COLD-FORMED STEEL DESIGN DOCUMENTS

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Goal of This Presentation

Provide overview of cold-formed steel
design specification and design standards
used in the construction industry.
Standards Hierarchy

- **Specification**
  - General Provisions
  - Design Standards
    - Prescriptive Method for One and Two Family Dwellings

Requirements for engineered or prescriptive design
AISI North American Specification

AISI STANDARD

North American Specification for the Design of Cold-Formed Steel Structural Members

2001 EDITION

Approved in Canada by the Canadian Standards Association (CSA S133-00)
Approved in Mexico by CANACERO

Design Specification for Cold-Formed Steel in Construction
AISI Framing Standards

- **General Purpose:**
  - AISI S200-07: General Provisions
  - AISI S201-07: Product Standard

- **Engineering Design Standards:**
  - AISI S210-07: Floor and Roof System Design
  - AISI S211-07: Wall Stud Design
  - AISI S212-07: Header Design
  - AISI S213-07: Lateral Design
  - AISI S214-07: Truss Design

- **Prescriptive Methods:**
  - AISI S230-07: Prescriptive Method for One and Two Family Dwellings
Code of Standard Practice

A. GENERAL
B. CLASSIFICATION OF MATERIALS
C. CONTRACT DOCUMENTS
D. INSTALLATION DRAWINGS
E. MATERIALS
F. INSTALLATION
G. QUALITY CONTROL
H. CONTRACTUAL RELATIONS
Scope

- Defines and sets forth accepted norms of good practice for fabrication and installation of cold-formed steel structural framing
- Supplement to legal building regulation
- Would be used unless there are differing instructions in the contract documents
- Voluntary document
Model Documents

- AISC - Code of Standard Practice for Steel Buildings and Bridges
- SJI – Recommended Code of Standard Practice for Steel Joists and Joist Girders
Summary

- The Age-Old Question: “Who is responsible for what?”
- The Age-Old Answer: “Good Communication”
  - Code of Standard Practice
  - Contract Documents – nothing replaces the need for a set of well thought-out and executed contract documents.

These documents compliment each other.
Example

• Responsibilities for field modifications and repairs must be clearly defined and communicated
Prescriptive Method

Consists of design tables and construction details
### Table E3-1a

Stud Thickness

| Wind Speed | Member Size | Stud Spacing (inch) | 8-Foot Studs | 9-Foot Studs | 20 | 30 | 50 | 70 | 20 | 30 | 50 | 70 |
|------------|-------------|---------------------|--------------|--------------|-----|----|----|----|-----|----|----|----|----|
| 85 mph     | 250S162     | 16                  | 33           | 33           | 33  | 33 | 33 | 33 | 33  | 33 | 33 | 33 | 33 |
|            | 500S162     | 24                  | 33           | 33           | 33  | 33 | 33 | 33 | 33  | 33 | 33 | 33 | 33 |
| 90 mph     | 250S162     | 16                  | 33           | 33           | 33  | 33 | 33 | 33 | 33  | 33 | 33 | 33 | 33 |
|            | 500S162     | 24                  | 33           | 33           | 33  | 33 | 33 | 33 | 33  | 33 | 33 | 33 | 33 |
| 100 mph    | 85 mph      | 250S162             | 16           | 33           | 33  | 33 | 33 | 33 | 33  | 33 | 33 | 33 | 33 |
|            | 500S162     | 24                  | 33           | 33           | 33  | 33 | 33 | 33 | 33  | 33 | 33 | 33 | 33 |
| 110 mph    | 90 mph      | 250S162             | 16           | 33           | 33  | 33 | 33 | 33 | 33  | 33 | 33 | 33 | 33 |
|            | 500S162     | 24                  | 33           | 33           | 33  | 33 | 33 | 33 | 33  | 33 | 33 | 33 | 33 |

*Note: F_y = 33 ksi*

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### Figure D2-3

Floor to Foundation Connection

- Web Stiffener
- Rim Track
- Sheathing
- Sill Sealer
- Anchor Bolt or Other Connection as Required
- 8 in. x 1/4 in. CLIP ANGLE FASTENED TO TRACK WITH 8 NEW-STYLE SCREWS
- Foundation