B408
Cross Frame Intermediate Diaphragm (For Curved Steel Beams)

Approved, and signed, March 26, 2009. Last date revised: June 12, 2019.

Revised 06-12-2019
At the ELEVATION:
- Changed the note pointing to the filler plate from: " Filler Plate to: " Filler Plate 1” wider than angle leg.
- Changed the filler plate size to accommodate the note change.
Under NOTES:
- Changed 1st note from: Provide steel per spec. 3309 to: Provide steel in accordance with spec. 3309.

Revised 11-03-2015
Under NOTES:
- Changed the first note from: All steel shall conform to Mn/DOT spec. 3309 to Provide steel per spec. 3309.
- Changed numbered note ① to read: Project neutral axis of member through center of bolt pattern.
- Added ②: For diaphragms located beneath deck joint, orient flange of cross frame members away from the deck joint.
At ELEVATION:
- Added numbered note ② to the size designation for the top and bottom L shape members of the diaphragm.

Re-Approved 03-26-2009
This detail has undergone substantial revisions including changing the connection of the diagonal members from bolted to welded.

Under NOTES: Notes and note numbers have changed throughout the sheet.

Removed: Section D-D and the Section D-D arrows were removed from the sheet.

Added: Designer note reading "Designer to specify gusset plate thickness, ½” minimum. Filler plate thickness to match gusset”.

At ELEVATION:
- Added "(See Detail B410)" to both "TIGHT FIT…” notes and moved the notes from the fascia beam to the interior beam. Removed numbered note ① from "TIGHT FIT…” note at the bottom flange.
- Changed the lower horizontal member from a WT_ x_ to L_x_x_.
- Removed the weld symbol from the gusset plate to WT connection at the fascia beam.
- Moved the Section C-C arrows to reflect the view shown.
- Removed the bolting details from the upper and lower cross member to gusset plate connections and at the filler plate location.
- Moved the weld symbol from the interior beam/web location to the fascia beam/web location and removed numbered note ①.
- Added the wording “BEAM SPACING” to the centerline to centerline dimension and changed the numbered note from ② to ④.
- Added weld symbol to the filler plate/cross frame location.
- Added numbered note ② to the "USE OUTSIDE STIFFENER…” note.
- Removed the 90 degree angle at the bottom of the fascia beam.
- Change note "INTERIOR DIAPHRAGM STIFFENER" to "DIAPHRAGM CONNECTION STIFFENER" and added numbered note ⑦.
- Changed numbered note at the fascia beam dimension between top and bottom flange from ⑥ to ⑦.

At DETAIL "A":
- Removed the bolting details and dimensions from the cross member to gusset plate connection.
• Changed note from "INTERMEDIATE DIAPHRAGM STIFFENER" to "DIAPHRAGM CONNECTION STIFFENER".
• Added a double leader line from the weld symbol to clarify weld locations. Changed the numbered note at the weld symbol from ① to ②.
• Changed note from "NEUTRAL AXIS OF L_x_x_ " to "NEUTRAL AXSIS OF ANGLES" and changed numbered note from ③ to ④.

At DETAIL "B":
• Removed the bolting details and dimensions from the cross member to gusset plate connection.
• Changed note from "INTERMEDIATE DIAPHRAGM STIFFENER" to "DIAPHRAGM CONNECTION STIFFENER".
• Combined notes "NETURAL AXIS OF WT_x_" and "NETURAL AXIS OF L_x_x_ " to "NETURAL AXIS OF ANGLES" and changed numbered note from ② to ④. Leader line points to both locations.
• Moved the weld symbol location and added double leader line to clarify weld locations. Changed the numbered note from ④ to ①.

At SECTION C-C:
• Removed bolted detail from the cross member to gusset plate connections.
• Removed note "PLATE CONNECTION OPTION SHOWN".
• Changed note from "INTERMEDIATE DIAPHRAGM STIFFENER" to "DIAPHRAGM CONNECTION STIFFENER (7” MIN)” and added numbered note ②.
• Removed notes "L_x_x_ " and "WT_x_" and "WT_x_ TO BE COPED TO CLEAR GUSSET PLATE. (TYP.)" and their leader lines.
• Changed note "BEAM FLANGE" to "BOTTOM BEAM FLANGE".
• Changed the connection plates at the bottom flange to show a two bolt pattern on each side of the gusset plate.
• Added weld symbol with "(TYP.)" and numbered note ③ to gusset plate/L-shape connection.
• Added "(BOLTED CONNECTION SHOWN)" under Section C-C title.
• Removed the L-shape cross member on the left side of section C-C to reflect the section arrows in the elevation view.
• Changed note " _" GUSSET PLATE" to " _" GUSSET PLATE (TYP.)".

09-11-2004
At ELEVATION: changed STIFFENER PLATE to INTERMEDIATE DIAPHRAGM STIFFENER
At DETAIL "A": changed STIFFENER PLATE to INTERMEDIATE DIAPHRAGM STIFFENER
At DETAIL "B": changed STIFFENER PLATE to INTERMEDIATE DIAPHRAGM STIFFENER
At SECTION D-D: changed INTERMEDIATE STIFFENER (7” MIN.) to INTERMEDIATE DIAPHRAGM STIFFENER (7” MIN.)
At SECTION C-C: changed INTERMEDIATE STIFFENER to INTERMEDIATE DIAPHRAGM STIFFENER

Approved, and signed, November 22, 2002.