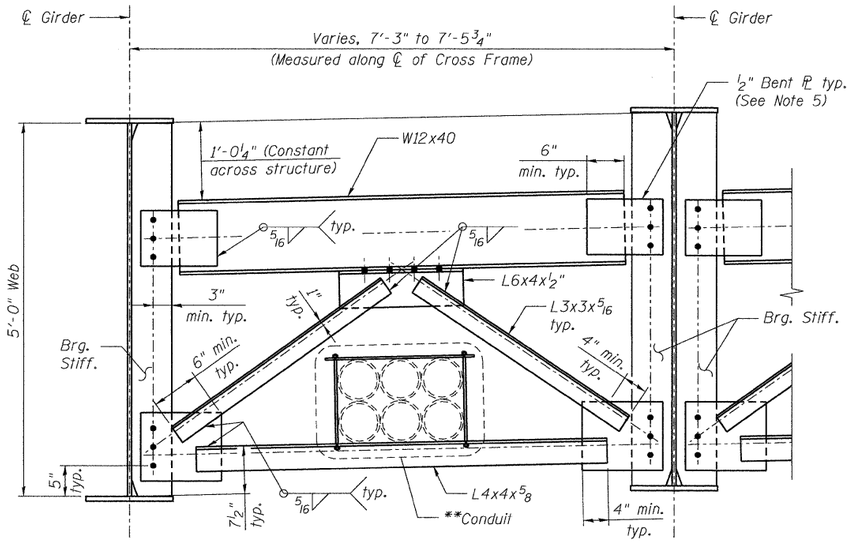
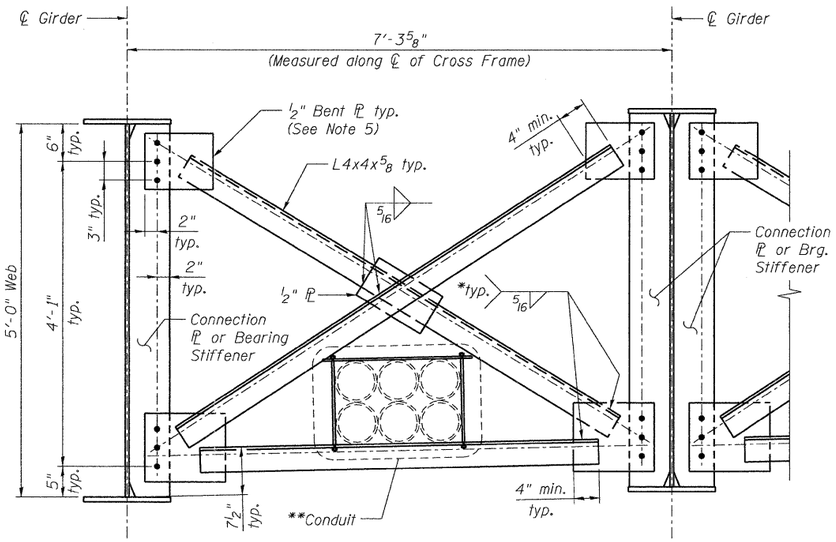



## TYPE I CROSS FRAME

(No. cross frames required = 8)




## TYPE III CROSS FRAME

(No. cross frames required = 156)

* Fillet weld angles along 3 sides on one face of gusset plate.

** Located on north side of Girder 3 only, see Intermediate Conduit Support Detail for additional information.

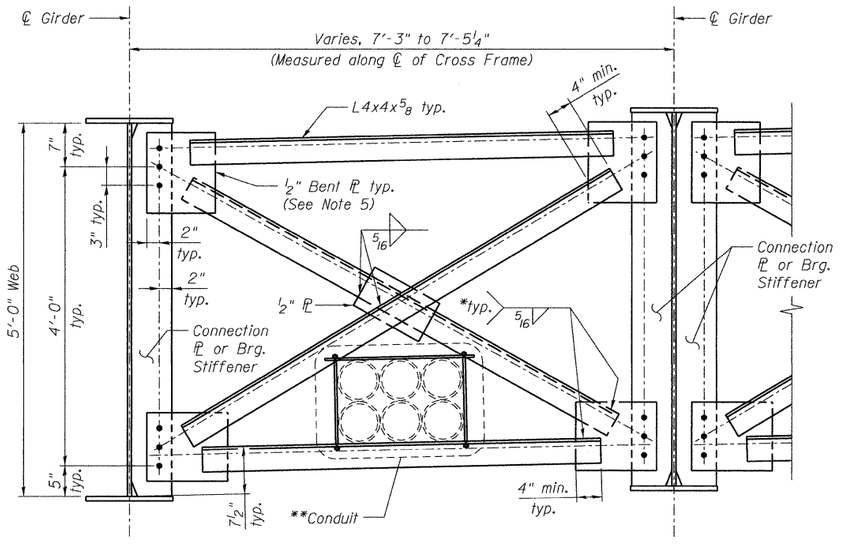
## CROSS FRAME DIMENSIONS

| Cross Frame | Type | Girders 1-2 | Girders 2-3 | Girders 3-4 | Girders 4-5 |
|---|---|---|---|---|---|
| 0 | I | 7'-3" | 7'-3" | 7'-3" | 7'-3" |
| 1A-2G | II | 7'-3" | 7'-3" | 7'-3" | 7'-3" |
| 2 | II | 7'-3 5/8" | 7'-3 5/8" | 7'-3 5/8" | 7'-3 5/8" |
| 3A-7G | III | 7'-3 5/8" | 7'-3 5/8" | 7'-3 5/8" | 7'-3 5/8" |
| 7 | II | 7'-3 3/4" | 7'-3 3/4" | 7'-3 3/4" | 7'-3 3/4" |
| 8A | II | 7'-3 7/8" | 7'-3 7/8" | 7'-3 7/8" | 7'-3 7/8" |
| 8B | II | 7'-4 1/8" | 7'-4 1/8" | 7'-4 1/8" | 7'-4 1/8" |
| 8C | II | 7'-4 3/8" | 7'-4 1/2" | 7'-4 1/2" | 7'-4 1/2" |
| 8D | II | 7'-4 3/4" | 7'-4 3/4" | 7'-4 7/8" | 7'-4 7/8" |
| 8E | II | 7'-5 1/8" | 7'-5 1/4" | 7'-5 1/4" | 7'-5 1/4" |
| 8 | I | 7'-5 5/8" | 7'-5 5/8" | 7'-5 5/8" | 7'-5 3/4" |

Measured along ℄ Cross Frame between ℄ Girders.

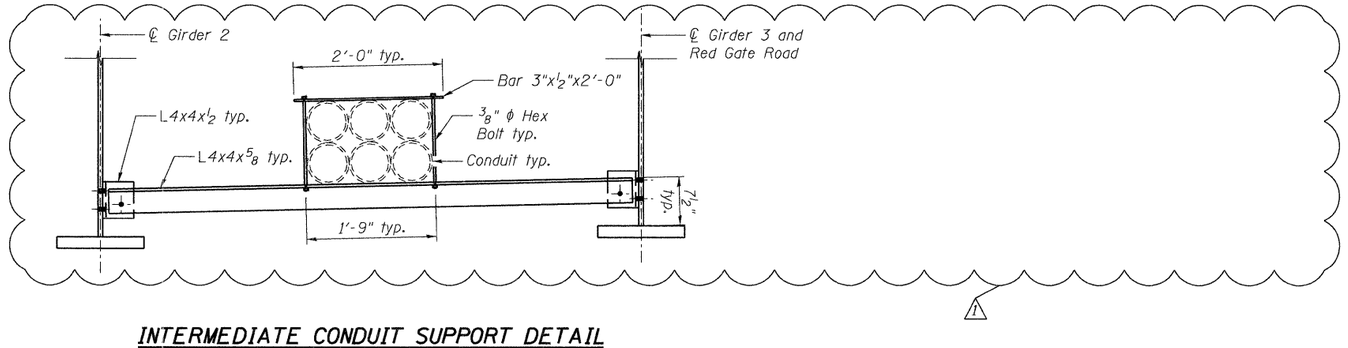
## NOTES:

1. All cross frame members shall be AASHTO M270 Grade 50 steel.
2. See Steel Plate Girder Details on Sheet S30 for bearing stiffener and connection plate details.
3. All cross frames between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
4. All cross frame components shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
5. Connection Plates are not bent at Cross Frames 0 thru 2G, where ℄ Cross Frame is perpendicular to ℄ Girder. Bent Connection Plates are required at Cross Frames 2 thru 8, where ℄ Cross Frame is skewed to ℄ Girder.
6. Cost of intermediate conduit supports and all conduit mounting accessories shall be included in the cost of Furnishing and Erecting Structural Steel Bridge No. 2.
7. The calculated deflections of the girders under steel self-weight shall be used to detail the cross frame connections, and to erect the structural steel such that the girders will be plumb within a tolerance of ±1/8" per vertical foot throughout when supporting their own weight. See Sheet S32 for steel only deflections.
8. For location of Stiffeners and Connection Plates, see Sheets S24 thru S27.
9. Hex bolts, nuts, and washers for conduit support detail shall be hot-dipped galvanized and conform to ASTM A307.
10. Contractor shall verify spacing requirements and anchorage details of conduit supports with manufacturer.
11. Intermediate conduit supports shall be placed at mid-distance between cross frames where cross frames are greater than 15'-0" apart. Support shall be perpendicular to girder webs.
12. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 7/8" ϕ, holes 15/16" ϕ, unless noted otherwise.




## TYPE II CROSS FRAME

(No. cross frames required = 80)




## INTERMEDIATE CONDUIT SUPPORT DETAIL

(No. intermediate conduit supports required = 46)

benesch engineers · scientists · planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10092

| | | | |
|---|---|---|---|
| FILE NAME = 0456024.029_CrossFrame.dgn | USER NAME = akeaschall | DESIGNED - MFH | REVISED - ⚠1 ADDENDUM 1/6/2012 |
| | | CHECKED - AJK | REVISED - |
| | PLOT SCALE = | DRAWN - RMG | REVISED - |
| | PLOT DATE = 1/5/2012 | CHECKED - AJK | REVISED - |

CITY OF ST. CHARLES

**STEEL PLATE GIRDER CROSS FRAME DETAILS**
**STRUCTURE NO. 045-6024 RED GATE ROAD OVER THE FOX RIVER**
SHEET NO. S29 OF S56 SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 04-00092-00-BR | KANE | 440 | 251 |
| | | CONTRACT NO. 63650 | | |
| | ILLINOIS FED. AID PROJECT | | | |