MEMORANDUM

January 26, 2008

TO: Standards Committee
FROM: Mike Milligan, Secretary
RE: Minutes for the December 18, 2008 Standards Committee Meeting

The Standards Committee meeting was called to order by the Chairman at 9:03 a.m. on December 18, 2008 in the N755 Bay Window Conference Room. The meeting was adjourned at 11:35 a.m.

The following members were in attendance:

Mark Miller, Chairman
Dennis Kuchler, Constr. Mgmt.
Ron Heustis, Constr. Mgmt.
Scott Trammell, Highway Ops.
Ron Walker, Materials Mgmt.
Tom Caplinger, Crawfordsville Dist.

*Proxy for Mike Bowman
**Proxy for Bob Cales
***Proxy for Jim Keefer

Also in attendance were the following:

Mike Milligan, Secretary
Bill Knopf, Asphalt Pvmnt. Assoc.
Tony Uremovich, INDOT
Alfredo Hanza, INDOT
Prakash Patel, INDOT
Jim Reilman, INDOT
Kumar Dave, INDOT
Steve Fisher, INDOT
Greg Richards, INDOT
Mike Byers, ICPA
Robert Dirks, FHWA
Tom Duncan, FHWA
Paul Berebitsky, ICA
A. GENERAL BUSINESS ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

1. Approval of November 20, 2008 Minutes Approval of the Nov 20, 2008 minutes is pending revisions to be made to agenda items 08-15-2, 08-15-12 and 08-15-16. The final minutes will be distributed to the Committee members for approval via e-mail.

2. Mr. Miller noted that specification sub-committees should not continue to meet just to look for potential specification changes without a specific agenda, preferably approved or assigned by the Standards Committee. Specification sub-committees should focus on cost reduction measures and reduction of recurring special provisions, not just minor changes.

3. A request was submitted by Mr. Caplinger to consider the timing of release of revisions to recurring special provisions and the menu for the provisions. This has caused some confusion and added work by designers in an effort to submit the latest version of the RSP menu at time of Final Tracings. Designers are being told that failure to submit the latest version, whether it affects their contract or not, will result in lower evaluation of the designer by the contracts section.

A schedule will be considered for revisions to RSPs and the menu, possibly 4 times per year. Mr. Heustis will talk with Contracts to better understand the reasons for lower evaluations due to menu versions.

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

1. Design Manual Revision – Minimize the number of overhead structures to support signage for two-way, left-turn lanes (TWLTO).

2. Indiana Design Manual – Chapter 52

3. Indiana Design Manual – Chapter 77

C. RECURRING SPECIAL PROVISIONS PROPOSED ITEMS

(No items on this agenda)
OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

Item 08-16-1 Mr. Heustis 10
711.04 Certification of Fabricators
Action: Passed as revised

Item 08-16-2 Mr. Heustis 13
Standard Drawing 801-TCDV-02
Action: Passed as submitted

Item 08-16-3 Mr. Heustis 16
801.10.1 Construction Zone Energy
   Absorbing Terminal, CZ
Action: Passed as revised

Item 08-16-4 Mr. Wright 18
Standard Drawings 802-SBTS-01 thru 19
Action: Withdrawn

Item 08-16-5 Mr. Wright 42
910.19 Overhead Sign Structures
910.19(a) Aluminum Overhead Sign Structures, Box Truss and Bridge Attached
910.19(b) Steel Overhead Sign Structures, Box Truss, Cantilever, Monotube, and Bridge Attached
Action: Withdrawn

cc: Committee Members (11)
FHWA (2)
CONCEPTUAL PROPOSAL ITEM

1. Design Manual Revision - Minimize the number of overhead structures to support signage for two-way, left-turn lanes (TWLTO).

CONCEPTUAL PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Cost Saving idea - Minimize the number of overhead structures to support signage for two-way, left-turn lanes (TWLTO).

PROPOSED SOLUTION: Revise the Design Manual for better guidance

APPLICABLE STANDARD SPECIFICATIONS: N/A
APPLICABLE STANDARD DRAWINGS: N/A
APPLICABLE DESIGN MANUAL SECTION: 75-3.07
APPLICABLE SECTION OF GIFE: N/A

Submitted By: John Wright
Title: Roadway Services Manager
Organization: INDOT
Phone Number: 232-5147
Date: 11/20/08

ACTION: Conceptual proposal was approved by the Committee with FHWA concurrence.
75-3.06 Right-Turn Only Signs

When an exclusive right-turn only lane is provided, the use of an overhead sign should be considered where background clutter may be a problem. If background clutter is not a problem, ground-mounted signs may be as visible and more cost effective.

75-3.07 Two-Way Left-Turn Only (TWLTO) Signs

Overhead lane control signs should be provided at the beginning and end of the two-way, left-turn lanes and in urban areas approximately every 300 m in between. In suburban and built-up rural areas, the intermediate TWLTO sign spacing may be increased but normally not greater than 400 m. For the beginning and end, the supplementary words BEGIN and END should also be included. TWLTO signs should also be used on the back side of a LEFT TURN ONLY sign where a two-way, left-turn lane is transitioned into a one-way, left-turn lane. The supplementary BEGIN and END words are typically not included for this situation. Section 76-2.05(02) illustrates the pavement markings used for this transition.

The Department prefers to install these signs Ground Mounted only. If the Designer or District Traffic deems necessary, signs can be installed on an overhead structure.

The Department's preferred practice is to mount the overhead signs on cantilever supports, if feasible; if not, cable supports may be used. Supplemental post mounted signs are not necessary.

75-3.08 Do Not Pass Signs

The beginning of the no-passing zone is normally marked with a NO PASSING ZONE pennant on the left side of the roadway. The end of the zone is normally indicated with a sign post with three white delineators attached which is installed on the right side of the roadway. No-passing signs are not required at those zones marked because of railroad crossings, at most intersections or in urbanized areas.

75-3.09 Parking Signs

Part VII - Traffic Design

Regulatory Signs
CONCEPTUAL PROPOSAL ITEM

2. Indiana Design Manual - Chapter 52

CONCEPTUAL PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Indiana Design Manual Chapter 52 was in need of revisions to include the Mechanistic Empirical Pavement Design Guide, MEPDG and to incorporate various updates and revisions.

PROPOSED SOLUTION: David Andrewski, Manager, Office of Pavement Management, will brief the Standards Committee on the revised Indiana Design Manual Chapter 52 for informational purposes.

APPLICABLE STANDARD SPECIFICATIONS:

APPLICABLE STANDARD DRAWINGS: This will cause a change to spacing of D-1 joints and the Standard Drawings will need to be revised accordingly.

APPLICABLE DESIGN MANUAL SECTION: Chapter 52

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

Submitted By: David Andrewski, P.E.

Title: Manager, Office of Pavement Mgmt.

Organization: INDOT

Phone Number: 317-232-5452

Date: November 26, 2008

APPLICABLE SUB-COMMITTEE ENDORSEMENT?IDM Chapter 52 Revision Task Groups, Pavement Steering Committee

ACTION: The concept was approved conditionally by the Committee with the understanding that concerns by the Office of Pavement Preservation will be addressed, that FHWA concerns about a written implementation plan will be addressed, and that the final version will be reviewed and approved by the Executive staff. FHWA concurred with the conditional approval.
CONCEPTUAL PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Indiana Design Manual Chapter 77 was in need of revisions to incorporate various updates and revisions.

PROPOSED SOLUTION: Greg Richards, Division of Traffic Control Systems, will brief the Standards Committee on the revised Indiana Design Manual Chapter 77 for informational purposes.

Submitted By: Carl Tuttle, P.E. (thru Mike Bowman)
Title: Manager, Traffic Engineering.
Organization: Division of Highway Operations
Phone Number: 317-233-4726
Date: November 26, 2008

ACTION: The conceptual proposal was approved by the Committee with concurrence from the FHWA.
Summary of Revisions to Chapter 77, Traffic Signals

1. Chapter-wide Changes
   • Corrections for agency changes due to reorganization.
   • General updating and removal of obsolete information.

2. Definitions
   • Added items to the list and modified some definitions.

3. Signal Warrants
   • Changed to match warrants in 2003 MUTCD.

4. Preemption
   • Updated requirements for railroad preemption.
   • Added additional details regarding design of railroad preemption.

5. Signal Display
   • Changed to specify LED signal indications.

6. Signal Displays-Multiple & Supplemental Heads
   • Multiple left turn lanes, one head per lane shall be provided.
   • Changed to recommend supplemental heads if 3 or more through lanes.

7. Signal Head Placement Figures
   • Additional example cases were added at districts' request.

8. Signal Head Placement Distance
   • At least one and preferably both of the two signal faces required for the major movement on the approach shall be between 40' and 180' from the stop line.
   • If the nearest signal head is located between 150 and 180' from the stop line, a near side head may be considered.

9. Vision Cone
   • Changed from previous figure- shows vision cone from center of approach- including parking lane. Matches 2003 MUTCD.

10. Pedestrian Indication Warrants
    • Reference standards in the 2003 MUTCD.

11. Phase Numbering and Conventions
    • Standardized phase numbering and conventions.

12. Lead/Lag Left Turns
    • INDOT's emphasis on retaining and maintaining coordinated systems has encouraged the use of lagging left turns where they promote progression through a signal system.

13. Assignment of Right-of-Way
    • All-red flash.

14. Phase Change Interval
    • Strengthened language for use of ITE clearance intervals- designers should use for analysis.
    • Required for signal timings

15. Indecision Zone
    • Revised definition and changed terminology from "dilemma zone" to "indecision zone".
    • Type I Dilemma zone- caused by short clearance intervals- no longer an issue since ITE clearance intervals for amber and red are used.
    • Indecision zone, or Type II Dilemma zone- caused by differences in driver behavior. When presented with a yellow indication, do they stop or go?
    • Beginning of Indecision zone: distance from the stop line beyond which 90% of drivers would stop; end is a distance from the stop line where only 10% of all drivers would stop.

16. Count Loops
    • Added design information for count loops.
PROBLEM(S) ENCOUNTERED: Currently the 711.04 specification section includes a category of AISC certification that is no longer valid. Also there is some ambiguity regarding whether or not a fabricator needs to be certified.

PROPOSED SOLUTION: Modify the 711.04 section to update the categories of AISC certification to current AISC requirements

APPLICABLE STANDARD SPECIFICATIONS: 711.04

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: None

Submitted By: Ron Heustis (for Jim Reilman)

Title: Manager, Office of Construction Technical Support

Organization: INDOT

Phone Number: 317-234-2777

Date: December 9, 2008

APPLICABLE SUB-COMMITTEE ENDORSEMENT? None. Proposed changes believed to be editorial in nature.
SECTION 711, BEGIN LINE 50, DELETE AND INSERT AS FOLLOWS:

711.04 Certification of Fabricators

The fabricator of structural steel furnished under this section shall be certified in accordance with the American Institute of Steel Construction (AISC) and Quality Certification Program (Category III) before the fabricator will be permitted to fabricate a welded plate girder. It shall be the fabricator’s responsibility to maintain a valid certification and annual endorsements thereto.

Fabricators of main load-carrying components for multi-span bridges that have welded or bolted splices shall be certified under the AISC Major Steel Bridges (CBR) category. Fabricators of fracture critical members shall be certified under the CBR category and shall have the fracture critical endorsement. Fabricators certified as CBR are also certified to fabricate simple and continuous rolled beam structures. Only fabricators meeting the above requirements shall be used to fabricate girders using high performance steel.

Fabricators of main load-carrying components for simple span bridges or bridges that do not have welded or bolted splices shall, as a minimum, be certified under the AISC Simple Steel Bridges Structures (SBR) category.

If the fabrication of secondary structural steel members and other miscellaneous structural steel components, such as but not limited to diaphragms, bearing assemblies, and miscellaneous plates does not involve any welding or heating of the steel, the fabrication facility that is fabricating these components will not be required to be AISC certified as described in this section.

Only fabricators meeting the requirements of the AISC Quality Certification Program, “Major Steel Bridges (CBR)” with “Fracture Critical Members Endorsement (F)”, or approved equal, may be used to fabricate girders using high performance steel. Prior to approval for fabrication, the results of the latest AISC certification review shall be made available to the Engineer to determine if items critical to successful fabrication meet the needs of the specific work.
COMMITTEE COMMENTS:

Mr. Reilman passed out a one page handout with revisions to this item.

Other sections containing specific cross references:
None

Motion: Mr. Heustis
Second: Mr. Beuchel
Ayes: 10
Nays: 0

Action: Passed as revised

Recurring Special Provisions affected:

None

Standard Sheets affected:

None

2010 Standard Specifications Book

Create RSP (No. __________)
Effective __________ Letting
RSP Sunset Date: __________

Revise RSP (No. __________)
Effective __________ Letting
RSP Sunset Date: __________

Standard Drawing Effective __________

Create RPD (No. __________)
Effective __________ Letting
Technical Advisory

GIFE Update Req’d.? Y___ N_x
By - Addition or Revision

Frequency Manual Update Req’d? Y___ N_x
By - Addition or Revision

Received FHWA Approval? Yes
SPECIFICATION REVISIONS
PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Based on questions arising on construction projects, there is a lack of clarity on the meaning of the word "adjacent" as it applies to standard drawing 801-TCDV-02, note no. 9, specifically regarding the requirement for a type C warning light.

PROPOSED SOLUTION: There is no such requirement in the MUTCD to use the type C light in the specified circumstance, the practice is rarely followed and the value of type C light has come into question by the 801/808 sub-committee. The proposal is to eliminate this requirement for the light and resultantly minimize the problem associated with the definition of “adjacent.”

APPLICABLE STANDARD SPECIFICATIONS: n/a
APPLICABLE STANDARD DRAWINGS: 801-TCDV-02
APPLICABLE DESIGN MANUAL SECTION: n/a
APPLICABLE SECTION OF GIFE: n/a
APPLICABLE RECURRING SPECIAL PROVISIONS: n/a

Submitted By: Joe Novak (thru Ron Heustis)
Title: Construction Field Engineer
Organization: INDOT, Div. of Construction Management
Phone Number: 317-232-5081
Date: 11/19/08

APPLICABLE SUB-COMMITTEE ENDORSEMENT? Yes, 801/808 on 9/5/08.
COMMITTEE COMMENTS:

Mr. Uremovich brought up that Notes 7 and 10 should probably be moved to the Standard Specifications. This will be addressed in a future revision.

Mr. Dirks brought up that FHWA has concerns about the use of the term “adjacent”. This is not an issue that needs to be addressed immediately, but FHWA will be bringing this up in the future.

Other sections containing specific cross references:

None

Recurring Special Provisions affected:

None

Standard Sheets affected:

801-TCDV-02

Motion: Mr. Heustis
Second: Mr. Reilman
Ayes: 10
Nays: 0

Action: Passed as submitted

__ 20__ Standard Specifications Book

__ Create RSP (No. ____________) Effective ____________ Letting
  RSP Sunset Date: ____________

__ Revise RSP (No. ____________) Effective ____________ Letting
  RSP Sunset Date: ____________

Standard Drawing Effective Sept. 1, 2009

__ Create RPD (No. ____________) Effective ____________ Letting
  ___ Technical Advisory

GIFE Update Req’d.? Y___ N_x___
  By - Addition or Revision

Frequency Manual Update Req’d? Y___ N_x___
  By - Addition or Revision

Received FHWA Approval? Yes
GENERAL NOTES

1. Unless otherwise specified, channelizing devices shall be spaced as shown on Standard Drawing E 801-TCLG-01.

2. Reflectors may be omitted from cones for lane closures during daylight hours.

3. For vertical panels greater than 3 ft in height, the width of the strips shall be 6 in.

4. Vertical panels used on an expressway or a freeway shall have a minimum reflective panel area of 270 sq. in. Other roadways with a posted speed limit of 50 mph or greater shall have a minimum reflective panel area of 270 sq. in., also.

5. Cones shall have a minimum height of 2'-4" when used at night.

6. The maximum distance between the edges of adjacent reflective sheeting strips shall be 2 in.

7. Panel and direction indicator barricades and supports shall meet NCHRP 350 crash evaluation criteria.

8. Minimum flexible tubular marker base area shall be 0.3 sq. ft.

9. It is not necessary to delineate a drop-off of 3 in. or less adjacent to active travel lanes. Where channelizing devices are used to delineate drop-offs of 3 in. or less adjacent to active travel lanes, at least 33 in. of the device shall be above the adjoining pavement surface. Where channelizing devices are used to delineate a drop-off greater than 3 in. adjacent to active travel lanes, at least 27 in. of the device shall be above the adjoining pavement surface and a Type C warning light shall be attached to the top of the device (on the pavement side). In no case shall more than 9 in. of the device be below the adjoining pavement surface.

10. The proper orientation in respect to approaching vehicular traffic shall be maintained on vertical panels. Drums are the preferred channelizing device in a tight radius curve.

LEGEND

O - Device may be used in tangent set-ups.

X - Device may be used in taper or transition set-ups.

X - Devices may be used in two-way traffic set-ups to divide opposing lanes of traffic.

โอ - Device may be used to divide two or more lanes of traffic in the same direction.

โอ - Device may be used to replace barricades and drums where space is limited.

โอ - Device may be used to delineate edge of pavement drop-off where space is limited.
SPECIFICATION REVISIONS
PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Std Spec 801.10.1 permits the use of the GREAT, cz unit manufactured by Energy Absorption Systems even though it is not NCHRP 350 compliant. This compliance requirement went into effect in 1998 for projects on the NHS. For economic reasons, INDOT has permitted the temporary continued use of this product but no expiration date has yet been established. It is believed that these units have not been commercially sold as new since 1998 and have been replaced by the QuadGuard product produced by the same manufacturer. Other states have already sunset the use of this product. It is estimated that only 40 units remain as usable in the state.

PROPOSED SOLUTION: Place an expiration date of 1/1/11 in the specifications. This should permit virtually any contract active prior to this change to complete and allow enough warning to allow contractors to prepare for the change.

APPLICABLE STANDARD SPECIFICATIONS: 801.10.1
APPLICABLE STANDARD DRAWINGS: n/a
APPLICABLE DESIGN MANUAL SECTION: n/a
APPLICABLE SECTION OF GIFE: n/a
APPLICABLE RECURRING SPECIAL PROVISIONS: n/a

Submitted By: Joe Novak (thru Ron Heustis)
Title: Construction Field Engineer
Organization: INDOT
Phone Number: 232-5081
Date: 11/3/08

APPLICABLE SUB-COMMITTEE ENDORSEMENT? Yes, 801/808 on 9/5/08 - Joe Novak, chair. It should be noted that ICA has requested an expiration date of 1/1/12 in order to coincide with the expiration of old temporary concrete barrier units; INDOT has preferred and chosen an expiration date of 1/1/11 since we are eager to use the safer product, believe that we are long overdue on an expiration date, and have no evidence this will be a hardship to the industry.
REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 801, BEGIN LINE 479, INSERT AS FOLLOWS:

801.10.1 Construction Zone Energy Absorbing Terminal, CZ

The construction zone energy absorbing terminal, cz shall have passed NCHRP 350 level 3 crash test for all Interstate and other construction sites having a construction zone speed limit in excess of 45 mph and level 2 for non-Interstate construction sites having a construction zone speed limit of 45 mph or less. All energy absorbing terminal, cz shall have redirect capabilities and shall be approved by the FHWA. A copy of the crash test results and a copy of the FHWA approval letter shall be furnished to the Engineer prior to the installation of the unit. The Contractor may also use the Guard Rail Energy Absorbing Terminal cz, manufactured by Energy Absorption Systems, Inc. until January 1, 2011. All units of this type in use must shall be replaced with a compliant product immediately after this date regardless of the date of letting. No additional payment shall will be made for this replacement.

Other sections containing specific cross references: None

Motion: Mr. Heustis
Second: Mr. Andrewski
Ayes: 10
Nays: 0

Action: Passed as revised

Recurring Special Provisions affected:

None

2010 Standard Specifications Book

Create RSP (No. 801-T-170)
Effective March 2009 Letting
RSP Sunset Date: ____________

Revise RSP (No. ____________)
Effective ____________ Letting
RSP Sunset Date: ____________

Standard Drawing Effective ____________

Create RPD (No. ____________)
Effective ____________ Letting
__ Technical Advisory

GIFE Update Req’d.? Y N
By - Addition or Revision

Frequency Manual Update Req’d? Y N
By - Addition or Revision

Received FHWA Approval? Yes
SPECIFICATION REVISIONS
PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Box Truss Standards need to be updated to conform to 2008 AASHTO fatigue design changes.

PROPOSED SOLUTION: Revise Standard Drawings for Box Trusses

APPLICABLE STANDARD SPECIFICATIONS: 910.19, 910.20

APPLICABLE STANDARD DRAWINGS: 802-SBTS-01 to 19

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

Submitted By: John Wright
Title: Roadway Services Manager
Organization: INDOT
Phone Number: 232-5147
Date: 11/20/08
REVISION TO STANDARD DRAWINGS

802-SBTS Sign-01 Sign Box Truss Structure Plan and Elevation
802-SBTS Sign-02 Sign Box Truss Structure Table of Dimensions
     Spans 34' thru 85'
802-SBTS Sign-03 Sign Box Truss Table of Dimensions
     Spans 86' thru 130'
802-SBTS Sign-04 Sign Box Truss Structure Truss Schedule
802-SBTS Sign-05 Sign Box Truss Structure Isometric Views
802-SBTS Sign-06 Sign Box Truss Structure Connections and Weld Details
802-SBTS Sign-07 Sign Box Truss Structure Aluminum Chord Details
802-SBTS Sign-08 Sign Box Truss Structure End Support Details
802-SBTS Sign-09 Sign Box Truss Structure Truss Connection Details
802-SBTS Sign-10 Sign Box Truss Structure Truss Connection Details
802-SBTS Sign-11 Sign Box Truss Structure Steel End Support Handhole Details
802-SBTS Sign-12 Sign Box Truss Structure Steel End Support Base Details
802-SBTS Sign-13 Sign Box Truss Structure Steel End Support Base Details
802-SBTS Sign-14 Sign Box Truss Structure Interior Walkway Grating Plan
802-SBTS Sign-15 Sign Box Truss Structure Interior Walkway Grating Details
802-SBTS Sign-16 Sign Box Truss Structure Foundation at 33” Concrete Barrier Wall
802-SBTS Sign-17 Sign Box Truss Structure Foundation at 45” Concrete Barrier Wall
802-SBTS Sign-18 Sign Box Truss Structure Foundation at 36” Median or Shoulder
802-SBTS Sign-19 Sign Box Truss Structure Spread Footing Quantities

Other sections containing Motion: M
specific cross references:
     Second: M
     Ayes:
     Nays:

Action: Withdrawn

Recurring Special Provisions affected:
     _20_ Standard Specifications Book
     __ Create RSP (No. ___________)
     Effective ____________ Letting
     RSP Sunset Date: ____________
     __ Revise RSP (No. ___________)
     Effective ____________ Letting
     RSP Sunset Date: ____________

Standard Sheets affected:
     See Above

     Standard Drawing Effective ____________
     __ Create RPD (No. ___________)
     Effective ____________ Letting

     Technical Advisory

GIFE Update Req’d.? Y____ N____
     By - Addition or Revision

Frequency Manual Update Req’d.? Y____ N____
     By - Addition or Revision

Received FHWA Approval? _____
NOTES:

1. Sign box truss structures are for various maximum sign areas and span lengths. See Standard Drawings E 802–SBTS–02 thru 04 for structure schedule including dimensions and member sizes.

2. Maximum deviation of any chord from a straight line in any section shall be less than 1/8". Max. horizontal deviation over the entire length of the box truss shall be less than 3/8" from a straight line.


5. See Standard Drawing E 802–SNWW–01 through 03 for sign support and placement details.

6. All box truss members are aluminum and all end support members are steel.


LEGEND:

a. Chord
b. Verticals in front and back faces of box truss
c. Horizontals in top and bottom faces of box truss
d. Diagonals in front and back faces of box truss
e. Diagonals in top and bottom faces of box truss
f. Horizontals in End Supports
g. Diagonals in End Supports
h. End Support columns
j. Horizontal W-beam in End Support

INDIANA DEPARTMENT OF TRANSPORTATION
SIGN BOX TRUSS STRUCTURE
PLAN AND ELEVATION
OCTOBER 2008
DRAWING NO. E 802–SBTS–01

John C. Merrow
DESIGN ENGINEER
State Of
### DIMENSIONS FOR SIGN BOX TRUSSES (34" thru 85")

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### NOTES

1. The table of dimensions for sign box trusses is divided and put on two Standard Drawings. The tables show dimensions with all section requirements accounted for. For span lengths of 34" thru 130' see Standard Drawing E 862-585-03.

2. All panels on a truss shall be the same length. The minimum panel length for all trusses is 5'-0" and the maximum is 8'-0".

3. A single interior unit in a truss shall have an even number of panels to maintain the pattern of the vertical diaphragm.

4. Use minimum number of sections for each truss. Keep the maximum sections length at 35'-6".

5. See Standard Drawing E 862-585-03 for required combin.
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</tbody>
</table>

**Notes:**
1. Camber diagrams to build trusses with 2 to 4 sections are shown. Use 1 1/2" camber at midspan for oil truss spans of 36° through 100° and 3" for oil truss spans of 101° through 130°. Camber is not required for spans less than 36°. Camber shown is for fabrication only measured with truss fully supported, no load condition.
2. See Standard Drawing E 802-SBTS-02 for truss spans of 44° to 85° and other notes.
3. Allowable camber tolerance for trusses is 25% of specified camber value.
## SIGN BOX TRUSS SCHEDULE

<table>
<thead>
<tr>
<th>TRUSS TYPE</th>
<th>TRUSS SIGN AREA (SQ. FT.)</th>
<th>MAX. SPAN (FT.)</th>
<th>MAX. MOUNTING HEIGHT (IN.)</th>
<th>CHORD a, b, c, d, e (IN.)</th>
<th>VERTICAL f, g, h, i (IN.)</th>
<th>HORIZONTAL (IN.)</th>
<th>DIAGONAL (IN.)</th>
<th>W-Beam Width (IN.)</th>
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<tr>
<td>B</td>
<td>700</td>
<td>100</td>
<td>28'-6&quot;</td>
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<td>2.00, 0.220, 7.00, 0.375</td>
<td>14.00, 0.500</td>
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<td>W-10 x 68</td>
</tr>
<tr>
<td>C</td>
<td>130</td>
<td>28'-6&quot;</td>
<td>7.00, 0.375, 2.56, 0.250, 2.56, 0.188, 3.00, 0.500, 4.00, 0.500</td>
<td>2.00, 0.220, 8.00, 0.500</td>
<td>14.00, 0.500</td>
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<td>W-10 x 68</td>
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<tr>
<td>D</td>
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<td>14.00, 0.500</td>
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<td>W-10 x 68</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**

1. For dimensions and member locations see Standard Drawings E-802-SBTS-01 thru 03.
2. Material: Box Truss: Aluminum
   End Supports: Steel
3. For base pile and anchor bolt details see Standard Drawings E-802-SBTS-12 & 13.
4. See Standard Drawing E-802-SBTS-03 for member diagram.
TYPICAL EXTERIOR TRUSS SECTION

NOTES:
1. Number of panels and sections varies. See Standard Drawing E 802-SBTS-02 and 03 for table of dimensions.
2. For Details A thru D see Standard Drawing E 802-SBTS-06

TYPICAL INTERIOR TRUSS SECTION
NOTES:
1. All verticals and diagonal members shall be machined to provide a snug fit to the chord along the entire edge before welding. Horizontal and vertical end supports shall be slotted for the dimensions shown and welded to gussets. They shall be completely sealed against water penetration. See Typical Gasket Connection Detail.

2. See Standard Drawing E 802-S315-04 for schedule of truss members.

3. Vertical gussets shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a 1/4" minimum to 1 1/2" maximum clearance between any diagonal and any vertical.

4. For variable end dimension, see tables on Standard Drawings E 802-S315-02 & 03.

5. End plate may be welded as one piece and then slotted or welded as two pieces after slotting the member.
NOTE:
2. Plates shall be machined from solid rounds.
3. Matting surfaces to be flat within ±1/64". Flange shall be given additional finish if necessary to ensure contact between plates.
NOTES:

1. Type A J-hook shall consist of two 1/4-inch to 3/8-inch stainless steel bars, constructed as shown in detail and spot welded to inside of the end support members. Type B J-hook shall consist of one 1/4-inch to 3/8-inch stainless steel bar, shaped as shown in detail, threaded on straight end and fastened to inside by means of a hex nut spot welded to the end support members.

2. J-hook Type A or Type B shall be used.

3. Cap bolts that are used to attach top cap of end support columns shall be located to miss J-hook.

4. Toe edge of diagonal member shall be cut back to facilitate throat thickness. See Standard Drawing E 802-SBTS-06 for toe edge detail.

5. Cut holes in end support columns for W-beams to pass through. Holes to have 1/8-inch maximum clearance to W-beam. Holes in opposite sides of column to be checked for proper alignment prior to cutting.
<table>
<thead>
<tr>
<th>TRUSS TYPE</th>
<th>Z</th>
<th>D</th>
<th>L</th>
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<tbody>
<tr>
<td>A</td>
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<td>4</td>
<td>6</td>
</tr>
<tr>
<td>B</td>
<td>14</td>
<td>4</td>
<td>6</td>
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<td>C</td>
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<td>D</td>
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<tr>
<td>E</td>
<td>19</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Provide isolation from steel dissimilar metal as required.
2. For truss type D and E the 1" stem plate is not required. Filet weld front and rear plates together.

**ELEVATION**

**SECTION A-A**

**PLAN**

**SECTION B-B**

**UPPER CHORD CONNECTION DETAILS**

**3/4" DIA. STAINLESS STEEL U-BOLT DETAIL**

**INDIANA DEPARTMENT OF TRANSPORTATION**

**SIGN BOX TRUSS STRUCTURE TRUSS CONNECTION DETAILS**

**DRAWING NO.** E 802-SEITS-09

**OCTOBER 2008**

**John C. Macon**

**SENIOR DESIGNER**
NOTES:

1. Provide neoprene pads at all chord to W-beam bearing surfaces.

SECTION A-A

SECTION C-C

SADDLE SHIM DETAIL

<table>
<thead>
<tr>
<th>Truss Chord Outside Diameter D</th>
<th>a</th>
<th>b</th>
</tr>
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<tbody>
<tr>
<td>8&quot;</td>
<td>9/32&quot;</td>
<td>1 15/32&quot;</td>
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<td>1 7/32&quot;</td>
</tr>
<tr>
<td>7&quot;</td>
<td>25/32&quot;</td>
<td>31/32&quot;</td>
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</tbody>
</table>
NOTES:

1. In lieu of fabricated handhole frames as shown, frame may be cut from 2" plate (rolling direction vertical).

2. See Standard Drawing E 802-SMBW-03 for grounding post details. Grounding post to be placed on far side of support directly opposite center of handhole.


PLAN

- Foundation Axis
- End support columns
- Truss Axis
- Handhole frame

HANDHOLE FRAME DETAIL

- 5/16" diameter holes (6p)
- 3/8" x 2" flange per frame
- Drill and tap for (5)-20 screws
- Cross thread after gapping

HANDHOLE COVER

- 5/16" diameter holes (8p)
- 5/16" x 2" flange per frame

INDIANA DEPARTMENT OF TRANSPORTATION
SIGN BOX TRUSS STRUCTURE
STEEL END SUPPORT HANDHOLE DETAILS
OCTOBER 2008

DRAWING NO. E 802-SBTS-11

John C. Mann
SIGNED DRAFTER

Date: 07/18/08

Scale: 1/8" = 1'-0"
2. Use Type A Base Plate for End Supports with 16” diameter columns and Type B for 14” diameter columns.
INDIANA DEPARTMENT OF TRANSPORTATION

SIGN BOX TRUSS STRUCTURE
STEEL END SUPPORT BASE DETAILS

OCTOBER 2008

DRAWING NO. E 602-SBTS-13

John C. Marker 07/18/08
State of Indiana Engineer

NOTES:
1. Use temporary positioning plate and bottom anchor plate for all foundations. Temporary positioning plate should be removed after placing concrete.
2. Secure galvanized metal skirt to base plate after erection as shown in skirt details.
3. Minimum base plate gap is 3 1/2" and can be increased up to 5 1/2" if required for the adjustments due to grade. Metal skirt width shall be at least 1 1/2" more than the maximum gap.
4. Optionally may use four separate bars, weld to maintain angles and shapes as shown.
5. For end support base plate details see Standard Drawing E 502-SBTS-12.
WALKWAY GRATING PLAN

Notes:
1. Refer to Standard Drawing E R02-SMHW-02 for additional aluminum grating requirements.
2. Grating shall run full length center to center of end support frames plus 9” each end.
3. Grating width is nominal and may vary ± ½” based on available standard widths.
4. Grating can be spliced on any of the horizontal members within a section as needed. See Detail 2 on Standard Drawing E R02-SMHT-15 for typical grating splice details.
5. See Detail 1 on Standard Drawing E R02-SBS-15 for typical grating support details.

SECTION A-A

INDIANA DEPARTMENT OF TRANSPORTATION
SIGN BOX TRUSS STRUCTURE
INTERIOR WALKWAY GRATING PLAN
OCTOBER 2008
DRAWING NO. E R02-SBS-14

John A. Mamer 03/18/08
INSTR. ENGINS. IVE
SECTION B-B

1. Stainless steel shim, if needed. (One clamp each end). See Detail 3

2. 3/8" diameter holes in angles for 3/8" diameter stainless steel u-bolts. Two stainless steel washers and one flat washer and load nut required per bolt. U-bolt and angle connections required at horizontals only.

SECTION C-C

(Details not shown same as Detail 1)

ELEVATION

SHIM - DETAIL 3

R = bend to match tube (approximately)

NOTES:
1. Stainless steel shims shall be placed as shown in Details 1 and 2 if needed to compensate for alignment variations between horizontal and diagonal members. Thicker shims may be used subject to shims performing properly.
2. Tube to grating gap may vary from 1 1/4" to 1 1/2" max. to align walkway, allow for camber, etc.
3. See Table 1 for A dimensions.

TABLE 1

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<tr>
<th>OUTSIDE DIAMETER</th>
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INDIANA DEPARTMENT OF TRANSPORTATION

SIGN BOX TRUSS STRUCTURE
INTERIOR WALKWAY GRATING DETAILS

OCTOBER 2008

DRAWING NO. E BC2-SBTS-15

John C. Wanner 07/11/08
Notes:
1. For barrier wall with transition see Standard Drawing E 021-CDM9-03.
2. All reinforcement to be spayed coated.
3. For anchor bolts, see Standard Drawing E 021-SBT5-13.
4. Surface seal top and sides of barrier rail to the pavement surface.
5. Thread and cap both ends of steel conduit.
6. Top of foundation shall be level.
7. For reinforcing schedule see Standard Drawing E 021-SBT5-18.
8. This drawing is applicable to all box truss spans, mounting heights and sign sizes. The design is based on a minimum allowable soil bearing pressure of 1050 psf.
9. The top of the footing shall be a minimum of 4'-0" below the pavement or ground surface.

Legend:
- H = Horizontal bar
- V = Vertical bar

INDIANA DEPARTMENT OF TRANSPORTATION
SIGN BOX TRUSS STRUCTURE
FOUNDATION AT 33°
CONCRETE BARRIER WALL
OCTOBER 2008

DRAWING NO. E 021-SBT5-18

John C. Marion
SECTION C-C

1'-0" maximum bar spacing

SECTION B-B

Steel base plate
as required

Legend:
H = Horizontal bar
V = Vertical bar

Notes:
1. For barrier wall width transition see Standard Drawing E 602-CCMB-03.
2. All reinforcement to be epoxy coated.
3. For anchor bolts, see Standard Drawing E 802-SBT5-13.
4. Surface seal top and sides of barrier rail to the pavement surface.
5. Thread and cap both ends of steel conduit.
6. Top of foundation shall be level.
7. For reinforcing schedule see Standard Drawing E 802-SBT5-19.
8. This drawing is applicable to all box truss spans, mounting heights and sign areas. The design is based on a minimum allowable soil bearing pressure of 1800 psi.
9. The top of the footing shall be a minimum of 4'-0" below the pavement or ground surface.

INDIANA DEPARTMENT OF TRANSPORTATION
SIGN BOX TRUSS STRUCTURE
FOUNDATION AT 45" CONCRETE BARRIER WALL
OCTOBER 2008
DRAWING NO. E 602-SBT5-17

John P. Manor 10/24/08

501 x 4'-2"
502 x 3'-9"
Notes:
1. For barrier wall transition see Standard Drawing E 092-COMB-03.
2. All reinforcing to be epoxy coated.
4. Surface seal top and sides of foundation wall to the ground surface.
5. Thread and cap both ends of steel conduit.
6. Top of foundation shall be level.
8. This drawing is applicable to all box truss spans, mounting heights and sign areas. The design is based on a minimum allowable soil bearing pressure of 1500 psi.
9. The top of the footing shall be a minimum of 4'-0" below the pavement or ground surface.

Legend:
H = Horizontal bar
V = Vertical bar

INDIANA DEPARTMENT OF TRANSPORTATION
SIGN BOX TRUSS STRUCTURE
FOUNDATION AT 36" MEDIAN OR SHOULDER
OCTOBER 2008

DRAWING NO. E 092-SBSTS-18

John C. Mann
BPE Signature
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<th>Size &amp; Mark</th>
<th>No of Bars</th>
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<th>Weight (lbs)</th>
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Indiana Department of Transportation
SIGN BOX TRUSS STRUCTURE
SPREAD FOOTING QUANTITIES
OCTOBER 2008
DRAWING NO. 802-SBTS-19

John C. Mann
STATE DRAFTER
INDIANA DEPARTMENT OF TRANSPORTATION  
Driving Indiana’s Economic Growth

Design Memorandum No. 08-__  
Technical Advisory

November, 2008

TO:  All Design, Operations, and District Personnel, and Consultants

FROM: ___________________________
Anthony L. Uremovich  
Design Resources Engineer  
Production Management Division

SUBJECT: Overhead Box Truss Sign Structures and foundations

NEW STANDARDS

DRAWINGS:  INDOT Standards drawings October 2008 No E 802-SBTS-01 to 19

SUPERCEDES:  INDOT Standards drawings to 2005 No 802-SNOH-01 to 16 and  
INDOT Standards drawing March 2003 No 802-SNBF-01 to 07

EFFECTIVE: ____________, 2009, Letting

The Overhead Box Truss Structures and their foundations have been redesigned based on  
the AASHTO Standard Specifications for Structural Supports for Highway Signs,  
Luminaries, and Traffic Signals, 4th Edition, including 2006 Interims. All box trusses are  
aluminum while all end support columns are steel. Standard Design Types: A, B, C, D,  
and E are provided for certain combinations. New and redesigned, box truss structures  
have been developed for use with certain combinations of sign areas, spans lengths and  
heights.

I. Overhead Box Trusses

All aluminum standard box trusses are designated as:
   Overhead Box Truss Structure, Type A
   Overhead Box Truss Structure, Type B
Overhead Box Truss Structure, Type C
Overhead Box Truss Structure, Type D
Overhead Box Truss Structure, Type E

Standard designs Type A to Type E are provided for combinations of maximum sign areas of 500, 700 and 900 sft and maximum spans of 100 ft and 130 ft. They are built up from Exterior Sections and Interior Sections and their number varies depending on the required spans length. Minimum number of sections shall be used for each truss keeping the maximum section length 35’-6”. A single Interior Section in a truss shall have an even number of panels to maintain the pattern of vertical diagonals. All standard box truss width has been established at 6’-6”. All panels on the truss shall be the same length; the minimum panel length for all trusses is 5’-0 and maximum 6’-6”.

The details are shown on INDOT Standard Drawings 802-SBTS-series.

If a particular structure does not fit within the parameters of any of the standards Type A-E a special design shall be provided by the designer.

II. Overhead Box Truss Supports

End Support Members are steel tubes spaced 9’-0. The required sections of steel tubes are tabulated and depend on maximum sign area and span of the truss. Maximum mounting heights assumed for calculation is 28’-6”. The details are shown on new INDOT Standard Drawings.

III. Spread Footing

Spread footing design is provided for 33” and 45” Concrete Barrier and 36” Median or Shoulder Barrier for allowable soil bearing pressure: 1500, 2500, 3500 psf. If the allowable gross soil bearing capacity is less than 1500 psf, the designer shall provide a special foundation design and submit design calculations for review and approval. The results of calculations for soil bearing pressures above 3500 psf are not controlled by the bearing capacity of the soil but for overturning stability and require special design. The details of standard footings are shown on new INDOT Standard Drawings 802-SBTS-series.

The designer shall request a geotechnical investigation at the preliminary field check for each project requiring box trusses.

IV. Design Parameters

Structure Design

The overhead sign truss structures and their supports are design using allowable stress (ASD) approach in accordance with ASSHTO Specification and the following design parameters:

90 mph wind
50 years service life
Wind Importance Factor \( I_r = 1 \)
Gust Effect Factor \( G = 1.14 \)
Drag Coefficients, \( C_d \):
The sign height is assumed as 20 ft but length varies based on the sign area under consideration.

Signs \( C_d = 1.2 \), based on \( L/W = 5 \) (where \( L \) is longer dimension of the attached sign)

Truss members \( C_d \) = varies 1.1 to 1.2 as in Table 3-6, Section 3 of Specs
Fatigue Category I – Truck and Natural Wind gust loads only
Fatigue Importance Factor, \( I_f = 1 \)

Overhead sign structures were analyzed for four loads: dead, wind, ice and fatigue.
Dead load for the materials used is as follow:
Aluminum \(- 169 \text{ lbs/ft}^3\)
Steel \(- 490 \text{ lbs/ft}^3\)
Traffic message sign \(- 2.48 \text{ lb/ft} \) (aluminum extruded panels (12” typical)

The most common spans for sign trusses are 80’, 100’, and 130’, five different sign areas are identified as most often used; 500, 600, 700, 800, and 900 sft, and two mounting heights are most often needed 26’-6” and 28’-6”. However, the changes in member sizes were not significant enough to keep all the different design in use. The final design and analysis is performed for

3 sign areas: 500, 700 900 sft
Two spans lengths: 100, 130 ft
One mounting height: 28’-6”

Gusset plates have been used at the horizontal and horizontal diagonal member connections to the chords where the calculations indicate the critical fatigue stress range for the member sizes used.
The interior walkway is added to all the box trusses with the maximum weight of 5 psf.

Maximum stresses in the members were checked against the allowable stresses for two locations of the sign: sign located nearest to the column and sign located at the center of the span. Those two locations are considered the worst loading conditions for checking columns, chords and bracing members.

V. **Determining Standard Footing Item**

Standard spread footing should be shown on the plans using the following pay item format:
Box Truss Sign Structure Foundation, ________________________________....................EACH

TYPE

The pay item names should be one of the following designations: 33” Concrete Barrier Wall, 45” Concrete Barrier Wall, and 36” Median or Shoulder.

These three foundations will cover all type of box trusses to 130’ span and a maximum of 900 square foot.
REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 910, BEGIN LINE 1163, DELETE AND INSERT AS FOLLOWS:

910.19 Overhead Sign Structures

The complete structure with signs in place shall be able to withstand wind pressure in accordance with AASHTO specifications for the Design and Construction of Structural Supports for Highway Signs, Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. The structure shall be designed to resist movement by the wind which might contribute to the fatigue of the material in accordance with the AASHTO specifications.

SECTION 910, BEGIN LINE 1187, DELETE AND INSERT AS FOLLOWS:

(a) Aluminum Overhead Sign Structures, Box Truss and Bridge Attached

Extruded tubes shall be of aluminum in accordance with ASTM B 221 (B 221M), B 241 (B 241M), or B 429, alloy 6061-T6. Anchor base castings shall be of aluminum in accordance with ASTM B 26 (B 26M) or B 108, alloy 356.0-T6. All other castings shall be of aluminum in accordance with ASTM B 26 (B 26M), alloy 356.0-T6. Plates shall be of aluminum in accordance with ASTM B 209 (B 209M), alloy 6061-T6. Plates shall be free of sharp edges and irregularities.

Welding material and procedures shall be in accordance with 803 and applicable AWS provisions.

Bolts, nuts, screws, and flat washers shall be passivated type 304 stainless steel. Bolts and screws shall be in accordance with ASTM A 193 (A 193M), grade B8. Hexagon nuts and washers shall be in accordance with ASTM A 194 (A 194M), grade 8. Where high-strength bolts are indicated on the plans for chord splice connections, bolts and nuts shall be in accordance with 910.02(f) and shall be galvanized in accordance with AASHTO M 232.

Anchors bolts, nuts and washers shall be in accordance with ASTM A 307 F 1554. A hexagon nut, leveling nut, and flat washer in accordance with ASTM A 307, grade A, shall be furnished with each anchor bolt. Threaded Top ends of anchor bolts and associated hardware, as shown on the plans, shall be coated in accordance with ASTM A 153 or be mechanically galvanized and conform to the coating thickness, adherence, and quality requirements of ASTM A 153, class C.

Certified proof of the qualifications for a minimum of two welders shall be presented after the contract is awarded and before fabrication is started. This certification shall be from a commercial or public testing laboratory and qualifications shall be based on welding of aluminum alloy, 6061-T6 with consumable electrode type welding using aluminum alloy ER4043 ER5356 filler material. Welders shall qualify by passing the requirements of “Procedure and Performance Tests of Qualification Standard for Welding Procedures, Welders, and Welding Operations”, latest edition, formulated by the Boiler and Pressure Vessel Committee of the American Society of Mechanical Engineers.
SECTION 910, BEGIN LINE 1227, DELETE AND INSERT AS FOLLOWS:

(b) Steel Overhead Sign Structures, Box Truss, Cantilever, Monotube, and Bridge Attached

Steel sections used for upright members, cross beams, or horizontal members shall be either tapered or constant cross section tubular members as specified herein. The tubular members may be either circular or multi-sided.

Box truss and bridge attached structures shall be fabricated from constant cross section tubular steel in accordance with ASTM A 53, type E or S, grade B (minimum yield strength of 35,000 psi). Constant cross section tubular steel with greater yield strength may be used, with written approval. However, structural dimensions must remain as shown on the plans. Structures shall be galvanized after fabrication in accordance with ASTM A 123.

SECTION 910, BEGIN LINE 1266, DELETE AND INSERT AS FOLLOWS:

Gusset, flange, and base plates shall be in accordance with ASTM A 36 (A 36M) and shall be galvanized after fabrication in accordance with ASTM A 123. Base plates for upright poles shall develop the full strength of the poles. Castings for the vertical pole top and horizontal arm and cap shall be in accordance with ASTM A 126 and shall be galvanized with a minimum coating of 2 oz/sq ft (610 g/m²). Bolts, except anchor bolts, and nuts shall be in accordance with ASTM A 307 or high-strength bolts as shown on the plans. Two nuts for use in plumbing upright poles shall be furnished with each anchor bolt. Anchor bolts, except for box truss structures, shall be in accordance with ASTM A 675, grade 90 (A 675M, grade 620); ASTM A 576 modified to 55,000 psi (379 MPa) minimum yield strength; or ASTM A 307, grade A modified to 55,000 psi (379 MPa) minimum yield strength. Anchor bolts for box truss structures shall be in accordance with 910.19(a). Steel bolts, nuts, washers, and threaded the top ends of anchor bolts shall be coated in accordance with ASTM A 153 or be mechanically galvanized and conform to the coating thickness, adherence, and quality requirements of ASTM A 153, class C. Welding shall be in accordance with 711.32.
Other sections containing specific cross references:

910.19
802.02  Pg 629

910.19(a)
910.19(b)  Pg 798

910.19(b)
920.01(a)  Pg 861

Recurring Special Provisions affected:

None

Standard Sheets affected:

None

Action: Withdrawn

___ 20  Standard Specifications Book

___ Create RSP (No. ____________)
  Effective ____________ Letting
  RSP Sunset Date: ____________

___ Revise RSP (No. ____________)
  Effective ____________ Letting
  RSP Sunset Date: ____________

Standard Drawing Effective ____________

___ Create RPD (No. ____________)
  Effective ____________ Letting
  Technical Advisory

GIFE Update Req’d.? Y  N
  By - Addition or Revision

Frequency Manual Update Req’d.? Y  N
  By - Addition or Revision

Received FHWA Approval? ____