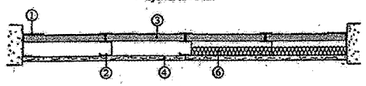
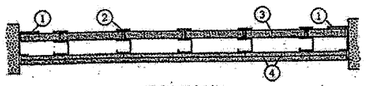
Design No. U415
Nonbearing Wall Ratings—1 or 2 Hr

System A - 1 Hr.



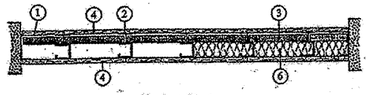
Horizontal Section

System B - 2 Hr.



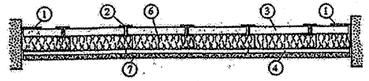
Horizontal Section

System C - 2 Hr.



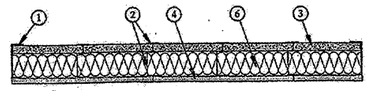
Horizontal Section

System D - 2 Hr.



Horizontal Section

System E - 2 Hr.



Horizontal Section

1. **Floor, Side and Ceiling Runners**—"J"—shaped runner, min 2-1/2 in. deep, with unequal legs of 1 in. and 2 in., fabricated from min 24 MSG 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.
2. **Steel Studs**—"C-H"—shaped studs, min 2-1/2 in. deep, fabricated from min 25 MSG 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.

2A. **Steel Studs**—(Not Shown)—"E"—shaped studs installed in place of "C-H"—shaped studs (Item 2) and to secure the closure liner panels at the ends of walls. Fabricated from min 25 MSG galv steel, min 2-1/2 in. deep, 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 in. less than floor to ceiling heights. Sill and lintel of opening formed with "J"—shaped runners (Item 1) secured to "E"—shaped studs with angle clips and steel screws.

3. **Wallboard, Gypsum***—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"—shaped section of "C-H" studs. Free edge of end panels attached to long leg of "J"— runners with 1-5/8 in. long Type S self-drilling, self-tapping bugle head 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.
   - Canadian Gypsum Company —Type SLX
   - United States Gypsum Co. —Type SLX
   - Yeso Panamericano S.A. de C.V. —Type SLX

4. **Wallboard, Gypsum***—

Systems A & D

Gypsum panels, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S self-drilling, self-tapping bugle head steel screws spaced 12 in. (24 in. OC in System D).
- Canadian Gypsum Company —Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX
- United States Gypsum Co. —Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX
- Yeso Panamericano S.A. de C.V. —Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX

System B

Gypsum panels, 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 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC. Outer or face layer attached to studs with 1-5/8 in. long Type S self-drilling, self-tapping bugle head steel screws spaced 12 in. Joints between inner and outer layers staggered a min of 12 in. when applied horizontally, joints centered over studs and staggered 24 in. when applied vertically.
- Canadian Gypsum Company —1/2 in. Type C, IP-X2 or WRC; 5/8 in. Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX
- United States Gypsum Co. —1/2 in. Types C, IP-X2 or WRC; 5/8 in. Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX
- Yeso Panamericano S.A. de C.V. —1/2 in. Types C, IP-X2 or WRC; 5/8 in. Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX

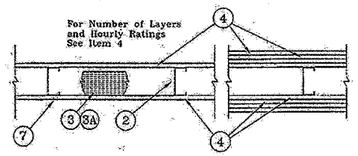
System C

Gypsum panels, 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 self-drilling, self-tapping bugle head steel screws spaced 12 in. OC.
- Canadian Gypsum Company —1/2 in. Type C, IP-X2; 5/8 in. Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX
- United States Gypsum Co. —1/2 in. Types C, IP-X2; 5/8 in. Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX
- Yeso Panamericano S.A. de C.V. —1/2 in. Types C, IP-X2; 5/8 in. Types AR, C, IP-X1, IP-X2, SCX, SHX, WRC, WRX

System E

Gypsum panels, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S self-drilling, self-tapping steel screws spaced 8 in. OC along the perimeter and 12 in. OC in the field. Screws along side joints offset 4 in.

Design No. U419
Non Bearing Wall Ratings—1, 2, 3 or 4 Hr (See Items 3 & 4)



1. **Floor and Ceiling Runners**—(Not shown)—Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.
2. **Steel Studs**—Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width as indicated under Item 4, min 1-1/4 in. flanges and 1/4 in. return, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
3. **Batts and Blankets***—(Required as indicated under Item 4)—Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 4. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

3A. **Batts and Blankets***—(Optional)—Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

4. **Wallboard, Gypsum***—Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal edge joints and horizontal butt joints on opposite sides of studs staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Wallboard Protection on Each Side of Wall

Rating	Min Stud Depth	No. Of Layers And Thickness Of Panels	Min Thickness Of Insulation (Item 3)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.
1	1-5/8	1 layer, 3/4 in. thick	Optional
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	2 layers, 3/4 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

- Canadian Gypsum Co.—1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3
- United States Gypsum Co.—1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3
- Yeso Panamericano SA de CV—1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3.

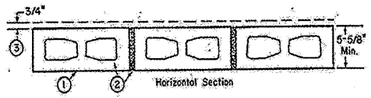
FIRE RESISTANCE DIRECTORY (BXRH)

FIRE RESISTANCE RATINGS - ANSI/UL263 (BXUV)—*Continued*

5. **Fasteners**—(Not shown)—Type S or S-12 self-drilling, self-tapping steel screws used to attach panels to studs (Item 2) or furring channels (Item 6). Single layer systems: 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 12 in. OC when panels are applied vertically. Two layer systems: First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. Three-layer systems: First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. Four-layer systems: First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth Layer- 2-5/8 in. long for 1/2 in., 5/8 in. panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.
6. **Furring Channels**—(Optional, not shown) for single or double layer systems)—Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 panhead steel screws.
7. **Joint Tape and Compound**—Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer panels.
8. **Siding, Brick or Stucco**—(Optional, not shown) —Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.
9. **Caulking and Sealants***—(Optional, not shown)—A bead of acoustical sealant applied around the partition perimeter for sound control.
   - United States Gypsum Co.—Type AS

*Bearing the UL Classification Marking

Design No. U906
Bering Wall Rating—2 HR.
Nonbearing Wall Rating—2 HR.



Horizontal Section

1. **Concrete Blocks***—Nominal 6 by 8 by 16 in. hollow or solid. Classification D-2 (2 hr).
   - Anchor Concrete Products, Inc.
   - Florida Rock Industries, Inc.
   - Pike Industries Inc., d/b/a Tilcon Whitcomb.
   - Westbrook Concrete Block Co., Inc.
2. **Mortar**—Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
3. **Portland Cement Stucco or Gypsum Plaster**—Add 1/2 hr to Classification if used. Attached to concrete blocks (Item 1).
4. **Foamed Plastic***—(Optional-Not Shown)—1-1/2 in. thick max, 4 ft wide sheathing attached to concrete blocks (Item 1).
   - Celotex Corp—Type Thermax

*Bearing the UL Classification Marking

SA&E PROJECT NUMBER	01-632-056
BID PACKAGE	BP-1
ISSUED FOR CONSTRUCTION	FEB. 4, 2020

REVISIONS

R #	Doc #	Date

Southern A&E LLC
7951 Troon Circle
Austell, Ga 30168
(770) 819-7777
architects & engineers

FACILITY CODE NUMBER: 672-0109

(6) CLASSROOM ADDITION TO:

CREEKSIDE MIDDLE SCHOOL

CATAULA , GEORGIA

HARRIS COUNTY BOARD OF EDUCATION

HAMILTON , GEORGIA

UL1

STATE OF GEORGIA — JAMES M. SOUTHERN — REGISTERED ARCHITECT

DRAWING NUMBER

A702

ORIGINAL SHEET SIZE: ARCH E1 (30" X 42")