Drill & tap frame for 1/2"-13 x 2 1/2" stainless steel hex head bolts. 8 required per frame.

**PLAN**

**SECTION B-B**

**SECTION A-A**

**FRAME CASTING TYPE 5**

**FRAME CASTING TYPE 5**
PLAN

SECTION B-B

SECTION A-A

CASTING TYPE 5
ALTERNATE BOLTED FRAME

INDIANA DEPARTMENT OF TRANSPORTATION

SEPTEMBER 2001

STANDARD DRAWING NO. E 720-ICCA-02

Anthony L. Demovich 9-04-01
SENIOR STANDARDS ENGINEER  DATE

Firooz Bandi 9-04-01
SENIOR STANDARDS ENGINEER  DATE
Grate is bolted to frame with 1/2" hex head SS bolts. 4 req'd. each grate.

FRAME AND GRATE
CASTING TYPE 5 (ALTERNATE)
INDIANA DEPARTMENT OF TRANSPORTATION

CASTING TYPE 8
FRAME

SEPTEMBER 1998

STANDARD DRAWING NO. E 720-ICCA-04

DETAILS PLACED IN THIS FORM 11-15-98

/s/ Anthony L. Bearden 11-15-98
DESIGN STANDARDS ENGINEER

/s/ Firooz Zendi 11-15-98
DETAILED DESIGN ENGINEER

DESIGN STANDARDS ENGINEER
ORIGINALLY APPROVED 9-21-98

PLAN

SECTION B-B

FRAME
CASTING TYPE 8

SECTION A-A

13/32" (typ.)

18 29/32" R

63/32" R (typ.)

24"

25/32"

3 1/2"

13/32"

6 1/2"

1 15/16"

3 1/2"

25/32"

1 9/16" (typ.)

19/32" R

19/32" R

33 15/32"

7 7/8"

1 31/32"

13/32"

15 7/8"

3 1/2"

7/8" square hole

23 5/8"

25/32"

22 1/16"

19 11/16"

23 7/32"

13/32" R (typ.)

7 7/8"

2"

13/32"

5" draft

13/32"
1. Curb box adjustable from 5 1/2" to 8 3/4".

GENERAL NOTES

FRONT

BACK

SECTION A-A

CASTING TYPE 8
CURB BOX
SEPTEMBER 1998
STANDARD DRAWING NO. E 720-ICCA-06

INDIANA DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS ENGINEER
DATE

S/E Anthony L. Trembanich 11-15-98

S/E Firouz Zandi 11-15-98
PLAN

SECTION B-B

DETAIL B

SECTION A-A

FRAME

CASTING TYPE 10
铸型类型 10
格栅

10月 2003

标准图纸编号 E 720-ICCA-09

INDIANA DEPARTMENT OF TRANSPORTATION

GRATE
CASTING TYPE 10

PLAN

SECTION A-A

SECTION B-B

DETAIL OF SECTION A-A
GENERAL NOTES
1. Curb box adjustable
   5 1/4" to 6 3/4".

FRONT

BACK

CURB BOX
CASTING 10

SECTION A-A

SIDE

INDIANA DEPARTMENT OF TRANSPORTATION
CASTING TYPE 10
CURB BOX
SEPTEMBER 1998

STANDARD DRAWING NO. 720-ICCA-09A

ORIGINAL APPROVED 9-01-98
NOTES

1. Steel grating shall be 1 1/2" x 8, minimum and 2 1/4" x 8, maximum.

2. The dimensions of the angle iron items shall be as shown except that the A dimensions may vary according to type of galling used.

3. For Section A-A, Section B-B see Standard Detail E 720-I1307-08.

STEEL GRATING TYPE 12
FRAME AND GRATE
SEPTEMBER 2008

STANDARD DRAWING NO. E 720-I00A-10

ANGLE IRON FRAME DETAIL
PLAN

3/8"-16 x 2 1/2" Steel hex bolt, nut, and washer (6 places)

3/8"-16 x 3" Steel hex bolt nut, and washer (2 places)

SECTION D-D

2 1/2" x 2 1/2"

SECTION A-A

5/8" dia. bolt hole

3/4" typ.

3-9 1/4"

3-9 1/4"

7-10 1/8"

1/8" typ.

3/4" typ.

SECTION A-A

GRATE AND FRAME CASTING

ALTERNATE TYPE 12

CAASTING TYPE 12 (ALTERNATE)

FRAME AND GRATE

SEPTEMBER 1999

INDIANA DEPARTMENT OF TRANSPORTATION

STANDARD DRAWING NO. E 720-ICCA-11

DETAILS PLACED IN THE FORMAT 11-15-99

/C/ Anthony L. Draper 11-15-99

DESIGN STANDARDS ENGINEER

/C/ Finney J. Sundt 11-15-99

CHIEF HIGHWAY ENGINEER

ORIGINALLY APPROVED 11-15-99
PLAN

Bored hole to fit 3/4"-10 UNC x 3 1/2" round head, square neck carriage bolt 5 required.

SECTION A-A

FRAME
CASTING TYPE 15

INDIANA DEPARTMENT OF TRANSPORTATION
CASTING TYPE 15
FRAME
SEPTEMBER 1998

STANDARD DRAWING NO. E 720-ICCA-16

DETAILS PlACED IN THE FORM:

/s/ Anthony J. Orendorff  11-15-98
Chief Highway Engineer  DATE

/s/ Ferros Randi  11-15-98
Design Standards Engineer  DATE

ORIGINALLY APPROVED 9-21-98
GENERAL NOTES

1. Curb adjustment 5 1/2" to 9 1/2".