ARCHITECTURAL SHEET METAL MANUAL

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC.
www.smacna.org

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SEVENTH EDITION – JANUARY, 2012

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FOREWORD

This seventh edition of the Architectural Sheet Metal Manual has many changes and several additions. Changes include new chapters and details on penetrations, additional and revised tables in support of commentary and illustrations, additional commentary and illustrations in support of newer construction techniques, an expanded appendix covering issues that have received industry emphasis since the last edition and many clarifications.

A pair of "fast look-up keys" has been placed in front of the Table of Contents to assist users with the speedier location of information in this 542-page technical document.

Nearly every building constructed is unique. Architectural sheet metal elements can be used to distinguish an otherwise ordinary building. Metal roofs, column covers, domes and spires add character and can be used by skilled designers to make a dramatic architectural statement. Architects and designers can use unique metals, variations of metal finishes, contrasting roof seam types, shaped metal cornices, finials, and other elements that are provided by custom sheet metal to best convey the expressed desires of the most forward-thinking owners.

Sloped roofs are an especially important architectural element and, although there are many proprietary roof systems currently on the market, the unique attributes of custom-fabricated metal deserves the innovative designer's first and last consideration. By their nature, proprietary roof systems are designed for a mass market and a certain degree of architectural uniqueness is lost with the use of packaged systems. Packaged systems typically rely heavily on sealants as weatherproofing and standard package flashing. A custom sheet metal contractor who installs a packaged roof system can provide custom detailing and job-specific flashing that will greatly enhance the roof's overall weathertightness. Custom sheet metal has the inherent advantages of building-specific design, soldered joints, and other beneficial characteristics that can only be realized through the use of custom sheet metal.

In order to provide designers a broader choice in application and design and to reflect local practices as well as varying geographic conditions, this manual often includes alternative methods of design and construction. Not all local area practices are discussed or illustrated as this would be impractical. Deviations from included recommendations may often be permissible, depending upon verification of satisfactory service under conditions other than those covered in this manual. Careful examination of the information herein and local climate conditions will enable designers to select the proper detail for practically any architectural sheet metal requirement.

Designers and owners are strongly encouraged to consult local SMACNA architectural sheet metal contractors about any application of architectural sheet metal. Local architectural sheet metal contractors can offer technical guidance and make suggestions on the choice of metals, the relative economies of different techniques, the practicality of design details, and can otherwise share their experience. You can find a local SMACNA contractor using the online member list at http://www.smacna.org for specific technical and design assistance. Architects can use elements from this manual as a guide in developing an architectural sheet metal section of their project specifications.

Direct reference to this manual by figure or detail number is encouraged.

SMACNA expresses appreciation to the committees and task forces, architects, sheet metal contractors, journeymen sheet metalworkers, manufacturers, and other interested individuals and companies that have contributed time, knowledge and experience in the development of this and former editions. SMACNA's technical staff also gains insight into the need for additions and changes based on the incoming technical inquiries—a service offered to the public via the SMACNA Website Technical Inquiry form—but also an ongoing feedback path for ideas and subject areas of industry interest. Many drawings, much commentary and suggestions have been consigned to further study and, as the association is able to make additional clarification for various applications, it will do so.

SHEET METAL AND AIR CONDITIONING CONTRACTORS'
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CHAPTER RP

ROOF PLANS

TYPICAL METAL ROOF PLAN

The master isometric drawing in this figure contains keys to related components and other Figure Numbers that are listed below. The location of each key on the illustration is generally recognizable as a gutter, downspout, eave, ridge, valley, hip, rake, headwall, roof transition, coping, or other component. Associated Figure Numbers address some aspect of design or installation. Consult the Table of Contents to identify the subject covered by each listed Figure Number and to pursue specific interests. Use of the key system should improve lookup of references and facilitate in achieving a well-designed, coordinated roofing and flashing system.

Item Number	Component	Figure Numbers
1	Hanging Gutter	1-1, 1-2, 1-3, 1-5, 1-6, 1-7, 1–12, 1–13, 1–14, 1–15, 1-17, 1-18, 1-19, 1-20, 1-24
2	Built-In Gutter	1-4, 1-5, 1-8, 1-9, 1-21, 1-23, 1-24
3	Scupper/Conductor Heads	1-25, 1-26, 1-27, 1–28, 1–29, 1–30
4	Downspouts	1-31, 1-32, 1-33, 1-34, 1-35, 1-36
5	Formed Metal Copings	3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-9
6	Flashing	4-4, 4-5, 4–6, 4–7
7	Metal Roofs	6-1, 6-4, 6-5, 6-6, 6-8, 6-9, 6–10, 6–15, 6–16, 6–18, 6–22, 6–23
8	Valley Flashing	6-7, 6-10
9	Ridge/Hip Flashing	6–6, 6–9, 6-17
10	Dormer Flashing	6–4, 6-6, 6-9, 6–10, 6-17
11	Roof Penetrations/Skylights	6-17, 8–1, 8–2, 8–3, 9–12
12	Domes	6-22, 12–7
13	Metal Wall Systems	7–1, 7–2, 7–3, 7–5, 7–6, 7–8, 7–9
14	Column Covers	10–1
15	Roof Penetration	8–12
16	Headwall Flashing	6-7, 6-17
17	Roof Rake/Edge	6–4, 6-6, 6–7, 6–10, 6–14, 6–15, 6–16, 6-18, 7–6

Table RP–1 Metal Roof Plan – Fast Lookup Keys to Architectural Elements

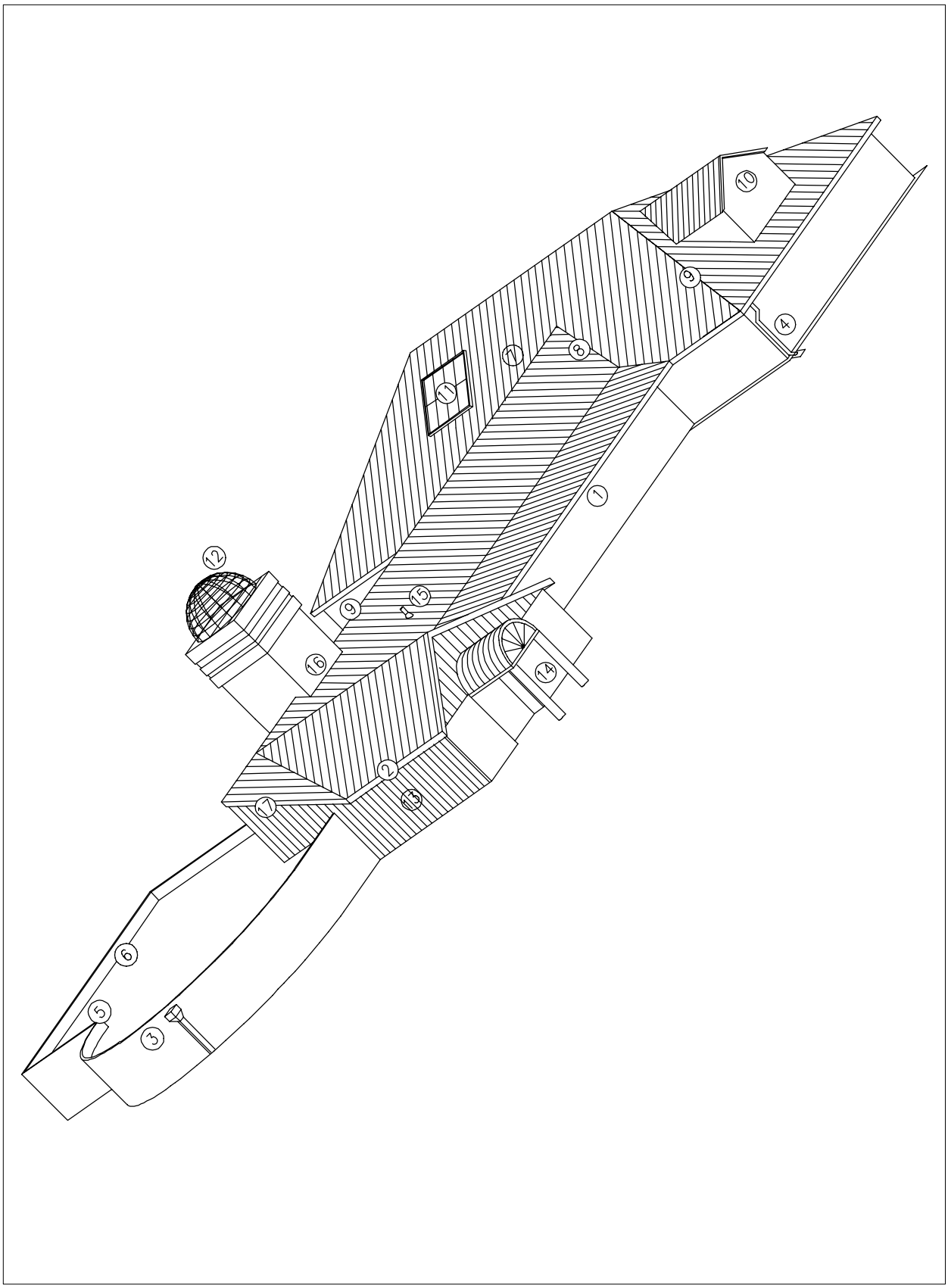

FIGURE RP–1 TYPICAL METAL ROOF PLAN