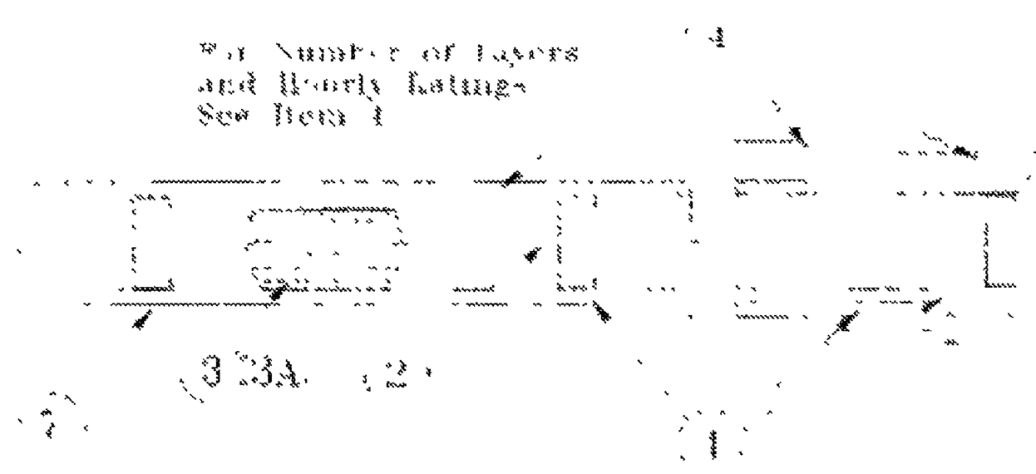
Design No. U419

June 10, 2003

Nonbearing 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 Gypsum Board* -- Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity Horizontal joints need not be backed by steel framing Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in 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 & Thkns of Panel	Min Thkns of Insulation (Item 3)
1	3-1/2	1 layer, 5/8" thick	Optional
1	2-1/2	1 layer, 1/2" thick	1-1/2 in
1	1-5/8	1 layer, 3/4" thick	Optional
2	1 5/8	2 layers, 1/2' thick	Optional
2	1-5/8	2 layers, 5/8" thick	Optional
2	3-1/2	1 layer, 3/4" thick	3 in
3	1-5/8	3 layers, 1/2" thick	Optional
3	1-5/8	2 layers, 3/4' thick	Optional
3	1-5/8	3 layers, 5/8 thick	Optional
4	1 5/8	4 layers, 5/8" thick	Optional
4	1-5/8	4 layers, 1/2" thick	Optional
4	2-1/2	2 layers, 3/4' thick	2 in

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 SHC or ULTRACODE WRC

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 SHC or ULTRACODE WRC

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

4A Gypsum Board* -- (As an alternate to Item 4) -- 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

USG MEXICO 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 8 in OC along vertical and bottom edges and 12 in OC in the field 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 thick panels or 2-5/8 in long for 5/8 in thick panels, spaced 24 in OC Fourth layer 2-5/8 in long for 1/2 in thick panels or 3 in long for 5/8 in thick panels, spaced 12 in OC Screws offset min 6 in from layer below

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

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 Mark

95868

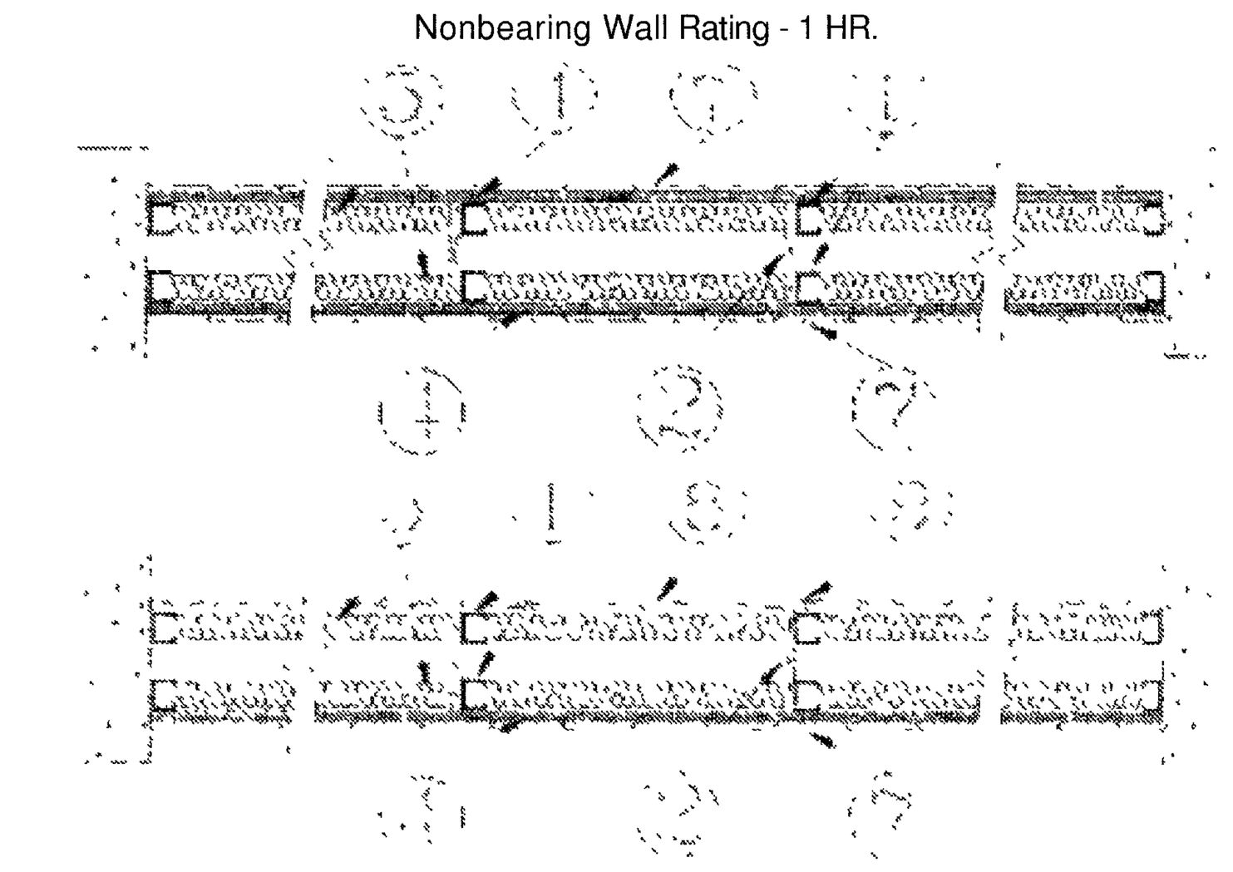
Design Number U419

No Scale

Design No. U445

November 08, 2000

Nonbearing Wall Rating - 1 HR.



1 Studs Channel shaped 1-5/8 in wide by 1-1/4 in deep with 5/16 in folded back return flange legs Fabricated from 20 MSG (0 0329 in , min bare metal thickness) galvanized steel Max stud spacing 16 in OC Studs to be cut 1 in less than assembly height

2 Bracing Two Types -- Cut from steel runners or studs, cavity width Fastened with two 1/2 in long, Type S -12 steel, screws in each stud, space braces max 48 in OC As an alternate, bracing cut from gypsum wallboard, length equal to stud cavity width and 6 in wide Fastened with two 1 in long, Type S -12 steel, screws in each stud, space braces max 48 in OC

3 Floor and Ceiling Runners (not shown) – Channel shaped runners, 1-5/8 in wide by 1-1/4 in deep, fabricated from 20 MSG (0 0329 in , min bare metal thickness) galvanized steel Attached to floor and ceiling with fasteners, 24 in OC, max

4 Cementitious Backer Units* Board 1/2 or 5/8 in thick, square edge, attached to studs with 1-1/4 in long Type S-12, corrosion resistant wafer-head steel screws spaced 8 in OC, joints covered with glass fiber mesh tape

UNITED STATES GYPSUM CO -- Durock Exterior Cement Board or Durock Brand Cement Board

5 Batts and Blankets* Placed to fill interior of stud cavity Min thickness 1-1/2 in both stud cavities

THERMAFIBER L L C -- Type SAFB

6 Bond Coat for Setting Tile Latex modified Portland cement mortar or ANSI AI36 1 Type I organic adhesive applied with a 1/4 in square notched trowel

7 Ceramic Tile Tile 1/4 in thick, joints filled with grout

8 Gypsum Board* Applied vertically, 5/8 in thick, attached to studs with 1 in long Type S -12 steel screws, spaced 8 in OC along the edges of the board and 12 in OC in the field of the board

CANADIAN GYPSUM COMPANY -- Types AR, IP-AR

UNITED STATES GYPSUM CO -- Types AR, IP-AR

USG MEXICO S A DE C V – Types AR, IP-AR

9 Joint Tape and Compound Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads, paper tape, 2 in wide, embedded in first layer of compound over all joints As an alternate, nominal 3/32 in thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard Joints reinforced

10 Vapor Permeable Water Barrier Sheathing Material (Optional -- Not Shown) – As required

11 Water Barrier (Optional, Not Shown) - Commercial asphalt saturated and/or coated felt

*Bearing the UL Classification Marking

Design Number U445

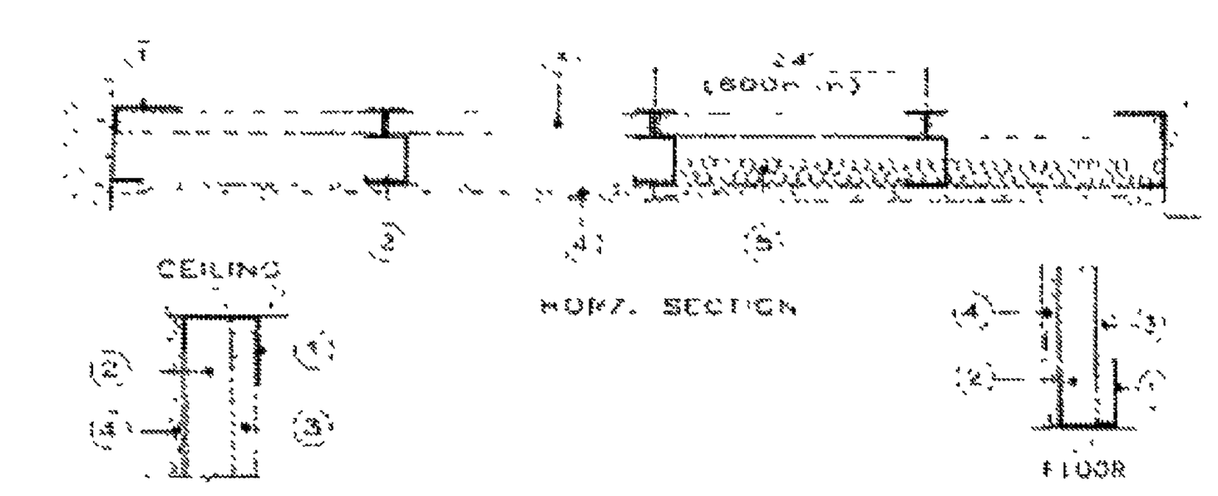
No Scale

Design No. U469

August 29, 2003

Assembly Rating — 1 HR

Nonbearing Wall



1 Floor and Ceiling Runners – "J" - shaped, 2-1/2 in wide with unequal legs of 1 in and 2 in , fabricated from 24 MSG galv steel 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, 2-1/2 in wide by 1-1/2 in deep, fabricated from 25 MSG galv steel, spaced 24 in or 600 mm OC Vertically restrained walls require studs to be cut 3/8 in less than floor to ceiling height

3 Gypsum Board* – 1 in thick gypsum wallboard liner panels, supplied in nominal 24 in or 600 mm widths 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 head steel screws spaced not greater than 12 in OC

CANADIAN GYPSUM COMPANY – Type SLX

UNITED STATES GYPSUM CO – Type SLX

USG MEXICO S A DE C V -- Type SLX

4 Gypsum Board* – 5/8 in thick, 4 ft or 1200 mm wide applied vertically and attached to studs with 1 in long Type S steel screws spaced 12 in OC along the edges and in the field of the boards

AMERICAN GYPSUM CO -- Types AG-C, AGX-C

BPB AMERICA INC - ProRoc Type C

BPB CANADA INC -- ProRoc Type C

CANADIAN GYPSUM COMPANY -- Types C, IP-X2, IPC-AR, SCX or WRC

G-P GYPSUM CORP SUB OF

GEORGIA-PACIFIC CORP -- Type 5

LAFARGE NORTH AMERICA INC -- Types LGFC-C LGFC-C/A

PABCO GYPSUM, DIV OF

PACIFIC COAST BUILDING PRODUCTS INC -- Type C or PG-C

STANDARD GYPSUM L L C -- Type SG-C

TEMPLE-INLAND FOREST PRODUCTS CORP -- Type TG-C

UNITED STATES GYPSUM CO -- Type C FRX-G, IP-X2, IPC-AR, SCX or WRC

USG MEXICO S A DE C V -- Type C, IP-X2 IPC-AR, SCX or WRC

5 Batts and Blankets* -- (Optional) -- Mineral wool batts partially or completely filling stud cavity

THERMAFIBER L L C -- Type SAFB

5A Fiber, Sprayed* As an alternate to Batts and Blankets (Item 5) -- Spray applied cellulose insulation material The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product Nominal dry density of 3 0 lb/ft3

THERMAFIBER L L C -- Type SAFB

5B Fiber, Sprayed* -- As an alternate to Batts and Blankets (Item 5) and Item 5A 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

*Bearing the UL Classification Marking

Design Number U469

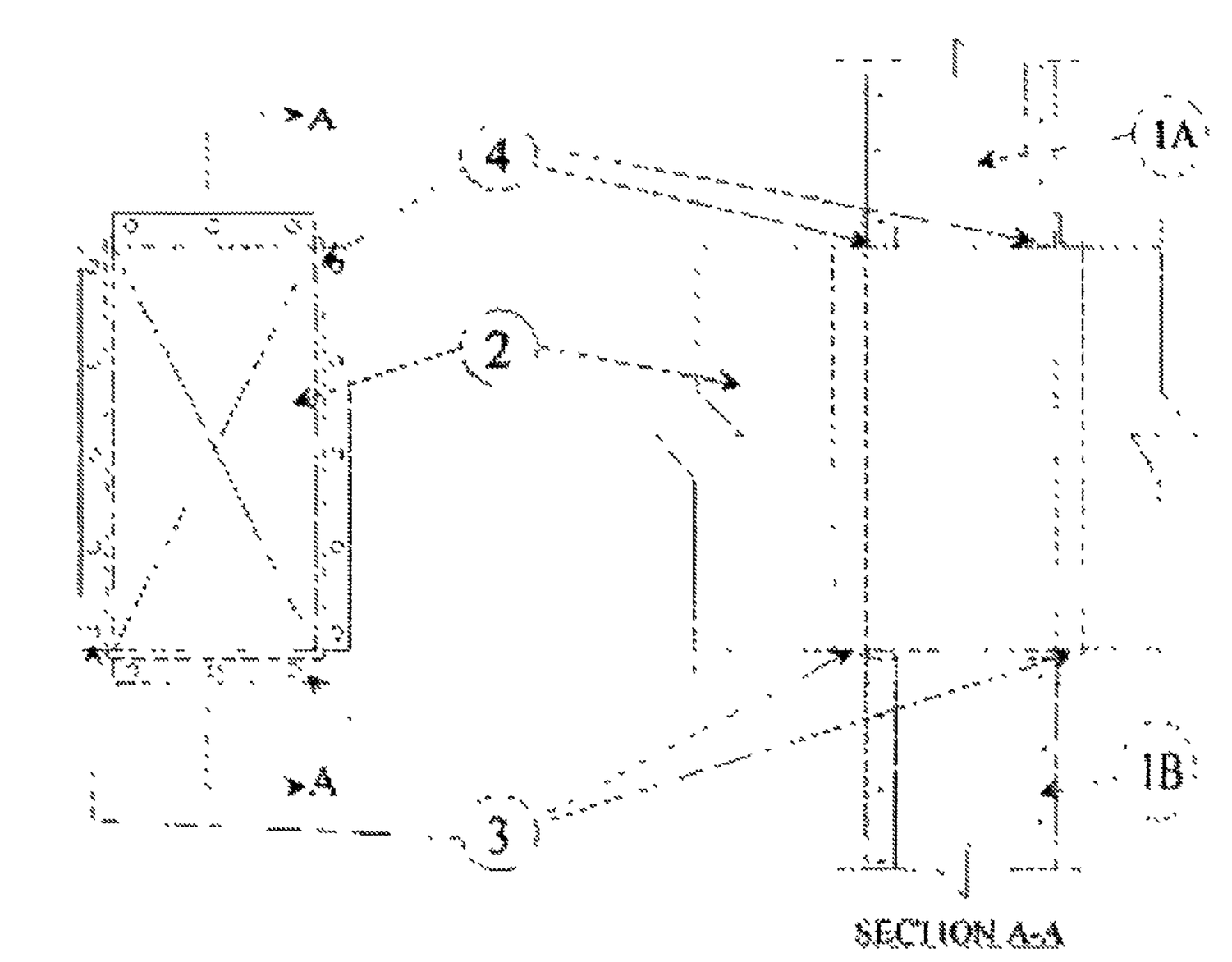
No Scale

System No. W-L-7003

December 20, 2000

F Rating - 1 Hr

T Rating - 0 Hr



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

A Studs Wall framing may consist of either wood studs or steel channel studs Wood studs to consist of nom 2 by 4 in lumber spaced 16 in OC Steel studs to be min 2-1/2 in wide and spaced max 24 in OC When steel studs are used and the max dimension of opening exceeds the width of the stud cavity, the opening shall be framed on all sides using lengths of studs installed between the vertical studs and attached to the studs at each end The framed opening in the wall shall be 2 to 4 in wider and 2 to 4 in higher than the dimensions of the steel vent duct (Item 2) such that a clearance of 1 to 2 in is present between the duct and the framing on all four sides

B Gypsum Board* One layer of nom 5/8 in thick gypsum wallboard, as specified in the individual Wall and Partition Design Max area of opening is 188 sq in with max dimension of 14-1/2 in for wood stud walls Max area of opening is 325 sq in with max dimension of 25 in for steel studs

2 Steel Vent Duct Nom 24 x 12 or 12 x 24 in (or smaller) x 24 gauge (or heavier) galv steel vent duct One vent duct to be positioned within the firestop system The annular space shall be min 1/4 in to a max 3/4 in Duct to be rigidly supported on both sides of the wall assembly

3 Steel Retaining Angle Nom 2 x 2 x 1/8 in steel angles attached to all four sides of the duct on both sides of the wall The angles shall be attached with No 8 (or larger) steel sheet metal screws or 1/4 in diam by min 1 in long steel bolts and nuts spaced within a max of 2 in from each end and at a max of 5 in OC

4 Fill, Void or Cavity Material* – Sealant Min 5/8 in thickness of fill material applied within the annulus, flush with both surfaces of wall

HILTI CONSTRUCTION CHEMICALS, DIV OF

HILTI INC – CP601S, CP606 or FS-ONE Sealant

System Number W-L-7003

No Scale

REVISIONS

CONSULTANT

JMA ARCHITECTURE STUDIOS

RECORD DRAWING

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CITY OF LAS VEGAS

DOWNTOWN SENIOR SERVICES CENTER

NEIGHBORHOOD SERVICES

BID SET

STAMP

OWNER: CITY OF LAS VEGAS
DEPARTMENT OF PUBLIC WORKS
ARCHITECTURAL SERVICES

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LAS VEGAS, NEVADA 89101
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DRAWN	B. Bulanov
FILE	
DATE	September 8, 2004
SCALE	N.T.S.
BID NO	04.15341.01
CLV DWG NO	521-287
	UL Listings
SHT NO	A2.32