Today’s live webinar will begin shortly. Please standby.

As a reminder, all lines have been muted. Please type any questions or comments through the Chat feature on the left portion of your screen.

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Session Description

18.5 Steel Erection: It doesn’t get built without the erector
November 19, 2018

Structural steel erection consists of assembling the building’s frame on site safely and economically. This session will address how steel erection gets done, from securing the work to executing it. Topics include:

- Erectors’ contractual relationships
- Estimating
- AISC Code of Standard Practice
- Erection schematic
- Selling an erection project
- Contracts
- Prefabrication coordination
- Erection pre-mobilization planning
- Prosecuting the work

Learning Objectives

- List items that a steel erector must extract from a project’s construction documents for supporting an accurate estimate.
- Identify good and bad steel details that affect a steel erector’s ability to safely and efficiently perform work.
- List items addressed in a site safety plan.
- List steel erection challenges and solutions highlighted through real project examples.

Night School 18: Steel Construction
Session 5: It doesn’t get built without the Erector
November 19, 2018

Phil Torchio
President – CEO, Retired Williams Enterprises of Georgia
parent of Williams Erection Company
Atlanta Steel Erectors
Smyrna, GA
Night School 18

- **18.1 Introduction** to the Steel Construction Process Oct. 15
- **18.2 The Manufacturing** of Structural Steel Shapes Oct. 22
- **18.3 A Virtual, Detailed Tour of the Steel Fabrication Process** Oct. 29
- **18.4 Connection Design** as the Fabricator’s Representative Nov. 5
- **18.5 It Doesn’t Get Built Without the Erector** Nov. 19
- **18.6 Erection Engineering** – Stability During Construction Nov. 26
- **18.7 Field Fixes** and Solutions Dec. 3
- **18.8 Quality Control and Quality Assurance** Dec. 10

The Plan for Today:

**Part One:**
- Who we are and how we get work to perform
- Estimating the job
- AISC Code of Standard Practice
- Construction Contracts for Erectors
- Erection scheme committed to paper or model
- Selling an Erection Project

**Part Two:**
- We have a contract, now what?
- Erector Pre mobilization planning
- Site specific Erection plan
- Engineered Stability Plan
- Doing the Work

**Part Three:**
- Questions

Our Community

- Per Manta there are 1,197 Structural Fabricators in the USA, AISC says 1,700
- Per Manta there are 12,733 or 11,261 or 10,086 Steel Erectors
- Changes per the day you search the internet. But there is an order of magnitude more erectors than fabricators
Part One
Where do the jobs come from?

- 95% of requests for quotation come from Fabricators that we have performed work for in the past
- Pre Qualification requirements of General Contractor / Construction Manager (Owner’s Designated Representative for Construction (ODRD))
  - AISC Erector Qualification
  - Bonding Capacity
  - Safety Record
- Drawings, Models and Specifications Furnished by Fabricator
  - In the olden days hard copies now all electronic
- Sample Contract Documents
- Site Visit

Estimate - Drawing Review

- Architectural Drawings for Elevations
- Civil drawings site layout
- Structural Drawings S001 General Structural Notes
- S100 –S500 Structural Drawings
- Specifications 5000 series:
  - From the Job Specifications - AISC Code of Standard Practice

Estimate information

From the drawings:
- Column counts (may vary if too heavy for crane(s))
- Beam/Girder count
- Truss and or joist count (Truss weights for crane)
- Stud count
- Bracing count, Vertical X or K
- Bracing horizontal
- Decking square footage
- Deck edge angle, bent plate, closure and support angle (attention to attachment)
- Bracing for edge bent plate etc.
- Roof frames - penetrations
- Moment connections
  - Calculate weld weight
- Welded column splices
  - Calculate weld weight
- Detail cost drivers special connections or conditions.

From the Fabricators:
- Bolt count and Bolt sizes
- Tonnage
- Stairs part of the package?
- Fabricator or Erector to furnish the Studs?
- Fabricator to drill holes for safety cable?
- Fabricator to drill holes for safety cable?
- Column lifting holes?
- Special field weld preparations
- Shop assembly of components
- Shoring
- Bond
Estimate information

**From the GC - ODRC:**
- Job access
- Traffic control for material delivery
- Lay down area
- Gravel and dewatering
- Furnish cranes? What limitations for Erector
- Power 440 three phase?
- Special Safety requirements
- Site personnel requirements
- GC’s on site management team
- CCIP OCIP Insurance (deductibles)

AISC Code of Standard Practice

**2016 Code of Standard Practice**

**Preface:**
As in any industry, trade practices have developed among those that are involved in the design, purchase, fabrication and erection of structural steel. This Code provides a useful framework for a common understanding of the acceptable standards when contracting for structural steel. As such, it is useful for owners, architects, engineers, general contractors, construction managers, fabricators, steel detailers, erectors and others associated with construction in structural steel. Unless specific provisions to the contrary are contained in the contract documents, the existing trade practices contained herein are considered to be the standard custom and usage of the industry and are thereby incorporated into the relationships between the parties to a contract.
Football Hall of Fame

Steel Construction: From the Mill to Topping Out
Session 5: It Doesn’t Get Built Without the Erector

Survey
Site layout

TABLE 10.1
AESS Category Matrix

<table>
<thead>
<tr>
<th>Category</th>
<th>AESS C</th>
<th>AESS D</th>
<th>AESS 2</th>
<th>AESS 3</th>
<th>AESS 4</th>
<th>AESS B</th>
<th>Standard Structural Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature</td>
<td>Feature</td>
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<td>Texture</td>
<td>Custom</td>
<td>Elements</td>
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<td>Surface</td>
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<tr>
<td>AESS 1: Basic elements</td>
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<tr>
<td>AESS 2: Feature elements viewed at a distance greater than 20 ft (6 m).</td>
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<tr>
<td>AESS 3: Feature elements viewed at a distance less than 20 ft (6 m).</td>
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<tr>
<td>AESS 4: Showcase elements with special surface and edge treatment beyond fabrication.</td>
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</tr>
<tr>
<td>AESS C: Custom elements with characteristics described in the contract documents.</td>
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</tr>
</tbody>
</table>
S001 General Structural Notes

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SS-8 FIELD MODIFICATION OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER.

SS-9 THE CONTRACTOR SHALL SUBMIT A STEEL ERECTION PROCEDURE, PREPARED UNDER THE SUPERVISION OF A STRUCTURAL ENGINEER, SPECIFYING THE LOCATION OF THE PROPOSED STRUCTURAL STEEL CONNECTIONS FOR REVIEW BY THE STRUCTURAL ENGINEER OF RECORD. THIS PROCEDURE MUST INCLUDE THE PROPOSED SURVEY REQUIRED BY THE STEEL SPECIFICATIONS.

SS-10 HOT ROLL SHAPES WITH FLANGE THICKNESS EXCEEDING 2 INCHES OR BUILT UP HEAVY SHAPE WITH PLATES EXCEEDING 2 INCHES IN THICKNESS USE COMPLETE JOINT PENETRATION WELDS THAT FUSE THROUGH THE THICKNESS. STEEL REINFORCEMENT BARS AND FABRICATED CONNECTIONS SHALL HAVE A PLASTIC CONNECTING LENGTH OF 12 TIMES THE BAR DIAMETER, BUT NOT LESS THAN 6 TIMES THE BAR DIAMETER, AND THE IMPACT TEST SHALL BE CONDUCTED AT THE TEMPERATURE OF THE STRUCTURE. IF THE TEST TEMPERATURE IS BELOW 0 DEGREES FAHRENHEIT, THE IMPACT TEST SHALL BE MADE AT THE TEMPERATURE OF THE STRUCTURE. THE IMPACT TEST SHALL BE MADE AT A MAXIMUM TEMPERATURE OF 70 DEGREES FAHRENHEIT.

SS-11 WELD ELECTRODES FOR THE HEAVY SHAPES NOTED IN SS-10 THAT REQUIRE CVN TESTING SHALL HAVE A CVN OF 20 FT-LB AT -20 DEGREES F AND 40 FT-LB AT 70 DEGREES F, EXCEPT FOR STRUCTURES NOT ENCLOSED AND MAINTAINED AT A TEMPERATURE OF 50 DEGREES F OR HIGHER, THE TEST TEMPERATURE SHALL BE EQUAL TO THE LOWEST ANTICIPATED SERVICE TEMPERATURE (LAST) PLUS 20 DEGREES F. LAST SHALL BE EQUAL TO THE TEMPERATURE OF THE STRUCTURE AT THE LOWEST ANTICIPATED SERVICE TEMPERATURE.

SS-12 STEEL REINFORCEMENT TO EXISTING BEAMS AND COLUMNS SHALL BE WELDED BY QUALIFIED WELDERS USING TECHNIQUES AND SEQUENCES THAT MINIMIZE POST-WELD DISTORTION OF THE MEMBER. WELDING PROCEDURE SPECIFICATIONS AND WELD SEQUENCES SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW.

SS-13 WHERE NEW STEEL BEAM FRAMING TIES INTO EXISTING STRUCTURE, FIELD APPLIED CONNECTIONS ARE REQUIRED. CONTRACTORS SHALL SUBMIT A FIELD APPLIED CONNECTION PROCEDURE FOR REVIEW AND REPLACEMENT OF FIREPROOFING IF PRESENT AT THE CONNECTION.

Notes trigger closer examination and cost drivers
Details Review

- Good Angle BP support
- Not so Good

Connection options:
- Welded shear tabs
- Weld + bolt tabs
- Seat angle

Tack weld embed by Fabricator or erector to hold elevation

Fillet Weld?
Provide bolted field connections to assist location and plumbing. Then field weld to structure.
Tower Crane Load Chart

Load capacity at 133' = 22,250 lbs.
Estimate Erection Plan

We know:
- Material Quantities for Erection
- Site conditions for access, shake out, potential use of mobile crane
- Furnished Tower Crane capacity at each pick point
- Piece weight of each crane pick of concern
- Know (or suspect) the need for engineered stability plan
- Desired schedule from GC/Owner
- Contract issues that might drive cost
- Column lengths for Tower crane picks
- Use of large mobile crane at the lower level to avoid cuts
  - Cost of Field welded splice CJP
  - Time required for splice and impact to schedule
  - Do splices need to be complete prior to setting the next tier?
- Shoring and stability requirements
  - Preliminary contact with erection engineer for cost and ideas
- Fabricator’s shipping schedule
- Sequences for the job

Estimate Erection Plan cont.

We commit to the plan:
- Critical path Critical activity (often field welding or bolting)
- Staffing for this critical activity
- Equipment for this activity
- Second shift considerations or Overtime
- GC pour schedule drives clean up crew sizes
  - Preliminary site specific safety plan
  - Office management and field Project Engineer and Ironworker supervision
The Not So Good Old Days
Gases, vapors, fumes, dusts, mists

- Engineering controls must be used first where feasible.
- When not feasible, PPE must be provided.
- PPE is always the last choice for protection.
Estimate Erection Plan cont.

We price the plan:

Labor:
- Raising gang(s)
- Plumbing and perimeter safety gang
- Bolt up
- Welding
- Decking
- Stud crew
- Stair crew
- Miscellaneous crew
- Site support
- Travel and per diem
- Weather delay estimate

Equipment:
- Cranes
- Man lifts
- Welding equipment
- Generator (if no power)
- Air compressor
- Hoisting

Pricing continued:

Tools and supplies:
- Welding electrode
- Preheating supplies
- Rigging
- Safety cable
- Posts
- Personal protection equipment
- Fuel
- Small tools
- Delivery

Formalize the:
Erection Scope, Assumptions and Exclusions

Erection Scope and Provisions

A. Engineered lift plan and logistics plan is not required or included.
B. Price Based on all wide flange bracing with bolted splices.
C. Welded Column Splices to be converted to PJP to resist indicated loads and an erection load of 200 Kip Feet of Moment.

PROVISIONS:
- Access inside and around structure, including all roads, ramps, etc. to be provided and maintained by the general contractor.
- All steel and deck shall be sequenced by Williams Erection Company, delivered to the hook by the fabricator.
- No Marshaling of steel is included in this proposal. Controlling contractor (GC) to provide adequate area for unloading and shakeout of material within reach of the erecting cranes.
- Fabricator to provide a 13/16" diameter hole approximately 1' from each end of the top flange of each beam or girder framing column to column only for safety tie off system. Sketch available upon request.

PROVISIONS CONT’D.
- Horizontal and vertical control lines to be by the general contractor.
- We include two strands of 3/8" galvanized aircraft cable to be installed at the perimeter and all major interior openings (including roof). Maintenance and removal will be by the general contractor including all handrail posts and becomes the property of the general contractor.
- This proposal is based on the current edition of AISC “Code of Standard Practice”.
- Power will be provided by the general contractor. 480 Volts, 3-Phase, 600 Amps. Including cost of power, hook up and material.
- All bent plate or continuous angles shall be shipped loose. If plate is loose then shop attach studs or deform anchors to vertical leg. Fabricator to provide outriggers for all bent plate 1’-0” or greater.
PROVISIONS CONT’D.

- Fabricator to shop assemble all support frames to maximum extent possible.
- Sidelaps of all floor deck shall be “Button Punched”.

Exclusions:
- Cost of bond
- Waiver of subrogation
- Builders Risk Deductible
- Liquidated Damages in excess of 1% of contract price

Pricing wrap up:

- Total cost (this is truly direct cost)
- Mark up
- Base sales price
- Requested alternates

Bid Types:

- Steel in Place – Fabrication and Erection
- Sealed Bid Erection Only
- Cost plus not to exceed
- Commitment from Fabricator
- Auction

Steel Erection Contractual Relationships

- Subcontracted to the Structural Fabricator

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Steel Erection Scary Contractual Requirements

- Contract flow down - Incorporation of all the contracts above
- Schedule changes - Subcontractor agrees to comply with any schedule for the Project set forth in the Contract Documents, and with any subsequent updates or modifications to the Project schedule issued by the Owner, the Prime Contractor, or Fabricator.
- Pay if Paid - Progress Payments, less applicable retainage, shall be paid to Subcontractor within 7 days after Fabricator receives payment from the Prime Contractor. To the extent enforceable under applicable law, Fabricator’s receipt of payment from the Prime Contractor is specifically made a condition precedent to Fabricator’s obligation to make payment to the Subcontractor. In the event of such nonpayment by the Owner or Prime Contractor, Subcontractor’s rights and remedies shall be the same as those available to Fabricator under the Trade Contract.

Requirement to proceed without change orders

Time of the Essence - The Subcontractor agrees and recognizes that time is of the essence in its performance of this Subcontract Agreement. Subcontractor further recognizes that the Owner, the Prime Contractor, and Fabricator may sustain financial loss if the Project or any part of it is delayed because the Subcontractor fails to perform any or all of its Work in accordance with the Contract Subcontract Agreement. Subcontractor agrees to begin performance when directed by Fabricator and to perform in such a manner, at such times, and in such order as Fabricator may direct, so as not to delay the Project. Subcontractor agrees that in the event of any claim, dispute or other matter in question arising out of or relating to this Subcontract Agreement (hereinafter “dispute”), the Subcontractor shall continue to diligently perform all obligations as required under this Agreement and will not directly or indirectly stop or delay the Work in any way, notwithstanding the existence of such dispute(s).

With the signing of the contract the marriage is official. Torchio’s two laws of construction contracts:

1. A bad contract with a good customer is much to be preferred to a good contract with a bad customer
2. Perfect performance of the parties obviates the contract.

The way to assure the contract stays in the drawer is to perform as expected and communicate with your customer.

The Golden Rule
Bonding
Legal Process
Mediation
Arbitration
Court

PART TWO
We have a job!

The marriage occurs for the particular job.

- Contract finalization
- Pre detailing meeting
- Requested changes for ease of erection or economic betterment
**Part Two:**
- We have a contract, now what?
- Erector Pre mobilization planning
- Site specific Erection plan
- Engineered Stability Plan
- Doing the Work

**Pre Mobilization Planning**

**Fabricator's pre detailing meeting**
- Finalize sequencing
  - Driven by lay down area, shake out area, delivery restriction for traffic control
  - Finalize connection design for erection ease
  - Welded splice joint design
  - Erection connections for hoisting
  - Stability provisions

---

**Column Hitch**

**Erection Sequence Plan from Site Erection Plan**

Note that multiple sequences may arrive on site and be unloaded, cribbed and spread in laydown area or erected directly off of truck. For clarity, we are listing the receiving of each sequence in order. Basic Erection Sequence is to erect columns, erect beams so as to box in floor by floor for column stability in addition to connecting frame to core concrete embeds. This erection plan may be adjusted at the discretion of the WEC project manager and foreman.

The Basic Sequence Summary Tables Are As Follows:

<table>
<thead>
<tr>
<th>Steel Erection Project Set Up</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence #</td>
<td>Description</td>
</tr>
<tr>
<td>1</td>
<td>Verify &amp; Install Embeds Below Ground - Follow Embed Drawings</td>
</tr>
<tr>
<td>2</td>
<td>Verify &amp; Install Embeds Ground Floor to Level 5 - Follow Embed Drawings</td>
</tr>
<tr>
<td>3</td>
<td>Verify &amp; Install Embeds Level 6 to Level 16 - Follow Embed Drawings</td>
</tr>
<tr>
<td>4</td>
<td>Verify &amp; Install Embeds Level 16 &amp; Above - Follow Embed Drawings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Steel Erection</th>
<th>Steel Erection Set Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence #</td>
<td>Description</td>
</tr>
<tr>
<td>5</td>
<td>Verify &amp; Install Clips &amp; Connection Steel Below Ground Floor - Follow Connection Drawings</td>
</tr>
<tr>
<td>6</td>
<td>Verify &amp; Install Clips &amp; Connection Steel Ground Floor to Level 5</td>
</tr>
<tr>
<td>7</td>
<td>Verify &amp; Install Clips &amp; Connection Steel Level 6 to Level 16</td>
</tr>
<tr>
<td>8</td>
<td>Verify &amp; Install Clips &amp; Connection Steel Level 16 &amp; Above</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Steel Erection</th>
<th>Embed and Connection Material Steel Erection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence #</td>
<td>Description</td>
</tr>
<tr>
<td>9</td>
<td>Verify &amp; Install Canopy Steel Level 2 - Erection on Hold</td>
</tr>
<tr>
<td>10</td>
<td>Verify &amp; Install Canopy Steel Level 3 - Erection on Hold</td>
</tr>
</tbody>
</table>

---
Complete Joint Penetration (CJP) for W14 x 1194

Assume 30 degree bevel, 3/8 root - AWS D1.1
Prequalified B U 4a (leaving out the web)

Flange weld area 6" X 3.46" X 24" = 498 in³
Root opening 2 @ 6" X .375 X 24" = 108in³
Run off tabs 4 @ (6"X 3.46 X 2")/2 = 83in³

Total Volume 690 in³ Steel weight 193 lbs.
FCAW weight 230 lbs.

Assuming a welder deposits 35 lbs. of FCAW an 8 hour shift this is a 6.5 Man day column splice.
AWS D1.1 Currently
AWS D1.1 D 2020

<table>
<thead>
<tr>
<th>CL</th>
<th>Level</th>
<th>upper col</th>
<th>lower col</th>
<th>Tension</th>
</tr>
</thead>
<tbody>
<tr>
<td>P5</td>
<td>6</td>
<td>W16×1104</td>
<td>W16×1104</td>
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<td>5</td>
<td>W16×1104</td>
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<td>1</td>
<td>W16×1104</td>
<td>W16×1104</td>
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</tr>
</tbody>
</table>

PJP Welds sized per tension and moment loads and use of 70 KSI Filler Metal
PJP for W14 x 1194

Assume 45 degree bevel, AWS D1.1 Prequalified BTC P4 GF
Weld Groove from Table 3.25''
Flange weld area 3.25'' X 3.25'' X 24'' = 254 in³
Root opening 0
Run off tabs 4@ (3.25''X 3.25 X 1.5'')/2 = 32in³
Total Volume 286 in³ Steel weight 80 lbs. FCAW weight 95 lbs.

Assuming a welder deposits 50 lbs. of FCAW an 8 hour shift
this is a 1.9 Man day column splice

Labor saving by using PJP = 4.6 man days
Direct labor cost at $50 per hour = $1,840
Indirect savings ??
Some Interesting Jobs and Special Erection Considerations

100 ton Hillman Roller 2 per Truss
Lifting Assembly (no welds)
Multi Crane Combinations

Concrete cored building with exterior cranes tied off to the core prevented cranes going higher. Third crane installed to complete skin and steel erection.

Alternative Hoisting
20,000 Lb. Capacity

Precision Placement of Concrete Embed

Small (relatively) but Precise
183’ Cantilever

Thanks to Tim Duke, CWI for these Pictures
Alternative to use of large cranes:
Derrick VS 500 ton Truck Crane
$3,500/ Month VS $4,000/ day

Steel Construction: From the Mill to Topping Out
Session 5: It Doesn’t Get Built Without the Erector

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American Institute of Steel Construction
Engineered Erection Plans

Big and Light

Big and Heavy

Georgia Tech Football Practice Facility
Engineered Erection
Stability Plan
Structure Not Self Supporting Until complete

220’
GENERAL ERECTION NOTES:

1. All engineering data, stresses, and loads shall be shown on the shop drawings and shop erection plans.

2. The erection order shall indicate the sequence of erection and the safety devices to be used.

3. All temporary erection aids shall be removed before turnover.

4. Erection of the structure shall be in accordance with the American Institute of Steel Construction (AISC) specifications and the American National Standards Institute (ANSI) codes.

5. All erection work shall be performed by qualified personnel.

6. All temporary erection aids shall be removed prior to turnover.

REMOVAL OF TEMPORARY ERECTION AIDS:

1. Braces to columns at level line 11' 0" to remain until completion of building envelope.

2. Temporary guide steel frames at level lines 11' 0" and 20' 0" to remain until completion.

3. Temporary guide steel frames at level lines 20' 0" and 32' 0" shall remain in permanent guide steel frames between level lines 11' 0" and 20' 0".

4. Temporary guide steel frames at level lines 32' 0" and 42' 0" shall remain in permanent guide steel frames between level lines 20' 0" and 32' 0".

5. All temporary guide steel frames shall be removed prior to turnover.

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1. This document provides an engineered sequence for erection that must be followed as described herein unless revisions are approved in writing by Stanley D. Lindsey & Associates (SDL).  
2. The erection of modular truss chord sections and truss columns requires careful coordination with crane lifting limits.  
3. Erection sequencing information for the completion of truss chord sections, wing plate connections, loose cover plates, and temporary gusset erection aids.

**Erection Stability Plan for Heavy Structure with Life Safety Issues**

1. THIS DOCUMENT PROVIDES AN ENGINEERED SEQUENCE FOR ERECTION THAT MUST BE FOLLOWED AS DESCRIBED HEREIN UNLESS REVISIONS ARE APPROVED IN WRITING BY STANLEY D. LINDSEY & ASSOCIATES (SDL).  
2. THE ERECTION OF MODULAR TRUSS CHORD SECTIONS AND TRUSS COLUMNS REQUIRES CAREFUL COORDINATION WITH CRANE LIFTING LIMITS.  
3. ERECTION SEQUENCING INFORMATION FOR THE COMPLETION OF TRUSS CHORD SPLICES, WING PLATE CONNECTIONS, LOOSE COVER PLATES, AND TEMPORARY GUSSET ERECTION AIDS.
McLeod Hospital Over Build (Video)

- This consists of building a truss system over the existing staff cafeteria, laundry and power facility for the existing operating hospital
Individual Webinar Registrants

CEU/PDH Certificates
Within 2 business days...

- You will receive an email on how to report attendance from: registration@aisc.org.
- Be on the lookout: Check your spam filter! Check your junk folder!
- Completely fill out online form. Don’t forget to check the boxes next to each attendee’s name!

8-Session Registrants

CEU/PDH Certificates
One certificate will be issued at the conclusion of all 8 sessions.

Individual Webinar Registrants

CEU/PDH Certificates
Within 2 business days...

- New reporting site (URL will be provided in the forthcoming email).
- Username: Same as AISC website username.
- Password: Same as AISC website password.

8-Session Registrants

Access to the quiz: Information for accessing the quiz will be emailed to you by Wednesday. It will contain a link to access the quiz. EMAIL COMES FROM NIGHTSCHOOL@AISC.ORG

Quiz and Attendance records: Posted Tuesday mornings. www.aisc.org/nightschool - click on Current Course Details.

Reasons for quiz:
- EEU – must take all quizzes and final to receive EEU
- CEUs/PDHs – If you watch a recorded session you must take quiz for CEUs/PDHs.
- REINFORCEMENT – Reinforce what you learned tonight. Get more out of the course.

NOTE: If you attend the live presentation, you do not have to take the quizzes to receive CEUs/PDHs.
8-Session Registrants

**Access to the recording:** Information for accessing the recording will be emailed to you by this Wednesday. The recording will be available for three weeks. For 8-session registrants only. EMAIL COMES FROM NIGHTSCHOOL@AISC.ORG.

**CEUs/PDHs** – If you watch a recorded session you must take AND PASS the quiz for CEUs/PDHs.

Night School Resources for 8-session package Registrants

Find all your handouts, quizzes and quiz scores, recording access, and attendance information all in one place!

Night School Resources for 8-session package Registrants

Go to www.aisc.org and sign in.

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- Weekly “quiz and recording” email.
- Weekly updates of the master Quiz and Attendance record found at www.aisc.org/nightschool. Scroll down to Quiz and Attendance records.
  - Updated on Tuesday mornings.

Night School Resources for 8-session package Registrants

- Webinar connection information:
  - Found in your registration confirmation/receipt.
  - Reminder email sent out Monday mornings.
- Link to handouts also found here.

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