March 30, 2015

To: Members ACI/CRSI Committee 315 - Details of Concrete Reinforcement

Voting Members:

Gregory P. Birley
Richard H. Birley
David A. Grundler
Robert W. Hall
Todd R. Hawkinson

Dennis L. Hunter
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Associate/Consulting/Subcommittee Members:

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Dennis J. Fontenot
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Thomas G. Schmaltz
William G. Sebastian
Avanti C. Shroff
Richard W. Stone
Richard D. Thomas
Farahad Zahedi

From: Anthony L. Felder
Secretary

Subject: Meeting Notice and Agenda

April 12, 2015
Marriott and Kansas City Convention Center
Kansas City, MO

Our next meeting will be held on Sunday, April 12, 2015 from 2:00 p.m. to 5:00 p.m. in Room C-2211 of the Marriott and Kansas City Convention Center in Kansas City, MO.

A proposed agenda is attached.

Copy to: Eldon Tipping, TAC Contact
Daniel W. Falconer, ACI Technical Director
AGENDA
ACI/CRSI COMMITTEE 315 - DETAILS OF CONCRETE REINFORCEMENT

Marriott and Kansas City Convention Center, Kansas City, MO
April 12, 2015  2:00 – 5:00 p.m.  C-2211

1. 2:00 p.m. - call meeting to order

2. Self-introductions

3. Approval of minutes of last meeting, Oct 26, 2014, distributed Jan 21, 2015

4. Review committee membership.  See Exhibit 1, current roster.

5. Status Reports
   a. ACI 131 BIM / CRSI BIM - Pete Zgiebloski
   b. CRSI Detailing - Dave Grundler
   c. CRSI (Placing, Fabrication, Supports) - Robbie Hall

6. Review ACI 315 Mission Statement
   “Develop and report information on proper details of concrete reinforcement.”
   Goal: Revise and ballot revisions to "Details and Detailing of Concrete Reinforcement"

7. Committee 315 – Details of Concrete Reinforcement
   a. Discussion – Future direction and activities
   b. Review suggestions proposed by Robbie Hall.  See Exhibit 2
   c. Review ACI 318-14 - Chapter 25 – Reinforcement Details  See Exhibit 3, Index
   d. Review of ACI 315-99 as amended by Greg Zeisler (On Screen)

8. Constructability:
   a. Review volunteer’s progress.  See Exhibit 4, Index of Forums
   b. Review “Forums for Discussion”.  See Exhibit 5.

9. Articles for Concrete International

10. New Business

11. Motion to Adjourn
ACI/CRSI COMMITTEE 315 ROSTER
March 2015

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Suggestions proposed by Robbie Hall

• Background
  o ACI 315 - direction changed again
  o CRSI MSP – re-write underway
  o CRSI Detailing – ready for publication

• Audience Reach
  o ACI 315 – Designers
  o CRSI MSP – Detailers

• Content Demand
  o Unanimous agreement throughout all committees (ACI 315, CRSI Detailing, CRSI MSP) that content is needed and would fill a current gap within the industry.
  o 2 publications that complement each other.

• Suggested Separation of Content
  o **ACI 315 Guide**
    • Recommended general responsibilities for designers / structural detailers
      o Definition of teamwork “for success”
      o Completeness of documents
      o Clear communication of design/detailing intent
      o Asking questions about ambiguity, conflicting information, missing information
    • Graphical representation of 318 requirements as it relates to detailing of reinforcement
    • Recommended practices for details of concrete reinforcement in structural drawings
      o Minimum requirements and standards
      o Recommendations
      o How to avoid ambiguity and misunderstanding
      o Congestion
      o Practicality and constructability

  o **CRSI Guide**
    • Recommended general responsibilities for rebar detailers
      o Definition of teamwork “for success”
      o Completeness of documents
      o Clear communication of design/detailing intent
      o Asking questions about ambiguity, conflicting information, missing information
    • Graphical representation of first/last bar location, etc. (CRSI Appendix C)
    • Recommended practices for details of concrete reinforcement in placing drawings
      o Minimum requirements and standards
      o Recommendations
      o How to avoid ambiguity and misunderstanding
      o Congestion
      o Practicality and constructability
CHAPTER 25
  REINFORCEMENT DETAILS
25.1 – Scope, p. 411

25.2 – Minimum spacing of reinforcement, p. 411

25.3 – Standard hooks, seismic hooks, crossties, and minimum inside bend diameters, p. 412

25.4 – Development of reinforcement, p. 414

25.5 – Splices, p. 428

25.6 – Bundled Reinforcement, p. 433

25.7 – Transverse reinforcement, p. 434

25.8 – Post-tensioning anchorages and couplers, p. 443

25.9 – Anchorage zones for post-tensioned tendons, p. 443
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<td>Paul Brienen</td>
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<td>Use of Wire Reinforcement for Footings and Beams</td>
<td>Todd Hawkinson</td>
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<td>Javed Malik</td>
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<td>Javed Malik / Neal Anderson</td>
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<td>#55</td>
<td>Interpreting Beam Schedules</td>
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<td>#57</td>
<td>Using Standees</td>
<td>Dick Birley</td>
<td>X Aug 2010</td>
<td>Dick Birley / Neal Anderson</td>
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<td>#58</td>
<td>Dropped Main Reinforcing for Use as Support Bars</td>
<td>Robbie Hall</td>
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<td>#59</td>
<td>Defining Top Bars vs. Other Bars</td>
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<td>Corrosion Resistant Reinforcing Steel</td>
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<td>#61</td>
<td>Cutting and Bending with a Torch</td>
<td>Pete Fosnough</td>
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<td>Bending Bars Projecting From Concrete</td>
<td>MSP - ACI 318</td>
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<td>Mechanical Couplers and Form Savers</td>
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<td>Standard Hooks Exceeding Concrete Dimensions</td>
<td>Pete Z / Robbie</td>
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<td>Bar Configuration at Penetrations Near Footings</td>
<td>Robbie Hall</td>
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<td>Diagonals at Openings in Thin Members</td>
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<td>#67</td>
<td>Standard use For Bar Supports</td>
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<td>#68</td>
<td>Rust on Rebar</td>
<td>Robbie/Dennis/Pete Z</td>
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<td>Surface Contamination of Stainless Steel Reinforcing</td>
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<td>#70</td>
<td>Introduction to Steel Reinforcing Bar Splices</td>
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**Code:** White - available; Pink - in process; Green - draft submitted; Yellow - reviewed & complete
Forums for Discussion
ACI 315 – March 2015 - Kansas City

#19 - Minimum Requirements for Drawings [Todd Hawkinson]
- Hold until the new code comes out

#25 - Mandrel Sizes and Bend Diameters [Dennis Hunter]
- A research project is underway at NC State University that is re-assessing the current bend diameters used in the industry. Due to be completed in May 2014

#33 - Slab Steps [Javed Malik]
- Usually slabs are too thin for standard hooks
- Within 20% of slab support, steps are not a big issue
- Otherwise, step needs design attention
- Use straight bars and laps rather than hooks and offsets
- Use thicker slabs to avoid stepping bottom soffit; step top only

#34 - Top of column configuration [Robbie Hall]
- Hook verticals
- Use hooked bars lapped with verticals; do not need bending capacity or development lengths
- Terminators or T-heads if possible; cannot be in the same plane
- Congestion in beams or slabs
- Round columns
- Columns at edge of slabs – where to hooks go?
- Provide lots of sketches

#35 - Top of Pile configuration [Javed Malik]
- Hook verticals
- Use hooked bars lapped with verticals; may need bending capacity or development lengths
- Terminators or T-heads
- Difficulties in confined pile caps
- Make cap thicker to develop straight bars
- Provide lots of sketches

#36 - Wrapping structural steel [Javed Malik]
- Interference of ties with 135° hooks
- Problem with bars that must penetrate I-beam web; use two lapped “J”-bars
- Use smaller structural steel and avoid the use of cross-ties as much as possible
- Composite columns are an item that has not been completely settled among engineers

#37 - Mixing grades of steel in a project [Greg Birley]
- Avoid if at all possible; price difference is minimal
- Mixing grades may cause expensive problems
- In a project
- In a member
- Segregation is difficult
- Difficult to trace grade once in concrete
- Some steel is not easily identified
#40 - Location of offsets on column vertical bars  
- Place offsets below beam soffit  
- Note that moment is at the top of columns  
- Offset of column verticals passing through beams  
- Inverting column offsets, i.e. offset at bottom of column rather than at top

#41 - Alternating hooks on ties in columns and beams  
- Extra labor  
- Vibrators get caught on the hooks  
- More difficult to place cages over dowels  
- More difficult to install corbels and embeds  
- Is alternating of 135° hooks necessary

#44 - Direction of hooks on wall and column dowels and vertical bars  
- Hook inward wherever possible  
- Simpler for pre-assembly  
- Walls get better development  
- Use ‘U’-bars for dowels

#46 - Mechanical pads and machine bases  
- Provide option for embedded dowels or drill-and-grout dowels (best)  
- Use dowels rather than one-piece bars  
- General notes often do not apply to site situations  
- Grout dowels in sleeves  
- Consider seismic issue

#48 - Preassembly of Boundary elements and Coupling Beams  

#52 - Interpreting Engineering Drawings

#53 - Sharing of CAD files  

#55 - Interpreting Beam Schedules  
- Javed will send a sample to person who does this forum

#56 - Interpreting Beam Schedules  
- Pete is asking for someone to rewrite this forum

#67 - Standard Use of Bar Supports  
- Reviewing CRSI document in order to write draft

#68 - Rust on Rebar  
- Collating various documents in order to write draft