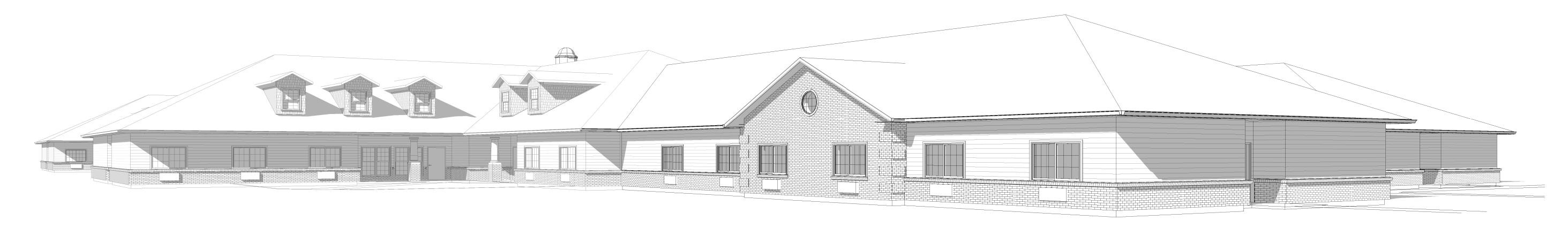
CONSTRUCTION DOCUMENTS

SPRINGBROOK NURSING AND REHABILITATION CENTER ADDITION

195 SPRINGBROOK AVE, CLAYTON, NC



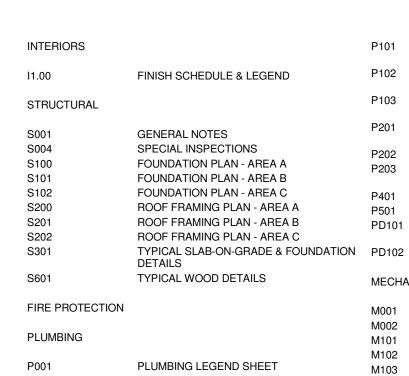
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C-6.0	LIGHTING PLAN	A1.02	LEVEL 1 REFLECTED CEILING PLAN

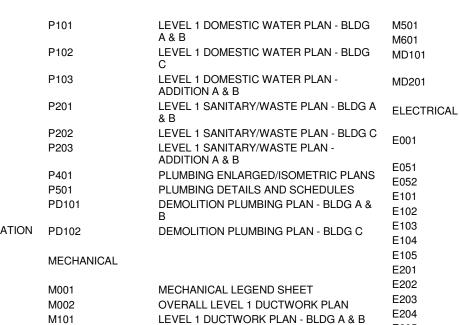
1.03	LEVEL 1 ENLARGED PLAN - BLDG A & B
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2.03	EXTERIOR ELEVATIONS
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3.04	TYP. ROOF DETAILS

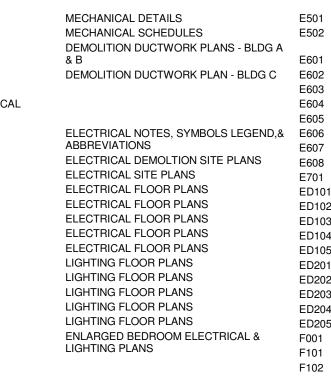
DOOR SCHEDULE

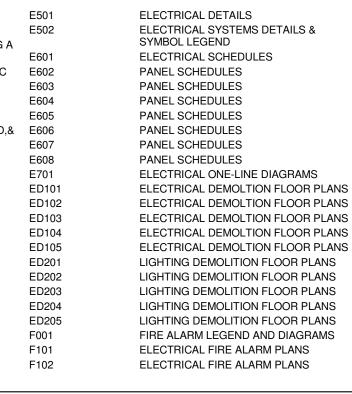


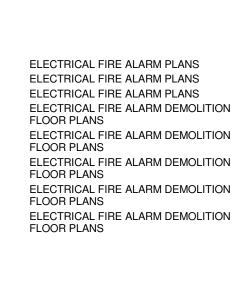


OVERALL PLUMBING LEGEND PLAN

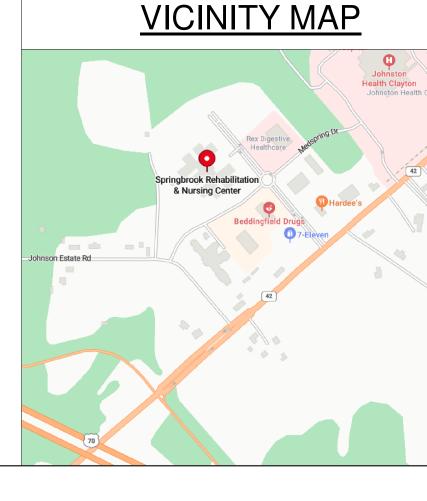








F104



CIVIL ENGINEER

205 S. FUQUAY AVE.,

FUQUAY-VARINA, NC

(919) 552-0849

LANDSCAPE ARCHITECT

STUDIOWALES

LEVEL 1 DUCTWORK PLAN - BLDG C

LEVEL 1 DUCTWORK PLAN - ADDITION A & E401

architecture

3151 Milhaven Lake Dr. I WINSTON-SALEM, NC 27106 p. 414.704.6764 I www.studio-wales.com

DATE: 02/18/2024 PROJECT NUMBER:NH-3138

STRUCTURAL ENGINEER

LABELLA ASSOC. 400 S. TRYON, STE 1300 CHARLOTTE, NC (704) 376-6423

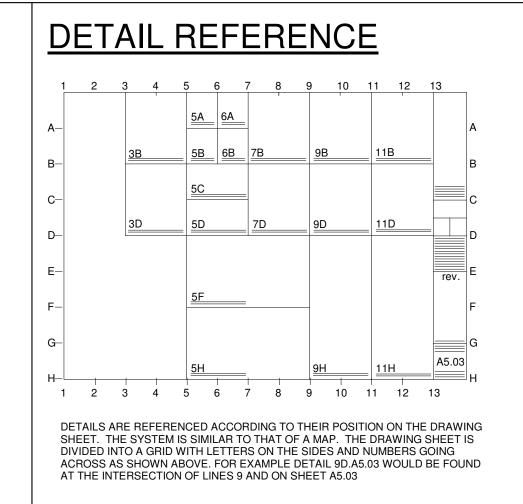


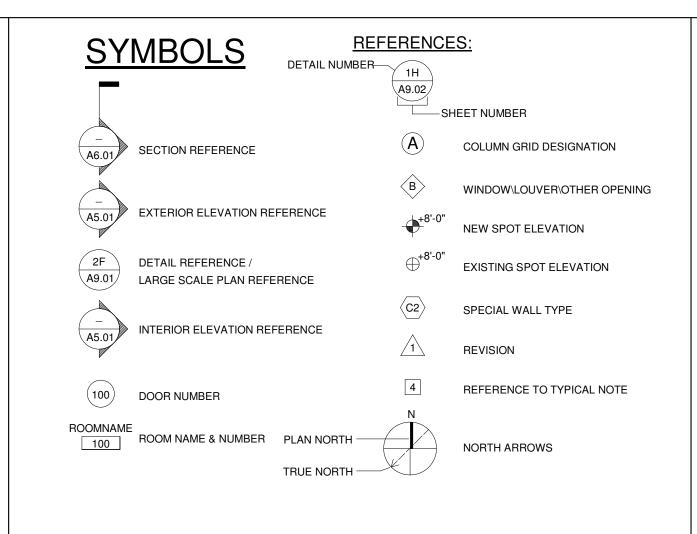
400 S. TRYON, STE 1300

CHARLOTTE, NC

(704) 376-6423

ΛRI	ABBREVIATIONS E. east GYP. gypsum MAX. maximum Q.T. quarry tile SUSP. suspended												
		<u> </u>	<u> </u>	E.	east	GYP.	gypsum	MAX.	maximum	Q.T.	quarry tile	SUSP.	suspended
_		0.11		E.C.	electrical contractor	H.B.	hose bibb	MBR.	member	R. R.A.	riser, radius return air	SW. SYM.	switch
&	and	C.H.	ceiling height	E.J.	expansion joint	H.C.	hollow core	MECH.	mechanic (al)	R.A. R.C.P.		T&B.	symmetry (ical) top and bottom
\angle	angle	C.I.	cast iron	E.W.C. EA.	electric water cooler	H.M. H.P.	hollow metal	MED. MEMB.	medium	R.C.P. R.D.	reinforced concrete pipe roof drain	T&G.	tongue and groove
0	at	C.J.	control joint	EA. ELAS.	each elastometric	H.P. HDW.	horsepower	MET.	membrane metal	R.H.	right hand	T.	tread
@		C.M.T.	ceramic mosaic tile	ELAS. ELEC.		HDWD.	hardware hardwood	MEZZ.		R.O.	rough opening	T.C.	top of curb
ω	centerline	C.M.U.	concrete masonry unit		electric (al) ABelectric cabinet	HORIZ.	horizontal	MFGR.	mezzanine manufacture (er)	R.O.W.	right of way	T.P.	top of pavement
ſ	channel	C.T.	ceramic tile	ELEV.	elevator, elevation	HT.		MIN.	minimum	REBAR.	rienforcing bar	T.P.D.	toilet paper dispenser
Ø	diameter or round	C. to C. CAB.	center to center cabinet	EMER.	emergency	HVAC.	height heating/ventilating	MISC.	miscellaneous	REC.	recessed	T.W.	top of wall
Ø		CAB. CARP.	carpet	ENCL.	enclose (ure)	IIVAO.	/air conditioning	MOD.	modified	RECT.	rectangular	TEL.	telephone
上	perpendicular	CARP. CEM.	cement	ENTR.	entrance	HWY.	highway	MTD.	mounted	REF.	reference	TEMP.	tempered or temperature
PE	plate	CEN.	ceramic	EQ.	equal		iligilway	MUL.	mullion	REFR'G.	refrigerator	TERZ.	terrazzo
#	pound or number	CLG.	ceiling	EQUIP.	equipment	I.P.S.	iron pipe size	N.	north	REG.	register	THK.	thick (ness)
# A.B.	anchor bolt	CLO.	closet	ESTB.	establish	ID.	inside diameter	N.C.B.C.	2012 NC building code	REINF.	reinforced	THRES.	threshold
A.F.F.	above finish floor	CLO.	clear	EXP.	expansion	IN.	inches	N.I.C.	not in contract	REQ.	required	TLT.	toilet
A.P.	access panel	CNTR.	counter	EXSTG.	existing	INCL.	include (ed) (sion)	N.T.S.	not to scale	RESIL.	resilient	T.O.F.	top of footing
A.C.T.	acoustical tile ceiling	COL.	column	EXT.	exterior	INSUL.	insulation (ed)	NO. or #	number	RET.	return	TV.	television
A/C.	air conditioning	COMP.	composition	F.B.O.	furnished by others	INT'R.	interior	NOM.	nominal	REV.	revisions(s), revised	TYP.	typical
ABV.	above	CONC.	concrete	F.D.	floor drain	INV.	invert	O. to O.	out to out	RFG.	roofing	U.O.N.	unless otherwise noted
ACOUS.	acoustical	CONF.	conference	F.E.	fire extinguisher	INV. EL.		O.C.	on center (s)	RM.	room	UNFIN.	unfinished
ADD.	addendum	CONN.	connection	F.E.C.	fire extinguisher cab.		or or or or or	O.D.	outside diameter	S-P.	single-ply	UTIL.	utility
ADJ.	adjacent or adjustable	CONSTR		F.H.C.	fire hose cabinet	JAN.	janitor	OFF.	office	S.	south	V.B.	vinyl base
AGG.	aggregate	CONT.	continuous	F.O.C.	face of concrete	JT.	joint	O.H.	opposite hand	S.C.	solid core	V.C.T.	vinyl composition tile
AL.	aluminum	CONTR.	contractor	F.O.F.	face of finish	K.D.	kiln dried or knock down	OPN'G.	opening	S.C.J.	structural control joint	V.I.F.	verify in field
ALT.	alternate	CORR.	corridor	F.O.S.	face of studs	KIT.	kitchen	OPP.	opposite	S.D.	soap dispenser or storm	V.F.	vinyl fabric
ANOD.	anodize	CSMT.	casement	F.S.	full size	KO.	knockout	OUT.	outvert		drain	V.T.	vinyl tile
APPROX.	. approximate	CTR.	center	F.T.F.	face to face	Ĺ.	left, length	OZ.	ounce	S.N.D.	sanitary napkin dispenser	VW.F.	vinyl wall fabric
APT.	apartment	CTSK.	countersink (sunk)	FDN.	foundation	L.H.	left hand	P.C.	plumbing contractor	S.N.R.	sanitary napkin receptacle		ventilating
ARCHT.	architect (ural)	D.	diameter	FIN.	finish (ed)	L.L.	live load	P.C.F.	pounds per cubic foot	S.S.	stainless steel	VERT.	vertical
AUTO.	automatic	D.F.	drinking fountain	FL.	floor (ing)	L.P.	low point	P.L.F.	pounds per lineal foot	S.T.C.	sound transmission	VEST.	vestibule
AVG.	average	D.H.	double hung	FLASH'G.	. flashing	L.R.	living room	P.LAM.	plastic laminate		classification	VOL. W.	volume
B.U.R.	built-up roofing	D.L.	dead load	FLUOR.	fluorescent	L.W.	lightweight	P.S.F.	pounds per square foot	S4S.	surfaced 4 sides	W.C.	west, women water closet
BD.	board	DBL.	double	FRPF.	fireproof (ing)	LAB.	laboratory	P.S.I.	pounds per square inch	SAN.	sanitary	W.F.	wide flange
BEV.	beveled	DEM.	demolish, demolition	F.P.W.H.	freeze proof wall hydrant	LAM.	laminate (d)	P.T.D.	paper towel dispenser	SCHED.	schedule	W.I.	wrought iron
BITUM.	bituminous	DEPT.	department	FT.	foot or feet	LAV.	lavatory	P.T.R.	paper towel receptacle	SECT.	section	W.W.F.	welded wire fabric
BLDG.	building	DIAG.	diagonal, diagram	FTG.	footing	LT.	light	P.T.	pressure treat (ed)	SFTWD.	softwood	W/	with
BLK.	block	DIFF.	diffuser	FURN.	furnish	LTG.	lighting	PLAS.	plaster	SHT.	sheet	W/O	without
BLKG.	blocking	DIM.	dimension	FURR.	furring	LVR.	louver	PLYWD.	plywood	SIM. SPEC.	similar	WD.	wood
BM.	beam or bench mark	DMT.	demountable	FUT.	future	M.C.	medicine cabinet or	PNL.	panel		specification	WDW.	window
BR.	bedroom	DN.	down	F.V.	field verify		mechanical contractor	PNT(d).	paint (ed)	SQ.	square	WP.	waterproofing
BRCG.	bracing	DO.	door opening	G.B.	grab bar	M.H.	manhole	PR.	pair	SQ. FT.	square foot	WSCT.	wainscot
BRG.	bearing	DR.	door	G.C.	general contractor	M.O.	masonry opening	PT.	point	STD. STL.	standard	WT.	weight
BSMT.	basement	DS.	downspout	GA. GALV.	gage, gauge	MACH.	machine	PTD PTN.	paper towel dispencer	STOR.	steel	YD.	vard
BTW.	between	DTL.	detail		galvanized	MAINT.	maintenance	PTN. PVC.	partition polyvinyl chloride	STOR. STRUC.	storage		,
C.B.	catch basin	DWG.	drawing	GL.	glass, glazing	MAS.	masonry	PVC. PVMT.	, , ,	STRUC. SURF.	structure (al) surface		
	52.011 520117	DWR.	drawer	GR.	grade	MATL.	material (s)	r v IVI I .	pavement	SUMF.	Surface		





<u>MATE</u>	RIAL DESIGNA	<u> ATION</u>	<u>S</u>
	EARTH		FINISHED WOOD
	GRAVEL		PLYWOOD
(Þ , \\ \	CONCRETE		ROUGH WOOD FRAMING
1 > 1	TERRAZZO		BLOCKING
	PLASTER,SAND,GROUT		BATT INSULATION
	BRICK		RIGID INSULATION
	CMU		ACOUSTICAL TILE
	75% SOLID CMU		CERAMIC TILE
	STEEL		CARPET

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Name of Project:	SPRINGBROOK NU	RSING A	ND REHABILITATION	ON CENTER ADD	TION	
Address: <u>195 SPR</u>	RINGBROOK AVE, CL	AYTON,	NC			
Proposed Use: <u>N</u>	URSING HOME					
Owner/Authorized	Agent: JON WHITE		Phone #: <u>91</u>	9-428-7361	-Mail: JONWI	HITE.NC@OUTLOOK.COM
Owned By:		□ Cit	y / County	⊠ Private		State
Code Enforcement	Jurisdiction:	□ Ci	ty	⊠ County <u>JOH</u>	NSTON	State
CONTACT:						
DESIGNER:	FIRM:		NAME:	LICENSE #:	TELEPHONE #:	E-MAIL:
Architectural	STUDIO WALES		KEITH WALES JR.	13140	414-704-6764	
Civil	CURRY ENGINEERING GRO)UP	JARED MATTHEWS	048484	919-552-0849	JARED@CURRYENG.COM
Electrical	LABELLA ASSOC.		KEVIN HOWARD	045398	704-376-6423	KHOWARD@LABELLAPC.COM
Fire Alarm			KEVIN HOWARD	045398	704-376-6423	KHOWARD@LABELLAPC.COM
Plumbing	LABELLA ASSOC.		MICHAEL GROSE	047719	704-376-6423	MGROSE@LABELLAPC.COM
Mechanical	LABELLA ASSOC.		MICHAEL GROSE	047719	704-376-6423	MGROSE@LABELLAPC.COM
Sprinkler—Standpip)e [_]		PROVIDED BY GC / S	SPRINKLER SUB-CONTE	ACTOR .	
Structural	LABELLA ASSOC.		DAN HILL	040156	704-376-6423	DHILL@LABELLAPC.COM
Retaining Walls>5'	High LABELLA ASSOC.				<u>-</u>	
Landscape	N/A					
2018 EDITION C	OF NC CODE FO	 R:	─────────────────────────────────────	ction X Addition	n 🗆 Renovat	ion 🗌 1st Time Interio
			☐ Shell / Core			n - Shell / Core
	RUII DING CODE	:	Prescriptive		☐ Ch. 14	·
2018 EXISTING E			: Level 1	•	Level 3	· ·
2018 EXISTING E		teration				· ·
	AI	~):	CONDITION 1
CONSTRUCTED	. (date) <u>2014</u>	CU	RRENT OCCUF	PANCY (Ch. 3	, <u></u>	CONDITION 1
CONSTRUCTED RENOVATED:	AI: (date)	CUI PRO	RRENT OCCUF DPOSED OCC	PANCY (Ch. 3 UPANCY (Ch.	3): <u>I-2,</u>	CONDITION 1
CONSTRUCTED RENOVATED:	AI: (date)	CUI PRC	RRENT OCCUF OPOSED OCC rent:	PANCY (Ch. 3	3): <u>I-2,</u>	
CONSTRUCTED	AI: (date) (date) Y (NCBC1604.5)	CUI PRC	RRENT OCCUF OPOSED OCC rent:	PANCY (Ch. 3 UPANCY (Ch.] II 🗵 III 🗌 IV	3): <u>I-2,</u>	
CONSTRUCTED RENOVATED: RISK CATEGOR' BASIC BUILDING	AI: (date) 2014 (date) Y (NCBC1604.5)	CUI PRC Curr Prop	RRENT OCCUF DPOSED OCC rent:	PANCY (Ch. 3 UPANCY (Ch. II X III IV IV	3): 1-2,	CONDITION 1
CONSTRUCTED RENOVATED: RISK CATEGOR' BASIC BUILDING	AI: (date)	CUI PRC Curr Prop	RRENT OCCUP DPOSED OCC rent:	PANCY (Ch. 3 UPANCY (Ch. II X III IV II X III IV	3): <u>I-2,</u>	EX V-A
CONSTRUCTED RENOVATED: RISK CATEGOR' BASIC BUILDING Construction Ty	AI: (date)	CUI PRO Curr Prop	RRENT OCCUP DPOSED OCC rent:	PANCY (Ch. 3 UPANCY (Ch. II X III IV II X III IV	3): <u>I-2,</u>	XV-A V-B
CONSTRUCTED RENOVATED: RISK CATEGOR' BASIC BUILDING Construction Ty (check all that	AI : (date) (date) Y	CUI PRO Curr Prop	RRENT OCCUP DPOSED OCC rent:	PANCY (Ch. 3 UPANCY (Ch. II X III IV III X III IV III X III IV III A III B 3 NFPA 1	3): <u>1-2,</u> 11V 3R □ NFPA	XV-A V-B
CONSTRUCTED RENOVATED: RISK CATEGOR' BASIC BUILDING Construction Ty (check all that	AI: (date)	CUI PRO Curr Prop	RRENT OCCUP DPOSED OCC rent:	PANCY (Ch. 3 UPANCY (Ch. II X III IV II X III IV	3): <u>1-2,</u> 11V 3R □ NFPA	XV-A V-B
CONSTRUCTED RENOVATED: RISK CATEGOR' BASIC BUILDING Construction Ty	AI : (date) (date) Y	CUI PRO Curr Prop	RRENT OCCUP DPOSED OCC rent:	PANCY (Ch. 3 UPANCY (Ch. II X III IV III X III IV III X III IV III A III B 3 NFPA 1	3): <u>I-2,</u> IIV 3R □ NFPA	× V-A ∨-B

FLOOR EXI	STING (SQ. FT.)	NEW (SQ. FT.)	SUB-TOTAL (SQ. FT.)
FLOOR 3	– SF	– SF	– SF
FLOOR 2	– SF	– SF	- SF
BUILDING C - LEVEL 1	26,070 SF	8,172 SF	34,242 SF
BUILDING B - LEVEL 1	12,704 SF	0 SF	12,704 SF
BUILDING A - LEVEL 1	26,290 SF	0 SF	26,290 SF
TOTAL	65,064 SF	8,172 SF	73,236 SF

	*AREA INCLUDES INTERIOR SF AND COVERED EXTERIOR AREA **AREA INCLUDES INTERIOR SF & EXTERIOR DECKS
Occupancy:	ALLOWABLE AREA
Assembly	□ A-1
Business	
Educationa	
Factory	□F-1 Moderate □F-2 Low
Hazardous	\square H-1 Detonate \square H-2 Deflagrate \square H-3 Combust \square H-4 Health \square H-5 HPM
Institutiona	I
	\square I $-$ 3 \square 1 \square 2 \square 3 \square 4 \square 5
	□ I-4
Mercantile	
Residential	\square R-1 \square R-2 \square R-3 \square R-4
Storage	□ S−1 Moderate □ S−2 Low □ High−piled

Accessory Occupancy Classification(s):	B, S-1	EA. LESS	THAN 10%
Incidental Uses (Table 509) :	_		
Special Uses (Ch.4 - List Sections) :	407		
Special Provisions (Ch.5 - List Sections :	_		
Mixed Occupancy: □No XYes Se	eparation:	Hr.	Exception:

- X 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
- area for each use shall not exceed 1. $A \overline{\ Allowable \ Area}$ of Occupancy

STORY NO.	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL)	(B) TABLE 506.2 ⁴ AREA	(C) AREA FOR FRONTAGE INCREASE ^{1,5}	(D) ALLOWABLE AREA OR UNLIMITED
BLDG A - LEVEL 1	I-2, COND. 1*, A-2	26,290 SF	38,000 SF*	NOT USED	38,000 SF
BLDG B - LEVEL 1	I-2, COND. 1*, A-2	12,704 SF	38,000 SF*	NOT USED	38,000 SF
BLDG B - LEVEL 1	I-2, COND. 1*, A-2	34,242 SF	38,000 SF*	NOT USED	38,000 SF
_	-	-	-	-	-

AREA CALCULATION BASED UPON MOST RESTICTIVE OCCUPANCY (I-2, COND. 1) NCBC 508.3

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 ="	(F)
b. Total Building Perimeter = -'-0" (P)	
c. Ratio $(F/P) = \frac{-}{}$ (F/P)	

2 Unlimited area applicable under conditions of Section 507. 3 Maximum Building Area = total number of stories in the building \times D (max. 3 stories)(506.2) 4 The maximum area of parking garages must comply with 406.5.4

e. Percent of frontage increase I = 100 [F/P - 0.25]x W/30 = - (%)

5 Frontage increase is based upon the unsprinklered area value in Table 506.2

d. W = Minimum width of public way = 30 (W)

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE ¹
Building Height in Feet (Table 5.4.3) ²	Feet 50'-0"*	Feet 41'-10"	_
Building Height in Stories (Table 5.4.4) ³	Stories _1*	Stories _1	_
		is not based on Table 504.3 or 5	504.4

3. The maximum height of an open parking garage must comply with table 406.5.4 * *AREA CALCULATION BASED UPON MOST RESTICTIVE OCCUPANCY (I-2, COND. 1) NCBC 508.3

FIRE PROTECTION REQUIREMENTS

OOR EXISTING (SQ. FT.) NEW (SQ. FT.) SUB-TOTAL (SQ. FT.)			1					
OOR 3 - SF - SF - SF	BUILDING ELEMENT	FIRE SEPARATION		RATING PROVIDE	DETAIL # AND	DESIGN #	SHEET # FOR RATED	SHEET # FOR
00R 2 — SF — SF — SF	BUILDING ELEMENT	DISTANCE	REQ'D	(W/*	SHEET #		PENETRATION	RATED
IILDING C - LEVEL 1 26,070 SF 8,172 SF 34,242 SF		(FEET)	KLQ D	REDUCTION)				JOINTS
<u> </u>	Structural frame, including columns,							
<u>IILDING A - LEVEL 1 26,290 SF 0 SF 26,290 SF</u>	girders, trusses		1 HR	1 HR				
OTAL 65,064 SF 8,172 SF 73,236 SF	Bearing walls	>30						
*AREA INCLUDES INTERIOR SF AND COVERED EXTERIOR AREA **AREA INCLUDES INTERIOR SF & EXTERIOR DECKS	Exterior							
	North		1 HR	1 HR	G3.02	U-356	G1.02	G1.02
ccupancy: ALLOWABLE AREA	East		1 HR	1 HR	G3.02	U-356	G1.02	G1.02
Assembly $\square A-1$ $XA-2$ $\square A-3$ $\square A-4$ $\square A-5$	West		1 HR	1 HR	G3.02	U-356	G1.02	G1.02
Business	South		1 HR	1 HR	G3.02	U-356	G1.02	G1.02
Educational 🗆	Interior		1 HR	1 HR	G3.01	U-305	G1.02	G1.02
Factory $\square F-1$ Moderate $\square F-2$ Low								
Hazardous □ H−1 Detonate □ H−2 Deflagrate □ H−3 Combust □ H−4 Health □ H−5 HPM	Nonbearing walls and partitions — Exterior	>30						
	North	/30	0 110	_	_	_	_	_
			0 HR		_	_	_	_
	East		O HR	-				
	West		0 HR	_	_	_	-	_
Mercantile	South		0 HR	-	_	_	-	_
Residential \square R-1 \square R-2 \square R-3 \square R-4	Interior walls and partitions	3	0 HR	0 HR	G3.01	U-305	G1.02	G1.02
Storage S-1 Moderate S-2 Low High-piled	Floor Construction including supporting beams	and ioists	1 HR	N/A	N/A	N/A	N/A	N/A
	Floor Ceiling Assembly	,	1 HR	N/A	N/A	N/A	N/A	N/A
	Columns Supporting Floors		1 HR	N/A	N/A N/A	N/A N/A	N/A	N/A N/A
	Roof Construction			•		-		-
•	including supporting beams	and joists	1 HR	1 HR	G3.02	RC-2602	G3.02	A6.01
pecial Uses (Ch.4 - List Sections): 407	Roof Ceiling Assembly		1 HR	1 HR	G3.02	RC-2602	G3.02	A6.01
pecial Provisions (Ch.5 - List Sections :	Columns Supporting Roof		1 HR	1 HR	G3.02	RC-2602	G1.02	G1.02
ixed Occupancy: \(\tau_{No} \) \(\text{X} \text{Yes} \) Separation: \(- \text{Hr} \) Exception: \(- \text{Y} \)	Shafts Enclosures — Exit		_	N/A	N/A	N/A	N/A	N/A
X Non-Separated Use (508.3)	Shafts Enclosures — Other		_	N/A	N/A	N/A	N/A	N/A
The required type of construction for the building shall be determined by applying the height and area	Corridor Separation		OHR/SP	OHR/SP	G3.01	U-305	G1.02	G1.02
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 1 2	Occupancy/Fire Barrier Sep	aration	1 HR	1 HR	G3.01	U-305	G1.02	G1.02
\square Separated Use (508.4) — See below for area calculations for each story, the area of the occupancy shall	Party/Fire Wall Separation		2HR	2HR	EXG	U-305	EXG	EXG
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.	Smoke Barrier Separation		1 HR	1 HR	EXG	U-305	EXG	EXG
Actual Area of Occupancy Actual Area of Occupancy	Smoke Partition		OHR/SP	OHR/SP	G3.01	U-305	G1.02	G1.02
$A = \frac{1}{Allowable Area of Occupancy} + B \frac{1}{Allowable Area of Occupancy} \le 1$	Tenant/Dwelling/Sleeping Sc	eparation	_	N/A	N/A	N/A	N/A	N/A
A B - H - H - H - H - H - H - H - H - H -	Incidental Use Separation		NR	_	_	_	-	_
	* Indicates section nu	ımber permi	ttina red	duction	i	,		

Indicates section number permitting reduction

** All code references are for NC Building Code, U.N.O. Indicates calculated equivalent thickness

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPERATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENING PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
SOUTH >30'-0"	UP,S	NO LIMIT	27%
NORTH >30'-0"	UP,S	NO LIMIT	16%
WEST >30'-0"	UP,S	NO LIMIT	21%
EAST >30'-0"	UP,S	NO LIMIT	21%

LIFE SAFETY SYSTEM REQUIREMENTS ☐ No X Yes Emergency Lighting: □ No X Yes

Exit Signs: □No Fire Alarm: □ No X Yes □ Partial Smoke Detection Systems: □ No X Yes NCFC 915.1 Carbon Monoxide Detection:

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: <u>G2.01</u> \boxtimes 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) N/A 🖾 Occupancy Use for each area as it relates to occupant load calculations (Table 1004.1.2) 🛮 Occupant loads for each area

 \boxtimes Exit access travel distances (1017)

 \boxtimes Common path of travel distances (1006.2.1 & 1006.3.2(1))

 \boxtimes Dead end lengths (1020.4) - NOT ALLOWED

🛮 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 5E/A6.01

 \boxtimes 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) NONE 🖾 Location of doors with electromagnetic egress locks (1010.1.9.9) EXG. TO REMAIN UNMODIFIED

□ Location of doors with hold—open devices

Location of emergency escape windows (1030) IN EACH SLEEPING ROOM

 \square The square footage of each fire area (202) N/A

 \boxtimes The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)

 \square Note any code exceptions or table notes that may have been utilized regarding the items above N/A

ACCESSIBLE DWELLING UNITS (SECTION 1107)

(SEE STRUCTURAL DRAWINGS)

		I				I				
TOTAL	ACCESSIBLE	ACCESSIBLE	TYPE A	TYPE	TYPE B	TYPE B	TOTAL			
UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	ACCESSIBLE			
	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	UNITS PROVIDED			
		_		_		_	_			
ACCESSIBLE PARKING (SEE CIVIL DRAWIN							DRAWINGS)			

SECTION 1106									
LOT OR PARKING	TOTAL # OF P	IOTAL #							
AREA	REQUIRED	PROVIDED	REGULAR WITH 5'	VAN SPAC	ES WITH	ACCESSIBLE			
			ACCESS AISLE	132" ACCESS	8' ACCESS	PROVIDED			
				AISLE	AISLE				
TOTAL									

STRUCTURAL DESIGN: **DESIGN LOADS:** Importance Factorswind (lw) ______ Snow (6) _____

Seismic (+) _____ Live Loads: Ground Snow Load: - psf. Wind Load: Basic Wind Speed — mph (ASCE-7)

Wind Base Shears (for MWFRS) $Wx = \frac{-K}{}$ Wy = $\frac{-K}{}$ SEISMIC DESIGN CATEGORY \Box A \Box B \Box C \Box C

Provide the following Seismic Design Parameters: Spectral Response Accelerations - / %g S1 - %g Site Classification (Table 1613.5.2) \Box A \Box B \Box C \Box D \Box E \Box F

Exposure Category——

Data Source: Field Test Presumptive Historical Data Basic structural system (check one)

 \sqcup Bearing Wall □Dual w/Special Moment Frame \square Building Frame Dual w/Intermediate R/C or Special Steel ☐ Inverted Pendulum ☐ Moment Frame

Seismic Base Shear: $Vx = \frac{-K}{}$ $Vy = \frac{-K}{}$ Analysis Procedure: Simplified Equivalent Lateral Force Dynamic Architectural, Mechanical, Components anchored €s □ No LATERAL DESIGN CONTROL: Earthquake \Box

SOIL BEARING CAPACITIES: Field Test (provide copy of test report) _____ psf N/A psf

Presumptive Bearing Capacity – Pile size, type, and capacity -SPECIAL INSPECTIONS REQUIRED: ☐ Yes ☐ No

PLUMBING FIXTURE REQUIREMENTS NO CHANGE IN OCCUPANCY OR FIXTURES PROVIDED IN RENOVATION AREA, AREA OF ADDITION IS ONLY CARE RECEIPEINTS WHICH MEETS NC DHSR REQ'S URINALS LAVATORIES SHOWERS/ DRINKING FOUNTAINS WATERCLOSETS

	MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX	TUBS	REGULAR	ACC
Floor 1 Existing	_	_	_	_	_	_			_	_
Floor 1 New	_	_	_	_	_		_	_	_	_
Floor 1 Required*	_	_	_			_	_	_	_	_
Floor 2 Existing	_			_	_	_	_	_	_	_
Floor 2 New		_	-	_	_	_	_	_	_	_
Floor 2 Required*	_	_	_	_	_	_	_	_	_	_

SPECIAL APPROVALS - N/A

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below) Division of Health Service Regulation at NC Department of Health and Human Services, Johnston County Health Dept.

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 w/ code \boxtimes NO \square YES (Remainder of section is not applicable)

Exempt Building NO YES (Provide Code Reference)____

Climate Zone: \boxtimes 3A \square 4A \square 5A Method of Compliance:

☐ Prescriptive (Energy Code) ☐ Prescriptive (ASHRAE 90.1) ☐ Performance (Energy Code) ☐ Performance (ASHRAE 90.1)

THERMAL ENVELOPE *NO MODIFICATION TO THERMAL ENVELOPE [NCEBC 2018 811.1]

Roof/ceiling Assembly (each assembly)

Description of Assembly: WOOD FRAME W/ SHINGLES U-Value of total assembly: <u>U-0.027</u> R—Value of insulation:

Skylights in each assembly: ___0 U—Value of skylight: <u>U—0.0 MIN.</u> total square footage of skylights in each assembly: 0 SF

Exterior Walls (each assembly) Description of Assembly (1): WOOD FRAME W/ SIDING

U-Value of total assembly: ___U-0.064 R-Value of insulation: R-20

Description of Assembly (2): WOOD FRAME W/ MASONRY VENEER U-Value of total assembly: ___U-0.064 R-20 R—Value of insulation:

Openings (windows or doors with glazing) U-Value of assembly: <u>U-0.45</u> Solar heat gain coefficient: 0.25

projection factor: 0.0 <u>U-0.70</u> 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: N/A U—Value of total assembly: ____

R—Value of insulation: Floors slab on grade Description of Assembly: CONC. S.O.G.

R-Value of insulation: Horizontal/vertical requirement: slab heated:

(SEE MECHANICAL DRAWINGS) MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Method of Compliance: Prescriptive (Energy Code) Thermal Zone $_{-}$

winter dry bulb: ___ summer dry bulb: -Interior Design Conditions winter dry bulb: ___ summer dry bulb: ___

relative humidity: ___ Building heating load: -

Building cooling load: -Mechanical Spacing Conditioning System

description of unit heating efficiency: _ cooling Afficiency: heat output of unit: ___

ළ/ze category of unit: ___ Boiler Size category. If oversized, state reason: — Chiller Size category. If oversized, state reason: — List equipment efficiencies: -

ELECTRICAL SUMMARY (SEE ELECTRICAL DRAWINGS) ELECTRICAL SYSTEM AND EQUIPMENT

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

Lighting schedule (each fixture type) lamp type required in fixture ___ number of lamps in fixture ____

ballast type used in fixture ___ number of ballasts in fixture ____ total wattage per fixture ____ total interior wattage specified s allowed (whole building or space by space)___

total exterior wattage specified vs allowed ___

Additional Prescriptive Compliance

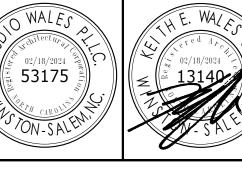
 \square 506.2.1 Møre Effecient Mechanical Equipment 506.2.2 Reduced Lighting Power Density __506.2.3 Energy Recovery Ventilation Systems 506.2.4 Higher Efficiency Service Water Heating

☐ 506.2.5 On—Site Supply of Renewable Energy

☐ 506.2.6 Automatic Daylighting Control Systems

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CONSTRUCTION DOCUMENTS FOR CONSTRUCTION

Revisions Description date: 02/18/2024

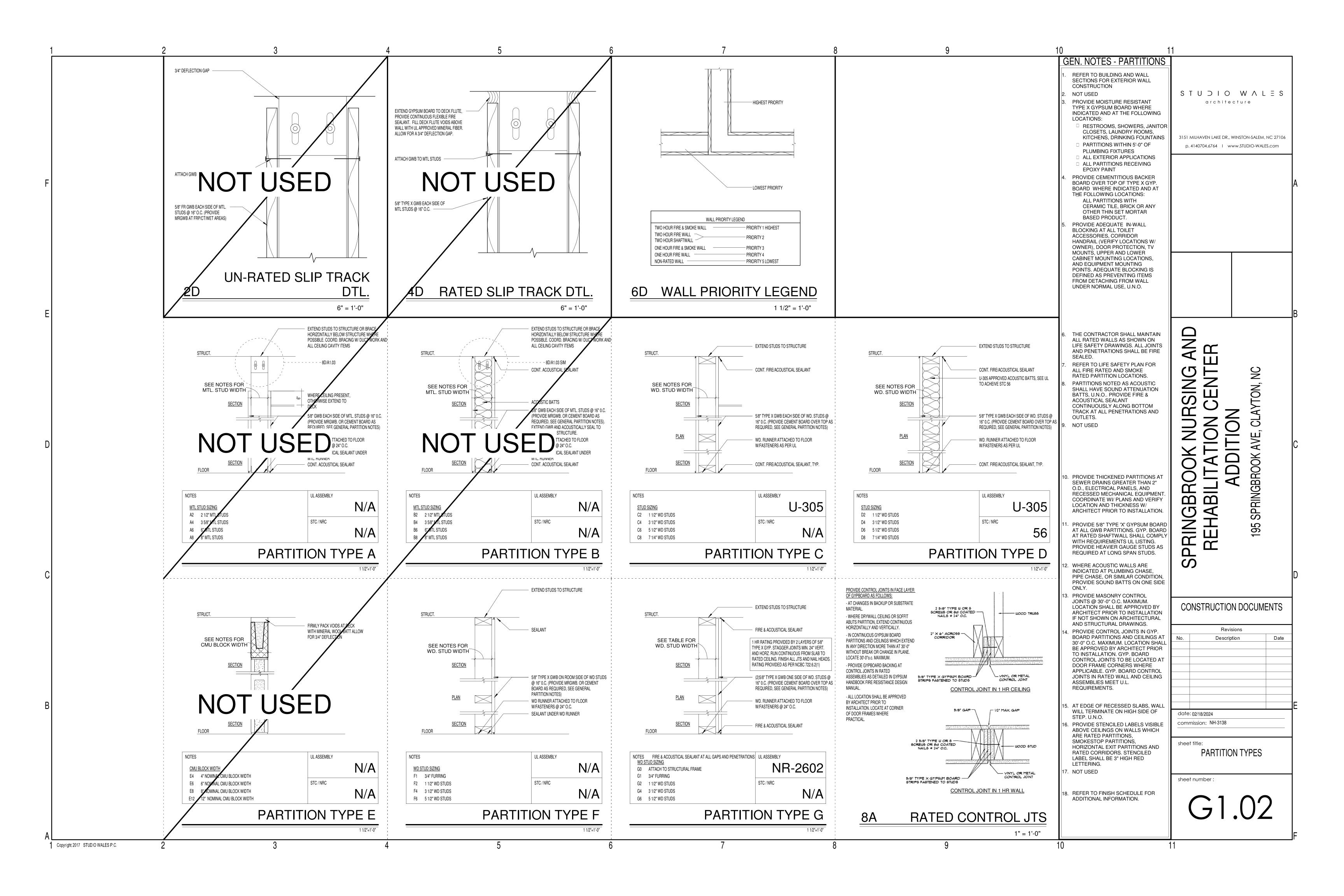
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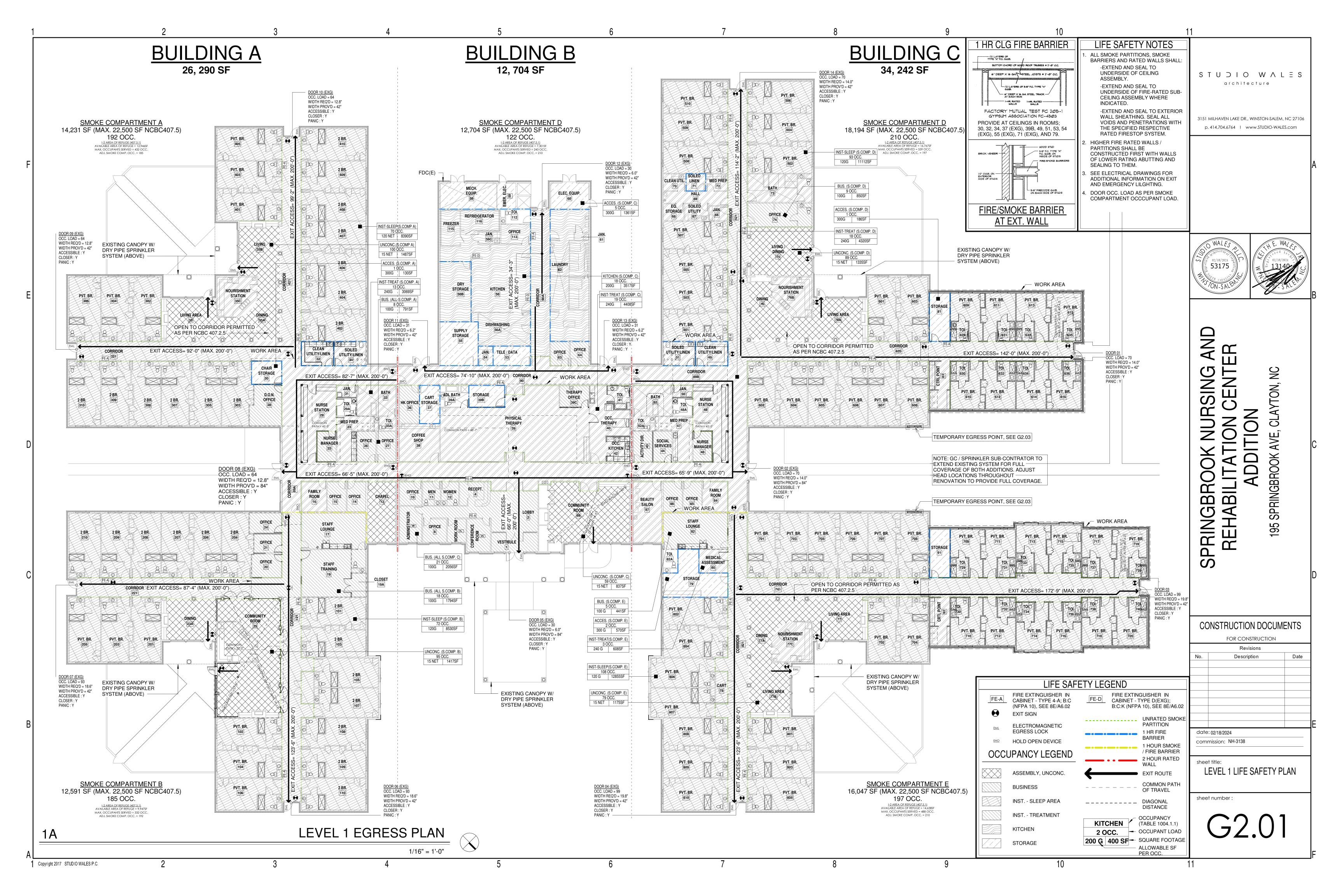
APPENDIX B

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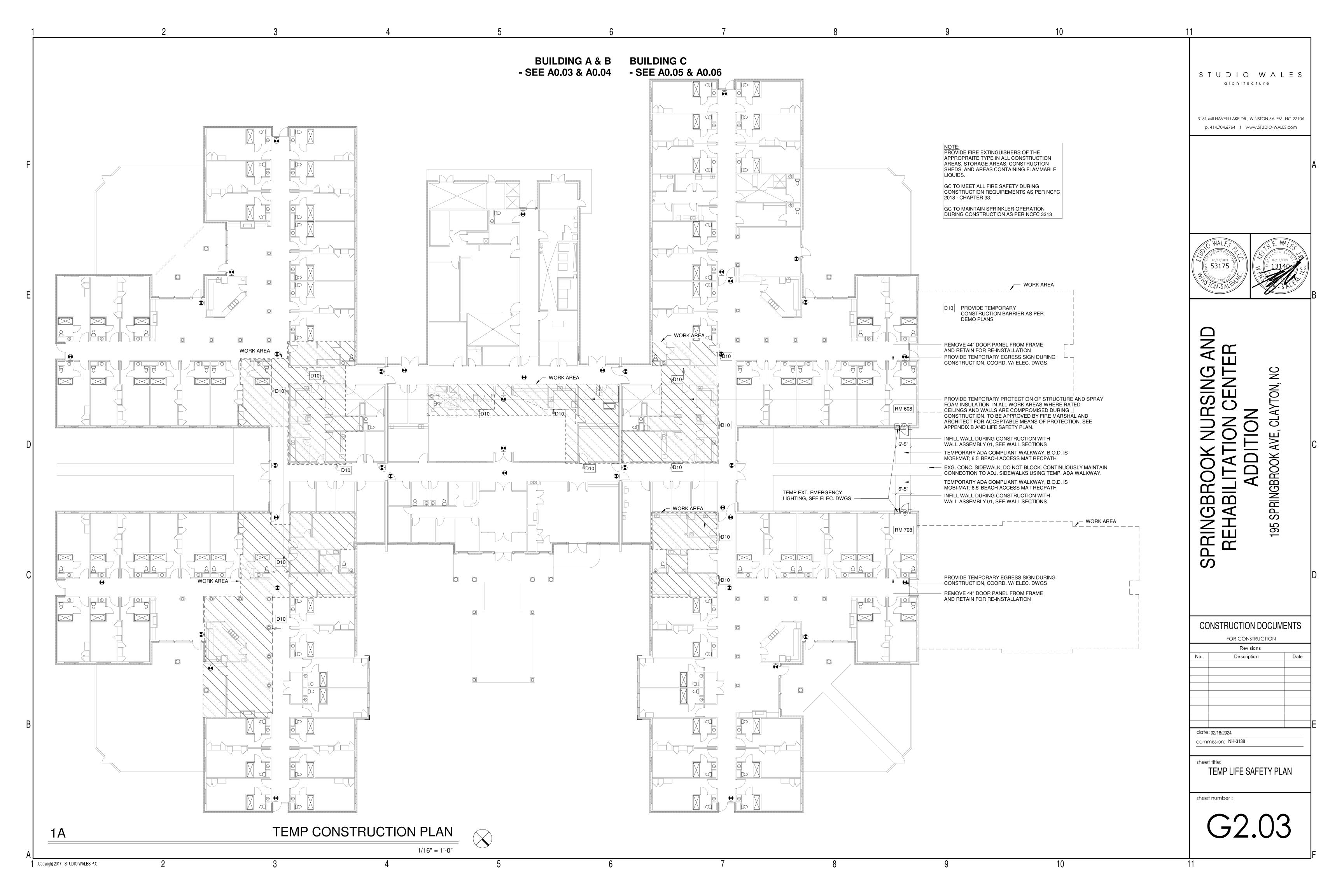
sheet title:

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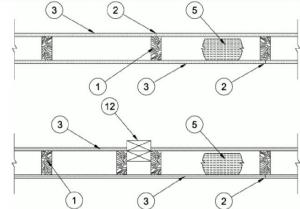








nploving the UL or cUL Certification (such as Canada), respectively. Indicates such products shall bear the UL or cUL Certification Mark fo



Wood Studs — Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped

2. Joints and Nail-Heads — Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the

3. Gypsum Board* — 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long. 0.0915 in. shank diam and 15/64 in. am heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of gypsum panels, refer to Items 6 through 6F, Steel Framing Members*. When Items 6, 6B, 6C, 6D, 6E, or 6F. Steel Framing Members*, are used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 6A, Steel Framing Members*, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3 When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between

AMERICAN GYPSUM CO — Types AGX-1(finish rating 23 min.), M-Glass (finish rating 23 min.), Type AGX-11 (finish rating 26 min.), Type AGX-12 (finish rating 22 min.), Type AGX-12 (finish rating 22 min.), Type AGX-12 (finish rating 22 min.), Type AGX-12 (finish rating 23 mi

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1 (finish rating 24 min)

CABOT MANUFACTURING ULC — Type X (finish rating 22 min), 5/8 Type X. Moisture Resistant Type X, Gypsum Sheathing Type X, Mold & Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing

CERTAINTEED GYPSUM INC — Type C. Type X-1 (finish rating 26 min); Type EGRG or GlasRoc (finish rating 23 min), GlasRoc-2. Type Habito (finish rating 26 min), Type LWTX (finish rating 18 min), Type LGFC6A (finish rating 34 min), Type LGFC9A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX (finish rating 21 min), Type CLLX (finish rating 24 min)

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (f GEORGIA-PACIFIC GYPSUM L L C — Type 5 (finish rating 26 min), Type 6 (finish rating 23 min), Type 9 (finish rating 20 min), Type 0, Type 10, Type 1

(finish rating 22 min), Sheathing Type- DGLW (finish rating 22 min), Soffit-Type DGLW (finish rating 22 min), Type LWZX (finish rating 22 min), Type LWZX (finish rating 22 min), Veneer Plaster Base - Type LWZX (finish rating 22 min), Water Rated - Type LWZX (finish rating 22 min), Sheathing - Type LWZX (finish rating 22 min), Sheathing - Type LWZX (finish rating 22 min), Type DGLZW (finish rating 22 min), Sheathing - Type LWZX (finish rating 22 min), Sheathing - Type LWZX (finish rating 22 min), Type DGLZW (finish rating 22 min), Type LWZX (fin

NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW-G (finish rating 20 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min

NATIONAL GYPSUM CO — Riyadh, Saudi Arabia — Type FR, or WR.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-2 (finish rating 20 min), PG-3 (finish rating 20 min), Types PG-3W, PG-5W (finish rating 20 min), Type PG-4 (finish rating 20 min), Type PG-6 (finish rating 23 min), Types PG-3WS, PG-5WS, PGS-WRS (finish rating 20 min), Types PG-5, PG-9 (finish rating 26 min), PG-11 PG-13 (Nails increased to 2 in.), Type PG-C or PGI (finish rating 26 min)

PANEL REY S A — Type ARX, GREX, GRIX, PRX, PRC, PRC2; Types RHX, Guard Rey, MDX, ETX (finish rating 22 min), PRX2 (finish rating 21 min)

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1 (finish rating 26 min)

THAI GYPSUM PRODUCTS PCL — Type C, Type X (finish rating 26 min)

NITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-X2 (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type IP-X1 (finish rating 24 min) 24 min), Type SHX (finish rating 24 min), Type SGX (finish rating 24 min), Type SGX (finish rating 24 min), Type ULIX (finish rating 24 min), Type WRX (finish rating 24 min), Type WRX (finish rating 24 min), Type ULIX (finish rating 24 min), Ty

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRX (finish rating 24 min), Type WRX (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type IP-AR (finish rating 24 min), Type

3A. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel

AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LighttRoc (finish rating 25 min.)

eel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.

CERTAINTEED GYPSUM INC — Type C, Type X-1 (finish rating 26 min), Type EGRG or GlasRoc, LWTX.

CGC INC — Type AR (finish rating 24 min), Type (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IP-XI (fin

NATIONAL GYPSUM CO — Type FSW (finish rating 24 min)

VITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type SGX (finish rating 24 min), Type SGX (finish rating 24 min), Type UP-X1 (finish rating 24 min), Type UP-X1 (finish rating 24 min), Type UP-X1 (finish rating 24 min), Type UP-X2 (finish rating 24 min) min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type FRX-G (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min)

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX (finish rating 24 min).

USG MEXICO S A DE C V— Type AR (finish rating 24 min), Type IP-X2 (finish rating 24

Type SCX, Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min)

3B. Gypsum Board* — (As an alternate to Item 3) — Nom 3/4 in. thick, installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-3/8 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A.

UNITED STATES GYPSUM CO — Types AR, IP-AR

USG MEXICO S A DE C V — Types AR. IP-AR

3C. Gypsum Board* — (As an alternate to Items 3, 3A and 3B) — 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally to one side of the assembly. Installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-1/4 in. long ad gypsum panel steel screws as described in Item 3A. Joint covering (Item 2) not required.

 $\mathbf{UNITED} \ \mathbf{STATES} \ \mathbf{GYPSUM} \ \mathbf{CO} - \mathbf{Type} \ \mathbf{SHX}$

USG MEXICO S A DE C V — Type SHX

3D. Gynsum Roard* — (As an alternate to Items 3.3A. 3B. or 3C.— Not Shown) — For Direct Application to Study Only. Nom 5/8 in thick lead backed gynsum papels with heyeled, square or tapered edges, applied vertically. Vertical joints centered over joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to 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 discs or tabs may be used in lieu of or in addition to the lead batten strips or optional at other locations. Max 3/4 in. diam by max 0.125 in, thick lead disc sion 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 underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% RAY-BAR ENGINEERING CORP — Type RB-LBG (finish rating 24 min)

3E. Gypsum Board* — (As an alternate to Items 3, 3A, 3B, 3C, and 3D) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel ws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., gypsum board GEORGIA-PACIFIC GYPSUM L L C — Type DGG (finish rating 20 min), GreenGlass Type X (finish rating 23 min)

3F. Gypsum Board* — (As an alternate to Items 3, 3A, 3B, 3C, 3D, and 3E) — 5/8 in. glass-mat faced with square edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC around the perimeter and in the field with 6d cement coated

UNITED STATES GYPSUM CO — Type USGX (finish rating 22 min.)

USG BORAL DRYWALL SFZ LLC — , Type USGX (finish rating 22 min.)

USG MEXICO S A DE C V — Type USGX (finish rating 22 min.)

3G. **Gypsum Board***— (As an alternate to Items 3 through 3F) — 5/8 in. thick paper surfaced applied vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

NATIONAL GYPSUM CO — Type SBWB

31. Gypsum Board* — (As an alternate to Items 3 through 3H, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES (finish rating 20 min)

3H. Gypsum Board* — (As an alternate to Items 3) — Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long. 0.0915 in. shank diam and 15/64 in.

3). Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick paper surfaced applied vertically or horizontally. Gypsum panels secured with 1-1/4 in. Type W coarse thread gypsum panel steel screws spaced a maximum of 12 in. OC.

3K. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW-G (finish rating 20 min rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min).

3L. Gypsum Board* — (As an alternate to Item 3) — For Direct Application to Studs 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 of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick. compression fitted or adhered over the screw heads. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "It MAYCO INDUSTRIES INC — "X-Ray Shielded Gypsum"

3M. Gypsum Board* — (As an alternate to Items 3) — For Direct Application to Studs Only — For use as the base layer or as the face layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical injuries centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screen was paced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in. 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 am 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". Fasteners for face layer gypsum panels (Items 4, 4A or 4B) 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4. RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

3N. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick, 4 ft. wide, applied horizontally or vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 3 or 3A. CERTAINTEED GYPSUM INC — Easi-Lite Type X (finish rating 24 min), Easi-Lite Type X-2 (finish rating 24 min)

30. Wall and Partition Facings and Accessories* — (As an alternate to Item 3, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527 (finish rating 24 min).

3P. Gypsum Board* — (As an alternate to Item 3, Not Shown) — Two layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by wood studs. Horizontal joints on the same side between face and base layers need not be staggered. Base layer gypsum panels fastened to studs with 1-1/4 in. long drywall nails spaced 8 in. OC. Face layer gypsum panels fastened to studs with NATIONAL GYPSUM CO — Type FSW (finish rating 25 min)

3Q. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel num 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally. CERTAINTEED GYPSUM INC — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-/A, Type LGFC-WD, Type LGLLX

3R. **Gypsum Board*** — (As an alternate to Item 3. For use with Item 5H) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 3 above. Applied either horizontally or vertically, and screwed to panels with 1-5/8 in. long Type W coarse thread steel screws at 8 in. OC at perimeter and in the field with the last two screws 4 and 3/4 in. from the edges of the board when applied as the base layer. When used in widths other than 48 in., gypsum panels are to be installed horizontally. 3S. Gypsum Board* — 3/4 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels secured as described in Item 3 with nail length increased to 2 in. BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-13

3T. Wall and Partition Facings and Accessories* — (As an alternate to 5/8 in. thick board as outlined in Item 3) — Nominal 1-3/8 in. thick. 4 ft wide panels, applied vertically or horizontally, Fastened with #6 x 2 in. long drywall screws spaced 8 in. OC PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 545

3U. Gypsum Board* — (As an alternate to Item 3 - For use with Foamed Plastic products, Item 5J) — 5/8 in. thick, 4 ft. wide, applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1

CABOT MANUFACTURING ULC — Type X

CERTAINTEED GYPSUM INC — Type X CGC INC — Type SCX

PANEL REY S A — Type ARX, PRX SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

THAI GYPSUM PRODUCTS PCL — Type X

UNITED STATES GYPSUM CO — Types SCX and SGX

USG BORAL DRYWALL SFZ LLC — Types SCX and SGX

USG MEXICO S A DE C V — Type SCX

3V. Gypsum Board* — (As an alternate to Item 3. For use with Item 5K) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 3 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of els secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. 3W. Gypsum Board* — (As an alternate to Item 3. For use with Item 5L) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 3 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 W screws spaced 8 in. OC at perimeter and in the field.

4. Steel Corner Fasteners — (Optional) — For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. Batts and Blankets* — (Optional — Required when Item 6A is used (RC-1)) — Glass fiber or mineral wool insulation. Placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be friction-CERTAINTEED CORP JOHNS MANVILLE

KNAUF INSULATION LLC MANSON INSULATION INC

 $\textbf{ROCKWOOL} - \text{Types Acoustical Fire Batts and Type AFB, min. density 1.69 pcf / 27.0 kg/m}^3$

ROCKWOOL MALAYSIA SDN BHD — Type Acoustical Fire Batts

ROCK WOOL MANUFACTURING CO — Delta Board THERMAFIBER/OWENS CORNING — Type SAFB, SAFB FF

5A. Fiber. Sprayed* — (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application l dry density of 2.7 lb/ft³, Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application inst

Applegate Greenfiber Acquisition LLC — Insulmax and SANCTUARY for use with wet or dry application.

AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

58. Fiber, Sprayed* — (Not Shown - Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions GEORGIA-PACIFIC GYPSUM L L C — Types 5. DAPC, TG-C o completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft. NU-WOOL CO INC — Cellulose Insulation

5C. Batts and Blankets* — Required for use with resilient channels, Item 7, 3 in. thick mineral wool batts, friction-fitted to fill interior of wall.

5D. Glass Fiber Insulation — (As an alternate to Item 5C) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See Batts and Blankets (BKNV or

5E. Batts and Blankets* — (Required for use with Wall and Partition Facings and Accessories, Item 3D) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, frictionitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers 5F. Fiber, Sprayed* — (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D) — As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied granulated mineral fiber material. The fiber is applied with adhesive, at a minimum etely fill the enclosed cavity in accordance with the application instructions supplied with the product. See Fiber, Sprayed (CCAZ).

5G, Fiber, Sprayed* — (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D). — As an alternate to Batts and Blankets (Item 5) and Item 5A - Brown Colored Spray applied cellulose fiber. The fiber is applied with water to completely fill the INTERNATIONAL CELLULOSE CORP — Celbar-RL

5H. Foamed Plastic* — (Optional -For use with Item 3R) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity. Holcim Solutions and Products US, LLC — Nexseal™ 2.0 or Nexseal™ 2.0 LE Spray Foam and Sucraseal Spray Foam.

51. Fiber, Sprayed* — (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application nstructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft3. Applegate Greenfiber Acquisition LLC— Applegate Advanced Stabilized Cellulose Insulation

5J. Foamed Plastic* — (Optional, Not Shown - For use with Item 3U) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity,
HOLCIM SOLUTIONS AND PRODUCTS US, LLC — Types GacoEZSpray F4500, GacoProFill FR6500R, Gaco 052N, GacoOnePass F1850, GacoOnePass Low GWP F1880, and Gaco WallFoam 183M

CARLISLE SPRAY FOAM INSULATION — Types SealTite ONE, 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

5L. Foamed Plastic* - (Optional, Not Shown – For use with Item 3W) – Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity. BASF CORP - Types Enertite® NM, Enertite® G, FE178®, Spraytite® 178, Spraytite® 181206, Walltite® US, Walltite® US-N, Walltite® HP+, Spraytite® Comfort XL, Walltite® MAX, Walltite® MAX, Walltite® LWP, Walltite® Plus and

6. Steel Framing Members* — (Optional, Not Shown) — 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 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of he overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) lips secured to studs with No. 8 x 1-1/2 in. coarse drywall 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)

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 are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. 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 3. b. Steel Framing Members* — Used to attach furring channels (Item 6Aa) to one side of studs 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

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep. spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with louble strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap,

6C. Steel Framing Members* — (Optional, Not Shown) — 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

b. Steel Framing Members* — Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

b. Steel Framing Members* — Used to attach furring channels (Item 6Ca) to studs. Clips spaced 48 in. OC., and secured to studs with No. 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6D. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below: a. Furring 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 a double strand of No. 18 AWG twisted steel wire. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6Da) 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.

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 3. b. Steel Framing Members* — Used to attach resilient channels (Item 6Ea) 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 KEENE BUILDING PRODUCTS CO INC - Type RC+ Assurance Clip

6F. Steel Framing Members* — (Optional, Not Shown) — 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 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap,

b. Steel Framing Members* — Used to attach furring channels (Item 6Fa) to studs. Clips spaced 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

6G. Steel Framing Members* — (Optional, Not Shown) — Used as an alternate method to attach resilient channels to wall studs. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 16 in. edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions. PAC INTERNATIONAL L L C — Type RC-1 Boost

7. Furring Channel — Optional — Not Shown — For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double

8. Caulking and Sealants — (Not Shown, Optional) — A bead of acoustical sealant applied around the partition perimeter for sound control.

A. Item 2, above — Nailheads Shall be covered with joint compound.

B. Item 2, above — Joints As described, shall be covered with fiber tape and joint compound.

9. STC Rating — The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

C. Item 5, above — Batts and Blankets* The cavities formed by the studs shall be friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.

D. Item 6, above — Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall assembly.

E. Item 8, above — Caulking and Sealants (Not Shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound control. F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives for obtaining STC rating.

10. Wall and Partition Facings and Accessories* — (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer ations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gy ntended as a substitute for the required layer(s) of UL Classified Gypsum Board. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

11. Cementitious Backer Units* — (Optional Item Not Shown — For Use On Face Of 1 Hr Systems With All Standard Items Required) - 7/16 in., 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide. Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members, as When 4 ft. wide boards are used, horizontal joints need not be backed by framing.

NATIONAL GYPSUM CO — Type DuraBacker, PermaBase, DuraBacker Plus, or PermaBase Plus

12. Non-Bearing Wall Partition Intersection — (Optional) —Two nominal 2 by 4 in. studs or nominal 2 by 6 in. studs nailed together with two 3 in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. 3 in. long 10d nails spaced a max. 16 in. OC. vertically, Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

13. Mesh Netting — (Not Shown) — Any thin, woven or non-woven fibrous netting material attached with staples to the outer face of one row of studs to facilitate the installation of the sprayed fiber from the opposite row. 4. Mineral and Fiber Board* — (Optional, Not Shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with 2 in. long Type W steel screws, spaced 12 in. OC. The required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended s a substitute for the required layer(s) of UL Classified Gypsum Board.

14A. Mineral and Fiber Board* — (Optional, Not Shown) — For use with Items 14B-14E) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing th minimum 1-3/8 in. long ring shanked nails or 1-1/4 in. long Type W steel screws, spaced 12 in. OC along board edges and 24 in. OC in field of board along intermediate framing. Not evaluated or intended as a substitute for the required layer(s) of HOMASOTE CO — Homasote Type 440-32

148. Glass Fiber Insulation — (For use with Item 14A) — 3-1/2 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, placed to fill the interior of the wall. See Batts and Blankets (BKNV or BZJZ)

14C. Batts and Blankets* — (As an alternate to Item 14B, For use with Item 14A), 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 3-1/2 in. face of the studs with staples placed 24 in. OC.

14D. Adhesive — (For use with Item 14A) — Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 14A).

14E. Gypsum Board* — (For use with Item 14A) — 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board (Item 14A) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type G Screws paced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fiber Board (Item 14A). Secured to outermost studs and bearing plates with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered

CGC INC — Types C, IP-X2, IPC-AR

CERTAINTEED GYPSUM INC - Type LGFC-C/A

NATIONAL GYPSUM CO — Types FSK-C, FSW-C PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C

PANEL REY S A — Type PRC

THAI GYPSUM PRODUCTS PCL — Type C

USG BORAL DRYWALL SFZ LLC - Type C

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

14F. Mineral and Fiber Board — (Optional, Not Shown) — For optional use as an additional layer on one side of wall - Nom 1/2 in, thick, 4 ft wide, square edge fiber boards applied vertically to studs on one side of the wall in between the wood studs and the UL Classified Gypsum Board (Item 3). Fiber boards installed with 1-1/4 in. long. Type W, bugle head, coarse thread gypsum board screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 3) installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

14G. Building Units - (Optional Item Not Shown - For use over Gypsum Board, Item 3) 1 in., 2 in. or 3 in. thick, 4 ft. wide - Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with wafer head screws of adequate length to penetrate framing by a minimum of of 3/4 in., spaced a max 8 in. o.c. NATIONAL GYPSUM CO - Type PBCI

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

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CONSTRUCTION DOCUMENTS

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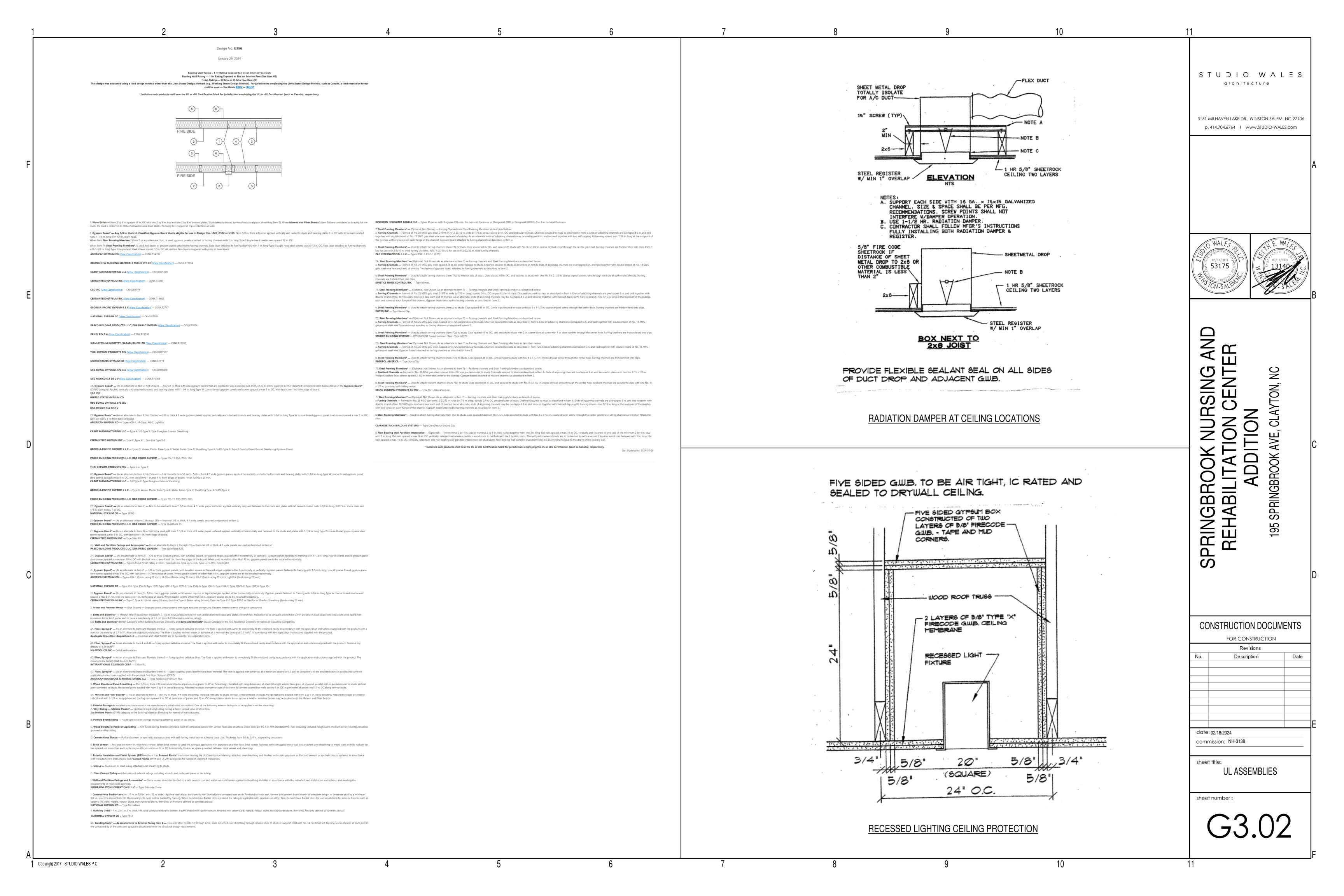
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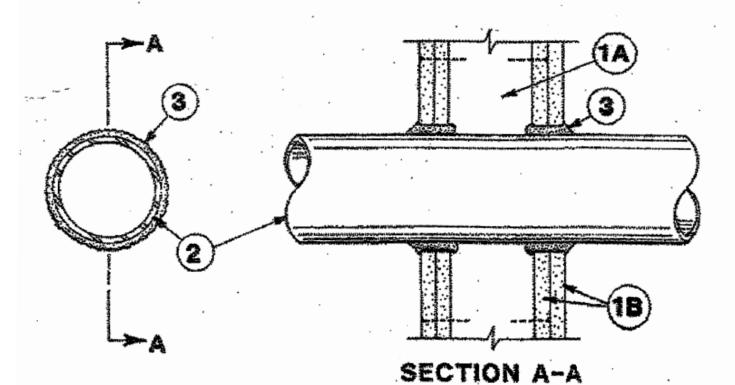


F Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)

7 Ratings — 9, 1, 2, 3, and 4 Hr (See Item 3)

L Rating At Ambient — less than 1 CFM/sq ft

L Rating At 400 F - less than 1 CFM/sq ft



 Wall Assembly — The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Well framing may consist of either wood studs (mex 2 h fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm).

2. Through-Penetrant — One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min of 0 in / (0 mm). (point contact) to max 2 in. (51 mm) Pipe, conduit or tubing to be rigidly supported on both sides of well assembly. The following types and sizes of metallic pipes, conduits or tubing may be

A. Steel Pipe - Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier)

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

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

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

E. Copper Pipe - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier)

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

1. Nom 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic

covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

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

GASTITE, DIV OF TITEFLEX

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

WARD MFG L L C

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

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

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

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

*Bearing the UL Classification Mark

System No. W-L-5001

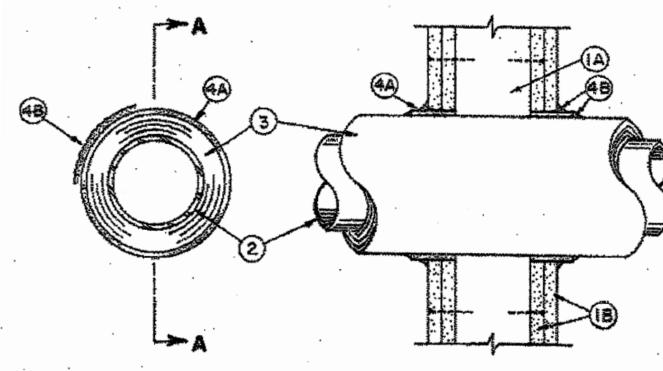
May 19, 2005

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 3/4, 1 and 1-1/2 Hr (See Item 3)

L Rating At Ambient — 2 CFM/sq ft

L Rating At 400 F — less than 1 CFM/sq ft



SECTION A-A

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

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of mom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) iumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Norn 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Design in the UL Fire Resistance Directory. Max diam of opening is 14-1/2 (368mm) in for wood stud walls and 18 in. (457 mm) for steel stud walls.

The hourly F Rating of the firestop system is 1 hr when installed in a 1 hr fire rated wall and 2 hr when installed in a 2 hr fire rated wall.

2. Through Penetrants — One metallic pipe or tubing to be centered within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:

A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Copper Tubing — Nom 6 In. (152 mm) diam (or smaller) Type L (or heavier)

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

3. Pipe Covering* — Nom 1 or 2 in. (25 or 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lep tape. Transverse joints sealed with metal fasteners or with butt strip tape supplied with the product. When nom 1 in. (25 mm) thick pipe covering is used, the annular space between the pipe covering and the circular cutout in the gypsum wallboard layers on each side of the

wall shall be min 1/4 in. (6 mm) to max 3/8 in. (10 mm) When nom 2 in. (51 mm) thick pipe covering is used, the annular space between the pipe covering and the circular cutout in the gypsum board layers on each side of the wall shall be min 1/2 in. (13 mm) to max 3/4 in. (19 mm)

See Pipe and Equipment Covering Materials (BRGU) category in Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

The hourly T Rating of the firestop system is 3/4 hr when nom 1 in. (25 mm) thick pipe covering is used. The hourly T Rating of the firestop system is 1 hr and 1-1/2 in when nom 2 in. (52 mm) thick pipe covering is used with 1 hr and 2 hr fire rated walls, respectively.

4. Fixestop System - Installed symmetrically on both sides of wall assembly. The details of the firestop system shall be as follows:

A. Fill, Void or Cavity Materials* — Wrap Strip — Nom 1/4 in. (6 mm) thick inturnescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. (51 mm) wide strips. Nom 2 in. (51 mm) wide strip tightly wrapped around pipe covering (foil side out) with seam butted. Wrap strip layer securely bound with steel wire or aluminum foil tape and slid into amrufer space approx 1-1/4 in. (32 mm) such that approx 3/4 in. (19 mm) of the wrap strip width protrudes from the wall surface. One layer of wrap strip is required when nom 1 in. (25 mm) thick pipe covering is used. Two layers of wrap strip are required when nom 2 in. (51 mm) thick pipe covering is used.

3M COMPANY - FS-195+

B. Fill, Void or Cavity Materials* — Caulk or Scalant — Min 1/4 in. (6 mm) diam continuous bead applied to the wrap strip/wall interface and to the exposed edge of the wrap strip layer approx 3/4 in. (19 mm) from the wall surface.

3M COMPANY — CP 25WB+, IC 15WB+, FireDam 150+ caulk or FB-3000 WT seglant

*Bearing the UL Classification Mark

System No. W-L-5009

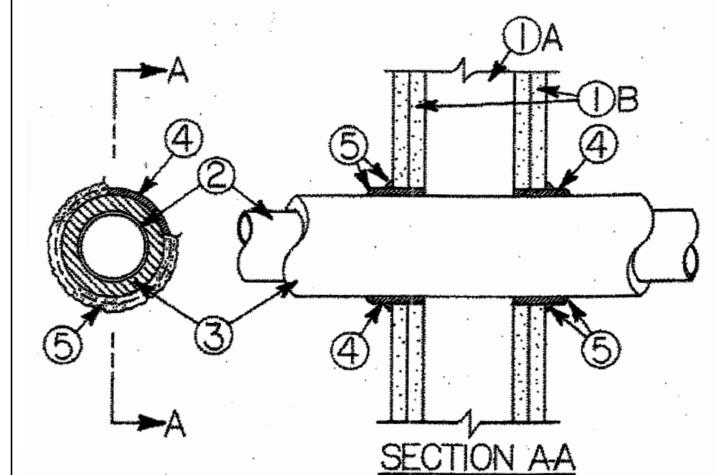
May 19, 2005

F Rating -- 2 Hr

T Rating — 1/2 Hr

L Rating At Ambient — Less than 1 CFM/sq ft

L Rating At 400 F - Less than 1 CFM/sq ft



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

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 mm by 102 mm) lumber spaced 16 in. (406 mm) OC, Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in.

5. **Gypsum Board*** — Two layers of nom 5/8 in. (16 mm) thick gypsum board, as specified in the individual Wall and Partition Design. Diam of opening cut in gypsum board layers on each side of wall assembly (concentric with pipe, Item 2) to be 1/2 to 3/4 in. (13 to 19 mm) larger than outside diam of pipe insulation (Item 3) such that, when installed, a 1/4 to 3/8 in. (6 to 10 mm) annular space will be present between the pipe insulation and the gypsum board around the entire circumference of the opening. Max diam of opening is 4 in. (102 mm).

2. Copper Pipe — Nom 2 in. (51 mm) diam (or smaller) Type L (or heavier) copper pipe. A max of one pipe is permitted in the firestop system. Pipe to be installed near center of stud cavity width and is to be rigidly supported on both sides of wall assembly.

3. Pipe Insulation — Plastics — Nom 5/8 in. (16 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible fearm supplied in the form of tubes with skin. Pipe insulation to be sized to outside diam of copper pipe.

See **Plastics (QMFZ2)** category in the Recognized Component Directory for names of manufacturers. Any Recognized Component pipe insulation material meeting the above specifications and having a UL94 Flammability Classification of 94-5VA may be used.

4. Fill, Void or Cavity Materials* — Wrap Strip — Nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foll, supplied in 2 in. (51 mm) wide strips. Nom 2 in (51 mm) wide strip tightly wrapped around pipe insulation (foil side out) with seam butted. Wrap strip layer securely bound

with steel wire or aluminum foil tape and slid into annular space approx 1-1/4 in. (32 mm) such that approx 3/4 in. (19 mm) of the wrap strip width protrudes from the wall surface. Wrap strip installed symmetrically on both sides of wall.

3M COMPANY - FS-195+

5. Fill, Void or Cavity Materials* — Caulk or Scalant — Min 1/4 in. (6 mm) diam continuous bead applied to leading edge of wrap strip layer (Item 4) prior to insertion of wrap strip layer into annular space. After insertion of wrap strip layer in annular space, a nom 1/4 in. (6 mm) diam continuous bead is to be applied to the wrap strip/wall interface and to the exposed edge of the wrap strip layer approx 3/4 in. (19 mm) from the wall surface.

SM COMPANY - CP 25WB+, IC 15WB+, FireDam 150+ caulk or FB-3000 WT sealant

#Bearing the UL Recognized Component Marking.

*Bearing the UL Classification Mark

System No. W-L-2005

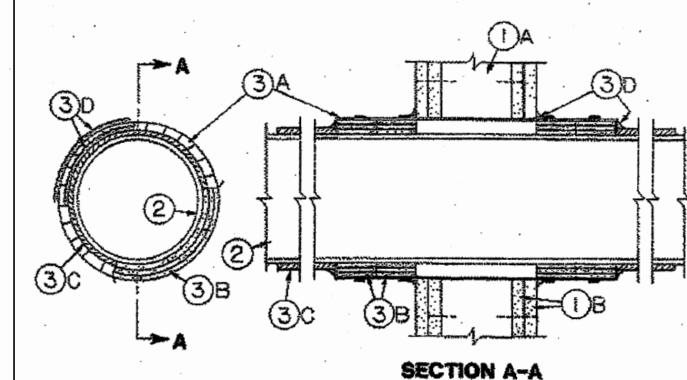
F Ratings — 1 and 2 Hr

April 11, 2006

T Ratings -- 0, 3/4, 1, 1-1/2 and 2 Hr

L Rating At Ambient - 7 CFM/sq ft

L Rating At 400 F — less than 1 CFM/aq ft



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

A. Stude — Wall framing may consist of either wood stude or steel channel stude. Wood stude to consist of nom 2 by 4 in. 51 by 102 mm lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. 51 by 102 mm lumber end plates and cross braces. Steel stude to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 13-3/4 in.

2. Nonmetallic Pipe — Nom 5, 8 or 10 in. (152, 203 or 254 mm) diam Schedule 40 polyvinyl chloride (PVC) pipe for use in closed (process or supply) or vented (drain, waste of vent) piping systems. One pipe to be centered in the firestop system. Pipe to be installed near center of stud cavity width and to be rigidly supported on both sides of well.

3. Firestop System — Installed symmetrically on both sides of wall assembly. The hourly F and T Ratings for the firestop system are dependent upon the size of nonmetallic pipe and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Nom Pipe Diam Xn.	Annular Space In.	Wall Fire Rating Hr	F Rating Hr	T Rating Hr
6 (152)	3/4 (19)	1	1	1
6 (152)	3/4 (19)	2	2 .	2
8 (203)	1 (25)	1	1	3/4
8 (203)	1 (25)	2	2	1-1/2
10 (254)	1-1/2 (38)	1	1	3/4
10 (254)	1-1/2 (38)	2	1	3/4

The details of the firestop system shall be as follows.

A. Steel Sleave — Cylindrical sleave fabricated from min 0.016 in. (0.41 mm) thick (28 gauge) galv sheet steel and having a min 1 in. (25 mm) lap along the longitudinal seam. Length of steel sleave shall be equal to thickness of wall plus 9-1/2 in. (241 mm), 10 in. (254 mm) or 11 in. (279 mm) for the 6, 8 and 10 in. (152,203 and 254 mm) diam pipe sizes, respectively. Inside diam of steel sleave and diam of through opening in the gypsum wallboard layers to be equal to outside diam of wrap strip (Item B) layers on pipe. Cylindrical sleave inserted in annular space around nonmetallic pipe and centered in wall. After installation of wrap strip (Item B) layers, min 1/2 in. (13 mm) wide by min 0.028 in. (0.71 mm) thick stainless steel band clamp installed around steel collar on both sides of wall assembly with one band clamp located near the wall surface and another located approx 1 in. (25 mm) from the outer edge of the wrap strip layers. Edges of steel sleave to be slit approx 1 in. (25 mm) OC around circumference of sleave on both sides of wall, with length of slits approximately equal to thickness of mat wrap layers, to form retainer tabs. Retainer tabs bent 90 deg toward pipe to lock wrap strip layer(s) in position.

B. Fill, Void or Cavity Materials* — Wrap Strip — Nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. (51 mm) wide by 24 in. (610 mm) long strips. Two stacks of wrap strip (nom 4 in. or 102 mm high stack) tightly-wrapped around nonmetallic pipe on each side of wall and slid into steel sleeve (Item A) such that inner edges are flush with or recessed max 1/4 in. (6 mm) into surface of wall. For nom 6 in. (152 mm) diam pipes, three layers of wrap strip are required in each stack. For nom 8 in. (203 mm) diam pipes, four layers of wrap strip are required in each stack. For nom 10 in. (254 mm) diam pipes, six layers of wrap strip are required in each stack. Each layer of wrap strip to be installed with butted seams, with the butted seams in successive layers staggered. Wrap strips temporarily held in position using aluminum foil tape, filament tape, steel wire tie, or equivalent.

3M COMPANY — Type FS-195+

C. Pipe Covering* — Nom 1 in. (25 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all service jacket. Min 6 in. (152 mm) length of pipe covering installed around PVC pipe at its egress from the wrap strip layers (Item B) on both sides of the wall. Pipe covering secured to pipe with steel wire ties spaced max 4 in. (102 mm) OC. Edge of pipe covering abutting wrap strip to be sealed with a min 1/4 in. (6 mm) diam bead of caulk (Item D).

See Pipe And Equipment Covering — Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

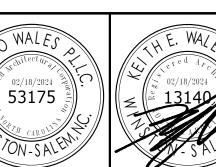
D. Fill, Void or Cavity Materials* — Caulk or Scalant — Generous bead of caulk to be applied to outer perimeter of steel sleeve at interface with wall surfaces and to perimeter of pipe covering material wrap at its Interface with the wrap strip layers.

3N COMPANY - CP 25WB+, IC 15WB+, FireDam 150+ caulk or FB-3000 WT

*Bearing the UL Classification Mark

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ADDITION

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CONSTRUCTION DOCUMENTS

FOR CONSTRUCTION

	Revisions	
No.	Description	Date
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date: 02/18/2024 commission: NH-3138

UL ASSEMBLIES

sheet number

sheet title:

G3.03

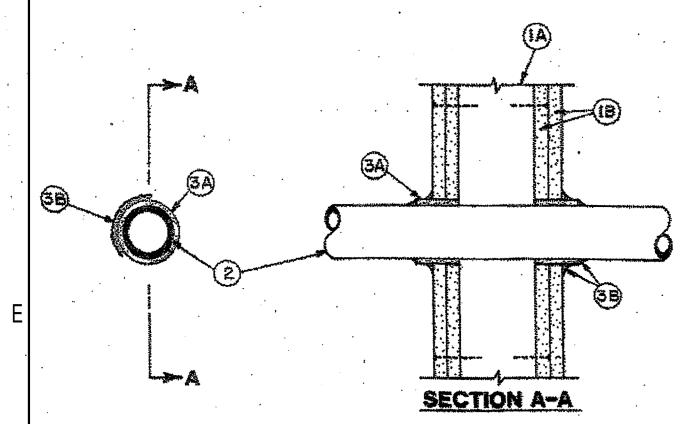
1 Copyright 2017 STUDIO WALES P.C. 2 3 4 5

May 23, 2005

F Ratings — 1 and 2 Hr (See Item 3)

T Ratings — 1 and 2 fir (See Item 3) L Rating At Ambient - 7 CFM/sq ft (See Item 38)

L Rating At 400 F - less than 1 CFM/sq ft (See Item 3B)



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

> A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with norn 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. Gypsum Board* - 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory, Max diam of opening is 3-1/8 in.

2. Through Penetrants — One nonmetallic pipe or conduit to be centered in the through opening. The annular space between pipe or conduit and periphery of opening shall be min 1/4 in. (6 mm) and max 3/8 in. (10 mm). Pipe or conduit to be rigidly supported on both sides of the floor-ceiling assembly. The following types and sizes of nonmetallic pipes or conduits may be used:

> A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

B. Rigid Nonmetallic Conduit++ - Nom 2 in. (51 mm) diam (or smaller) (Schedule 40 or 80) PVC conduit installed in accordance with the National electric

C. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

D. Cellular Core Polyvinyl Chloride (ccPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

E. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

F. Celiular Core Acrylonitrile Butadiene Styrene (ccABS) Pipe — Norn 2 in. (51 mm) diam (or smaller) Schedule 40 cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

3. Firestop System — Installed symmetrically on both sides of wall assembly. The hourly F and T Ratings for the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The details of the firestop system shall be as follows.

> A. Fill, Void or Cavity Materials* — Wrap Strip — Nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. (51 mm) wide strips. Nom 2 in. (51 mm) wide strip tightly wrapped around nonmetallic pipe (foil side out) with seam butted. Wrap strip layer securely bound with steel wire or aluminum foil tape and slid into annular space approx 1-1/4 in. (32 mm) such that approx 3/4 in. (19 mm) of the wrap strip protrudes from the wall

3M COMPANY - FS-195+

B. Fill, Void or Cavity Materials* — Caulk, Sealant or Putty — Min 5/8 in. (16 mm) thickness of caulk or putty applied into annular space between wrap strip and periphery of opening. A nom 1/4 in. (6 mm) diam bead of caulk or putty to be applied to the wrap strip/wall interface and to the exposed edge of the wrap strip layers approx 3/4 in. (19 mm) from the wall surface.

3M COMPANY — CP 25WB+ caulk or MP+ Stix putty, IC 15WB+ caulk, FireDam 150+ caulk or FB-3000 WT sealant. (Note: L Ratings apply only when Type CP 25WB+ caulk or FB-3000 WT sealant is used. CP 25WB+ not suitable for use with

C. Foil Tape - (not shown) - Nom 4 in. (102 mm) wide, 3 mil thick aluminum tape wrapped around pipe prior to the installation of the wrap strip (Item 3A). Min of one wrap, flush with both sides of wall and proceeding outward. Tape is not required for pipes shown in Items 2A, 28 and 2C.

*Bearing the UL Classification Mark

System No. W-L-3001

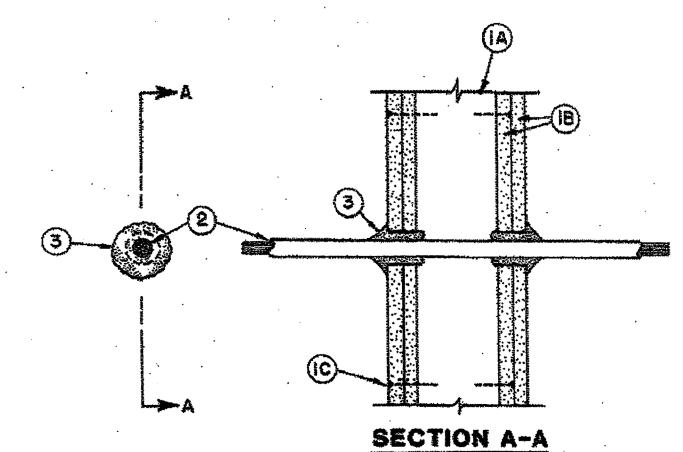
September 07, 2004

(Formerly System No. 149)

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 3/4, 1, 1-1/2 and 2 Hr (See Item 2)

L Rating At Ambient - 15 CFM/sq ft (See Item 3) L Rating At 400 F — less than 1 CFM/sq ft (See Item 3)



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

A. Studs — Wall framing may consist of either wood studs or steel channel studs.

Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in, OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in OC.

B. Gypsum Board* - Nom 1/2 or 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wellboard type, thickness, number of layers and sheet orientation shall be as specified in the individual Wall or Partition Design. Diam of circular through opening to be 3/8 in. to 5/8 in. larger than outside diam of cable or

C. Fasteners — When wood stud framing is employed gypsum wallboard layers Partition Design. When steel channel stud framing is employed, gypsum wallboard attached to stude with Type S self-drilling, self-tapping bugle-head steel screws as specified in the individual Wall or Partition Design.

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Cables — Individual cable or max 1 in. diam cable bundle installed in through opening with an annular space of min 0 in. (point contact) to max 3/4 in. Cable to be rigidly supported on both sides of wall assembly. The following types and sizes of cables may be used:

A. Max 150 pair No. 24 AWG copper conductor telephone cable with polyvinyl chloride (PVC) insulation and jacket materials. When max 25 pair telephone cable is used, T Rating is 2 hr. When 59 to 150 pair telephone cable is used in 1 hr fire rated wall, T Rating is 3/4 hr. When 50 to 150 pair telephone

cable is used in 2 hr fire rated wall, T Rating in 1 hr.

B. Max No. 10 AWG multiple copper conductor Type NM ("Romex") nonmetallic sheathed cable with PVC insulation and jacket materials. When Type NM cable is used, max T Rating is 1-1/2 hr.

C. Multiple fiber optical communication cable jacketed with PVC and having a max outside diam of 5/8 in. When fiber optic cable is used, max T Rating is 2 hr.

D. Max 12 AWG multiconductor (max seven conductors) power/control cable with cross-linked polyethylene (XLPE) insulation and XLPE or PVC jacket materials. When multiconductor power/control cable is used, max T Rating is 2 hr.

E. Max four conductor with ground No. 2 AWG (or smaller) aluminum SER cables with polyvinyl chloride insulation amd jacket materials.

3. Fill, Void or Cavity Materials* — Cavit, Scalant or Putty — Caulk or putty fill material installed to completely fill annular space between cable and gypsum wallboard on both sides of wall and with a min 1/4 in. diam bead of caulk or putty applied to perimeter of cable(s) at its egress from each side of the wall.

3M COMPANY -- MP+ putty, CP 25WB+ caulk or FB-3000.WT sealant. (Note: L Ratings apply only when Type CP 25WB+ caulk or FB-3000 WT sealant is used.)

*Bearing the UL Classification Mark

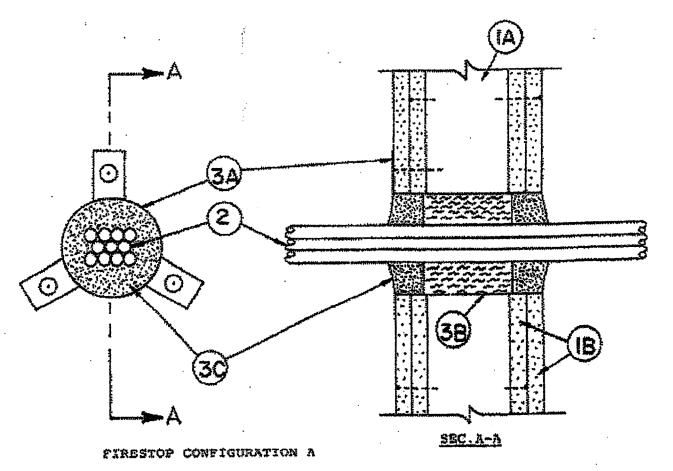
System No. W-L-3005

June 23, 2000

(Formerly System No. 235)

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 1/2 Hr



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

Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. In 2 hr fire-rated assemblies, steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. In 1 hr fire-rated assemblies, steel studs to be min 3-5/8 in. wide and spaced max 24 in.

B. Gypsum Board* - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the Individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 3 in.

The hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

Cables — Aggregate cross-sectional area of cable in opening to be max 40 percent of the aggregate cross-sectional of the opening. Cables to be centered and rigidly supported on both sides of floor or wall

A. Max 50 pair No. 24 AWG (or smaller) copper conductor telephone cables with polyvinyl chloride (PVC) insulation and jacket materials.

B. Max 2/C (with ground) - 12 AWG (or smaller) PVC insulated and jacketed

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

A. Steel Sleeve - Cylindrical sleeve friction fitted into the opening with nom 1 in.

by 1 in, long mounting flanges and secured to gypsum wallboard with 2 in, long Type S self-drilling, self-tapping steel screws and fender washers. Sleeve may be field fabricated from min 0.016 in. thick (No. 30 gauge) galv sheet metal in accordance with the manufacturer's installation instructions.

B. Packing Material — In 2 hr fire-rated assemblies, min 2-1/2 in. thickness of min 4 pcf mineral wool insulation firmly packed into opening as a permanent form. In 1 hr fire-rated assemblies, min 2-3/8 in. thickness of min 4 pcf mineral wool insulation firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill

C. Fill, Void or Cavity Material* - Caulk or Putty - Min 1-1/4 in. thickness of fill material applied within annulus flush with both surfaces of wall. Fill material to be forced into interstices of cable bundle max extent possible. Additional fill material to be installed such that a min 1/2 in. crown is formed around the penetrating item.

WR GRACE & CO - CONN - FS900, FS901, FS903, FS903CG, FS905, FS905CG, FS929, FST901, FST903 or FST905 Sealant or FSP 1000 Putty

System No. W-J-1010

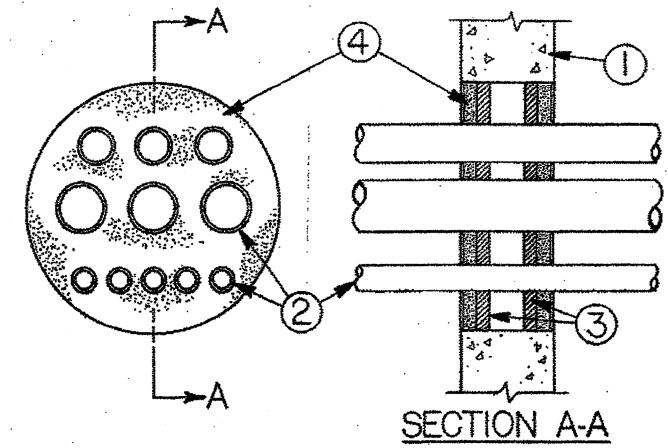
June 15, 2005

F Rating — 3 Hr

T Ratings -- 1, 1-1/2 and 2 Hr (See Item 2)

L Rating At Ambient - 2 CFM/sq ft

L Rating At 400 F - less than 1 CFM/sq ft



1. Wall Assembly -- Min 6 in. (152 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 12 in. (305 mm).

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Steel Pipe or Conduit — Nom 3 in. (76 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe, steel conduit or steel electrical metallic tubing. Multiple pipes and/or conduit permitted in opening provided a min separation of 1/4 in. (6 mm) is maintained between pipes or conduits. Pipes and/or conduits to be rigidly supported on both sides of the well assembly. The T Rating of the firestop system is dependent upon the max diam of the pipes or conduits, as tabulated below:

	Max Pipe or Conduit Diam In.	T Rating Hr
3 (76)		1
1 (25)		1-1/2
3/4 (19)		2

3. Packing Material — Min 1 in. (25 mm) thick rigid glass fiber insulation or mineral wool batt insulation firmly packed into opening on both sides of wall assembly as a permanent form. Packing material to be recessed min 1 in. (25 mm) from surface of wall on both sides of wall assembly.

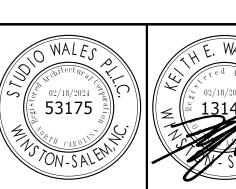
4. Fill, Void or Cavity Materials* — Caulk or Scalant — Applied to fill the through opening to a min depth of 1 in. (25 mm)_on both sides of well assembly.

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

*Bearing the UL Classification Mark

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CONSTRUCTION DOCUMENTS

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Revisions Description date: 02/18/2024

commission: NH-3138

sheet title: **UL ASSEMBLIES**

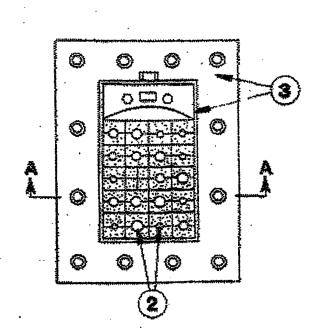
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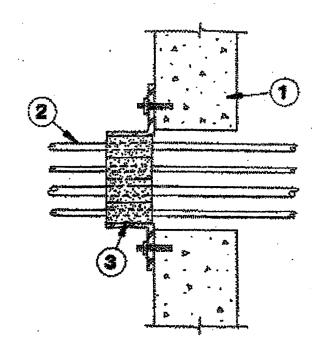
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December 05, 1996

(Formerly System No. 497)

T Rating - 0 Hr





SECTION A-A

1. Wall Assembly - Min 4 in. thick reinforced normal weight (140-150) concrete. Wall assembly may also be constructed of any UL Classified Concrete Blocks*. Max area of opening is 72,2 sq in. with max dimension of 10-17/64 in.

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrants — One metallic pipe or conduit to be positioned within the firestop device. Pipe or conduit to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or conduits may be used:

A. Steel Pipe — Nom 2 in. diam (or smaller) Schedule 40 (or heavier) steel pipe.

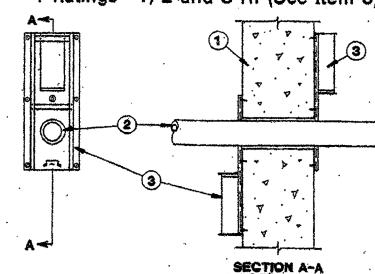
B. Conduit - Nom 2 in. diam (or smaller) rigid galv steel conduit.

3. Firestop Device — Firestop device shall be installed in accordance with the accompanying installation instructions. Firestop device consists of a steel frame, compression unit, stay plates and elastometic insert blocks. The firestop device may be installed on either side of a solid concrete wall assembly. When wall is constructed of concrete blocks, devices are to be installed symmetrically on both sides of wall assembly. Device secured by means of 3/8 in. diam by 1-7/8 in. long steel expansion anchors spaced a max 4 in. OC. The annular space between the through-penetrants and the periphery of the steel frame shall be filled with elastomeric insert blocks and a compression unit sized to fit the specific penetrating items and steel frame. During the installation of the insert blocks within the steel frame, thin metal stay plates shall be used to separate each row of insert blocks and retain the insert blocks within the steel frame. After installation of the blocks, the bolts of the compression unit are tightened to form an effective seal around the throughpenetrants and elastomeric insert blocks. The size of device is dependent upon the thickness of the wall and

Thkns of Wali In.	as tabulated below: Opening Size In.	Size of Device
8	4-11/32 x 5-1/2	RGB-2
8	7-1/32 x 5-1/2	RGB-4
8	9-11/32 × 5-1/2	RGB-6
8	7-1/32 x 10-17/64	RGB-4x2
4	4-11/32 × 5-1/2	RGB-2
4	7-1/32 x 5-1/2.	RGB-4
4	9-11/32 x 5-1/2	RGB-6
4	7-1/31 × 10-17/64	RGB-4x2

System No. WJ2009

(Formerly System No. 527) F Ratings-1, 2 and 3 Hr (See Item 3) T Ratings—1, 2 and 3 Hr (See Item 3)



WALL ASSEMBLY

1. Wall Assembly-Min 7-5/8 in. thick wall assembly constructed of any UL Classified Concrete Blocks* or common bricks, laid up with mortar. Max diam of opening is 7 in. See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufac-

2. Through Penetrants—One nonmetallic pipe or conduit to be centered within the firestop system. Pipe to be rigidly supported on both sides of wall assembly. A nom annular space of 1/4 to 3/8 in. is required within the firestop system. Pipe or conduit to be rigidly supported on both sides of the wall assembly. The following types of nonmetallic pipes or conduits may be

A. Polyvinyl Chloride (PVC) Pipe—Nom 6 in. diam (or smaller) Schedule 40 PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

B. Polyethylene (PE) Pipe—Nom 6 in: diam (or smaller) Schedule 40 PE pipe for use in

closed (process or supply) or vented (drain, waste or vent) piping system. C. Chlorinated Polyvinyl Chloride (CPVC) Pipe-Nom 6 in, diam (or smaller) Schedule 40 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping

D. Polypropylene (PP) Pipe-Nom 6 in. diam (or smaller) Schedule 40 PP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe to be rigidly supported on both sides of wall assembly.

3. Firestop Device*-Devices consist of rectangular metal frame with a spring-loaded guillotine blade mechanism installed around outer circumference of opening. Devices to be mounted to each surface of wall assembly using 1-5/8 in. long steel masonry anchors in accordance with accompanying installation instructions. The hourly F and T ratings of the devices are dependent upon the type, size and schedule of the penetrating item, as shown in the following ta-

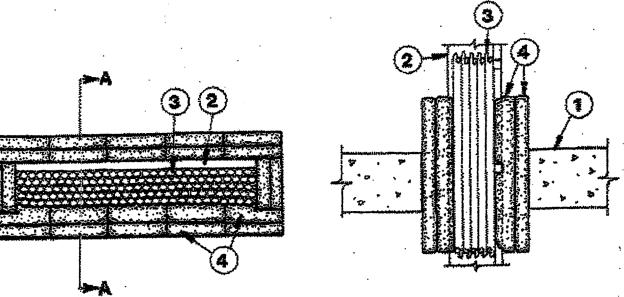
Max Device Size (In.)	Type Of Pipe	Nom Pipe Diam in.	Pipe Schedule	F Rating, Hr	T Rating, Hi
4	PE	4	Sch 40	1	<u> </u>
3	- PP	· 3	Sch 40	2	2
2	CPVC	2	Sch 80	3	2
1-1/2	PVC	1-1/2	Sch 80	· · · 3	$\bar{2}$
3	PVC	3	Sch 40	· 3	3
6	PVC	6	Sch 40	3	. 2
•	Orion Industries	Inc.—Types 1-1		in.	·

*Bearing the UL Classification Marking

System No. W-J-4005

F Rating - 3 Hr

T Rating - 0 Hr



SECTION A-A

1. Wall Assembly — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening is 176 sq in. with

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Cable Tray — Max 18 in. wide by 4 in. deep open ladder cable tray with channel-shaped side-rails formed of min 0.064 in. thick steel and with 1 in. wide by 1 in. deep rungs spaced 9 in. OC. One cable tray to be installed in the opening. The annular space between the cable tray and the periphery of the opening shall be min 2 in. Cable tray to be rigidly supported on both sides of wall assembly.

3. Cables — Aggregate cross-sectional area of cables in cable tray to be max 40 percent of the cross-sectional area of the cable tray based on a max 3 in. cable loading depth within the cable tray. Any combination of the following types and sizes of copper conductor cables may be used:

A. Max 100 pair No. 24 AWG copper conductor communication cables with polyvinyl chloride (FVC) insulation and jacket materials,

B. Max 7/C No. 12 AWG copper conductor control cables with polyvinyl chloride (PVC) insulation and jacket materials.

C. Max 350 kcmil single conductor power cables with polyvinyl chloride (PVC)

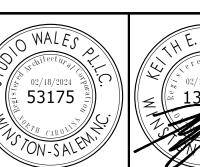
4. Fill, Veid or Cavity Materials* — Cushions — Nominal 13 in. long by 4-1/2 or 7-1/2 in. wide by 1 in. thick fabric covered intumescent cushions. Cushions installed flat with nominal 13 in. length of each cushion passing through the wall opening with its ends projecting equally beyond the wall surface on each side of the wall assembly. Cushions tightly-packed into through opening between cables, cables and cable tray and cable tray and periphery of opening.

TREMCO INC - TREMStop-PS

*Bearing the UL Classification Mark

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