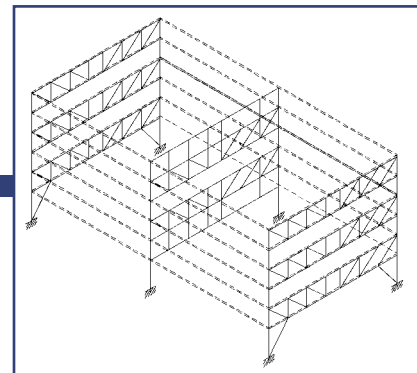


ANATOMY OF A STAGGERED TRUSS

Bobbi Marstellar, P.E and Tom Faraone, P.E.

You've heard about staggered-truss framing, but have you ever seen it? Now's your chance! This handy poster shows common details for staggered-truss framing systems.



Unless you've been hiding under a rock, you've likely heard about the staggered truss steel framing system. For some of you this sounds like a new system. The rest of you—and we aren't going to give away your age—know it has been around a long time.

The fact is, bell-bottoms, shag carpet and the staggered truss, all born in the '60s, are enjoying a comeback. We can't comment on the bell-bottoms and shag carpet, but the renaissance of the staggered truss is an easy one. This cost efficient steel-and-precast-plank system can provide up to 60 × 100 feet of clear space—an architect's dream. In addition, it offers floor-to-floor heights as low as 8'-8".

But why now?

Improved fabricator efficiencies, low mill prices and increased steel availability are combining to make this system the winning choice for multi-story residential construction.

As interest in the system rapidly increases, AISC has responded with a number of resources to help engineers understand and design the system, in-

cluding AISC's *Design Guide 14: Staggered Truss Framing Systems*, in-house technical seminars, and the Steel Solutions Center. What's more, many hollow-core plank manufacturers offer practical details and design information on combining plank with structural steel framing.

In spite of the many resources available, designers and fabricators have continued to ask questions, such as:

- How deep is the truss?
- What is a typical bottom chord member?
- How is the truss connected to the column?
- How is the slab supported?
- What is a typical web member?
- How do I support the roof level?

Since we agree that a picture is worth a 1,000 words, we're presenting this "Anatomy of the Staggered Truss" drawing to answer the questions above. In addition, you will find a wealth of typical information that can help you better understand what the staggered truss system is and how it works.

Significant recent examples of successful staggered truss projects include:

- The Mystic Marriott Hotel and Spa, Groton, CT, 2001, 6 stories

- Radisson Hotel, Irving, TX, 1999, 12 stories (erected in 19 days!)
- Clayton On the Park, White Plains, NY, 2002, 8 stories
- Aladdin Hotel and Casino, Las Vegas, NV, 2000, 38 stories

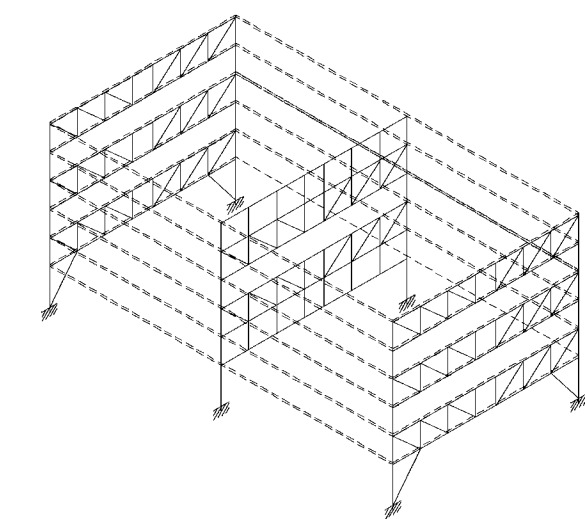
And there are many staggered truss projects currently in design throughout the country, with the start of construction expected by the end of 2002.

Hang this drawing over your water cooler because the staggered truss is here to stay. If you have questions regarding the system, want additional copies of the drawing or would like to discuss how a staggered truss system could benefit your project, please contact the Steel Solutions Center at 312.670.2400 or solutions@aisc.org.

Roberta (Bobbi) Marstellar is Director, Steel Solutions Center at AISC in Chicago, IL. Tom Faraone is Regional Engineer, Northeast Region, for AISC Marketing, LLC.

Acknowledgment

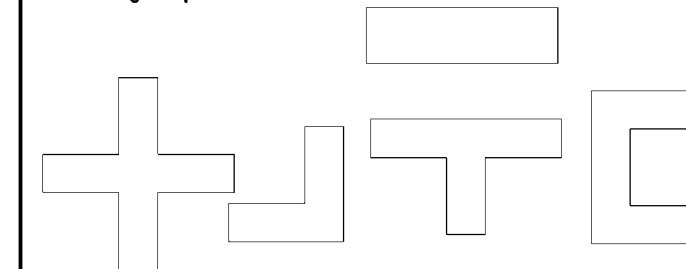
The authors offer a special thanks to Ronald Teves, a Chicago-based engineer, for preparing the drawing.



STAGGERED TRUSS FRAMING SYSTEMS

How to Tell If Its a Staggered Truss:

* Building Shape:



RESOURCES:

AISC Design Guide 14:
Staggered Truss Framing Systems / Wexler and Lin

Notes:
Typical Truss Spacing = 60 feet (with 8" Plank)
Typical Frame Weight = 6-8 psf
Typical Weight of 65 foot Truss = 6.5 Tons
(Truss Weight can range from 5-8 tons depending on the span)

Material Specification:
Wide Flange Shapes = ASTM A992
HSS Shapes = ASTM A500, Grade B
Plates = ASTM A36
Angles = ASTM A36

Contact Information:
Steel Solutions Center
American Institute of Steel Construction
One East Wacker, Suite 3100
Chicago, IL 60601-2000

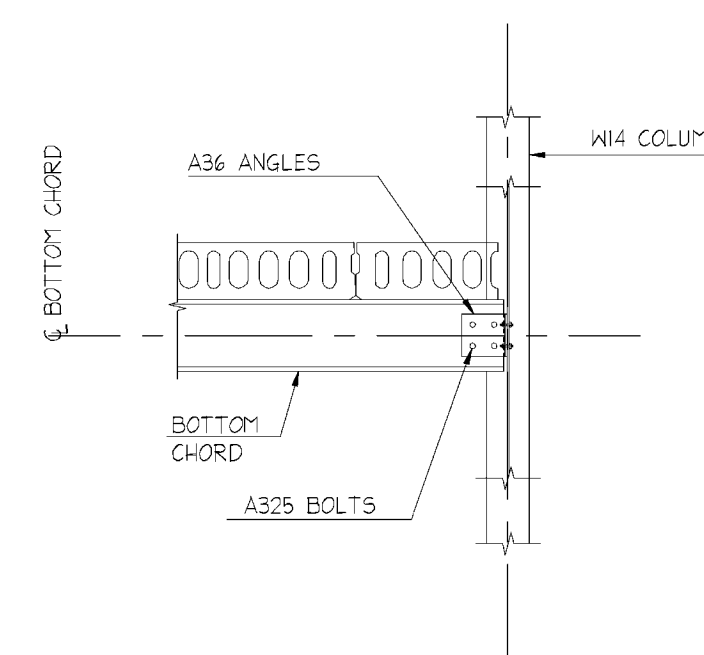
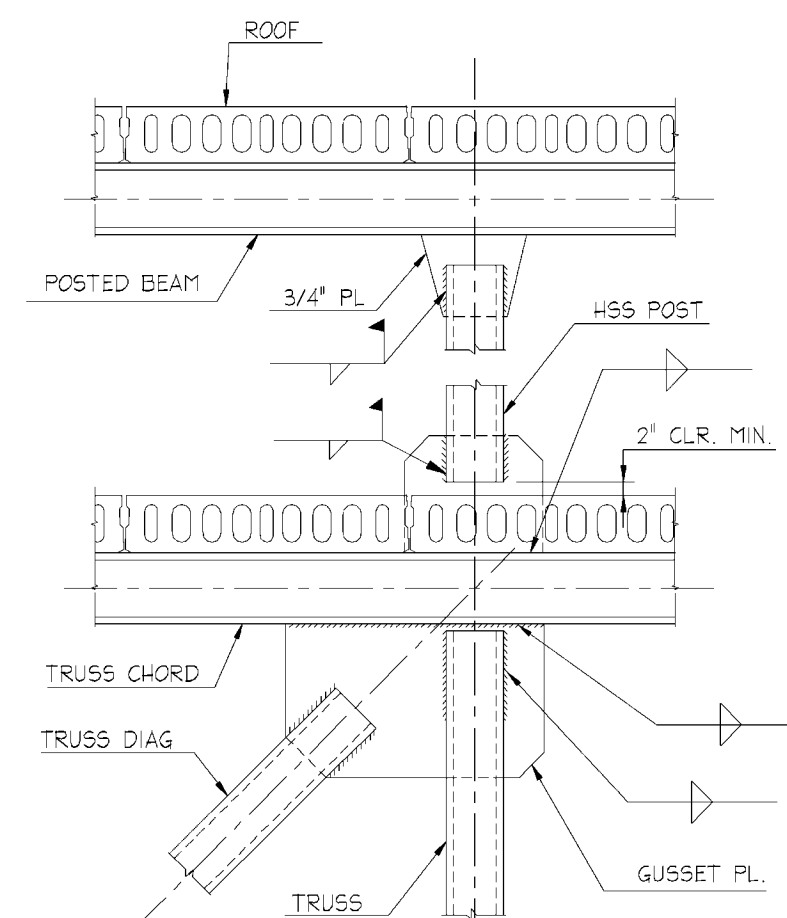
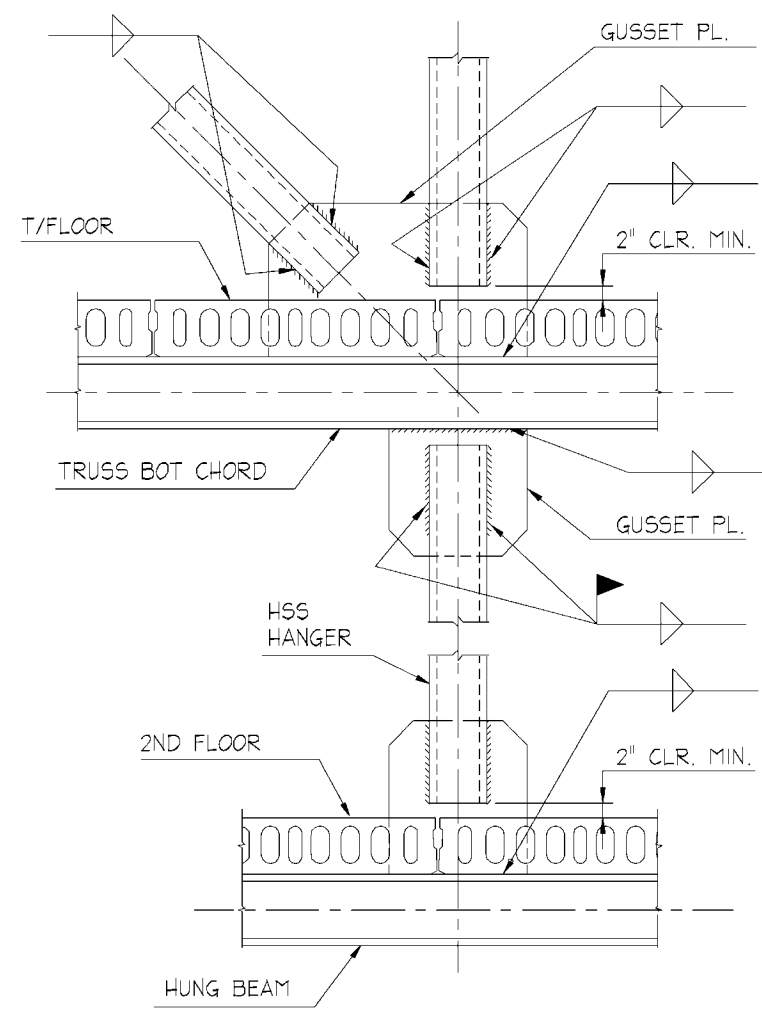
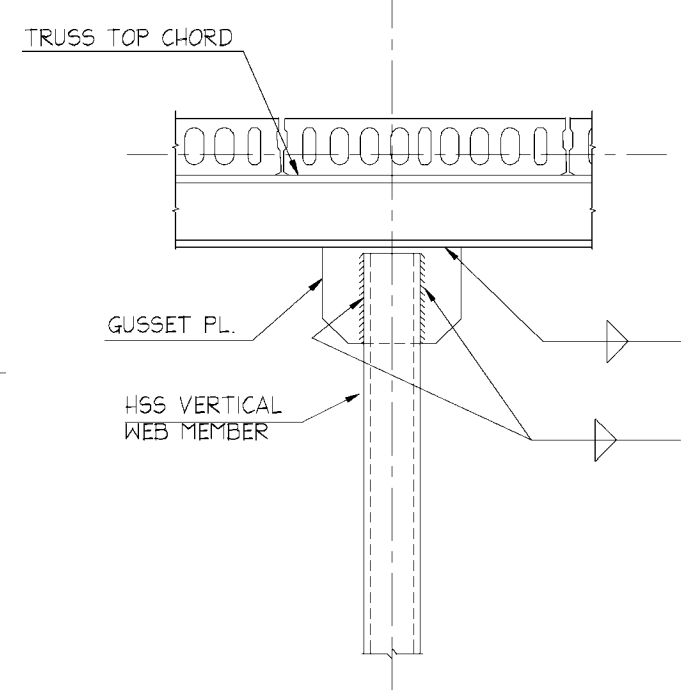
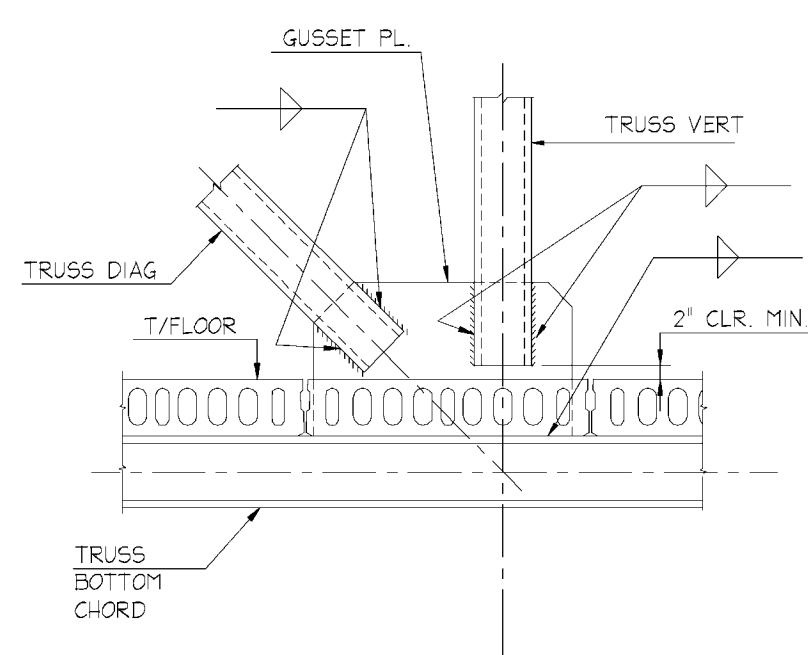
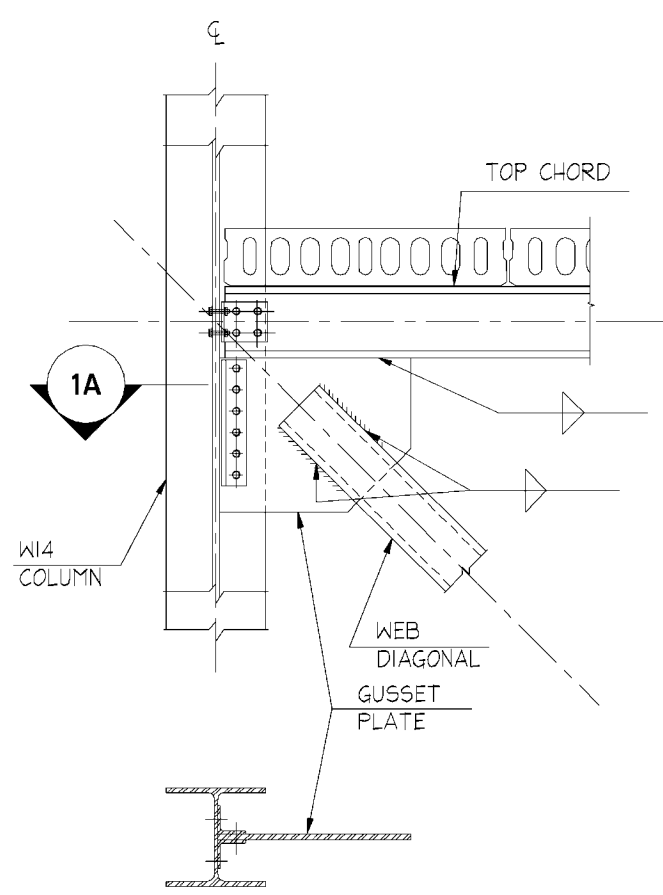
312-670-2400, Press 1
solutions@aisc.org
www.aisc.org



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| 1 | MODERN STEEL CONSTRUCTION | 09.01.02 |

ANATOMY OF A STAGGERED TRUSS

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1 TRUSS TO COLUMN CONNECTION

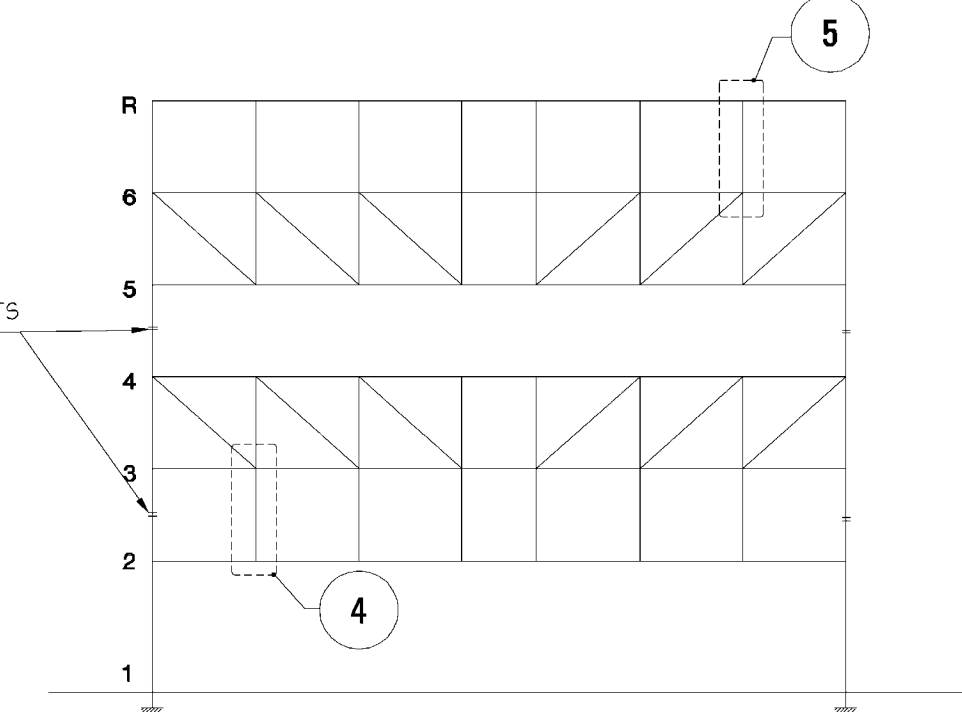
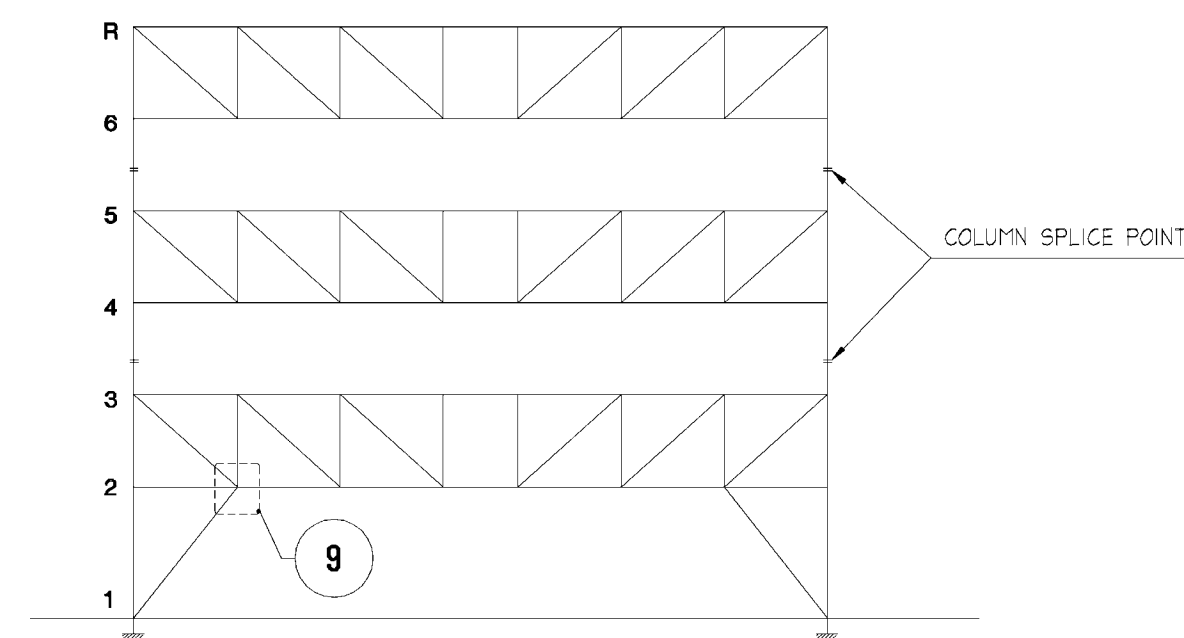
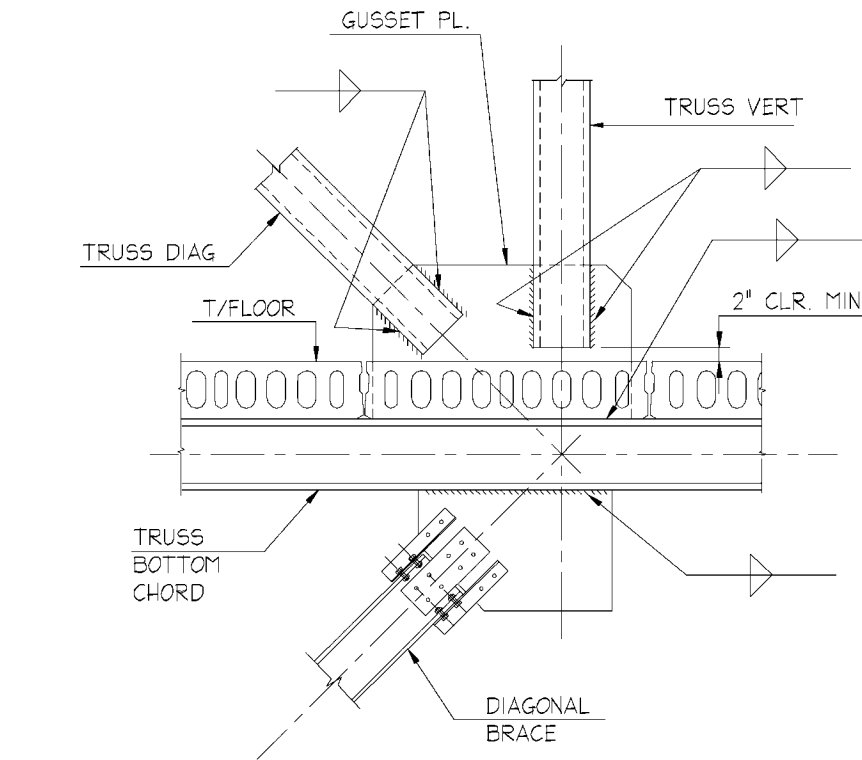
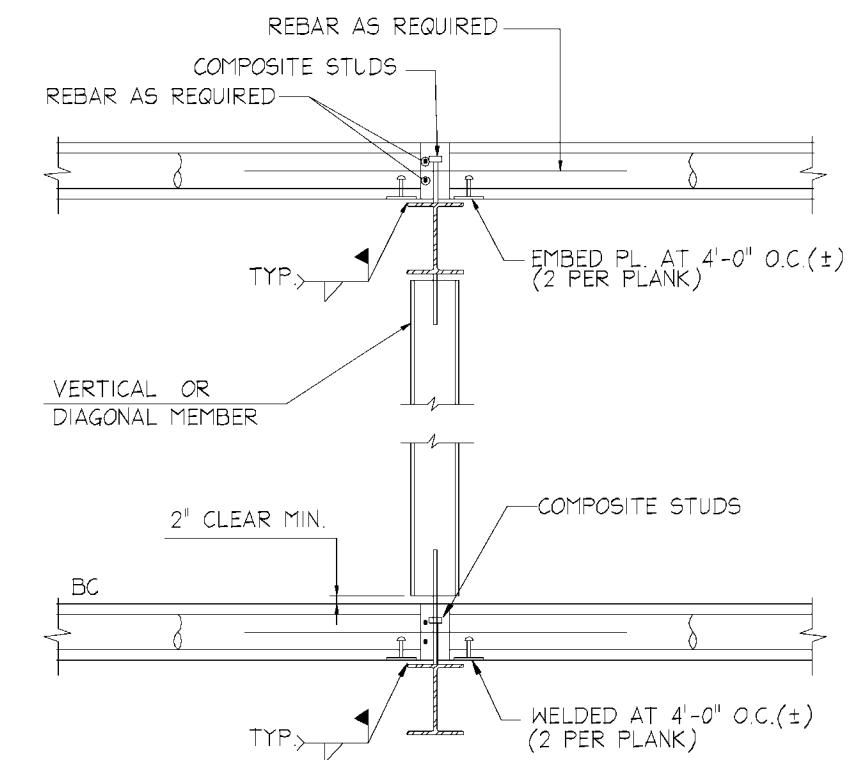
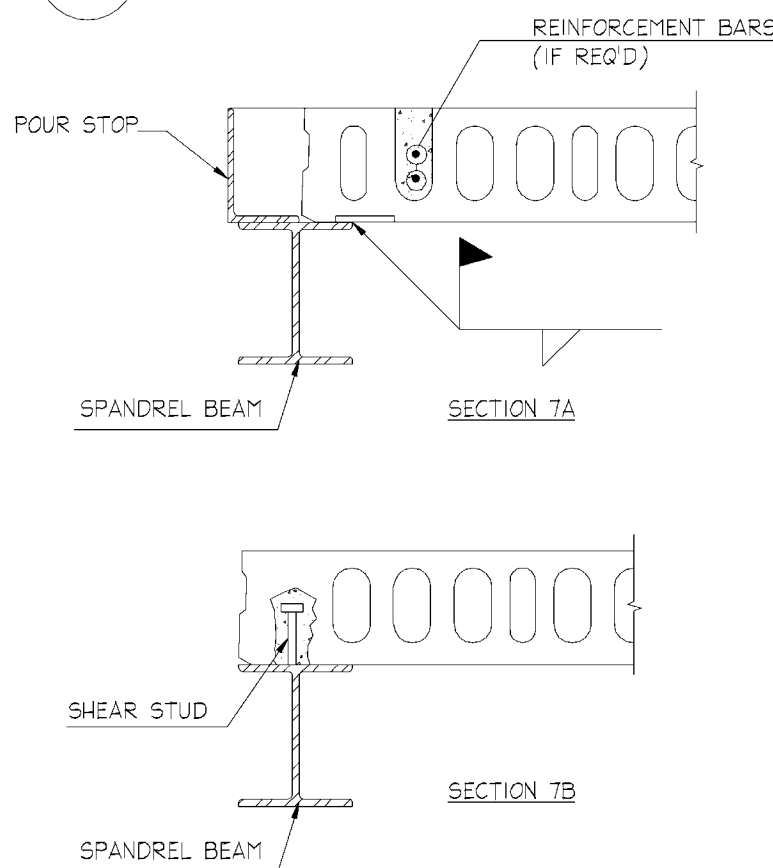
2 TRUSS VERTICAL WEB TO BOTTOM CHORD CONNECTION

3 TRUSS VERTICAL WEB TO TOP CHORD CONNECTION

4 HANGER TRUSS DETAIL AT 2ND LEVEL

5 POST DETAIL AT ROOF

6 BOTTOM CHORD TO COLUMN CONNECTION



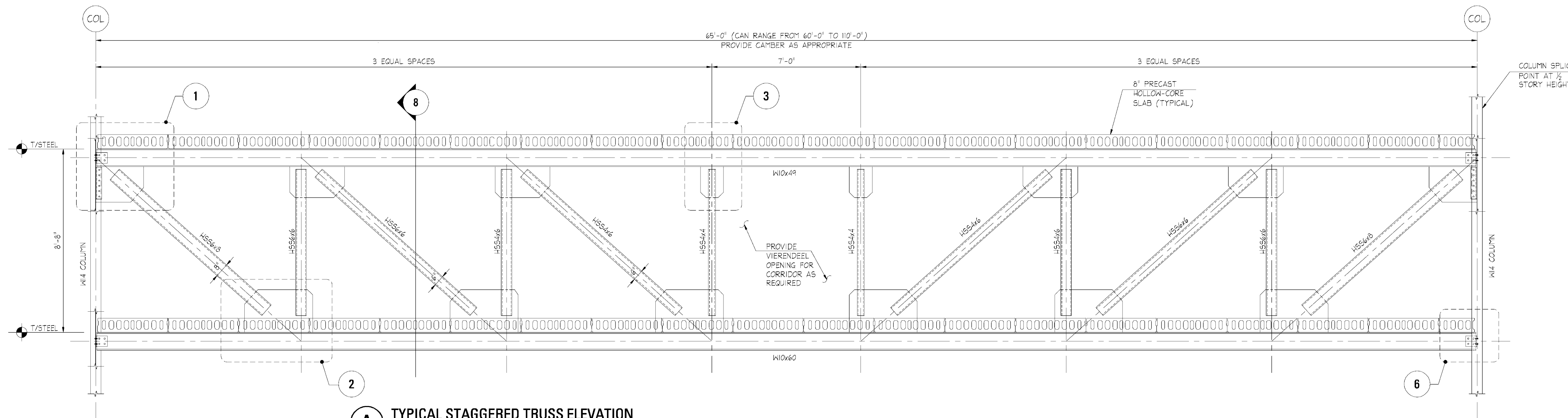
7 PLANK TO SPANDREL CONNECTION

8 TRUSS SECTION

9 BRACE TO BOTTOM CHORD CONNECTION

B EVEN TRUSS FRAME ELEVATION

C ODD TRUSS FRAME ELEVATION



A TYPICAL STAGGERED TRUSS ELEVATION