OR CONTRACTOR SHALL REVIEW AND DETERMINE THAT ALL DIMENSIONS ARE COORDINATED AS REQUIRED WITH ALL OTHER DESIGN PROFESSIONALS DRAWINGS AND SHOP DRAWINGS FOR PROJECT PRIOR TO FABRICATION OF MATERIALS OR THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE METAL BUILDING COMPANY AND ENGINEER OF RECORD.
5. SHOP DRAWING ARE CRITICAL TO ENSURE THE DIMENSIONS AND DESIGN OUTLINED IN THESE PLANS MEET THE MINIMUM REQUIREMENTS REQUIRED BY THESE SCOPES OF WORK IF UNDER CONTRACT BY OTHERS. IN THE EVENT THE CONTRACTOR'S OR OWNER'S FAILING TO PROVIDE, HE SHALL BE RESPONSIBLE FOR THE RESULTS OR ANY SUCH ERRORS OR OMISSIONS AND THE COST OF RECTIFYING THE SAME (EXAMPLES: ELEVATOR, STAIRWELL, DOORS, ETC?.).
6. IF ANY ERRORS OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER DOCUMENT, THE OWNER / CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND METAL BUILDING COMPANY IN WRITING OF SUCH OMMISSIONS OR ERRORS PRIOR TO PROCEEDING WITH ANY WORK WHICH APPEARS IN QUESTION. EVERY REASONABLE EFFORT HAS BEEN MADE TO ENSURE COORDINATION BETWEEN THESE DRAWINGS AND THE STRUCTURAL PLANS. IN THE EVENT THE CONTRACTOR'S OR OWNER'S FAILING TO GIVE SUCH NOTICE, THEY SHALL BE RESPONSIBLE FOR THE RESULTS OR ANY SUCH ERRORS OR OMISSIONS AND THE COST OF RECTIFYING THE SAME.
7. ANY OMISSIONS AND/OR CONFLICITS WITH PLANS SHALL BE REPORTED TO METAL BUILDING COMPANY SO THAT THEY CAN BE RESOLVED PRIOR TO PROCEEDING WITH WORK.
8. DO NOT SCALE DRAWINGS – IF A REQUIRED DIMENSION IS MISSING PLEASE CONTACT THE METAL BUILDING COMPANY AND / OR ENGINEER OF RECORD.
9. NO MODIFICATIONS TO PLANS SHALL BE MADE WITHOUT THE PERMISSION OF METAL BUILDING COMPANY AND ENGINEER OF RECORD. MODIFIACATIONS REQUIRED DUE TO FIELD CONDITONS OR OTHER CONTRACTORS OR ITEMS THAT WHICH MAY ADVERSELY AFFECT THE STRUCTURE REQUIRES WRITTEN PERMISSION (NO MODIFICATIONS TO STRUCTURAL MEMBERS IS ALLOWED).
10. ALL SECTIONS AND DETAILS SHALL BE CONSIDERED TO BE TYPICAL OR SIMILAR UNLESS ANOTHER SECTION OR DETAIL IS REFERENCED ON THE PLANS.
11. SCOPE OF WORK OF METAL BUILDING COMPANY IS INDICATED IN THE CONTRACT. THE DRAWINGS REFLECT SCOPES OF WORK AS REQUIRED FOR PERMITTING OR AT THE DIRECTION OF OWNER / CONTRACTOR.
12. SUBMITTALS TO THE ENGINEER OF RECORD FOR REVIEW MUST CONTAIN THE CONTRACTOR'S OR OWNER'S STAMP SIGNIFYING THEIR REVIEW / ACCEPTANCE. SUBMITTALS SENT WITHOUT WILL BE RETURNED AT THEIR EXPENSE WITHOUT REVIEW. A MAX. OF THREE SETS ADDITIONAL SETS WILL BE DISCARDED.
13. THE CONTRACTOR OR OWNER SHALL TAKE ALL NECESSARY STEPS TO PROTECT THE STRUCTURE, THE WORK PERSONS AND OTHER PEOPLE DURING CONSTRUCTION. HE SHALL SUPERVISE AND DIRECT THE WORK AND BE RESPONSIBLE FOR ALL CONSTRUCTION.

SLAB ON GRADE

UNLESS SPECIFICALLY STATED OTHERWISE IN THE GEOTECHNICAL SOILS REPORT, THE FOLLOWING MINIMUM CRITERIA SHALL BE ADHERED TO.

a.) INTERIOR FILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY TEST (ASTM D1557).

b.) COMPACTION OF THE SOIL IN THE FIELD SHALL BE MONITORED/ CONTROLLED BY A REPRESENTATIVE OF A QUALIFIED LABORATORY.

c.) EACH LAYER OF FILL SHALL NOT EXCEED 12" THICK AND SHALL BE COMPACTED PRIOR TO PLACEMENT OF THE NEXT LAYER.

MAXIMUM SPACING OF CONTROL JOINTS SHALL BE AS SHOWN IN THE TABLE BELOW. PATTERNS SHALL BE APPROXIMATELY SQUARE W/ RATIO OF LONG SIDE TO SHORT SIDE NOT TO EXCEED 1.5 TO 1.0.

SLAB THICKNESS (IN) –	4	5	6	7	8	9	10
SPACING (FT)	12	13	15	18	20	23	25

MIX DESIGNS CONTAINING AGGREGATE LESS THAN 3/4" ARE NOT ACCEPTABLE

CUT SLAB AS SOON AS AGGREGATE DOES NOT DISLODGE (MUST BE WITHIN THE SAME DAY AS THE CONC. WAS PLACED)

CARE SHALL BE TAKEN BY THE GENERAL CONTRACTOR WHEN DETERMINING THE LOCATION OF SJ'S AND CJ'S TO ENSURE SLAB JOINTS DOES NOT READ THROUGH THE ARCHITECTURAL FINISHES.

WAREHOUSE SLABS SHALL BE POWER–TROWELLED TO A HARD, SMOOTH BURNISHED FINISH. THE FINAL TROWEL PASS SHALL BE DONE BY MACHINE – NOT BY HAND. WITHIN 30 MINUTES OF THE FINAL TROWEL PASS, THE FLOOR SHALL BE CURED WITH EUCLID'S SUPER REZ–SEAL OR APPROVED EQUAL, WHICH MAY BE WAIVED AT THE OWNER'S OPTION.

SLAB THICKNESS SHALL BE INCREASED AS REQUIRED TO PROVIDE ADEQUATE SUPPORT FOR CRANE LOADS WITHOUT CRACKING SLAB.

ALL CONCRETE SLABS ON GRADE SHALL BE A MINIMUM OF 6" THICK AND BE REINFORCED WITH 6 X6 W1.4 X W1.4 EXCEPT WERE SPECIFICALLY NOTED ON PLANS. FIBERMESH CONCRETE INSTEAD OF WIRE MESH IS AN ACCEPTABLE ALTERNATE ON SINGLE STORY BUILDING AND MULTISTORY BUILDING WITHOUT LOAD BEARING FLOOR PADS. FIBERMESH SHALL BE IN COMPLIANCE WITH ASTM C–1116 TYPE III AND ASTM C116 LEVEL 1 AND SHALL BE PLANT BATCH MIX WITH PROPORTIONS OF 1.5 POUNDS OF FIBERMESH PER CUBIC YARD OF CONCRETE.

PLACE A MINIMUM 6 MIL POLUETHYLENE VAPOR BARRIER OVER COMPACTED SOIL BETWEEN FOUNDATION AND SLAB UNLESS NOTED OTHERWISE IN GEOTHECHEAL ENGINEERS REPORT FOR THE PROJECT. SOIL MUST BE TREATED FOR TERMITE PROTECTION AFTER FINAL COMPACTION, PRIOR TO THE VAPOR BARRIER INSTALLATION.

DESIGN CRITERIA

CONSTRUCTION DOCUMENTS WERE DESIGNED AND MEET THE REQUIREMENTS OF THE OF THE LOCAL BUILDING CODE DESIGNATED UNDER STRUCTURAL DESIGN CRITERIA. (SEE STRUCTURAL PLANS FOR DESIGN LOADS).

FOUNDATIONS

1. CONFORMANCE WITH THE REQUIREMENTS OUTLINED IN THE GEOTECHNICAL SOILS REPORT SHALL BE DETERMINED BY PERFORMING INDUSTRY STANDARD SOIL DENSITY TESTS BY A CERTIFIED TESTING AGENCY.
2. IF SUBSURFACE INVESTIGATION FOR FOUNDATIONS HAS NOT BEEN PERFORMED AND GEOTECHNICAL ENGINEERING REPORT WAS NOT AVAILABLE FOR FOUNDATION DESIGN. PRIOR TO CONSTRUCTION, THE OWNER SHALL RETAIN THE SERVICES OF A QUAIFIED GEOTECHNICAL ENGINEER TO PERFORM SOILS BORINGS, PROVIDE RECOMMENDATIONS FOR FOUNDATION DESIGN (INCLUDING NET ALLOWABLE SOIL BEARING PRESSURE) PROVIDE EARTHWORK CONSTRUCTION CRITERIA AND PERFORM SOIL TESTING DURING CONSTRUCTION. THE OWNER / CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL EARTHWORK OPERATIONS IN STRICT ACCORDANCE WITH THIS REPORT. IF THE FOUNDATION RECOMMENDATIONS AND NET ALLOWABLE SOIL BEARING CAPACITY OR ANY OTHER ASSUMPTIONS (SEE BELOW) DIFFER FROM THE ASSUMED VALUE, THEN MODIFICATIONS TO THE STRUCTURAL DRAWINGS SHALL BE REQUIRED. SHOULD THIS OCCUR, THE OWNER / CONTRACTOR SHALL STOP CONSTRUCTION AND NOTIFY METAL BUILDING COMPANY AND THE ENGINEER OF RECORD IMMEDIATELY.
3. FOUNDATION PLANS HAVE BEEN DESIGNED WITH THE FOLLOWING ASSUMPTIONS IN THE ABSENSE OF A SUBSURFACE INVESTIGATION BY A GEOTECHNICAL ENGINEER. NET ALLOW. SOIL BEARING PRESSURE OF 2,000 PSF.
4. CONDITIONS DISCOVERED BY THE CONTRACTOR AND/OR GEOTECHNICAL FIELD REPRESENTATIVE DURING EXCAVATION WHICH MAY PREVENT THE ATTAINEMENT OF THE ALLOWABLE BEARING PRESSURE STATED IN THE GEOTECHNICAL SOILS REPORT, SHALL BE REPORTED TO THE ENGINEER.
5. THE SHEETLEDGES, RAINLIPS AND MASONRY LEDGES ARE VITAL TO THE PROPER FIT OF THE STEEL CONSTRUCTION. OWNER / CONTRACTOR SHALL FIELD VERIFY ALL TO BE AS SHOWN ON PLANS. IF THEY ARE NOT TO THE DRAWINGS CONTACT METAL BUILDING COMPANY PRIOR TO FABRICATION OR BEFORE STEEL ERECTION STARTS.
6. ALL ISOLATED PAD FOOTING ARE TO BEAR A MINIMUM OF 18" BELOW THE TOP OF CONCRETE SLAB / PAVEMENT OR A MINIMUM OF 12" BELOW FINISHED GRADE U.N.O. ON PLANS.
7. THE MINIMUM BEARING WIDTH OF CONTINUOUS FOOTINGS SHALL NOT BE LESS THAN 12" UNLESS SPECIFICALLY NOTED IN GEOTECHNICAL ENGINEERING REPORT.
8. PLANS AND DETAILS REFLECT A DESIGN TO ACCOMODATE A MAXIMUM FROST PROTECTION OF 12" UNLESS NOTED OTHERWISE IN THE CONSTRUCTION DOCUMENTS. IF THE REQUIRED FROST DEPTH EXCEEDS 12" THAN ENGINEER OF RECORD SHALL BE NOTIFIED PRIOR TO EXCAVATION OR FOUNDATIONS.

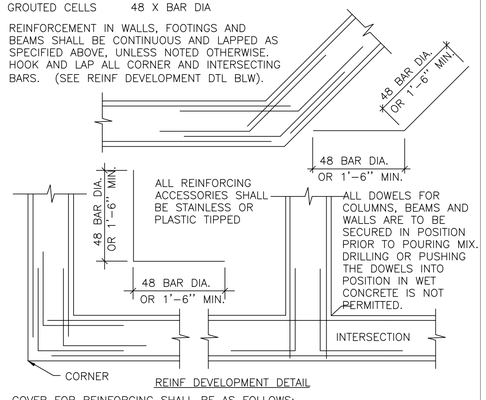
REINFORCING:

ALL REINFORCING SHALL BE DOMESTICALLY PRODUCED WITH REBAR CONFORMING TO ASTM–615 FOR GRADE 60 STEEL, AND WELDED WIRE FABRIC (WWF) TO ASTM A–185.

SPLICES AND ANCHORAGE OF REINFORCING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

WELDED WIRE FABRIC 12" MIN. HOOKS 48 X BAR DIA (18" MIN)
POURED CONCRETE 36 X BAR DIA (12" MIN) CORNERS 48 X BAR DIA (18" MIN)
GROUTED CELLS 48 X BAR DIA

REINFORCEMENT IN WALLS, FOOTINGS AND BEAMS SHALL BE CONTINUOUS AND LAPPED AS SPECIFIED ABOVE, UNLESS NOTED OTHERWISE. HOOK AND LAP ALL CORNER AND INTERSECTING BARS. (SEE REINF DEVELOPMENT DTL BLW).



REINF DEVELOPMENT DETAIL

COVER FOR REINFORCING SHALL BE AS FOLLOWS:

1. a. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
   b. CONCRETE EXPOSED TO EARTH OR WEATHER:
      #6 THRU #18 BARS 2"
      #5 BAR, W31 OR D31 WIRE AND SMALLER 1 1/2"
   c. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
      SLABS, WALLS, JOISTS:
      #14 AND #18 BARS 1 1/2"
      #11 BAR AND SMALLER 3/4"

THE VALUES IN THE TABLE SHOWN BELOW IS FROM THE VULCRAFT METAL DECK PRODUCT MANUAL AND REPRESENTS THE RECCOMMENDED WELDED WIRE FABRIC.

DECK TYPE	TOTAL SLAB DEPTH	RECOMMENDED WELDED WIRE FABRIC
1.5VL,VLIorR	<= 4 3/4"	6 X 6 – W1.4 X W1.4
1.5VL,VLIorR	> 4 3/4"	6 X 6 – W2.1 X W2.1
2VLI	<= 5 1/4"	6 X 6 – W1.4 X W1.4
2VLI	> 5 1/4"	6 X 6 – W2.1 X W2.1
3VLI	<= 6 1/4"	6 X 6 – W1.4 X W1.4
3VLI	> 6 1/4"	6 X 6 – W2.1 X W2.1

CONCRETE:

ALL CONCRETE SHALL HAVE THE FOLLOWING MIN. PROPERTIES:

LOCATION	28 DAY STRENGTH	SLUMP	MAX AGGR.
SLAB–ON–GRADE (OVER 4" THICK)	4,000 psi	4" ± 1"	1 1/2"
TIE BEAMS	4,000 psi	4" ± 1"	3/4"
TIE COLUMNS	3,000 psi	4" ± 1"	3/4"
CAST–IN–PLACE BEAMS	4,000 psi	4" ± 1"	1"
CAST–IN–PLACE COLUMNS	4,000 psi	4" ± 1"	1"
EQUIPMENT SUPPORTS	4,000 psi	4" ± 1"	1"
TILT–UP PANELS	4,000 psi	4" ± 1"	1 1/2"
GROUT UNDER TILT–UP PANELS	5,000 psi	8" ± 11"	3/8"
ELEVATED SLABS FORMED AND POURED	4,000 psi	4" ± 1"	1"
ELEVATED SLABS FORMED W/ MTL DECK	3,000 psi	4" ± 1"	1"
GROUT FOR FILLED CELLS	2,500 psi	8" ± 11"	3/8"

NOTES:

1. SLUMP FOR RAMPS AND SLOPING SURFACES SHALL NOT EXCEED 4".
2. SEE MASONRY GENERAL NOTES FOR GROUT TESTING REQUIREMENTS.
3. COLD JOINTS ARE NOT RECOMMENDED – ALTHOUGHT IF REQUIRED THEY SHOULD BE PLACED A MINIMUM OF 2'–0" OFF CENTERLINE OF COLUMNS..

CONCRETE PROPERTIES SHALL BE VERIFIED THROUGH INDUSTRY STANDARD TESTING PROCEDURES BY A CERTIFIED TESTING AGENCY. MIN. TEST REQUIRED SHALL INCLUDE SLUMP AND CYLINDER BEAKS FOR COMPRESSIVE STRENGTH. FINDINGS SHALL BE SUBMITTED TO THE ARCH./ENG. FOR REVIEW.

CONCRETE WORK SHALL CONFORM TO LATEST EDITIONS OF ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND ACI 315 DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.

CONCRETE MIX DESIGN SHALL MEET THE FOLLOWING CRITERIA:

1. PROPOSED MIX DESIGN SHALL BE ACCORDANCE WITH ACI 301
2. METHOD 1 OR METHOD 2 .
3. ENTRAPPED AIR CONTENT SHALL NOT EXCEED 3%.
4. ADMIXTURES USED TO ENTRAIN AIR ARE NOT ACCEPTABLE.
   ALL CONCRETE TO BE NORMAL WIIGHT WITH A DESIGN STRENGTH AT 28 DAYS.

SITE ADDED WATER IS NOT ACCEPTABLE. ADDING WATER TO THE MIX WILL RESULT IN REJECTION OF THE RESULTS BY THE ENGINEER OF RECORD.

CONTRACTOR IS RESPONSIBLE FOR THE ADEQUACY OF THE FORMS AND SHORING AND FOR SAFE PRACTICE IN THEIR USE AND REMOVAL.

PLACING OF CONCRETE IN ALL REINFORCED COLUMNS AND WALLS SHALL BE IN LIFTS NOT EXCEEDING 7 1/2 FEET IN HEIGHT. CONCRETE SHALL BE PLACED THROUGH "ELEPHANT TRUNK TUBULAR SHUTES LOCATED SUCH THAT THE FREE AIR DROP OF THE MIX DOES NOT EXCEED 6 FEET. ALTERNATE PLACEMENT METHOD OF CONCRETE WITH OR WITHOUT ADMIXTURES SHALL NOT BE USED UNLESS APPROVED BY ENGINEER OF RECORD.

STRUCTURAL STEEL

SS1 A CERTIFIED TESTING AGENCY SHALL BE ENGAGED TO PERFORM INDUSTRY STANDARD INSPECTIONS TO ENSURE CONFORMANCE WITH PLANS AND SPECIFICATIONS (IF PROVIDED). SUBMIT REPORTS TO ARCHITECT AND ENGINEER.

SS2 FABRICATE AND ERECT STRUCTURAL STEEL IN CONFORMANCE WITH THE LATEST VERSION OF AISC 360–10.

SS3 MATERIAL SPECIFICATIONS:

ALL STEEL SHALL BE PRODUCED DOMESTICALLY.

ROLLED SHAPES, PLATES AND BARS: ASTM A36, EXCEPT WIDE–FLANGE & WT SECTIONS, WHICH SHALL BE ASTM A992.

HOLLOW STRUCTURAL SECTION (HSS): ASTM A500, GRADE B.

ANCHOR BOLTS, RODS, NUTS AND WASHERS: PER BASE PLATE SCHEDULE.

HEADED STUDS: ASTM A108, GRADE 1015 THROUGH 1020, COLD–FINISHED CARBON STEEL, AWS D1.1, TYPE B.

BOLTED STRUCTURAL CONNECTIONS: UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE 3/4"~ ASTM A325, TYPE N. BOLTS INDICATED LESS THAN 5/8"~ SHALL BE ASTM A307.

WELDED CONNECTIONS: ELECTRODES – E70XX UNO (LOW HYDROGEN). FILLET WELDS SHALL BE 3/16" UNO.

SS4 HIGH–STRENGTH FIELD–BOLTED CONNECTIONS SHALL BE INSTALLED, TIGHTENED, TESTED AND INSPECTED ACCORDING TO "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC). ALL BOLTS IN STEEL TO STEEL CONNECTIONS SHALL BE BROUGHT TO A "SNUG–TIGHT" CONDITION, AS DEFINED IN THE SPECIFICATION. ALL BOLTS IN STEEL TO EMBED CONNECTIONS SHALL BE FINGER–TIGHT WITH PEENED THREADS. SLIP–CRITICAL (SC) BOLTS MUST BE FULLY TENSIONED PER SPECIFICATION.

SS5 ALL WIDE FLANGE FLOOR MEMBERS SHALL BE CONNECTED TO THE SUPPORTING STRUCTURE AS DETAILED IN CONNECTION SCHEDULES ON SHEET FD–2.

SS6 BRACE AND MAINTAIN ALL STEEL IN ALIGNMENT UNTIL OTHER PARTS OF CONSTRUCTION NECESSARY FOR PERMANENT SUPPORT ARE COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TEMPORARY SHORING AS REQUIRED FOR THE STABILITY OF THE STEEL FRAME UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN COMPLETED AND BUILDING IS ENCLOSED.

SS7 ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF "THE STANDARD CODE FOR WELDING IN BUILDING CONSTRUCTION" OF THE AMERICAN WELDING SOCIETY.

SS8 GROUT FOR COLUMN BASE PLATES AND PRESET BEARING PLATES SHALL BE NON–SHRINK, NON–METALLIC GROUT (5000 PSI MIN).

SS9 SUBMIT SHOP DRAWINGS INDICATING ALL SHOP AND ERECTION DETAILS INCLUDING PROFILES, SIZES, SPACING AND LOCATIONS OF STRUCTURAL MEMBERS, CONNECTION ATTACHMENTS, FASTENERS, LOADS AND TOLERANCES.

SS10 STRUCTURAL STEEL SHALL RECEIVE A SHOP COAT OF PRIMER (COLOR AS DIRECTED BY ARCHITECT) EXCEPT THOSE AREAS WHICH WILL RECEIVE SPRAY–ON FIRE PROTECTION, OR WHERE HEADED STUDS ARE TO BE WELDED.

SS11 THE STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN FULL CONFORMANCE WITH THE "OSHA STEEL ERECTION STANDARD". IF THE CONSTRUCTION DRAWINGS DEVIATE FROM THE OSHA STANDARD THEN THE FABRICATOR SHALL PROVIDE SUBMITTALS THAT CLEARLY INDICATE THE DEVIATION WITH A REVISION CLOUD AND REQUEST APPROVAL FROM BBM TO MAKE THE CHANGE SO THAT CONFORMANCE WITH THE OSHA STANDARD IS ASSURED.

SS12 REFER TO SPECIALTY ENGINEERING (SE) NOTES FOR DELEGATED ENGINEERING REQUIREMENTS.

SPECIALTY ENGINEERING REQUIREMENTS

SE1 STEEL PAN STAIRS SHALL BE DESIGNED BY THE FABRICATOR'S SPECIALTY ENGINEER AND SHALL INCLUDE STRINGERS, TREADS, HAND RAILINGS, PLATFORMS (AS REQUIRED), PAN INSERTS AND MISCELLANEOUS SUPPORTS AND CONNECTIONS. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND MUST BE SIGNED, DATED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE SAME STATE AS THE PROJECT LOCATION. MINIMUM DESIGN LIVE LOAD SHALL BE 100 PSF. SUBMITTALS SHALL INCLUDE THE JOINTING IN THE CONCRETE FILL AS REQUIRED TO MITIGATE PLASTIC SHRINKAGE CRACKING.

SE2 GUARDRAILS, HANDRAILS, POSTS AND SUPPORT CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR'S SPECIALTY ENGINEER. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND MUST BE SIGNED, DATED AND SEALED BY A ENGINEER REGISTERED IN THE SAME STATE AS THE PROJECT LOCATION. DUE CONSIDERATION SHALL BE GIVEN TO EXPANSION & CONTRACTION BY PROVIDING SLIP JOINTS AS REQUIRED. DESIGN LOADING(S) SHALL CONFORM TO ALL REQUIREMENTS OF THE BUILDING CODE (SEE DESIGN CRITERIA FOR THE APPLICABLE BUILDING CODE).

SE3 FLAGPOLES AND SITE LIGHTING POLES SHALL BE DESIGNED BY THE POLE VENDOR'S SPECIALTY ENGINEER AND SHALL INCLUDE POLES, FOUNDATIONS AND CONNECTIONS. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND MUST BE SIGNED, DATED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE SAME STATE AS THE PROJECT LOCATION. MINIMUM DESIGN LOADS SHALL CONFORM TO ANSI/NAAM FP100 "SPECIFICATIONS FOR DESIGN LOADS OF METAL FLAGPOLES".

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RBS-FØ.1

MASONRY

MASONRY CONSTRUCTION, MATERIALS, AND INSPECTION SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF THE LATEST ADOPTED EDITIONS ACI 530 & 530.1, ASCE 5 & 6, TMS 402 & 602, ASTM C476 & C1019, AND NCMA TEK 107, UNLESS SPECIFIED IN THESE CONTRACT DOCUMENTS.
CONCRETE BLOCKS SHALL CONFORM TO THE MINIMUM REQ. OF ASTM C-90 WITH f'm=1,500psi (1,900psi ON THE NET AREA)

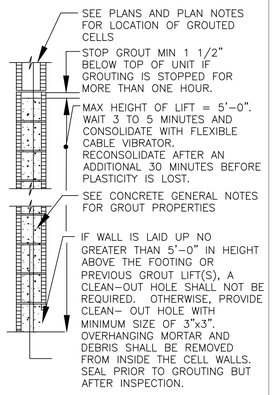
MORTAR SHALL COMPLY WITH THE MINIMUM REQUIREMENTS OF ASTM C270 FOR TYPE M OR S W/ (COMPRESSIVE STRENGTH =2500psi AND 1800psi RESPECTIVELY. SITE TESTED MORTAR CUBES SHALL ACHIEVE A MINIMUM OF 80% OF THE DESIGN COMPRESSIVE STRENGTH)

BLOCK SHALL NOT BE MOISTENED BEFORE GROUTING.

ALL CROSS WEBS SHALL BE FULLY BEDDED IN MORTAR AROUND CELLS TO BE GROUTED.
GROUT FOR FILLED CELLS SHALL BE PLACED AS INDICATED BELOW:

NOTES:
1. DO NOT GROUT UNTIL MORTAR HAS SET SUFFICIENTLY TO WITHSTAND THE PRESSURE OF THE GROUT. WAIT NOT LESS THAN 24 HOURS.
2. WAIT A MINIMUM OF (1) HOUR BEFORE PLACING NEW GROUT ON A PREVIOUS LIFT.
3. THE MINIMUM CONTINUOUS UNOBSTRUCTED CLEAR AREA IN CELL TO RECEIVE GROUT MUST
4. BE NOT LESS THAN 3"x3".
5. MORTAR FINS MUST BE REMOVED AS BLOCK PLACEMENT PROCEEDS.
6. MORTAR DROPPINGS MUST BE KEPT OUT OF CELLS WHICH ARE TO BE GROUTED.

MAXIMUM WALL HEIGHT FROM TOP OF FOOTING OR PREVIOUS GROUT POURS LAID UP AT ONE TIME SHALL BE 12'-0".

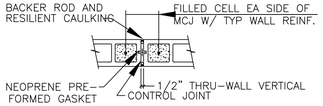


GROUTING DETAIL

GROUT PLACEMENT STOPPED FOR (1) HOUR OR MORE SHOULD BE STOPPED (1 1/2") BELOW THE TOP OF THE MASONRY UNIT TO PROVIDE A KEY FOR SUBSEQUENT GROUTING.
STOPPING AND RESUMING WORK: RACK BACK 1/2-UNIT LENGTH IN EACH COURSE. DO NOT TOOTH. CLEAN EXPOSED SURFACES OF SET MASONRY WET UNITS LIGHTLY (IF REQ'D) AND REMOVE LOOSE MAS UNITS AND MORTAR PRIOR TO LAYING FRESH MASONRY.
DO NOT APPLY UNIFORM LOADS TO MASONRY WALLS FOR (3) DAYS. DO NOT APPLY CONCENTRATED LOADS TO MASONRY WALLS FOR (7) DAYS.
MAXIMUM CONTROL JOINT SPACING FOR CONCRETE MASONRY UNITS SHALL BE THREE (3) X WALL HEIGHT BUT NO FURTHER THAN 50FT. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS.
PROVIDE GROUT FILLED PRECAST "U-LINTELS" WITH ONE (1) #5 CONTINUOUS AT ALL OPENINGS WHERE THE CONCRETE BEAMS ARE NOT SHOWN OR NOTED. MINIMUM UNFILLED LINTEL CAPACITY EQUAL FOUR HUNDRED (400) POUNDS / FOOT FOR SPAN INDICATED.
HORIZONTAL REINFORCE WALL WITH LADDER TYPE (ASTM A82, #9 GAGE WIRE) DEFORMED REINFORCEMENT EQUAL TO DURO-WALL IN BED JOINTS AT SIXTEEN (16) INCHES O.C. UNLESS OTHERWISE NOTED ON PLANS MEASURED VERTICALLY.
EXTEND ALL VERTICAL WALL REINFORCING TO WITHIN TWO (2) INCHES OF TOP OF WALL OR BEAM UNLESS OTHERWISE NOTED ON PLANS. TERMINATE REINFORCING WITH STANDARD ACI 90 DEGREES HOOK IF ROOF JOIST AND / OR TRUSSES BEAR ON THE TOP OF WALL. IF A PARAPET EXIST, HOOK IS NOT REQUIRED.
SEE FOUNDATION PLAN FOR ALL VERTICAL REINFORCING REQUIRED TYPICAL VERTICAL REINFORCING SIZE AND SPACING SHALL BE ABOVE AND BELOW ALL WALL OPENINGS.

CONTINUOUS 8" NOMINAL WIDTH BY 16" DEEP BOND BEAMS REINFORCED WITH TWO (2) #5 CONTINUOUS BARS IN EACH COARSE ARE REQUIRED FOR MASONRY STEEL LINTELS AND EXPANSION ANGLE REFERENCE STRUCTURAL PLANS.

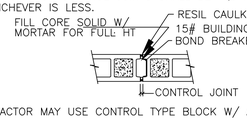
CONTINUOUS 8" NOMINAL WIDTH BY 16" DEEP BOND BEAMS REINFORCED WITH TWO (2) #5 CONTINUOUS BARS ARE REQUIRED AT PARAPETS.



NOTES:
1. THRU-WALL JOINT SHALL BE CONTINUOUS WITHOUT INTERRUPTION FROM FOUNDATION TO TOP OF WALL.
2. TERMINATE TYPICAL HORIZONTAL JOINT REINFORCING AT JOINT.

MASONRY CONTROL JT (MCJ)

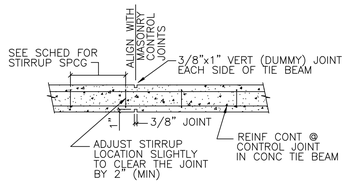
MAXIMUM SPACING OF CONTROL JOINTS SHALL BE (3 x WALL HEIGHT) OR 50'-0", WHICHEVER IS LESS.



THE CONTRACTOR MAY USE CONTROL TYPE BLOCK W/ ARCH APPROVAL

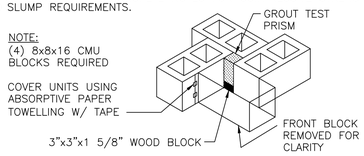
MASONRY CONTROL JT (MCJ) ALTERNATE

TEMPORARY BRACING AND SHORING OF WALLS TO PROVIDE STABILITY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE OWNER / CONTRACTOR.



MCJ @ TIE BEAM

JOB SITE MIXING OF GROUT SHALL NOT BE PERMITTED. TESTING SHALL CONFORM TO ASTM C1019. SEE TEST MOLD DETAIL BELOW. SEE SCHEDULE UNDER CONCRETE NOTES FOR COMPRESSIVE STRENGTH AND SLUMP REQUIREMENTS.

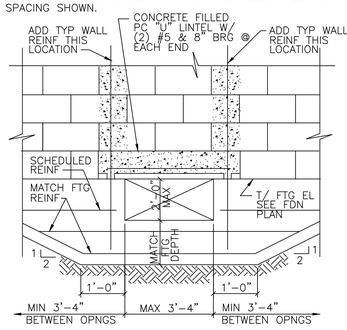


DETAIL MASONRY GROUT TEST MOLD (ASTM C-1019)

MASONRY CONT

TYPICAL MECHANICAL OPENING DETAIL:

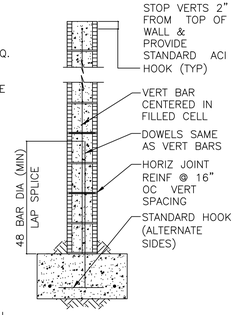
NOTE:
GC TO CONTACT ENGINEER IF OPENING EXCEEDS SIZE AND AND SPACING SHOWN.



TYP MECH OPNG THRU FTG

TEMPORARY BRACING AND SHORING OF WALLS TO PROVIDE STABILITY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
PROVIDE GROUT FILLED PRECAST U-LINTELS WITH (1) #5 CONT AT ALL OPENINGS WHERE CONCRETE BEAMS ARE NOT SHOWN OR NOTED. MINIMUM UNFILLED LINTEL CAPACITY = 400 lb/LF FOR SPAN INDICATED.
HORIZONTALLY REINFORCE WALLS WITH LADDER TYPE (ASTM A-82, #9 GAGE WIRE) DEFORMED REINFORCEMENT EQUAL TO DURO-WALL IN BED JOINTS AT 16" OC UNO, MEASURED VERTICALLY. PLACE PER MFR INSTRUCTIONS. LAP ALL HORIZONTAL JOINT REINFORCING 8" MIN.
VERTICAL REINFORCING MUST HAVE A MINIMUM CLEARANCE OF 1/2" TO INSIDE FACE. VERTICAL BAR LAP = 48 x BAR DIAMETER. SEE FILLED CELL DETAIL BELOW FOR ADDITIONAL INFORMATION.

NOTES:
SEE FOUNDATION PLANS FOR ALL VERT REINF. REQ. TYP VERTICAL REINFORCING SIZE & SPACING SHALL BE ABOVE AND BELOW ALL WALL OPENINGS.
EXTEND ALL VERTICAL WALL REINFORCEMENT TO WITHIN 2" OF TOP OF WALL OR BEAM UNLESS NOTED OTHERWISE.
TERMINATE REINFORCING WITH STANDARD ACI 90 DEGREE HOOK IF ROOF JOISTS AND/OR TRUSSES BEAR ON TOP OF WALL AND THERE IS NO PARAPET. IF PARAPET EXISTS, HOOK IS NOT REQUIRED.



FILLED CELL DETAIL

VERTICAL REINFORCEMENT IN WALLS SHALL BE SECURED AND LATERALLY SUPPORTED AGAINST DISPLACEMENT AT INTERVALS NOT EXCEEDING 192 x BAR DIAMETER OR 10 FT WHICHEVER IS LESS WHENEVER A CLEANOUT IS REQUIRED. SEE GROUTING DETAIL NOTE FOR CLEANOUT REQUIREMENTS.
REINFORCE MASONRY OPENINGS GREATER THAN 1'-0" WIDE, WITH HORIZ JT REINF PLACED IN (2) HORIZ JOINT'S APPROXIMATELY 8" APART, IMMEDIATELY ABOVE THE LINTEL AND IMMEDIATELY BELOW THE SILL. EXTEND REINFORCING A MINIMUM OF 2'-0" BEYOND JAMBS OF THE OPENING EXCEPT AT CONTROL JOINTS. SEE PLAN FOR ADDITIONAL REQUIREMENTS.

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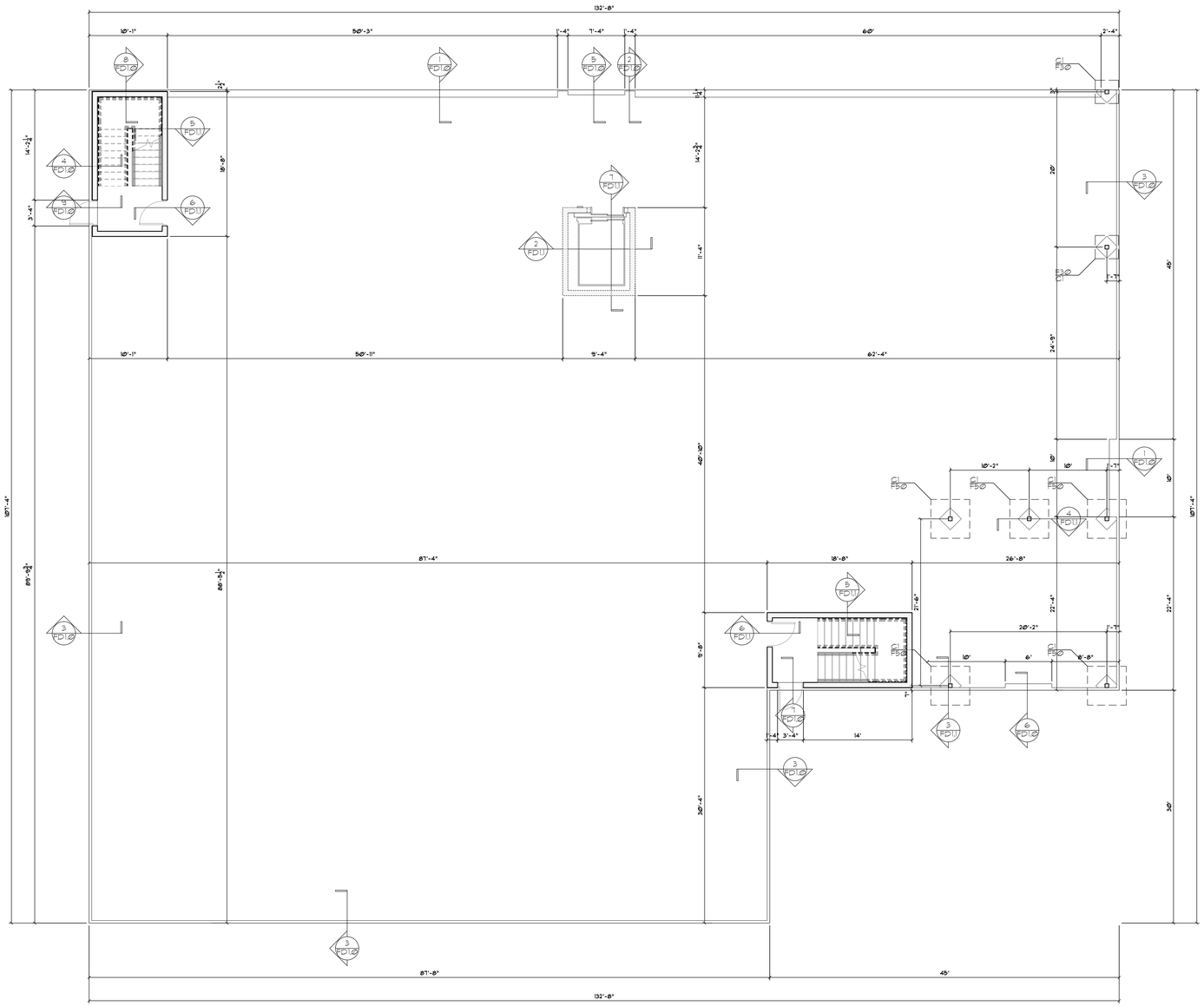
RBS-F0.1A

FOUNDATION PLAN NOTES (2 STORY)	
1	FLOOR SLAB SHALL BE 6" THICK, f'c'=4,000psi CONCRETE REINFORCED WITH 6X6 W1.4xW1.4 WWF OVER 6 MIL VAPOR BARRIER ON COMPACTED SUB-GRADE. (SEE SLAB ON GRADE DETAILS FOR PLACEMENT OF REINFORCED) FIBER REINFORCED CONCRETE IS AN ACCEPTABLE ALTERNATIVE TO WELDED WIRE FABRIC. REINFORCED CONCRETE FIBERS SHALL BE 100% VIRGIN POLYPROPYLENE, FIBRILLATED FIBERS AS MANUFACTURED BY FIBER MESH CO, OR APPROVED EQUAL APPLIED AT A RATE OF 1 1/2lbs/CY.
2	T/SLAB EL. = Ø'-Ø" TYP. UNO. T/INT. STL COL FTG = -2'-Ø" TYP. UNO. T/EXT STL COL FTG = -2'-Ø" TYP. UNO. (REFERENCE ONLY - SEE CIVIL DWGS FOR ACTUAL ELEVATIONS.)
3	ALL CMU BEARING WALLS ARE 8" (TYP. UNO.)
4	ALL FTGS ARE CENTERED BENEATH BEARING WALLS AND COLUMNS (TYP. UNO.)
5	REINF LOAD-BEARING CMU WALLS W/ #5 VERT BAR CENTERED IN GROUT-FILLED CELL AT ENDS, CORNERS, AND AT MAX SPACING OF 24" OC. SEE "ILLUSTRATIVE PLAN OF VARIOUS CMU WALL CONDITIONS" ON SHEET FØ1 FOR ADDITIONAL INFO. ALL LOAD BEARING CMU WALLS SHALL HAVE A BB2 AT EA FLOOR & TOP OF WALL, UNO.
6	TYP SPACING OF FILLED CELLS SHALL APPLY ABOVE AND BELOW OPENINGS ALSO.
7	SEE SHEETS RBS-FØ1 FOR STRUCTURAL GENERAL NOTES.
8	MAINTAIN STRUCTURAL SLAB THICKNESS AT ALL FLOOR SLOPES AND DEPRESSIONS
9	SEE RBS-BD1Ø FOR FOUNDATION, COLUMN AND BASE PLATE SCHEDULES.
1Ø	INDICATES 8" CMU.
11	T/ ELEVATOR MAT -4'-Ø" B.F.F. COORD W/ ELEVATOR MFR.

FOUNDATION SCHEDULE			
MARK	SIZE (L x W x D)	REINFORCING	REMARKS
F3Ø	3'-Ø" x 3'-Ø" x 1'-4"	(3) #5 EA WAY, BOT	COL PAD FOOTING
F5Ø	5'-Ø" x 5'-Ø" x 1'-4"	(5) #5 EA WAY, BOT	COL PAD FOOTING
FOUNDATION DESIGN INFORMATION			
ALL FOUNDATION DESIGNED IS BASED ON AN ASSUMED NET ALLOWABLE SOIL BEARING PRESSURE OF 2,000 PSF. A SOILS REPORT SHALL BE OBTAINED PRIOR TO THE PROJECT START AND THE BEARING PRESSURE SHALL BE CONFIRMED. OWNER ASSUMES ALL LIABILITY IF A SOILS REPORT IS NOT OBTAINED AND/OR THE BEARING PRESSURE IS NOT VERIFIED.			



BLDG FOUNDATION PLAN

1/8" = 1'

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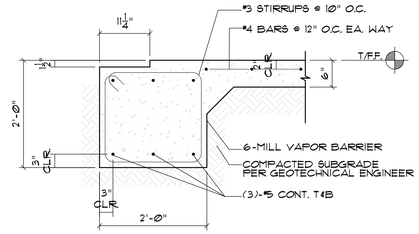
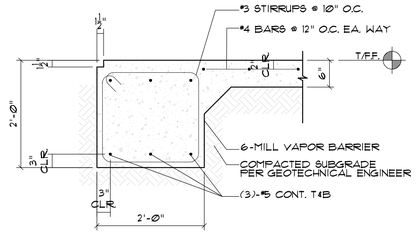
SCALE	AS NOTED
SHEET	

RBS-F1.Ø



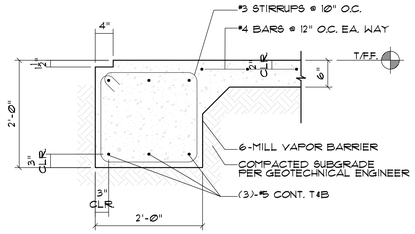
1 FD1.0 TYPICAL FOUNDATION DETAIL AT RAINLIP

SCALE: 3/4" = 1'



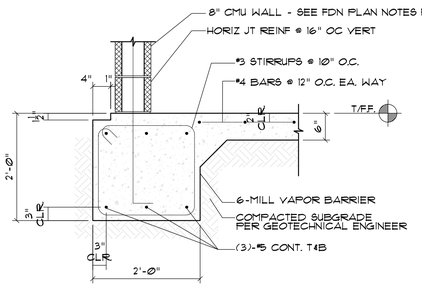
2 FD1.0 TYPICAL FOUNDATION DETAIL AT SHEETLEDGE

SCALE: 3/4" = 1'



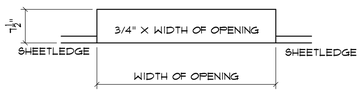
3 FD1.0 TYPICAL FOUNDATION DETAIL AT BRICK LEDGE

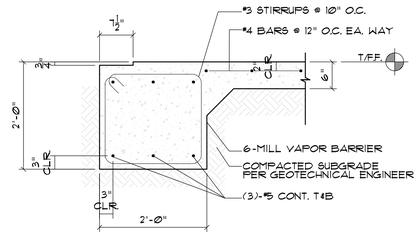
SCALE: 3/4" = 1'



4 FD1.0 TYPICAL FOUNDATION DETAIL AT EXTERIOR CMU WALL

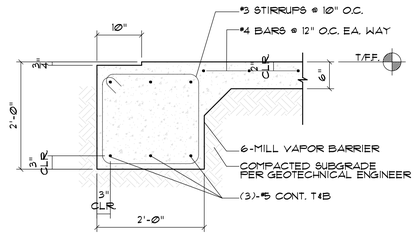
SCALE: 3/4" = 1'





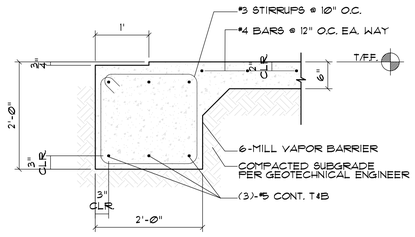
5 FD1.0 TYPICAL FOUNDATION DETAIL AT 6" FRAMED DOOR

SCALE: 3/4" = 1'



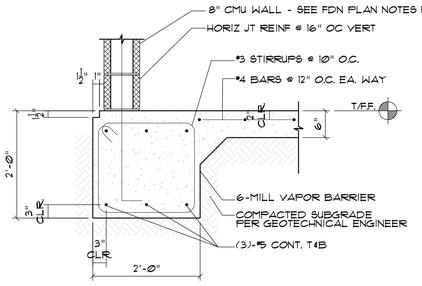
6 FD1.0 TYPICAL FOUNDATION DETAIL AT 6" FRAMED DOOR

SCALE: 3/4" = 1'



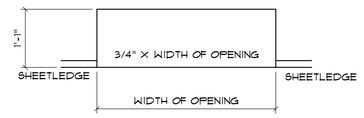
7 FD1.0 TYPICAL FOUNDATION DETAIL AT 6" FRAMED DOOR

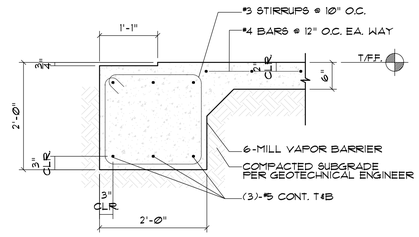
SCALE: 3/4" = 1'



8 FD1.0 TYPICAL FOUNDATION DETAIL AT EXTERIOR CMU WALL

SCALE: 3/4" = 1'





9 FD1.0 TYPICAL FOUNDATION DETAIL AT 6" FRAMED DOOR

SCALE: 3/4" = 1'

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REV.	DATE	DESCRIPTION	BY
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SHEET TITLE

FOUNDATION DETAILS

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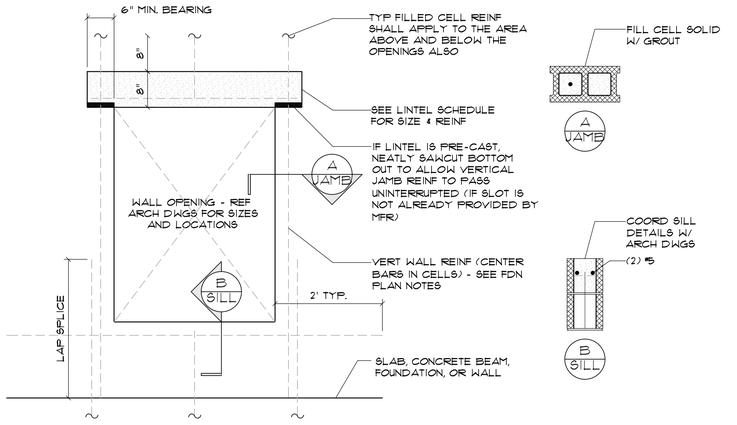
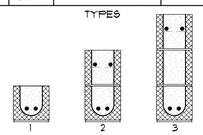
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-FD1.0



LINTEL SCHEDULE (8" CMU)				
TYPE	HEIGHT	REINFORCING	MAX CLEAR SPAN	MIN. CAPACITY (NOTE 1)
1	8x8	(2) #5 CONT	UP TO 6'-Ø"	1150 PLF
2	8x16	(2) #5 CONT T&B	UP TO 10'-Ø"	1450 PLF
3	8x24	(2) #5 CONT T&B	UP TO 14'-Ø"	1600 PLF

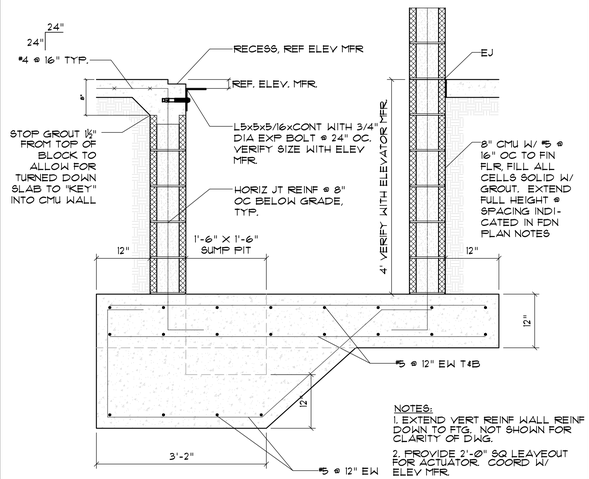
TYPES



NOTE TO ENG:
VERIFY BEAM CAPACITIES IF YOU HAVE FLOOR OR ROOF LOADS WITHIN THE ARCH ACTION AREA.

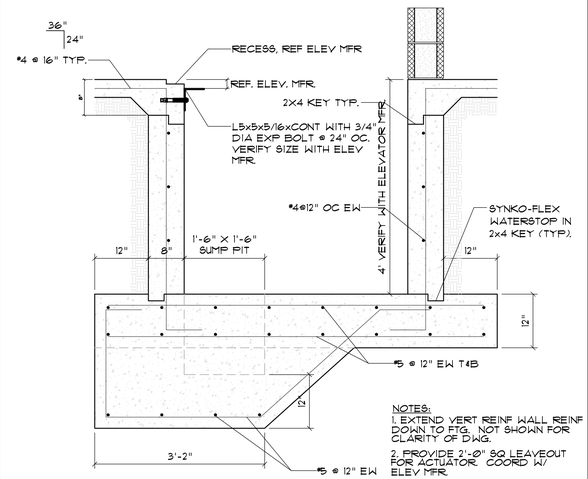
NOTE:
1. MIN. PB CAPACITY FOR THE INDICATED SPAN MUST BE VERIFIED BY THE PRECAST MFR AND DOCUMENTATION PROVIDED IN THE SUBMITTALS.

1 / FD1.1 — TYPICAL MASONRY WALL OPENING ELEVATION
SCALE: 3/4" = 1'



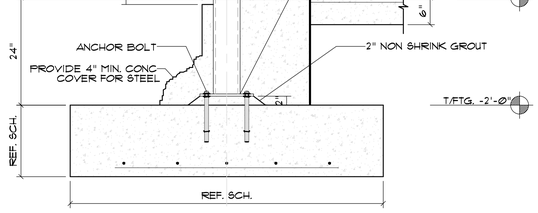
NOTES:
1. EXTEND VERT REINF WALL REINF DOWN TO FTG. NOT SHOWN FOR CLARITY OF DWG.
2. PROVIDE 2'-Ø" SQ LEAVEOUT FOR ACTUATOR. COORD W/ ELEV MFR.

2 / FD1.1 — SECTION AT ELEVATOR PIT
SCALE: 3/4" = 1'

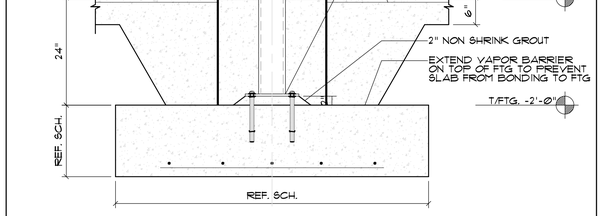


NOTES:
1. EXTEND VERT REINF WALL REINF DOWN TO FTG. NOT SHOWN FOR CLARITY OF DWG.
2. PROVIDE 2'-Ø" SQ LEAVEOUT FOR ACTUATOR. COORD W/ ELEV MFR.

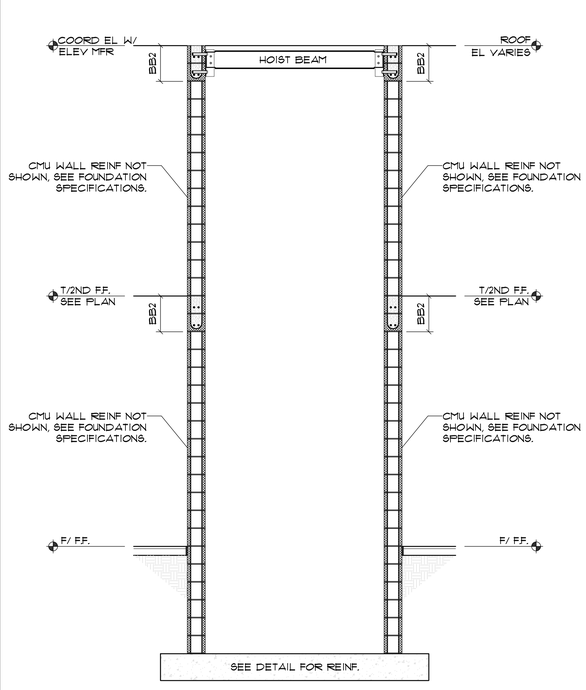
2A / FD1.1 — SECTION AT ELEVATOR PIT (GC OPTION)
SCALE: 3/4" = 1'



3 / FD1.1 — EXTERIOR HSS STEEL COLUMN TO FOUNDATION
SCALE: 3/4" = 1'

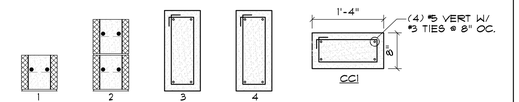


4 / FD1.1 — INTERIOR HSS STEEL COLUMN TO FOUNDATION
SCALE: 3/4" = 1'



7 / FD1.1 — SECTION @ ELEVATOR SHAFT (FOR 2 STORY)
N.T.S.

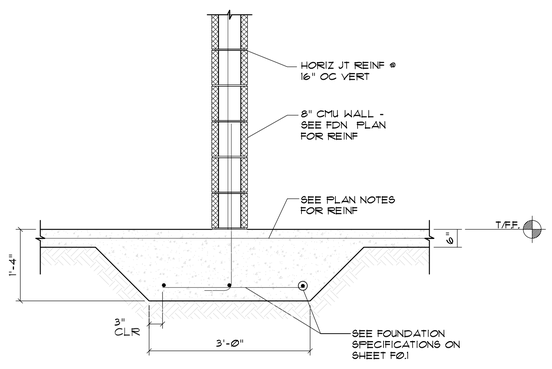
MASONRY WALL/CONCRETE BEAM SCHEDULE								
MARK	TYPE	NOMINAL SIZE (W"xD")	REINFORCING			STIRRUPS		COMMENTS
			BOT	MID	TOP	SIZE	SPACING	
BB1	1	8x8	--	(2) #5	--	--	--	
BB2	2	8x16	(2) #5	--	(2) #5	--	--	
CB1	3	8x16	(2) #5	--	(2) #5	#3	12" OC	
CB2	4	8x24	(2) #5	(2) #5	(2) #5	#3	12" OC	
TB1	3	8x16	(2) #5	--	(2) #5	#3	24" OC	
TB2	3	8x12(MIN)	(2) #5	--	(2) #5	#3	24" OC	MATCH COURSING



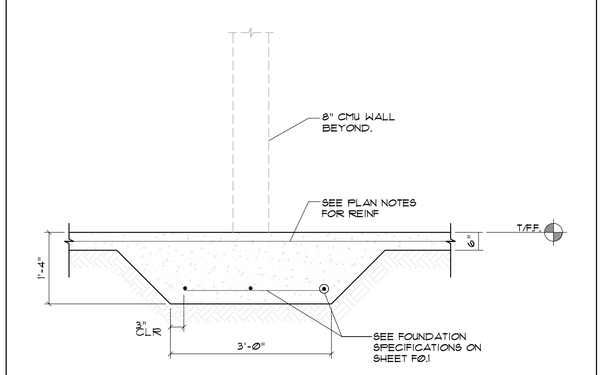
BEAM TYPES

NOTES:
1. "BB" = BOND BEAM (COMPOSED OF KNOCK-OUT BLOCK)
2. "TB" = TIE BEAM (FORMED AND POURED)
3. "CB" = CONCRETE BEAM (FORMED AND POURED)
4. "CC" = CONCRETE COLUMN (FORMED AND POURED)

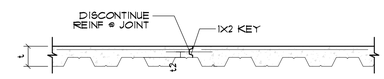
8 / FD1.1 — MASONRY WALL BEAM SCHEDULE
SCALE: 3/4" = 1'



5 / FD1.1 — SECTION (INTERIOR CMU WALL)
SCALE: 3/4" = 1'



6 / FD1.1 — SECTION (INTERIOR CMU WALL OPENING)
SCALE: 3/4" = 1'



8 / FD1.1 — DETAILS METAL DECK CONTROL JOINT
SCALE: 3/4" = 1'

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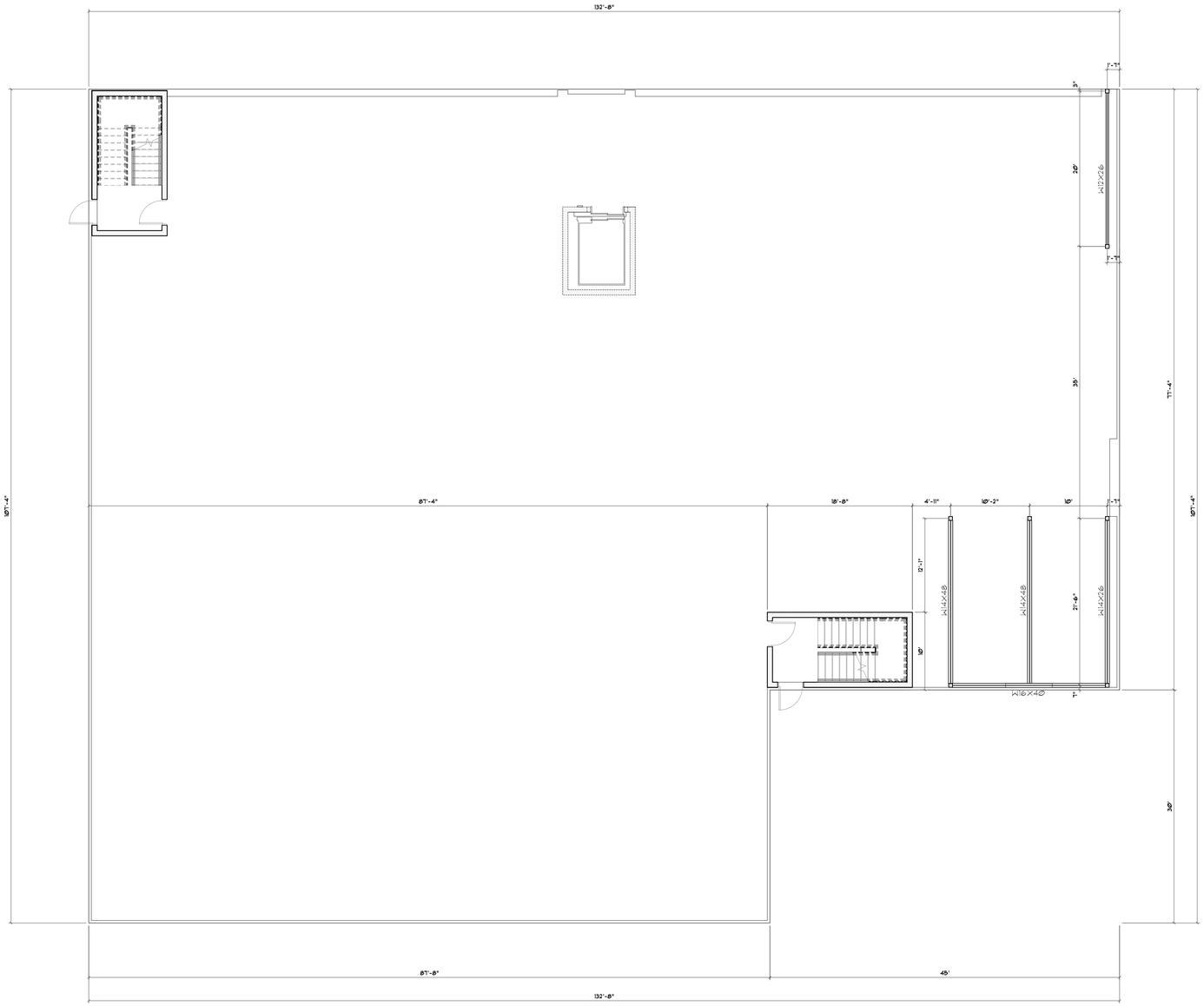
SHEET	

RBS-FD1.1



BLDG 1ST FLOOR BLACK STEEL LAYOUT

1/8" = 1'

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BLACK STEEL PLAN

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SHEET	

RBS-B1.0

HSS COLUMN & BASE PLATE SCHEDULE

COLUMN MARK	COLUMN SIZE	BASE PLATE			ANCHOR BOLT		CAP PLATE	REMARKS
		"A"	"B"	THICKNESS	EMBED (NT 2&3)	DIAMETER		
(C1) HSS66-4	6"X6"X1/4"	12"	12"	1/2"	9"	3/4"		

1. ANCHOR RODS SHALL BE ASTM F1554 (GRADE 36) UNO, THREADED EACH END WITH NUT AT BOTTOM. PLATE WASHER AT BOTTOM NUT IS NOT REQ'D. INCREASE FOOTING THICKNESS AT ANCHOR RODS TO PROVIDE MIN 3" COVER. SEE NOTE BELOW IN ANCHOR ROD DETAIL.
2. PLATE WASHERS SHALL HAVE HOLE WITH DIAMETER EQUAL TO ROD DIAMETER + 1/16". CIRCULAR OR SQUARE WASHERS ARE ACCEPTABLE.
3. IT SHALL BE ACCEPTABLE TO PROVIDE A HEAVY HEX HEAD BOLT IN LIEU OF THE THREADED ROD WITH HEAVY HEX NUT AT BOTTOM.

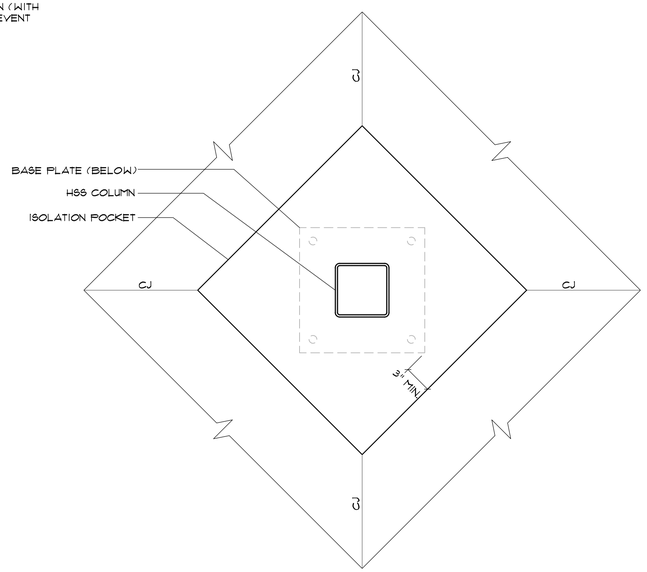
BOLT MATERIAL TYPE	MINIMUM EMBEDED LENGTH	MAXIMUM EMBEDED LENGTH	MINIMUM EMBEDED EDGE DISTANCE
A307, A36	12d	E+FTG THICKNESS -5"	5d≥4"
A325, A449	17d		7d≥4"

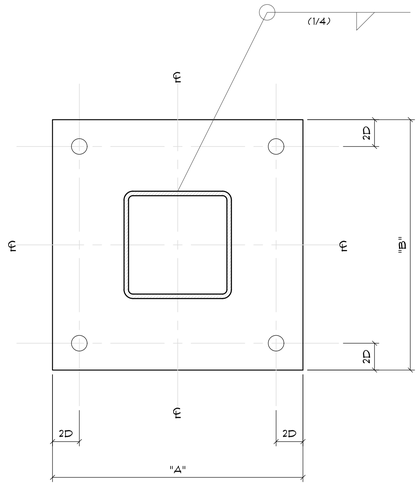
OVERSIZED HOLES AND PLATE WASHERS FOR BASE PLATES

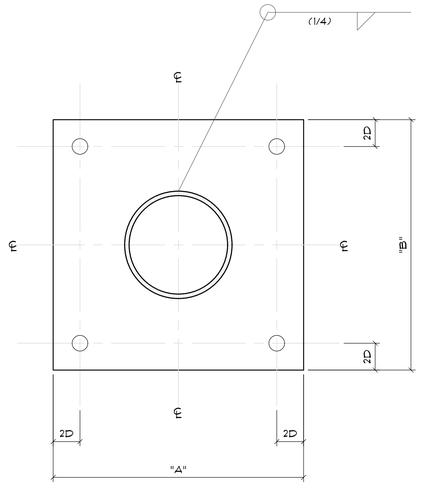
BOLT DIAMETER	HOLE DIAMETER	PL WASHERS	BOLT DIAMETER	HOLE DIAMETER	PL WASHERS
3/4"	1 5/16"	1/4"X2"X2"	1 1/2"	2 5/16"	1/12"X3 1/2"
7/8"	1 9/16"	5/16"X2 1/2"X2 1/2"	1 3/4"	2 3/4"	5/8"X4"
1"	1 13/16"	3/8"X3"X3"	2"	3 1/4"	3/4"X5"
1 1/4"	2 1/16"	1/2"X3"X3"	2 1/2"	3 3/4"	7/8"X5 1/2"

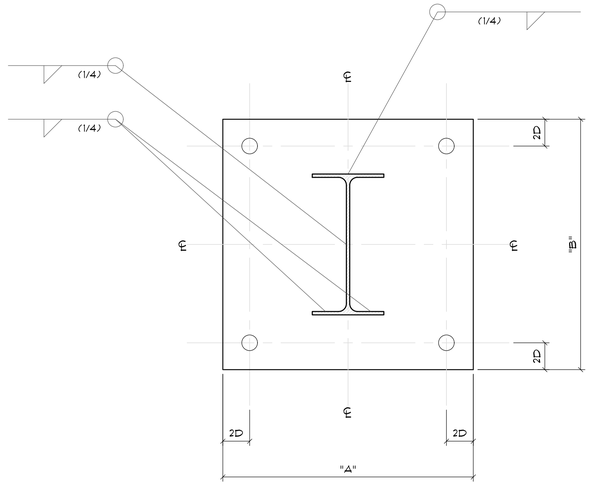
ISOLATION POCKET DETAIL

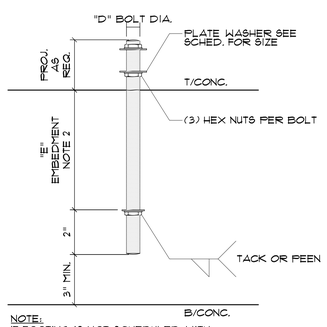
NOTE:
IT IS IMPERATIVE THAT THE ORIENTATION OF ISOLATION POCKET BE AS THAT SHOWN (WITH CORNERS AT CONTROL JOINTS) TO PREVENT EXCESSIVE CRACKING IN SLAB.



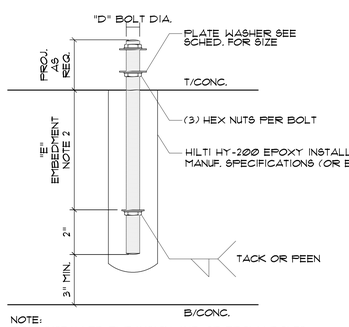








NOTE:
IF FOOTING IS NOT SCHEDULED WITH SUFFICIENT THICKNESS, THEN INCREASE THICKNESS AT ANCHOR BOLTS ONLY



NOTE:
POST INSTALLED EXPANSION AND OR EPOXY BOLTS ARE ACCEPTABLE ALTERNATIVES TO THE CAST IN PLACE ANCHOR BOLTS SHOWN.
THE POST INSTALLED ANCHORS SHALL BE OF EQUIVALENT DIAMETER AND EMBEDMENT LENGTH AS SCHEDULED.

BASE PLATE & ANCHOR BOLT DETAIL

SCALE: 3" = 1'

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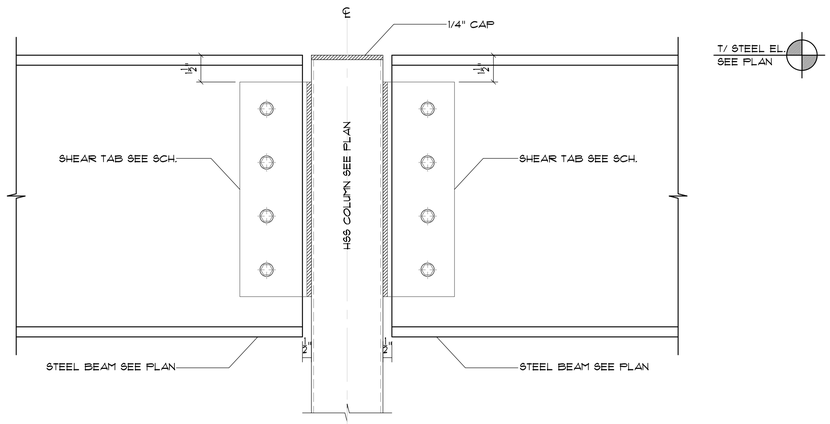
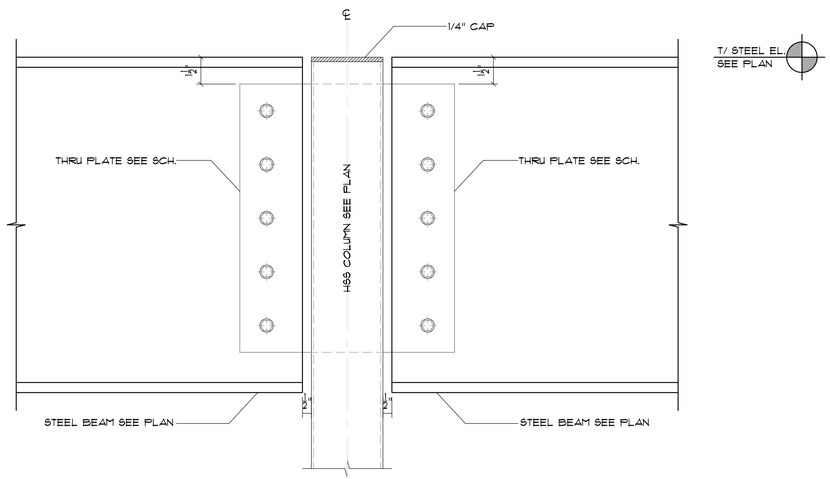
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

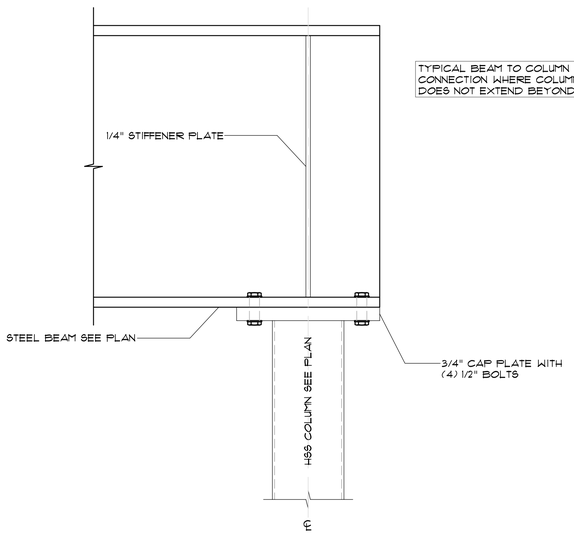
RBS-BD1.Ø

NOTE: COLUMN CAP PLATE MAY NOT BE REQUIRED. COLUMNS MAY EXTEND UPWARDS.





TYPICAL BEAM TO COLUMN CONNECTION WHERE COLUMN DOES NOT EXTEND BEYOND BEAM



TYPICAL BEAM TO STL COL SHEAR CONNECTION

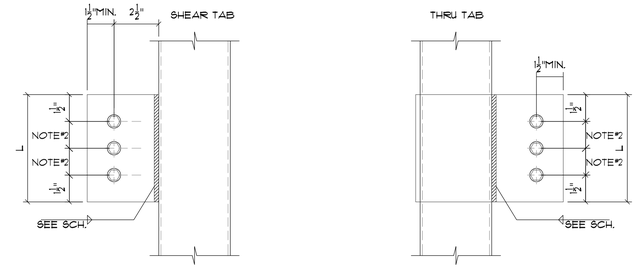
SCALE: 3" = 1'

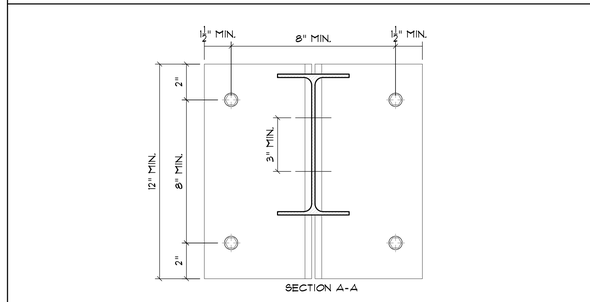
SINGLE PLATE SHEAR CONNECTION SCHEDULE
(SHOP WELDED, FIELD BOLTED)

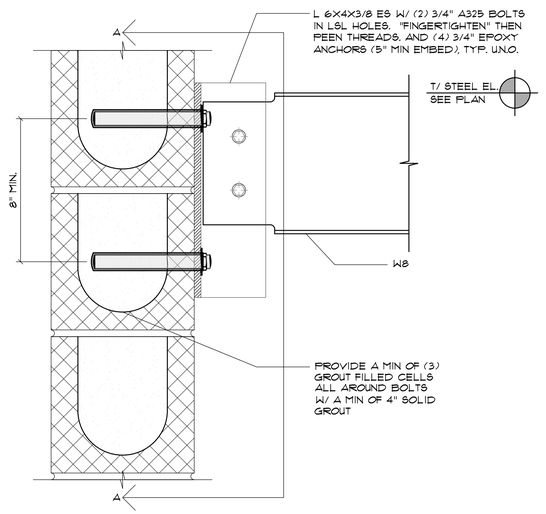
BEAM SIZE (SEE PLAN)	NO. OF A325-N BOLTS	SHEAR TAB / THRU-PLATE THICKNESS (36 KSI), IN.	FILLET WELD SIZE (E70XX), IN.	MAXIMUM ALLOWABLE END REACTION, KIPS	SHEAR TAB / THRU-PLATE LENGTH (L), IN.
W8, W10	(2) 3/4" BOLTS	5/16"	1/4"	8.2	6"
W12, W14	(3) 3/4" BOLTS	5/16"	1/4"	16.3	9"
W16, W18	(4) 3/4" BOLTS	5/16"	1/4"	26.1	12"
W21	(5) 3/4" BOLTS	3/8"	5/16"	36.3	15"
W24	(6) 3/4" BOLTS	3/8"	5/16"	46.3	18"
W27	(7) 3/4" BOLTS	3/8"	5/16"	56.4	21"

NOTES:

1. FOR BEAMS NOT SHOWN HEREIN, FABRICATOR SHALL DESIGN THE SHEAR CONNECTION BASED ON THE REACTION SHOWN ON THE PLAN.
2. SEE SCHEDULE ABOVE FOR NUMBER OF BOLTS (3"GA.).
3. PROVIDE 13/16"x1 1/2" HORIZ SLOTS IN BEAM WEB.
4. BEAMS SHALL BE 50 KSI.
5. PROVIDE HORIZ SLOTS IN SHEAR PLATE.
6. PROVIDE HARDENED WASHER OVER SLOTTED HOLES.
7. BOLTS SHALL BE INSTALLED "SNUG-TIGHT".

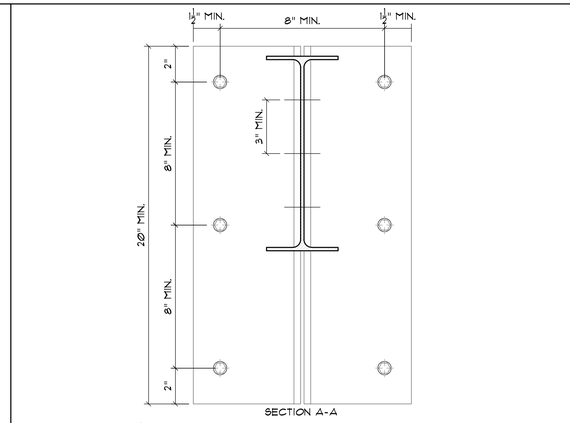


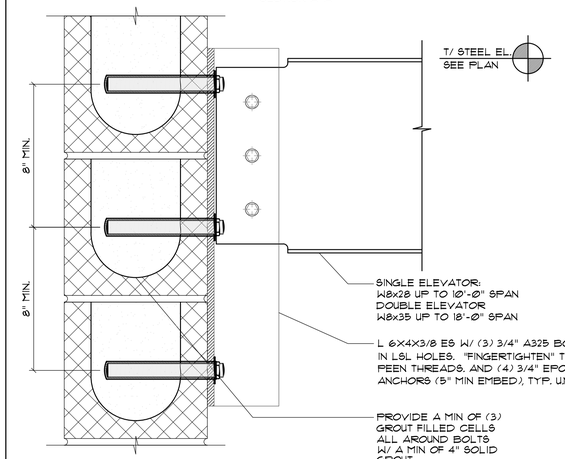




TYPICAL ELEVATOR SPREADER BEAM

SCALE: 3" = 1'





TYPICAL ELEVATOR HOIST BEAM

SCALE: 3" = 1'

bennett&pless

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RAPIDBUILDINGSOLUTIONS.COM

JOB NUMBER:
527-23-SPR-NC

RELIANT DEVELOPMENT LLC
MIDGARD SELF STORAGE
14396 NC 210 SOUTH
SPRING LAKE, NC 28390

REV.	DATE	DESCRIPTION	BY
01	08-24-23	ARCH'S COMMENTS	AB

SHEET TITLE

BLACK STEEL DETAILS

DATE	07-28-23
DESIGNED BY	RBS
CHECKED BY	RBS
DRAWN BY	APB
SCALE	AS NOTED
SHEET	

RBS-BD1.1