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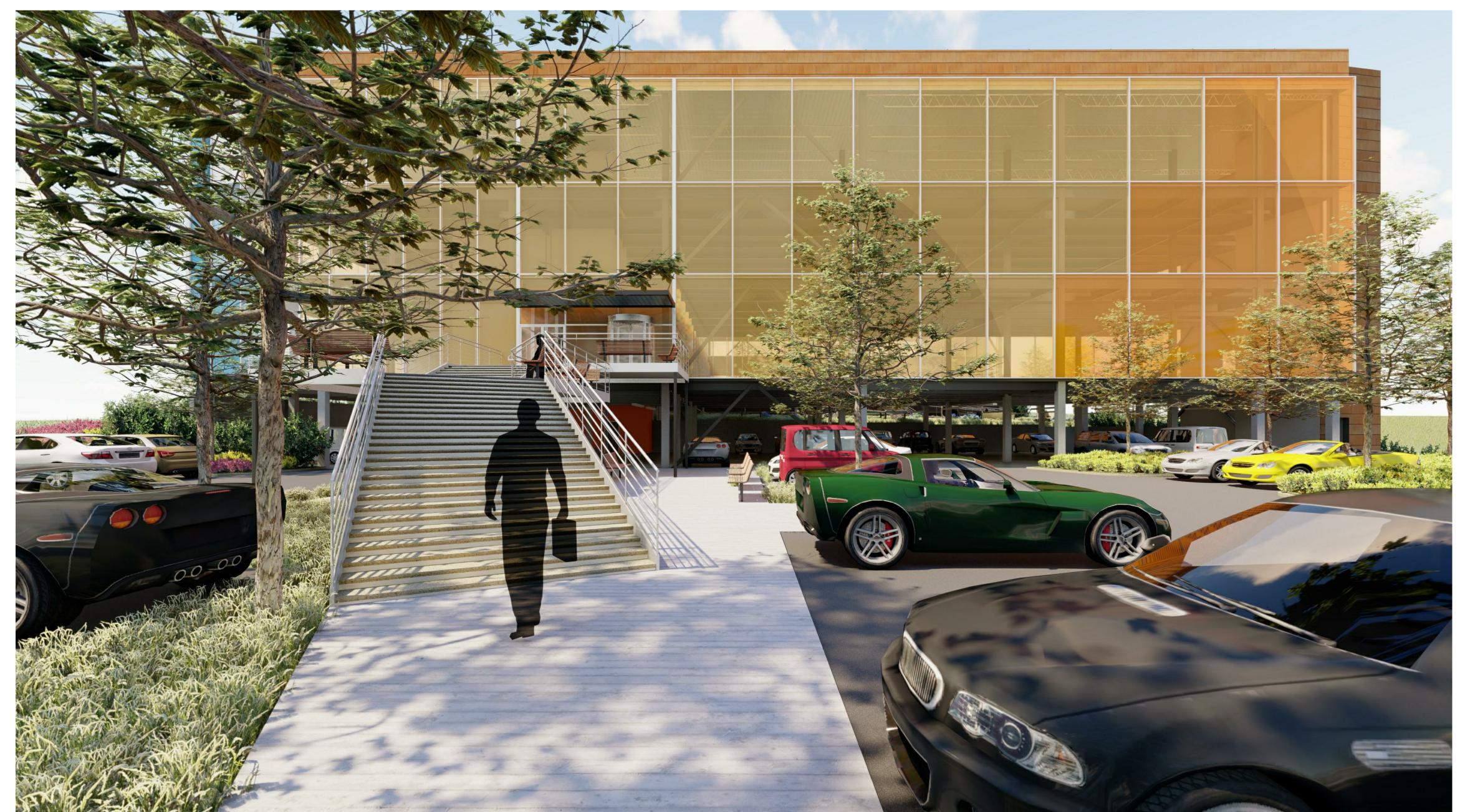
MECHANICAL SCHEDULES AND NOTES MECHANICAL PARKING LEVEL PLAN MECHANICAL FIRST FLOOR PLAN MECHANICAL SECOND FLOOR PLAN MECHANICAL THIRD FLOOR PLAN

ARCHITECTURAL

LANDSCAPE

STRUCTURAL

# DERITA OFFICE BUILDING



OWNER One Boston Place, Suite 2600 Boston, MA 02108 2243586496 Sushanth Charabuddi: scharabuddi@eagleipropertygroup.com

SURVEY/MAPPING

GEOTECHNOLOGIES, INC. 3200 Wellington Court, Suite 108 Raleigh, NC 27615

1318-E6 Central Avenue Charlotte, NC 28205

LANDSCAPE ARCHITECT

**ARCHITECT** 

OSTERLUND ARCHITECTS, PLLC 5 West Hargett Street, Suite 502 Raleigh, NC 27601

Andy Osterlund: andy@aoarchitect.com

CONSULTANT NAME 5 West Hargett St., Suite 502 Raleigh, NC 27601 9198389337 Ashley Sessoms: ashley@aoarchitect.com

FIRE PROTECTION

7047823032 Drew Jester: djester@waynefire.com

PME ENGINEER

708 St. Mary's Street PO Box 10443 Dana Beasley: dwb@maple-eng.com

PROJECT LOCATION

LOCATION MAP NTS 3A

CONSULTANT NAME

GEOTECHNICAL

CIVIL ENGINEER

Brian D. Smith, PE

SITE COLLABORATIVE 1318-E6 Central Avenue Charlotte, NC 28205 7043343303 Brian D. Smith, PE

STRUCTURAL ENGINEER

333 Fayetteville St., Ste #506 Raleigh, NC 27601 919.654.6907 Bill Dzurick: wdzurick@sastructural.com

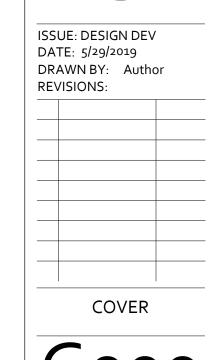
INTERIOR DESIGNER

WAYNE AUTOMATIC FIRE SPINKLERS, INC. 4370 Motorsport Dr Concord, NC 28027

MAPLE ENGINEERING Raleigh, NC 27605 9193414247

SITE SPECIFICATIONS & DETAILS EROSION CONTROL DETAILS **EROSION CONTROL DETAILS** LANDSCAPE PLAN LANDSCAPE DETAILS GENERAL STRUCTURAL NOTES GENERAL STRUCTURAL NOTES SPECIAL INSPECTION TABLES SPECIAL INSPECTION TABLES SPECIAL INSPECTION TABLES TYPICAL DETAILS TYPICAL DETAILS FOUNDATION PLAN FIRST FLOOR FRAMING PLAN THIRD FLOOR FRAMING PLAN ROOF FRAMING PLAN BRACE FRAME ELEVATIONS FOUNDATION DETAILS FRAMING DETAILS SITE PLAN PARKING PLAN **1ST FLOOR PLAN** 2ND FLOOR PLAN 3RD FLOOR PLAN ROOF PLAN **BUILDING ELEVATIONS BUILDING ELEVATIONS** COURTYARD ELEVATIONS **BUILDING SECTIONS BUILDING SECTIONS BUILDING SECTIONS ENLARGED PLANS ENLARGED PLANS ENLARGED PLANS** SHAFT SECTIONS SHAFT SECTIONS ENTRACE STAIR SECTIONS WALL SECTIONS WALL SECTIONS WALL SECTIONS DETALS SCHEDULES DOOR ELEVATIONS RENDERINGS





5 W Hargett Street 502

CONSULTANTS:

PROJECT No.:

 $\Box$ 

Raleigh, NC 27601 (919) 838-9337 aoarchitect.com

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

Name of Project: DERITA OFFICE BUILDING Address: 881 DERITA RD CONCORD NC Zip Code 28027 Owner/Authorized Agent: Sushanth Charabuddi Phone # (617) 933 7244 E-Mail scharabuddi@eagleipropertygroup.com Owned By: Private Code Enforcement Jurisdiction: City

CONTACT: \_\_ DESIGNER FIRM NAME LICENSE# TELEPHONE# E-MAIL
Architectural Osterlund Architects A Osterlund 10236 (919) 838 9337 andy@aoarchitect.com
Civil URBAN DESIGN P. Brian Smith xxxxx (704) 334-3303 brian@urbandesignpartners.com
Electrical Maple Zack Tomlin 037509 (919) 341-4247 zlt@maple-eng.com
Plumbing Maple Zack Tomlin 037509 (919) 341-4247 zlt@maple-eng.com
Mechanical Maple Zack Tomlin 037509 (919) 341-4247 zlt@maple-eng.com
Mechanical Maple Zack Tomlin 037509 (919) 341-4247 zlt@maple-eng.com

Sprinkler-Standing Wayne C Williams 15774 (704) 782-3032 cwilliams@waynefire.com URBAN DESIGN P. Brian Smith xxxxx (704) 334-3303 brian@urbandesignpartners.com

Maple Zack Tomlin 037509 (919) 341-4247 zlt@maple-eng.com

Maple Zack Tomlin 037509 (919) 341-4247 zlt@maple-eng.com 
 Zack Tomlin
 037509 (919) 341-4247
 zlt@maple-eng.com

 C Williams
 115724 (704) 782-3032
 cwilliams@waynefire.com

 W Dzurick
 044686 (919) 654-6907
 wdzurick@sastructural.com
 Sprinkler-Standpipe Wayne Structural Schneider Retaining Walls >5' High \_\_\_\_\_\_ (\_\_)

2018 NC BUILDING CODE: New Building 2018 NC EXISTING BUILDING CODE: N/A CONSTRUCTED: (date) \_\_\_\_\_ CURRENT OCCUPANCY(S) (Ch. 3): \_\_\_

 
 RENOVATED:
 (date)
 PROPOSED OCCUPANCY(S) (Ch. 3):
 OCCUPANCY CATEGORY (Table 1604.5): Current: Select one Proposed: Select one BASIC BUILDING DATA Construction Type: II-B Sprinklers: Yes NFPA 13

Primary Fire District: No Flood Hazard Area: No Special Inspections Required: Yes (Contact the local inspection jurisdiction for additional procedures and requirements.) **Gross Building Area Table** 

Standpipes: Class I - Wet

ALLOWABLE AREA Primary Occupancy Classification(s): <u>Assembly - A-2</u> <u>Business</u> <u>Storage - Parking Garage (Open)</u> 2018 NC Administrative Code and Policies

Accessory Occupancy Classification(s): \_ Incidental Uses (Table 509): Special Uses (Chapter 4 – List Code Sections): \_\_\_\_ Special Provisions: (Chapter 5 - List Code Sections): Mixed Occupancy: Select one Separation: Select one Exception:  $\frac{Select \ one}{Actual \ Area \ of \ Occupancy \ A} \quad + \quad \underbrace{Actual \ Area \ of \ Occupancy \ B}_{Allowable \ Area \ of \ Occupancy \ B} \quad \leq 1$ STORY DESCRIPTION AND (A) (B) (C) (D)

NO. USE BLDG AREA PER STORY (ACTUAL) AREA DER STORY (ACTUAL) AREA DER STORY (ACTUAL) AREA STORY (ACTUAL) AREA STORY OR UNLIMITED<sup>2,3</sup>

<sup>1</sup> Frontage area increases from Section 506.2 are computed thus:

a. Perimeter which fronts a public way or open space having 20 feet minimum width = \_\_\_\_\_\_(F) b. Total Building Perimeter = \_\_\_\_\_(P)

Ratio (F/P) = \_\_\_\_\_(F/P) c. Ratio (F/P) = \_\_\_\_\_(F/P)
d. W = Minimum width of public way = \_\_\_ e. Percent of frontage increase  $I_f = 100 \text{ [ F/P - 0.25] x W/30} =$  (%) <sup>2</sup> Unlimited area applicable under conditions of Section 507. <sup>3</sup> Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2). <sup>4</sup> The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1. <sup>5</sup> Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT								
	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE					
Building Height in Feet (Table 504.3)								
Building Height in Stories (Table 504.4)								

BUILDING ELEMENT	FIRE		RATING	DETAIL#	DESIGN#	SHEET # FOR	SHEET #
	SEPARATION DISTANCE (FEET)	REQ'D	PROVIDED (W/* REDUCTION)	AND SHEET#	FOR RATED ASSEMBLY	RATED PENETRATION	FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North	15	0					
East	> 30	0					
West	> 30	0					
South	> 30	0					
Interior		0					
Nonbearing Walls and Partitions							

Exterior walls					
North	15	0			
East	> 30	0			
West	> 30	0			
South	> 30	0			
Interior walls and partition	ns	0			
Floor Construction	'	0			
Including supporting bear	ms		1		
and joists					
Floor Ceiling Assembly		0			
Columns Supporting Floors	3				
Roof Construction, includir	ng				
supporting beams and joists	s				
Roof Ceiling Assembly					
Columns Supporting Roof					
Shaft Enclosures - Exit					
Shaft Enclosures - Other					
Corridor Separation	"	-			
Occupancy/Fire Barrier Sep	paration				
Party/Fire Wall Separation					
Smoke Barrier Separation					
Smoke Partition					
Tenant/Dwelling Unit/ Sleeping Unit Separation					
Incidental Use Separation					

	PERCENTAGE OF WA	ALL OPENING CALCULA	TIONS
FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	Allowable area (%)	ACTUAL SHOWN ON PI

LIFE SAFETY SYSTEM REQUIREMENTS Emergency Lighting: Exit Signs: Fire Alarm: Smoke Detection Systems: Carbon Monoxide Detection: N

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: ☐ Fire and/or smoke rated wall locations (Chapter 7) Exterior wall opening area with respect to distance to assumed property lines (705.8) Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2) 2018 NC Administrative Code and Policies

Occupant loads for each area Exit access travel distances (1017) Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1)) Dead end lengths (1020.4) Clear exit widths for each exit door Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3) Actual occupant load for each exit door A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation Location of doors with panic hardware (1010.1.10) Location of doors with delayed egress locks and the amount of delay (1010.1.9.7) Location of doors with electromagnetic egress locks (1010.1.9.9) Location of doors equipped with hold-open devices Location of emergency escape windows (1030) The square footage of each fire area (202) The square footage of each smoke compartment for Occupancy Classification I-2 (407.5) Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS (SECTION 1107)										
ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED				

ACCESSIBLE PARKING (SECTION 1106)									
LOT OR PARKING	TOTAL # OF PA	RKING SPACES	# OF AC	# OF ACCESSIBLE SPACES PROVIDED					
AREA	REQUIRED PROVIDED	REGULAR WITH	VAN SPAC	ACCESSIBLE					
			5' ACCESS AISLE	132" ACCESS	8' ACCESS	PROVIDED			
				AISLE	AISLE				
TOTAL									

	PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)										
USE		WATERCLOSETS		URINALS	LAVATORIES			SHOWERS	DRINKING FOUNTAINS		
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX	/TUBS	REGULAR	ACCESSIB
ACE	EXIST'G										
	NEW										
	REQ'D										
						`	`				

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below) 2018 NC Administrative Code and Policies

ENERGY SUMMARY ENERGY REQUIREMENTS: The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design. Existing building envelope complies with code: Select one Exempt Building: Select one Provide code or statutory reference: Climate Zone: Select one Method of Compliance: Select one (If "Other" specify source here)\_\_\_\_\_ THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly) Description of assembly: U-Value of total assembly: R-Value of insulation: Skylights in each assembly: U-Value of skylight: total square footage of skylights in each assembly: Exterior Walls (each assembly) Description of assembly: U-Value of total assembly: R-Value of insulation: Openings (windows or doors with glazing)

R-Value of insulation:

slab heated:

U-Value of assembly: Solar heat gain coefficient: projection factor: Door R-Values: Walls below grade (each assembly) Description of assembly: U-Value of total assembly: R-Value of insulation: Floors over unconditioned space (each assembly) Description of assembly: U-Value of total assembly: R-Value of insulation: Floors slab on grade Description of assembly: U-Value of total assembly:

Horizontal/vertical requirement:

\_\_\_\_

2018 NC Administrative Code and Policies

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

DESIGN LOADS: Importance Factors: Wind (I<sub>W</sub>) Select one Snow (I<sub>S</sub>) Select one Seismic (I<sub>E</sub>) Select one Floor Ground Snow Load: psf Wind Load: Basic Wind Speed Exposure Category Select one mph (ASCE-7) SEISMIC DESIGN CATEGORY: Select one Provide the following Seismic Design Parameters: Occupancy Category (Table 1604.5) Select one Spectral Response Acceleration S<sub>S</sub>\_\_\_\_\_%g Site Classification (ASCE 7) Select one Data Source: <u>Select one</u> Basic structural system Select one
Analysis Procedure: Select one Architectural, Mechanical, Components anchored? Select one LATERAL DESIGN CONTROL: Select one SOIL BEARING CAPACITIES: Select one psf
Pile size, type, and capacity

2018 NC Administrative Code and Policies

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

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT Thermal Zone 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 efficiency:

size category of unit: Size category. If oversized, state reason.: Size category. If oversized, state reason.: List equipment efficiencies:

2018 NC Administrative Code and Policies

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

ELECTRICAL SUMMARY ELECTRICAL SYSTEM AND EQUIPMENT Method of Compliance: Select one Lighting schedule (each fixture type) number of lamps in fixture ballast type used in the fixture number of ballasts in fixture total wattage per fixture total interior wattage specified vs. allowed (whole building or space by space) total exterior wattage specified vs. allowed Additional Efficiency Package Options (When using the 2018 NCECC; not required for ASHRAE 90.1) C406.2 More Efficient HVAC Equipment Performance C406.3 Reduced Lighting Power Density

C406.4 Enhanced Digital Lighting Controls

C406.7 Reduced Energy Use in Service Water Heating

C406.5 On-Site Renewable Energy

C406.6 Dedicated Outdoor Air System

2018 NC Administrative Code and Policies

ISSUE: DESIGN DEV DATE: 5/29/2019 DRAWN BY: Author **REVISIONS:** 

CODE SUMMARY

5 W Hargett Street 502 Raleigh, NC 27601

CONSULTANTS:

PROJECT No.:

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(919) 838-9337 aoarchitect.com

Design No. U411 April 15, 2019 Nonbearing Wall Rating — 2 Hr. \* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

1. Floor and Ceiling Runner — (Not Shown) — Min. 25 MSG galv steel, 1 in. return legs,  $2-1/\bar{2}$  in. deep (min), attached to floor and ceiling with fasteners 24 in. OC max. 1A. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2A, channel shaped, min 2-1/2 in. deep, attached to floor and ceiling with fasteners 24 in. OC. max. **ALLSTEEL & GYPSUM PRODUCTS INC** — Type SUPREME D24/30EQD and Type SUPREME D20

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — Viper20™ Track

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

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

FUSION BUILDING PRODUCTS — Viper20™ Track IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track

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

**SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME D24/30EQD and Type SUPREME D20 **STEEL CONSTRUCTION SYSTEMS INC** — Type SUPREME D24/30EQD and

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

1B. Floor and Ceiling Runners — (Not Shown) — For use with Item 2B-Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min width to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC. 1C. Framing Members\* — Floor and Ceiling Runners — (Not Shown) – As an alternate to Item 1 - For use with Item 2C, channel shaped, min 2-1/2 in. wide fabricated from min 0.015 in. thick galv steel, attached to floor and ceiling with fasteners 24 in. OC. max. **CLARKDIETRICH BUILDING SYSTEMS** — CD Protrak

**DMFCWBS L L C** — ProTRAK **MBA METAL FRAMING** — ProTRAK **RAM SALES L L C** — Ram ProTRAK **STEEL STRUCTURAL PRODUCTS L L C** — Tri-S ProTRAK

1D. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2D, channel shaped, min 2-1/2 in, wide fabricated from min 0.018 in, thick galv steel, attached to floor and ceiling with fasteners 24 in. OC. max. TELLING INDUSTRIES L L C — TRUE-TRACK™

1E. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2E, channel shaped, min 2-1/2 in. wide fabricated from min 25 MSG steel, attached to floor and ceiling with fasteners 24 in. OC. max. KIRII (HONG KONG) LTD — Type KIRII

1F. Floor and Ceiling Runners — (Not Shown) — Channel shaped, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below, attached to floor and ceiling with fasteners spaced max 24 in. OC. MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track

FUSION BUILDING PRODUCTS — Viper20™ Track IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track

1G. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2G, channel shaped, min 2-1/2 in. deep, attached to floor and ceiling with fasteners 24 in. OC. max. **TELLING INDUSTRIES L L C** — Viper20<sup>™</sup> Track

1H. Framing Members\* — Floor and Ceiling Runners — (Not Shown) -As an alternate to Item 1 - For use with Item 2J. Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max. **BAILEY METAL PRODUCTS LTD** — Type PLATINUM PLUS

11. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2K, channel shaped, min 3-1/2 in. wide fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners 24 in. OC. max. **STEEL INVESTMENT GROUP L L C** — AlphaTRAK

1J. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2L. Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max. **OEG BUILDING MATERIALS** — OEG Track

1K. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2M, channel shaped, min 2-1/2 in. deep, formed of min. 25 MSG (0.018 in. min. bare metal thickness), attached to floor and ceiling with fasteners 24 in. OC. max. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper X Track

1L. Framing Members\* — Floor and Ceiling Runners — (Not Shown) — As an alternate to Item 1 - For use with Item 2N. Channel shaped, min. 2-1/2 in. deep, attached to floor and ceiling with fasteners 24 in. OC. max. **ALLSTEEL & GYPSUM PRODUCTS INC** — Type SUPREME D25

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV -Type SUPREME D25

**QUAIL RUN BUILDING MATERIALS INC** — Type SUPREME D25 **SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME D25 **STEEL CONSTRUCTION SYSTEMS INC** — Type SUPREME D25 **UNITED METAL PRODUCTS INC** — Type SUPREME D25

1M. Floor and Ceiling Runner — (Not shown) - As an alternate to Item 1, For use with Items 20 and 40 - Min 25 MSG galv steel, 1-5/8 in. deep (min), attached to floor and ceiling with fasteners 24 in. OC. max. . Steel Studs — Min 2-1/2 in. deep, formed of min 25 MSG galv steel max stud spacing 24 in. OC. Studs to be cut 3/4 in. less than assembly

2A. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1G, channel shaped studs, min 2-1/2 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. **ALLSTEEL & GYPSUM PRODUCTS INC** — Type SUPREME D24/30EQD and Type SUPREME D20

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™ CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME D24/30EQD and Type SUPREME D20

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ FUSION BUILDING PRODUCTS — Viper20™

IMPERIAL MANUFACTURING GROUP INC — Viper20™

**QUAIL RUN BUILDING MATERIALS INC** — Type SUPREME D24/30EQD and Type SUPREME D20 SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME

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

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

SUPREME D20

in. less than assembly height. 2C. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1C, channel shaped studs, min 2-1/2 in. wide fabricated from min 0.015 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. **CLARKDIETRICH BUILDING SYSTEMS** — CD ProSTUD **DMFCWBS L L C** — ProSTUD MBA METAL FRAMING — ProSTUD **RAM SALES L L C** — Ram ProSTUD

**STEEL STRUCTURAL PRODUCTS L L C** — Tri-S ProSTUD

2B. Steel Studs — (As an alternate to Item 2, For use with Item 4D, 4H,

protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC.

Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4

and 4J) — Channel shaped, fabricated from min 20 MSG corrosion-

2D. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1D, channel shaped studs, min 2-1/2 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height TELLING INDUSTRIES L L C — TRUE-STUD™

2E. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1E, channel shaped studs, min 2-1/2 in. wide fabricated from min 25 MSG steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. KIRII (HONG KONG) LTD — Type KIRII

2F. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1G, channel shaped studs, min 2-1/2 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. TELLING INDUSTRIES L L C — Viper20™

2G. **Framing Members**\* — **Steel Studs** — As an alternate to Item 2 — For use with Item 1, channel shaped studs, Min 2-1/2 in. deep, formed of min 25 MSG galv steel max stud spacing 24 in. OC. Studs to be cut 3/4 in. less than assembly height. **EB METAL INC** — NITROSTUD

2H. **Framing Members**\* — **Steel Studs** — As an alternate to Item 2 — For use with Item 1, channel shaped studs, Min 2-1/2 in. deep, formed of min 25 MSG galv steel max stud spacing 24 in. OC. Studs to be cut 3/4 in. less than assembly height OLMAR SUPPLY INC — PRIMESTUD

21. **Framing Members**\* — **Steel Studs** — As an alternate to Item 2 — For use with Item 1A (3-5/8 in, wide track), channel shaped studs, fabricated from min 25 MSG corrosion-protected steel. 1-1/4 in. wide by 3-5/8 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than MARINO/WARE, DIV OF WARE INDUSTRIES INC — StudRite™

21. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1H, channel shaped, min 3-5/8 in. wide, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. **BAILEY METAL PRODUCTS LTD** — Type PLATINUM PLUS

2K. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 11, channel shaped studs, min 3-1/2 in. wide fabricated from min 0.018 in. thick galv steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. **STEEL INVESTMENT GROUP L L C** — AlphaSTUD

2L. **Framing Members**\* — **Steel Studs** — As an alternate to Item 2 — For use with Item 1J, channel shaped studs, Min 2-1/2 in. deep, formed of min 25 MSG galv steel max stud spacing 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height. **OEG BUILDING MATERIALS** — OEG Stud

2M. Framing Members\* — Steel Studs — As an alternate to Item 2 — For use with Item 1K, channel shaped studs, min 2-1/2 in. deep, formed of min. 25 MSG (0.018 in. min. bare metal thickness), spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper X

2N. **Framing Members**\* — **Steel Studs** — As an alternate to Item 2 — For use with Item 1L, channel shaped studs, min depth 2-1/2 in. deep, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. **ALLSTEEL & GYPSUM PRODUCTS INC** — Type SUPREME D25

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV -Type SUPREME D25

**QUAIL RUN BUILDING MATERIALS INC** — Type SUPREME D25 **SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME D25 **STEEL CONSTRUCTION SYSTEMS INC** — Type SUPREME D25 **UNITED METAL PRODUCTS INC** — Type SUPREME D25

20. Framing Members — Steel Studs — (As an alternate to Item 2) For use with Items 1M and 4O - channel shaped studs min 1-5/8 in. deep, formed of 25 MSG galv steel, max stud spacing 24 in. OC. Studs cut 3/8 in. to 3/4 in. less than assembly height. 3. Batts and Blankets\* — (Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. See Batts and Blankets (BZJZ) category for names of

3A. Fiber, Sprayed\* — As an alternate to Batts and Blankets (Item 3) -(100% Borate Formulation) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft<sup>3</sup>. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft<sup>3</sup>, in accordance with the application instructions supplied with the product. **U S GREENFIBER L L C** — INS735& INS745 for use with wet or dry application. INS765LD and INS770LD are to be used for dry application

3B. Fiber. Sprayed\* — As an alternate to Batts and Blankets (Item 3) — Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft. **NU-WOOL CO INC** — Cellulose Insulation

3C. Fiber, Sprayed\* — As an alternate to Batts and Blankets (Item 3) — Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft3. INTERNATIONAL CELLULOSE CORP — Celbar-RL

3D. Fiber, Sprayed\* — As an alternate to Batts and Blankets (Item 3) — Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions 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/ft<sup>3</sup>. **APPLEGATE HOLDINGS L L C** — Type 1 SAFE Applegate Fired Rated

4. **Gypsum Board**\* — 5/8 in. thick, outer layer paper, glass mat or vinyl surfaced. (Laminated System) Gypsum board applied vertically in two layers. Inner layer attached to studs with 1 in. long Type S steel screws spaced 8 in. OC along vertical edges, and 12 in. OC in the field and outer layer laminated to inner layer with joint compound, applied with a notched spreader producing continuous beads of compound about 3/8 in. in diameter, spaced not greater than 2 in. OC. Joints of laminated outer layer offset 12 in. from inner layer joints Outer layer gypsum board attached to floor and ceiling runner track with 1-5/8 in. long Type S steel screws spaced 12 in. OC. Optional, (Direct Attached System), Inner layer attached to studs with 1 in.

long Type S steel screws spaced 16 in. OC in the field and along the vertical edges. Outer layer attached to the studs over the inner layer with 1-5/8 in. long Type S steel screws spaced 16 in. OC in the field and along the vertical edges and 12 in. OC to the floor and ceiling runners. Joints of screw-attached outer layer offset from inner layer joints. Joints of outer layer may be taped or untaped. Nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.

ACADIA DRYWALL SUPPLIES LTD — Type X, 5/8 Type X, Type Blueglass

AMERICAN GYPSUM CO — Types AG-C, AGX-1, M-Glass, AGX-11, LightRoc **BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO** — Type DBX-1

Exterior Sheathing

**CERTAINTEED GYPSUM INC** — Types 1, FRPC, EGRG, GlasRoc, GlasRoc-2, Type X, Type X-1, Type C, or 5/8" Easi-Lite Type X CGC INC — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD, LGLLX, CLLX

**GEORGIA-PACIFIC GYPSUM L L C** — Types 5, 6, 9, C, DAP, DD, DA, DAPC, DGG, DS, GPFS6, LS, TG-C, Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, GreenGlass Type X, Type X ComfortGuard Sound Deadening Gypsum Board, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type DGLW, Water Rated-Type DGLW, Sheathing Type- DGLW, Soffit-Type DGLW, Type LW2X, Veneer Plaster Base - Type LW2X, Water Rated -Type LW2X, Sheathing - Type LW2X, Soffit - Type LW2X, Type DGL2W, Water Rated - Type DGL2W, Sheathing - Type DGL2W

FSW-6, FSW-8, FSW-C, FSW-G, FSMR-C, FSL, SoundBreak XP Type X Gypsum

**NATIONAL GYPSUM CO** — Types eXP-C, FSK, FSK-C, FSW, FSW-3, FSW-5,

**NATIONAL GYPSUM CO** — Riyadh, Saudi Arabia — Type FR, or WR. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C, PG-3, PG-5, PG-9, PG-11, PG-C, PGS-WRS

PANEL REY S A — Types GREX, PRX, RHX, MDX, ETX, PRC or PRC2

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1 **SAINT-GOBAIN GYPROC MIDDLE EAST FZE** — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine

**THAI GYPSUM PRODUCTS PCL** — Type C or Type X **UNITED STATES GYPSUM CO** — Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2,

M2TECH ACTIV'Air

**USG BORAL DRYWALL SFZ LLC** — Types C, SCX, SGX, USGX **USG MEXICO S A DE C V** — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, USGX, WRC or WRX

4A. **Gypsum Board\*** — (As an alternate to Item 4) — Nom 3/4 in. thick, installed as described in Item 4 with 1-1/4 in. long Type S screws for inner layer and 2-1/4 in. long Type S screws for outer layer. CGC INC — Types AR, IP-AR

**UNITED STATES GYPSUM CO** — Types AR, IP-AR **USG MEXICO S A DE C V** — Types AR, IP-AR

IPC-AR, SCX, SGX, SHX, ULIX, USGX, WRC, WRX

4B. **Gypsum Board\*** — (As an alternate to Items 4 and 4A) — 5/8 in. thick 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Horizontal joints need not be backed by steel framing. Secured as described in Item 4 for the direct attached system. When used in widths other than 48 in., gypsum panels to be installed horizontally. **CERTAINTEED GYPSUM INC** — Type X, Type C, Type GlasRoc

CGC INC — Type SHX **SAINT-GOBAIN GYPROC MIDDLE EAST FZE** — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine M2TECH ACTIV'Air

**THAI GYPSUM PRODUCTS PCL** — Type X, Type C **UNITED STATES GYPSUM CO** — Type SHX, FRX-G **USG MEXICO S A DE C V** — Type SHX

4C. Gypsum Board\* — (As an alternate to Items 4, 4A and 4B) — Two layers of 5/8 in. thick gypsum board applied horizontally or vertically. Inner layer attached to studs with No. 6 by 1 in. long Type S bugle head screws spaced 24 in. OC along the top and bottom tracks starting 2 in. and then 12 in. from the vertical edge. Inner layer screws spaced 24 in. OC along the studs, starting 2 in. and then 12 in. from the top and bottom of the studs and starting 1-1/4 in. from the horizontal joints when installed horizontally. Outer layer attached to studs with 1-5/8 in. long Type S bugle head screws spaced 16 in. OC along the top and bottom tracks starting 1-3/4 in. from the vertical edge. Outer layer screws spaced 16 in. OC along the studs, starting 1-3/4 in. and then 8 in. from the top and bottom of the studs and starting 1-1/4 in. and then 8 in. from the horizontal joints when installed horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers staggered a min of 12 in. When outer layers are installed horizontally, vinyl or casein, dry or premixed joint compound shall be applied in two coats to joints and screw heads of outer layer. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. **GEORGIA-PACIFIC GYPSUM L L C** — Types 5, 6, 9, C, DAP, DD, DA, DAPC, DGG, DS, GPFS6, LS, TG-C, Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, GreenGlass Type X, Type X ComfortGuard Sound Deadening Gypsum Board, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type DGLW, Water Rated-Type DGLW, Sheathing Type- DGLW, Soffit-Type DGLW, Type LW2X, Veneer Plaster Base - Type LW2X, Water Rated -Type LW2X, Sheathing - Type LW2X, Soffit - Type LW2X, Type DGL2W,

4D. **Gypsum Board**\* — (Not Shown) — (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2B) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical ioints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. **RAY-BAR ENGINEERING CORP** — Type RB-LBG

Water Rated - Type DGL2W, Sheathing - Type DGL2W

4E. **Gypsum Board**\* — (As an alternate to Items 4 through 4D) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types QuietRock ES

4F. **Gypsum Board**\* — (As an alternate to Items 4 through 4E) -5/8 in. thick, applied vertically or horizontally as the outer layer to one side of the assembly. Horizontal joints need not be backed by steel framing. Secured as described in Item 4 for the direct attached system. When used in widths other than 48 in., gypsum panels to be installed horizontally. **CERTAINTEED GYPSUM INC** — Type SilentFX

4G. **Gypsum Board**\* — As an alternate to Item 4 — Nom. 5/8 in. thick, inner layer attached vertically to studs with 1 in. long Type S steel screws spaced 16 in. OC in the field and along the vertical edges. Outer layer attached to the studs horizontally over the inner layer with 1-5/8 in. long Type S steel screws spaced 16 in. OC in the field and along the vertical edges and 12 in. OC to the floor and ceiling runners. Joints of outer layer must be taped. Nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. ACADIA DRYWALL SUPPLIES LTD — Type Blueglass Exterior Sheathing PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C,

4H. **Gypsum Board**\* — (Not Shown) — (As an alternate to Items 4. For direct attachment only to steel studs Item 2B) — For Direct Application to Studs Only- For use as the base layer on one or both sides of the wall. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type S 12 steel screws spaced 8 in. OC at perimeter and 12 in OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Fasteners for face layer gypsum panels when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4. To be used with Lead Batten Strips (see Item 5A) or Lead Discs (see Item 6A). MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

PG-11, PGS-WRS

41. **Gypsum Board\*** — (As an alternate to Item 4, not for use with Items 1C and 2C or 1L and 2N) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 4.

CGC INC — Type ULX **UNITED STATES GYPSUM CO** — Type ULX

**USG MEXICO S A DE C V** — Type ULX

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

4K. **Gypsum Board** — (As an alternate to Items 4 through 4J, not for use with Items 1C and 2C.) — Two layers of nominal 15 mm thick gypsum board applied vertically. Inner layer attached to studs with No.  $3.5 \times 1-3/8$ in. long bugle head, self-drilling screws spaced 23-5/8 in. OC in the field and 15-3/4 in. OC in the perimeter, with the first screw 2 in. from the edge. Outer layer attached to the studs over the inner layer with No. 3.5  $\times$ 1-3/4 in. long bugle head, self-drilling screws spaced 11-13/16 in. OC in the field and 7-7/8 in. OC in the perimeter, with the first screw 3/4 in. from the edge. Outer laver screws staggered from inner laver screws. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layer staggered one stud cavity. Self-adhesive fiberglass mesh (9x9 mesh) tape, nom 2 in. wide, applied over all joints of outer layer panels. Dry or premixed joint compound applied in two coats to joints over the mesh tape and screw heads of outer laver **GYPSEMNA CO LLC** — Types MRFW, FW, TF

4L. **Gypsum Board**\* — (As an alternate to Items 4 through 4K) — Two layers of 5/8 in. thick gypsum board applied vertically or horizontally. Inner layer attached to studs with #6 x 1 in. long bugle head screws spaced 12 in. OC along the top and bottom tracks and 16 in. OC in the field and along the vertical edges. Outer layer attached to studs with #6 imes1-5/8 in. long bugle head screws spaced 12 in. OC along the top and bottom tracks and 16 in. OC in the field and along the vertical edges. Vertical joints are centered over studs and staggered between layers and on opposite sides of the wall. Horizontal joints on the face layer are staggered 12 in. from the base layer. Horizontal joints need not to be backed by steel framing. CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD

4M. Wall and Partition Facings and Accessories\* — (As an alternate to Items 4 through 4L) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 4. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM - Type QuietRock 527.

4N. **Gypsum Board**\* — (As an alternate to Item 4 through 4M) — For direct application to studs only - Four layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. When applied horizontally, base layer secured to studs with 1 in. Type S screws spaced 24 in. OC. Second layer installed with joints offset 12 in. from base layer and secured with 1 in. Type S screws spaced 24 in. OC. Third layer installed with joints in line with base layer and secured with 1-1/2 in. Type S screws spaced 16 in. OC. Fourth layer installed with joints in line with second layer and secured with 1-5/8 in. Type S screws spaced 12 in. OC. For all layers, screws offset 4 in, from previous layer. When applied vertically, base layer secured with 1 in. Type S screws spaced 24 in. OC. Second layer secured with joints offset one stud cavity and secured with 1 in. Type S screws spaced 24 in. OC. Third layer installed with joints in line with base layer and secured with 1-1/2 in. Type S screws spaced 12 in. OC. Fourth layer secured with joints in line with second layer and secured with 1-5/8 in. Type S screws spaced 8 in. OC along vertical edges and 12 in. OC in the field. For all layers, screws offset 4 in. from previous layer. NATIONAL GYPSUM CO — Type FSW

40. **Gypsum Board**\* — (As an alternate to Items 4 through 4N) — Two layers of 5/8 in. thick gypsum board applied vertically or horizontally. Inner layer attached to studs with 1 in. long Type S screws spaced 16 in. OC in the field and vertical edges and along top and bottom tracks. Outer layer attached to studs with 1-5/8 in. long Type S screws spaced 16 in. OC in the field and vertical edges and along the top and bottom tracks. Vertical joints are centered over studs and staggered between layers and on opposite sides of studs. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by steel framing. Horizontal edge joints and horizontal butt joints in adjacent layers need not be staggered NATIONAL GYPSUM CO — Type FSLX

4P. Wall and Partition Facings and Accessories\* — (As an alternate to Item 4) — 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 along the perimeter and 12 in. OC in the field. PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type

5. Lead Batten Strips — (Not Shown, For Use With Item 4D) — Lead

batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum board (Item 4D) and optional at remaining stud locations. Required behind vertical joints. 5A. **Lead Batten Strips** — (Not Shown, for use with Item 4H) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at remaining stud locations. 6. **Lead Discs or Tabs** — (Not Shown, For Use With Item 4D) — Used in lieu of or in addition to the lead batten strips (Item 5) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4D) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". 6A. **Lead Discs** — (Not Shown, for use with Item 4H) — Max 5/16 in. diam by max0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D". 7. 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 studs and floor and ceiling runners with 1-5/8 in. long Type S 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

7A. 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 4). Fiber boards installed with 1-1/4 in. long, Type S steel screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 4) 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. **BLUE RIDGE FIBERBOARD INC** — SoundStop

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.

**HOMASOTE CO** — Homasote Type 440-32

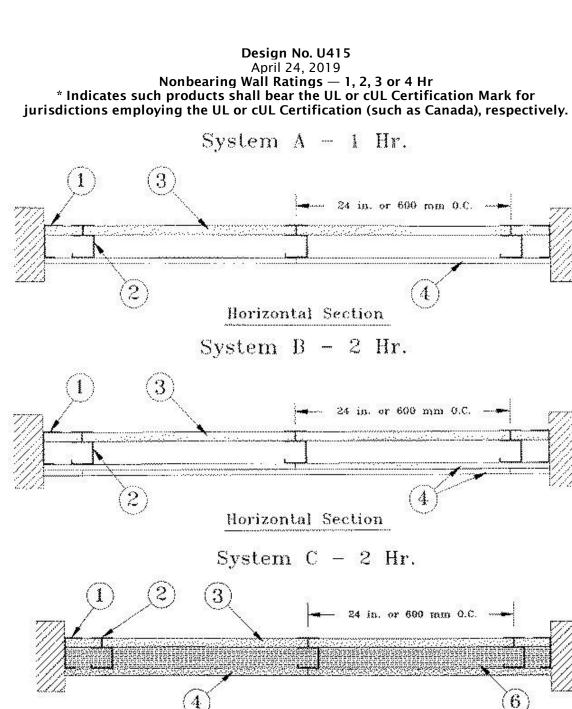
8. Furring Channels — (Optional, Not Shown — not for use with Items 4D, 4H, 4J, or 4N) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type 8A. Framing Members\* — (Optional on one or both sides. Not Shown not for use with Items 4D, 4H, 4J, or 4N) — As an alternate to Item 8, furring channels and Steel Framing Members as described below: a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep. spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. b. **Steel Framing Members**\* — Used to attach furring channels (Item 8Aa) to studs. Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75)

8B. Framing Members\* — (Optional on one or both sides, Not Shown — Not for use with Items 4D, 4H, 4J, or 4N) — As an alternate to Item 8, furring channels and Steel Framing Members as described below: a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 4. b. **Steel Framing Members**\* — Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips. **STUDCO BUILDING SYSTEMS** — RESILMOUNT Sound Isolation Clips - Type A237R

8C. Steel Framing Members\* — (Optional on one or both sides, Not Shown — Not for use with Items 4D, 4H, 4J, or 4N) — As an alternate to Item 8, 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 8Cb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4. b. **Steel Framing Members**\* — Used to attach furring channels (Item 8Ca) to studs. Clips spaced 48 in. OC, and secured to studs with No.  $8 \times 2-1/2$  in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. REGUPOL AMERICA — Type SonusClip

8D. Steel Framing Members\* — (Optional on one or both sides, Not Shown — Not for use with Items 4D, 4H, 4J, or 4N) — As an alternate to Item 8, furring channels and Steel Framing Members as described below: a. **Resilient Channels** — Formed of No. 25 MSG galv steel. spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 4. b. **Steel Framing Members**\* — Used to attach resilient channels (Item 8Da) 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.  $10 \times 1/2$  in. pan-head self-**KEENE BUILDING PRODUCTS CO INC** — Type RC+ Assurance Clip

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



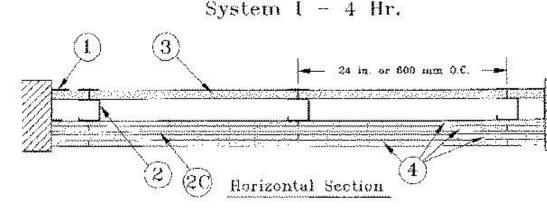
24 in, or 600 mm 0.C. Horizontal Section System D - 2 Hr. 24 in. or 600 rom 0.C. Horizontal Section System E - 2 Hr.

Horizontal Section

System F - 2 Hr. = 24 in. or 600 mm 0.C. --Horizontal Section

System G - 3 Hr. 24 in. or 800 mm O.C. Horizontal Section

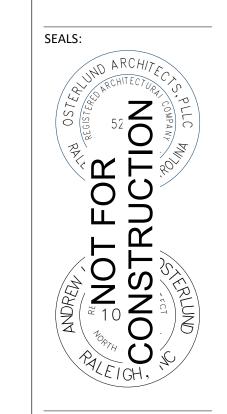
Horizontal Section



1. Floor, Side and Ceiling Runners — "J" - shaped runner, min 2-1/2 in. deep (min 4 in. deep when System C is used), with unequal legs of 1 in. and 2 in., fabricated from min 24 MSG (min 20 MSG when Item 4A, 4B, 4C, 4D or 7 are used) galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC. "E" - shaped studs (Item 2A) may be used as side runners in place of "I" - shaped runners. 2. Steel Studs — "C-H" - shaped studs, min 2-1/2 in. deep (min 4 in. deep when System C is used), fabricated from min 25 MSG (min 20 MSG when Items 2D, 4A, 4B, 4C, 4D or 7 is used) galv steel. Cut to lengths 3/8 to 1/2

in. less than floor-to-ceiling height and spaced 24 in. or 600 mm OC (max 16 in. OC when Items 4A, 4B, 4C, or 4D are used). 2A. **Steel Studs** — (Not Shown) — "E" - shaped studs installed back to back in place of "C-H" - shaped studs (Item 2) "E" - shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when Item 2D, 4A, 4B or 7 is used) galv steel, min 2-1/2 in. deep (min 4 in. deep when System C is used), with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 to 1/2 in. less than floor to

ceiling heights. 2B. Furring Channels — (Optional, Not Shown) — For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "C-H" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan-head steel screws. When furring channels are used, wallboard to be installed vertically only. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7). 2C. **Furring Channels** — For use with System I - "Hat" - shaped, 25 MSG galy steel furring channels attached directly over the inner layers of wallboard to each stud with 2 in. long Type S pan head steel screws. Screws alternate from top flange to bottom flange at each stud intersection. Furring channels spaced vertically max 24 in. OC.



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2D. Steel Framing Members\* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7):

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

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

2E. **Steel Framing Members**\* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. . Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B), Type X-Ray Shielded Gypsum (Item 4C), Type RPP-Lead Lined

Drywall (Item 4F) or cementitious backer units (Item 7). a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4. b. **Steel Framing Members**\* — Used to attach furring channels (Item 2Ea) to studs. Clips spaced 24 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips. STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

2F. **Steel Framing Members**\* — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7):

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 3. b. **Steel Framing Members**\* — Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted PLITEQ INC — Type GENIECLIP

2G. Steel Framing Members\* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B), Type X-Ray Shielded Gypsum (Item 4C), Type RPP-Lead Lined Drywall (Item 4F) or cementitious backer units (Item 7):

a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 2Gb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4. b. **Steel Framing Members**\* — Used to attach furring channels (Item 2Ga) to studs. Clips spaced 24 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. **REGUPOL AMERICA** — Type SonusClip

2H. **Steel Framing Members**\* — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B), Type X-Ray Shielded Gypsum (Item 4C), Type RPP-Lead Lined Drywall (Item 4F) or cementitious backer units (Item 7):: a. Resilient Channels — Formed of No. 25 MSG galv steel.

> spaced 24 in. OC, and perpendicular to studs. Channels secured to stude as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in, from the center of the overlap, Gypsum board attached to resilient channels as described in Item 4. b. **Steel Framing Members**\* — Used to attach resilient channels (Item 2Ha) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No.  $10 \times 1/2$  in. pan-head self-**KEENE BUILDING PRODUCTS CO INC** — Type RC+ Assurance Clip

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

> 2-23/32 in. wide by 7/8 in. or 1-1/2 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only and attached to furring channels as described in Item 4. b. **Steel Framing Members**\* — Used to attach furring channels (Item 2Ia) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8  $\times$  1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into **CLARKDIETRICH BUILDING SYSTEMS** — Type

a. Furring Channels — Formed of No. 25 MSG galv steel.

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

ClarkDietrich Sound Clip

**UNITED STATES GYPSUM CO** — Type SLX

**USG BORAL DRYWALL SFZ LLC** — Type SLX

**USG MEXICO S A DE C V** — Type SLX

4. Gypsum Board\* —

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in OC when installed horizontally. Horizontal joints need not be backed by steel framing. **CGC INC** — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULIX, ULX, WRC, WRX, USGX. When ULIX is used insulation, Item 6, Batts and Blankets\* is required and minimum stud depth is 4 in.

**USG BORAL DRYWALL SFZ LLC** — Types C, SCX, SGX, USGX **USG MEXICO S A DE C V** — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX,

SHX, ULX, USGX, WRC, WRX

System B — 2 Hr Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to study with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs CGC INC — 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-

AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

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

**USG BORAL DRYWALL SFZ LLC** - 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

**USG MEXICO S A DE C V** - 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System C — 2 Hr Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field when installed vertically or 8 in. OC along the vertical edges and in the field when installed horizontally. Horizontal joints need not be backed by steel framing. Screws along side joints offset 4 in. Requires min 4 in. deep framing per Items 1, 2 and 3. Requires min 3 in. thick mineral wool batts per Item 6. **CGC INC** — Types IP-X3 or ULTRACODE

**UNITED STATES GYPSUM CO** — Types IP-X3 or ULTRACODE **USG BORAL DRYWALL SFZ LLC** — Type ULTRACODE

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

WRC, WRX

System D — 2 Hr Gypsum panels, with beyeled, square or tapered edges, nom 5/8 in. thick. 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to study with 1 in, long Type S steel screws spaced 24 in, when installed vertically or 16 in. OC when installed horizontally. Horizontal ioints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 6. **CGC INC** — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX,

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

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

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

System E — 2 Hr Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing. **CGC INC** — 1/2 in. Types C, IP-X2, IPC-AR, 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

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

**USG BORAL DRYWALL SFZ LLC** - 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

**USG MEXICO S A DE C V** - 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers. Inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. Outer or face layer attached to resilient furring channels (Item 2B) with 1-5/8 in. long Type S steel screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered 24 in. CGC INC — 1/2 in, Type C. IP-X2, IPC-AR or WRC: 5/8 in, Types AR, C. FRX-

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

**USG BORAL DRYWALL SFZ LLC** — 1/2 in. Type C; 5/8 in. Types C, SCX **USG MEXICO S A DE C V** - 1/2 in. Types C. IP-X2. IPC-AR or WRC: 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System G — 3 Hr Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in OC when installed horizontally. Middle layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. . Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers. **CGC INC** — Types C, IP-X2, IPC-AR, WRC

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

**USG BORAL DRYWALL SFZ LLC** — Type C **USG MEXICO S A DE C V** — Types C, IP-X2, IPC-AR, WRC

System H — 3 Hr Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers. **CGC INC** — Types C, IP-X2, IPC-AR, WRC

**UNITED STATES GYPSUM CO** — Types C, IP-X2, IPC-AR, WRC **USG BORAL DRYWALL SFZ LLC** — Type C

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

System I — 4 Hr Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 4 ft wide (or 1200 mm for metric spacing) wallboard with square or tapered edges. Total of four layers to be used. First and second (inner) layers applied vertically or horizontally over the steel studs. Horizontal joints need not be backed by steel framing. When applied vertically, joints centered over studs and staggered min 24 in., otherwise all joints staggered min 12 in. First layer secured to studs with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 24 in. OC. Second layer secured to studs with 2-1/4 in. long Type S self-drilling, selftapping bugle-head steel screws spaced 12 in. OC. Third layer applied vertically over the furring channels (Item 2C) with a 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Fourth layer applied vertically or horizontally with 2-1/4 in. long Type S selfdrilling, self-tapping bugle-head steel screws spaced 12 in. OC. When applied vertically, joints to be staggered min 24 in. from third layer, otherwise all joints staggered min 12 in. **CGC INC** — Types IP-X3 or ULTRACODE

**UNITED STATES GYPSUM CO** — Types IP-X3 or ULTRACODE **USG BORAL DRYWALL SFZ LLC** — Type ULTRACODE

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

4A. Gypsum Board\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to study with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9) or Lead Discs or Tabs (see Item 10). **RAY-BAR ENGINEERING CORP** — Type RB-LBG

4B. **Gypsum Board**\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Type Nelco

4C. Gypsum Board\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to study with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9A) or Lead Discs (see Item 10A). Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum 4D. **Gypsum Board**\* — (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer, For direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification OO-L-201f, Grade "C". **RADIATION PROTECTION PRODUCTS INC** — Type RPP - Lead Lined

5. **Joint Tape and Compound** — (Not Shown) Systems A, B, C, E, F, G, H, I

Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered with joint compound. 6. Batts and Blankets\* — Systems A, B, E, F, G, H, I

(Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt mineral bearing the UL Classification Marking as to Fire Resistance. System A With Type ULIX Gypsum Boards Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ)

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

**THERMAFIBER INC** — Type SAFB, SAFB FF

**ROCKWOOL** — Type AFB

**Categories** for names of Classified companies.

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

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

Directory for names of Classified companies. 9. **Lead Batten Strips** — (Not Shown, For Use With Item 4A) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Required behind vertical joints. 9A. Lead Batten Strips — (Not Shown, for use with Item 4C) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".. Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at remaining stud locations. 10. **Lead Discs or Tabs** — (Not Shown, For Use With Item 4A) — Used in lieu of or in addition to the lead batten strips (Item 9) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4A) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". 10A. **Lead Discs** — (Not Shown, for use with Item 4C) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

11. **Lead Batten Strips** — (Not Shown, For Use With Item 4B) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4B) and optional at remaining stud locations. 12. **Lead Tabs** — (Not Shown, For Use With Item 4B) — 2 in. wide, 5 in.

long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 4B) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary. Indicates such products shall bear the UL or cUL Certification Mark for

jurisdictions employing the UL or cUL Certification (such as Canada),

respectively.



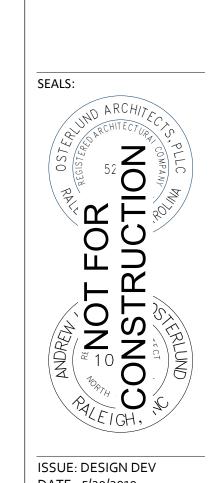
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DATE: 5/29/2019 DRAWN BY: JFK **REVISIONS: UL DETAILS** 



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BUILDING CONCORD, NORTH CAROLIN,
PROPERT

BOSTON, MASSACHUSETTS DERIT

ISSUE: DESIGN DEV DATE: 5/29/2019 DRAWN BY: Author REVISIONS: LIFE SAFETY

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