



J.R. HOE
AND SONS



Construction Products Catalog

NEENAH 
FOUNDRY COMPANY
DISTRIBUTOR

J.R. Hoe & Sons - A Strong Tradition



J.R. Hoe

In 1909, J. R. Hoe – a steel mill superintendent – migrated from Pittsburgh to the mountains of Kentucky to take over a small foundry operation. His five sons, each skilled in a different facet of iron making, followed him and over the next several decades built the company into a center of metalworking expertise. The solid reputation of Hoe castings was established early in the 20th century.

By the 1950's Hoe and Sons had grown and diversified into fabricated steel and machine work. They designed and built many complete coal handling systems throughout the southern mountains. The Hoe foundry began to produce construction castings for the nation's booming infrastructure system. The first street castings installed in many towns and cities bear the "HOE of KY" mark of quality and reliability.

When Harry M. Hoe and Harry H. "Bo" Hoe – the third and fourth generations – took over in 1988, the company began a decade of growth and modernization. Both foundry and fabrication divisions diversified into new markets. Along with its line of construction castings, Hoe produces gray and ductile iron castings for many industries across the U.S. The company also moved into aluminum and stainless steel and now offers a diverse range of construction-related metal fabrications. Computer controlled (CNC) machining is integrated into both casting and fabrication production.

In 2001 J. R. Hoe & Sons became the exclusive regional distributor for Neenah Foundry, which offers the most complete line of construction castings in the U.S. From its centrally located Louisville, Kentucky sales office, Hoe distributes from an inventory of over 800 tons of castings and fabricated products. With fast, efficient delivery and competitive pricing, Hoe is established as THE REGIONAL SOURCE for metal construction products.

The current Hoe management team is progressive-minded – yet always conscious of the company's strong past. Long before it became fashionable to develop a corporate mission statement, J. R. Hoe established the standard of excellence for his company:



The Hoe Brothers Circa 1950

Customer Satisfaction Is Our Job!



Left to Right

Louisville Office: Rocky Campbell, Sales Manager; Alice Johnson, Louisville Operations Manager

Middlesboro Office: Harry H. "Bo" Hoe, President; Tim Miracle, Casting Sales/Shipping Coordinator
Rob Arch, P.E., Fabrication Manager



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Casting Specifications

General

Castings are of uniform quality and free from defects which may impair the service of the casting. Castings are manufactured with smooth finish and well cleaned by shotblast. Due to the natural corrosion resistance of cast iron, castings are furnished uncoated.

Materials

Gray iron castings manufactured by HOE conform to ASTM A48, Class 35B, where specified. For extreme loading conditions ductile iron may be specified conforming to ASTM A536 in tensile strength ranges from 65,000 to 80,000 psi.

Tolerances

As-cast dimensions may vary per industry standards, typically +/- 1/16" unit per unit foot.

Bearing Surfaces

Round frames with grates or covers are supplied with machined bearing surfaces to prevent rocking, unless otherwise noted.

Performance

Overall function and shape, rather than weight, are the major considerations of casting performance. Many castings have been redesigned to provide better load-bearing capabilities at a lower weight. Proof load data is available upon request.

Submittals

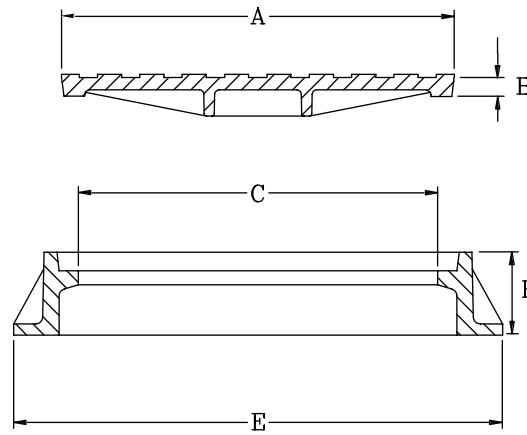
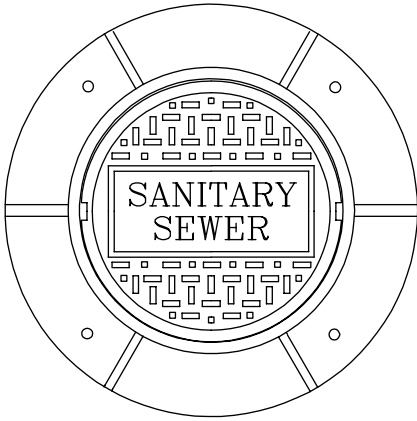
The HOE engineering department cooperates closely with engineers to specify the appropriate casting for each application. Individual detailed drawings are available via fax or email for each casting listed in catalog.



Iron Castings -- A Recycled Product

All iron castings listed in this catalog are manufactured from re-melted scrap metals and thereby qualify as a recycled product.

Round Manhole Covers



Detailed drawings available upon request

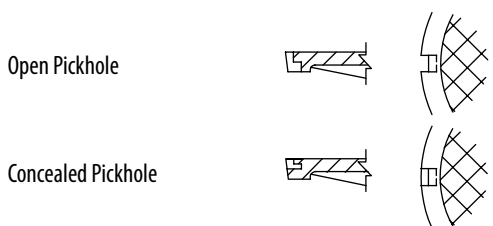
Standard Size

- Listed in progression of clear opening diameter ("C" dimension).
- All designed for H-20 traffic loading.
- Standard lettering available: Sanitary or Storm Sewer; Special lettering available
- Cover locking options shown on page 11
- Available in bolted/watertight design

Cat. No.	A	B	C	E	F
MC-162	22 1/4	1 1/2	20 1/2	26 1/2	4
MC-200	22 3/4	1 1/2	19 1/2	27	2 3/4
MC-260	22 3/4	1 1/2	21	30	4
MC-315	22 3/4	1 3/4	21	34	7
MC-350	22 3/4	1 1/2	21	35	7
MC-385	22 3/4	1 1/2	21	35	7
MC-425	22 3/4	1 1/2	21	35	7
MC-450	22 3/4	1 1/2	21	36	9
MC-420	24	1 1/8	22	34	7
MC-275	24	1 1/8	22	30	4
MC-206	25 1/2	1 1/2	23 1/2	29 1/2	4
MC-285	26	1 1/2	24	33	4
MC-375	26	1 1/2	24	36	7
MC-295	28	1 1/2	26	33	4
KY-510	28	1	26	38	8

Table Dimension in Inches

Pickhole Designs



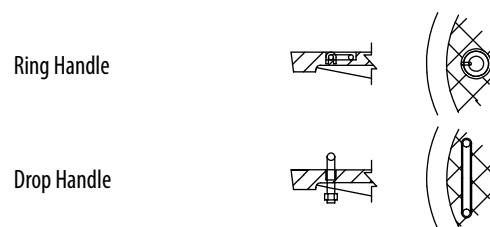
Large Diameter

- Used primarily in utility construction
- Standard lettering: Electric, Telephone, Communication
- Lift handle options shown below

Cat. No.	A	B	C	E	F
MC-522	31 3/4	1 3/4	30	39 1/4	6
MC-680	31 3/4	1 3/8	30	49	5 5/8
MC-780	31 3/4	1 3/8	30	49	10
MC-455	34 1/2	1 1/2	32 1/2	38 1/2	4
MC-747	38	1 3/4	36	46	6
MC-805	46 1/8	1 1/2	44 1/2	50 1/2	4

Table Dimension in Inches

Lift Handle Options

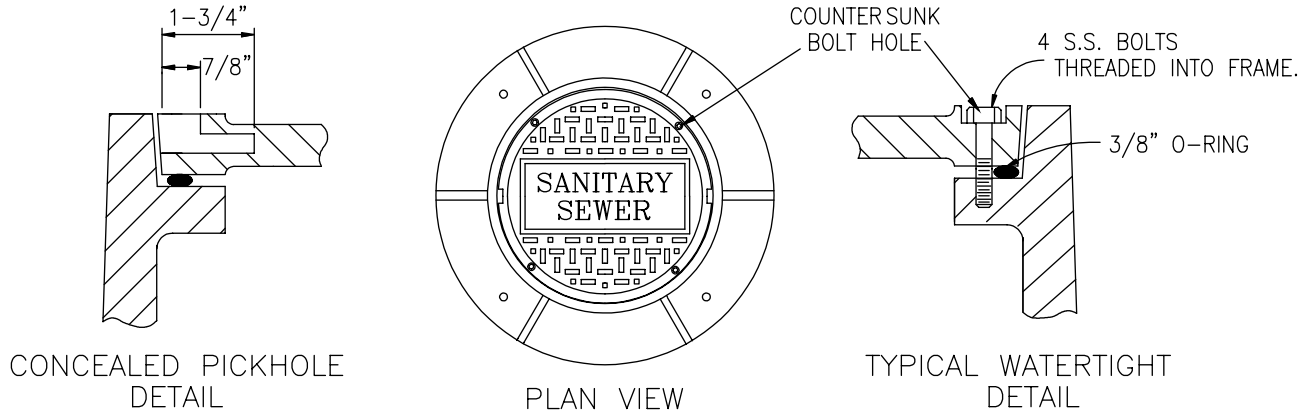


Manhole Accessories

For Surface Water Inflow Prevention

Watertight Manhole Covers

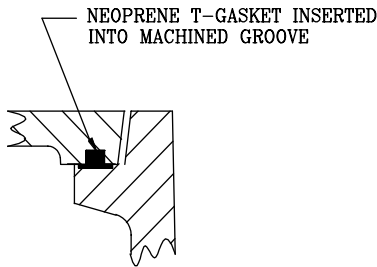
- All manhole covers listed in this catalog can be made watertight.
- Details shown below.



Cover to Frame Seal Options

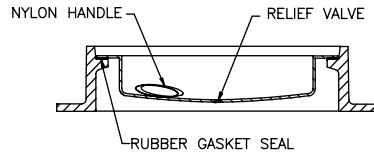
Self-sealed Manhole Covers

- Weight of cover "seals" gasket to frame



"Rainstopper" Manhole Insert

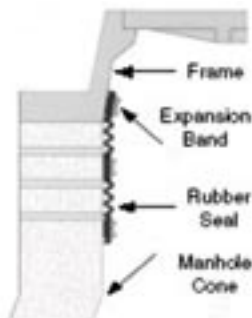
- Made from durable HDPE plastic or stainless steel
- Sewer gas vented with a non-mechanical device
- Easily installed by one person in new or existing systems



Frame to Concrete Seal Options

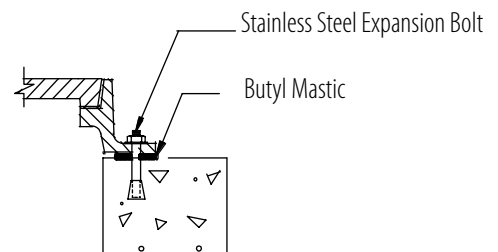
Internal Flexible Chimney Seal

- Eliminates wet weather inflow by creating a watertight seal between the frame casting and the top of the manhole cone
- Allows the seal to move vertically and/or laterally
- Easily installed in new or existing structures



Anchor Bolts with Sealant

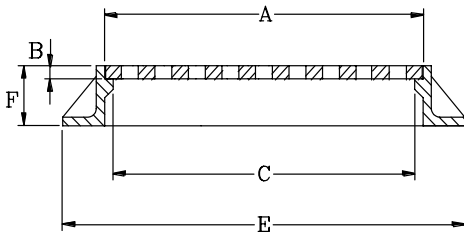
- Expansion anchors with mastic sealant available for all frames listed in catalog.



Round Manhole Catch Basins

Frames and Grates

- Listed in progression of clear opening diameter ("C" dimension)
- Available with 3 grate types
- All flat grates designed for H-20 traffic loading
- All sizes interchangeable with solid covers

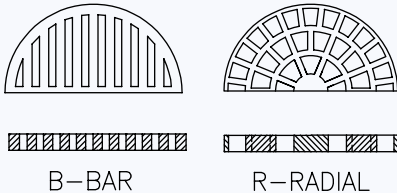


Detailed drawings available upon request

Cat. No.	A	B	C	E	F	Grate Types	Drain Area*
MCB-82	13 1/4	1 1/2	11 1/2	17 1/2	4	B	0.3
MCB-162	22 1/4	1 1/2	20 1/2	26 1/2	4	B	1.0
MCB-210	22 3/4	1 1/2	19 1/2	27	2 3/4	B, R, BH	1.3
MCB-260	22 3/4	1 1/2	21	30	4	B, R, BH	1.3
MCB-350	22 3/4	1 1/2	21	34	7	B, R, BH	1.3
MCB-450	22 3/4	1 1/2	21	36	9	B, R, BH	1.3
MCB-206	25 1/2	1 1/2	23 1/2	29 1/2	4	B, R	1.7
MCB-285	26	1 1/2	24	33	4	B, BH	1.5
MCB-375	26	1 1/2	24	35	7	B, BH	1.5
MCB-295	28	1 1/2	26	33	4	B	1.7
MCB-455	34 1/2	1 1/2	32 1/2	38 1/2	4	B	2.7
MCB747	38	1 3/4	36	46	6	B	3.2
MCB-805	46 1/8	1 1/2	44 1/2	50 1/2	4	B	4.8

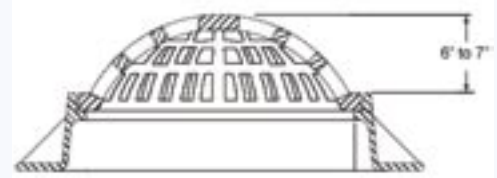
B= bar grate R= radial grate BH = Beehive grate • Table Dimension in Inches • * in square feet

Standard Grate Types



Beehive Grates

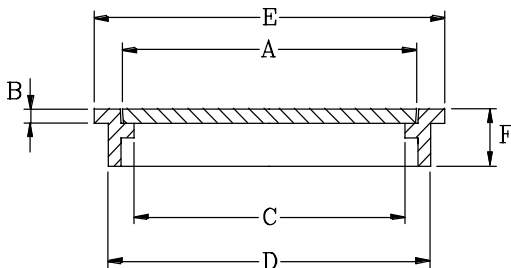
For additional yard drainage, beehive grates are available in 22 3/4" and 26" diameter frame sizes.



Manhole Covers for Slab Construction

Frames and Covers or Grates

- Listed in progression of clear opening diameter ("C" dimension)
- Cast with flange up to anchor into top of concrete slab
- All designed for H-20 traffic loading
- Available in bolted/watertight design
- Cover locking options shown on page 11



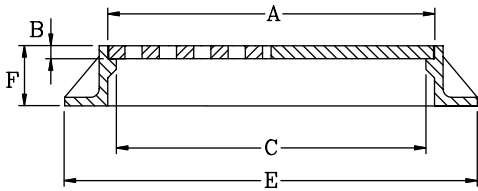
Cat. No.	A	B	C	D	E	F	Drain Area *
MCS-82	13 1/4	1 1/2	11 1/2	14 1/2	17 1/2	4	0.3
MCS-162	22 1/4	1 1/2	20 1/2	23 1/2	26 1/2	4	1.0
MCS-290	22 3/4	1 1/2	21	24 1/4	30	4	0.9
MCS-206	25 1/2	1 1/2	23 1/2	26 1/2	29 1/2	4	1.7
MCS-288	26	1 1/2	24	27 1/2	33	4	1.1
MCS-440	27 1/2	2 1/2	24	29	33 1/2	5	1.6
MCS-298	28	1 1/2	26	29 1/2	33	4	1.5
MCS-338	32	1	30	33 1/2	38	4 3/4	1.9
MCS-455	34 1/2	1 1/2	32 1/2	35 5/8	38 1/2	4	2.5

Table Dimension in Inches • * in square feet

Catch Basin Inlets

Square/Rectangular Grates with Frames

- Listed in progression of clear opening diameter ("C" dimension)
- Frame bottom flange to rest on concrete structure
- All designed for H-20 traffic loading
- Available with grates or solid covers
- Available in bolted/watertight design on one-piece solid cover

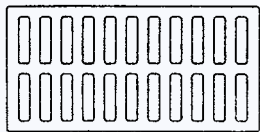


Detailed drawings available upon request

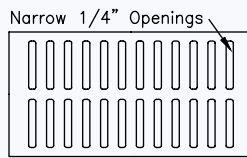
Cat. No.	A	B	C	E	F	Grate Type	Drain Area*
Square							
HOE-60-A	12 X 12	1 1/4	10 x 10	16 x 16	2 1/2	A	0.4
HOE-165-A	18 X 18	1 1/2	18 x 18	24 x 24	4	A, S	0.9
HOE-280	24 X 24	1 1/2	22 x 22	30 x 30	4	C, S	1.5
HOE-342	23 7/8 X 23 7/8	2	22 x 22	35 x 35	6	L-Vane, A	1.5
HOE-378	24 X 24	1 1/2	24 x 24	35 x 35	6	A, C, S	1.5
HOE-320	25 3/4 X 25 3/4	1 1/2	24 x 24	30 x 30	4	C, BH, S	1.8
HOE-428	30 x 30	1 1/2	28 x 28	34 1/2 x 34 1/2	4	C	2.7
HOE-468	32 x 32	1 1/2	30 x 30	36 x 36	4	C, S	2.8
HOE-595	(2) 18 x 36	2	34 x 34	42 x 42	3 1/2	C	3.8
Rectangular							
HOE-180-A	18 X 24	1 1/2	16 x 22	22 X 28	4	C	1.2
HOE-175-A	20 X 23	1 1/2	18 x 21	24 X 27	3 1/2	A, L-Vane	1.1
HOE-275-A	24 X 30	2	20 x 26	29 X 35	3 1/2	A	2.4
KY-460	23 _ X 30	3	21 3/4 x 28 1/2	33 X 39	4	C	2.4
†HOE-580	17 X 38 (2)	1 3/4	15 x 35	26 X 40	5 1/2	A, L-Vane	1.6
†HOE-518	24 X 36 (2)	1 1/2	22 x 34	32 X 43	5	C, S	3.0
†HOE-818	24 X 48 (2)	1 1/2	24 X 48	35 X 60	5	C, S	3.3

Table Dimension in Inches • * in square feet • †2-pc. Grate

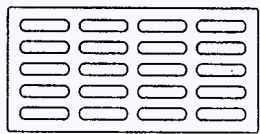
Standard Grate Types



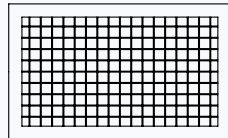
TYPE A



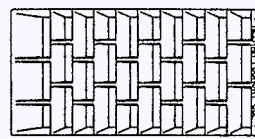
TYPE P



TYPE C



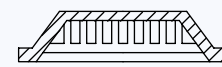
TYPE S (SOLID)



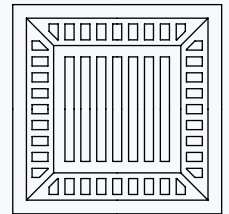
TYPE L-VANE

Beehive Grate

Beehive grate available for 24" x 24" inlet

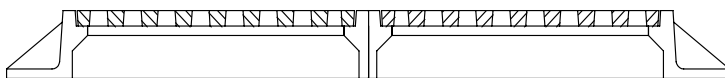


BH — BEEHIVE



Double Inlet Sets

- Frames less one flange fit side-by-side for large area drainage requirements.



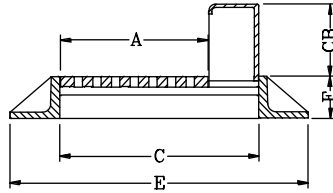
Cat. No.	Drainage Size	Drain Area*
HOE-275-A DOUBLE	30 X 48	5.0
HOE-428 DOUBLE	30 X 60	5.3
HOE-518 DOUBLE	36 X 48	6.0
HOE-818 DOUBLE	48 X 48	6.6

Table Dimension in Inches • * in square feet

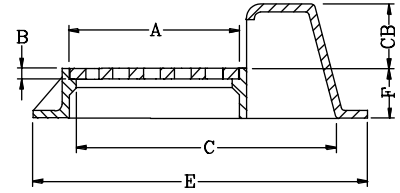
Curb Box Inlets

Frames, Grates and Curb Boxes

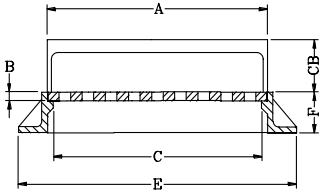
- For curb and gutter installation
- Available in two design types as listed
- All grates designed for H-20 traffic loading



TYPE A
(Curb box fits into frame)



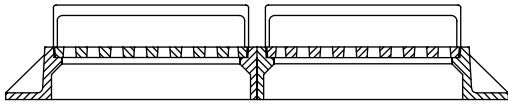
TYPE B
(Curb box stands free from frame)



FRONT VIEW

Double Curb Box Inlets

- Available in sizes marked †



Cat. No.	A	B	C	E	F	CB	Design	Drain Area*
Hoe-399	16 x 23	2	22 x 20 1/2	36 dia.	7-8	Adj	A	1.0
Hoe-445	20 x 23	1 1/2	25 x 31	32 x 36	7	4	B	1.1
†KY-465	18 x 24	1 1/4	22 x 22	34 x 34	5	6	A	0.9
†Hoe-525	18 x 36	2	24 x 36	31 x 43	4-6	Adj	A	1.8
†Hoe-730	17 x 38 (2)	1 3/4	26 x 35	23 x 40	5 1/2	4	B	1.7
Hoe-695	24 x 36	2	30 x 36	37 x 43	4-6	Adj	A	2.3
Hoe-950	24 x 48	2	26 3/4 x 44	34 x 50	4	12	B	3.2

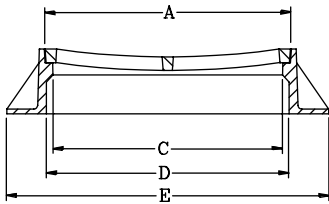
Table Dimension in Inches • * in square feet • † Double Curb Box Inlets available

Detailed drawings available upon request

Concave Inlets

Frame and Grate

- For special surface drainage conditions



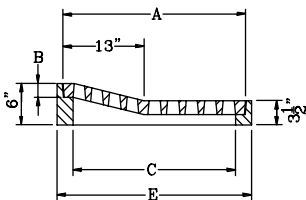
Cat. No.	A	B	C	E	F	Drain Area*
Hoe-149	18 x 24	1 1/2	16 x 22	19 1/2 x 25 1/2	3 1/2	1.1
KY-550	18 x 30	2 1/2	16 x 28	30 x 42	4 1/2	1.5
Hoe-405	24 x 24	1 1/2	24 x 24	35 x 35	6	1.3
Hoe-449	23 1/4 x 33	1 3/4	22 x 31	30 x 40 1/2	5	2.1

Table Dimension in Inches • * in square feet

Drive Over Inlets

Frame and Grate

- For driveways and mountable curbs



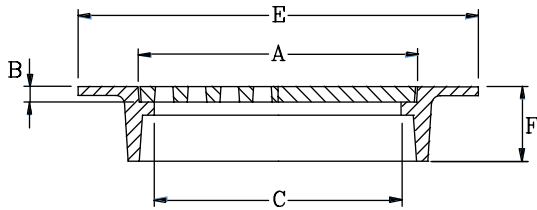
Cat. No.	A	B	C	E	F	Drain Area*
Hoe-410	26 1/8 x 22 1/4	2	23 1/2 x 19 1/2	28 1/8 x 24 3/8	3 1/2 - 6	2.0
Hoe-698	26 1/8 x 22 1/4 (2)	2	23 1/2 x 39	28 1/8 x 48	3 1/2 - 6	4.0

Table Dimension in Inches • * in square feet

Square Inlets for Slab

Frames and Grates or Covers

- Cast with flange up to anchor into top of concrete slab
- All grates designed for H-20 traffic rating
- Available in bolted/watertight design
- Cover locking options shown on page 11



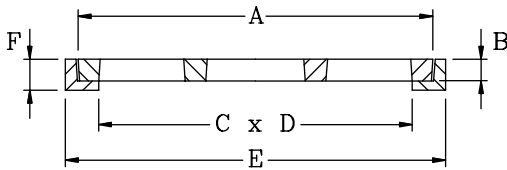
Cat. No.	A	B	C	E	F	Grate	Drain Area*
MCS-112	13 3/4 x 13 3/4	1 1/2	12 x 12	18 x 18	4	C	0.5
MCS-234	23 1/2 x 23 1/2	1 1/2	22 x 22	28 x 28	4	C	1.8
MCS-320	25 3/4 x 25 3/4	1 1/2	24 x 24	30 x 30	4	C, BH, S	1.9
MCS-428	30 x 30	1 1/2	28 x 28	34 1/2 x 34 1/2	4	C	2.7
MCS-468	32 x 32	1 1/2	30 x 30	36 x 36	4	C, S	2.8
MCS-718	38 x 38	2	36 x 36	43 x 43	4	C, S	4.1

Table Dimension in Inches • * in square feet

Detailed drawings available upon request

Angle Frames and Grates or Covers

- Square/rectangular grates with cast or fabricated angle frames
- Available with grates or solid covers
- All designed for H-20 traffic loading

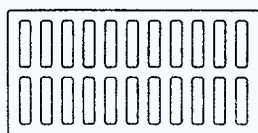


Detailed drawings available upon request

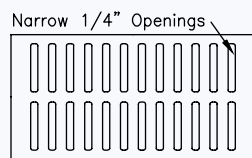
Cat. No.	A	B	C x D	E	F	Grate	Drain Area*
Square							
Hoe-60	12 x 12	1	10 x 10	13 1/2 x 13 1/2	1 1/2	A, S	0.4
Hoe-165	18 x 18	1 1/2	15 1/2 x 15 1/2	21 x 21	2 1/2	A, S	0.9
Hoe-200	24 x 24	1 1/2	22 x 22	26 x 26	2 1/2	A, C, S	1.4
Hoe-315	27 x 27	1 1/2	25 1/2 x 25 1/2	30 1/2 x 30 1/2	2 1/2	A, C, S	2.3
Hoe-368	32 x 32	1 1/2	29 x 29	32 1/2 x 32 1/2	2	A, C, S	2.8
Hoe-490	36 x 36 (2)	2	33 x 33	37 x 37	2 1/2	A, C	3.8
Hoe-555	39 x 39 (2)	2	36 x 36	40 x 40	2 1/2	A, C	4.4
Rectangular							
Hoe-108	14 x 24	1 1/2	11 1/2 x 21 1/2	15 x 25	1 3/4	A, P	0.8
Hoe-180	18 x 24	2	16 x 22 1/2	19 x 25	2 1/2	C	1.2
KY-230	18 x 30	2 1/2	15 1/4 x 27	20 x 31 1/2	3 1/2	L	1.4
Hoe-245	18 x 36	2	15 1/2 x 34	19 1/2 x 38	2 1/2	C	1.5
Hoe-275	24 x 30	2	20 x 26	25 1/2 x 31 1/2	2 1/2	A	2.4
Hoe-330	24 x 36	2	21 x 33	25 x 37	2 1/2	A	2.9
Hoe-690	24 x 48	2	20 x 44	25 7/8 x 49 7/8	4	C	3.2

Table Dimension in Inches • * in square feet

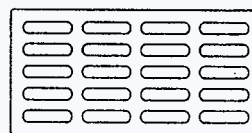
Standard Grate Types



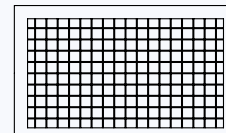
TYPE A



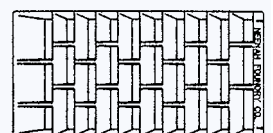
TYPE P



TYPE C



TYPE S (SOLID)



TYPE L-VANE

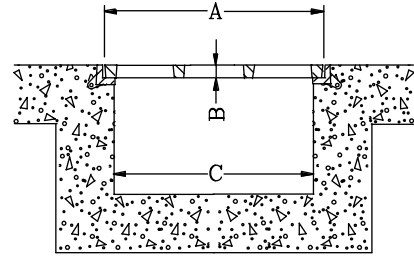
Trench Grating

Heavy-duty Trench Frames and Grates

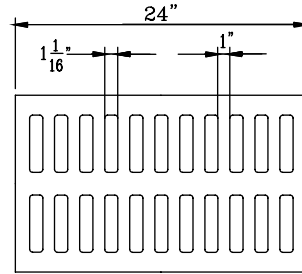
- All designed for H-20 traffic rating
- Available with solid covers

Standard Sizes

A	B	C
8	1½	6
10	1½	8
12	1½	10
14	1½	12
17	1½	15
20	1½	18
23	1½	21
26	1½	24
30	2	27
33	2	30
36	2	33
39	2	36
42	2	39
45	2	42
51	2	48



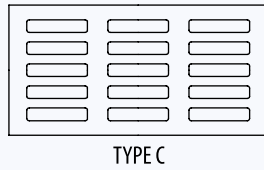
TYPICAL TRENCH DETAIL



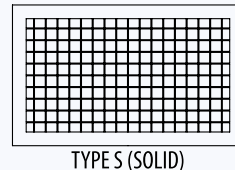
WIDTH VARIES PER CHART

TYPE A
(Standard Traffic-Rated)

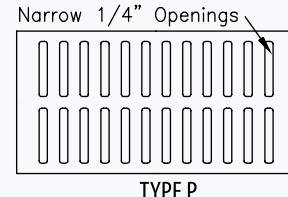
Other Grate Types



TYPE C



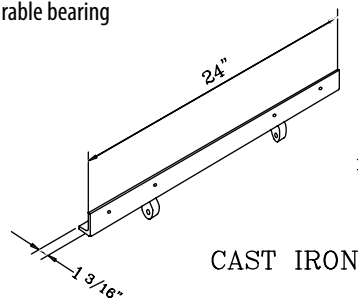
TYPE S (SOLID)



TYPE P

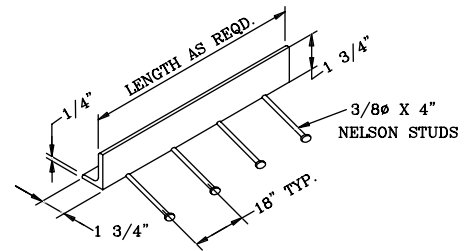
Embed Frame Rail

- Formed into concrete trench to provide durable bearing seat for grating
- Two styles available



CAST IRON

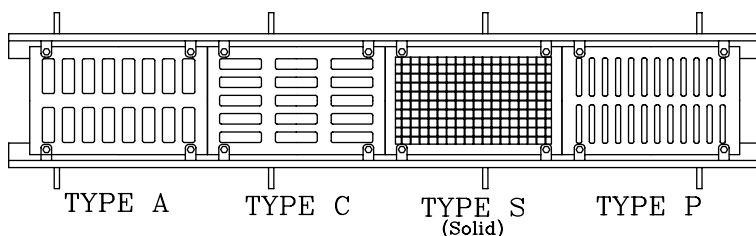
3/16"Ø PRE-DRILLED HOLE FOR FORMING NAIL



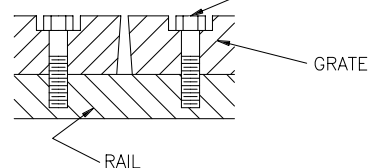
FABRICATED STEEL
(ON 1 1/2" GRATES ONLY)

Bolted Grating or Covers

- Available in all sizes and types listed above
- Bolted to cast iron frame only
- Available with tamper-proof bolts

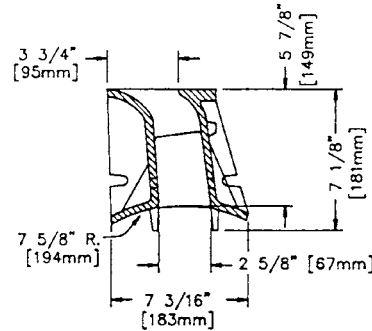
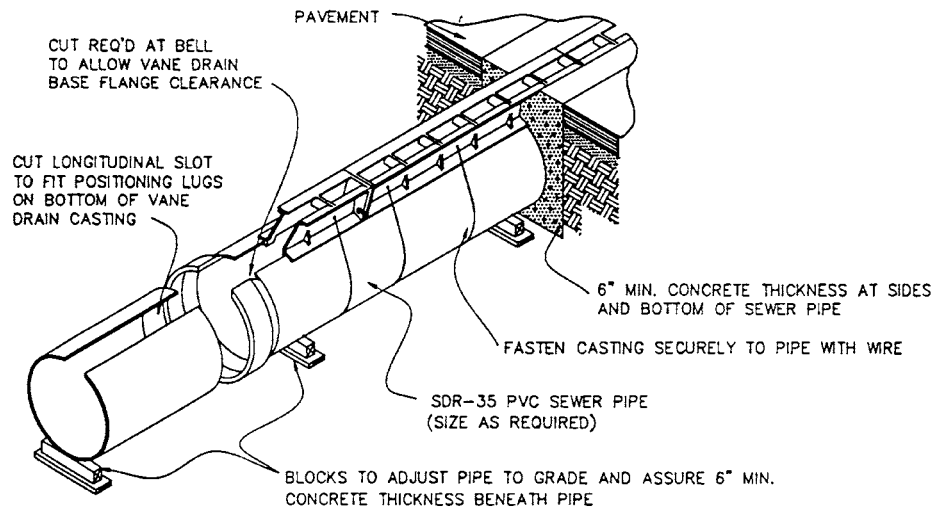


S.S. HEX SCREW - COUNTERSUNK



Slotted Vane Drain – R-3599-A

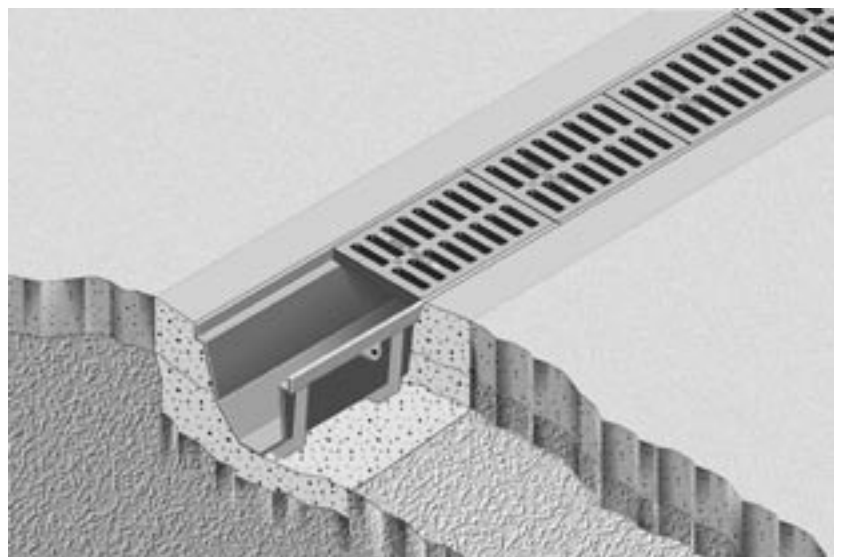
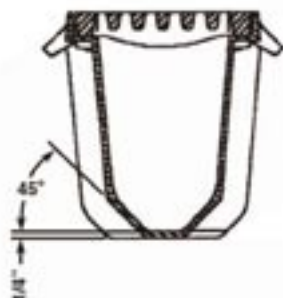
- Install by sawing a slot into top of PVC pipe
- Wire slotted vane drain over slot
- 36" lengths can be bolted together to desired trench length
- .1 sq. ft. per LF open area



The NF Company slotted vane drain offers ease of installation along with superior vaned inlet design to capture pavement drainage.

Trench Assemblies – R-4996 Series

- Light Duty or Heavy Duty available
- Durability and permanence of cast iron
- Labor and material saving installation
- Tested and proven hydraulic performance
- Specification brochure available upon request

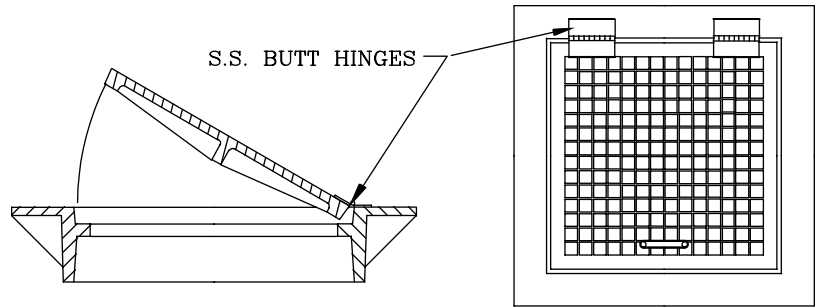


The NF Company 4996 Series trench system offers tough "self-forming" cast iron trench pan with a variety of grates or covers.

Square/Rectangular Access Covers

For Slab Construction

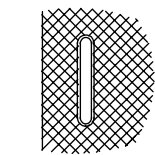
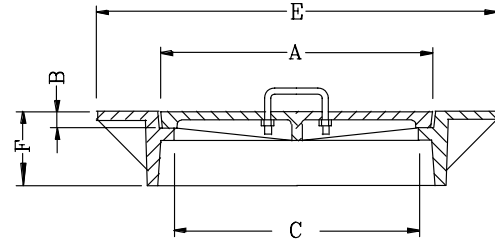
- Cast with flange up to anchor into top of concrete slab
- All designed for H-20 traffic loading
- See options below



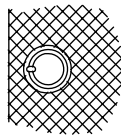
Standard Sizes

Cat. No.	A	B	C x D	E	F
MCS-320	25 3/4 X 25 3/4	1 1/2	24 X 24	30 X 30	4
MCS-428	30 X 30	1 1/2	28 X 28	34 1/2 X 34 1/2	4
MCS-468	32 X 32	1 1/2	30 X 30	36 X 36	4
MCS-718	38 X 38	2	36 X 36	43 X 43	4

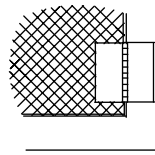
Table dimensions in inches



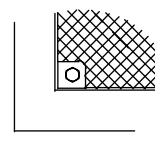
DROP HANDLES



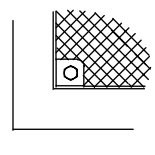
RING HANDLES



HINGES



SECURITY - BOLTED



WATERTIGHT

Also Available:

Neenah Foundry Company heavy-duty square/rectangular T-hinged access covers (R-6662 series). Opening sizes from 12" x 12" to 48" to 48"

Security and Locking Options

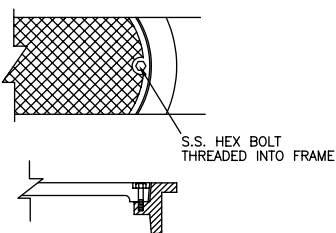
Casting Security

- Secured access to underground utilities is now required for all airports, correctional facilities and most industrial sites. For this reason, all castings or fabrications listed in catalog may be secured by specifying one of the options detailed below.

Cover Locking Options

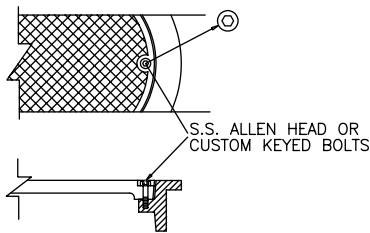
- Four standard types
- Types 1 and 2 are available on all covers
- Types 3 and 4 -- inquire

Type 1



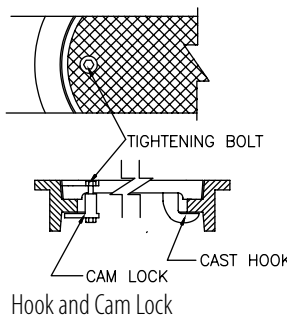
Standard Security - Bolted

Type 2



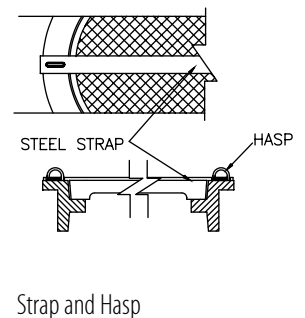
Tamper-Proof Security - Bolted

Type 3



Hook and Cam Lock

Type 4



Strap and Hasp

Manhole Frames and Covers - R-3492 Series

- Standard sizes: 24" and 30" ID
- Rated for minimum 100,000 lb. wheel loads
- Covers bolted to frames per FAA spec.



R-3492

Drainage Inlet Frames and Grates - R-3475 Series

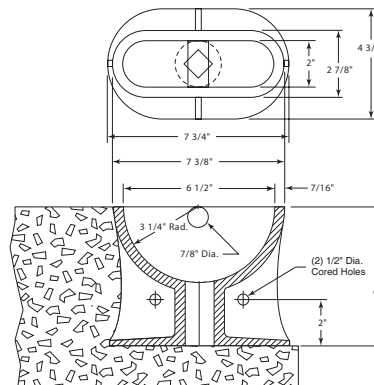
- Available in multiple grate assemblies
- All rated for minimum 100,000 lb. wheel loads
- Grates bolted to frames per FAA spec.
- Free open area per grate: 2.4 sq. ft.



R-3475-F

Mooring Eyes - R-3490 Series

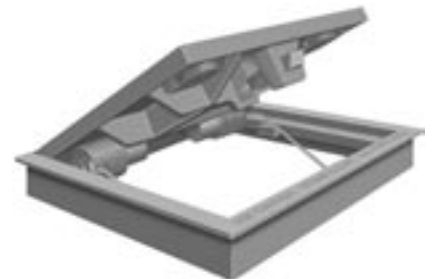
- Aircraft tiedown anchors
- Tie bars tested to 9000 lb. ultimate load
- Available with ground rod assemblies



R-3490-A

Spring-Assisted Airport Hatches - R-3498 Series

- May be easily opened by one person
- Ductile iron lid suitable for aircraft loading
- Self-contained frame, lid and spring assembly
- Available clear open sizes: 24" sq., 30" sq., and 36" sq.
- Specification brochure available upon request.



R-3498-K2S

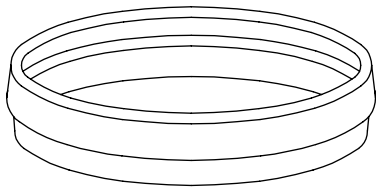
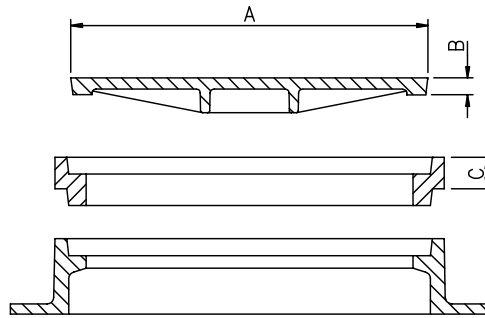
Manhole Adjusting Rings

For Raising Manhole Covers

- Brings covers to street level after re-surfacing
- Takes only minutes to install
- Two types available

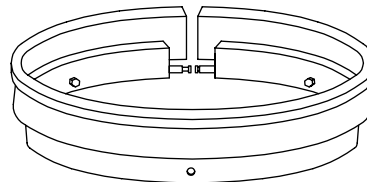
To order, please specify:

- A) Cover diameter
- B) Cover thickness at seat
- C) Height desired



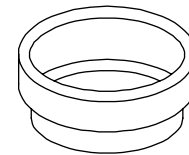
Solid Cast Iron

- Cast from Class 30 gray iron
- Machined to fit existing covers in street
- Minimum vertical rise = lid thickness plus 1/2"
- May be stacked for increased height



Fabricated, Adjustable

- Fabricated from A-36 Steel
- Stainless steel adjustment hardware
- Adjusts 3/8" larger or smaller
- Minimum vertical rise as small as 3/4"
- Very useful in milling/paving operations



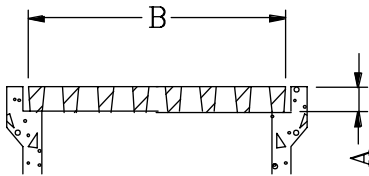
Water Valve Risers

- For 5 1/4" diameter lids
- Sizes available: 1", 1 1/2", 2", 3" and 4" rise

Drainage Pipe Grates

For Concrete Pipe Bells

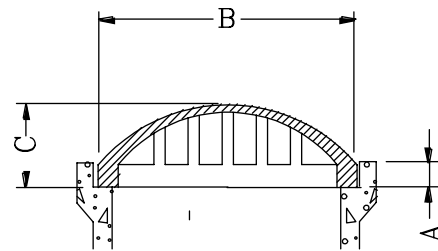
- Designed to fit bell end of standard RCP
- Both flat or beehive grates available



Flat Bar Grate

Cat. No.	A	B	PIPE SIZE
HOE-31	2 1/2	14 3/4	12
HOE-65-A	2	18 3/4	15
HOE-70	2	20 1/2	18
HOE-141	2 1/2	27	24
HOE-220	3	33 1/2	30
HOE-260	3 1/2	40	36

Table dimensions in inches



Beehive Grate

Catalog #	C	B	A
HOE-53-B	5 1/2	14 3/4	2 1/2
HOE-71-C	6 1/4	18 1/4	2 1/2
HOE-117-D	7 1/2	22	3
HOE-120-E	8	27	2 1/2

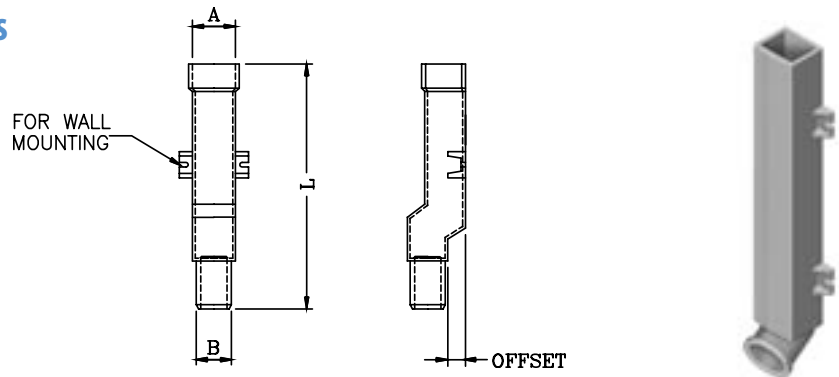
Table dimensions in inches

Downspout Boots - R-4926-29 Series

- Protect metal downspouts from traffic at ground level
- Mount to wall of building
- Offset 2 1/2" to allow for underground connection
- Various sizes and lengths available

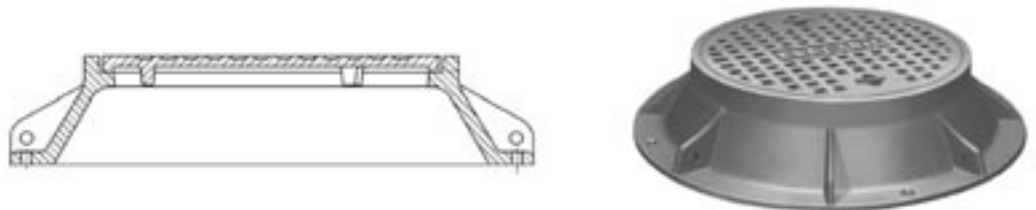
To order please specify:

- A Inside Top Bell
- B Outside Spigot
- L Length Desired



Utility Manhole Frames and Covers - R-1640 Series

- Standard lettering available: Electric, Communication, Telephone
- Drop handles
- Security bolting available



Automatic Drainage Gates - R-5050 Series

Used in areas that require prevention of back flow — storm or sanitary sewer systems

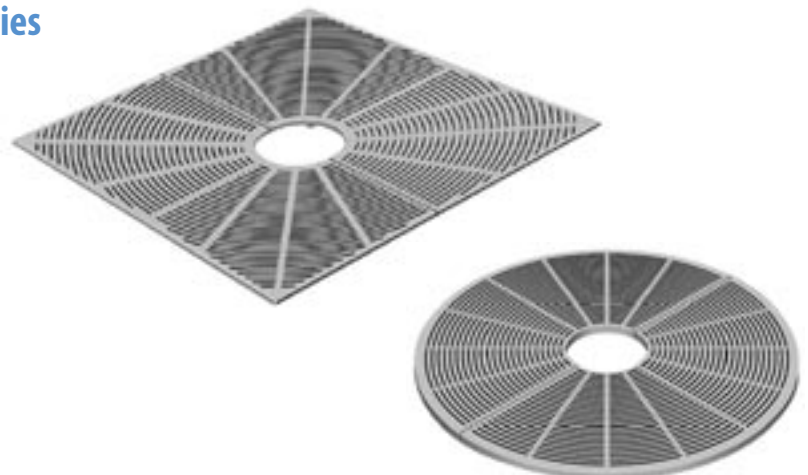
- Cast iron body with stainless steel hardware
- Optional neoprene or bronze seat mounting or bronze bushing



Tree Grates and Frames - R-8700 - 9100 Series

Cast Iron Frames and Grates

- Conform to ASTM A48, Class 35 or better
- Available with expandable tree openings
- Numerous sizes and patterns available
- Tree grates and frames are furnished without paint or primer.



**NF Company tree grate catalog
available upon request.**

Kentucky Department of Transportation

Steel Drop Box Inlet Frames and Grates

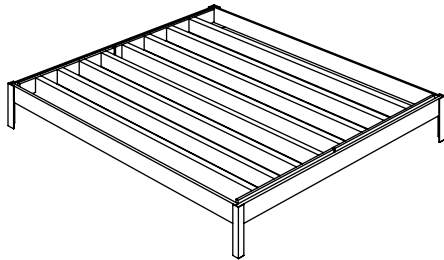
Types 1 through 7

Cast Iron Drop Box Inlet Frames and Grates

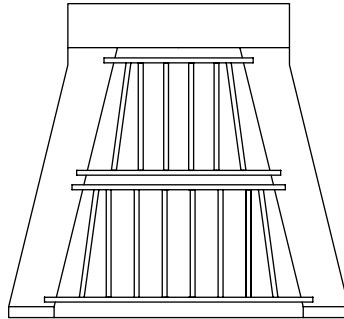
Types 10 through 16

Steel Sloped Boxes:

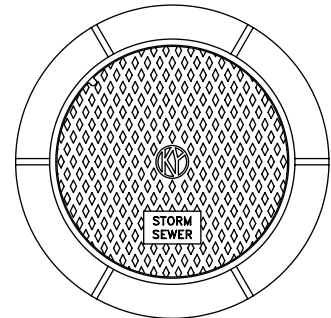
- 15-18" and 24" Sloped Box Outlet Type 1 Grates
- 18", 24", 30", 36" Sloped & Flared Box Inlet/Outlet Grates
- Sloped Box Inlet or Outlet Type 1 and 2 Grates



Steel Drop Box Inlets



Sloped & Flared Box Inlet/Outlet



Manhole Covers

Cast Iron Curb Boxes:

- Concrete Median Barrier Box Inlet
- Curb Box Inlets, Type A and B
- Standard Curb Box Inlet, Type F

Manhole Covers (Types A, B & C)

or Junction Box (Type B):

- Non-traffic, Frame and Lid, Type 1
- Traffic, Frame and Bolted Lid, Type 2

Indiana Department of Transportation

The Louisville yard stocks the following INDOT specifications:

- Type A & B Monument Box Frames and Covers
- OS/OSD Bridge Scupper Frames and Bolted Grates
- SQA Bridge Scupper Frames and Bolted Grates
- Type 2, Gutter Inlet Frame and Type C Grate
- Type 3, Catch Basin Frame and Type K Vented Cover
- Type 4, Manhole Frame and Type K Vented Cover
- Type 5, Inlet Frames and Type V Grates
- Type 6, Concave Gutter Inlet Frames and Grates
- Type 7, Convex Grates
- Type 8, Curb Inlet Frames, Type V Grates and Curb Boxes
- Type 10, Curb Inlet Frames, Type V Grates and Curb Boxes
- Type 12-A & 12, Single and Double Median Drain Frames and Type C Grates
- Type 13, Single Valley Gutter Inlet Frames and Grates
- Type 14, Double Inlet Frames and Grates
- Type 15, Curb Inlet Frames, Type V Grates and Curb Boxes
- Beehive Grates for 12", 15", 18", and 24" RCP



R-4016-K



R-1714



R-3287-5



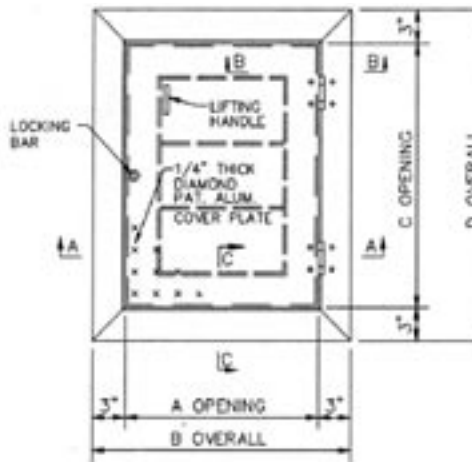
R-3936-A

All the above castings are stocked at our Louisville, Kentucky distribution yard and are certified per DOT specifications.

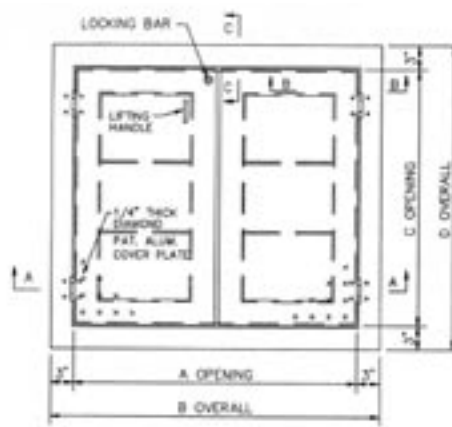
Light Duty Access Doors

Aluminum Frames with Hinged Covers

- Stainless steel hardware – lift handle, auto-lock and hold-open bar
- For pedestrian loading – 300 pound/sq. ft.
- Also available in channel frame-style watertight



SINGLE



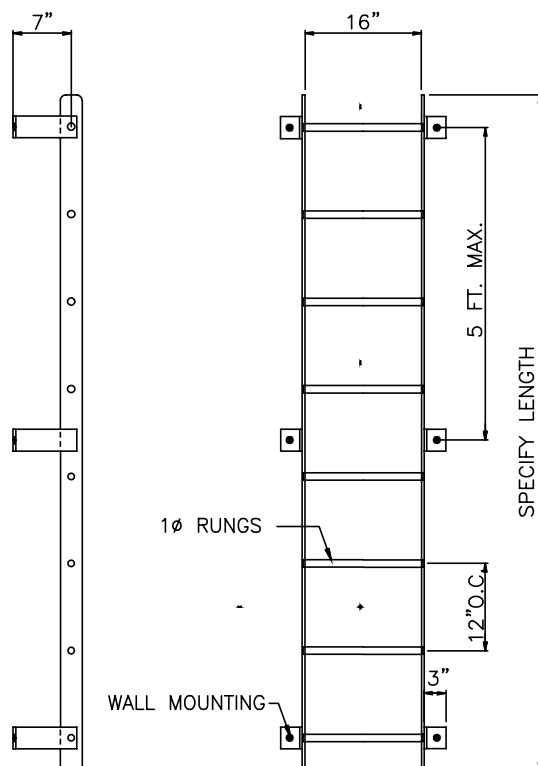
DOUBLE

Model No.	A	B	C	D	Unit Wt.
SINGLE					
S1R2424	24	30	24	30	50 lbs
S1R3030	30	36	30	36	62 lbs
S1R3636	36	42	36	42	78 lbs
S1R3048	30	36	48	54	84 lbs
S1R3648	36	42	48	54	97 lbs
DOUBLE					
S2R4242	42	48	42	48	106 lbs
S2R4848	48	54	48	54	123 lbs
S2R5448	54	60	48	54	132 lbs
S2R7248	72	78	48	54	164 lbs
S2R6060	60	66	60	66	171 lbs

Underground Vault Access

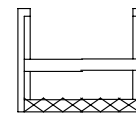
Wall Mount Ladders

- Bolt to concrete wall
- Designed per OSHA standards – safety cages and extended posts available
- From aluminum, galvanized and stainless steel

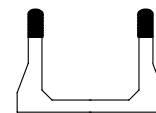


Manhole Steps

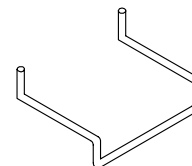
- Three Types Available



TYPE 1
CAST IRON



TYPE 2
PLASTIC
(DRIVE-IN)

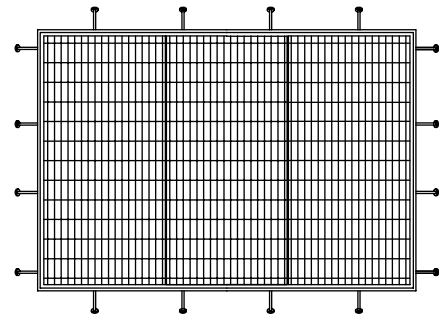
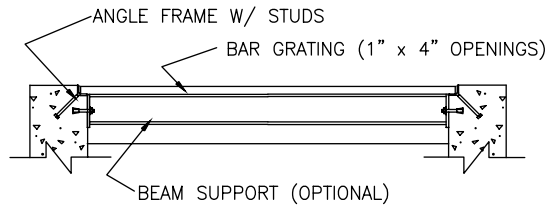


TYPE 3
GALV. STEEL

Bar Grating Assemblies

Frames and Grates

- Fabricated to opening size required
- From aluminum, galvanized, stainless steel, or standard mill finish
- For pedestrian or traffic loading
- Beam supported where required

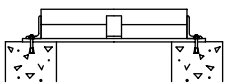
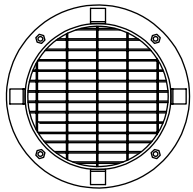


LENGTH X WIDTH AS REQUIRED

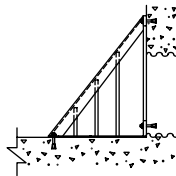
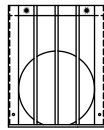
Custom Fabricated Grates

Retention Basin Inlets, Pipe Screens and Trash Racks

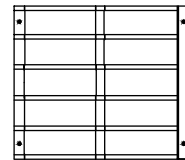
- Fabricated to meet design criteria
- From aluminum, galvanized, stainless steel or standard mill finish



Retention Basin Inlet



Pipe Screen



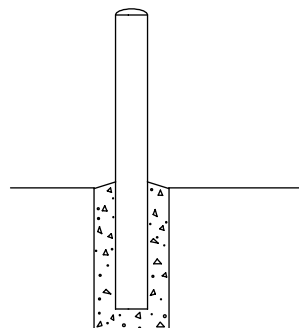
Trash Rack

In addition to above, custom grates available to meet any design criteria

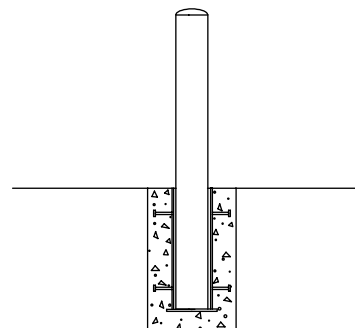
Pipe Bollards

Poured in Place, Removable or Base Plate

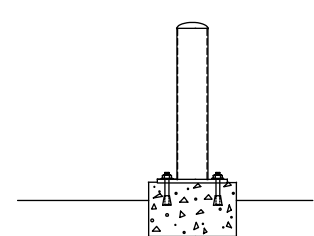
- Standard in 4", 6", and 8" diameter
- From primer coated or galvanized steel
- Specify height



Type 1
Poured In-place



Type 2
Removable w/ ground sleeve



Type 3
Bolted w/ base plate

Fabricated Metal Products

Structural and Miscellaneous

- A complete line of fabricated metal products both structural and miscellaneous is available.
- These products utilize carbon steel, aluminum or stainless steel as specified by the designer. Carbon steel can be supplied either galvanized or primer coated.
- Contact us to discuss your specific fabricated metal product needs.

1. Structural Steel

- Beams
- Columns
- Bracing
- Joist
- Decking

2. Miscellaneous Metals

- Platforms
- Mezzanines w/grating or Tread plate

3. Stairways

- With grating treads or pans

4. Rails

- Sloped, flat, 2 or 3 line, picketed

5. Ladders

- With or Without cages or step-throughs

6. Machinery and Pipe Supports

7. Embeds

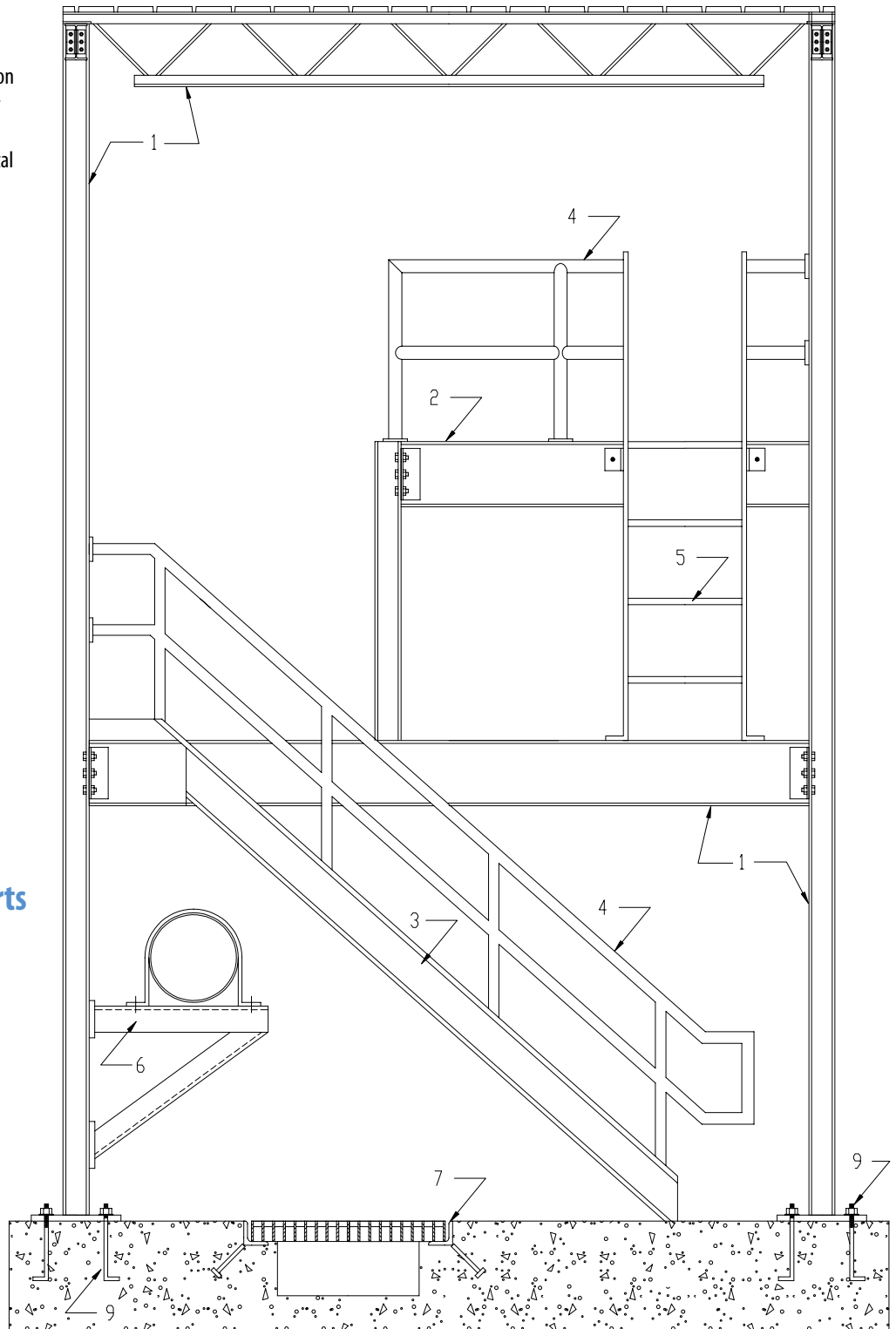
- For slabs, trenches

8. Bollards

- Poured in place
- Bolted
- Removable

9. Anchor Bolts

- Mill finish
- Galvanized
- Stainless





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