STANDARD DETAILS
FOLDED STEEL PLATE GIRDER SYSTEM™
DESIGN SPECIFICATIONS

1.0 USE AND LIMITATIONS

CDR BRIDGE SYSTEMS, LLC takes full responsibility for ensuring that all design calculations are performed by qualified professionals, in accordance with the applicable design specifications, standards, and codes.

CDR BRIDGE SYSTEMS, LLC is to prepare design calculations and drawings for the folded steel plate girder system in accordance with the guidelines provided by CDR BRIDGE SYSTEMS, LLC and the using agency. The calculations and drawings are based on the information provided by the client and the applicable design standards.

2.0 TECHNICAL INFORMATION

The folded steel plate girder system consists of a cold bent plate steel girder with a precast composite concrete deck panel as shown in the following drawings.

The folded steel plate girder system is acceptable for use in accelerated bridge construction and conventional construction.

The folded steel plate girder system may be used on any existing or proposed substructure type. Approach slabs can be accommodated.

The folded steel plate girder system may be used for bridge or slip forms, either on the ground or off the ground, with or without the use of temporary forms.

The maximum girder spacing is limited to 12" due to 10"-16" lane width for shipping. However, greater design spans can be accommodated if deck slabs are precast on site.

The design is applicable for simply supported spans only.

The trussed girder is applicable to a non-symmetric section, intermediate stiffeners, diaphragms, or cross frame within the allowable limits provided by CDR BRIDGE SYSTEMS, LLC as required by the design.

The composite girder is compliant with the Public Utilities Commission of Ohio (PUCO) guidelines for non-composite slender elements. A 3.5-barreling according to the design manual section (A.S. 109) and C/D/1-600 standard is recommended for the girder system.

Eleven (11) standard folded steel plate girder systems are available for use. Individual plate dimensions may be varied by CDR BRIDGE SYSTEMS, LLC as required by the design.

The composite girder is compact, the top flange of the non-composite girder system is non-composite slender element.

A 3.5-barreling according to the design manual section (A.S. 109) and C/D/1-600 standard is recommended for the girder system.

The design is applicable to a non-symmetric section, intermediate stiffeners, diaphragms, or cross frame within the allowable limits provided by CDR BRIDGE SYSTEMS, LLC as required by the design.

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1.0 GENERAL

AS NOTED.

PARALLEL TO THE BRIDGE CENTERLINE OF BEARINGS.

CONSTRUCT DECK SLAB TRANSVERSE CONSTRUCTION JOINTS OF THE PROPOSED CONSTRUCTION.

NEW STRUCTURE IN THE FIELD AS NECESSARY FOR PROPER FIT VERIFY ALL DIMENSIONS AND GEOMETRY OF THE EXISTING OR SEISMIC FORCES.

ANCHOR BOLTS ARE DESIGNED TO RESIST APPLICABLE RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS, EXCEPT ADDITIONAL COST TO THE DEPARTMENT.

A 996/A 996M REINFORCEMENT BARS IN BARRIERS OR WHERE BARS UNLESS SPECIFIED. DO NOT USE RAIL STEEL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENNDOT ULTRA HIGH PERFORMANCE CONCRETE (UHPC) MIX DESIGN AND BY THE CONTRACT SPECIAL PROVISIONS.


PROVIDE FABRICATED STRUCTURAL STEEL IN ACCORDANCE WITH PENNDOT STANDARD DRAWING BC-736M, SHALL BE HOT DIP GALVANIZED OR PAINTED. OTHERWISE. ALL STRUCTURAL STEEL WHICH IS NOT GRADE 50W 270M, GRADE 50 OR GRADE 50W (ASTM A 709/A 709M, THE CONTRACT SPECIAL PROVISIONS.)

ANCHOR BOLTS MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT, IF APPROVED BY THE DISTRICT BRIDGE ENGINEERS.

PROVIDE GRADE 60 REINFORCING STEEL Bars THAT THE MEAN ULTRA HIGH PERFORMANCE CONCRETE (UHPC) WELD DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 404 AND THE APPROPRIATE SPECIFICATION OF PENNDOT'S CME STANDARD SPECIAL PROVISIONS.

A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A YELLOW CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT, IF APPROVED BY THE DISTRICT BRIDGE ENGINEERS.

PROVIDE GRADE 60 REINFORCING STEEL BARS THAT THE MEAN ULTRA HIGH PERFORMANCE CONCRETE (UHPC) WELD DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 404 AND THE APPROPRIATE SPECIFICATION OF PENNDOT'S CME STANDARD SPECIAL PROVISIONS.

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NOTES:

1. FOR SHEET OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.
2. FOR GIRDER PANEL LAYOUT, SEE SHEET NO. 5.
3. FOR GIRDER DETAILS, SEE SHEET NO. 8.
4. FOR DIAPHRAGM DETAILS, SEE SHEET NO. 6 & 7.
5. FOR DECK SLAB REINFORCEMENT, SEE PENNDOT STD. BD-601M, BC-752M.
6. FOR DECK SLAB DETAILS, SEE PENNDOT STD. BD-601M, BC-752M.
7. FOR HAUNCH REINFORCEMENT DETAILS, SEE PENNDOT STD. DWGS. BD-601M & BC-752M.
8. FOR DRIP NOTCH DETAILS, SEE PENNDOT STD. BD-601M, BC-752M.
9. FOR BARRIER DETAILS, SEE PENNDOT STD. BD-601M, BD-602M, BD-603M, & BD-752M.

Other barriers may be accommodated.

SEE NOTE 9.

NOT TO SCALE

![Diagram of folded steel plate girder system]

TYPICAL SECTION

(WITH 1'-1" UMPC CLOSURE POUR)
TYPICAL GIRDER PANEL LAYOUT

NOTES:
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NOS. 1 & 2.
2. FOR TYPICAL SECTION DETAILS, SEE SHEET NO. 4.
3. FOR DIAPHRAGM DETAILS, SEE SHEET NOS. 6 & 7.
4. FOR GIRDER DETAILS, SEE SHEET NO. 8.
5. FOR GIRDER PANELS, SEE SHEET NOS. 10-20.
6. FOR DECK SLAB REINFORCEMENT, SEE PENNDOT STD. OWG, BD-601W.
NOTES:
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NOS. 1 & 2.
2. FOR TYPICAL SECTION DETAILS, SEE SHEET NO. 4.
3. FOR GIRDER PANEL LAYOUT, SEE SHEET NO. 5.
4. FOR GIRDER DETAILS, SEE SHEET NO. 6.
5. FOR GIRDER TABLES, SEE SHEET NO. 7.
6. FOR ADDITIONAL DIAPHRAGM DETAILS, SEE SHEET NO. 7.
7. FOR ADDITIONAL GIRDERS, SEE SHEET NO. 8.
8. FOR ADDITIONAL END DIAPHRAGM DETAILS, SEE PENNDOT STD. ONG. BD-611M, BD-626M, AND BD-667M.
9. FOR ADDITIONAL APPROACH SLAB DETAILS, SEE PENNDOT STD. ONG. BD-522M.
10. FOR WATERPROOFING DETAILS, SEE PENNDOT STD. ONG. BC-788M.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

CDR BRIDGE SYSTEMS, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

DIAPHRAGM DETAILS - 1

PENNDOT DRAWING #: 14-604-BDTD
GIRDER SECTIONS AT FLANGE SEPARATOR

FLANGE SEPARATOR DETAILS

SECTION A-A

LIFTING ANCHOR DETAILS

NOTES:

1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.
2. FOR TYPICAL SECTION DETAILS, SEE SHEET NO. 4.
3. FOR GIRDER PANEL LAYOUT, SEE SHEET NO. 5.
4. FOR DIAPHRAGM DETAILS, SEE SHEET NO. 6 & 7.
5. FOR GIRDER TOLERANCES, SEE SHEET NO. 9.
6. FOR GIRDER TABLES, SEE SHEET NO. 10 & 20.
7. FOR ADDITIONAL SHEAR STUD DETAILS, SEE PENNDOT STD. ORG. BC-755M.
8. FOR ADDITIONAL BEARING STIFFENER DETAILS, SEE PENNDOT STD. ORG. BC-753M.
9. FOR ADDITIONAL BEARING DETAILS, SEE PENNDOT STD. ORG. BD-653M AND BC-755M.
NOTES:
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.
2. FOR DIAPHRAGM DETAILS, SEE SHEET NO. 6 & 7.
3. FOR GIRDER DETAILS, SEE SHEET NO. 8.
4. FOR GIRDER TABLES, SEE SHEET NO. 10-20.

9. COMBINED WIDTH TOLERANCE FOR BOTH BOTTOM FLANGES IS +1/8'-0" (MAX. 1/8"
10. TWIST 1/8'-0" (MAX. 1/8"
11. COMBINED WIDTH TOLERANCE FOR BOTH BOTTOM FLANGES IS +1/8'-0" - 1/8'
FSPG DESIGNATION: W36 H16 016 A77

NON-COMPONENT SECTION PROPERTIES

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NOMINAL MOMENT CAPACITY

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PLASTIC MOMENT CAPACITY

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EQUIVALENT PLATE GIRDER FOR STLRFD

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1/2" PLATE INFORMATION

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
Bureau of Product Delivery

CDR BRIDGE SYSTEMS, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

GIRDER TABLES - 1

<table>
<thead>
<tr>
<th>SHEET 10 OF 20</th>
</tr>
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NOTES:
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.
2. PLASTIC MOMENT CALCULATED BASED ON N=8, L=1. COMPOSITE COMPACT SECTION IN POSITIVE PLANE.
3. SECTION PROPERTIES BASED ON A CONCRETE STRENGTH OF 4 KSI AND ASTM A36 GR. 50 STEEL.
4. SECTION PROPERTIES CONSIDER ONLY CONCRETE DECK W/ 2" INTEGRAL WEARING SURFACE & 4" MAUıN.
5. SECTION PROPERTIES ASSUME BOTTOM PLANKS ARE LEVEL.
6. COMPOSITE SECTION PROPERTIES ARE BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.
**FSPG DESIGNATION:** W36 H20 016 A77

### Non-Composite Section Properties
- **Iw**: 2653 in\(^4\)
- **S1**: 224.8 in\(^2\)
- **S0**: 104.6 in\(^2\)
- **x**: 8.14 in

### 3N:24 Composite Section Properties
- **Iw**: 3934 in\(^4\)
- **S1**: 4562 in\(^2\)
- **S0**: 492 in\(^2\)
- **x**: 5078 in

### N:8 Composite Section Properties
- **Iw**: 7002 in\(^4\)
- **S1**: 1333 in\(^2\)
- **S0**: 1066 in\(^2\)
- **x**: 1123 in

### 1/2" Plate Information
- **Plate Width Along Plate**: 83.25 in
- **Area**: 31.21 ft\(^2\)
- **Weight**: 106.28 lb/ft

### Notes:
1. For Index of Drawings and Specifications, see Sheet Nos. 1 & 2.
2. Plastic moment calculated based on AASHTO 6.10.7.1.2 (Composite compact section in positive flexure).
3. Non-composite section properties based on a concrete strength of 4 ksi and ASTM A 992, Grade 50 steel.
4. Section properties assume bottom flanges are level.
5. Composite section properties are based on effective slab width excluding the closure pour.

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### Equivalent Plate Girder for STLRFD
- **Top Flange**: 17.5° × 1.375 in
- **Bottom Flange**: 17.5° × 1.375 in

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### Girder Tables - 3

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**Design**: Folded Steel Plate Girder System

**Cor Bridge Systems, LLC**

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**Designer**: D.L. Clark Building, Suite 160

**Website**: [www.corbridge.com](http://www.corbridge.com)

---

**Scale**: Not to Scale

**Date**: 9/19/14

---

**File Path**: 10:17:19 AM

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**Plot Date**: 9/19/2014

---

**Drawn By**: Kenneth Younger

---

**Checked By**: R.E.

---

**Cor Job #:**
FSPG DESIGNATION: W40 H20 016 A77

N=8 COMPOSITE SECTION PROPERTIES

\[ I_w = 7932.8 \text{ in}^4 \]
\[ S_{TOP} = 924.7 \text{ in}^3 \]
\[ S_{BOT} = 1574.5 \text{ in}^3 \]
\[ \gamma = 0.82 \text{ in} \]

N=24 COMPOSITE SECTION PROPERTIES

\[ I_w = 2443.2 \text{ in}^4 \]
\[ S_{TOP} = 1239.6 \text{ in}^3 \]
\[ S_{BOT} = 365.6 \text{ in}^3 \]

\[ \gamma = 3.53 \text{ in} \]

NOTES:
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.
2. PLASTIC MOMENT CALCULATED BASED ON COMPACT PLATE GIRDER SYSTEM.
3. SECTION PROPERTIES BASED ON A CONCRETE STRENGTH OF 4 ksi AND ASTM A516, GRADE 50 STEEL.
4. SECTION PROPERTIES CONSIDER A 0.5" INTEGRAL WEARING SURFACE & 0.375" PLATE THICKNESS.
5. SECTION PROPERTIES ASSUME BOTTOM FLANGES ARE LEVEL.
6. COMPOSITE SECTION PROPERTIES ARE BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.

MOMENT CAPACITY

\[ M_{plastic} = 2309 \text{ in-lb} \]
\[ M_{nominal} = 1895 \text{ in-lb} \]

\[ M_{plastic} = 2444 \text{ in-lb} \]
\[ M_{nominal} = 2025 \text{ in-lb} \]

1/2" PLATE INFORMATION

\[ \text{ AREA} = 44.96 \text{ in}^2 \]
\[ \text{ WEIGHT} = 152.98 \text{ lb} \]

DESIGNER

DATE: 5/19/14

SHEET 13 OF 20

FOLDED STEEL PLATE GIRDER SYSTEM

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

CDR BRIDGE SYSTEMS, LLC
FSPG DESIGNATION: W40 H24 016 A77

NON-COMPOSITE SECTION PROPERTIES

N=8 COMPOSITE SECTION PROPERTIES

3N=24 COMPOSITE SECTION PROPERTIES

NON-COMPOSITE SECTION PROPERTIES

1. INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NOS. 1 & 2.
2. PLASTIC MOMENT CALCULATED BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.
3. SECTION PROPERTIES BASED ON CONCRETE STRENGTH OF 4 KSI AND ASTM A709, GRADE 50 STEEL.
4. SECTION PROPERTIES ASSUME BOTTOM FLANGES ARE LEVEL.
5. COMPOSITE SECTION PROPERTIES ARE BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.

NOTES:

MOMENT CAPACITY

EQUIVALENT PLATE GIRDER FOR STLRFD

3/8 PLATE INFORMATION

1/2 PLATE INFORMATION

FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NOS. 1 & 2.
PLASTIC MOMENT CALCULATED BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.
SECTION PROPERTIES BASED ON CONCRETE STRENGTH OF 4 KSI AND ASTM A709, GRADE 50 STEEL.
SECTION PROPERTIES ASSUME BOTTOM FLANGES ARE LEVEL.
COMPOSITE SECTION PROPERTIES ARE BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.
PLASTIC MOMENT CALCULATED BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY

COR BRIDGE SYSTEMS, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

GIRDER TABLES - 5

Corp Bridge Systems, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

D.L. Clark Building, Suite 610
610 Market Street
Pittsburgh, PA 15222
(412) 322-2138
www.corbridge.com

COR BRIDGE SYSTEMS, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

GIRDER TABLES - 5

COR BRIDGE SYSTEMS, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

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COR BRIDGE SYSTEMS, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

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FOLDED STEEL PLATE GIRDER SYSTEM

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COR BRIDGE SYSTEMS, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

GIRDER TABLES - 5

COR BRIDGE SYSTEMS, LLC
FOLDED STEEL PLATE GIRDER SYSTEM

GIRDER TABLES - 5
NOTES:
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NOS. 1 & 2.
2. PLASTIC MOMENT CALCULATED BASED ON 0.1% STRAIN AT PLASTIC PLATE 
COMPACT SECTION IN POSITIVE PLATE FLANGE.
3. SECTION PROPERTIES BASED ON A CONCRETE STRENGTH OF 4 ksi AND ASTM A36
GRADE 50 STEEL.
4. SECTION PROPERTIES CONSIDER 0.25" THICK CONCRETE DECK WITH 0.25"
INTERNAL WEARING SURFACE & 0.5" HAUNCH.
5. SECTION PROPERTIES ASSUME BOTTOM PLANKS ARE LEVEL.
6. COMPOSITE SECTION PROPERTIES ARE BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.

FSPG DESIGNATION: W40 H28 016 A77

NON-COMPOSITE SECTION PROPERTIES

N=8 COMPOSITE SECTION PROPERTIES

3N=24 COMPOSITE SECTION PROPERTIES

NON-COMPOSITE SECTION PROPERTIES

MOMENT CAPACITY

EQUIVALENT PLATE GIRDER FOR STLRF

1/2" PLATE INFORMATION

GIRDER TABLES - 6

DESIGNER

SHEET 15 OF 20
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.

2. PLASTIC MOMENT CALCULATED BASED ON AASHTO 6.10.7.1.2 (COMPOSITE COMPACT SECTION IN POSITIVE FLEXURE).

3. SECTIONS PROPERTIES BASED ON A CONCRETE STRENGTH OF 4 KSI AND ASTM A709, GRADE 50 STEEL.

4. SECTION PROPERTIES CONSIDER 8" THICK CONCRETE DECK WITH 0.5" INTEGRAL WEARING SURFACE & 0" HAUNCH.

5. SECTION PROPERTIES ASSUME BOTTOM FLANGES ARE LEVEL.

6. COMPOSITE SECTION PROPERTIES ARE BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUL.

7. TOP PLATE INFORMATION PLATE WIDTH ALONG 3 PLATE:

8. EFFECTIVE SLAB WIDTH 3.5% 7.5% 10.5% 0.375"

9. PLATE WIDTH ALONG 3 PLATE:

10. EFFECTIVE SLAB WIDTH 3.5% 7.5% 10.5% 0.375"

11. COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF PRODUCT DELIVERY

12. CD B RIDGE SYSTEMS, LLC FOLDED STEEL PLATE GIRDER SYSTEM
NON-COMPOSITE SECTION PROPERTIES

N=8 COMPOSITE SECTION PROPERTIES

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3N=24 COMPOSITE SECTION PROPERTIES

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</tr>
<tr>
<td>7'-0&quot;</td>
<td>14873</td>
<td>13667</td>
<td>13608</td>
</tr>
<tr>
<td>8'-0&quot;</td>
<td>15420</td>
<td>13807</td>
<td>13667</td>
</tr>
<tr>
<td>9'-0&quot;</td>
<td>15002</td>
<td>13667</td>
<td>13608</td>
</tr>
<tr>
<td>10'-0&quot;</td>
<td>14622</td>
<td>13608</td>
<td>13567</td>
</tr>
</tbody>
</table>

3N=24 COMPOSITE SECTION PROPERTIES

<table>
<thead>
<tr>
<th>Protection</th>
<th>Effective Slab Width</th>
<th>Iplastic</th>
<th>Icomposite</th>
</tr>
</thead>
<tbody>
<tr>
<td>6'-0&quot;</td>
<td>13807</td>
<td>13667</td>
<td>13608</td>
</tr>
<tr>
<td>7'-0&quot;</td>
<td>13667</td>
<td>13608</td>
<td>13567</td>
</tr>
<tr>
<td>8'-0&quot;</td>
<td>13807</td>
<td>13667</td>
<td>13608</td>
</tr>
<tr>
<td>9'-0&quot;</td>
<td>13667</td>
<td>13608</td>
<td>13567</td>
</tr>
<tr>
<td>10'-0&quot;</td>
<td>13608</td>
<td>13567</td>
<td>13538</td>
</tr>
</tbody>
</table>

NOTES:

1. For index of drawings and specifications, see sheet nos. 1 & 2.
2. Plastic moment calculated based on 0.11 in. thick composite plate section.
3. Section properties based on a concrete strength of 4 ksi and ASTM A990, Grade 50 steel.
4. Section properties assume bottom flanges at 90° to internal webbing surface at a 0° haunch.
5. Section properties assume bottom flanges are level.
6. Composite section properties are based on effective slab width excluding the closure pour.
**FSPG DESIGNATION: W44 H24 016 A77**

### Non-Composite Section Properties

<table>
<thead>
<tr>
<th>L (in)</th>
<th>S, Top (in²)</th>
<th>S, Bot. (in²)</th>
<th>h (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>507</td>
<td>440</td>
<td>389.3</td>
<td>9.9</td>
</tr>
</tbody>
</table>

### N=8 Composite Section Properties

**Effective Slab Width**

<table>
<thead>
<tr>
<th>L (in)</th>
<th>S, Top (in²)</th>
<th>S, Bot. (in²)</th>
<th>h (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10'</td>
<td>12158</td>
<td>12638</td>
<td>13089</td>
</tr>
<tr>
<td>9'</td>
<td>1170</td>
<td>1295</td>
<td>1404</td>
</tr>
<tr>
<td>8'</td>
<td>847.3</td>
<td>1340.6</td>
<td>1595.4</td>
</tr>
<tr>
<td>7'</td>
<td>610.6</td>
<td>1756.8</td>
<td>2082.4</td>
</tr>
</tbody>
</table>

### 3N=24 Composite Section Properties

**Effective Slab Width**

<table>
<thead>
<tr>
<th>L (in)</th>
<th>S, Top (in²)</th>
<th>S, Bot. (in²)</th>
<th>h (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6'-0&quot;</td>
<td>974.4</td>
<td>583.5</td>
<td>399.4</td>
</tr>
<tr>
<td>5'-0&quot;</td>
<td>859.1</td>
<td>534.6</td>
<td>407.3</td>
</tr>
<tr>
<td>4'-0&quot;</td>
<td>761.5</td>
<td>509.4</td>
<td>422.6</td>
</tr>
</tbody>
</table>

### Notes:

1. For Index of Drawings and Specifications, see Sheet Nos. 1 & 2.
3. Section properties based on a concrete strength of 4 ksi and ASTM A992 grade 50 steel.
4. Section properties consider 8" thick concrete deck with 0" internal bearing surface & 0" haunch.
5. Section properties assume bottom flanges are level.
6. Composite section properties are based on effective slab width excluding the closure pour.

---

**MOMENT CAPACITY**

<table>
<thead>
<tr>
<th>Top Flange</th>
<th>31.25 ± 0.375</th>
</tr>
</thead>
<tbody>
<tr>
<td>Med.</td>
<td>23.625 ± 0.375</td>
</tr>
<tr>
<td>Bottom Flange</td>
<td>29.0 ± 0.375</td>
</tr>
</tbody>
</table>

**Equivalent Plate Girder for Stlrdf**

**Plate Width Along & Plate & Area**

| 105.42 in | 35.53 in² | 194.91 lb-ft |

---

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF PROJECT DELIVERY**

**CDR BRIDGE SYSTEMS, LLC**

**FOLDED STEEL PLATE GIRDER SYSTEM**

---

**DESIGNER**

**D.D. CLARK BUILDING, SUITE 610**

**105°00'00"**

**WEBSITE:** [Web](http://www.cdrbridges.com)

**DESIGNER:** [Name]

**SHEET 18 OF 20**
FSPG DESIGNATION: W44 H32 018 A77

NOTES:
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.
2. PLASTIC MOMENT CALCULATED BASED ON 6.0 "PLASTIC, M" PLATE INFORMATION.
3. SECTION PROPERTIES BASED ON A CONCRETE STRENGTH OF 4 KSI.
4. SECTION PROPERTIES INCLUDE 3/4" INTEGRAL WEARING SURFACE AS A 0° HANSEN.
5. SECTION PROPERTIES ASSUME BOTTOM FLANGES ARE LEVEL.
6. COMPOSITE SECTION PROPERTIES ARE BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.

Moment Capacity

Top Flange:
- 26.75 kips x 0.375 ft
- 31.625 kips x 0.776 ft
- 23.00 kips x 0.500 ft

Equivalent Plate Girder for STLRFD
- Top Flange:
  - 26.75 kips x 0.375 ft
  - 31.625 kips x 0.776 ft
  - 23.00 kips x 0.500 ft

1/2" Plate Information
- Plate Width Along A Plate: 115.76 in
- Area: 43.39 ft²
- Weight: 471.64 lb

Girder Tables - 10

Designer: MJM
Dated: 9/19/14
Scale: Not to Scale

Folded Steel Plate Girder System

Commonwealth of Pennsylvania
Department of Transportation
Bureau of Project Delivery

CDR Bridge Systems, LLC
Folded Steel Plate Girder System

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2700 McCandless Street
Pittsburgh, PA 15212-1746
Ph: 412-322-0313
Fax: 412-322-2138
Web: www.cdrbridges.com
FSPG DESIGNATION: W44 H34 020 A77

NOTES:
1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.
2. PLASTIC MOMENT CALCULATED BASED ON 0.06 % STRAIN AT COMPACT SECTION IN POSITIVE PLANE.
3. SECTION PROPERTIES BASED ON A CONCRETE STRENGTH OF 4 ksi and ASTM A36 GRADE 50 STEEL.
4. SECTION PROPERTIES CONSIDER 8" THICK CONCRETE DECK WITH 3/8" INTEGRAL WEARING SURFACE & 0" HAUNCH.
5. SECTION PROPERTIES ASSUME BOTTOM FLANGES ARE LEVEL.
6. COMPOSITE SECTION PROPERTIES ARE BASED ON EFFECTIVE SLAB WIDTH EXCLUDING THE CLOSURE POUR.

1. FOR INDEX OF DRAWINGS AND SPECIFICATIONS, SEE SHEET NO. 1 & 2.
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