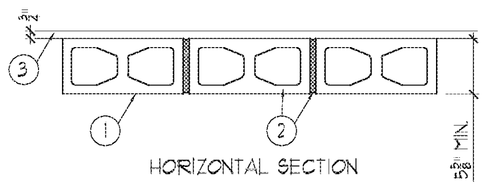
DESIGN NO. U906

February 06, 2014
BEARING WALL RATING —2 HR.
NONBEARING WALL RATING —2 HR.



HORIZONTAL SECTION

1. Concrete Blocks* —Nominal 6 by 8 by 16 in, hollow or solid. Various designs. Classification (2 hr).
See Concrete Blocks category for list of eligible manufacturers.
ANCHOR CONCRETE PRODUCTS INC
GAGNE & SON CONCRETE BLOCK INC
GLENWOOD MASONRY PRODUCTS
Allowable compressive stress of 51% of max allowable compressive stress in accordance with the empirical design method.
OLDCASTLE APG SOUTH INC, DBA ADAMS PRODUCTS
WESTBROOK CONCRETE BLOCK CO INC
Allowable compressive stress of 15.6% of max allowable compressive stress in accordance with the empirical design method.

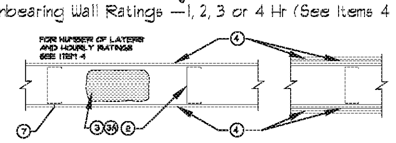
2. Mortar —Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.

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).
ATLAS ROOFING CORP -- "EnergyShield Pro Wall Insulation" and "EnergyShield Pro 2 Wall Insulation."
THE DOW CHEMICAL CO —Type Thermax Sheathing, Thermax Light Duty Insulation, Thermax Heavy Duty Insulation, Thermax Metal Building Board, Thermax White Finish Insulation, Thermax ci Exterior Insulation, Thermax IH Insulation, Thermax Plus Liner Panel and Thermax Heavy Duty Plus (HDP)
*Bearing the UL Classification Mark

Design No. U419

May 14, 2014
Nonbearing Wall Ratings —1, 2, 3 or 4 Hr (See Items 4 & 5)



1. Floor and Ceiling Runners - (Not shown) - Channel shaped, fabricated from min 25 MSG (min 20 MSG when Item 4A is used) 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 (min 20 MSG when Item 4A is used) 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. Gypsum Board* - Gypsum Panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 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 & Thickness of Panel	Min. Thickness of Insulation (Item 3)
1	3-1/2	1 layer, 5/8 in. thick	Optional

CANADIAN GYPSUM COMPANY - 1/2 in. thick Type C, IP-X2 or IPC-AR‡ WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX or WRC‡ 3/4 in. thick Type IP-X3, ULTRACODE, ULTRACODE SHX OR ULTRACODE WRX
UNITED STATES GYPSUM CO - 1/2 in. thick Type C, IP-X2, IPC-AR or WRC‡ 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR‡ 3/4 in. thick Type IP-X3, ULTRACODE, ULTRACODE SHX OR ULTRACODE WRX
YESO PANAMERICANO S A DE C V - 1/2 in. thick Type C, IP-X2 or IPC-AR‡ WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX or WRC‡ 3/4 in. thick Type IP-X3, ULTRACODE, ULTRACODE SHX OR ULTRACODE WRX.

4A. Gypsum Board* - (As an alternate to Item 4) - 5/8 in. thick gypsum panels, installed as described in Item 4 with, Type S-12 steel screws. The length and spacing of the screws as specified under Item 5.
CANADIAN GYPSUM COMPANY - Type FRX
UNITED STATES GYPSUM CO - Type FRX

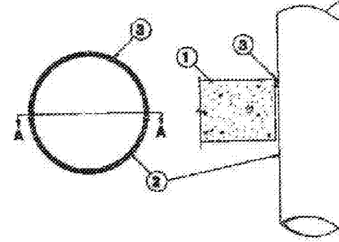
4B. Gypsum Board* - (As an alternate to Items 4 and 4A) - 5/8 in. thick, 2 ft. wide, tongue and groove edge, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 5. Joint covering (Item 7) not required.
CANADIAN GYPSUM COMPANY - Type SHX
UNITED STATES GYPSUM CO - Type SHX.
YESO PANAMERICANO S A DE C V - Type SHX.

5. Fasteners - (Not shown) - Type S or S-12 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 or 1/2 in., 5/8 in. thick panels for 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, spaced 12 in. OC. Screws offset min. 6 in. from layer below. Four-layer systems: First layer - 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer - 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer - 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in.OC. Fourth layer - 2-5/8 in. long for 1/2 on. thick 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 steel screws. Not for use with Item 4A.
7. Joint Tape and Compound - Vinyl or cassein, 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.

*Bearing the UL Classification Mark

SYSTEM NO. C-AJ-1037

November 19, 1997
F RATING —2 HR
T RATING —1/4 HR



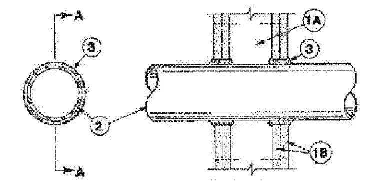
1. Floor or Wall Assembly —Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 9 in. See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Steel Piple —Nom 8 in. diam (or smaller) Schedule 10 (or heavier) steel pipe. One pipe to be centered within the firestop system. A nom annular space of 3/16 in. is required within the firestop system. Pipe to be rigidly supported on both sides of floor or wall assembly.

3. Fill, Void or Cavity Material* —Caulk —Caulk fill material to be forced within the annulus to the max extent possible, flush with top surface of floor or with both surfaces of wall.
RECTORSEAL —Metacaulk 835+

SYSTEM NO. W-L-1001

F RATINGS -- 1, 2, 3 AND 4 HR (SEE ITEMS 2 AND 3)
T RATINGS -- 0, 1, 2, 3, AND 4 HR (SEE ITEM 3)
L RATING AT AMBIENT -- LESS THAN 1 CFM/SQ FT
L RATING AT 400 F -- LESS THAN 1 CFM/SQ FT



SECTION A-A

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

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

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

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

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

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

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

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

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

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

1. Nom 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

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

GASTITE, DIV OF TITEFLEX

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

WARD MFG L L C

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

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

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

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

*Bearing the UL Classification Mark

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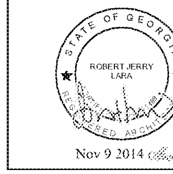

Nov 9 2014

STRUCTURAL
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MEP
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NOTES:

REVISION #	DATE	REMARKS

ISSUE DATE:	ISSUED TO:	ISSUED FOR:
10-02-2014	COUNTY	PERMITS

PROJECT ADDRESS:
MASJID AL-MOMINEEN
837 NORTH INDIAN CREEK DRIVE
CLARKSTON, DEKALB COUNTY
GEORGIA. 30021

LAYOUT:
UL DESIGNS

PAPER SIZE: 24X36 (ARCH D)

SCALE: AS NOTED

SHEET NUMBER:
A500

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