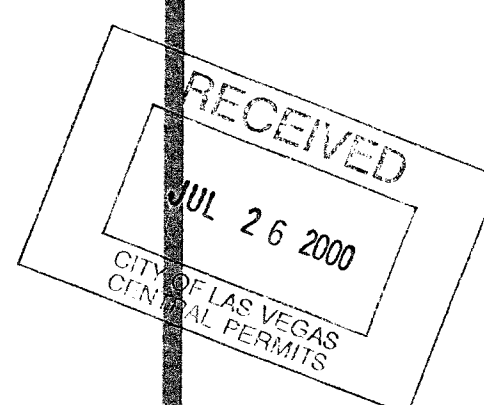




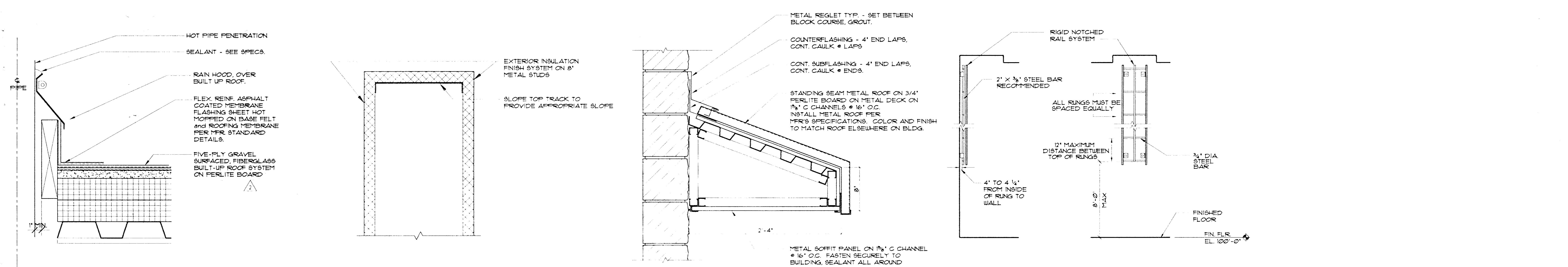
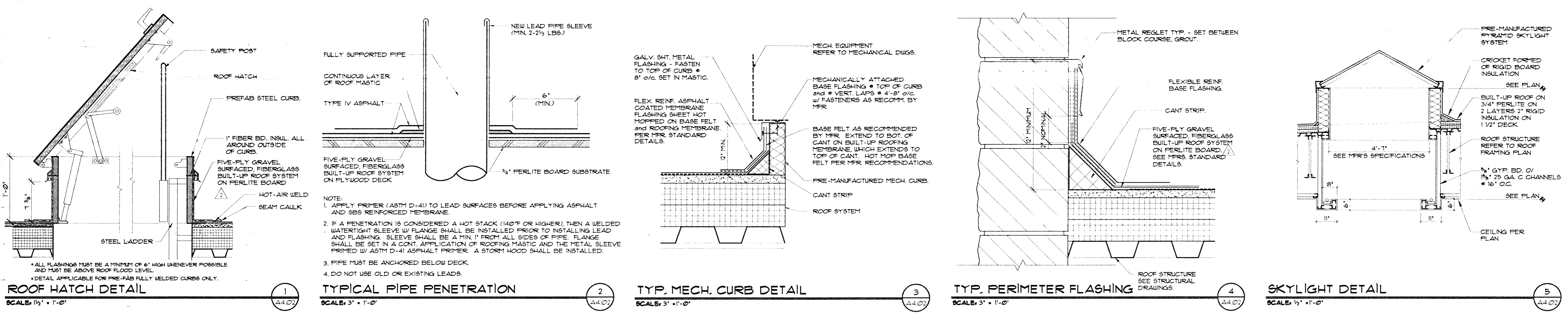
ROOF DETAILS

SUMMERLIN ARBORS PARK  
POOL AND POOL BUILDING



Revisions:  
Date: October 22, 1999  
Project No. 9803500  
Scale: AS NOTED  
Drawn By: DDT

A4.02



1 ROOF HATCH DETAIL SCALE: 1/2" = 1'-0"  
2 TYPICAL PIPE PENETRATION SCALE: 3/4" = 1'-0"  
3 TYP. MECH. CURB DETAIL SCALE: 3/4" = 1'-0"  
4 TYP. PERIMETER FLASHING SCALE: 3/4" = 1'-0"  
5 SKYLIGHT DETAIL SCALE: 1/2" = 1'-0"  
6 TYP. HOT STACK FLASHING DETAIL SCALE: 3/4" = 1'-0"  
7 PARAPET at STUD WALL SCALE: 3/4" = 1'-0"  
8 SHOWER/LOCKER COVER SCALE: 1/2" = 1'-0"  
9 LADDER (ROOF ACCESS) SCALE: 1/2" = 1'-0"

metal roof deck panel assembly. See Fire Resistance Directory—Metal Roof Deck Panels (EIV).

3. **Roof Insulation—Foamed Plastic**—Polysiocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., to be applied in one or more layers. Boards to be installed with end joints staggered a min of 6 in. Min thickness shall be selected from the table below. No limit on max overall thickness.

Restrained or Unrestrained Assembly Rating	Min Insulation Thkns., in.	
	With Gypsum Wallboard	Without Gypsum Wallboard
1	1 1/2	2
2	2	3
3	3	4

Apache Products Co.—Type Apache Plyox  
Atlas Roofing Corp.—Type AC Foam II  
Celotex Corp.—Types L, D  
Firestone Building Products Co.—ISO 95-FK, ISO 95-GL, ISO 95-GR, Rhoflex Isocyanurate FK, Rhoflex Isocyanurate GL, Rhoflex Isocyanurate GR  
Hunter Panels LLC—H Shield  
John Manville International Inc.—ENRGY 2, ISO 1, PSI 25  
Loadmaster Systems Inc.—Type Loadmaster polysiocyanurate insulation  
Rmax Inc.—Type Multi-Max FA

3A. **Foamed Plastic**—(Not shown)—As an alternate to Item 3, polysiocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., with formed channels on the top side and a flat bottom face, to be applied in one layer. Min thickness as measured at the thinnest cross section of polysiocyanurate shall be in accordance with Item 3. No limit on max thickness (as measured at the thinnest section of the board). Insulation covered with fluid applied 3/8 min thick nonveneer FPA rated membrane for use with Class A or C cementitious or asphalt organic granules. Sheathing installed with all joints offset min 6 in. from joints of insulation board.

GAF Materials Corp.—Type INSUL AIR  
John Manville International Inc.—Type ISO-VENT

3B. **Building Units**—As an alternate to Item 3, polysiocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., based on the top surface with oriented strand board. Min thickness of the polysiocyanurate core is 1.3 in. No limit on max overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).

Apache Products Co.—Aparho Nail-Free Roof and Nail Line V.  
Atlas Roofing Corp.—A4 Foam Nail Base Insulation and Vented R.  
Celotex Corp.—Mg-Therm Nail Line  
3C. **Roof Insulation—Mineral and Fiber Boards**—(Not shown)—Optional. Applied in one or more layers over the foamed plastic (Item 3) to be applied with adhesive (Item 6), asphalt or coal tar pitch (Item 7) or mechanically fastened (Item 8).

Johns Manville International Inc.

3D. **Building Units**—As an alternate to Item 3, polysiocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., based on the top surface with oriented strand board. Min thickness of the polysiocyanurate core is 1.3 in. for the 1 1/2 hr rating without gypsum wallboard (Item 4) and for the 1 1/2 hr rating without gypsum wallboard and 2.6 for the 1 1/2 hr rating without gypsum wallboard and 2.6 in. in adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).

John Manville International Inc.—Mailboard.

3E. **Building Units**—As an alternate to Item 3, polysiocyanurate foamed plastic insulation boards based on the underside (or both sides) with mineral fiber board. Min thickness of the polysiocyanurate core is 1.3 in. for the 1 1/2 hr rating without gypsum wallboard (Item 4) and for the 1 1/2 hr rating without gypsum wallboard and 2.6 for the 1 1/2 hr rating without gypsum wallboard and 2.6 in. in adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).

John Manville International Inc.—Fusco Foam

3F. **Building Units**—As an alternate to Item 3, polysiocyanurate foamed plastic insulation boards based on the underside with wood fiber board. Min thickness of the polysiocyanurate core is 1.3 in. for the 1 1/2 hr rating without gypsum wallboard (Item 4) and for the 1 1/2 hr rating without gypsum wallboard and 2.6 for the 1 1/2 hr rating without gypsum wallboard and 2.6 in. in adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).

John Manville International Inc.—ENRGY 2, PSI 25.

3G. **Building Units**—As an alternate to Item 3, polysiocyanurate foamed plastic insulation boards, nom 48 by 48 or 96 in., based on the top surface with gypsum board. Min thickness of the polysiocyanurate core is 1.3 in. for 1 hr rating without gypsum wallboard (Item 4) and for the 1 1/2 hr rating with wallboard (Item 4) and 2.6 in. for the 1 1/2 hr rating without gypsum wallboard (Item 4). No limit on overall thickness. Boards to be installed with end joints staggered a min of 6 in. in adjacent rows. Adhesive (Item 6) may be applied between the building units and the vapor retarder (or gypsum wallboard if vapor retarder is not used).

John Manville International Inc.—ENRGY 2 Gypsum Composite, as described in Item 10. Supplied in sheets nom 4 by 8 or 12 ft long, truck. Min weight 2.2 psi. Applied perpendicular to steel roof deck direction with end joints staggered 2 ft in adjacent rows. End joints to occur over structural steel roof members. See Gypsum Wallboard (KXK) category for names of manufacturers.

John Manville International Inc.—ENRGY 2 Gypsum Composite, as described in Item 10. Supplied in sheets nom 4 by 8 or 12 ft long, truck. Min weight 2.2 psi. Applied perpendicular to steel roof deck direction with end joints staggered 2 ft in adjacent rows. End joints to occur over structural steel roof members. See Gypsum Wallboard (KXK) category for names of manufacturers.

3H. **Vapor Retarder—Sheathing Material**—(Optional)—(Not shown)—Vinyl film or paper scrim vapor barrier applied to steel roof deck or gypsum wallboard with adhesive (Item 6), hot asphalt (Item 7) or sand topcoat overlapped approx 2 in. in adjacent sheets. See Sheathing Material (EHTZ) category for names of manufacturers.

3I. **Adhesive**—(Optional)—The vapor retarder, the gypsum wallboard or the first layer of roof insulation may be secured with adhesive to the steel crest truss. Also used to attach the vapor retarder to gypsum wallboard, the first layer of insulation to vapor retarder or gypsum wallboard and each additional layer of insulation. Applied in 1/2 in. wide ribbons on OC at 8 to 4 ft/100 sq ft. See Adhesives (RWR) category for names of manufacturers.

3J. **Asphalt or Coal Tar Pitch**—(Optional)—(Not shown)—The vapor retarder, the gypsum wallboard or the first layer of roof insulation may be secured with asphalt or coal tar pitch to the steel crest surfaces at a max rate of 15 lb/100 sq ft. Also used to attach the vapor retarder to gypsum wallboard, the first layer of insulation to vapor retarder or gypsum wallboard and each additional layer of roof insulation, applied at a max rate of 35 lb/100 sq ft. See Adhesives (RWR) category for names of manufacturers.

3K. **Mechanical Fasteners**—(Optional)—(Not shown)—Mechanical fasteners, such as screws, bolts, nuts, washers, etc., used to secure the steel roof deck, the gypsum wallboard or the first layer of roof insulation to steel roof deck.

3L. **Steel Roof Deck**—(Unclassified)—Min 1 1/2 in. deep and 16 in. wide galv fluted steel deck. Min gauge is No. 22 MSG. Ends overlapped in supports a min 1 1/2 in. and welded to supports 12 in. OC and at side laps. Side laps overlapped with 1/2 in. long lap head, self-drilling, self-tapping steel screws spaced a max of 36 in. OC.

3M. **Classified Steel Floor and Form Units**—Noncombustible 1 1/2 to 3 in. deep, 24 to 36 in. wide, min 22 MSG galvanized steel fluted units. Ends overlapped at supports a min 1 1/2 in. and welded to support, 12 in. OC and at side laps. Side laps fastened with 3/4 in. long No. 12 self-drilling, self-tapping steel screws at 36 in. OC. As alternate to screw fasteners, adjacent units may be button punched or welded together 3/8 in. OC along side joints.

Bowman Metal Deck/Wheeling Corrugating Co., Div. of Wheeling-Pittsburgh Steel Corp.—Galv Types B, F and N, and stud units may be used for ratings up to 2 hr.

Vulcraft, Div. of Nucor Corp.—Galv Types B, F and N, and stud units may be used for ratings up to 2 hr.

Wheeling Corrugating Co., Div. of Wheeling-Pittsburgh Steel Corp.—Types B, BW, F and N, and stud units may be used for ratings up to 2 hr.

Note: Type 2, 10E Spray-Applied Fire Resistive Materials to be used with galv steel roof units only.

10. **Spray-Applied Resistive Material**—Applied by mixing with water and spraying in more than one coat to final thicknesses as shown in the illustration above and in the table below to steel surfaces which must be clean and free of dirt, loose scale and oil. Steel deck surface must be "spatter" coated with Type SK-III Spray-Applied Fire Resistive Materials prior to application of spray-applied resistive material. Type SK-III spray applied resistive material applied in accordance with the manufacturer's application instructions. Min average and min individual density of 12.5 pcf, respectively. For method of density determination, see Design Information Section. Thickness of the spatter coat is included in the total final thickness of protection material.

Restrained Assembly Rating	Unrestrained Assembly Rating	Unrestrained Beam Rating	On/SteelDeck		For 10K1 Joists Spaced	
			With Gypsum Wallboard	Without Gypsum Wallboard	On Beam	4 ft or Less OC
1	1	1	1	1	1	1
1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Arabic Vermiculite Industries—Types MK 6/8CS, MK 6/ED, MK 6/HY, MK 6K, SK 3, Sonotex 1.  
Grace Construction Products—Types MK 6/HY, MK 6S, RG, SK III, Sonotex 1.  
Grace Korea Inc.—Types MK 6/BE, MK 6/ED, MK 6/HY, MK 6S, SK III, Sonotex 1.  
\*No min insulation thickness required.

10A. **Alternate Spray-Applied Fire Resistive Materials**—Applied by mixing with water and spraying in one or more coats to final thicknesses as shown in the table below to steel beam surfaces which must be clean and free of dirt, loose scale and oil. When steel deck is used the area between the steel deck and the beams top flange shall be filled. Min avg and min individual density of 22.5 pcf, respectively. For method of density determination, refer to Design Information Section.

Restrained Assembly Rating	Unrestrained Assembly Rating	Unrestrained Beam Rating	On/SteelDeck		For 10K1 Joists Spaced	
			With Gypsum Wallboard	Without Gypsum Wallboard	On Beam	4 ft or Less OC
1	1	1	1	1	1	1
1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Arabic Vermiculite Industries—Type 2-146.  
Grace Construction Products—Type 2-146  
Grace Korea Inc.—Type 2-146  
\*No min insulation thickness required.

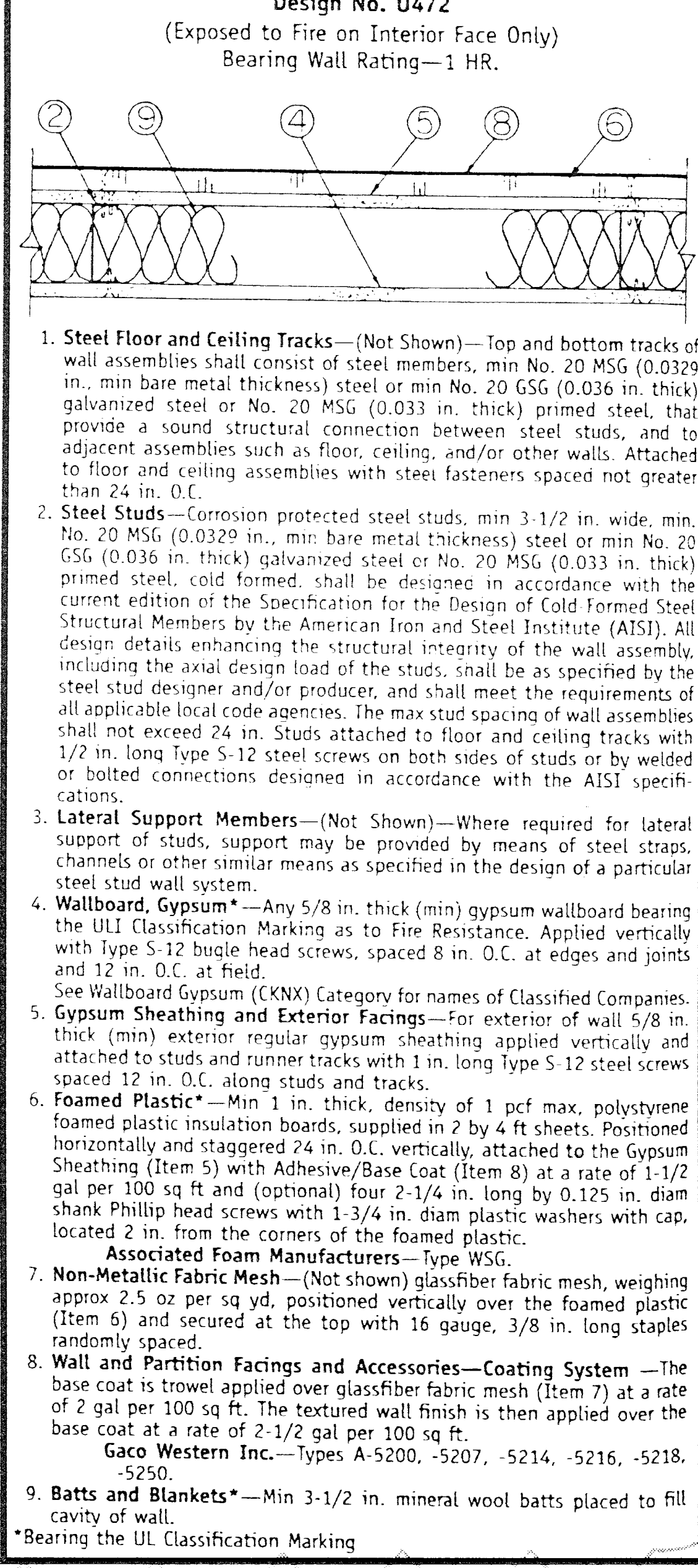
11. **Nonmetallic Fabric Mesh**—(Optional)—As an alternate to metal lath, glass fiber fabric mesh, weighing approx 2.5 oz/sq yd, polypropylene fabric mesh, weighing approx 1.25 oz/sq yd or equivalent, may be used to facilitate the spray application. The mesh is secured to one side of each joist web member. The method of attaching the mesh must be sufficient to hold the mesh and the spray applied Spray-Applied Fire Resistive Materials material in place during application until it has cured. An acceptable method to attach the mesh is by embedding the mesh in min 1/4 in. long beads of hot melted glue the beads of glue shall be spaced a max of 12 in. OC along the top chord of the bar joist. Another method to secure the mesh is by 1/4 in. long by 1/2 in. wide harpin clips formed from No. 18 SWG or heavier steel wire.

11A. **Metal Lath**—(Not shown)—Required with Item 10B, optional with Items 10, 10A)—Metal lath shall be 3/8 in. expanded diamond mesh, weighing 2.5 lb per sq yd. Secured to underside of steel deck by No. 12 by 3/8 in. pan head self-drilling, self-tapping screws and steel washers with an outside diam of 1/2 in. screws spaced 12 in. OC in both directions with lath edges overlapped approx 3 in.

11B. **Metal Lath**—(Optional)—(Not shown)—Metal lath may be used to facilitate the spray application of Spray-Applied Fire Resistive Materials on steel bar joists and trusses. The diamond mesh, 3/8 in. expanded steel lath, 1.7 to 3.4 lb/sq yd is secured to one side of each steel joist with No. 18 SWG galv steel wire at joist web and bottom chord members spaced 15 in. OC max. When used, the metal lath is to be fully covered with Spray-Applied Fire Resistive Materials with no min thickness requirements.

\*Bearing the UL Classification Marking

ONE HOUR  
FIRE-RESISTIVE  
CONSTRUCTION  
THROUGHOUT



PLANS APPROVED  
ARCHITECTURAL  
Building & Safety Dept.  
City of Las Vegas, Nevada  
JCC JUL 31 2000  
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