Approved Cast Iron Product Sheets

Standard Inlet and Manhole Program

Bridge Division

February 2020
Forward:

The Approved Cast Iron Product Sheets provide details of the cast iron frames, rings, covers, and grates for use with the Precast Inlet and Manhole Standards. Cast iron products are supplied with the precast inlets or manholes specified in the plans, and are subsidiary to the corresponding bid item, per Item 465, “Manholes and Inlets” and Item 471, “Frames, Grates, Rings and Covers.”

Refer to the Precast Inlet and Manhole Standards for the type of cover or grate that is supplied with the specified inlet or manhole. Include a note to Item 465 in the General Notes if an alternate cover or grate is desired.

The Product Sheets are for reference only. Do not include the Product Sheets in the plan set.

All grates, except 3x3 Extra Open Area and 4x4 Extra Open Area, are bicycle-compatible when the long dimension of slot is oriented perpendicular to the direction of travel. Grates are not ADA-compliant; do not place in pedestrian walkways or bicycle paths (also known as shared use paths).

A table of hydraulic design values follows. These values should be used for design, regardless of larger values shown on some Product Sheets.

<table>
<thead>
<tr>
<th>Product Style</th>
<th>Open Area (in²)</th>
<th>Perimeter (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3x3 Standard Grate</td>
<td>649</td>
<td>152.0</td>
</tr>
<tr>
<td>3x3 Extra Open Area Grate</td>
<td>792</td>
<td>152.0</td>
</tr>
<tr>
<td>4x4 Standard Grate</td>
<td>1180</td>
<td>200.0</td>
</tr>
<tr>
<td>4x4 Extra Open Area Grate</td>
<td>1404</td>
<td>200.0</td>
</tr>
<tr>
<td>3x5 Standard Grate</td>
<td>1109</td>
<td>200.0</td>
</tr>
<tr>
<td>32” Grate Cover</td>
<td>331</td>
<td>100.53</td>
</tr>
<tr>
<td>24” Grate Cover</td>
<td>162</td>
<td>73.83</td>
</tr>
<tr>
<td>18” Grate Cover</td>
<td>105</td>
<td>60.47</td>
</tr>
<tr>
<td>Type PCU Standard Grate</td>
<td>450</td>
<td>92.75</td>
</tr>
</tbody>
</table>
### Supplier: US Foundry

<table>
<thead>
<tr>
<th>Product Style</th>
<th>Product Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 3x3 Standard Grate Assembly</td>
<td>4076 Frame &amp; 6376 Grate</td>
</tr>
<tr>
<td>2 3x3 Standard Grate</td>
<td>6376 Grate</td>
</tr>
<tr>
<td>3 3x3 Extra Open Area Grate Assembly</td>
<td>4076 Frame &amp; 6377 Grate</td>
</tr>
<tr>
<td>4 3x3 Extra Open Area Grate</td>
<td>6377 Grate</td>
</tr>
<tr>
<td>5 3x3 Frame</td>
<td>4076 Frame</td>
</tr>
<tr>
<td>6 4x4 Standard Grate Assembly</td>
<td>4243 Frame &amp; 6243 Grate</td>
</tr>
<tr>
<td>7 4x4 Standard Grate</td>
<td>6243 Grate</td>
</tr>
<tr>
<td>8 4x4 Extra Open Area Grate Assembly</td>
<td>4243 Frame &amp; 6244 Grate</td>
</tr>
<tr>
<td>9 4x4 Extra Open Area Grate</td>
<td>6244 Grate</td>
</tr>
<tr>
<td>10 4x4 Frame</td>
<td>4243 Frame</td>
</tr>
<tr>
<td>11 3x5 Standard Grate Assembly</td>
<td>4273 Frame &amp; 6273 Grate</td>
</tr>
<tr>
<td>12 3x5 Standard Grate</td>
<td>6272 Grate</td>
</tr>
<tr>
<td>13 3x5 Frame</td>
<td>4272 Frame</td>
</tr>
<tr>
<td>14 32” Ring &amp; Solid Cover Assembly</td>
<td>111 Ring &amp; TW Cover</td>
</tr>
<tr>
<td>15 32” Solid Cover</td>
<td>TW Cover</td>
</tr>
<tr>
<td>16 32” Ring &amp; Grate Cover Assembly</td>
<td>111 Ring &amp; 5624 Grate</td>
</tr>
<tr>
<td>17 32” Grate Cover</td>
<td>5624 Grate</td>
</tr>
<tr>
<td>18 32” Ring</td>
<td>111 Ring</td>
</tr>
<tr>
<td>19 24” Ring &amp; Solid Cover Assembly</td>
<td>112 Ring &amp; TX Cover</td>
</tr>
<tr>
<td>20 24” Solid Cover</td>
<td>TX Cover</td>
</tr>
<tr>
<td>21 24” Ring &amp; Grate Cover Assembly</td>
<td>112 Ring &amp; 5619 Grate</td>
</tr>
<tr>
<td>22 24” Grate Cover</td>
<td>5619 Grate</td>
</tr>
<tr>
<td>23 24” Ring</td>
<td>112 Ring</td>
</tr>
</tbody>
</table>
Supplier: US Foundry

<table>
<thead>
<tr>
<th>Product Style</th>
<th>Product Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 18” Ring &amp; Solid Cover Assembly</td>
<td>174 Ring &amp; TY Cover</td>
</tr>
<tr>
<td>25 18” Solid Cover</td>
<td>TY Cover</td>
</tr>
<tr>
<td>26 18” Ring &amp; Grate Cover Assembly</td>
<td>174 Ring &amp; 5621 Grate</td>
</tr>
<tr>
<td>27 18” Grate Cover</td>
<td>5621 Grate</td>
</tr>
<tr>
<td>28 18” Ring</td>
<td>174 Ring</td>
</tr>
<tr>
<td>29 Type PCU Standard Grate Assembly</td>
<td>4187 Frame &amp; 6187 Grate</td>
</tr>
<tr>
<td>30 Type PCU Standard Grate</td>
<td>6187 Grate</td>
</tr>
<tr>
<td>31 Type PCU Standard Frame</td>
<td>4187 Frame</td>
</tr>
</tbody>
</table>
(4) Bolting slots for 1/2"-13 Px Hd Bolts

Material:

**USF 6376 Grate. Ductile Iron**
ASTM A 536 Grade 70-50-05.

**USF 4076 Reversible Frame. Gray Cast Iron**
ASTM-A48 Class 35B

<table>
<thead>
<tr>
<th>Pocket #</th>
<th>Qty. of Pockets</th>
<th>Pocket Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
<td>1 5/16&quot; x 5 15/16&quot;</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>5 15/16&quot; x 1 5/16&quot;</td>
</tr>
<tr>
<td>3</td>
<td>48</td>
<td>6 13/16&quot; x 1 5/16&quot;</td>
</tr>
</tbody>
</table>
(4) Bolting slots for 1/2"-13 Px Hd Bolts

SECTION A-A

SECTION B-B

Pocket |
---|---|---|
# | Qty. of Pockets | Pocket Dimension |
1 | 12 | 1 5/16" x 5 15/16"
2 | 20 | 5 15/16" x 1 5/16"
3 | 48 | 6 13/16" x 1 5/16"

USF 6376 Grate
TXDOT

LOAD RATING: AASHTO-M306-10 Heavy Duty
FLOW AREA: 665 in²
MATERIAL: Ductile Iron ASTM A 536 Grade 70-50-05

© 2014 All Rights Reserved

© 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY

PROPOSAL

8351 NW 93rd Street
Medley, FL, 33166-2025
ph: 1-800-432-9709
fax: 305-887-9429
www.usfoundry.com

8077028 186 10/10/2013

AB

AB

© 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY

© 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY

© 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
(4) Bolting slots for 1/2"-13 Px Hd Bolts

Pocket # | Qty. of Pockets | Pocket Dimension
---|---|---
1 | 4 | 5 15/16" x 5 15/16"
2 | 8 | 5 15/16" x 3 5/8"
3 | 4 | 5 15/16" x 1 5/16"
4 | 6 | 6 7/16" x 3 5/8"
5 | 36 | 6 7/16" x 1 5/16"

Material:
USF 6377 Grate, Ductile Iron
ASTM A 536 Grade 70-50-05.
USF 4076 Reversible Frame
Gray Cast Iron
ASTM-A48 Class 35B
(4) Bolting slots for 1/2"-13 Px Hd Bolts

Pocket | Qty.of Pockets | Pocket Dimension
--- | --- | ---
1 | 4 | 5 15/16" x 5 15/16"
2 | 8 | 5 15/16" x 3 5/8"
3 | 4 | 5 15/16" x 1 5/16"
4 | 6 | 6 7/16" x 3 5/8"
5 | 36 | 6 7/16" x 1 5/16"
PROPOSAL

USF 4076 Built-Up Frame
TXDOTT

Gray Cast Iron ASTM-A48 CLASS 35B

MATERIAL: Gray Cast Iron ASTM-A48 CLASS 35B

ITEM: Frame

BAAN #: 8030521

WEIGHT: 202

DATE: 10/9/2013

DRAWN BY: AB

UNLESS OTHERWISE NOTED WEIGHT IS IN POUNDS & APPROXIMATE (±5%). DO NOT SCALE

8351 NW 93rd Street
Medley, FL 33166-2025
ph: 1-800-432-9709
fax: 305-887-9429
www.usfoundry.com

© 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
Material:
USF 6243 Grate. Ductile Iron
ASTM A 536 Grade 70-50-05.
USF 4243 Reversible Frame. Gray Cast Iron
ASTM-A48 Class 35B
(4) Bolting slots for 1/2"-13 Px Hd Bolts

### Pocket # | Qty. of Pockets | Pocket Dimension
--- | --- | ---
1 | 12 | 1 3/4" x 7 13/16"
2 | 20 | 7 13/16" x 1 3/4"
3 | 32 | 9 1/16" x 1 3/4"
4 | 16 | 8 5/16" x 1 3/4"
**Bolting slots**
for 1/2"-13 Px Hd Bolts

<table>
<thead>
<tr>
<th>Pocket #</th>
<th>Qty.of Pockets</th>
<th>Pocket Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>7 13/16&quot; x 7 13/16&quot;</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>7 13/16&quot; x 4 13/16&quot;</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>7 13/16&quot; x 1 3/4&quot;</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>8 5/16&quot; x 4 13/16&quot;</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>9 1/16&quot; x 4 13/16&quot;</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>8 5/16&quot; x 1 3/4&quot;</td>
</tr>
<tr>
<td>7</td>
<td>24</td>
<td>9 1/16&quot; x 1 3/4&quot;</td>
</tr>
</tbody>
</table>

**Material:**
- USF 6243 Grate. Ductile Iron
- ASTM A 536 Grade 70-50-05.
- USF 4243 Reversible Frame. Gray Cast Iron
- ASTM-A48 Class 35B

**PROPOSAL**

USF 4243 Frame & 6244 Grate
TXDOT

LOAD RATING: AASHTO-M-306-10 Heavy Duty FLOW AREA: 1404 in²

<table>
<thead>
<tr>
<th>Item</th>
<th>BAAN #</th>
<th>Heavy Duty</th>
<th>Drawing</th>
<th>Date</th>
<th>Drawn By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>8030424</td>
<td>224</td>
<td>392</td>
<td>10/16/2013</td>
<td>AB</td>
</tr>
<tr>
<td>Grate</td>
<td>8077030</td>
<td>376</td>
<td>224</td>
<td>10/16/2013</td>
<td>AB</td>
</tr>
</tbody>
</table>

© 2014 All Rights Reserved

(4) Bolting slots for 1/2"-13 Px Hd Bolts

Pocket # | Qty. of Pockets | Pocket Dimension
--- | --- | ---
1 | 4 | 7 13/16" x 7 13/16"
2 | 8 | 7 13/16" x 4 13/16"
3 | 4 | 7 13/16" x 1 3/4"
4 | 2 | 8 5/16" x 4 13/16"
5 | 4 | 9 1/16" x 4 13/16"
6 | 12 | 8 5/16" x 1 3/4"
7 | 24 | 9 1/16" x 1 3/4"
(4) 1/2-13 Tapped Hole

SECTION A-A

PROPOSAL

USF 4243 Built-Up Frame
TXDOT

MATERIAL: Gray Cast Iron ASTM-A48 CLASS 35B

<table>
<thead>
<tr>
<th>Item</th>
<th>BAAN #</th>
<th>Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>8030424</td>
<td>224</td>
</tr>
</tbody>
</table>

Date: 10/11/2013
Drawn by: AB

© 2014 All Rights Reserved

8351 NW 93rd Street
Medley, FL 33166-2025
ph: 1-800-432-9709
fax: 305-887-9429
www.usfoundry.com
(4) Bolting slots for 1/2"-13 Px Hd Bolts

1/8" Leveling Pads

1 15/16"
1 3/8"
1 3/8"

SECTION B-B

1 1/4"
5 7/8"
8 1/16"
6 1/2"
5"
4"

SECTION A-A

USF 6272 Grate
TXDOT

LOAD RATING: AASHTO-M-306-10 Heavy Duty
FLOW AREA: 568 in²

MATERIAL: Gray Cast Iron ASTM-A48 Class 35B

ITEM: USF 6272 AB

Grate 8076838
DATE 11/19/2013

DRAWN BY AB

UNLESS OTHERWISE NOTED WEIGHT IS IN POUNDS & APPROXIMATE (±5%). DO NOT SCALE

REV A DATE 1-17-14 REV BY OD

Customer Drawing

11/19/2013

US FOUNDRY
AN EAGLE MANUFACTURING COMPANY

© 2014 All Rights Reserved

© 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
(4)-\( \phi 1/2" \)-13 x 2" Lg PX Hd Bolts

(2)-Non Penetrating Pick Holes

SECTION A-A
(4) Bolt Holes for 1/2"-13 Bolts

(2) Non Penetrating Pick Holes

SECTION A-A

PROPOSAL

USF TW Cover
TXDOT

LOAD RATING: AASHTO-M306-10 Heavy Duty
MATERIAL: Gray Cast Iron ASTM A48 Class 35B

ITEM: BAAN # WEIGHT DRAWING
Cover 8018249 171 11-01-2013

DRAWN BY ULS

UNLESS OTHERWISE NOTED WEIGHT IS IN POUNDS & APPROXIMATE (±5%). DO NOT SCALE

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
USF 111 Ring & 5624 Round Grate
TXDOT

LOAD RATING: AASHTO-M306-10 Heavy Duty
FLOW AREA: 331.65 in²

MATERIAL: Gray Cast Iron ASTM-A48 Class 35B

ITEM: BAAN # WEIGHT DRAWING
Ring 8022096 161
Grate 8077027 212

DATE 10/21/2013

DRAWN BY ULS

UNLESS OTHERWISE NOTED WEIGHT IS IN POUNDS & APPROXIMATE (±5%). DO NOT SCALE

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY

PROPOSAL
(2) - Ø1" Anchor Holes @ 35 1/2" B.C.

4X Ø 7/16" ⊥ 1 3/8"
1/2-13 UNC ⊥ 1"
(4) - $\phi \frac{1}{2}'' - 13 \times 2''$ Lg Px Hd Bolts

(2) - Non Penetrating Pick Holes

SECTION A-A

USF 112 Reversible Ring & TX Cover

USF TX

LOAD RATING: AASHTO-M306-10 Heavy Duty

MATERIAL: Gray Cast Iron ASTM-A48 Class 35B

ITEM: BAAN # WEIGHT DRAWING
Ring 8022098 91
Cover 8016634 100

DATE: 10/14/2013

DRAWN BY

ULS

UNLESS OTHERWISE NOTED WEIGHT IS IN POUNDS & APPROXIMATE (±5%). DO NOT SCALE

© 2014 All Rights Reserved

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
(4) Bolt Holes for Φ1/2"-13 Bolts

(2) Non Penetrating Pick Holes

SECTION A-A

PROPOSAL

USF TX Cover

TXDOT

LOAD RATING: AASHTO-M306-10 Heavy Duty

MATERIAL: Gray Cast Iron ASTM-A48 Class 35B

ITEM: USF TX

Cover 8016634

DATE 10-14-2013

DRAWN BY

UNLESS OTHERWISE NOTED WEIGHT IS IN POUNDS & APPROXIMATE (±5%). DO NOT SCALE

REV A 10-21-2013

© 2014 All Rights Reserved

8351 NW 93rd Street
Medley, FL, 33166-2025
ph: 1-800-432-9709
fax: 305-887-9429
www.usfoundry.com
(4) - Ø1/2"-13 x 2"Lg Px Hd Bolts
PROPOSAL

USF 112 Built Up Ring Reversible
TXDOT

MATERIAL: Gray Cast Iron ASTM-A48 Class 35B

ITEM: 8022098

DATE: 10-14-2013

DRAWN BY: ULS

UNLESS OTHERWISE NOTED WEIGHT IS IN POUNDS & APPROXIMATE (±5%). DO NOT SCALE

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
USF 174 Reversible Ring & TY Cover
TXDOT

LOAD RATING: AASHTO-M306-10 Heavy Duty
MATERIAL: Gray Cast Iron ASTM-A48 Class 35B

ITEM | BAAN # | DRAWN BY | DATE | NOTE #
Ring  | 8021481 | 67       | 10-15-2013 |
Cover | 8016636 | 70       |         |

SECTION A-A

(2) - Ø1" Pick Holes

Ø1/2"-13 x 1 3/4" Lg Px Hd Bolts

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY

© 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
8351 NW 93rd Street
Medley, FL 33166-2025
ph: 1-800-432-9709
fax: 305-887-9429
www.usfoundry.com

© 2014 All Rights Reserved
(1) Bolthole for 1/2"-13 Bolt

(2) - Ø1" Pick Holes

USF TY Cover

TXDOT

U.S. FOUNDRY & MFG. CORP.

U.S. FOUNDRY

AASHTO M306

CLASS 35B

MADE IN U.S.A.

LOAD RATING: AASHTO-M306-10 Heavy Duty

MATERIAL: Gray Cast Iron ASTM-A48 Class 35B

ITEM: USF TY

DATE: 10-15-2013

DRAWN BY:

© 2014 All Rights Reserved

ULS

© 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
(4)-Bolt Holes for \( \phi 1/2''-13 \) Bolt

\( \phi 17'' \)

SECTION B-B

\( \phi 19\frac{1}{4}'' \)

\( 1\frac{1}{4}'' \)

\( 2\frac{3}{4}'' \)

\( 1\frac{1}{2}'' \)

SECTION A-A

PROPOSAL

USF 5621 Round Grate
TXDOT

LOAD RATING: AASHTO-M306-10 Heavy Duty
FLOW AREA: 105.7 in²

MATERIAL: Gray Cast Iron  ASTM A-48 Class 35B

<table>
<thead>
<tr>
<th>ITEM</th>
<th>BAAN #</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>USF 5621</td>
<td>8070767</td>
<td>69</td>
</tr>
</tbody>
</table>

DATE: 10/15/2013
DRAWN BY ULS

© 2014 All Rights Reserved

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF U.S. FOUNDRY & MANUFACTURING CORP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF U.S. FOUNDRY & MANUFACTURING CORP. IS PROHIBITED. U.S. FOUNDRY & MANUFACTURING CORP. RESERVES THE RIGHT TO MAKE MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE. DRAWING IS UNCONTROLLED WHEN PRINTED. WEIGHTS AND DIMENSIONS ARE PROVIDED FOR REFERENCE ONLY © 2014 US FOUNDRY AN EAGLE MANUFACTURING COMPANY
The information contained in this drawing is the sole property of U.S. Foundry & Manufacturing Corp. Any reproduction in part or as a whole without the written permission of U.S. Foundry & Manufacturing Corp. is prohibited. U.S. Foundry & Manufacturing Corp. reserves the right to make modifications to design without prior notice. Drawing is uncontrolled when printed. Weights and dimensions are provided for reference only © 2014 US Foundry, An Eagle Manufacturing Company.

**USF 6187 Grate**

**TXDOT**

**LOAD RATING:** AASHTO-M306-10 Heavy Duty  
**FLOW AREA:** 229.2 in²

**MATERIAL:** Gray Cast Iron ASTM-A48 Class 35B

**ITEM:** USF 6187 Grate  
**BAAN #:** 8077012  
**DATE:** 6/13/2013

**DRAWN BY:** ULS

**NOTE:** UNLESS OTHERWISE NOTED WEIGHT IS IN POUNDS & APPROXIMATE (±5%). DO NOT SCALE.
**Supplier: EJ**

<table>
<thead>
<tr>
<th>Product Style</th>
<th>Product Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 3x3 Standard Grate Assembly</td>
<td>5750ZPT 5750M</td>
</tr>
<tr>
<td>2 3x3 Standard Grate</td>
<td>5750M</td>
</tr>
<tr>
<td>3 3x3 Extra Open Area Grate Assembly</td>
<td>5750ZPT 5750M2</td>
</tr>
<tr>
<td>4 3x3 Extra Open Area Grate</td>
<td>5750M2</td>
</tr>
<tr>
<td>5 3x3 Frame</td>
<td>5750ZPT</td>
</tr>
<tr>
<td>6 4x4 Standard Grate Assembly</td>
<td>5751ZPT 5751M</td>
</tr>
<tr>
<td>7 4x4 Standard Grate</td>
<td>5751M</td>
</tr>
<tr>
<td>8 4x4 Extra Open Area Grate Assembly</td>
<td>5751ZPT 5751M2</td>
</tr>
<tr>
<td>9 4x4 Extra Open Area Grate</td>
<td>5751M2</td>
</tr>
<tr>
<td>10 4x4 Frame</td>
<td>5751ZPT</td>
</tr>
<tr>
<td>11 3x5 Standard Grate Assembly</td>
<td>5752ZPT 5752M</td>
</tr>
<tr>
<td>12 3x5 Standard Grate</td>
<td>5752M</td>
</tr>
<tr>
<td>13 3x5 Frame</td>
<td>5752ZPT</td>
</tr>
<tr>
<td>14 32” Ring &amp; Solid Cover Assembly</td>
<td>1495 V1430</td>
</tr>
<tr>
<td>15 32” Solid Cover</td>
<td>V1430</td>
</tr>
<tr>
<td>16 32” Ring &amp; Grate Cover Assembly</td>
<td>1495 V3419</td>
</tr>
<tr>
<td>17 32” Grate Cover</td>
<td>V3419</td>
</tr>
<tr>
<td>18 32” Ring</td>
<td>1495</td>
</tr>
<tr>
<td>19 24” Ring &amp; Solid Cover Assembly</td>
<td>V1600-2 V1418</td>
</tr>
<tr>
<td>20 24” Solid Cover</td>
<td>V1418</td>
</tr>
<tr>
<td>21 24” Ring &amp; Grate Cover Assembly</td>
<td>V1600-2 V3418-1</td>
</tr>
<tr>
<td>22 24” Grate Cover</td>
<td>V3418-1</td>
</tr>
<tr>
<td>23 24” Ring</td>
<td>V1600-2</td>
</tr>
<tr>
<td>Product Style</td>
<td>Product Name</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>24 18” Ring &amp; Solid Cover Assembly</td>
<td>V1600-1</td>
</tr>
<tr>
<td>25 18” Solid Cover</td>
<td>V1600-1</td>
</tr>
<tr>
<td>26 18” Ring &amp; Grate Cover Assembly</td>
<td>V1600-1 V3600-1</td>
</tr>
<tr>
<td>27 18” Grate Cover</td>
<td>V3600-1</td>
</tr>
<tr>
<td>28 18” Ring</td>
<td>V1600-1</td>
</tr>
<tr>
<td>29 Type PCU Standard Grate Assembly</td>
<td>V4243-4</td>
</tr>
<tr>
<td>30 Type PCU Standard Grate</td>
<td>V4243-4</td>
</tr>
<tr>
<td>31 Type PCU Standard Frame</td>
<td>V4243Z2</td>
</tr>
</tbody>
</table>
Product Number
00575031B02

Design Features
- Materials
  Frame: Gray Iron (CL35B)
  Grate: Ductile Iron (70-50-05)
- Design Load
  Heavy Duty
- Open Area
  665 sq in.
- Coating
  Undipped
- Designates Machined Surface
- Weight
  409 lbs.

Certification
- ASTM A48
- ASTM A536
- AASHTO M306
- Country of Origin: USA

Major Components
00575011
00575031

Drawing Revision
5/24/2011  Designer: DEW
11/11/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information and/or know-how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
3. TxDOT 3x3 Extra Open Area Grate Set
5750ZPT 5750M2 Assembly

**Product Number**
00575033B02

**Design Features**
- **Materials**
  - Frame: Gray Iron (CL35B)
  - Grate: Ductile Iron (70-50-05)
- **Design Load**
  - Heavy Duty
- **Open Area**
  - 803 sq in.
- **Coating**
  - Undipped
- **Designates Machined Surface**
- **Country of Origin:** USA

**Certification**
- ASTM A48
- ASTM A536
- AASHTO M306

**Major Components**
- 00575011
- 00575033

**Drawing Revision**
5/24/2011 Designer: DEW
11/11/2014 Revised By: KK

**Disclaimer**
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know-how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

**Contact**
800 626 4653
ejco.com
4. TXDOT 3x3 Extra Opening Grate

5750M2 Grate

Product Number
00575033

Design Features
- Materials
  - Ductile Iron (70-50-05)
  - Heavy Duty
- Design Load
  - 803 sq. in
- Coating
  - Undipped
- / Designates Machined Surface
- Weight
  - 175 lbs.

Certification
- ASTM A536
- AASHTO M306
- Country of Origin: USA

Drawing Revision
5/24/2011  Designer: DEW
11/7/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

Contact
800 626 4653 ejco.com

LARGE OPENING DETAIL

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5 1/4&quot; X 3 1/2&quot;</td>
</tr>
<tr>
<td>B</td>
<td>5 5/8&quot; X 3 1/2&quot;</td>
</tr>
<tr>
<td>C</td>
<td>5 3/4&quot; X 5 13/16&quot;</td>
</tr>
<tr>
<td>D</td>
<td>6 1/4&quot; X 3 9/16&quot;</td>
</tr>
<tr>
<td>E</td>
<td>7&quot; X 3 9/16&quot;</td>
</tr>
</tbody>
</table>

SECTION A-A
5. TxDOT 3x3 Frame
5750ZPT Frame

Product Number
00575011

Design Features
- Materials
  - Gray Iron (CL35B)
- Design Load
  - Heavy Duty
- Open Area
  - n/a
- Coating
  - Undipped
- √ Designates Machined Surface
- Weight
  - 212 lbs.

Certification
- ASTM A48
- AASHTO M306
- Country of Origin: USA

Drawing Revision
5/24/2011  Designer: DEW
11/11/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
6. TXDOT 4x4 Standard Grate Set
5751ZPT 5751M Assembly

- Materials
  - Frame
    - Gray Iron (CL35B)
  - Grate
    - Ductile Iron (70-50-05)

- Design Load
  - Heavy Duty

- Open Area
  - 1274 sq.in.

- Coating
  - Undipped

- Designates Machined Surface
- √ Designates Undipped

- Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

- Certification
  - ASTM A48
  - ASTM A536
  - AASHTO M306
  - Country of Origin: USA

- Major Components
  - Product Number
    - 00575111
    - 00575131

- Drawing Revision
  - 5/24/2011 Designer: DEW
  - 11/11/2014 Revised By: KK

- Disclaimer
  - Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

- Configuration
  - This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know-how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

- Contact
  - 800 626 4653
  - ejco.com
7.TxDOT 4x4 Standard Grate
5751M Grate

Product Number
00575131

Design Features
- Materials
  - Ductile Iron (70-50-05)
- Design Load
  - Heavy Duty
- Open Area
  - 1274 sq. in.
- Coating
  - Undipped
- √ Designates Machined Surface
- Weight
  - 402 lbs.

Certification
- ASTM A536
- AASHTO M306
- Country of Origin: USA

Drawing Revision
8/3/2011 Designer: DEF
11/10/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
8.TxDOT 4x4 Extra Open Area Grate Set
5751ZPT 5751M2 Assembly

LARGE OPENING DETAIL

- A 7 3/8" X 4 13/16"
- B 7 13/16" X 4 13/16"
- C 7 15/16" X 7 3/4"
- D 9 5/8" X 4 13/16"
- E 6 13/16" X 4 13/16"

1/2" FLAT FACE GOTHIC

Product Number
00575133B02

Design Features
- Materials
  - Frame: Gray Iron (CL35B)
  - Grate: Ductile Iron (70-50-05)
- Design Load
  - Heavy Duty
- Open Area
  - 1484 sq in.
- Coating
  - Undipped
- Designates Machined Surface
- Weight
  - 615 lbs.

Certification
- ASTM A48
- ASTM A536
- AASHTO M306
- Country of Origin: USA

Major Components
00575111
00575133

Drawing Revision
5/24/2011 Designer: DEW
11/11/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know-how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
9. TxDOT 4x4 Extra Open Area Grate
5751M2 Grate

Product Number
00575133

Design Features
- Materials
  - Ductile Iron (70-50-05)
- Design Load
  - Heavy Duty
- Open Area
  - 1484 sq. in.
- Coating
  - Undipped
- √ Designates Machined Surface
- Weight
  - 371 lbs.

Certification
- ASTM A536
- AASHTO M306
- Country of Origin: USA

Drawing Revision
8/3/2011 Designer: DEF
11/10/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com

<table>
<thead>
<tr>
<th>LARGE OPENING DETAIL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>7 3/8&quot; x 4 13/16&quot;</td>
</tr>
<tr>
<td>B</td>
<td>7 13/16&quot; x 4 13/16&quot;</td>
</tr>
<tr>
<td>C</td>
<td>7 15/16&quot; x 7 3/4&quot;</td>
</tr>
<tr>
<td>D</td>
<td>9 5/8&quot; x 4 13/16&quot;</td>
</tr>
<tr>
<td>E</td>
<td>6 13/16&quot; x 4 13/16&quot;</td>
</tr>
</tbody>
</table>

NOTE: OPENINGS ARE SYMMETRIC
10.TxDOT 4x4 Frame
5751ZPT Frame

Product Number
00575111

Design Features
- Materials
  - Gray Iron (CL35B)
- Design Load
  - Heavy Duty
- Open Area
  - n/a
- Coating
  - Undipped
- Designates Machined Surface
- Weight
  - 244 lbs.

Certification
- ASTM A48
- AASHTO M306
- Country of Origin: USA

Drawing Revision
8/3/2011  Designer: DEF
11/11/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
HANDLING HOLE (4 PLCS.)

-1/2-13 PENT HD SS BOLT
-1/2" SS LOCK WASHER 00981193
-1/2" SS WASHER 00981199
-(4 PLCS.)

1 1/4" TYP

1/2" FLAT FACE GOTHIC

SECTION A-A

SECTION B-B

-1 1/4" TYP

Ductile Iron (70-50-05)

Gray Iron (CL35B)

-Design Load
Heavy Duty

-Open Area
1121 sq. in.

-Coating
Undipped

-√Designates Machined Surface

-Estimated Weight
Cover 331 lbs.
Frame 290 lbs.

Certification
-ASTM A48
-AASHTO M306
-ASTM A536
-Country of Origin: USA

Major Components
00575211
00575231

Drawing Revision
08/03/2011 Designer: JIJ
11/11/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know-how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
12. TxDOT 3x5 Standard Grate
5752M Grate

Product Number
00575231

Design Features
- Materials
  - Ductile Iron (70-50-05)
- Design Load
  - Heavy Duty
- Open Area
  - 1121 sq. in.
- Coating
  - Undipped
- Designates Machined Surface
- Weight
  - 331 lbs.

Certification
- ASTM A536
- AASHTO M306
- Country of Origin: USA

Drawing Revision
8/3/2011   Designer: JIJ
11/11/2014   Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc.
All rights reserved.

Contact
800 626 4653
ejco.com
13. TxDOT 3x5 Frame
5752ZPT Frame

Product Number
00575211

Design Features
- Materials
  - Gray Iron (CL35B)
- Design Load
  - Heavy Duty
- Open Area
  - n/a
- Coating
  - Undipped
- Designates Machined Surface
- Weight
  - 290 lbs.

Certification
- ASTM A49
- AASHTO M306
- - Country of Origin: USA

Drawing Revision
8/3/2011 Designer: JIJ
11/11/2014 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
14.TxDOT 32" Ring and Solid Cover Set
V1430 1495 Assembly

**Product Number**
41430139B01

**Design Features**
- **Materials**
  - Cover: Ductile Iron (70-50-05)
  - Frame: Gray Iron (CL35B)
- **Design Load**
  - Heavy Duty
- **Open Area**
  - n/a
- **Coating**
  - Undipped
- **Designates Machined Surface**
- **Estimated Weight**: 345 lbs.

**Certification**
- ASTM A536
- ASTM A48
- AASHTO M306
- **Country of Origin**: USA

**Major Components**
41430139
00149513

**Drawing Revision**
11/12/2013 Designer: MAH
Revision By:

**Disclaimer**
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know-how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

**Contact**
800 626 4653
ejco.com
15.TxDOT 32" Solid Cover
V1430 Cover

Product Number
41430139

Design Features
- Materials
  Ductile Iron (70-50-05)
- Design Load
  Heavy Duty
- Open Area
  n/a
- Coating
  Undipped
- √ Designates Machined Surface
- Estimated Weight
  185 lbs.

Certification
- ASTM A536
- AASHTO M306
- Country of Origin: USA

Drawing Revision
7/7/2011 Designer: JIJ
3/11/2013 Revised By: DEF

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
**16. TxDOT 32" Ring & Grate Cover Set**

**1495  V3419  Assembly**

- **Product Number**: 43419035B01
- **Design Features**
  - Materials
    - Frame: Gray Iron (CL35B)
    - Grate: Gray Iron (CL35B)
  - Design Load
    - Heavy Duty
  - Open Area
    - 337 sq. in.
  - Coating
    - Undipped
  - Designates Machined Surface
  - Estimated Weight
    - Frame 169 lbs.
    - Grate 241 lbs.

- **Certification**
  - AASHTO M306
  - ASTM A48
  - Country of Origin: USA

- **Major Components**
  - 00149513
  - 43419035

- **Drawing Revision**
  - 7/31/2014 Designer: MAH
  - 8/4/2014 Revised By: MAH

- **Disclaimer**
  - Weights (lbs/kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.
  - CONFIDENTIAL: This drawing is the property of EJ GROUP, Inc., and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ GROUP, Inc. Copyright © 2012 EJ GROUP, Inc. All rights reserved.

- **Contact**
  - 800 626 4653
  - ejco.com
**17.TxDOT 32" Grate Cover**

**V3419 Grate**

- **Product Number**: 43419035
- **Design Features**:
  - Materials: Gray Iron (CL35B)
  - Design Load: Heavy Duty
  - Open Area: 337 sq. inches
  - Coating: Undipped
  - Designates Machined Surface

**Certification**:
- ASTM A48
- AASHTO M306
- Country of Origin: USA

**Drawing Revision**
- 7/31/2014 Designer: MAH
- 8/4/2014 Revised By: MAH

**Disclaimer**
Weights (lb, kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.
CONFIDENTIAL: This drawing is the property of EJ GROUP, Inc., and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ GROUP, Inc. Copyright © 2012 EJ GROUP, Inc. All rights reserved.

**Contact**
800 626 4653
ejco.com
Product Number
00149513

Design Features
- Materials: Gray Iron (CL35B)
- Design Load: Heavy Duty
- Open Area: n/a
- Coating: Undipped
- Designates Machined Surface
- Estimated Weight: 169 lbs.

Certification
- ASTM A48
- AASHTO M306
- Country of Origin: USA

Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
19. TxDOT 24" Ring and Solid Cover Set
V1418 V1600-2 Assembly

Product Number
41418220B01

Design Features
- Materials
  Cover
  Gray Iron (CL35B)
  Frame
  Gray Iron (CL35B)
- Design Load
  Heavy Duty
- Open Area
  n/a
- Coating
  Undipped
- √ Designates Machined Surface

- Estimated Weight: 177 lbs.

Certification
- ASTM A48
- AASHTO M306
- Country of Origin: USA

Major Components
41418220
41600215

Drawing Revision
11/12/2013 Designer: MAH
Revised By:

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know-how that is the property of EJ Group, Inc. Copyright © 2013 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
20.TxDOT 24" Solid Cover
V1418 Cover

Product Number
41418220

Design Features
- Materials: Gray Iron (CL35B)
- Design Load: Heavy Duty
- Open Area: n/a
- Coating: Undipped
- Designates Machined Surface
- Estimated Weight: 85 lbs.

Certification
- ASTM A48
- AASHTO M306
- Country of Origin: USA

Drawing Revision
7/6/2011  Designer: JIJ
3/8/2013  Revised By: DEF

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com

© Copyright EJ Group, Inc. 2012


(4) EONLOCK® FOR 1/2"-13 BOLTS ON 21 1/2" B.C. EQUALLY SPACED

Product Number
41600215

Design Features
-Materials
Gray Iron (CL35B)
-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-✓ Designates Machined Surface
-Estimated Weight
91 lbs.

Certification
-ASTM A48
-AASHTO M306
-Approved By

Drawing Revision
3/4/2013 Designer: DEF
3/8/2013 Revised By: DEF

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com

SECTION A-A

BOTTOM VIEW

φ28 1/2"
φ23 3/4"
1 1/2"
4 1/2"
φ21 3/4"
φ23 3/4"
1 1/2"
24. TxDOT 18" Ring & Solid Cover Set
V1600-1  V3600-1 Assembly

1/2"-13 SS PENT BOLT
& 00981193 1/2" SS LOCK WASHER

(2) 1" DIA PICKHOLES

19 1/4" DIA
1 1/2"

2 13/16" COVER SECTION

24" DIA
19 1/2" DIA
1 1/2"

4 1/2"

18 1/8" DIA
19 1/2" DIA
20 1/2" DIA

1 1/2"

Product Number
41600151B01

Design Features
- Material
  Frame
  Gray Iron (CL358)
  Cover
  Gray Iron (CL358)

- Design Load
  Heavy Duty

- Open Area
  n/a

- Coating
  Undipped
  √ Designates Machined Surface

- Estimated Weight: 129 lbs.

Certification
- ASTM A48
- AASHTO M306

- Country of Origin: USA

Major Components
41600115
43600151

Drawing Revision
11/12/2013  Designer: MAH
Revised By:

Disclaimer
Weights (lbs/kg) and dimensions (inches/mm) are provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ GROUP, Inc., and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ GROUP, Inc.
Copyright © 2013 EJ GROUP, Inc.
All rights reserved.

Contact
800 626 4853
ejco.com
26. TxDOT 18" Ring & Grate Cover Set
V1600-1  V3600-1 Assembly

(4) 1/2"-13 SS PENT BOLTS
AND 00981193 1/2" SS
LOCK WASHERS

1/2" SHARP FACE
GOTHIC

DUMP NO WASTE

DRAINS TO WATERWAYS

MADE IN USA

GRATE SECTION

1 1/4"

1 1/4"

1"

ASTM A48 CL35B
SERIES NUMBER
PROD.NO.
MO/DY/YR
RECYCLED SYMBOL
EJ

24" DIA

19 1/2" DIA

1 1/2"

4 1/2"

FRAME SECTION

18 1/8" DIA
19 1/2" DIA
20 1/2" DIA

2 3/8"

1 1/2"

19 1/4" DIA

1"

Design Features

Materials
- Frame: Gray Iron (CL35B)
- Grate: Ductile Iron (70-50-05)

- Design Load: Heavy Duty
- Open Area: 106 sq.in.
- Coating: Undipped
- √ Designates Machined Surface
- Estimated Weight: 129 lbs.

Certification
- ASTM A48
- ASTM A536
- AASHTO M306
- Country of Origin: USA

Major Components
41600115
43600135

DrawingRevision
08/05/2014 Designer: MAH
Revised By:

Disclaimer
Weights (lbs/kg) diameters (Inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ GROUP, Inc., and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ GROUP, Inc. Copyright © 2013 EJ GROUP, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
28. TxDOT 18" Frame
V1600-1 Frame

Product Number
41600115

Design Features
- Materials
  - Gray Iron (CL35B)
- Design Load
  - Heavy Duty
- Open Area
  - n/a
- Coating
  - Undipped
  - ✓ Designates Machined Surface
- Estimated Weight
  - 74 lbs.

Certification
- ASTM A48
- AASHTO M306
- Country of Origin: USA

Drawing Revision
3/14/2013 Designer: DEF
Revised By:

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
30.TxDOT PCU Grate
V4243-4 Grate

Product Number
44243439

Design Features
- Materials
  - Ductile Iron (70-50-05)
- Design Load
  - Heavy Duty
- Open Area
  - 225 sq. in.
- Coating
  - Undipped
- √ Designates Machined Surface
- Slip Resistant Surface
  - with the LLLL® registered trademark

Estimated weight: 84 lbs.

Certification
- ASTM A536
- 
- Country of Origin: USA

Drawing Revision
2/12/2013  Designer:  KK
2/12/2013  Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2011 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
31. TxDOT PCU Frame
V4243Z2 Frame

SECTION B-B

SECTION A-A

Product Number
44243019

Design Features
- Materials
  - Gray Iron (CL35B)
- Design Load
  - Heavy Duty
- Open Area
  - n/a
- Coating
  - Undipped
- √ Designates Machined Surface

Certification
- ASTM A48
- AASHTO M306
- Country of Origin: USA

Weight
- 217 lbs.

Drawing Revision
12/27/2007 Designer: DEW
3/20/2013 Revised By: KK

Disclaimer
Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

CONFIDENTIAL: This drawing is the property of EJ Group, Inc. and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ Group, Inc. Copyright © 2012 EJ Group, Inc. All rights reserved.

Contact
800 626 4653
ejco.com
<table>
<thead>
<tr>
<th>Product Style</th>
<th>Product Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 3x3 Standard Grate</td>
<td>R-3400-36G</td>
</tr>
<tr>
<td>2 3x3 Extra Open Area Grate</td>
<td>R-3400-36GO</td>
</tr>
<tr>
<td>3 3x3 Frame</td>
<td>R-3400-36G solid</td>
</tr>
<tr>
<td>4 3x3 Frame</td>
<td>R-3400-36G scalloped</td>
</tr>
<tr>
<td>5 4x4 Standard Grate</td>
<td>R-3400-48G</td>
</tr>
<tr>
<td>6 4x4 Extra Open Area Grate</td>
<td>R-3400-48GO</td>
</tr>
<tr>
<td>7 4x4 Frame</td>
<td>R-3400-48G solid</td>
</tr>
<tr>
<td>8 4x4 Frame</td>
<td>R-3400-48G scalloped</td>
</tr>
<tr>
<td>9 3x5 Standard Grate</td>
<td>R-3400-60G</td>
</tr>
<tr>
<td>10 3x5 Frame</td>
<td>R-3400-60G solid</td>
</tr>
<tr>
<td>11 3x5 Frame</td>
<td>R-3400-60G scalloped</td>
</tr>
<tr>
<td>12 32” Solid Cover</td>
<td>R-1930-30</td>
</tr>
<tr>
<td>13 32” Grate Cover</td>
<td>R-2930-30</td>
</tr>
<tr>
<td>14 32” Ring</td>
<td>R-1930-30</td>
</tr>
<tr>
<td>15 24” Solid Cover</td>
<td>R-1930-24</td>
</tr>
<tr>
<td>16 24” Grate Cover</td>
<td>R-2930-24</td>
</tr>
<tr>
<td>17 24” Ring</td>
<td>R-1930-24</td>
</tr>
<tr>
<td>18 18” Solid Cover</td>
<td>R-1930-18</td>
</tr>
<tr>
<td>19 18” Grate Cover</td>
<td>R-2930-18</td>
</tr>
<tr>
<td>20 18” Ring</td>
<td>R-1930-18</td>
</tr>
<tr>
<td>21 Type PCU Standard Grate</td>
<td>R-3300</td>
</tr>
<tr>
<td>22 Type PCU Standard Frame</td>
<td>R-3300</td>
</tr>
</tbody>
</table>
NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
FREE OPEN AREA: 669 SQ. IN.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 290#
NOTE: MEETS AASTO M-306 LOADING REQUIREMENTS
FREE OPEN AREA: 873 SQ. IN.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 258#

ELEMENTS:
- 3/4" HIGH LETTERS ENGRAVED TYP.
- (4) 5/8" DIA. BOLT HOLE w/ 1 1/2" DIA. X 1/2" RECESS
- DUMP NO WASTE, DRAINS TO WATERWAY
- AASHTO M306
- NEENAH FOUNDRY, MADE IN USA

DIMENSIONS:
- 35 5/8"
- 38" x 38"
- 6 5/16"
- 1"
- 7/8"
NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 193#
NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS

MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 174# WAS NF-T2150

3'-0" X 3'-0" SCALLOPED SEAT FRAME

(4) DRILL START FOR 1/2" DIA. BOLT

(16) 1" DIA. VENT HOLE

3/4" HIGH RAISED LETTERS TYP.

1 1/2" X 45° CHAMFER

SECTION B-B
3/4" HIGH LETTERS ENGRAVED TYP.

(4) 5/8" DIA. BOLT HOLE
w/ 1 1/2" X 1/2" RECESS

NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
FREE OPEN AREA: 1136 SQ. IN.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 451#

WAS NF-T2185

NEENAH FOUNDRY
NEENAH WISCONSIN 54956
PHONE 800-596-5075
PHONE 920-793-9500
www.neenahfoundry.com

DATE: 02-13-2014

NF-34003060 B
NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 250#

WAS NF-T2158

DRAWING

SECTION A-A

SECTION B-B

3/4" HIGH LETTERS ENGRAVED

4X 1 1/2" X 45° CHAMFER

(4) DRILL STARTS FOR 1/2" DIA. BOLT

32X Ø1" VENT HOLE

38 1/4" 38 1/4"

36 1/4" 48"

35 5/8"

59 5/8"

63 1/8"

62 1/4"

5/8"

60"

62 1/4"

70"

1/4" CHAMFER
NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 164#";

WAS NF-T2151

PICKHOLE DETAIL
QUARTER SCALE

1" HIGH LETTERS RAISED FLUSH
(4) 5/8" DIA. BOLT HOLE w/ 1 1/2" X 1/2" RECESS
#29 3/8" B.C.
LOGO
(2) CONCEALED PICKHOLE PER NF-22642
TYPE "C" SURFACE DESIGN w/ PERMAGRIP TEXTURE
1/2" HIGH LETTERS RAISED FLUSH

1 1/2"  3/4"  3/8"  1/2"

9/16"  3/4"  1"

7/8"  3 1/4"

7/8"  1"

3 1/4"  3/4"  1 1/2"

3 1/4"  3/4"  1 1/2"

NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 164#";

WAS NF-T2151

PICKHOLE DETAIL
QUARTER SCALE

1" HIGH LETTERS RAISED FLUSH
(4) 5/8" DIA. BOLT HOLE w/ 1 1/2" X 1/2" RECESS
#29 3/8" B.C.
LOGO
(2) CONCEALED PICKHOLE PER NF-22642
TYPE "C" SURFACE DESIGN w/ PERMAGRIP TEXTURE
1/2" HIGH LETTERS RAISED FLUSH

1 1/2"  3/4"  3/8"  1/2"

9/16"  3/4"  1"

7/8"  3 1/4"

7/8"  1"

3 1/4"  3/4"  1 1/2"

3 1/4"  3/4"  1 1/2"

NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 164#";

WAS NF-T2151

PICKHOLE DETAIL
QUARTER SCALE

1" HIGH LETTERS RAISED FLUSH
(4) 5/8" DIA. BOLT HOLE w/ 1 1/2" X 1/2" RECESS
#29 3/8" B.C.
LOGO
(2) CONCEALED PICKHOLE PER NF-22642
TYPE "C" SURFACE DESIGN w/ PERMAGRIP TEXTURE
1/2" HIGH LETTERS RAISED FLUSH

1 1/2"  3/4"  3/8"  1/2"

9/16"  3/4"  1"

7/8"  3 1/4"

7/8"  1"

3 1/4"  3/4"  1 1/2"

3 1/4"  3/4"  1 1/2"

NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 164#";

WAS NF-T2151

PICKHOLE DETAIL
QUARTER SCALE

1" HIGH LETTERS RAISED FLUSH
(4) 5/8" DIA. BOLT HOLE w/ 1 1/2" X 1/2" RECESS
#29 3/8" B.C.
LOGO
(2) CONCEALED PICKHOLE PER NF-22642
TYPE "C" SURFACE DESIGN w/ PERMAGRIP TEXTURE
1/2" HIGH LETTERS RAISED FLUSH

1 1/2"  3/4"  3/8"  1/2"

9/16"  3/4"  1"

7/8"  3 1/4"

7/8"  1"

3 1/4"  3/4"  1 1/2"

3 1/4"  3/4"  1 1/2"
5/8" HIGH LETTERS ENGRAVED TYP.

(4) 5/8" DIA. BOLT HOLE
w/ 1 1/2" X 1/2" RECESS

#29 3/8" B.C.

1 1/8"

10"

4 7/8"

1 1/2"

3 1/2"

1"

7/8"

3/8"

9 1/2"

1 1/2"

1/2"

NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS.
FREE OPEN AREA: 1364 SQ. IN.
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 126# WAS NF-T2152

GRATE

NEENAH FOUNDRY

1/8" - 1"

SCALE

R-2930-30

ON: ELN

APP: SPT

DATE 02-12-2014

www.neenahfoundry.com

CAD Dwg. Ref: 29303030.DWG

$
NOTE: MEETS AASHTO M-306 LOADING REQUIREMENTS
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 183# WAS NF-T2159

SECTION A-A

3/4" HIGH RAISED LETTERS TYP.

SECTION B-B

2 3/4"

1 1/4"

5/8"

5/16"

22"

17 7/8"

16 7/8"

15 5/16"

5/8"

5/16"

R3/4"

1 1/16"

1 5/8"

61 3/8"

59 7/8"

28 1/4"

69 1/2"

61 3/8"
## Supplier: DL Foundry

<table>
<thead>
<tr>
<th></th>
<th>Product Style</th>
<th>Product Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3x3 Standard Grate with Anti-Skid</td>
<td>I-4850-01</td>
</tr>
<tr>
<td>2</td>
<td>3x3 Standard Grate</td>
<td>I-4850-02</td>
</tr>
<tr>
<td>3</td>
<td>3x3 Frame</td>
<td>I-4850-R1</td>
</tr>
<tr>
<td>4</td>
<td>32” Solid Cover</td>
<td>A-4008-38</td>
</tr>
<tr>
<td>5</td>
<td>32” Ring</td>
<td>B-4008-R1</td>
</tr>
<tr>
<td>6</td>
<td>24” Solid Cover</td>
<td>A-4005-01</td>
</tr>
<tr>
<td>7</td>
<td>24” Ring</td>
<td>A-4005-R1</td>
</tr>
<tr>
<td>8</td>
<td>18” Solid Cover</td>
<td>A-4003-02</td>
</tr>
<tr>
<td>9</td>
<td>18” Ring</td>
<td>A-4003-R1</td>
</tr>
<tr>
<td>10</td>
<td>Type PCU Standard Grate and Frame</td>
<td>I-4843-05, I-4850-R1</td>
</tr>
</tbody>
</table>
NOTES: AASHTO M306 CERTIFIED
Weight: 270lbs
OPEN AREA: 648.9in²

DUCTILE IRON CONFORMS TO ASTM A536 CL80-55-06

ALL TOLERANCES ARE +/- 1/16 IN. PER FOOT, MEASUREMENTS LESS THAN ONE FOOT ARE +/- 1/16 UNLESS OTHERWISE SPECIFIED

DESIGNATES MACHINED SURFACE

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

D&L Foundry, Inc.
PART NUMBER
I-4850-01

DATE DESCRIPTION DRAWN APPROVED
1/4/17 NEW PATTERN RMH RSG
2/6/17 SKID UPDATE RMH
2/7/17 SKID UPDATE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION

DESIGN REVIEW / /

SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

D&L SUPPLY MADE IN USA
DUL Supplies Made In USA

AASHTO M306

MADE IN THE USA

DESCRIPTION

D&L Foundry, Inc.
BOLT LUGS

(2) HANDLING HOLES

LEVELING PADS

D&L Supply
TXDOT
D&L Foundry
MADE IN USA

ASTM A48 CL35B

36" SQ
38 1/4" SQ
45 1/2" SQ

SECTION A-A

NOTES:
AASHTO M306 CERTIFIED
Weight: 210lbs

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED

NOTES:
AASHTO M306 CERTIFIED
Weight: 210lbs

DATE DESCRIPTION DRAWN APPR. GRAY IRON CONFORMS TO
1/5/17 NEW PATTERN RMH RSG ASTM A48 CL35B
1/13/17 REMOVED THICKNESS DIM. RMH RSG
1/16/17 ADDED TXDOT PLAQUE RMH RSG
2/3/17 HANDLING HOLE LOCATION CHANGE RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

REFERENCE INFORMATION
CATALOG NUMBERS
COVER FRAME
COPE: - XXXX COPE: - NEW
DRAG: - XXXX DRAG: - NEW

DESIGN REVIEW / /
SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A
NOTES:
CONFORMS TO AASHTO M306 H-20
WHEEL LOADS (40,000 LB MIN)
WEIGHT: 191 LBS
D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

DESCRIPTION
MADE IN THE USA

PART NUMBER

REFERENCE INFORMATION
CATALOG NUMBERS

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED.

NOTES:
CONFORMS TO AASHTO M-306 H-20 WHEEL LOADS (40,000 LBS. MIN)

CONFORMS TO ASTM A48 CL35B

WEIGHT: 125 LBS

SECTION A-A

GRAY IRON CONFORMS TO ASTM A48 CL35B

DATE
09/18/19
NEW TEMPLATE DRAWING
RKB
N/A

CRP: (4) 1/2"-13 UNC BOLTS (DRILL & TAP)

DESCRIPT
CONCEPTUAL

REFERENCES:
COVER
RING
COPE: - XXXX
COPE: - NEW
DRAG: - XXXX
DRAG: - NEW

DESIGN REVIEW
SALES
PATTERN
PROD.
POST.
OTHER
N/A
N/A
N/A
N/A
N/A

PRINTED COPIES ARE UNCONTROLLED

PRINTED COPIES ARE UNCONTROLLED
(2) HIDDEN EDGE PRIES
1" SHARP FACE GOTHIC
(4) \(\frac{1}{2}\)"x13" PENT BOLTS

SECTION A-A

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

PART NUMBER
A-4005-01

DATE           DESCRIPTION       DRAWN APPROVED
12/21/16       NEW PATTERN      RMH
12/21/16       COPE DESIGN CHANGES RMH RSG
1/4/17         UPDATED DRAG STACKING LUGS RMH RSG
2/1/17         UPDATED COPE TO REFLECT PATTERN RMH RSG
2/27/17        ADDED AASHTO MARKINGS  RMH

D&L FOUNDRY
MADE IN USA
ASTM A48 CL35B
A-4005
MMDDYYX#
AASHTO M306

NOTES:
AASHTO M306 CERTIFIED
Weight: 103lbs
NOTES:
AASHTO M306 CERTIFIED
Weight: 91lbs

SECTION A-A

D&L Foundry, Inc.
"The Iron Men"
MADE IN THE USA

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF D&L FOUNDRY IS PROHIBITED.

DESCRIPTION
MADE IN THE USA

PART NUMBER
A-4005-R1

DATE DESCRIPTION DRAWN APPROVED
1/3/17 REARRANGED PLAQUES RMH RSG
1/19/17 SWITCHED DRAFT DIRECTION FOR CO RMH
2/3/17 REARRANGED PLAQUES RMH RSG
2/27/17 ADDED AASHTO MARKINGS RMH

GRAY IRON CONFORMS TO ASTM A48 CL35B

NOTES:
AASHTO M306 CERTIFIED

Weight: 91lbs

DESIGN REVIEW
SALES N/A
PATTERN N/A
PROD. N/A
POST. N/A
OTHER N/A

REFERENCE INFORMATION
CATALOG NUMBERS
COVER N/A
RING N/A
COPE: - XXXX COPE: - NEW
DRAG: - XXXX DRAG: - NEW

ALL TOLERANCES ARE +/- 1/16 PER FOOT, MEASUREMENTS LESS THAN ONE FOOT ARE +/- 1/16 " UNLESS OTHERWISE SPECIFIED

DESIGNATES MACHINED SURFACE
NOTES:
CONFORMS TO AASHTO M306 H-20 WHEEL LOADS (40,000 LB MIN)
WEIGHT: 75 LBS

(1) \(\frac{1}{2}\)" SS PENTA HEAD SCREW (CORED)

\(\varnothing 18\frac{1}{4}\)" BC

(2) 1" VENT HOLES

SECTION A-A

NOTES:
CONFORMS TO AASHTO M306 H-20 WHEEL LOADS (40,000 LB MIN)
WEIGHT: 75 LBS
NOTES:
CONFORMS TO AASHTO M306 H-20
WHEEL LOADS (40,000 LB MINIMUM)
WEIGHT: 71 LBS

SECTION A-A
D&L Foundry, Inc.  "The Iron Men"
MADE IN THE USA

PART NUMBER
- I-4843-05
- I-4843-R1
- S-1000-R3

ASSEMBLY

DATE 05/02/18

DESCRIPTION ASSEMBLY DRAWING FOR INFORMATIONAL USE ONLY

D.C. GRATE - DUCTILE IRON TO CONFORM TO ASTM A536 CL80-55-06

FRAME - GRAY IRON TO CONFORM TO ASTM A48 CL35B

REFERENCE INFORMATION

CATALOG NUMBERS
- GRATE
- FRAME
- COPE - 2738
- COPE - FLR
- DRAG - 2739
- DRAG - FLR

DESIGN REVIEW N/A

SALES N/A

PATTERN N/A

PROD. N/A

POST. N/A

OTHER N/A

NOTES:
- DRAWING FOR INFORMATIONAL USE ONLY
- MEETS AASHTO M306 LOAD RATING
- I-4843-05 WEIGHT: 95LBS
- I-4843-R1: 220LBS
- OPEN AREA: 245.57 SQ IN
- NO PAINT

SECTION A-A

(3) 1" GROUT HOLES

29 1/2"

69 7/8"

1 1/16"

6 1/2"

59 3/8"

2738

2739

28 1/16"

28 1/2"

245.57 SQ IN

D&C

I-4843

I-4843-05 WEIGHT: 95LBS

I-4843-R1: 220LBS

I-4843-05

I-4843-R1

S-1000-R3

ASSEMBLY

DESIGNED MACHINED SURFACE

11MM STAINLESS STEEL LOCK BOLT

SELF-LOCKING NUT

LOCKING WING

PENTAGON BOLT HEAD TO FIT PENTA HEAD SOCKET

COVER

CAM LOCK DETAIL

GRATE: DUCTILE IRON TO CONFORM TO
ASTM A536 CL80-55-06

FRAME: GRAY IRON TO CONFORM TO
ASTM A48 CL35B

ALL TOLERANCES ARE +/- 1/16" PER
FOOT, MEASUREMENTS LESS THAN
ONE FOOT ARE +/- 1/32" UNLESS OTHERWISE SPECIFIED

THE INFORMATION CONTAINED IN THIS DRAWING
IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY
REPRODUCTION IN PART OR AS A WHOLE
WITHOUT THE WRITTEN PERMISSION OF D&L
FOUNDRY IS PROHIBITED

THE INFORMATION CONTAINED IN THIS DRAWING
IS THE SOLE PROPERTY OF D&L FOUNDRY. ANY
REPRODUCTION IN PART OR AS A WHOLE
WITHOUT THE WRITTEN PERMISSION OF D&L
FOUNDRY IS PROHIBITED