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**DIVISION: 07—THERMAL AND MOISTURE PROTECTION**  
**Section: 07725—Smoke Vents**

**DIVISION: 08—DOORS AND WINDOWS**  
**Section: 08620—Unit Skylights**

**REPORT HOLDER:**

**ACRALIGHT INTERNATIONAL,  
A DIVISION OF INTERNATIONAL SKYLIGHTS**  
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**EVALUATION SUBJECT:**

**SKYLIGHTS AND SMOKE VENTS**

**1.0 EVALUATION SCOPE**

**Compliance with the following codes:**

- 2000 *International Building Code*® (IBC).
- 1997 *Uniform Building Code*™ (UBC).

**Properties evaluated:**

- Weathering
- Structural integrity
- Smoke and heat venting

**2.0 USES**

The Acralight skylights described in this report are plastic-glazed skylights complying with Chapters 24 and 26 of the IBC and UBC. The Acralight smoke vents described in this report are smoke and heat vents complying with Chapter 9 of the IBC and UBC.

**3.0 DESCRIPTION**

**3.1 Acralight Skylights:**

Acralight skylights are glazed using smooth domes formed from 0.118- or 0.150-inch-thick (3.0 and 3.81 mm) flat sheets of Class CC2 Optix acrylic plastic described in ICC-ES report ER-5411. Model A-S-CM is curb-mounted, and Model A-S-SF is self-flashing. Details and allowable loads for the skylights are noted in Table 1.

**3.2 Acralight Heat and Smoke Vents:**

The Acralight heat and smoke vents identified in Table 2 comply with Section 910 of the IBC and Section 906 of the

UBC. All smoke vents are curb-mounted (CM), and the additional designation L3 is for louvered smoke vents. The units have two opening panel smooth domes, each glazed with 0.118-inch-thick (3 mm) “sky-tough” CC1 polyester material identified by Acralight as Sky-Tough. The retaining cap is 6063-T5 aluminum, with the remaining frame of galvanized steel complying with ASTM A 653 CS Grade B. The smoke vents can be operated with a manual release and are also thermally activated. The smoke vents have fusible links that actuate at 165°F (74°C). Details and allowable loads for the heat and smoke vents are noted in Table 2.

**4.0 INSTALLATION**

The curb-mounted skylights and smoke vents shall be installed on minimum 2-by-6 lumber with a minimum 0.5 specific gravity, and of a height sufficient so that installation of the plastic dome is a minimum of 4 inches (102 mm) above the plane of the roof. The wood curb and the attachment to the roof structure must be designed to resist wind uplift and gravity loads. The self-flashing units are designed to mount directly to the roof deck assembly.

The roof covering shall be removed and an opening equal to the inside curb dimensions shall be cut into the roof sheathing. The curbs and/or the roof deck must have a square and level mounting surface. A 1/2-inch-diameter (12.7 mm) bead of butyl sealant, silicone sealant, or an equal shall be applied to the top of the deck or curb before the skylight is set in place.

The skylight or smoke vents shall be attached to the wood curb or deck with 1/4-inch-diameter (6.4 mm), corrosion-resistant lag screws in each mounting hole provided, with the screw length being sufficient to penetrate the wood curb or wood deck framing member a minimum of 1 1/2 inches (38 mm).

Curb-mounted skylights or smoke vents must have the gap between the skylight frame and the wood curb fully shimmed for proper fastener installation. The units shall be flashed as required by the code.

Compatible sealant is applied over the mounting flange of the self-flashing skylight units and covered with the roof covering in such a manner as to ensure a watertight seal.

After smoke vents are installed on the roof deck, tie-downs shall be carefully removed. To ensure proper installation of the smoke vents, the vents shall be opened with the manual release and closed in accordance with the manufacturer's instructions.

Additional installation details are provided in Figures 1 and 2.

**5.0 CONDITIONS OF USE**

The Acralight plastic skylights and smoke vents described in this report comply with the 2000 *International Building Code*® and the 1997 *Uniform Building Code*™, subject to the following conditions:

- 5.1 Skylight installation complies with Sections 2405.4 and 2606 of the IBC or Sections 2409.4 and 2603 of the UBC, whichever is applicable; and with the manufacturer's instructions and this report.
- 5.2 Smoke vent installation complies with Section 910 of the IBC or Section 906 of the UBC, whichever is applicable.
- 5.3 Allowable loads do not exceed those noted in Tables 1 and 2 of this report.
- 5.4 Appropriate manufacturer's installation instructions are provided at each jobsite installation.

## 6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Interim Criteria for Plastic Skylights (AC16), dated July 2002, and UBC Standard 15-7; and a quality control manual.

## 7.0 IDENTIFICATION

Each skylight and smoke vent is identified by a label noting the Acralight International name and address, the evaluation report number (ESR-1004), the plastic classification (CC1 or CC2), plastic thickness before forming, model designation, and date of manufacture. In addition to the identification label, a label warning of risk of fall is applied to each skylight and smoke vent.

**TABLE 1—DETAILS AND ALLOWABLE LOADS FOR ACRALIGHT INTERNATIONAL  
A-CM AND A-SF SKYLIGHTS WITH ACRYLIC DOMES**

MODEL NO.	INSIDE CURB DIMENSIONS (inches)	DOME THICKNESS (inch)	DOME RISE (inches)	ALLOWABLE LOADS <sup>1</sup> (psf)		NUMBER OF RETAINER FASTENERS <sup>2</sup>	NUMBER OF SKYLIGHT MOUNTING FASTENERS
				LL	WL (up)		
1414	14.25 × 14.25	0.118	5	20	20	8	12
1919	19 × 19	0.118	5	20	20	8	12
2222	22.25 × 22.25	0.118	5	20	20	8	12
3030	30.25 × 30.25	0.118	6	20	20	12	16
3737	37 × 37	0.118	7.5	20	20	12	16
4242	42 × 42	0.118	8.5	20	20	16	20
4646	46.25 × 46.25	0.118	9.25	20	20	16	20
4848	48 × 48	0.118	10	20	20	16	20
1422	14.25 × 22.25	0.150	5	20	20	12	16
1446	14.25 × 46.25	0.150	5	20	20	12	16
2230	22.25 × 30.25	0.150	5	20	20	12	16
2237	22.25 × 37	0.150	5	20	20	12	16
2246	22.25 × 46.25	0.150	5	20	20	12	16
2272	22.25 × 72	0.150	5	20	20	12	16
2296	22.25 × 96	0.150	5	20	20	20	24
3037	30.25 × 37	0.150	6	20	20	12	16
3046	30.25 × 46.25	0.150	6	20	20	12	16
3069	30.25 × 69.25	0.150	6	20	20	16	20
3096	30.25 × 96	0.150	6	20	20	24	28
3496	34 × 96	0.150	7	20	20	24	28
3746	37 × 46.25	0.150	8	20	20	16	24
3775	37 × 75	0.150	8	20	20	20	24
3859	38 × 59	0.150	8	20	20	16	20
4669	46.25 × 69.25	0.150	9.25	20	20	20	24
4689	46.25 × 89.25	0.150	9.25	20	20	24	30
4896	48 × 96	0.150	10	20	20	24	30

For **SI**: 1 inch = 25.4 mm, 1 psf = 0.0479 kN/m<sup>2</sup>.

<sup>1</sup>LL = live load; WL = uplift wind load.

<sup>2</sup>Retainer fasteners are #10, self-drilling and -tapping, electrogalvanized steel sheet metal screws.

<sup>3</sup>Fasteners to attach skylights to wood curbs or wood roof framing members are 1/4-inch-diameter, corrosion-resistant steel lag screws having sufficient length to penetrate the wood member curb or wood roof framing member a minimum of 1 1/2 inches.

TABLE 2—SMOKE VENTS WITH SKY-TOUGH DOMES

MODEL NO.	INSIDE CURB DIMENSIONS (inches)	DOME THICKNESS (inch)	ALLOWABLE LOADS <sup>1</sup>		NO. OF RETAINER FASTENERS PER PANEL <sup>2</sup>	NO. OF SMOKE VENT MOUNTING FASTENERS <sup>3</sup>
			LL	WL		
4896 S-SV2D	48 x 96	0.118	20	20	20	30
4896 A-SV2D	48 x 96	0.118	20	20	20	30
4896-S-SV2D-L3	48 x 96	0.118	20	20	20	30
4896-S-AV2D-L3	48 x 96	0.118	20	20	20	30

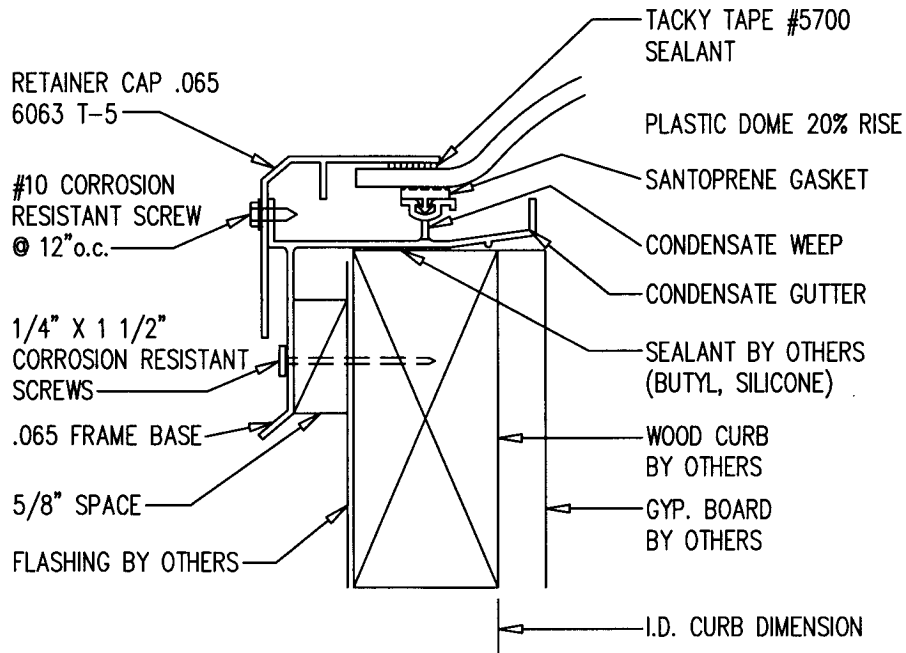
For **SI**: 1 inch = 25.4 mm, 1 psf = 0.0479 kN/m<sup>2</sup>.

<sup>1</sup>LL = live load; WL = uplift wind load.

<sup>2</sup>Retainer fasteners are #10, self-drilling and -tapping, electrogalvanized steel sheet metal screws.

<sup>3</sup>Fasteners to attach the smoke vent to wood curbs or wood roof framing members are 1/4-inch-diameter, corrosion-resistant steel lag screws having sufficient length to penetrate the wood member a minimum of 1 1/2 inches.

A-S-CM (CURB MOUNTED)



A-S-SF (SELF FLASHING)

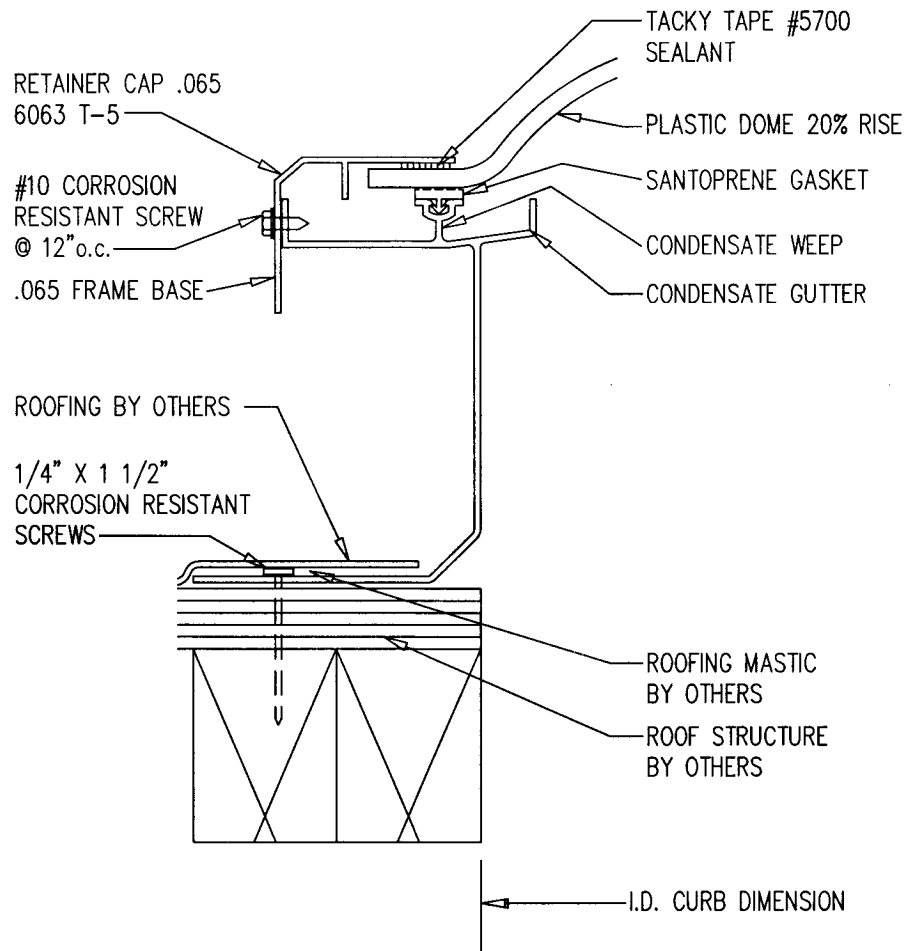
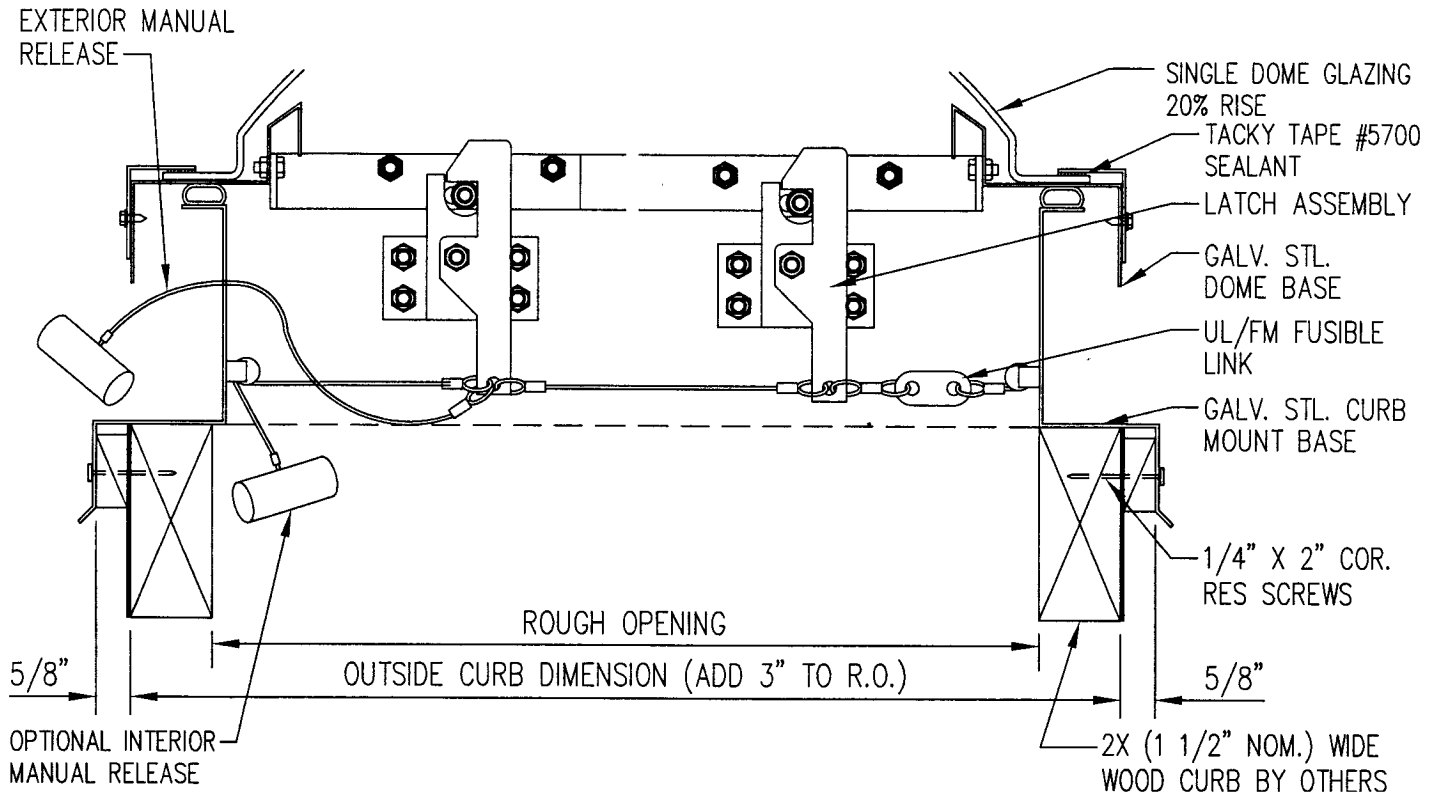


FIGURE 1—SKYLIGHT DETAILS

# A-SV2D-CM-ST

# S-SV2D-CM-ST



# A-SV2D-CM-ST

# S-SV2D-CM-ST

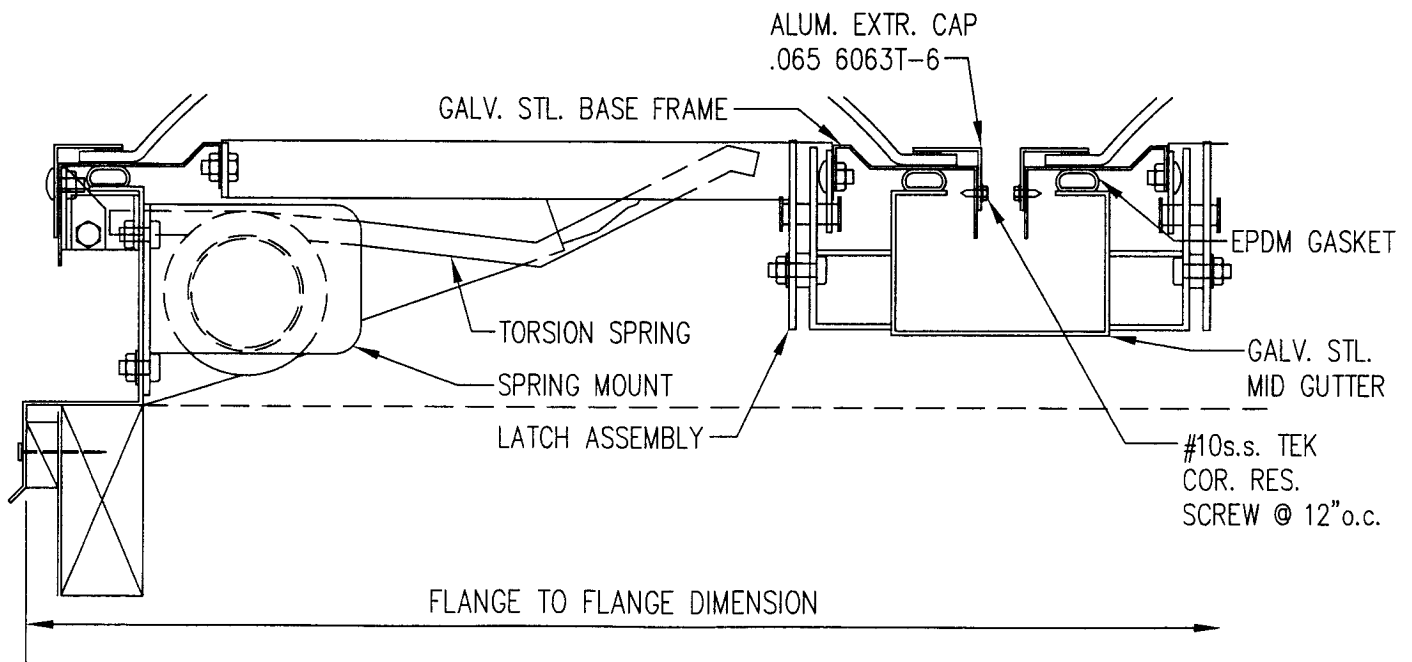
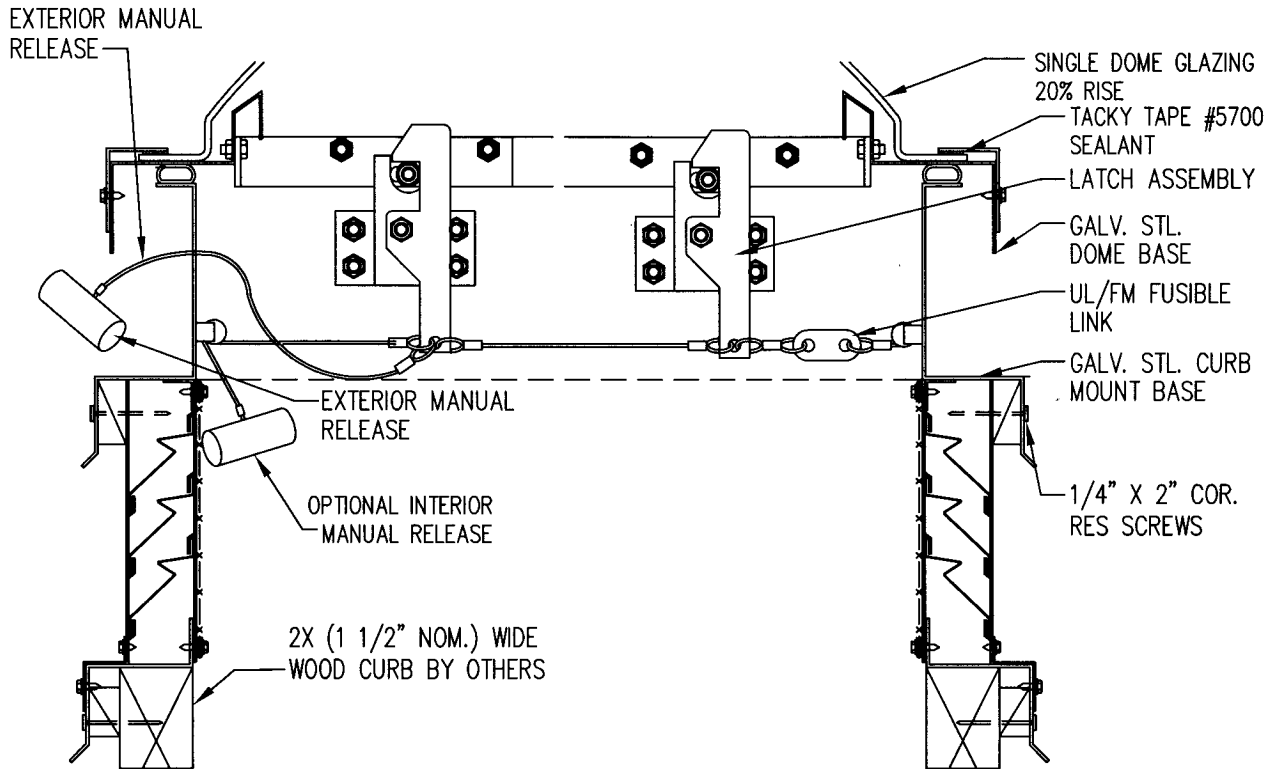


FIGURE 2—SMOKE AND HEAT VENT DETAILS

# A-SV2D-L3-CM-ST

# S-SV2D-L3-CM-ST



# A-SV2D-L3-CM-ST

# S-SV2D-L3-CM-ST

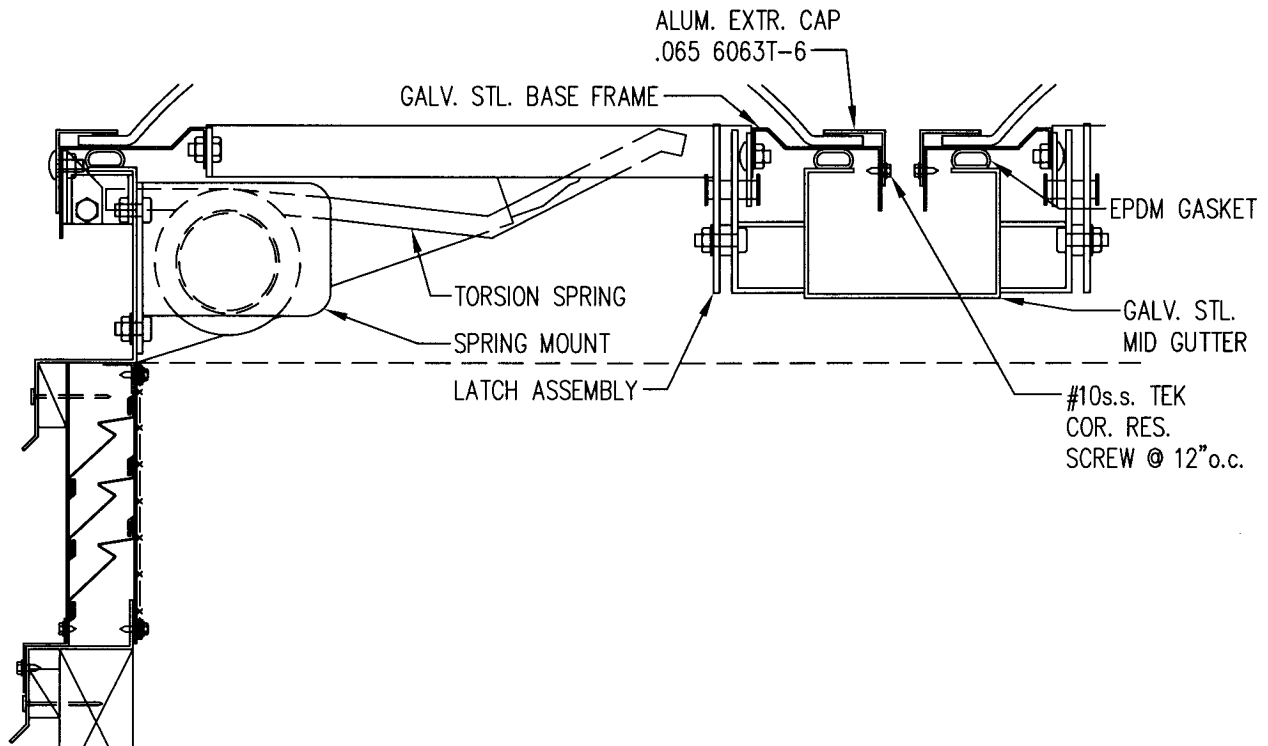


FIGURE 2—SMOKE AND HEAT VENT DETAILS (Continued)