



CMC PRECAST

Maryland (SHA) Drainage Inlets

Core Product Line

CORE PRODUCTS DIVISION



OVERVIEW

Precast Drainage Inlets are typically used for storm drain systems in lieu of built in place inlets.

SIZES

Precast drainage inlets are available in many sizes from small area drains to large inlets or combination inlet / junction boxes, both in rectangular designs as well as circular structures with diameters of 36 inch through 144 inch.

APPLICATION

Precast drainage inlets may be used for the following:

- Yard Inlets
- Curb Inlets
- Catch Basins
- Traffic Areas
- Parking Lots
- Median Inlets

JOINTS

The following joints may be available for precast drainage inlets:

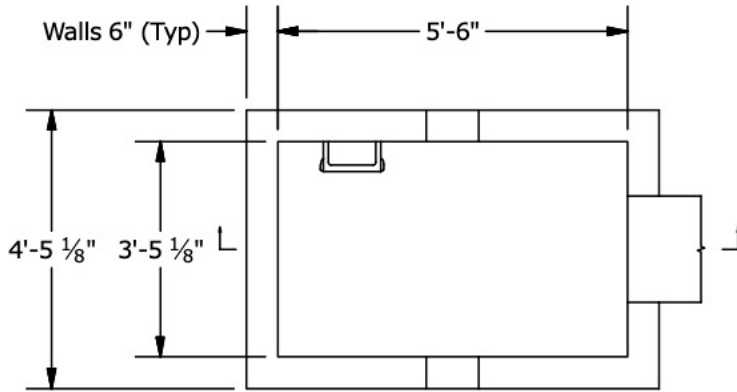
- Pre-formed mastic or butyl gasket
- Mortar Joints

APPLICABLE SPECIFICATIONS

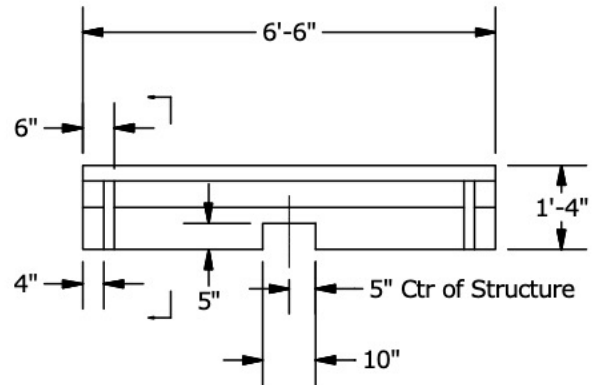
- **ASTM C478/AASHTO M199** - Precast Reinforced Concrete Manhole Sections
- **ASTM C913** - Precast Concrete Water and Wastewater Structures
- **ASTM C990** - Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
- **Maryland State Highway Association standards and specifications**



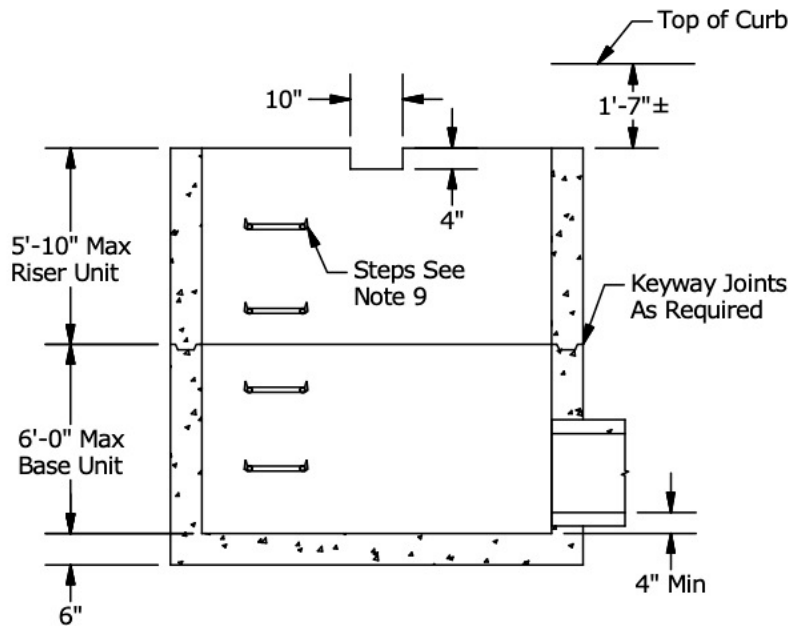
PRECAST WR INLET (MD 374.21)



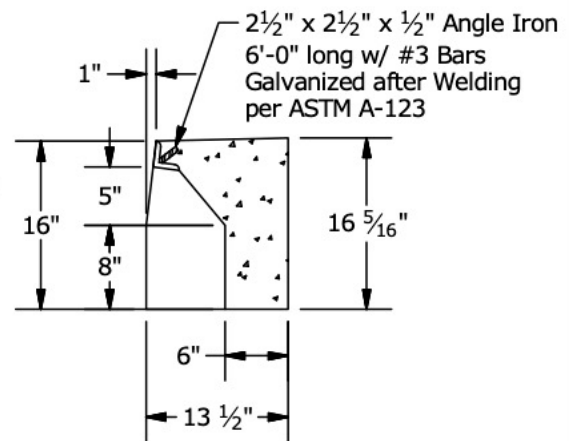
Plan View



Elevation View
(Precast Curb)



Section View

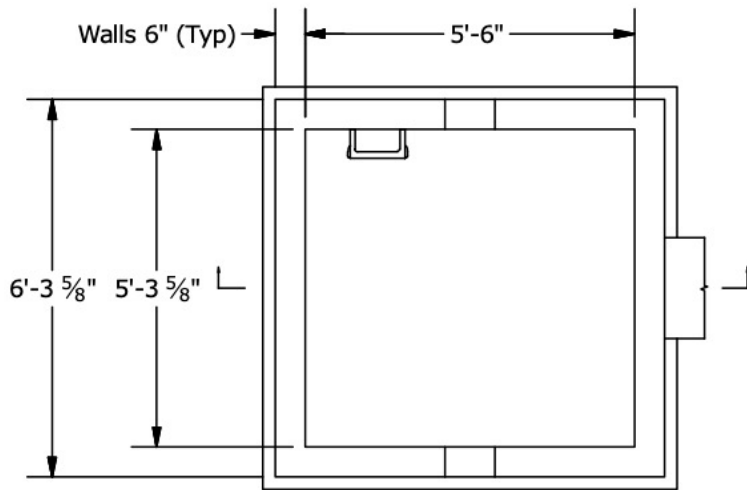


Section View
(Precast Curb)

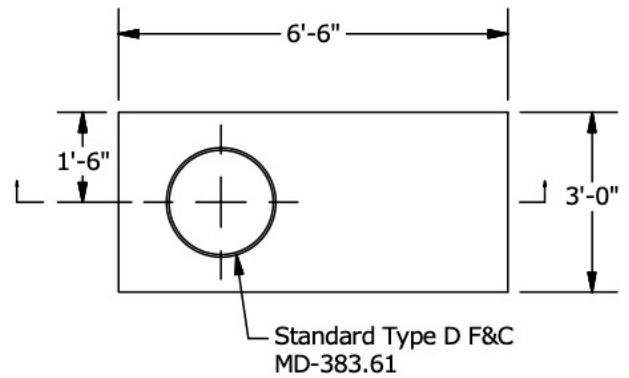
NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Steps provided at 15" spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

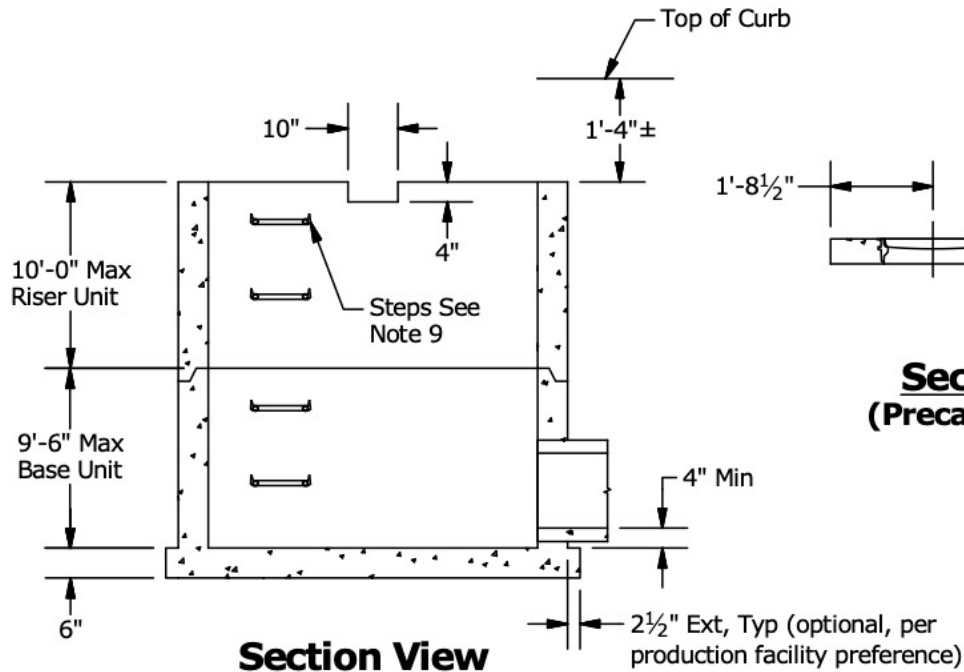
PRECAST WR INLET (MD 374.22)



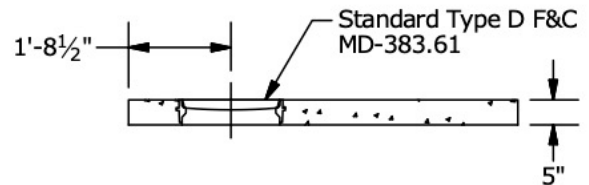
Plan View



**Plan View
(Precast Inlet Head)**



Section View



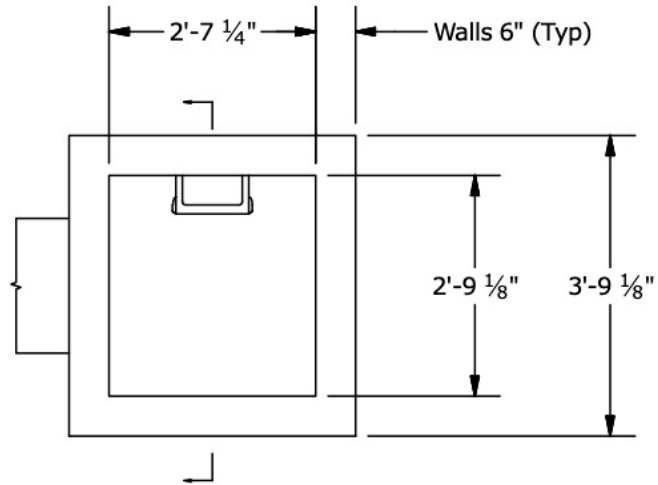
**Section View
(Precast Inlet Head)**

NOTES

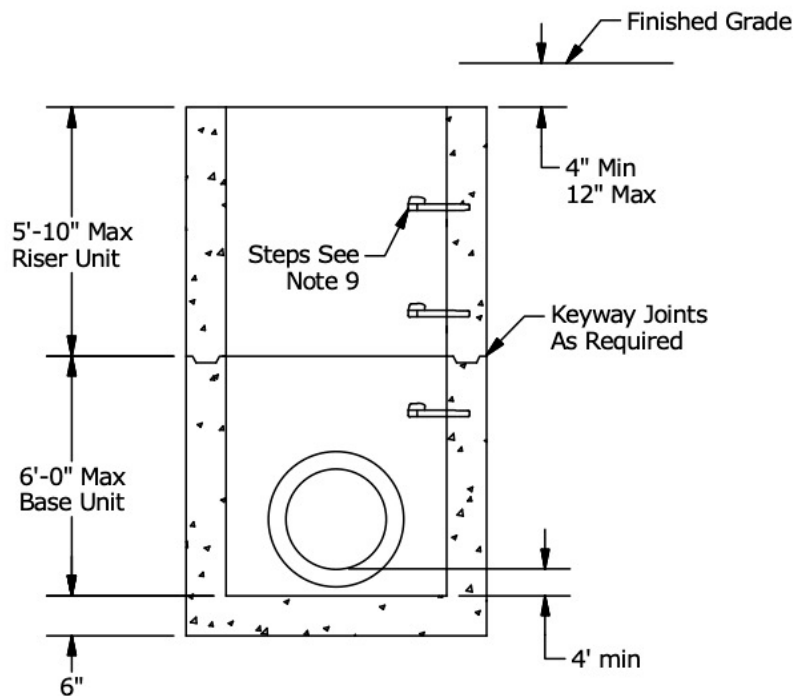
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to

8. construction plans.
9. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
10. Steps provided at 15" spacing, aligned vertically.
11. Invert shaping to be constructed in field by contractor.
12. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
13. Frame, Grate, and Beam not shown for clarity.

PRECAST SINGLE WR INLET (MD 374.23)



Plan View



Section View

NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
9. Steps provided at 15" spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

Walls 8" (Typ)

8'-4 $\frac{3}{4}$ "

3'-5"

2'-10 $\frac{3}{4}$ "

3'-5"

4'-1 $\frac{1}{8}$ "

2'-9 $\frac{1}{8}$ "

L

10'-0" Max Riser Unit

9'-6" Max Base Unit

8"

10"

4"

8"±

4" Min

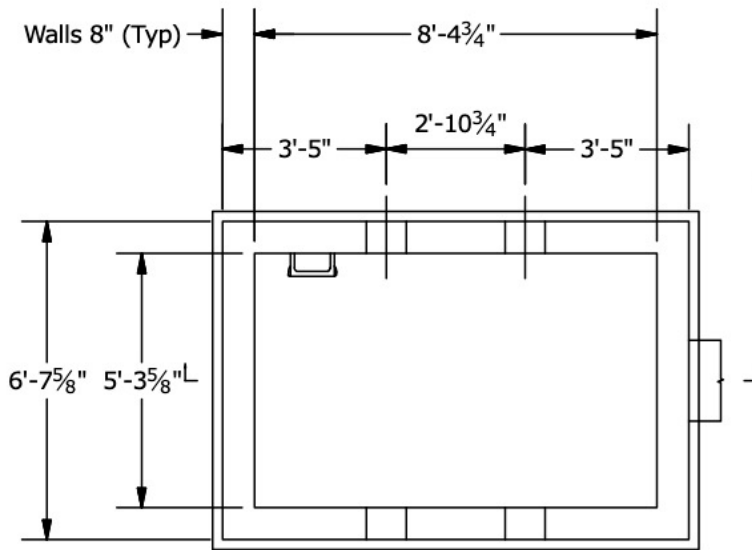
2½" Ext, Typ (optional, per production facility preference)

Steps See Note 9

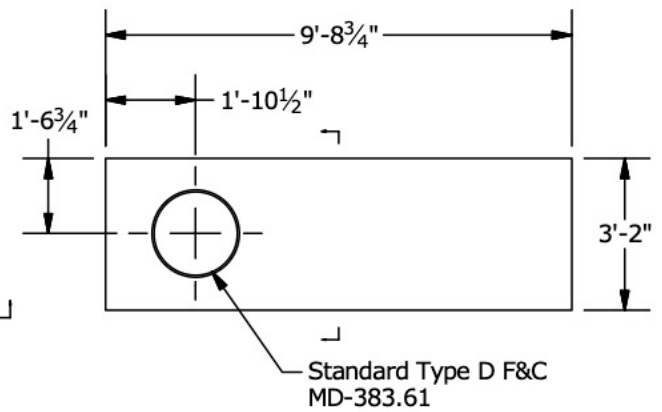
Finished Grade

© Copyright 2026 CMC

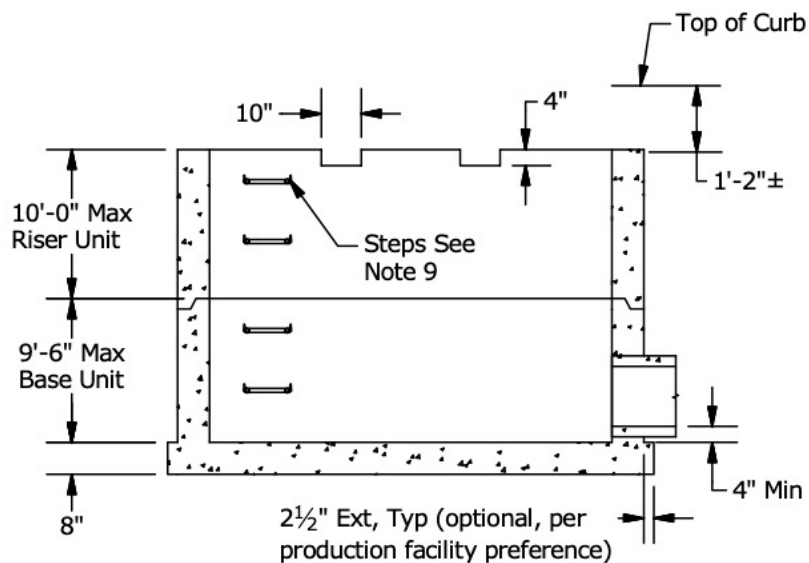
PRECAST TRIPLE WRM INLET (MD 374.27)



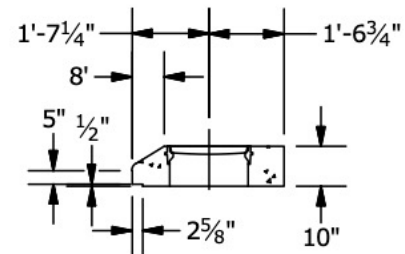
Plan View



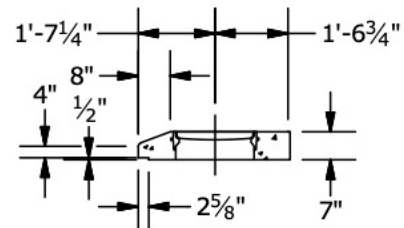
Plan View (Precast Concrete Slab)



Section View



Section View
(Precast Concrete Slab)
(Type B)

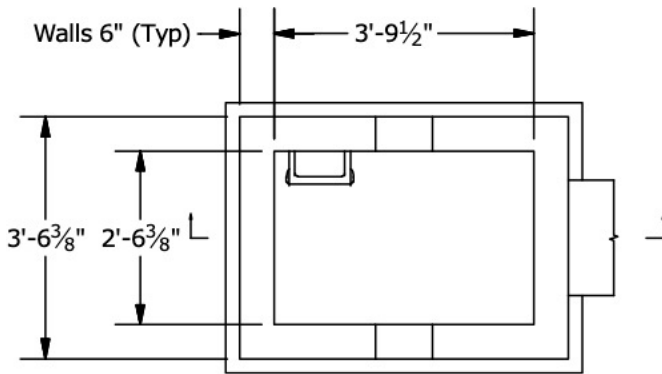


Section View
(Precast Concrete Slab)
(Type C)

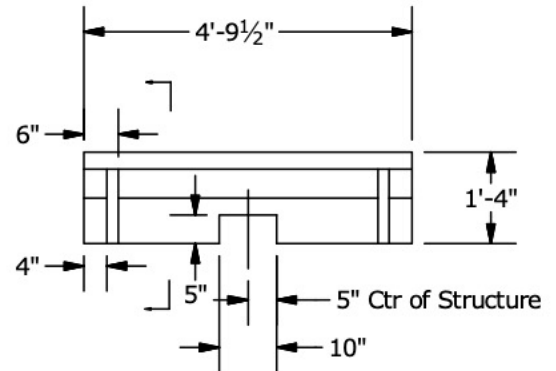
NOTES

- | | |
|---|---|
| 1. This design is intended for precast structures produced by CP&P only. | 8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans. |
| 2. Concrete to be mix No.6 (4,000 psi) minimum. | 9. Steps provided at 15" spacing, aligned vertically. |
| 3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min. | 10. Invert shaping to be constructed in field by contractor. |
| 4. Reinforcing designed by CP&P. | 11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications. |
| 5. Lifting devices provided for handling at manufacturer's discretion. | 12. Frame, Grate, and Beam not shown for clarity. |
| 6. Grade and slope adjustments to be completed in the field by contractor. | |
| 7. Pipe openings to be provided as required. For size, location, and invert elevations refer to | |

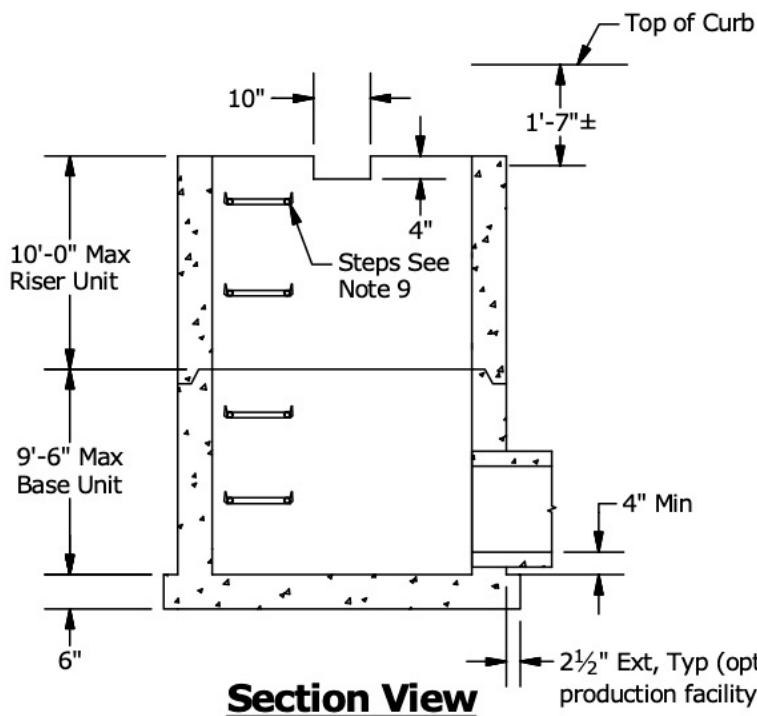
PRECAST NR INLET (MD 374.24)



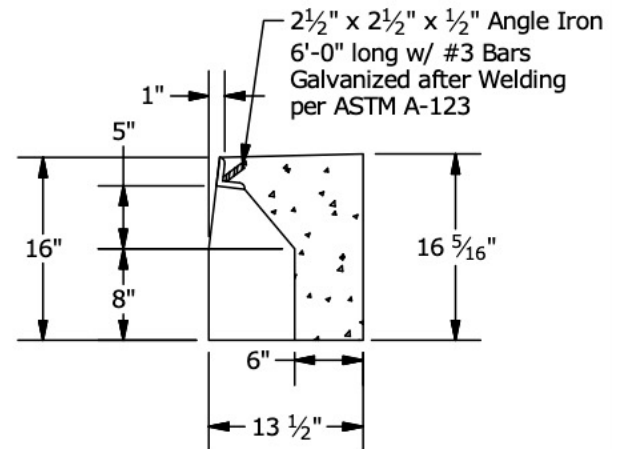
Plan View



**Elevation View
(Precast Curb)**



Section View



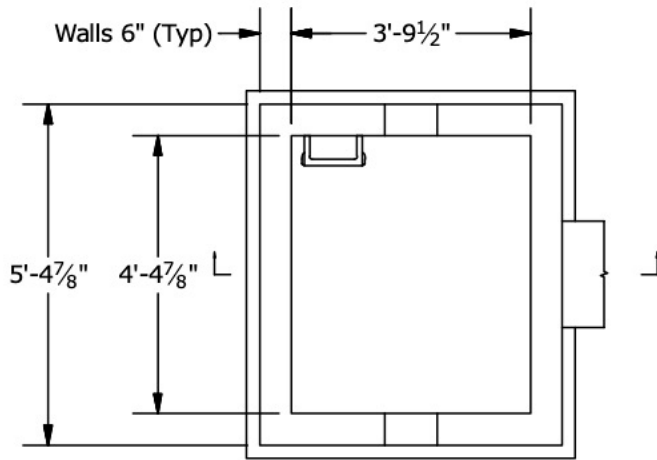
**Section View
(Precast Curb)**

NOTES

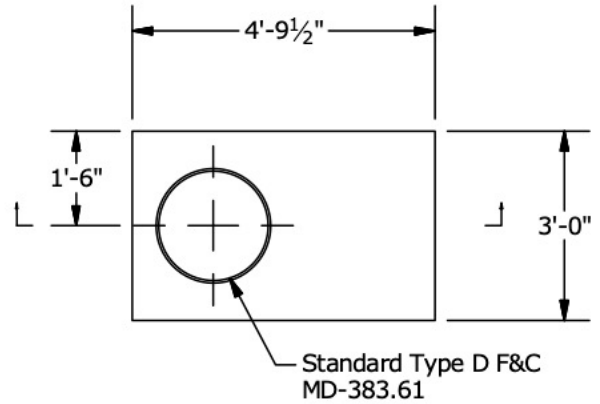
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to

8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Steps provided at 15' spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

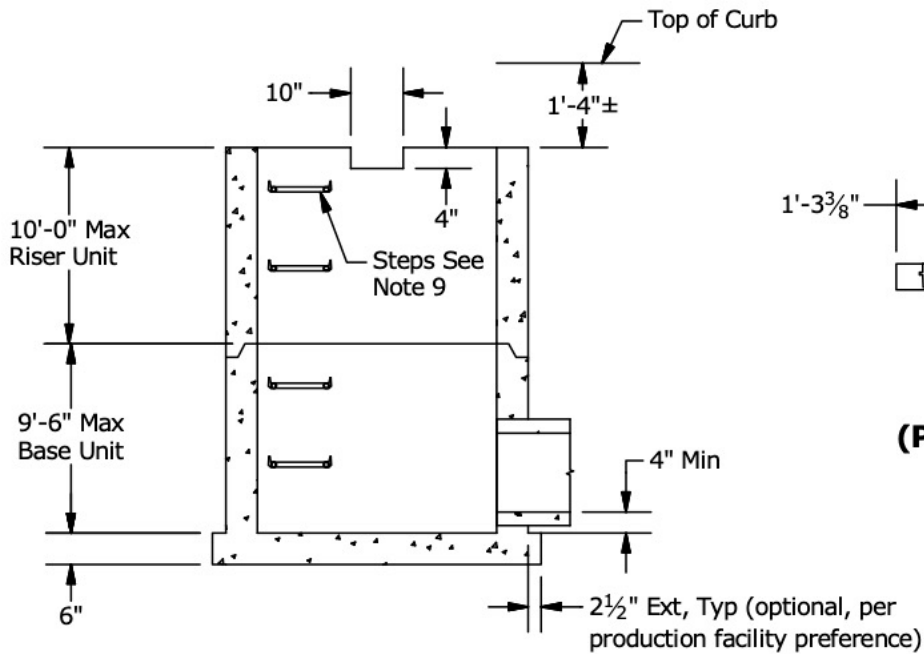
PRECAST NRM INLET (MD 374.25)



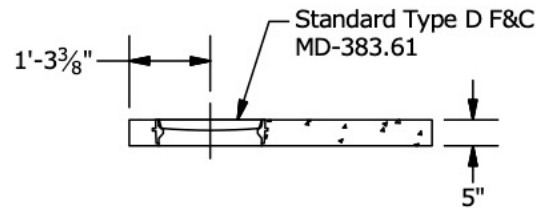
Plan View



**Plan View
(Precast Inlet Head)**



Section View

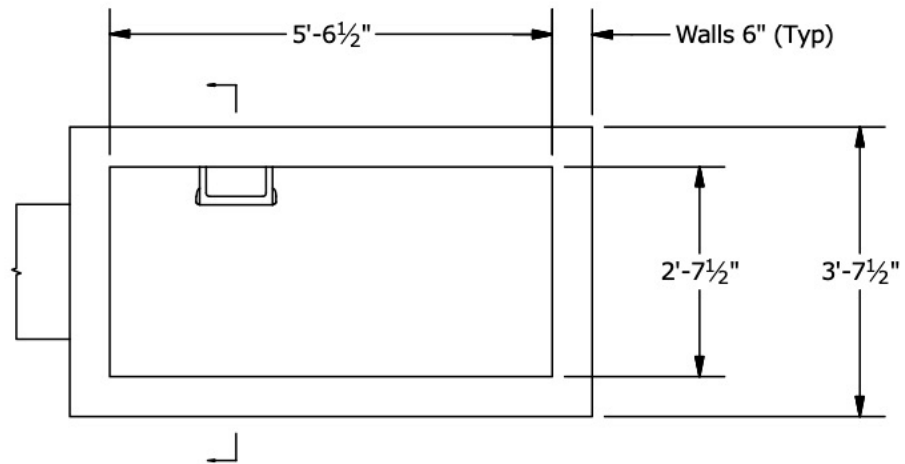


**Section View
(Precast Inlet Head)**

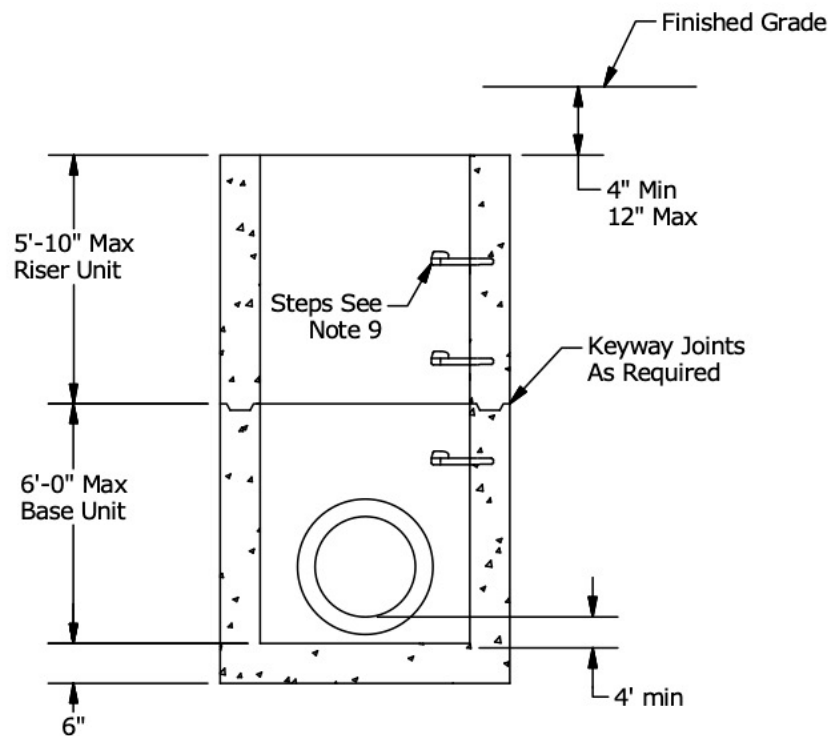
NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Steps provided at 15" spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

PRECAST TYPE S INLET DOUBLE GRATE TANDEM (MD 374.70)



Plan View

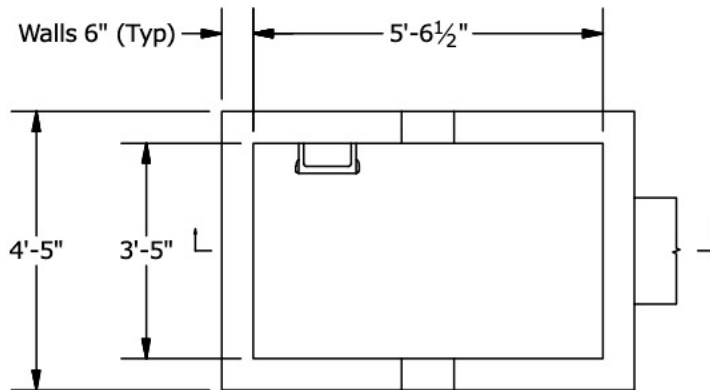


Section View

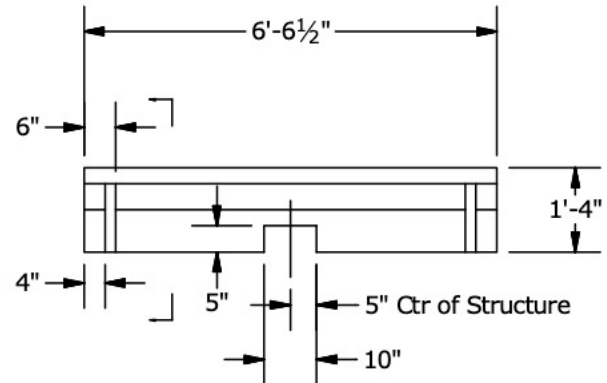
NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Steps provided at 15" spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

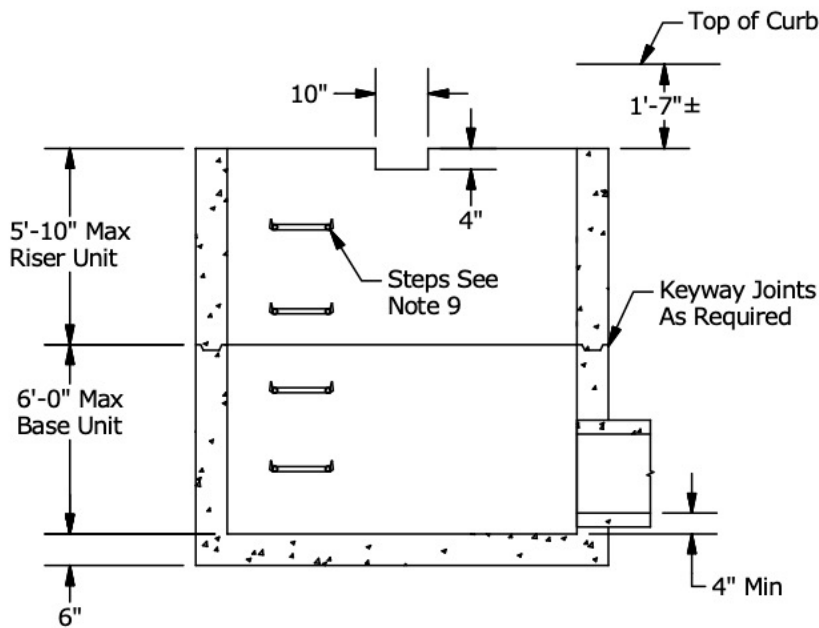
PRECAST STANDARD TYPE S COMBINATION INLET (MD 374.71)



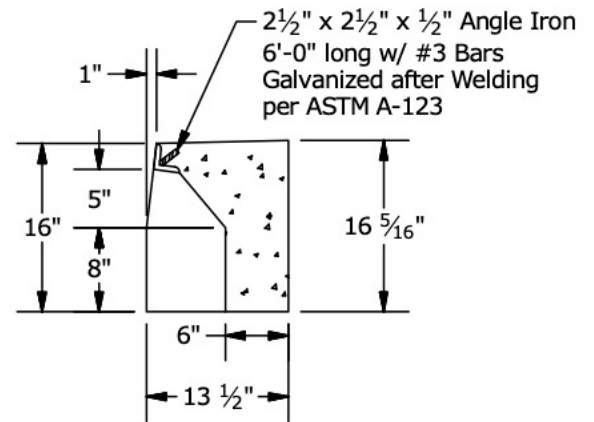
Plan View



Elevation View
(Precast Curb)



Section View

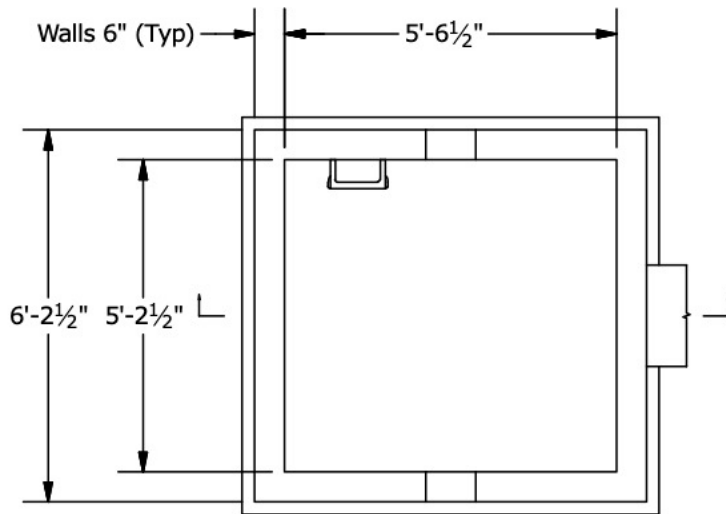


Section View
(Precast Curb)

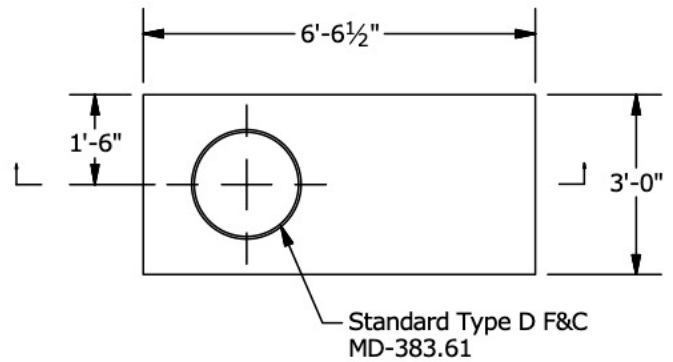
NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Steps provided at 15' spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

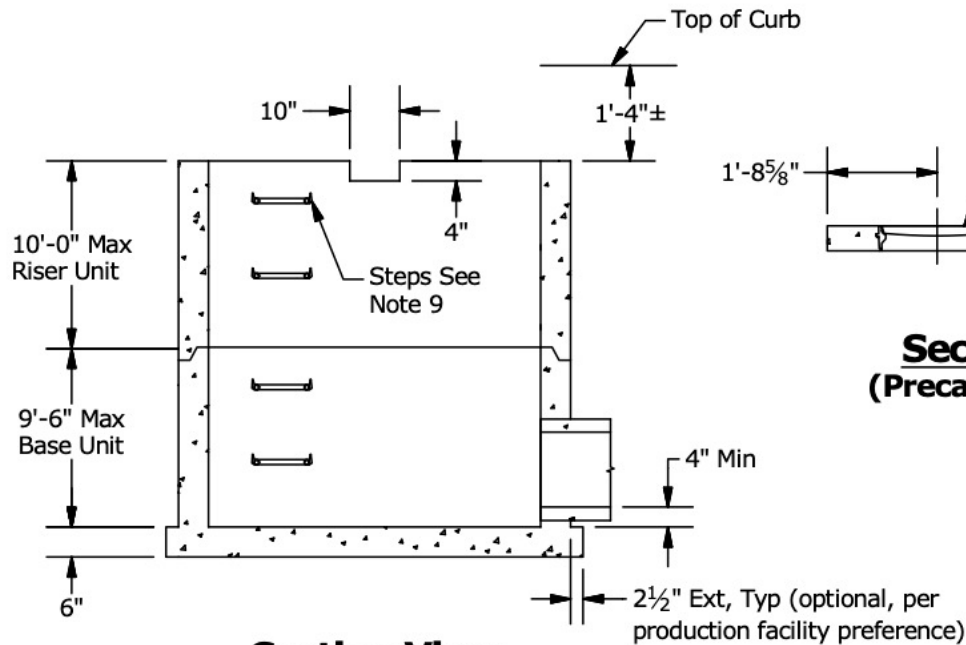
PRECAST STANDARD TYPE HS COMBINATION INLET (MD 374.72)



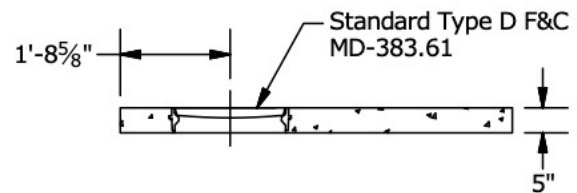
Plan View



**Plan View
(Precast Inlet Head)**



Section View



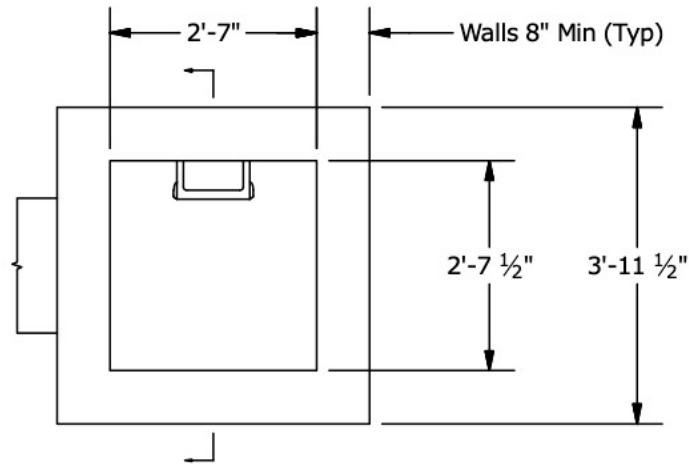
**Section View
(Precast Inlet Head)**

NOTES

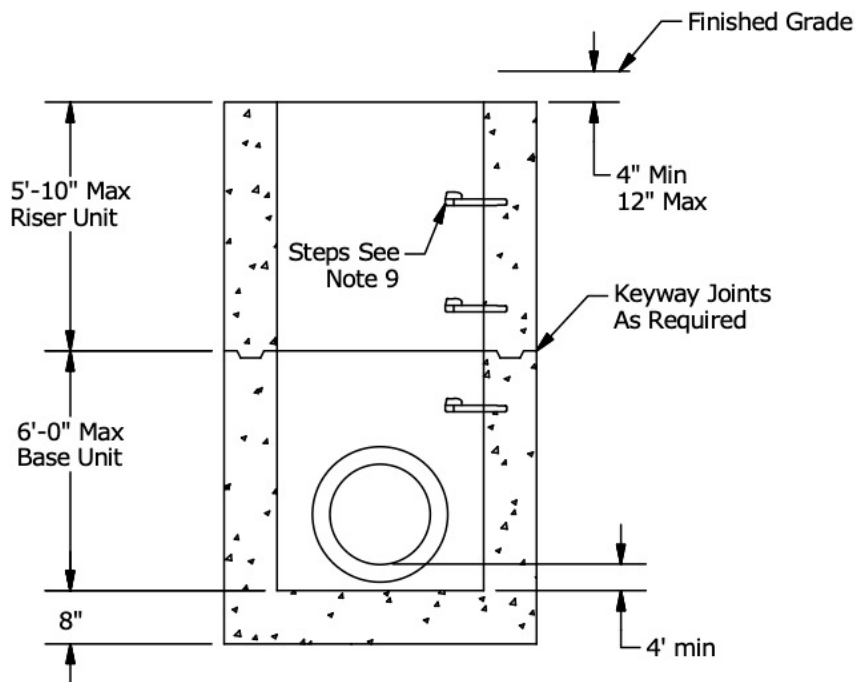
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to

8. construction plans.
9. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
10. Steps provided at 15" spacing, aligned vertically.
11. Invert shaping to be constructed in field by contractor.
12. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
13. Frame, Grate, and Beam not shown for clarity.

PRECAST TYPE S INLET SINGLE GRATE (MD 374.73)



Plan View

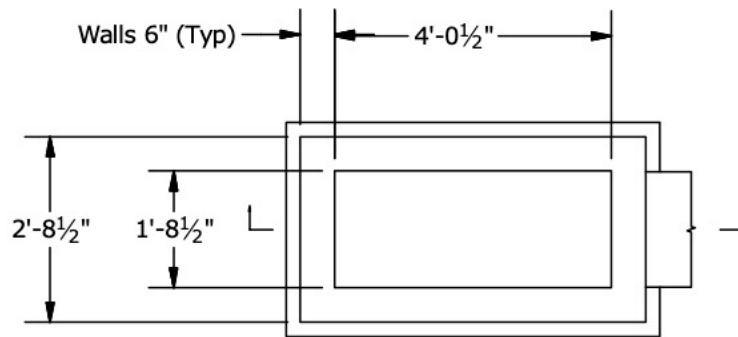


Section View

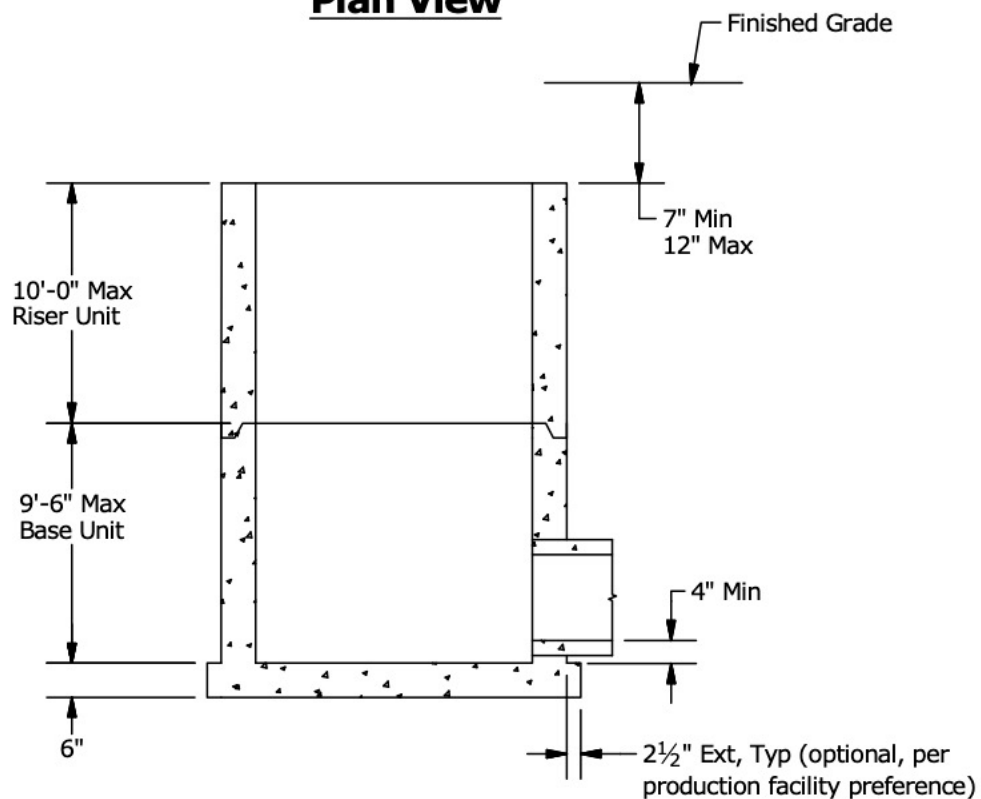
NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Steps provided at 15' spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

PRECAST STANDARD TYPE E INLET (MD 376.11)



Plan View



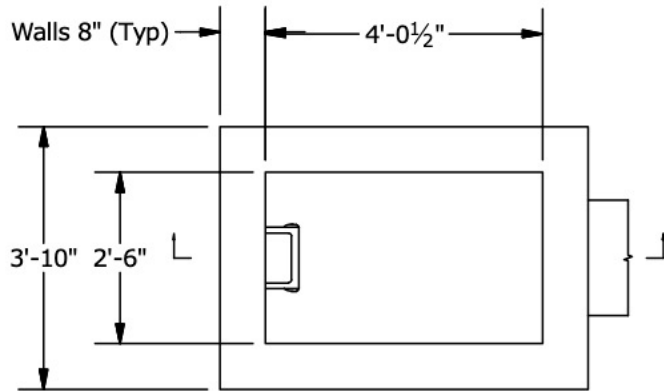
Section View

NOTES

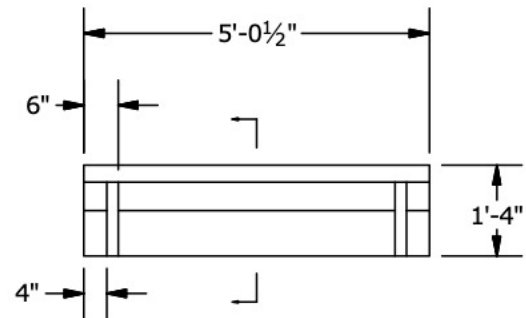
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.

7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
9. Invert shaping to be constructed in field by contractor.
10. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
11. Frame and Grate not shown for clarity.

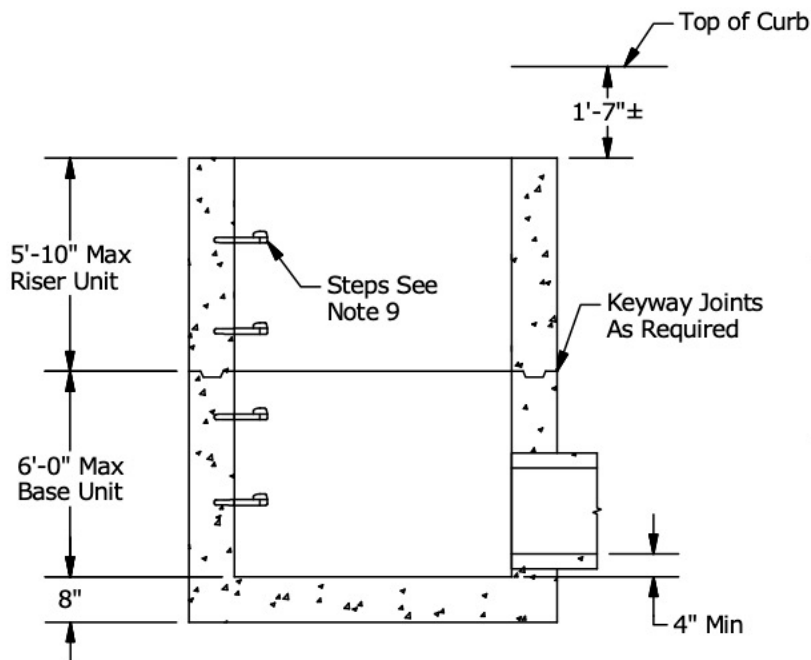
PRECAST STANDARD TYPE E COMBINATION INLET (MD 374.74)



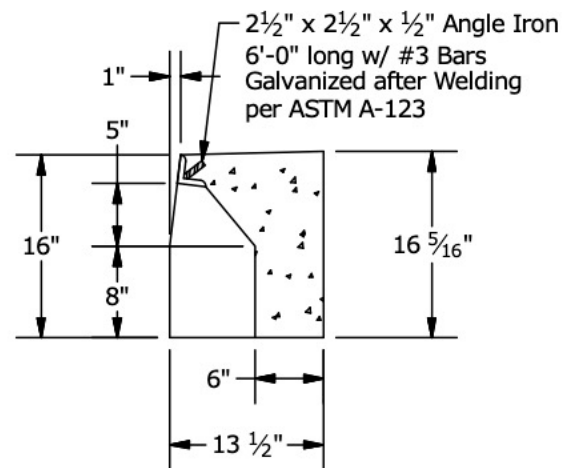
Plan View



Elevation View (Precast Curb)



Section View

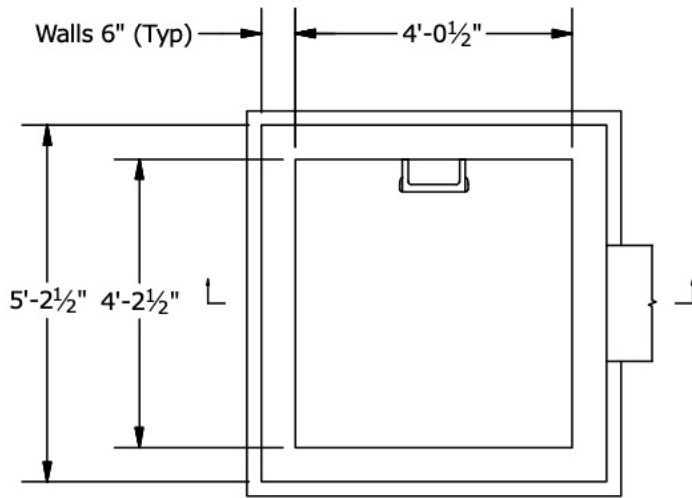


Section View (Precast Curb)

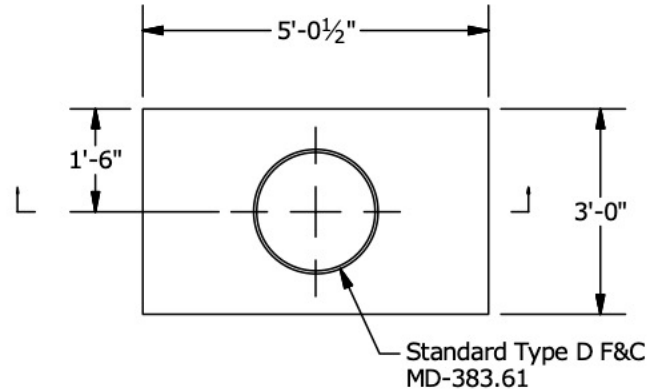
NOTES

- | | | | |
|----|--|-----|--|
| 1. | This design is intended for precast structures produced by CP&P only. | 8. | Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans. |
| 2. | Concrete to be mix No.6 (4,000 psi) minimum. | 9. | Steps provided at 15" spacing, aligned vertically. |
| 3. | Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min. | 10. | Invert shaping to be constructed in field by contractor. |
| 4. | Reinforcing designed by CP&P. | 11. | From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications. |
| 5. | Lifting devices provided for handling at manufacturer's discretion. | 12. | Frame, Grate, and Beam not shown for clarity. |
| 6. | Grade and slope adjustments to be completed in the field by contractor. | | |
| 7. | Pipe openings to be provided as required. For size, location, and invert elevations refer to | | |

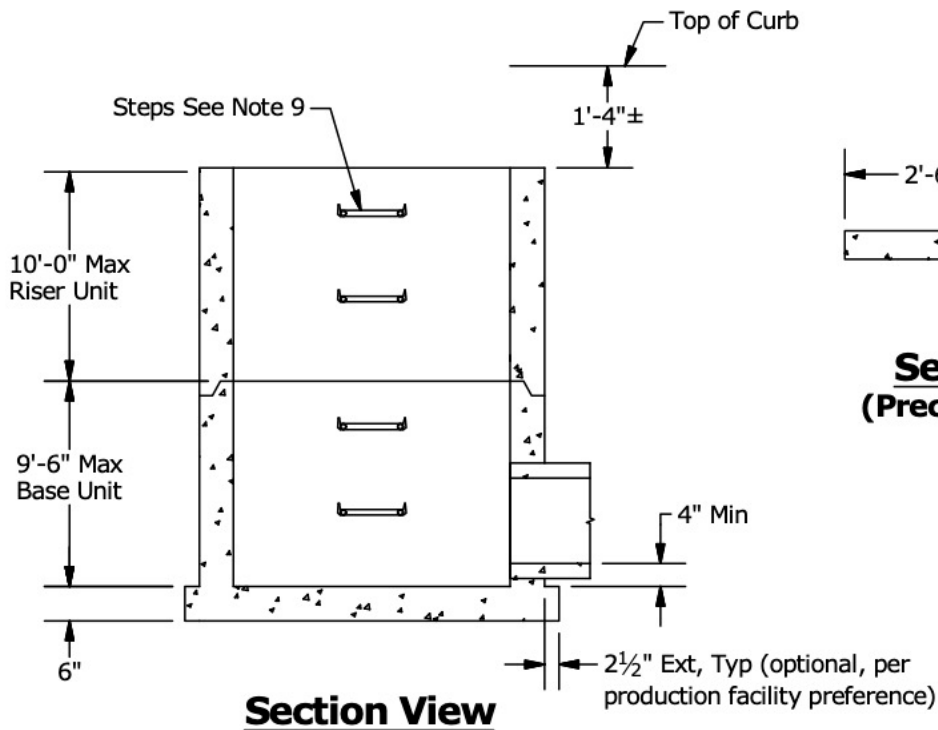
PRECAST STANDARD TYPE H COMBINATION INLET (MD 374.75)



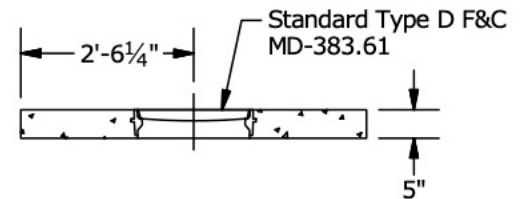
Plan View



**Plan View
(Precast Inlet Head)**



Section View



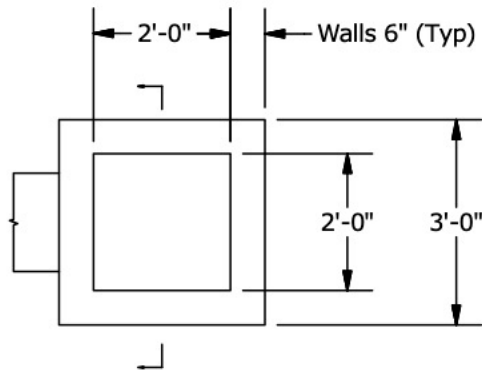
**Section View
(Precast Inlet Head)**

NOTES

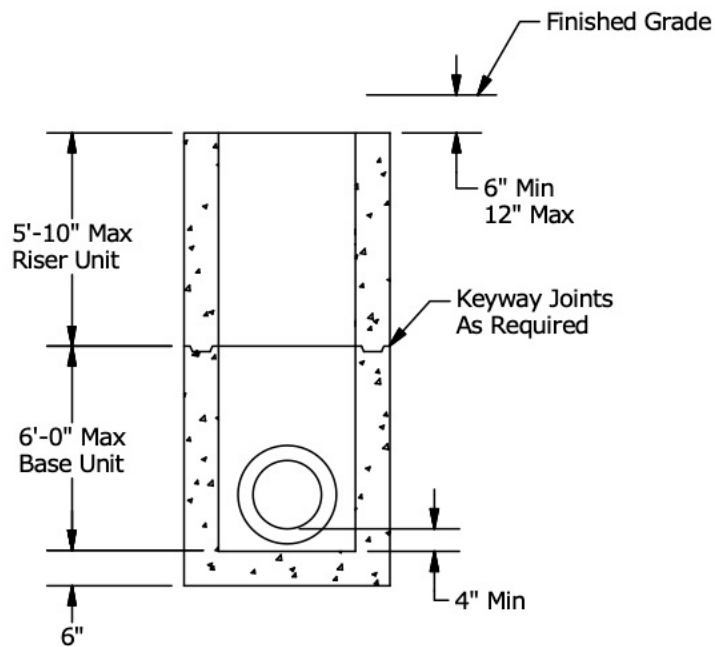
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to

8. construction plans.
9. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
10. Steps provided at 15" spacing, aligned vertically.
11. Invert shaping to be constructed in field by contractor.
12. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
13. Frame, Grate, and Beam not shown for clarity.

PRECAST ADA INLET SINGLE GRATE (MD 374.85)



Plan View

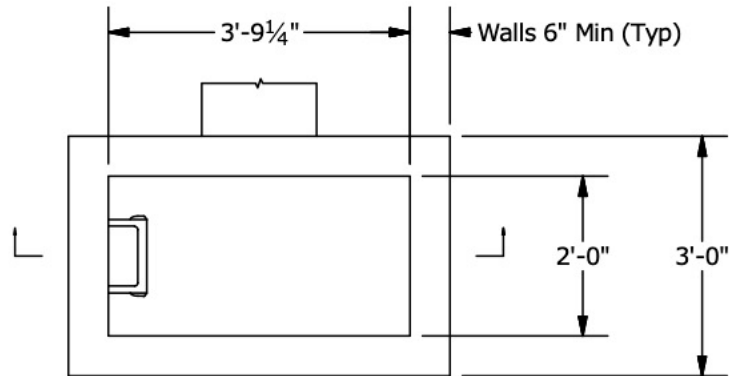


Section View

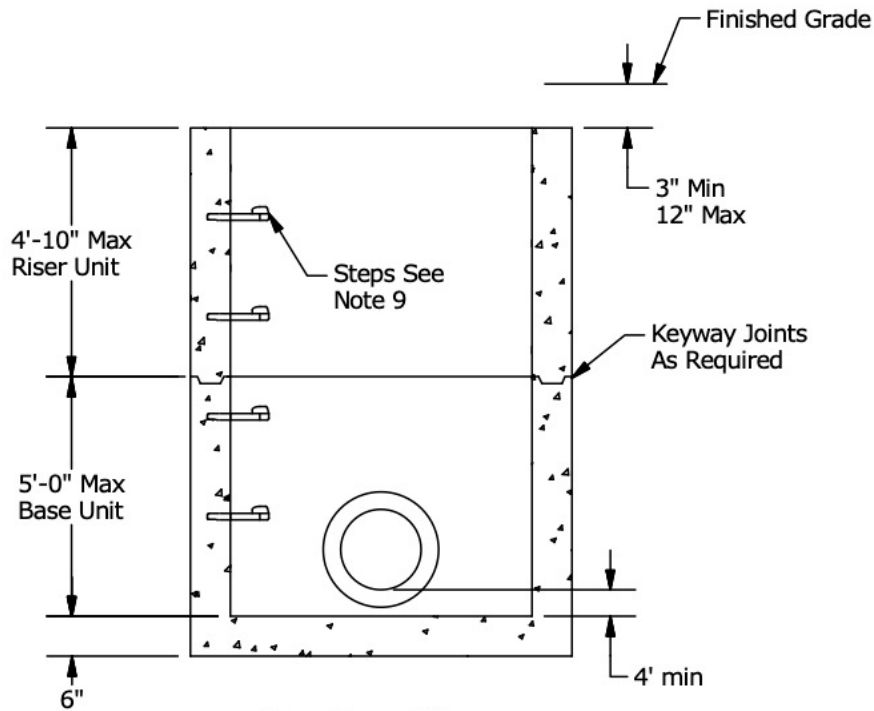
NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Invert shaping to be constructed in field by contractor.
10. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
11. Frame, Grate, and Beam not shown for clarity.

PRECAST ADA INLET DOUBLE GRATE TANDEM (MD 374.86)



Plan View

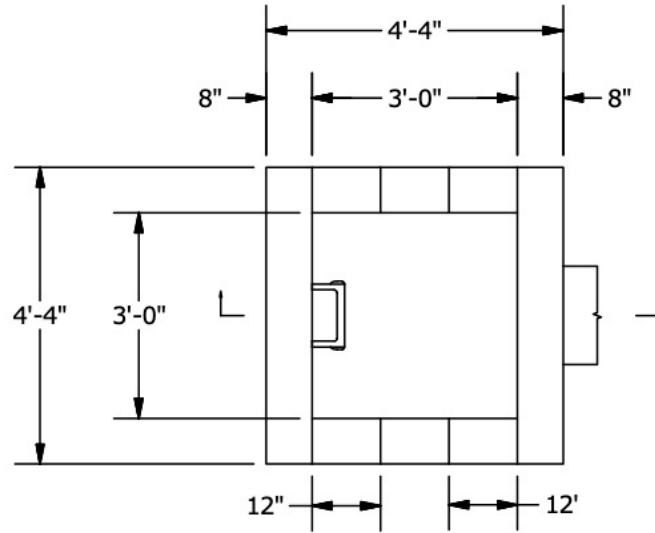


Section View

NOTES

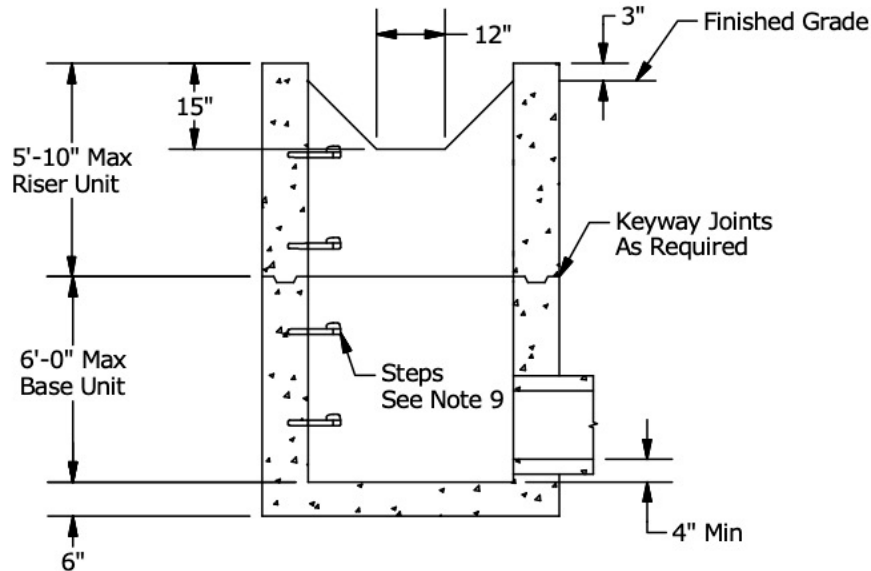
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Steps provided at 15" spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

PRECAST STANDARD TYPE K SINGLE OR DOUBLE INLET NON-TRAFFIC (MD 378.03)



Note: Single Opening same as Double except only one end is open.

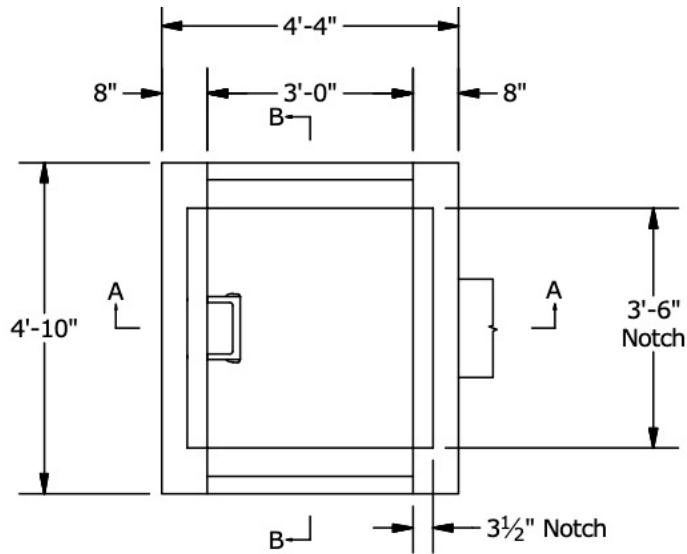
**Plan View
(Double Opening)**



**Section View
(Double Opening)**

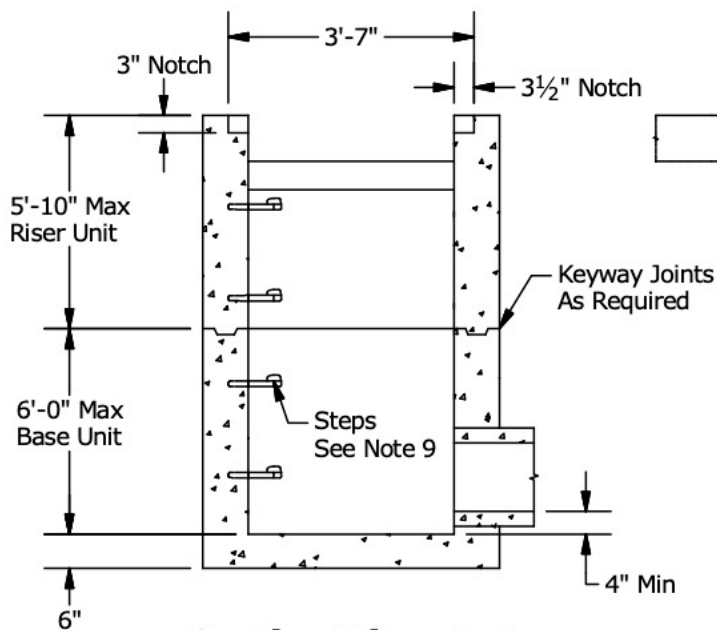
- NOTES**
1. This design is intended for precast structures produced by CP&P only.
 2. Concrete to be mix No.6 (4,000 psi) minimum.
 3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
 4. Reinforcing designed by CP&P.
 5. Lifting devices provided for handling at manufacturer's discretion.
 6. Grade and slope adjustments to be completed in the field by contractor.
 7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
 8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
 9. Steps provided at 15" spacing, aligned vertically.
 10. Invert shaping to be constructed in field by contractor.
 11. Frame, Grate, and Beam not shown for clarity.

PRECAST STANDARD TYPE K SINGLE OR DOUBLE INLET OPEN-END GRATE (MD 378.11)

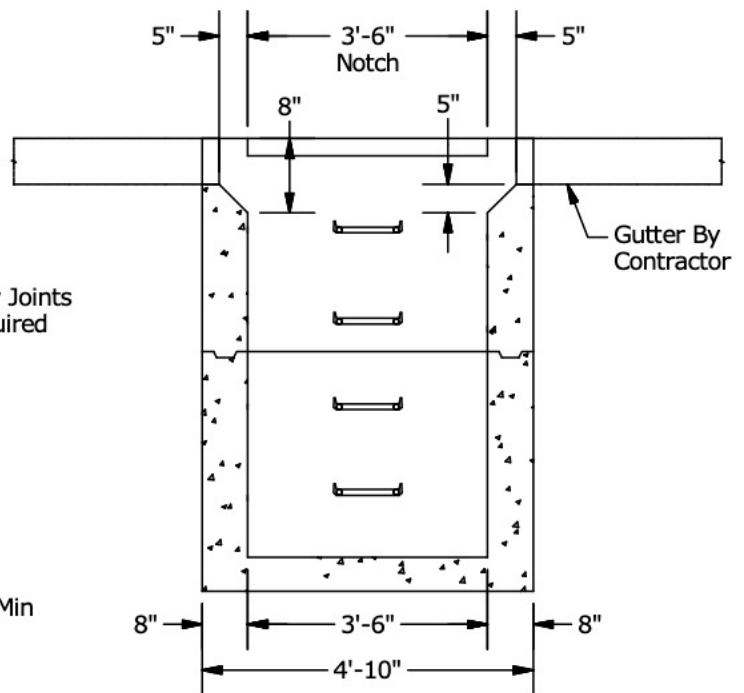


Note: Single Opening same as Double except only one end is open.

**Plan View
(Double Opening)**



**Section View A-A
(Double Opening)**



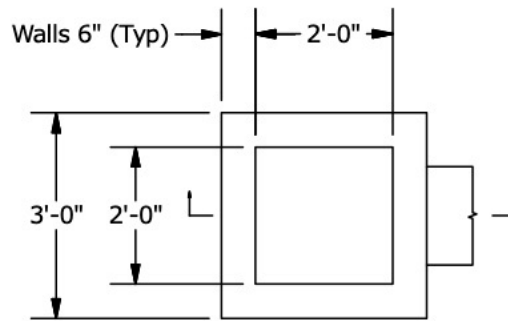
**Section View B-B
(Double Opening)**

NOTES

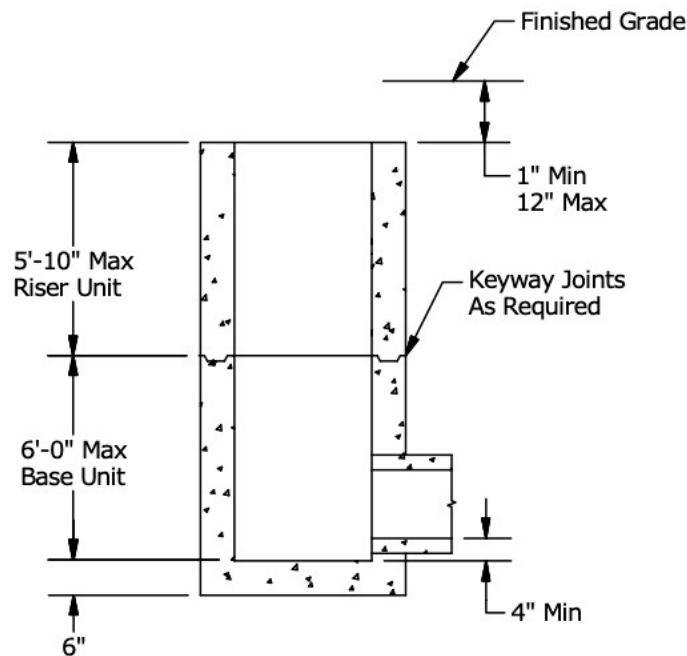
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to

8. construction plans.
9. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
10. Steps provided at 15' spacing, aligned vertically.
11. Invert shaping to be constructed in field by contractor.
12. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
13. Grate not shown for clarity.

PRECAST YARD INLET (MD 381.02)



Plan View



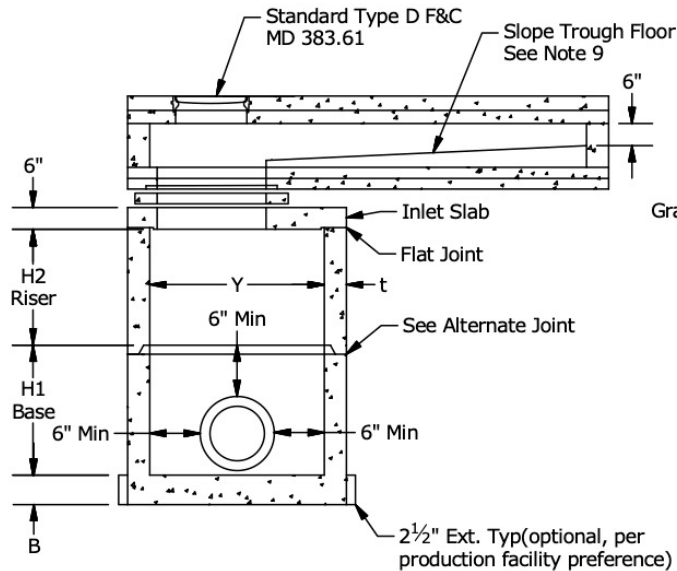
Section View

NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
9. Invert shaping to be constructed in field by contractor.
10. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
11. Frame and Grate not shown for clarity.

Technical drawing showing the side and top views of a gutter installation. The side view (top) shows a gutter with a width of 1'-11" and a depth of 6". The top view (bottom) shows a gutter with a width of 1'-8" and a depth of 1'-4". The gutter is supported by a 2'-6" Opg (Opening) and a T (Trough Opg). The gutter is secured with a Gutter Tie (See CP&P MD 374.64) and an Angle Iron. The overall width of the gutter is 3'-0" and the overall depth is 3'-2". The gutter is installed on a roof with a slope of 1/4" per foot.

Keyway (Alternate Joint)



Inlet Type	T	L
COG-5	5' - 0"	6' - 0"
COG-10	10' - 0"	11' - 0"
COG-15	15' - 0"	16' - 0"
COG-20	20' - 0"	21' - 0"

8. construction plans.
9. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
10. Steps provided at 15" spacing, aligned vertically.
11. Invert shaping to be constructed in field by contractor.
12. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
13. Frame, Grate, and Beam not shown for clarity.

PRECAST SQUARE & RECTANGULAR COG INLETS (5', 10', 15' & 20') (MD 374.51-01)

Pipe Size Max	Precast Square and Rectangular COG / COS Inlet Dimensions							
	B	H1 Base	H2 Riser	t Min	W	Y	Min Distance (ft) Top of Curb to Pipe Invert	Max Depth
12"	6"	2' to 6'-0" Max	1' to 5'-10" Max	6"	48"	48"	4.34	30'
24"	6"	3' to 6'-0" Max	1' to 5'-10" Max	6"	48"	48"	4.61-5.42	30'
33"	6"	4' to 6'-0" Max	1' to 5'-10" Max	6"	48"	48"	5.69-6.23	30'
36"	6"	5' to 6'-0" Max	1' to 5'-10" Max	6"	48"	48"	6.50	30'

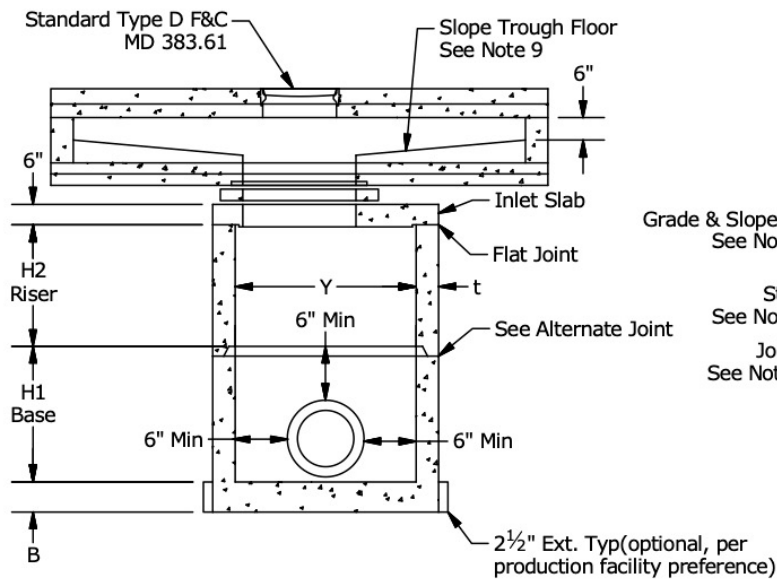
NOTES

- This design is intended for precast structures produced by CP&P only.
- Concrete to be mix No.6 (4,500 psi) minimum.
- Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
- Reinforcing designed by CP&P.
- Grade and slope adjustments to be completed in the field by contractor.
- Channel constructed in the field.
- Joints per manufacturer's design, sealed in field by contractor.
- Manhole steps provided at 15" spacing, aligned vertically.
- Sloped trough floor to be constructed in the field and used only when road grade is 1.5% or less.
- Precast base unit walls may taper per manufacturer's design.
- From curb inlet line, inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
- Troughs with T=6'-0" may be used for COG-5 & COS-5 Inlets. Troughs with T=16' may be used for COG-15 & COS-15 Inlets.

Technical drawing showing the side and front elevations of a gutter installation. The drawing includes the following dimensions and labels:

- Side Elevation (Top):**
 - Horizontal dimensions: t , Y , t .
 - Vertical dimensions: $6''$, $1'-11''$, $L/2$.
- Front Elevation (Bottom):**
 - Horizontal dimensions: $6''$, T (Trough Opg), L .
 - Vertical dimensions: $1'-8''$ Opg, $2'-6''$ Opg, $1'-8''$, $3'-0''$, $3'-2''$, $1'-4'$, $6''$.
- Labels:**
 - Angle Iron**: Points to the horizontal support member.
 - Gutter Tie**: Points to the vertical support member.
 - See CP&P MD 374.64**: Reference to the specification section.

Keyway (Alternate Joint)



Gutter By Contractor

See CP&P MD 374.64

Adjustment Collar

Adj te 5

Steps te 8

Intents te 7

t

W

Channel See Note 6

4" Min

Inlet Type	T	L
COG-5	5' - 0"	6' - 0"
COG-10	10' - 0"	11' - 0"
COG-15	15' - 0"	16' - 0"
COG-20	20' - 0"	21' - 0"

PRECAST SQUARE & RECTANGULAR COS INLETS (5', 10', 15' & 20') (MD 374.61-01)

Pipe Size Max	Precast Square and Rectangular COG / COS Inlet Dimensions							
	B	H1 Base	H2 Riser	t Min	W	Y	Min Distance (ft) Top of Curb to Pipe Invert	Max Depth
12"	6"	2' to 6'-0" Max	1' to 5'-10" Max	6"	48"	48"	4.34	30'
24"	6"	3' to 6'-0" Max	1' to 5'-10" Max	6"	48"	48"	4.61-5.42	30'
33"	6"	4' to 6'-0" Max	1' to 5'-10" Max	6"	48"	48"	5.69-6.23	30'
36"	6"	5' to 6'-0" Max	1' to 5'-10" Max	6"	48"	48"	6.50	30'

NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,500 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Grade and slope adjustments to be completed in the field by contractor.
6. Channel constructed in the field.
7. Joints per manufacturer's design, sealed in field by contractor.
8. Manhole steps provided at 15" spacing, aligned vertically.
9. Sloped trough floor to be constructed in the field and used only when road grade is 1.5% or less.
10. Precast base unit walls may taper per manufacturer's design.
11. From curb inlet line, inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Troughs with T=6'-0" may be used for COG-5 & COS-5 Inlets. Troughs with T=16' may be used for COG-15 & COS-15

Plan View

The diagram shows a top-down view of a circular structure, likely a manhole or access point, with various dimensions and labels:

- Dimensions:**
 - Overall width: 6"
 - Overall height: 1'-8"
 - Internal width: 2'-6" Opg
 - Internal height: 1'-8" Opg
 - Distance from left edge to center: 1'-4"
 - Distance from right edge to center: 3'-0"
 - Distance from right edge to center: 3'-2"
 - Distance from right edge to center: 6"
 - Overall length: L
- Labels:**
 - Gutter Tie** (See CP&P MD 374.64)
 - Angle Iron**
 - T (Trough Opg)**



Inlet Type	T	L
COG-5	5' - 0"	6' - 0"
COG-10	10' - 0"	11' - 0"
COG-15	15' - 0"	16' - 0"
COG-20	20' - 0"	21' - 0"

© Copyright 2026 CMC

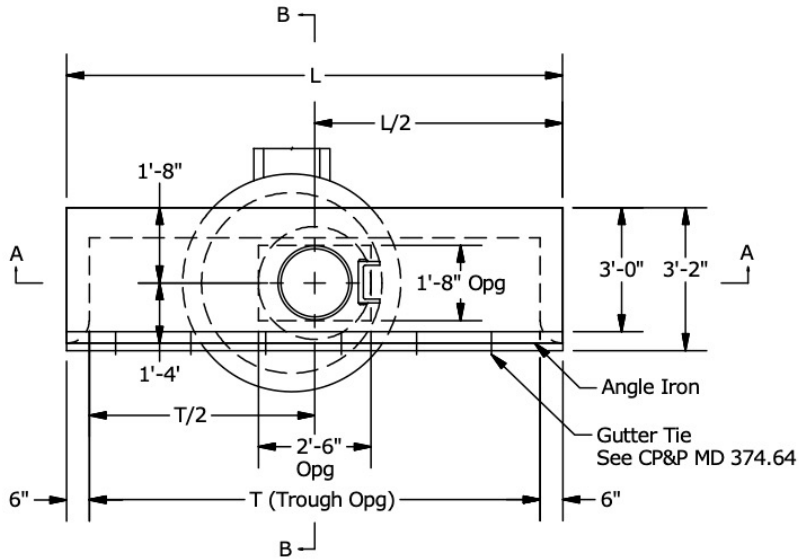
PRECAST CIRCULAR COG INLETS (5', 10', 15' & 20') (MD 374.62-01)

Pipe Size Max	Precast Circular COG / COS Inlet Dimensions							
	B	H1 Base Max	H2 Riser	Inlet SlabG	D	W	Min Distance (ft) Top of Curb to Pipe Invert	Max Depth
12"	6"	4'	1' to 4'	Not Req	36"	4"	3.84	20'
24"	8"	8'	1' to 8'	6"	48"	5"	4.58-5.43	30'
33"	8"	8'	1' to 8'	8"	60"	6"	5.87-6.41	30'
36"	8"	8'	1' to 8'	8"	60"	6"	6.69	30'
42"	8"	8'	1' to 8'	8"	72"	7"	7.23	25'
48"	8"	8'	1' to 8'	8"	72"	7"	7.77	25'
54"	8"	7'-8"	2'-0" to 8'	8"	84"	8"	8.31	20'
60"	8"	7'-8"	2'-0" to 8'	8"	84"	8"	8.85	20'
72"	8"	7'-8"	2'-8" to 8'	8"	96"	9"	9.31-9.94	20'
84"	10"	5'-10"	2'-8" to 6'	8"	120"	10"	10.42-10.96	20'

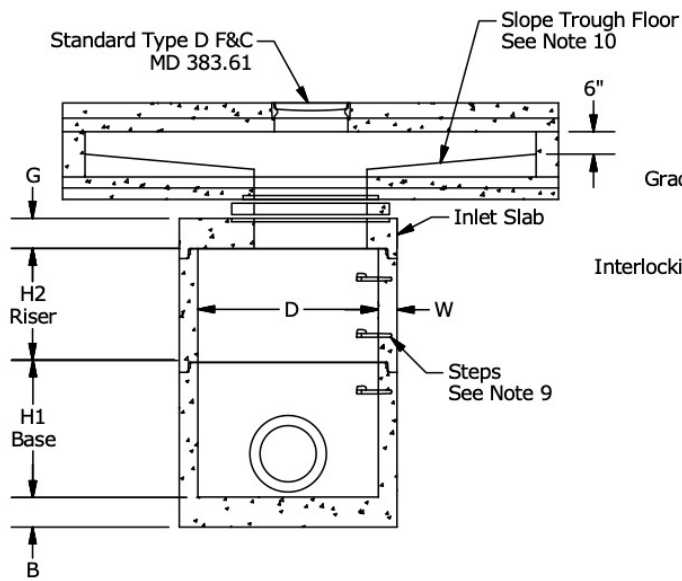
NOTES

- This design is intended for precast structures produced by CP&P only.
- Concrete to be mix No.6 (4,500 psi) minimum.
- Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
- Circular sections meet ASTM C478 / AASHTO M199.
- Reinforcing designed by CP&P.
- Grade and slope adjustments to be completed in the field by contractor.
- Channel constructed in the field.
- Joints per manufacturer's design, sealed in field by contractor.
- Manhole steps provided at 16" spacing, aligned vertically.
- Sloped trough floor to be constructed in the field and used only when road grade is 1.5% or less.
- Inlet slab not required for 36" Dia. Inlet. Trough sits directly on top of the circular unit. Contractor to mortar area between the outside walls of the trough and the unit wall in the field.
- Precast base unit walls may taper per manufacturer's design.
- From curb inlet line, inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
- 14) Troughs with T=6'-0" may be used for COG-5 & COS-5 Inlets. Troughs with T=16' may be used for COG-15 & COS-15 Inlets.

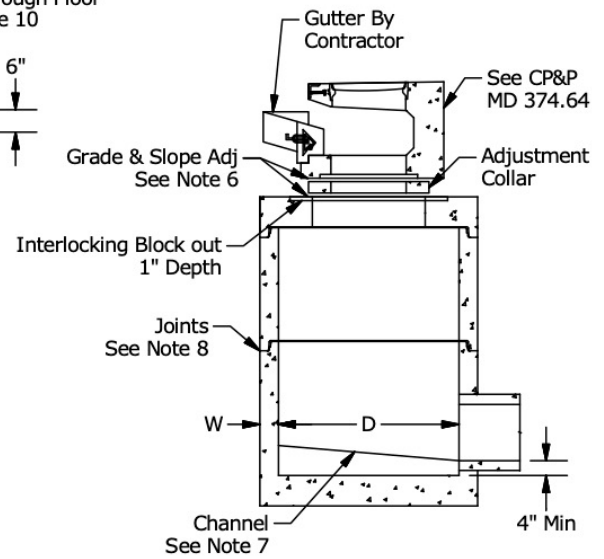
PRECAST CIRCULAR COS INLETS (5', 10', 15' & 20') (MD 374.63)



Plan View



Section View A-A



Section View B-B

Inlet Type	T	L
COG-5	5' - 0"	6' - 0"
COG-10	10' - 0"	11' - 0"
COG-15	15' - 0"	16' - 0"
COG-20	20' - 0"	21' - 0"

NOTES

1. For Components Notes and Dimensions (B, D, G, H1, H2, T, & W) See Drawing CP&P MD 374.63-01.

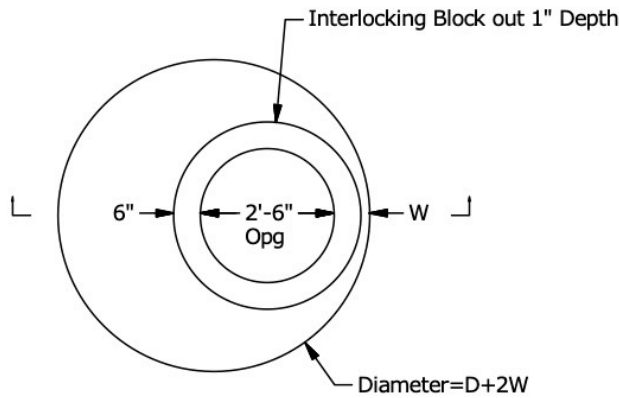
PRECAST CIRCULAR COS INLETS (5', 10', 15' & 20') (MD 374.63-01)

Pipe Size Max	Precast Circular COG / COS Inlet Dimensions							
	B	H1 Base Max	H2 Riser	Inlet SlabG	D	W	Min Distance (ft) Top of Curb to Pipe Invert	Max Depth
12"	6"	4'	1' to 4'	Not Req	36"	4"	3.84	20'
24"	8"	8'	1' to 8'	6"	48"	5"	4.58-5.43	30'
33"	8"	8'	1' to 8'	8"	60"	6"	5.87-6.41	30'
36"	8"	8'	1' to 8'	8"	60"	6"	6.69	30'
42"	8"	8'	1' to 8'	8"	72"	7"	7.23	25'
48"	8"	8'	1' to 8'	8"	72"	7"	7.77	25'
54"	8"	7'-8"	2'-0" to 8'	8"	84"	8"	8.31	20'
60"	8"	7'-8"	2'-0" to 8'	8"	84"	8"	8.85	20'
72"	8"	7'-8"	2'-8" to 8'	8"	96"	9"	9.31-9.94	20'
84"	10"	5'-10"	2'-8" to 6'	8"	120"	10"	10.42-10.96	20'

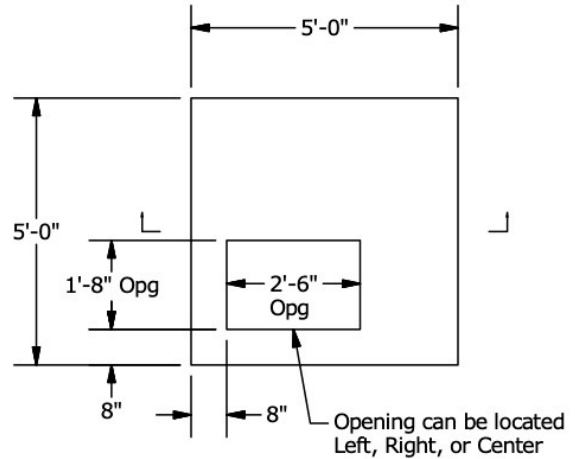
NOTES

- This design is intended for precast structures produced by CP&P only.
- Concrete to be mix No.6 (4,500 psi) minimum.
- Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
- Circular sections meet ASTM C478 / AASHTO M199.
- Reinforcing designed by CP&P.
- Grade and slope adjustments to be completed in the field by contractor.
- Channel constructed in the field.
- Joints per manufacturer's design, sealed in field by contractor.
- Manhole steps provided at 16" spacing, aligned vertically.
- Sloped trough floor to be constructed in the field and used only when road grade is 1.5% or less.
- Inlet slab not required for 36" Dia. Inlet. Trough sits directly on top of the circular unit. Contractor to mortar area between the outside walls of the trough and the unit wall in the field.
- Precast base unit walls may taper per manufacturer's design.
- From curb inlet line, inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
- Troughs with T=6'-0" may be used for COG-5 & COS-5 Inlets. Troughs with T=16' may be used for COG-15 & COS-15 Inlets.

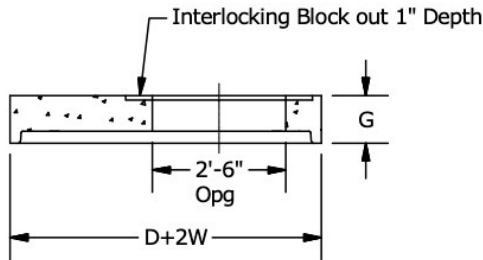
PRECAST INLET SLABS FOR COG & COS (MD 374.55-01)



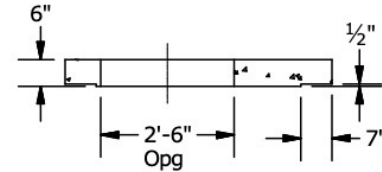
Plan View
Inlet Slab for Circular
COG & COS Inlets



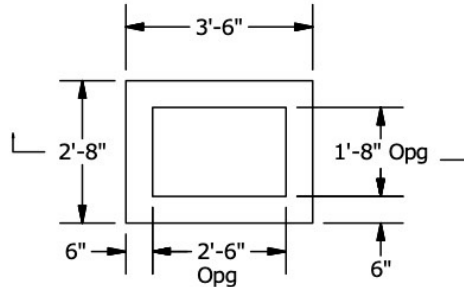
Plan View
Inlet Slab for Square & Rectangular
COG & COS Inlets



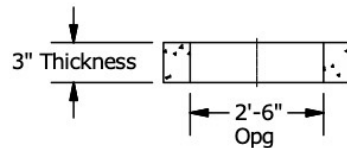
Section View



Section View



Plan View
Adjustment Collar for Square, Rectangular and Circular
COG & COS Inlets



Section View

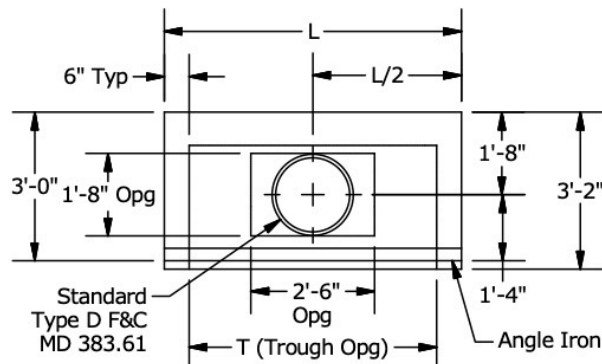
Circular Inlet Slab Dimensions			
D (in)	As in ² /ft	G (in)	W
36"	N/A	N/A	4"
48"	.58	6"	5"
60"	.40	8"	6"
72"	.46	8"	7"
84"	.48	8"	8"
96"	.53	8"	9"
120"	.60	8"	10"

NOTES

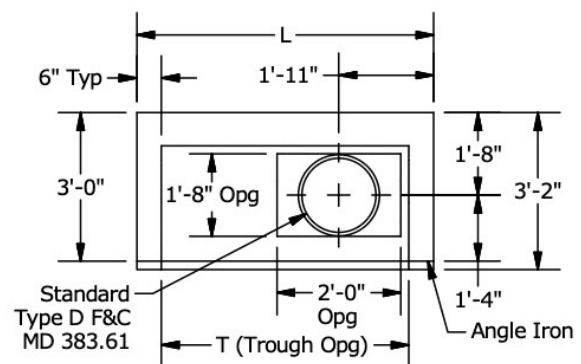
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to

8. construction plans.
9. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
10. Steps provided at 15' spacing, aligned vertically.
11. Invert shaping to be constructed in field by contractor.
12. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
13. Frame, Grate, and Beam not shown for clarity.

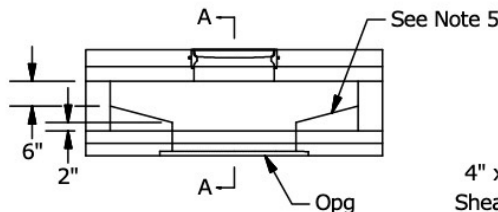
PRECAST TROUGHS FOR COG & COS INLETS (MD 374.64)



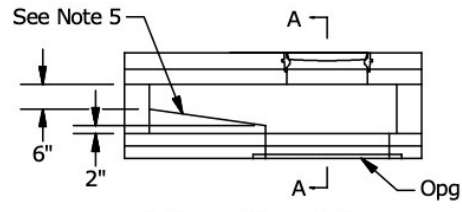
Plan View COS



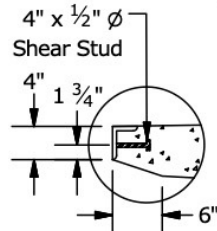
Plan View COG



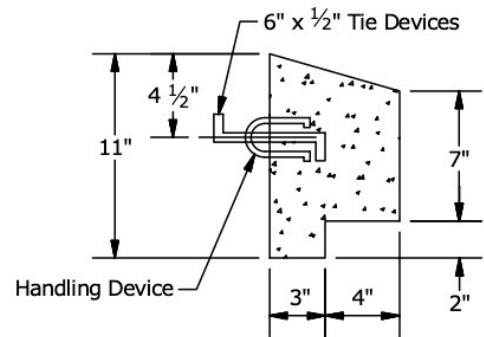
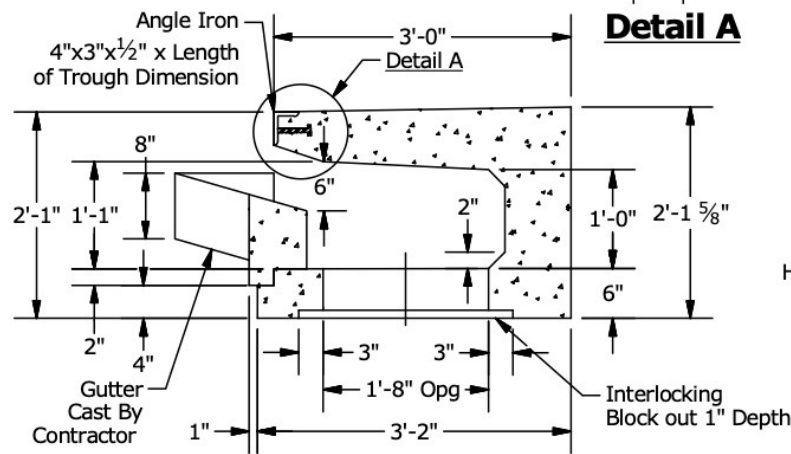
**Elevation View
Alternate COS Trough
(Trough Front Not Shown)**



**Elevation View
Alternate COG Trough
(Trough Front Not Shown)**



Detail A



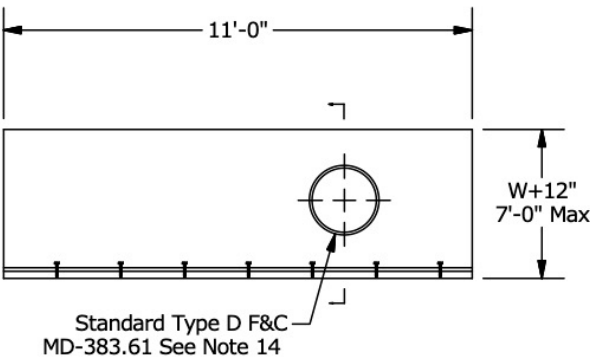
**Precast Trough Front
(Typical COG & COS
Length=T)**

Inlet Type	T	L
COG-5	5' - 0"	6' - 0"
COG-10	10' - 0"	11' - 0"
COG-15	15' - 0"	16' - 0"
COG-20	20' - 0"	21' - 0"
COS-5	5' - 0"	6' - 0"
COS-10	10' - 0"	11' - 0"
COS-15	15' - 0"	16' - 0"
COS-20	20' - 0"	21' - 0"

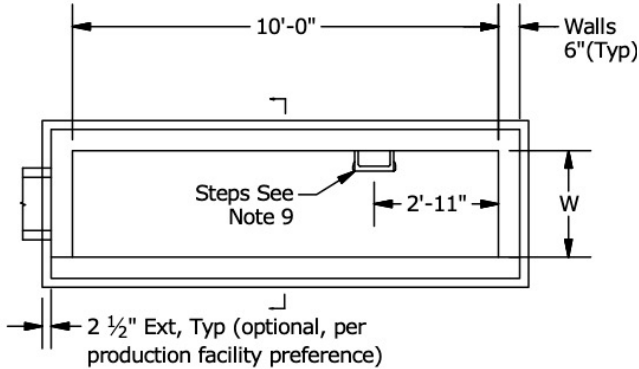
- NOTES**
- This design is intended for precast structures produced by CP&P only.
 - Concrete to be mix No.6 (4,000 psi) minimum.
 - Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
 - Reinforcing designed by CP&P.
 - Lifting devices provided for handling at manufacturer's discretion.
 - Grade and slope adjustments to be completed in the field by contractor.
 - Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
 - Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
 - Steps provided at 15' spacing, aligned vertically.
 - Invert shaping to be constructed in field by contractor.
 - From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
 - Frame, Grate, and Beam not shown for clarity.

© Copyright 2026 CMC

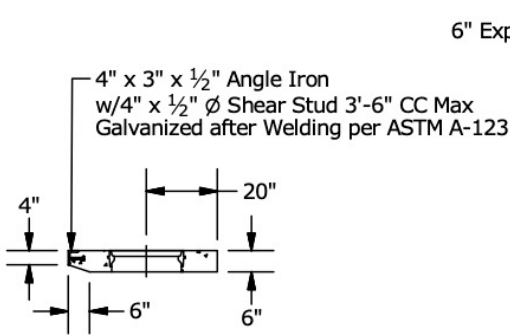
PRECAST 10'-0" COG & COS INLET BOX (W=2'-6" THRU 6'-0"-H=17'-" MAX)& TOP SLAB (MD 374.66 & 374.67)



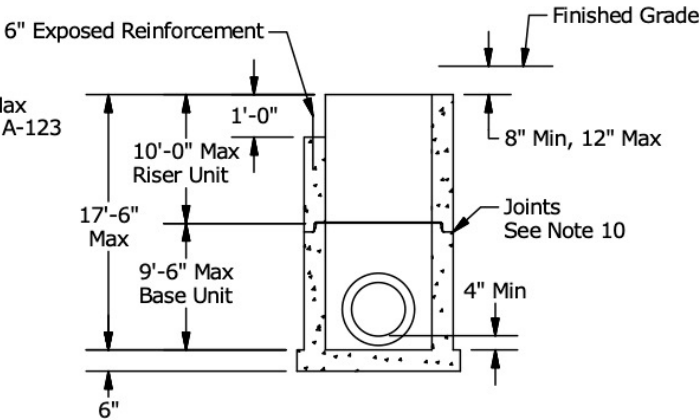
Plan View
(Top Slab)



Plan View
(Inlet Box)



Section View
(Top Slab)



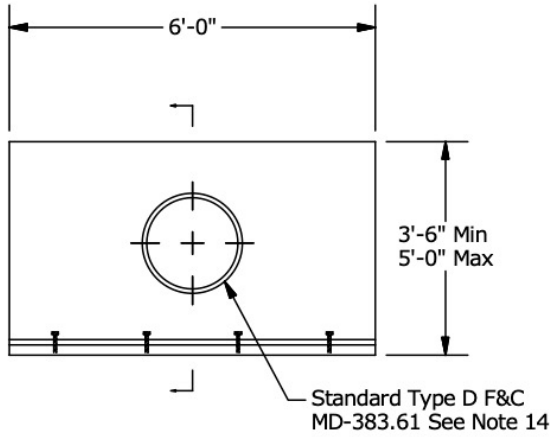
Section View
(Inlet Box)

Box Width
W
2'-6"
3'-0"
3'-6"
4'-0"
4'-6"
5'-0"
5'-6"
6'-0"

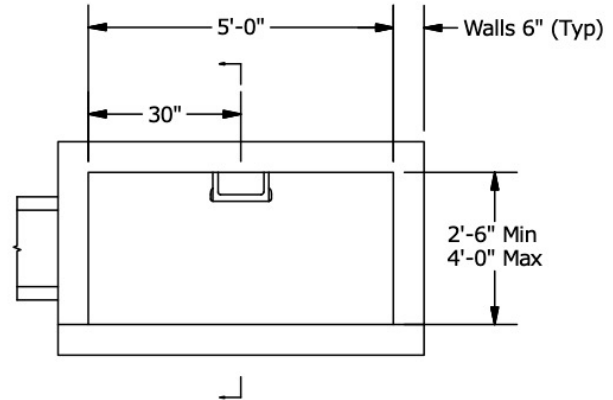
- NOTES**
- This design is intended for precast structures produced by CP&P only.
 - Concrete to be mix No.6 (4,000 psi) minimum.
 - Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
 - Reinforcing designed by CP&P.
 - Lifting devices provided for handling at manufacturer's discretion.
 - Grade and slope adjustments to be completed in the field by contractor.
 - Pipe openings to be provided as required. For size, location, and invert elevations refer to

- construction plans.
- Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
- Steps provided at 15' spacing, aligned vertically.
- Invert shaping to be constructed in field by contractor.
- From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
- Frame, Grate, and Beam not shown for clarity.

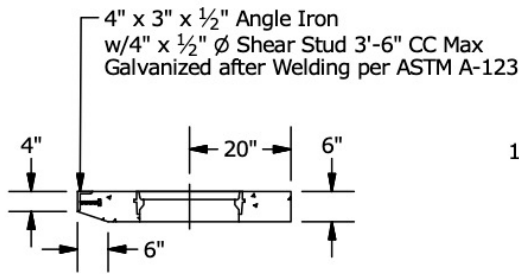
**PRECAST 5'-0" COG & COS INLET BOX (W=2'-6" THRU 4'-0"-H=12' MAX)& TOP SLAB
(MD 374.66 & 374.67)**



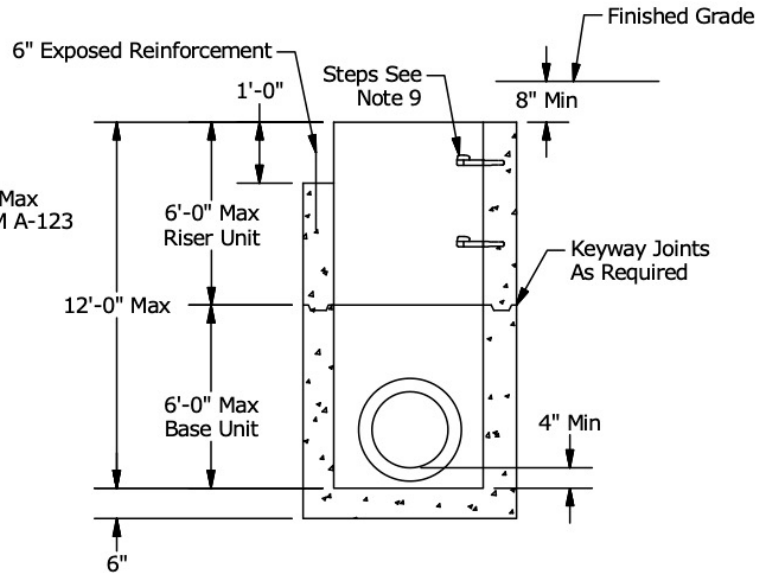
**Plan View
(Top Slab)**



**Plan View
(Inlet Box)**



**Section View
(Top Slab)**



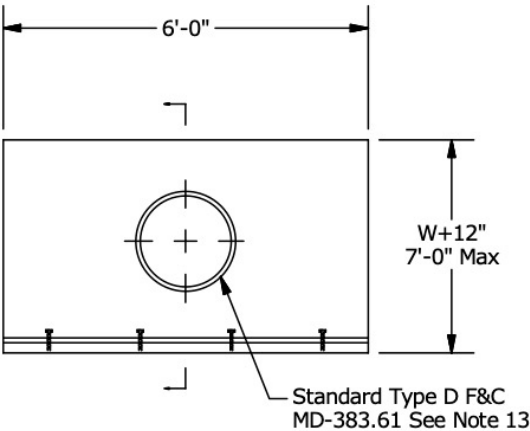
**Section View
(Inlet Box)**

NOTES

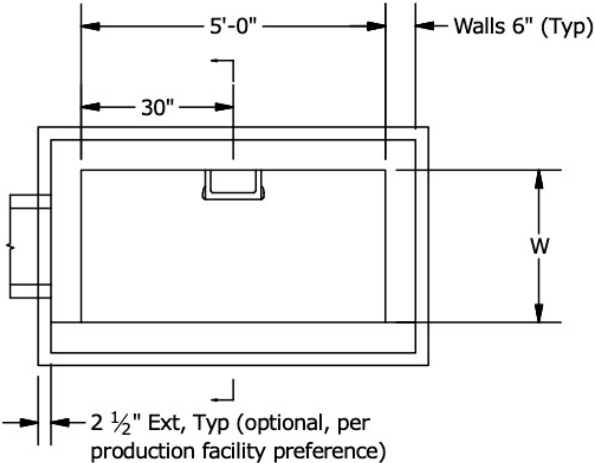
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Lifting devices provided for handling at manufacturer's discretion.
6. Grade and slope adjustments to be completed in the field by contractor.
7. Pipe openings to be provided as required. For size, location, and invert elevations refer to

- construction plans.
8. Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
9. Steps provided at 15' spacing, aligned vertically.
10. Invert shaping to be constructed in field by contractor.
11. From curb line, Inlet designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
12. Frame, Grate, and Beam not shown for clarity.

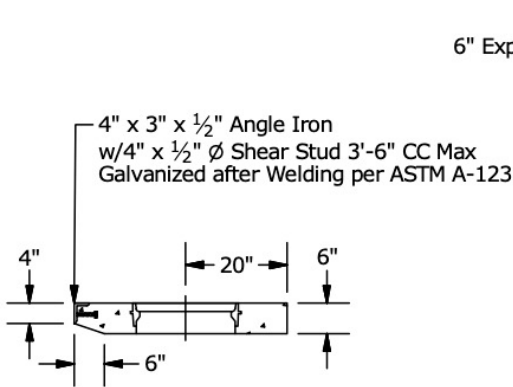
PRECAST 5'-0" COG & COS INLET BOX (W=2'-6" THRU 6'-0"-H=17'-6" MAX)& TOP SLAB (MD 374.66 & 374.67)



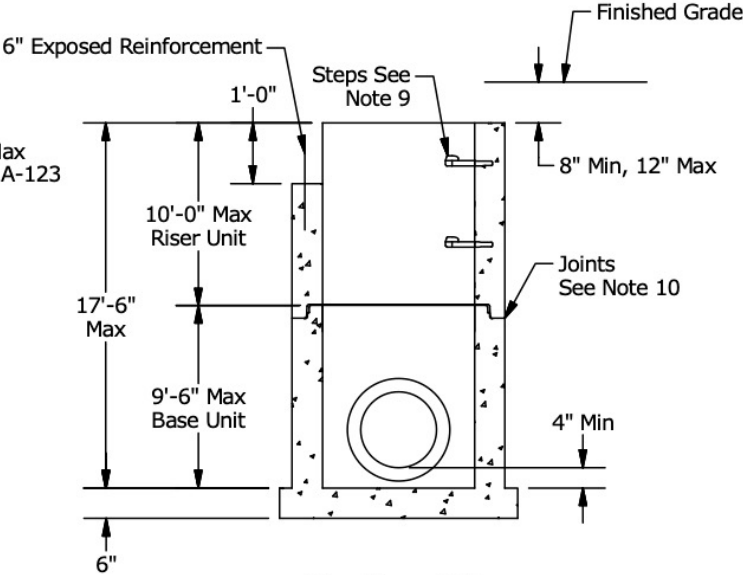
Plan View
(Top Slab)



Plan View
(Inlet Box)



Section View
(Top Slab)



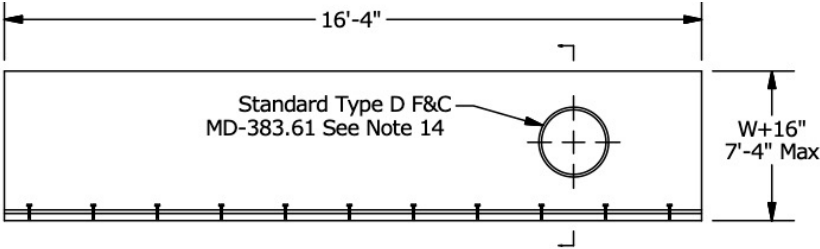
Section View
(Inlet Box)

Box Width
W
2'-6"
3'-0"
3'-6"
4'-0"
4'-6"
5'-0"
6'-0"

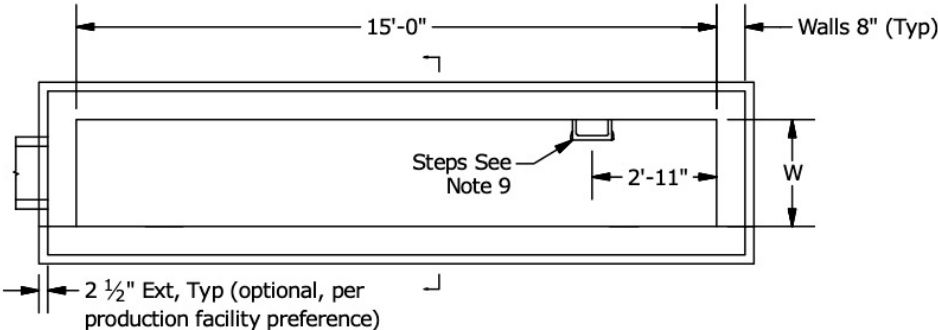
- NOTES**

 - This design is intended for precast structures produced by CP&P only.
 - Concrete to be mix No.6 (4,000 psi) minimum.
 - Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
 - Reinforcing designed by CP&P.
 - Lifting devices provided for handling at manufacturer's discretion.
 - Grade and slope adjustments to be completed in the field by contractor.
 - Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
 - Knockouts or holes for underdrain connections to be provided and located as directed on
- constructions plans.
 - Steps provided at 15" spacing, aligned vertically.
 - Joints provided when risers are required. All joints to be grouted with non-shrink grout inside and outside.
 - Invert channel to be constructed in field by contractor.
 - Structure and Top Slab designed for occasional HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
 - Frame and cover to be located above steps/ ladder rungs in inlet below.

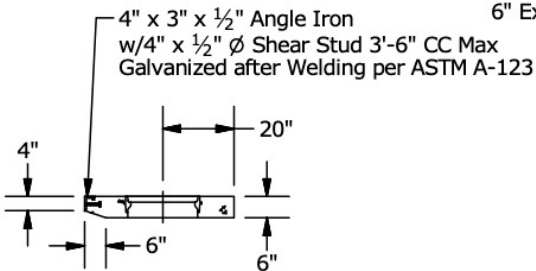
PRECAST 15'-0" COG & COS INLET BOX (W=2'-6" THRU 6'-0"-H=16'-0" MAX)& TOP SLAB (MD 374.66 & 374.67)



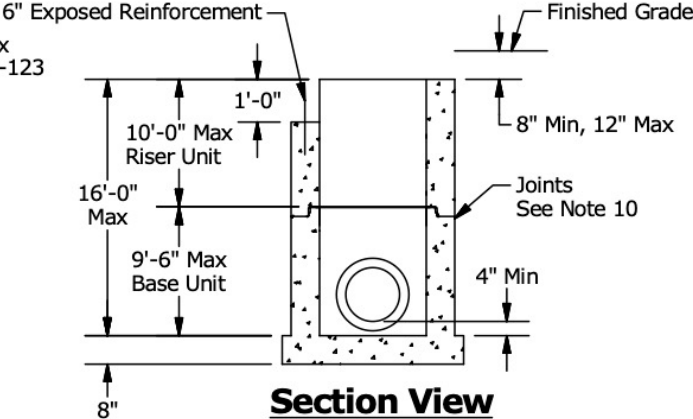
**Plan View
(Top Slab)**



**Plan View
(Inlet Box)**



**Section View
(Top Slab)**

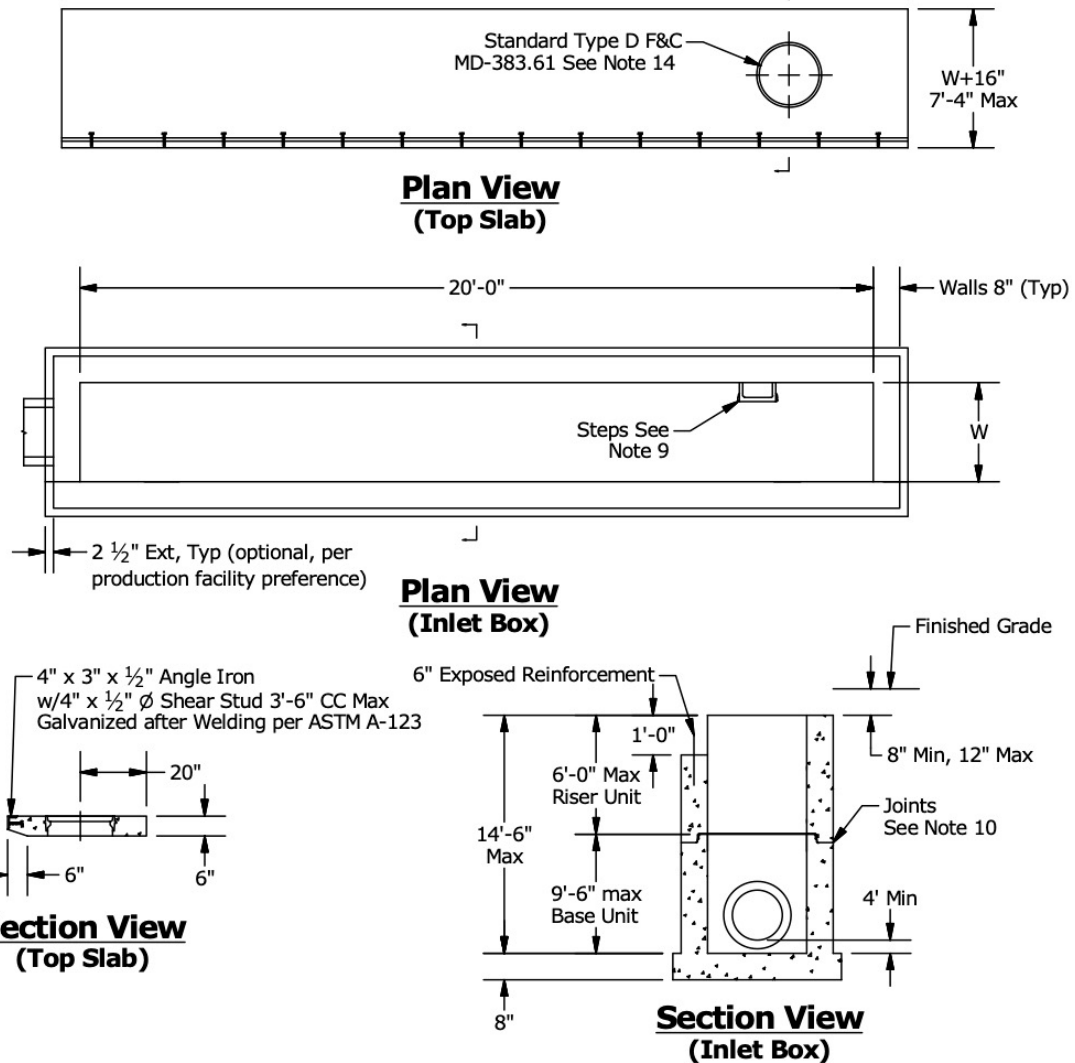


**Section View
(Inlet Box)**

Box Width
W
2'-6"
3'-0"
3'-6"
4'-0"
4'-6"
5'-0"
5'-6"
6'-0"

- NOTES**
1. This design is intended for precast structures produced by CP&P only.
 2. Concrete to be mix No.6 (4,000 psi) minimum.
 3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
 4. Reinforcing designed by CP&P.
 5. Lifting devices provided for handling at manufacturer's discretion.
 6. Grade and slope adjustments to be completed in the field by contractor.
 7. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
 8. 8) Knockouts or holes for underdrain connections to be provided and located as directed on constructions plans.
 9. Steps provided at 15' spacing, aligned vertically.
 10. Joints provided when risers are required. All joints to be grouted with non-shrink grout inside and outside.
 11. Invert channel to be constructed in field by contractor.
 12. Pipe supports and gutter to be supplied and installed by others. Minimum of (2) support at 5' max spacing required.
 13. Structure and Top Slab designed for occasional HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
 14. Frame and cover to be located above steps/ ladder rungs in inlet below.

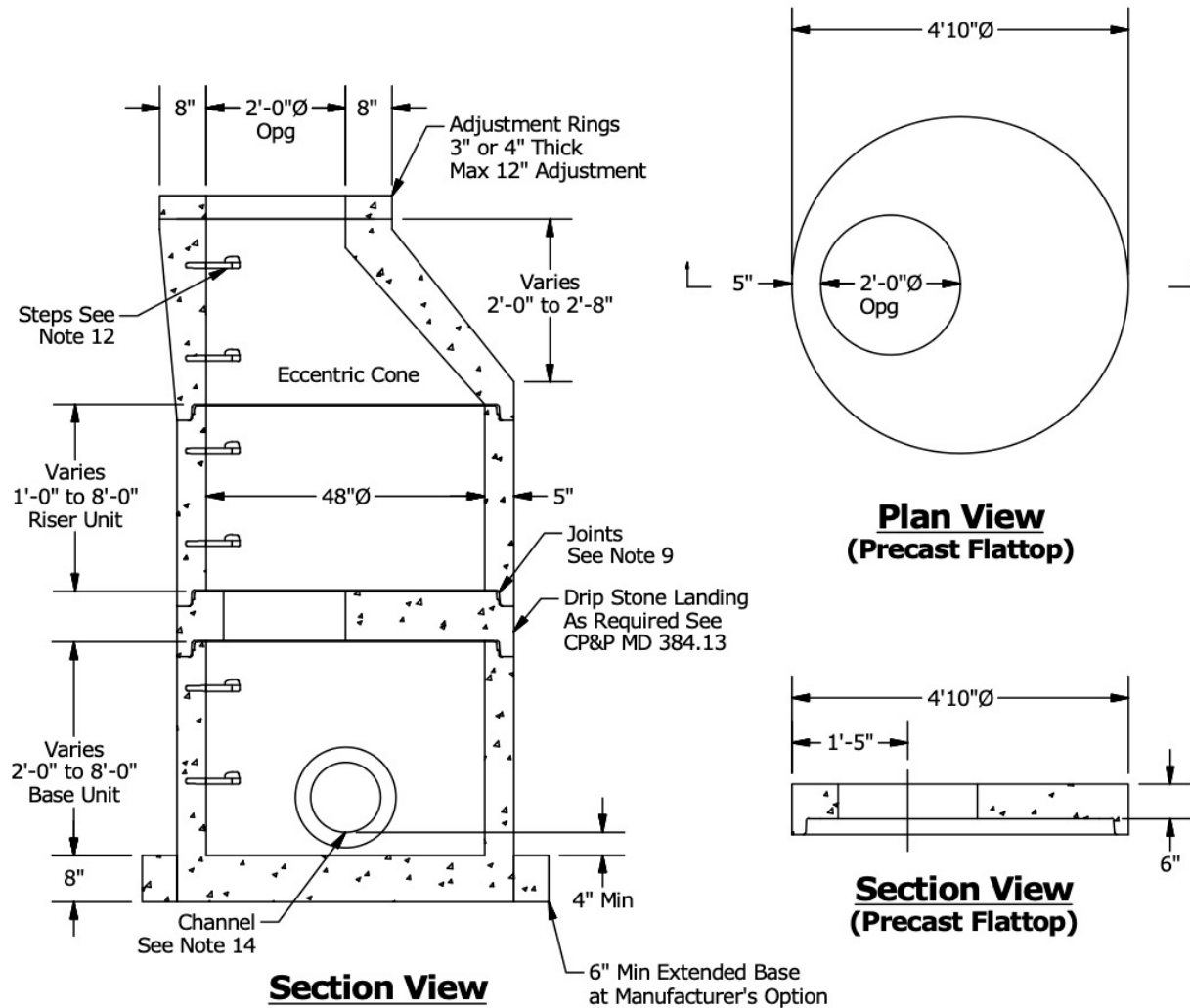
PRECAST 20'-0" COG & COS INLET BOX (W=2'-6" THRU 6'-0"-H=14'-6" MAX)& TOP SLAB (MD 374.66 & 374.67)



Box Width
W
2'-6"
3'-0"
3'-6"
4'-0"
4'-6"
5'-0"
5'-6"
6'-0"

- NOTES**
- This design is intended for precast structures produced by CP&P only.
 - Concrete to be mix No.6 (4,000 psi) minimum.
 - Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
 - Reinforcing designed by CP&P.
 - Lifting devices provided for handling at manufacturer's discretion.
 - Grade and slope adjustments to be completed in the field by contractor.
 - Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
 - Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
 - Steps provided at 15" spacing, aligned vertically.
 - Joints provided when risers are required. All joints to be grouted with non-shrink grout inside and outside.
 - Invert channel to be constructed in field by contractor.
 - Pipe supports and gutter to be supplied and installed by others. Minimum of (3) support at 5' max spacing required.
 - Structure and Top Slab designed for occasional HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
 - Frame and cover to be located above steps/ ladder rungs in inlet below.

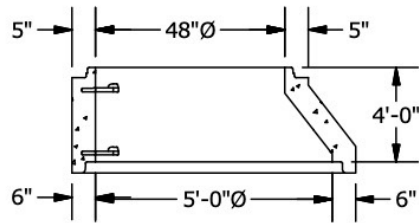
PRECAST 48"Ø MANHOLE FOR UP TO 24" PIPES (MD 384.01)



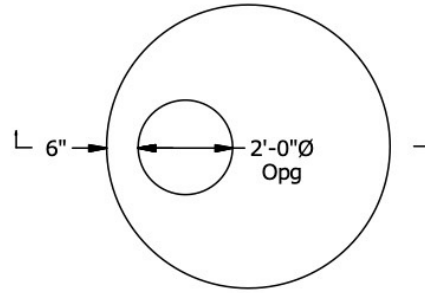
NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,500 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Equivalent WWR may be used for rebar shown.
6. Manhole sections meet ASTM C478 / AASHTO M199.
7. Lifting devices provided for handling at manufacturer's discretion.
8. Grade and slope adjustments to be completed in the field by contractor.
9. Joints per manufacturer's design, sealed in field by contractor.
10. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
11. Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
12. Manhole steps provided at 16" spacing, aligned vertically.
13. Structure designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
14. 14) Invert shaping to be constructed in field by contractor.

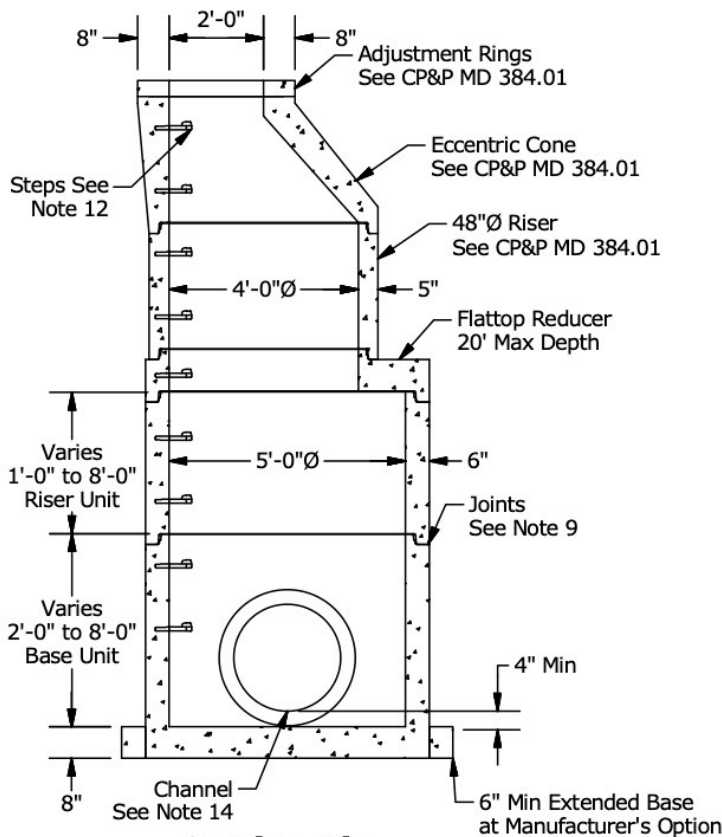
PRECAST 60"Ø MANHOLE FOR UP TO 36" PIPES (MD 384.03)



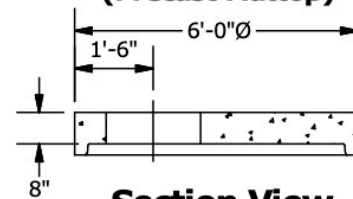
Section View
(Precast Eccentric Cone Reducer)



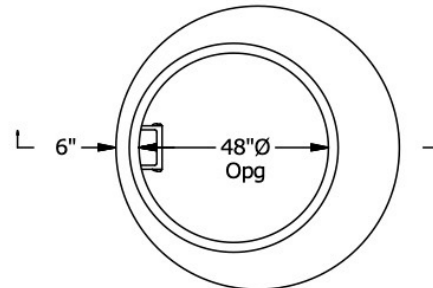
Plan View
(Precast Flattop)



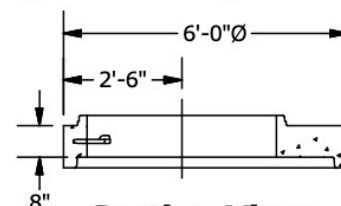
Section View



Section View
(Precast Flattop)



Plan View
(Precast Flattop Reducer)

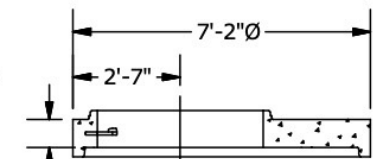
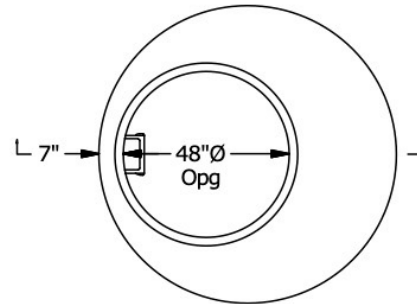
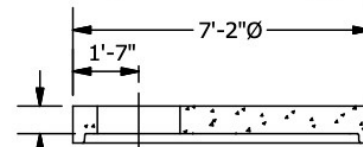
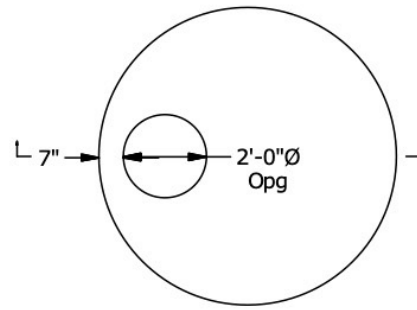
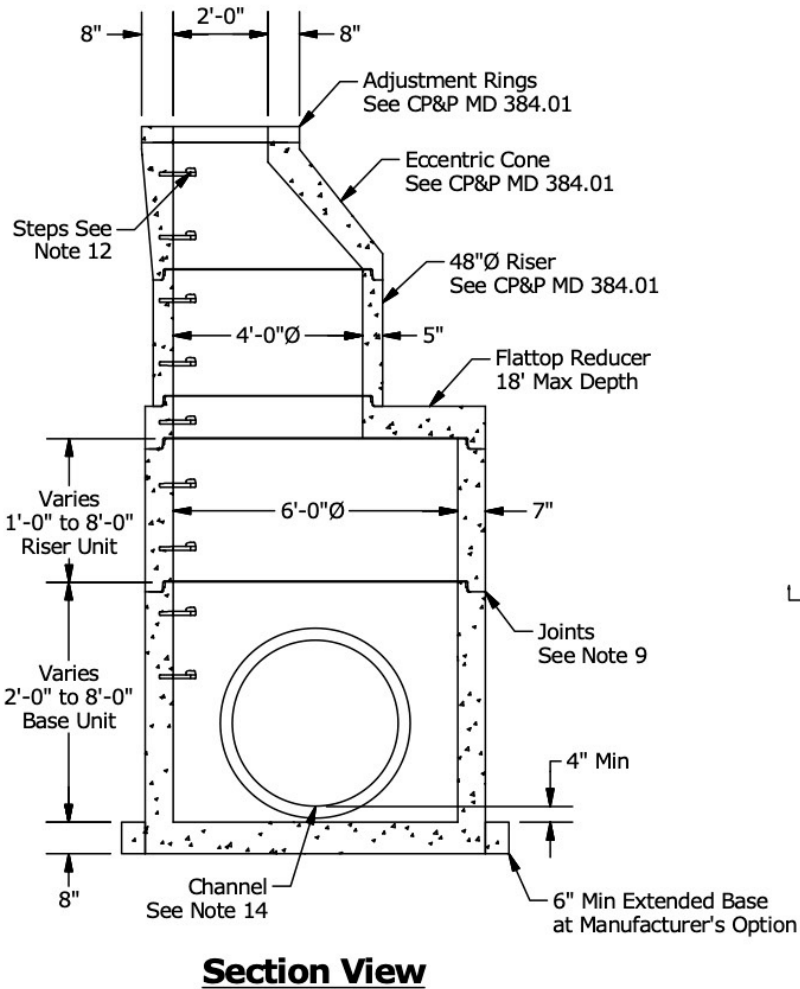


Section View
(Precast Flattop Reducer)

NOTES

- This design is intended for precast structures produced by CP&P only.
- Concrete to be mix No.6 (4,500 psi) minimum.
- Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
- Reinforcing designed by CP&P.
- Equivalent WWR may be used for rebar shown.
- Manhole sections meet ASTM C478 / AASHTO M199.
- Lifting devices provided for handling at manufacturer's discretion.
- Grade and slope adjustments to be completed in the field by contractor.
- Joints per manufacturer's design, sealed in field by contractor.
- Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
- Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
- Manhole steps provided at 16" spacing, aligned vertically.
- Structure designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
- Invert shaping to be constructed in field by contractor.

PRECAST 72"Ø MANHOLE FOR UP TO 48" PIPES (MD 384.05)

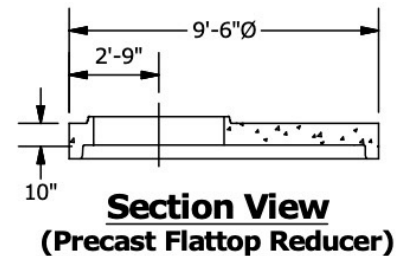
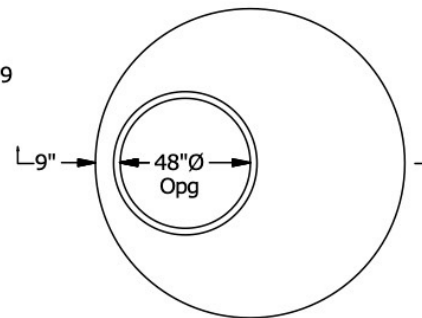
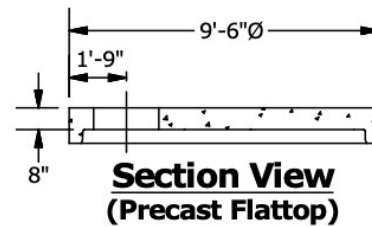
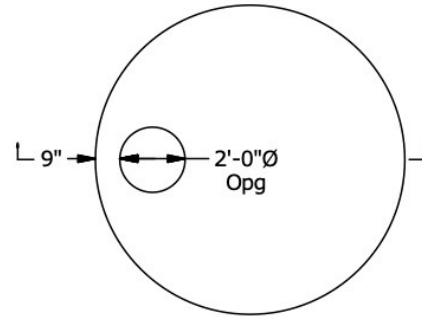
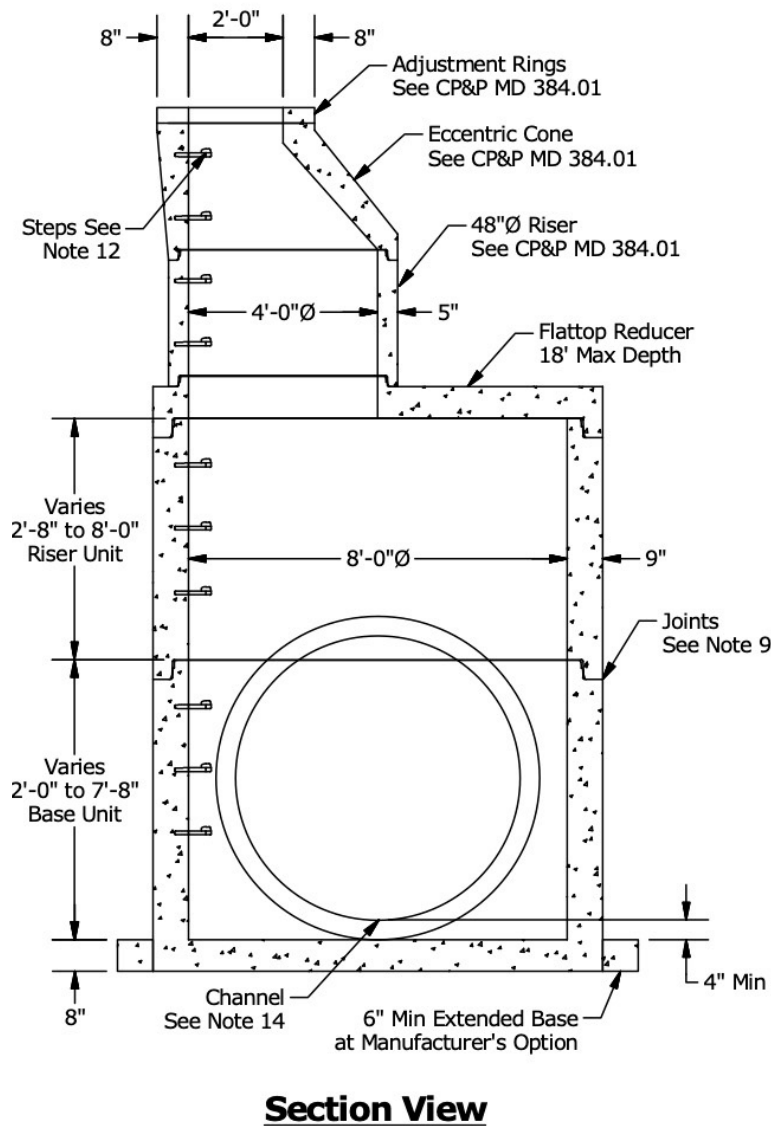


NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,500 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Equivalent WWR may be used for rebar shown.
6. Manhole sections meet ASTM C478 / AASHTO M199.
7. Lifting devices provided for handling at manufacturer's discretion.
8. Grade and slope adjustments to be completed in the field by contractor.

9. Joints per manufacturer's design, sealed in field by contractor.
10. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
11. Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
12. Manhole steps provided at 16" spacing, aligned vertically.
13. Structure designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
14. Invert shaping to be constructed in field by contractor.

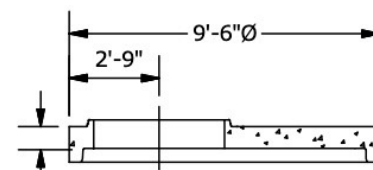
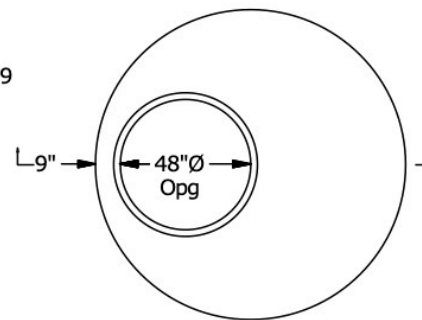
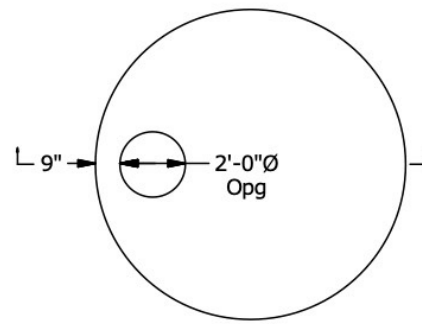
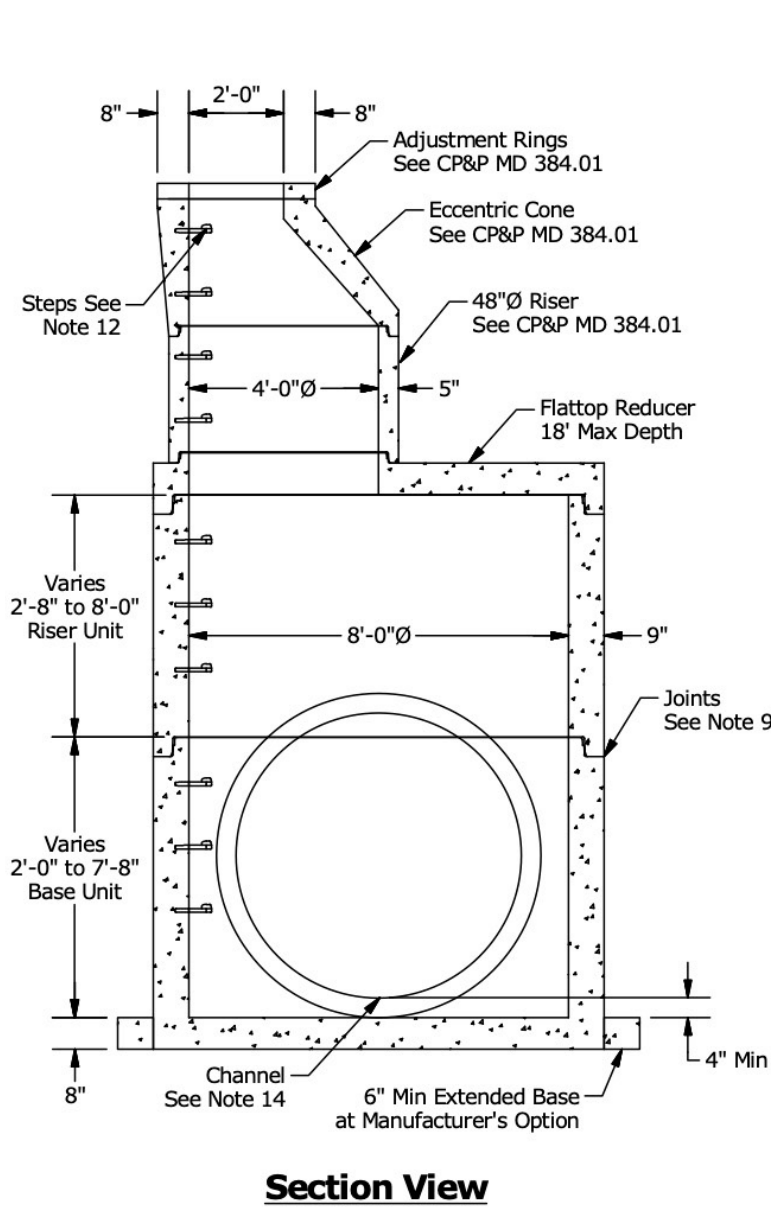
PRECAST 84"Ø MANHOLE FOR UP TO 60" PIPES (MD 384.07)



NOTES

- This design is intended for precast structures produced by CP&P only.
- Concrete to be mix No.6 (4,500 psi) minimum.
- Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
- Reinforcing designed by CP&P.
- Equivalent WWR may be used for rebar shown.
- Manhole sections meet ASTM C478 / AASHTO M199.
- Lifting devices provided for handling at manufacturer's discretion.
- Grade and slope adjustments to be completed in the field by contractor.
- Joints per manufacturer's design, sealed in field by contractor.
- Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
- Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
- Manhole steps provided at 16" spacing, aligned vertically.
- Structure designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
- 14) Invert shaping to be constructed in field by contractor.

PRECAST 96"Ø MANHOLE FOR UP TO 72" PIPES (MD 384.09)

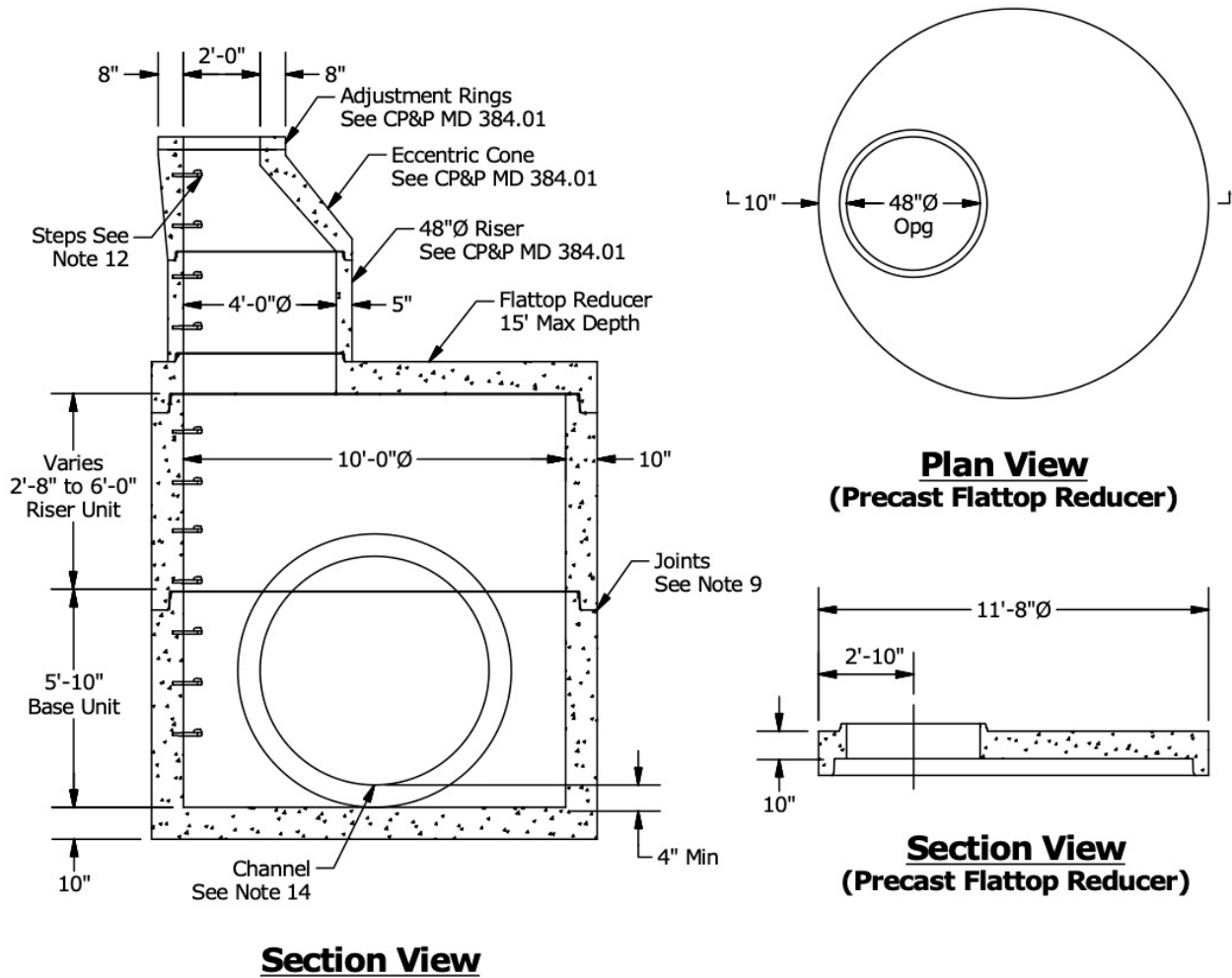


NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,500 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Equivalent WWR may be used for rebar shown.
6. Manhole sections meet ASTM C478 / AASHTO M199.
7. Lifting devices provided for handling at manufacturer's discretion.
8. Grade and slope adjustments to be completed in the field by contractor.

9. Joints per manufacturer's design, sealed in field by contractor.
10. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
11. Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
12. Manhole steps provided at 16" spacing, aligned vertically.
13. Structure designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
14. Invert shaping to be constructed in field by contractor.

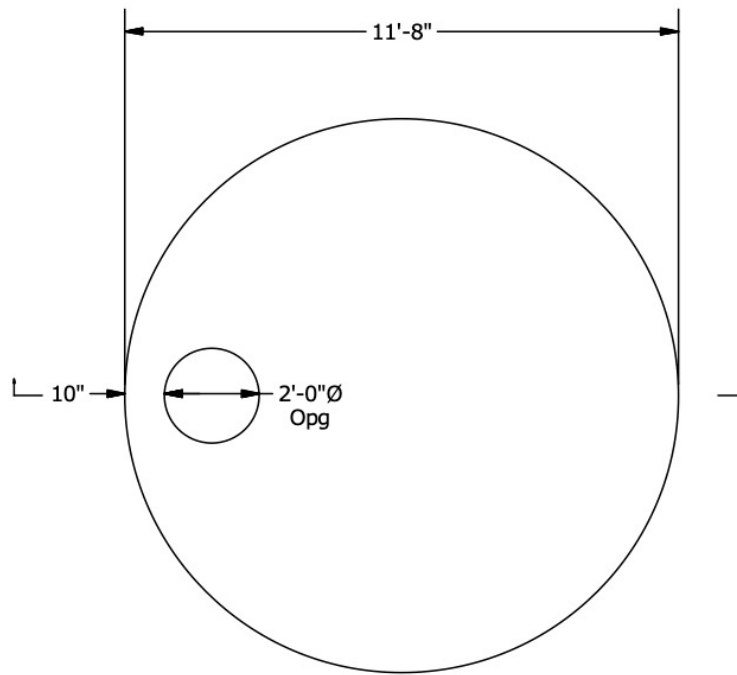
PRECAST 120"Ø MANHOLE FOR UP TO 84" PIPES (MD 384.11)



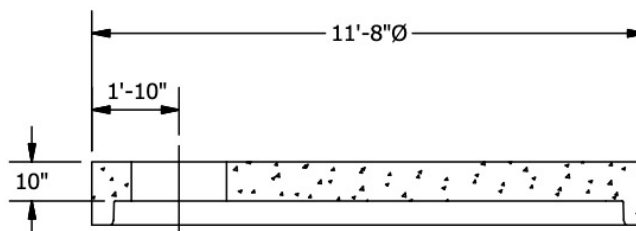
NOTES

- This design is intended for precast structures produced by CP&P only.
- Concrete to be mix No.6 (4,500 psi) minimum.
- Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
- Reinforcing designed by CP&P.
- Equivalent WWR may be used for rebar shown.
- Manhole sections meet ASTM C478 / AASHTO M199.
- Lifting devices provided for handling at manufacturer's discretion.
- Grade and slope adjustments to be completed in the field by contractor.
- Joints per manufacturer's design, sealed in field by contractor.
- Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
- Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
- Manhole steps provided at 16" spacing, aligned vertically.
- Structure designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.
- Invert shaping to be constructed in field by contractor.

PRECAST FLATTOP SLAB FOR 120"Ø MANHOLES (MD 384.12)



Plan View



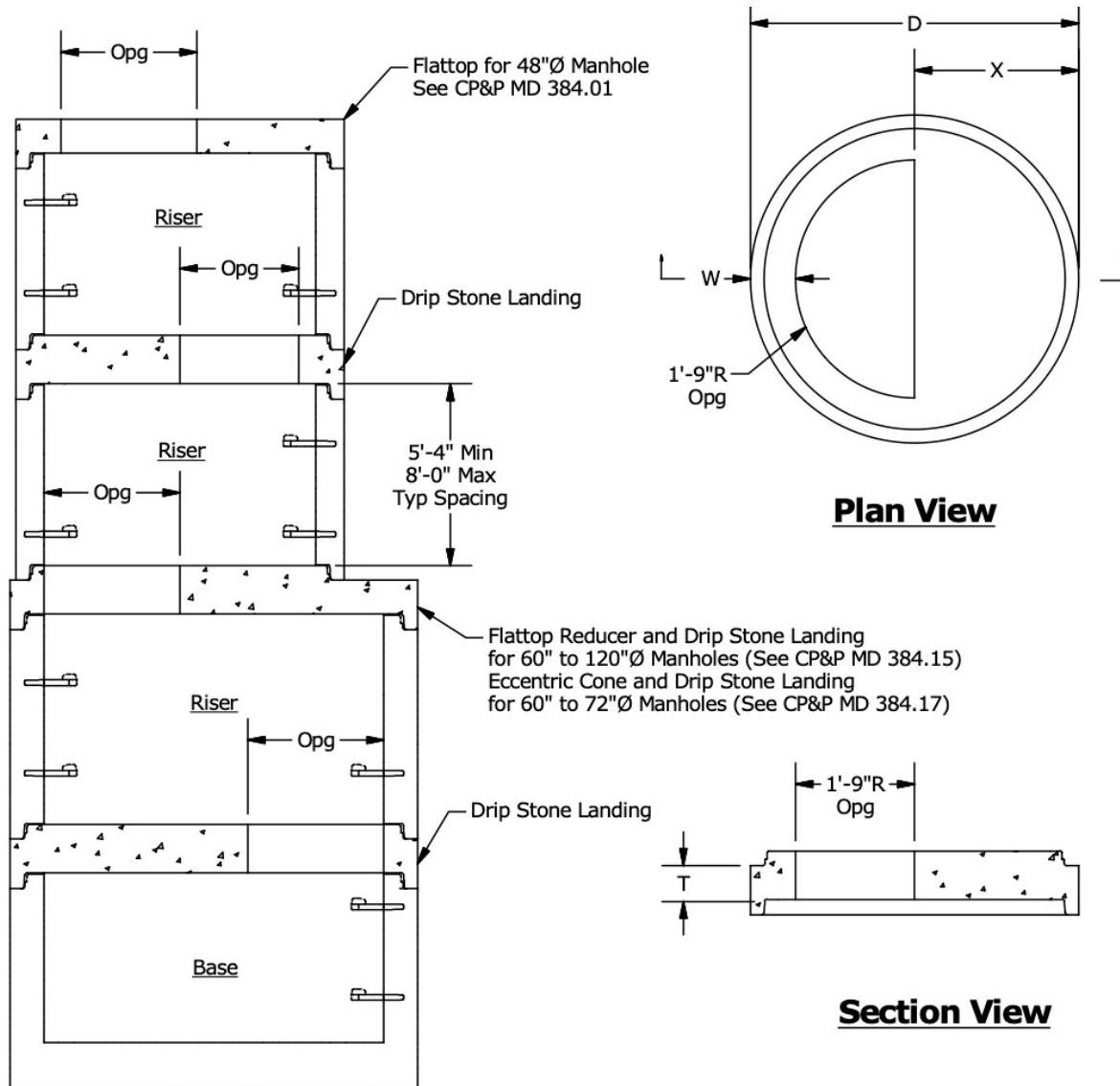
Section View

NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,500 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min.
4. WWR reinforcement conforms to ASTM A1064, Grade 65 min.

5. Equivalent WWR may be used for rebar shown.
6. Reinforcing designed by CP&P.
7. Structure designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.

PRECAST DRIP STONE LANDING FOR 48"Ø TO 120"Ø MANHOLES (MD 384.13)



**Section View
(Placement of Drip Stone Landings)**

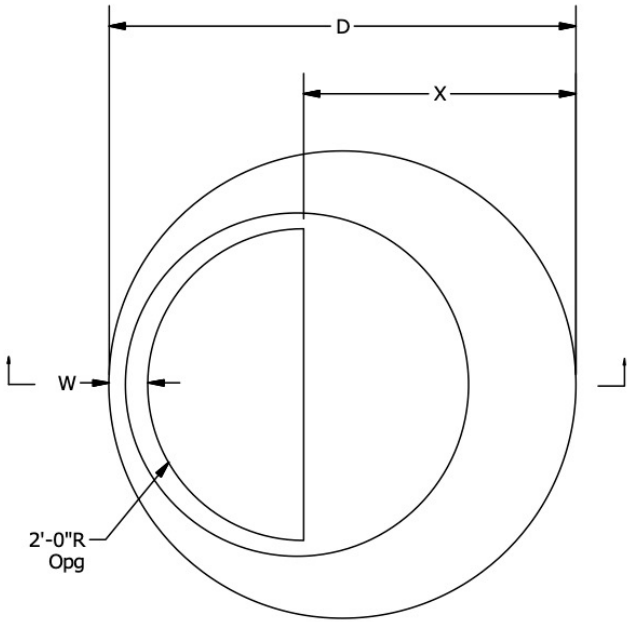
Precast Drip Stone Landing Dimensions				
Manhole Ø	D	T	W	X
48"	4'-10"	6"	8"	2'-5"
60"	6'-0"	8"	8"	3'-7"
72"	7'-2"	8"	8"	4'-9"
84"	8'-4"	8"	8"	5'-11"
96"	9'-6"	10"	9"	7'-0"
120"	11'-8"	10"	10"	9'-1"

NOTES

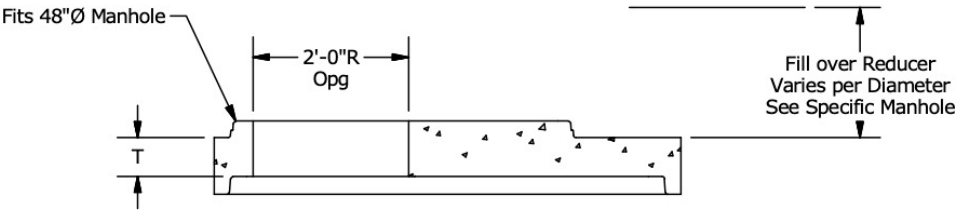
1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,500 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min.

4. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
5. Equivalent WWR may be used for rebar shown.
6. Reinforcing designed by CP&P.

PRECAST COMBINATION FLATTOP REDUCER & DRIP STONE LANDING (60"-120")
(MD 384.15)



Plan View



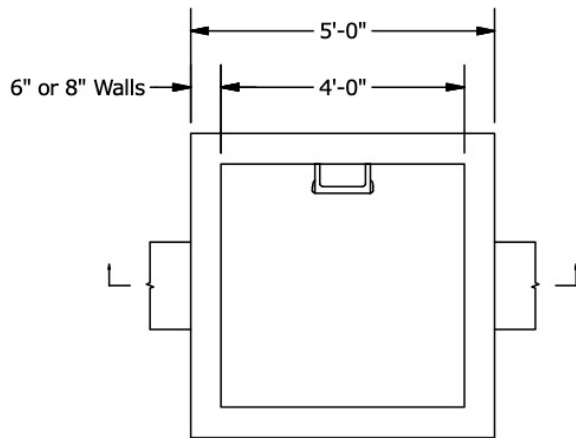
Section View

Precast Drip Stone Landing Dimensions				
Manhole Ø	D	T	W	X
60 "	6'-0"	8"	6"	3'-6"
72 "	7'-2"	8"	7"	4'-7"
84"	8'-4"	8"	8"	5'-8"
96"	9'-6"	8"	10"	6'-9"
120"	11'-8"	10"	10"	8'-10"

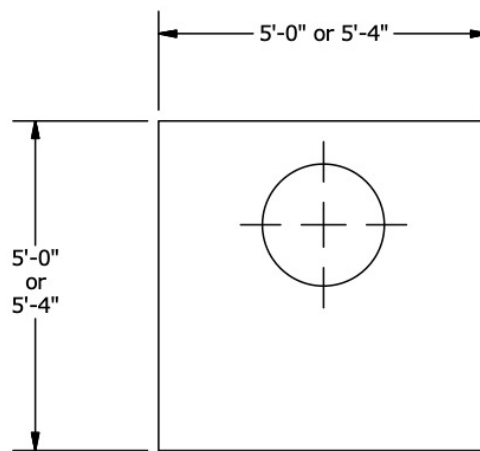
NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,500 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min.
4. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
5. Equivalent WWR may be used for rebar shown.
6. Reinforcing designed by CP&P.

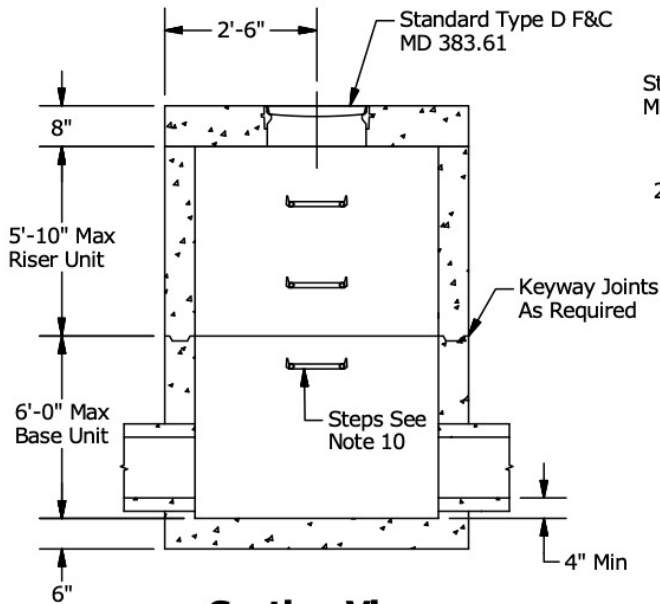
PRECAST 48" SQUARE SHALLOW MANHOLE (MD 383.00)



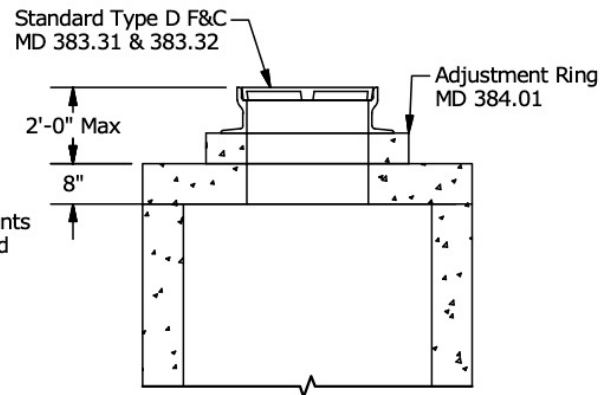
Plan View



**Plan View
(Precast Flattop)**



Section View



**Section View
(Precast Flattop)**

NOTES

1. This design is intended for precast structures produced by CP&P only.
2. Concrete to be mix No.6 (4,000 psi) minimum.
3. Bar reinforcement conforms to ASTM A615 or A706, Grade 60 min. WWR reinforcement conforms to ASTM A1064, Grade 65 min.
4. Reinforcing designed by CP&P.
5. Equivalent WWR may be used for rebar shown.
6. Lifting devices provided for handling at manufacturer's discretion.
7. Grade and slope adjustments to be completed in the field by contractor.

8. Pipe openings to be provided as required. For size, location, and invert elevations refer to construction plans.
9. Knockouts or holes for underdrain connections to be provided and located as directed on construction plans.
10. Steps provided at 15" spacing, aligned vertically.
11. Invert shaping to be constructed in field by contractor.
12. Structure designed for HS-25 loading, according to AASHTO LRFD Bridge Design Specifications.



CP&P, A CMC Precast Business
10364 Design Road
Ashland, Virginia 23005

V04012026