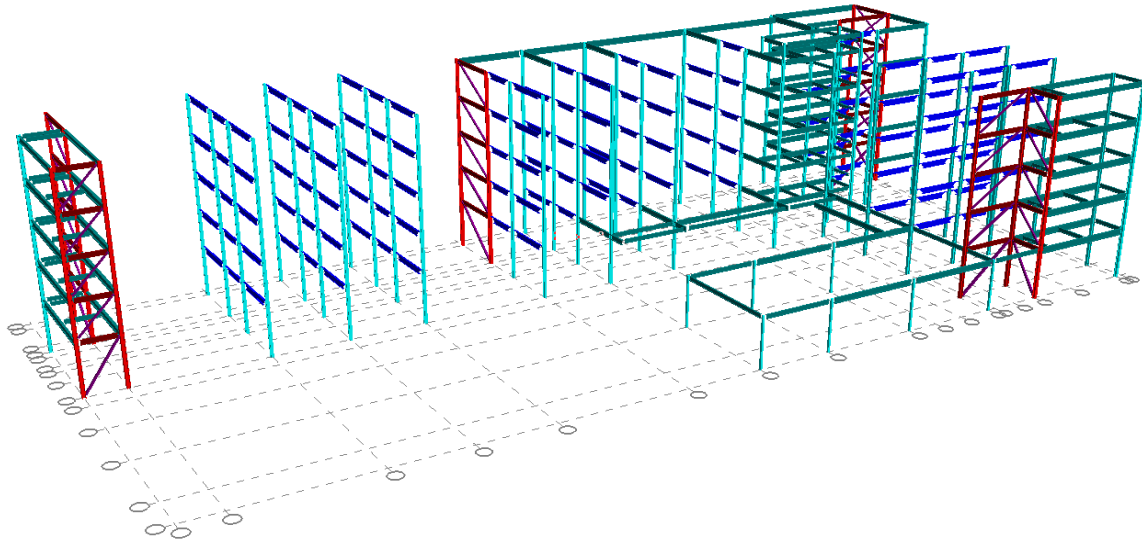


ALOFT HOTEL PROTOTYPE

SSC Advisor: Jason R. Ericksen
Regional Engineer: Bill Pascoli
Date: March 16, 2007



This Package includes:

- ✓ Comments on the Provided Solution
 - ✓ Steel Quantity Takeoff
 - ✓ Design Loads and Parameters
 - ✓ Typical Floor Framing Plans
 - ✓ Gravity Columns
 - ✓ Braced Frame Elevations
- Level 2 Framing
 - Levels 3, 4, and 5 Framing
 - Roof Framing
 - Layout
 - Schedule
 - Frames #1 - #4
 - Frames #5 - #7



This document has been prepared in accordance with information made available to the American Institute of Steel Construction, Inc., AISC Marketing, LLC, and the Steel Solutions Center, LLC at the time of its preparation. While it is believed to be accurate, it has not been prepared for conventional use as an engineering or construction document and should not be used or relied upon for any specific application without competent professional examination and verification of its accuracy, suitability and applicability by a licensed engineer, architect or other professional. AISC, AISCM, and SSC disclaim any liability arising from information provided by others or from the unauthorized use of the information contained in this document.

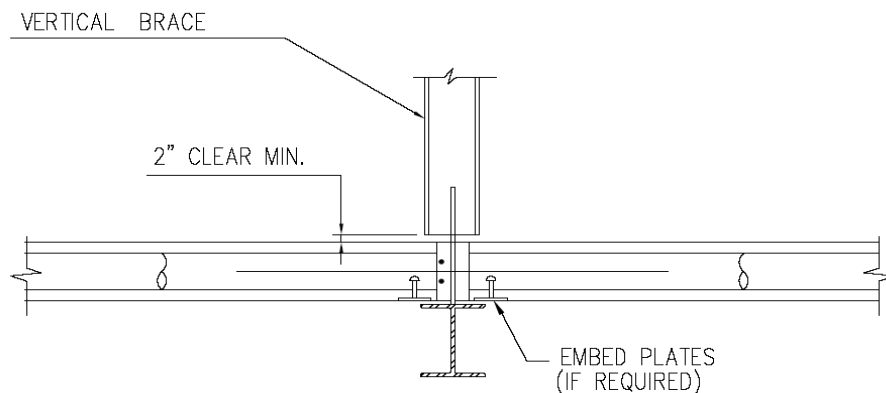
COMMENTS ON PROVIDED SOLUTION

Project: **ALOFT HOTEL**
Location: **Pennsylvania**
Client: **W Hotels**

Date: **March 16, 2007**
SSC Advisor: **Jason R. Ericksen**
Client Contact:

The information contained in this document is not intended as a basis for structural design for this or any project. Rather, it is a conceptual approach to the project that demonstrates the viability of the steel system for project requirements, budget, and schedule.

- The criteria per IBC 2003 is summarized and included in the following pages. The wind, seismic and snow loads approximations are based on a project located in Pennsylvania.
- The steel quantities and geometry are provided on floor layouts, a column and frame layout plan, a column schedule, truss elevations, and frame elevations. The typical floor framing is Girder-Slab D Beams and wide flange steel beams supporting 8" hollow-core plank without a structural topping. Braced frames provide the lateral resistance.
- The lateral force-resisting braced frames do not require moment connections. The column splices may need to transmit tensile forces, which may require special detailing. The frame elevations indicate all of the structural steel in the lateral force-resisting system.
- Material Specification
 - Wide flange shapes are A992, Gr. 50
 - Rectangular HSS sections are A500 Gr. B
- Steel members that may be required for erection bracing are not included in this solution. For example, there are no beams indicated running parallel to the hollow core plank. Erectors have used temporary wide flange beams for bracing on many projects. These members can be removed and reused. Another option is to use a D Beam and leave it in place.
- See suggested detail below for the brace to gusset connection detail in the braced frames. It is suggested that a minimum of 2 inches of clear distance between the bottom of the brace and the top of the precast plank is provided to avoid notching of the plank to accommodate the brace.



This document has been prepared in accordance with information made available to the American Institute of Steel Construction, Inc., AISC Marketing, LLC, and the Steel Solutions Center, LLC at the time of its preparation. While it is believed to be accurate, it has not been prepared for conventional use as an engineering or construction document and should not be used or relied upon for any specific application without competent professional examination and verification of its accuracy, suitability and applicability by a licensed engineer, architect or other professional. AISC, AISCM, and SSC disclaim any liability arising from information provided by others or from the unauthorized use of the information contained in this document.

QUANTITY TAKEOFF SHEET:

Total Structure

Project: **ALOFT HOTEL**
 Location: **Pennsylvania**
 Client: **W Hotels**

Date: **March 16, 2007**
 SSC Advisor: **Jason R. Ericksen**
 Client Contact:

Suspended Steel Floor Areas:

70,750 ft² 8" Hollow-Core Precast Plank

Steel Quantities:

Gravity Columns			
W10s	45 tons	1.28 psf	90 pieces
Beams (gravity)			
D Beams	36 tons	1.0 psf	134 pieces
Wide Flange	41 tons	1.2 psf	146 pieces
Braced Frames			
Beams	7.5 tons	0.21 psf	35 pieces
Columns	15 tons	0.42 psf	24 pieces
Braces (HSS)	8 tons	0.23 psf	35 pieces
Miscellaneous	5%	8 tons	0.22 psf
	161 tons	4.5 psf	464 pieces

* The quantities are based on centerline dimensions

** Miscellaneous steel accounts for framing not included in the model, such as framing for openings. It does not include connection material or slab edge material.



DESIGN PARAMETERS:

International Building Code 2003

Project: **ALOFT HOTEL**

Location: **Pennsylvania**

Client: **W Hotels**

Date: **March 16, 2007**

SSC Advisor: **Jason R. Ericksen**

Client Contact:

Gravity Loads

<u>Live Loads</u>	<u>Uniform</u>	
Residential	40 psf	
Flat Roof Snow Load	25 psf	(Drifts additional)

<u>Cladding Loads</u>	<u>Uniform</u>
EIFS Panels	20 psf

Wind Load Parameters

Basic Wind Speed =	90	mph
Wind Importance Factor, I_W =	1.00	
Exposure Category =	B	
Topographical Factor =	1.00	
Drift Limit =	H/500	

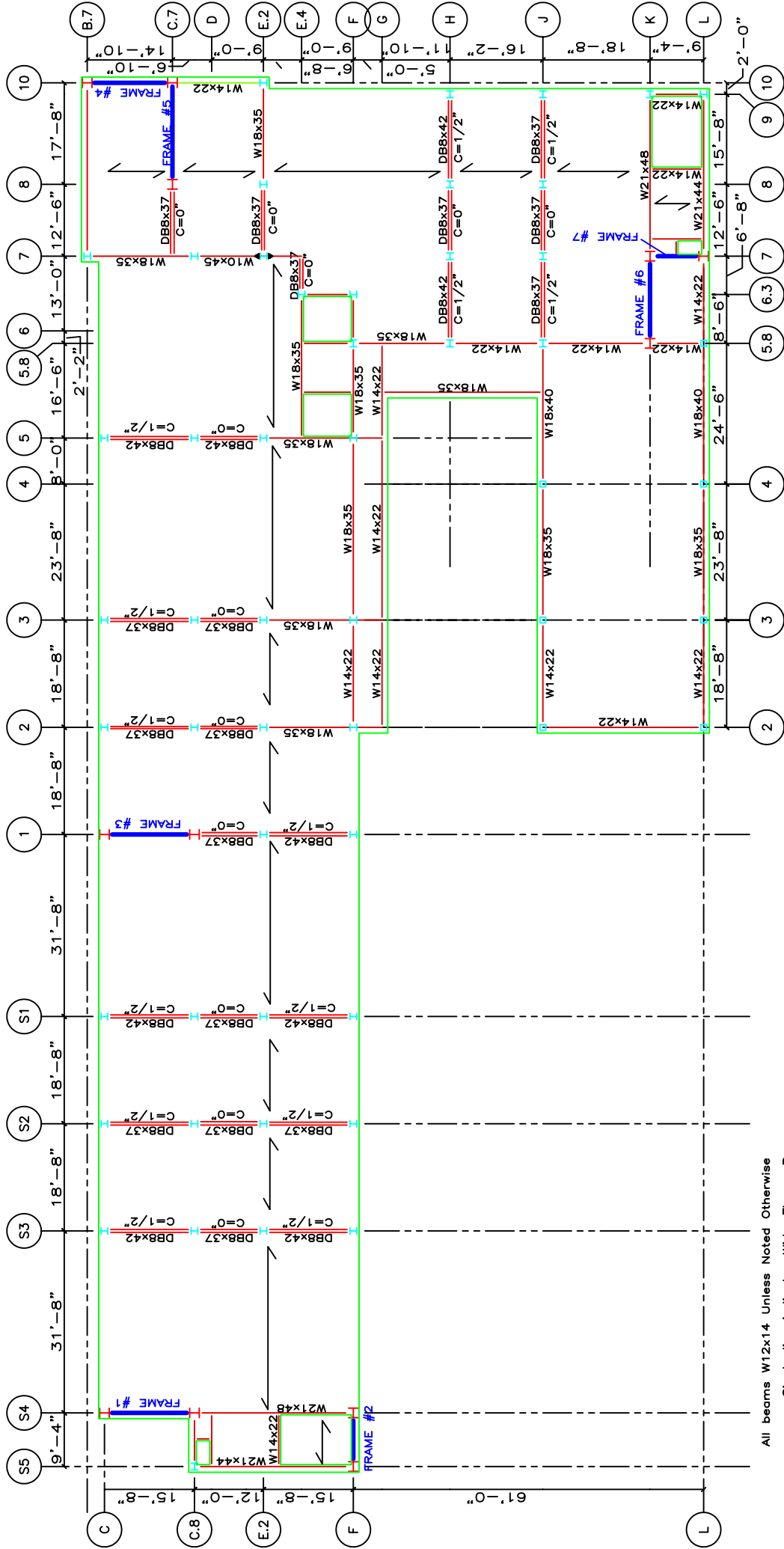
Basic Seismic-Force-Resisting System

"structural steel system not specifically detailed for seismic resistance" - (Braced Frames)

Seismic Design Parameters

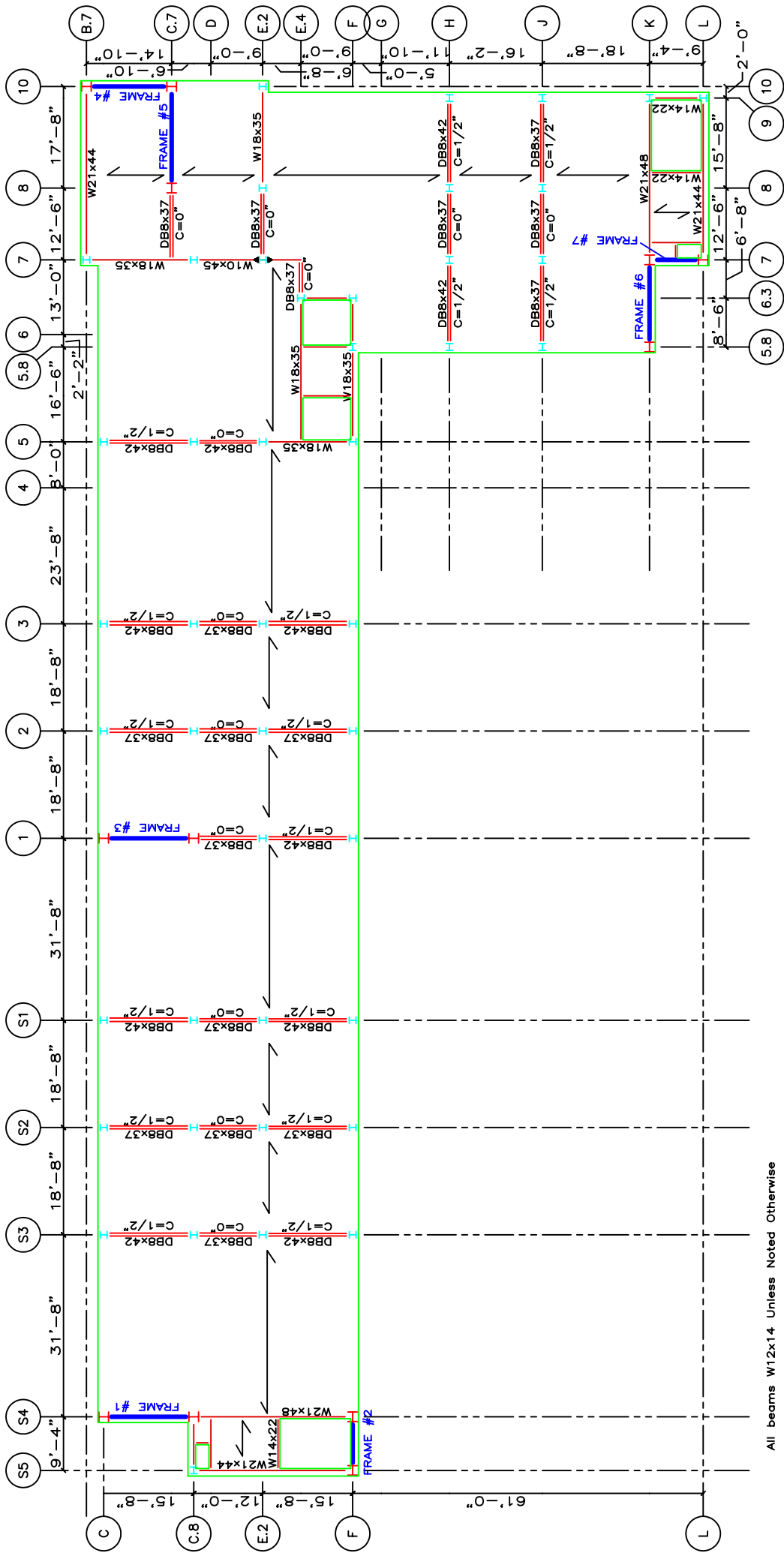
		<u>X-axis</u>	<u>Y-axis</u>
Seismic Use Group =	I	Building Period Coefficient, C_T = 0.020	0.020
Seismic Importance Factor, I_E =	1.00	Response Modification Coefficient, R = 3.0	3.0
Seismic Design Category =	B	System Overstrength Factor, Ω_o = 3.0	3.0
Site Class =	D	Deflection Amplification Factor, C_d = 3.0	3.0
Spectral Response Acceleration at Short Periods (0.2s), S_s =	0.200 g	Note: No Seismic detailing per AISC Seismic Provisions is required.	
Spectral Response Acceleration at One Second Period, S_1 =	0.060 g		





- All beams W12x14 Unless Noted Otherwise
- Single line indicates Wide-Flange Beam
- Double line indicates Girder-Slab D Beam
- Indicates Direction of 8" Hollow Core Plank (no structural topping)

FRAMING PLAN Level 2



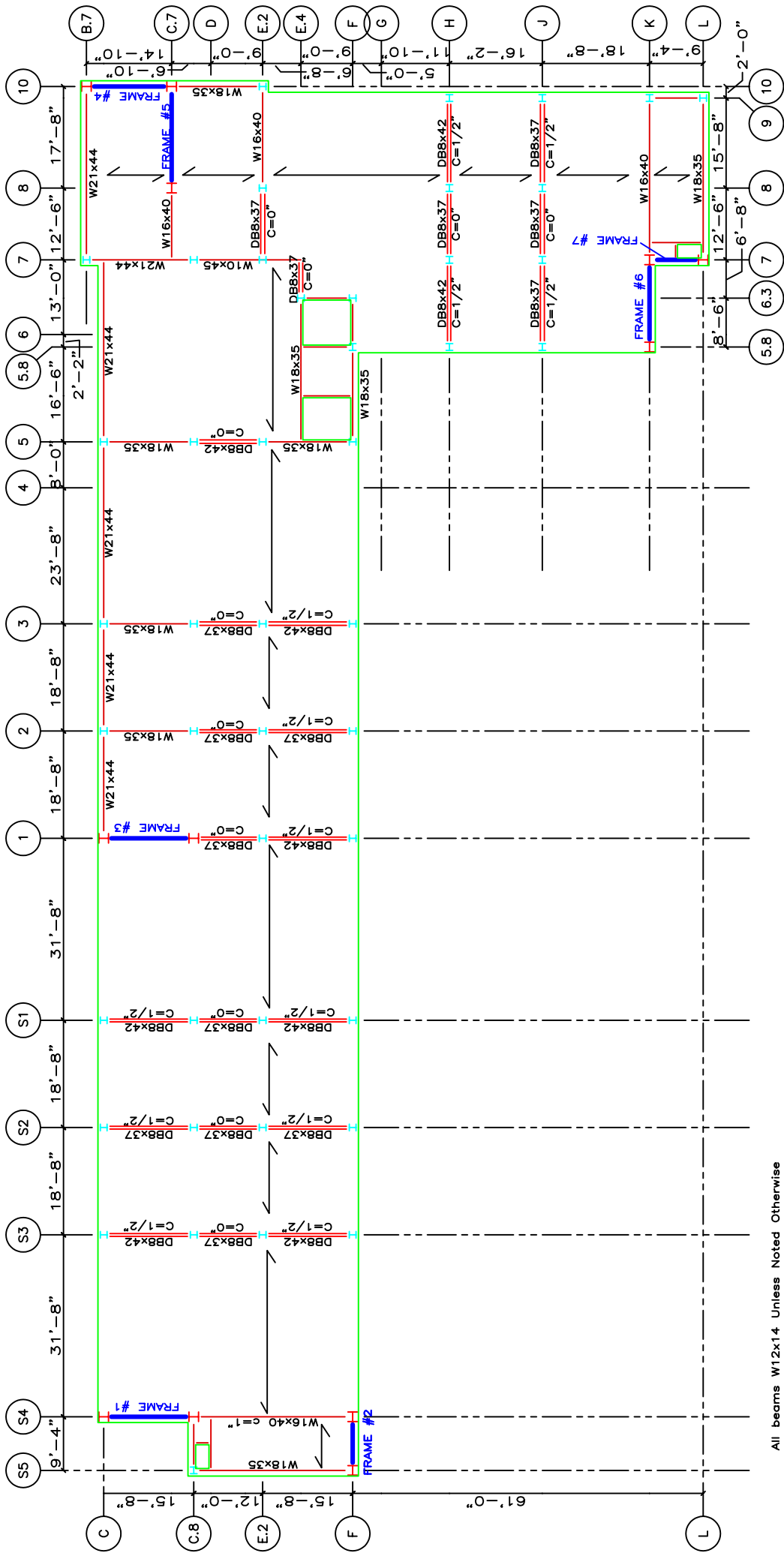
All beams W12x14 Unless Noted Otherwise

Single line indicates Wide-Flange Beam

Double line indicates Girder-Slab D Beam

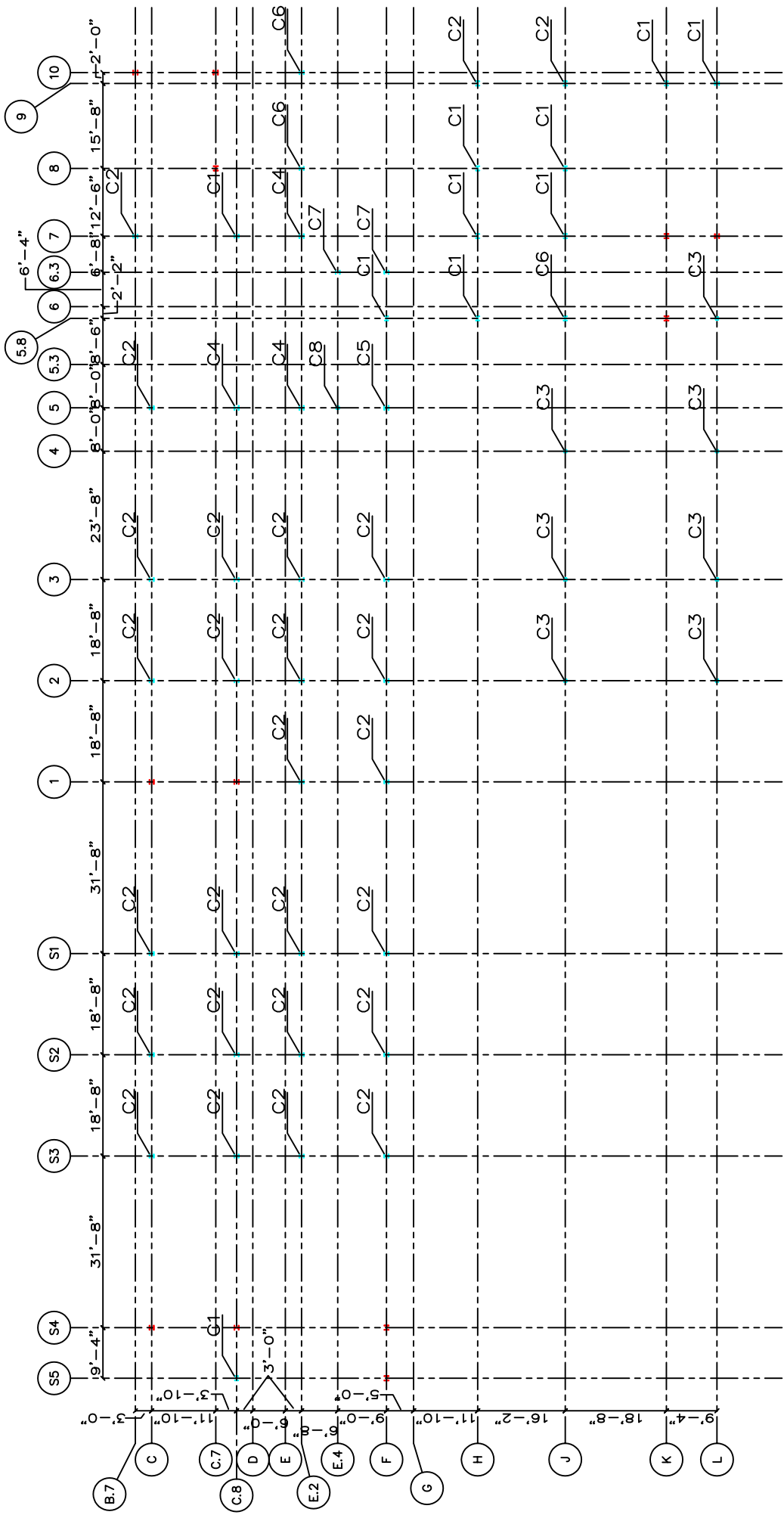
Indicates Direction of 8" Hollow Core Plank (no structural topping)

FRAMING PLAN Levels 3, 4, and 5

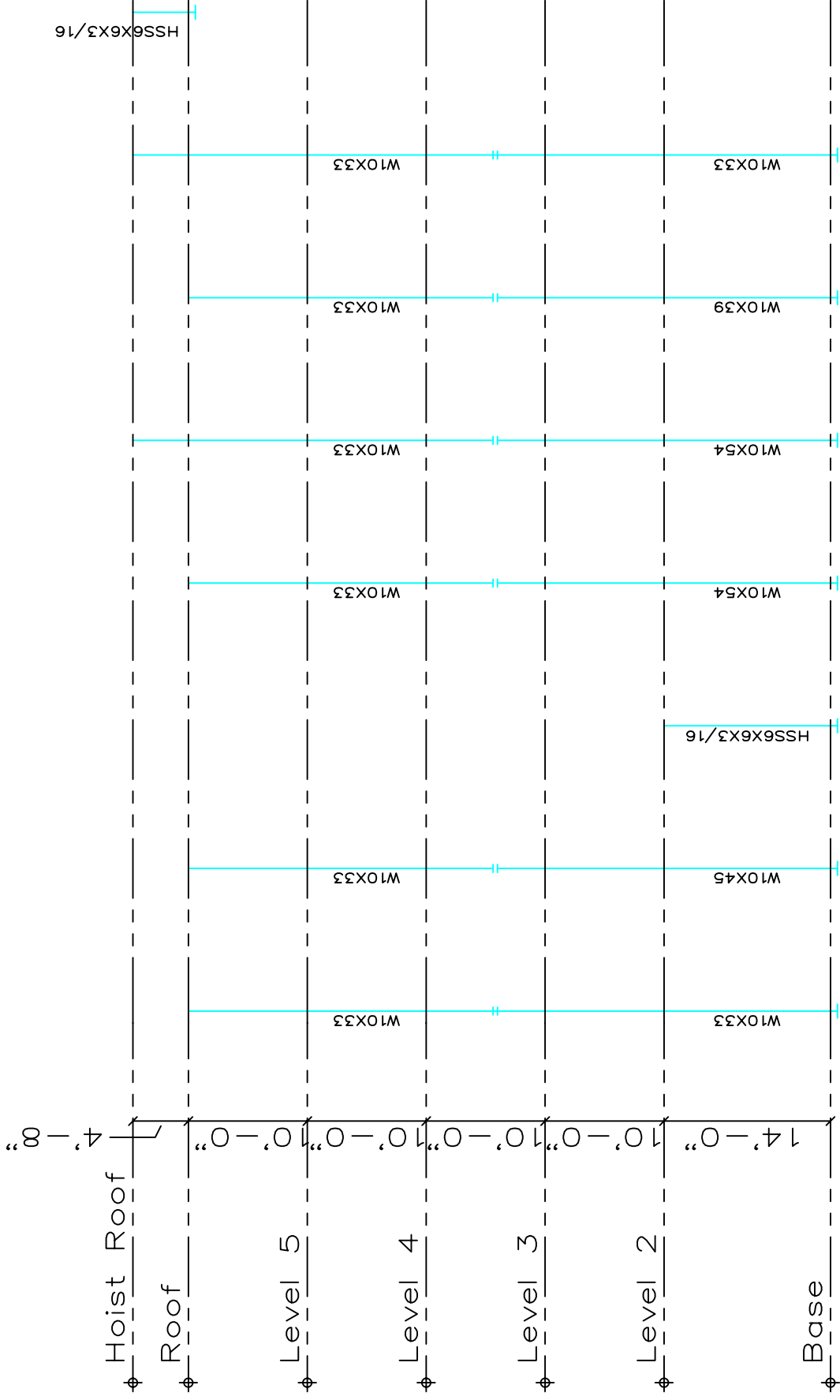


- All beams W12x14 Unless Noted Otherwise
- Single line indicates Wide-Flange Beam
- Double line indicates Girder-Slab D Beam
- ← Indicates Direction of 8" Hollow Core Plank (no structural topping)

FRAMING PLAN ROOF

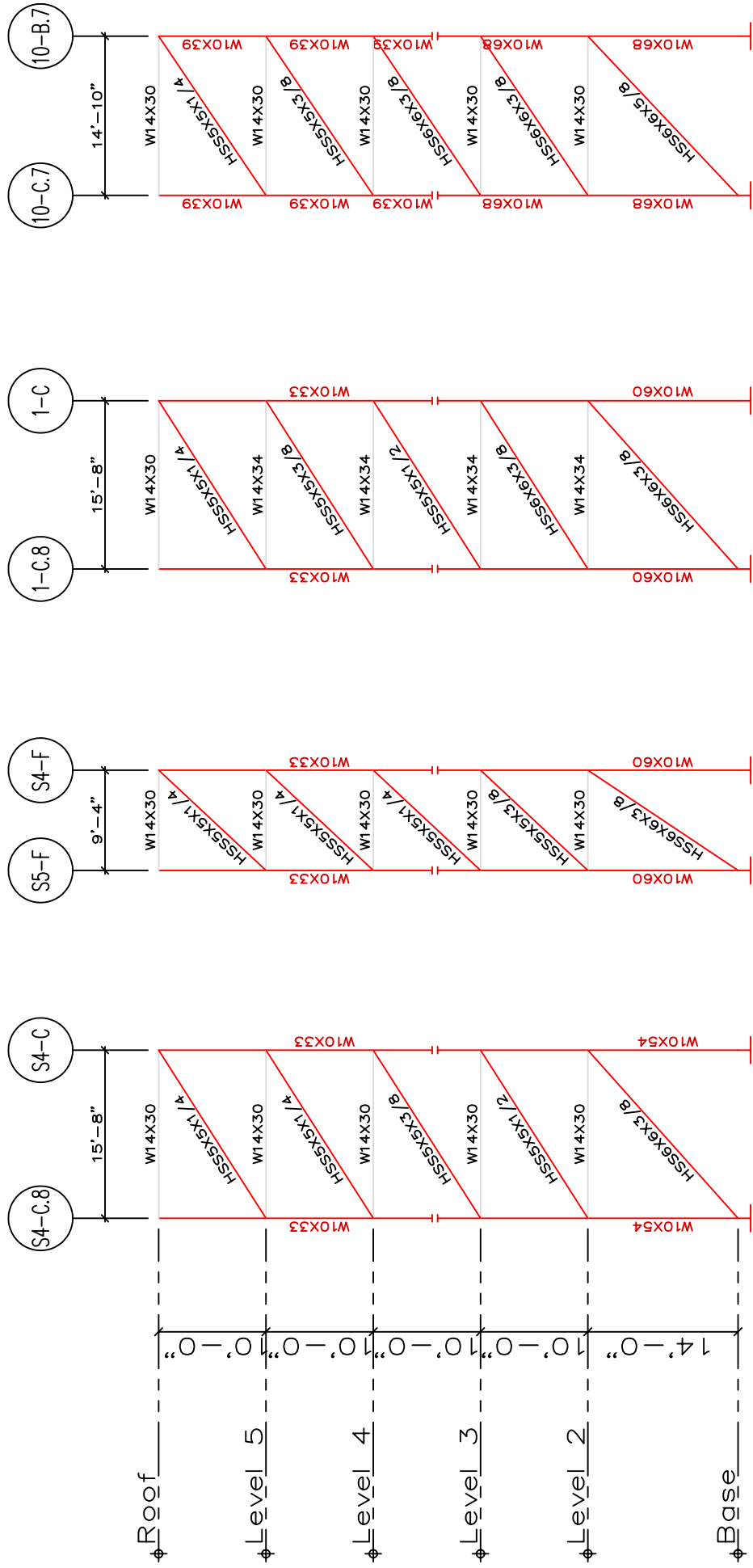


COLUMN LAYOUT



BASEPLATE	C1	C2	C3	C4	C5	C6	C7	C8
COLUMN MARK	C1	C2	C3	C4	C5	C6	C7	C8

COLUMN SCHEDULE



FRAME #1 FRAME #2 FRAME #3 FRAME #4

