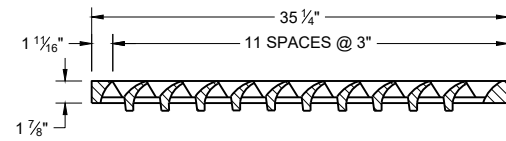
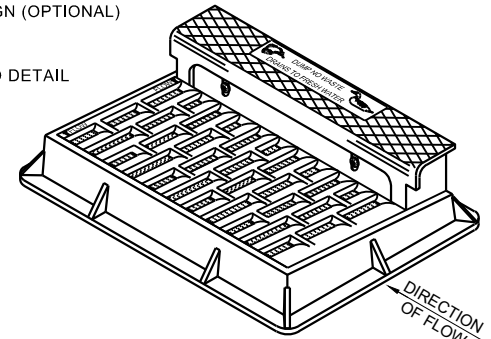
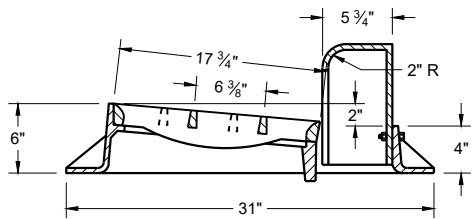
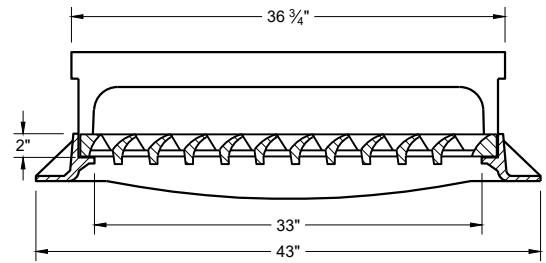
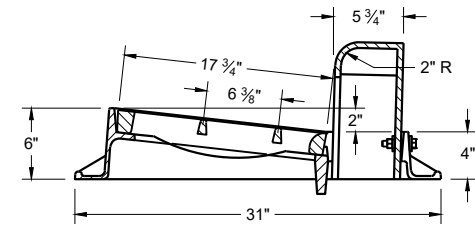
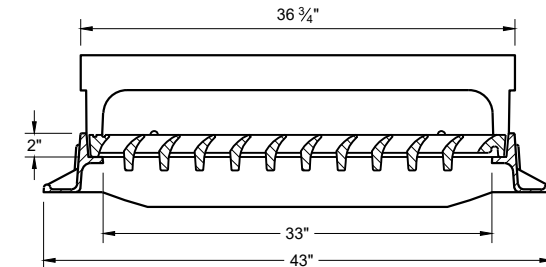


NOTE: EITHER CASTING IS ACCEPTABLE

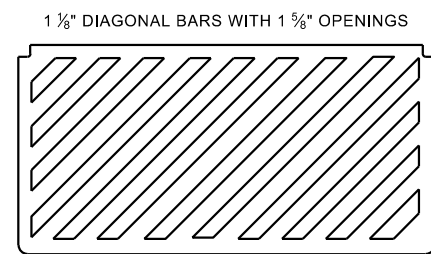


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"



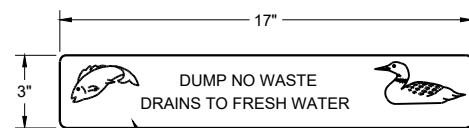
**TYPE "H"**

NOTE: EITHER CASTING IS ACCEPTABLE



**SPECIAL GRATE FOR TYPE "H" COVER**

(MEASURES 35" X 17 3/4" X 2")  
(NOTED AS TYPE H-S ON DRAINAGE TABLE)



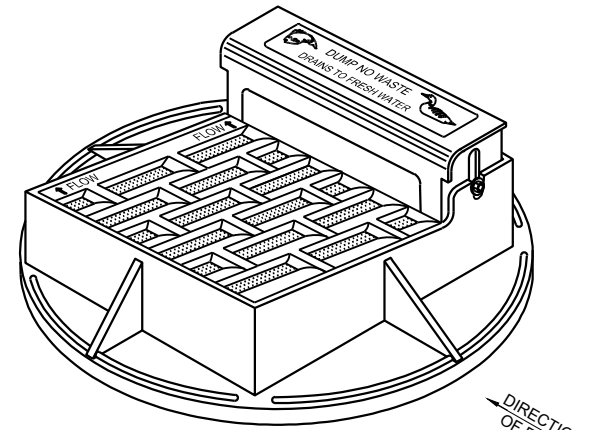
**LOGO DETAIL**

**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

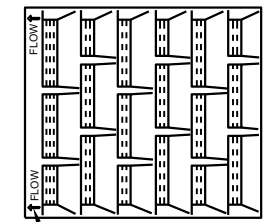
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

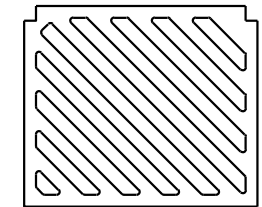


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

NOTE: EITHER CASTING IS ACCEPTABLE

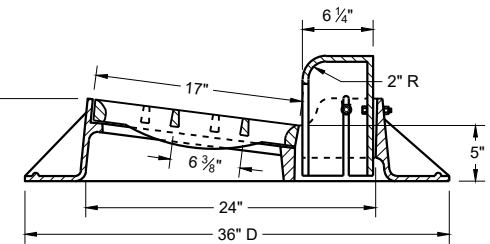
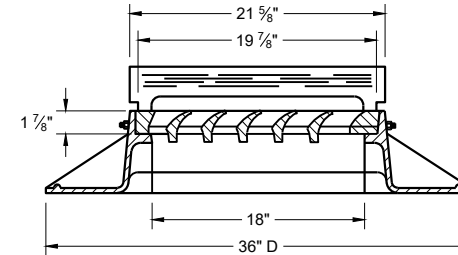
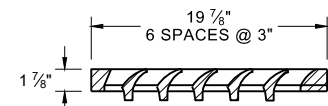


1" DIAGONAL BARS WITH 1 1/2" OPENINGS

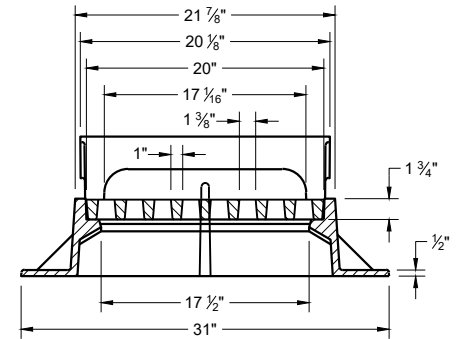
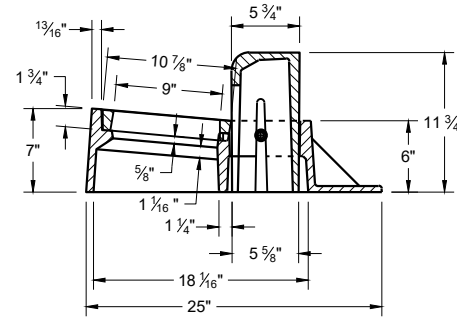


**SPECIAL GRATE FOR TYPE "A" COVER**

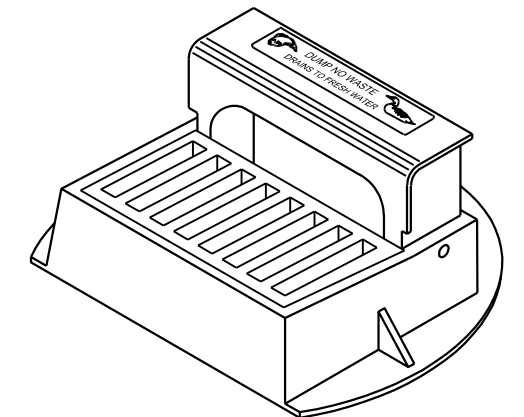
(MEASURES 19 3/4" X 17" X 1 7/8")  
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



**TYPE "A"**



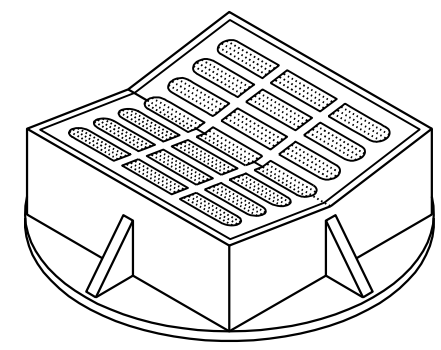
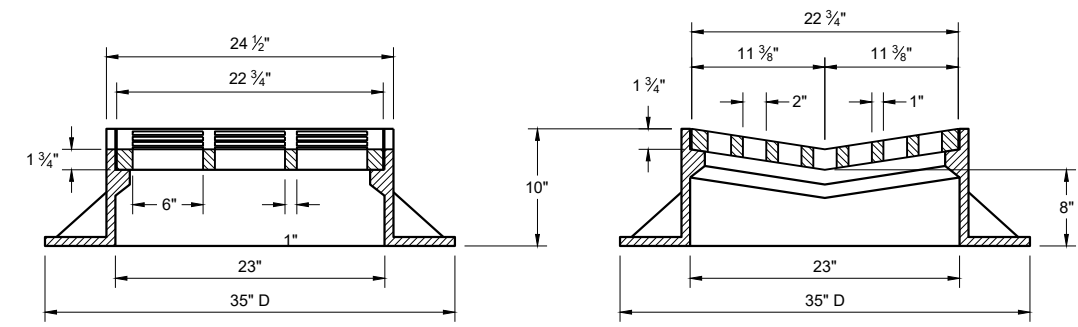
**TYPE "Z"**



**INLET COVERS TYPES A, H, A-S, H-S AND Z**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

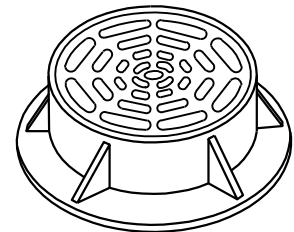
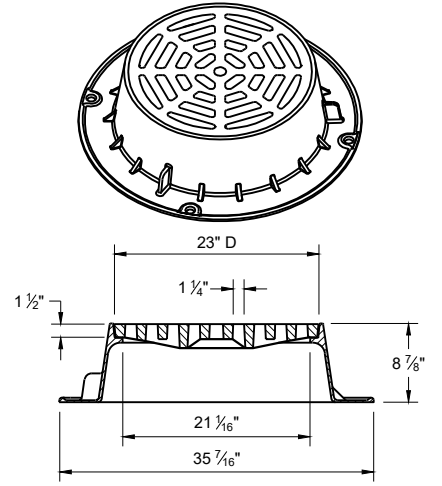
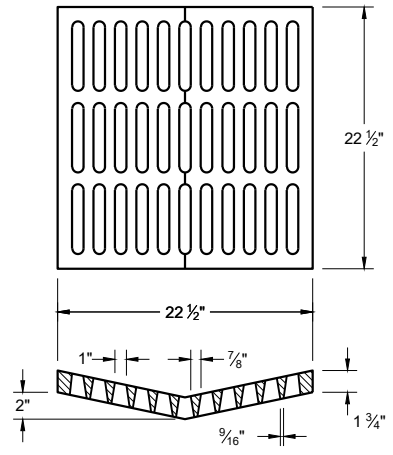
APPROVED  
December 2023 DATE /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR  
FHWA



**TYPE "B"**

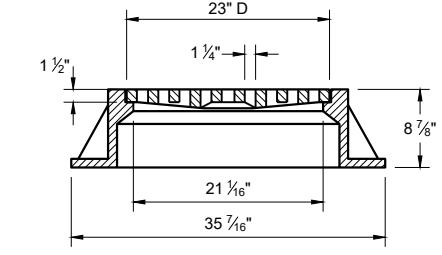
**ALTERNATIVE GRATE FOR TYPE "B" COVER**

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE  
**NOTED AS TYPE B - A ON THE DRAINAGE TABLE**



**TYPE "C"**

NOTE: EITHER CASTING IS ACCEPTABLE

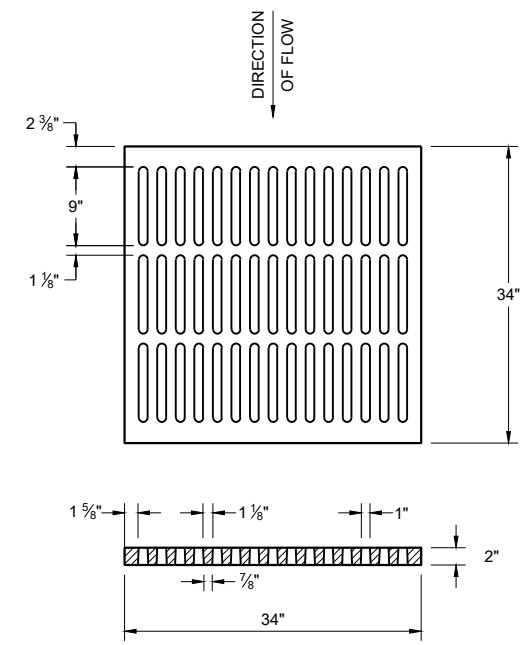


**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

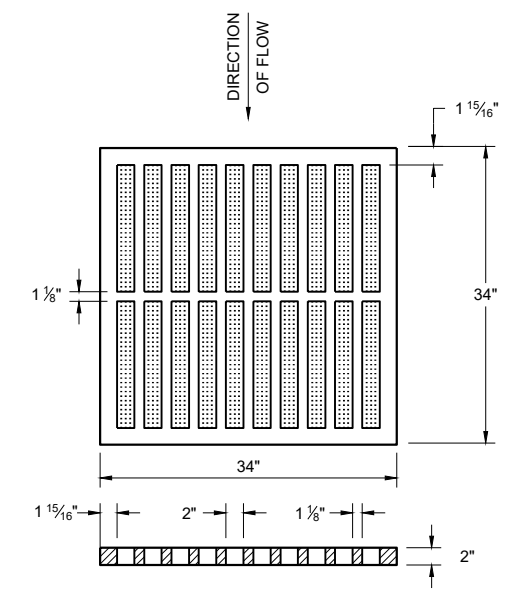
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



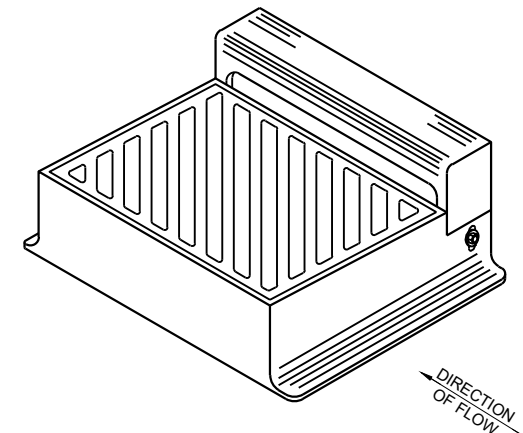
**ALTERNATIVE TYPE "MS"**

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED  
**NOTED AS TYPE MS-A ON THE DRAINAGE TABLE**

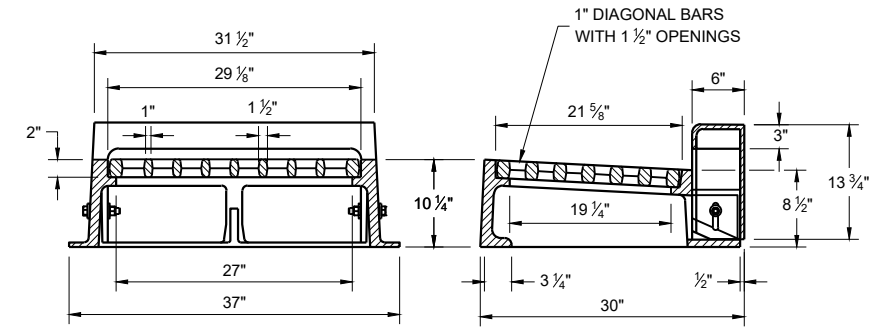


**TYPE "MS"**

USE ON FREEWAYS AND EXPRESSWAYS  
**NOTED AS TYPE MS ON THE DRAINAGE TABLE**



DIAGONAL SLOTS SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED.  
 GRATES ARE MANUFACTURED TO BE REVERSIBLE.



**TYPE "WM"**

NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

6

6

SDD 08A05-21b

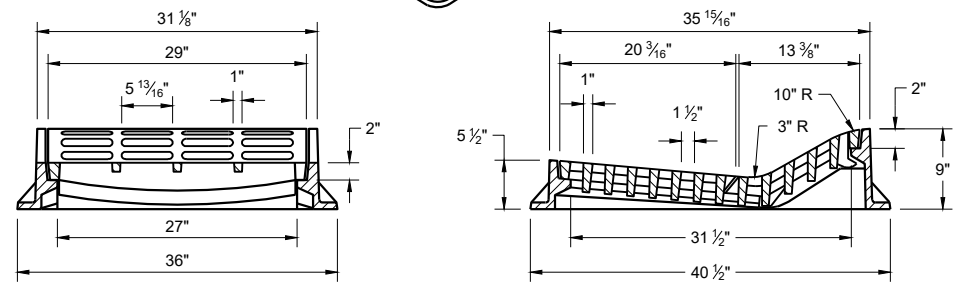
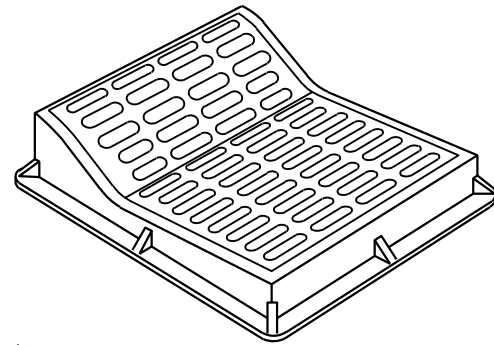
SDD 08A05-21b

<b>INLET COVERS TYPES B, B-A, C, MS, MS-A AND WM</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2023 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

**GENERAL NOTES**

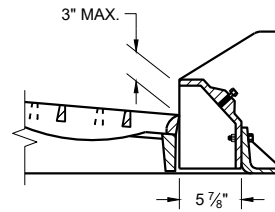
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



**TYPE "F"**

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

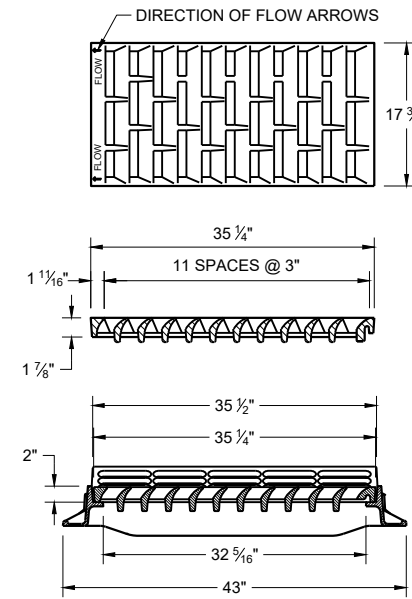


**ALTERNATIVE CURB BOX FOR TYPE "HM" COVER**

USE WITH TYPES "G" AND "J" CONCRETE CURB AND GUTTER, 30 INCH  
NOTED AS TYP "HM-GJ" ON DRAINAGE TABLE

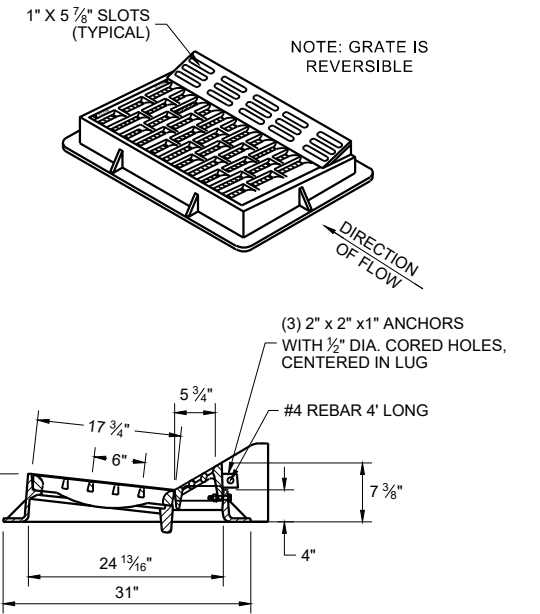
NOTE:  
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.



**TYPE "HM"**

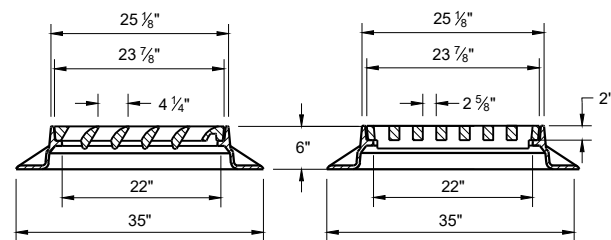
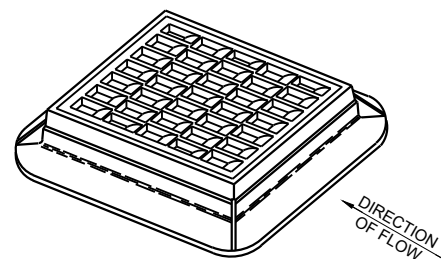
USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"



NOTE:  
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

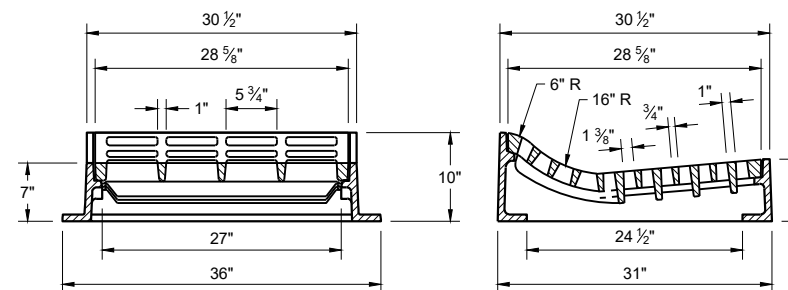
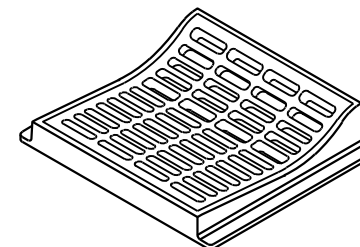
NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.

6



**TYPE "S"**

SDD 08A05-21c



**TYPE "T"**

USE WITH TYPES "R" AND "T" CONCRETE CURB AND GUTTER, 36"

6

**INLET COVERS  
TYPES F, HM, HM-S, S, T,  
HM-GJ AND HM-GJ-S**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

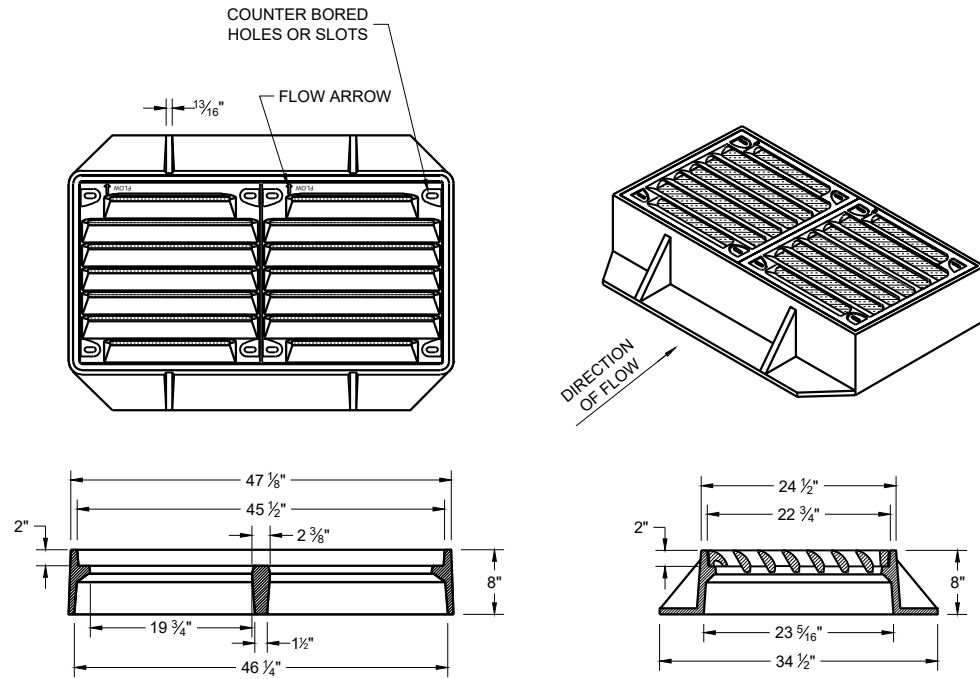
APPROVED  
December 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR

SDD 08A05-21c

**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

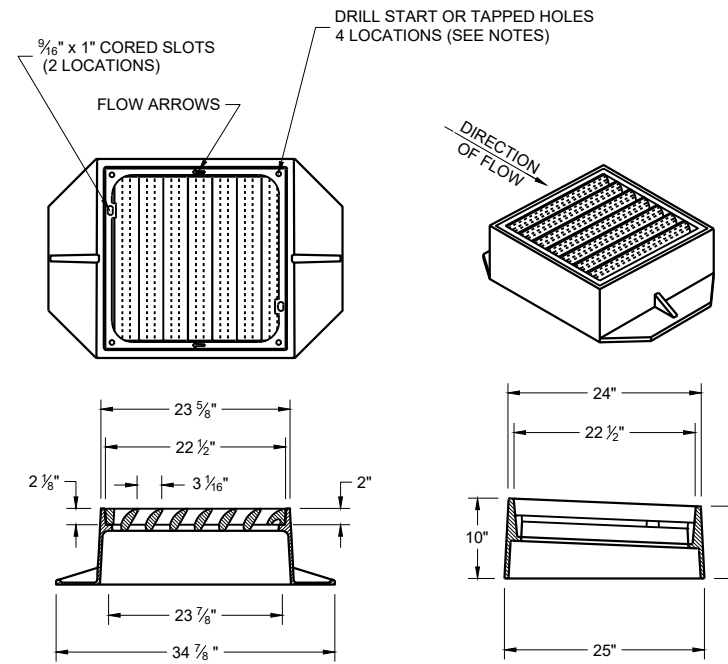
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



**TYPE "VV-B"**

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER  
ALL DRILLING AND TAPPING GRATES AND FRAMES BY CASTING MANUFACTURER

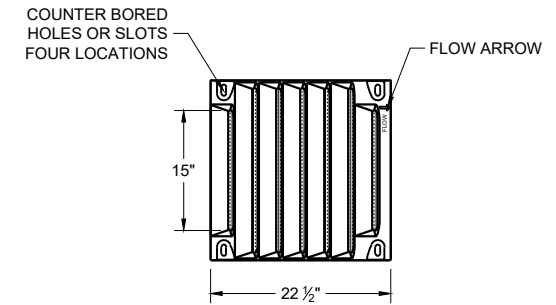
TYPE V  
FRAME - CAST GRAY IRON ASTM A48 CLASS 35B  
3/8" DIA. X 1/16" DRILL START IN 8 LOCATIONS  
GRATE - CAST GRAY IRON ASTM A-48, CLASS 35B



**TYPE "V"**

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER ALL DRILLING AND TAPPING GRATES AND FRAMES BY CASTING MANUFACTURER

TYPE V  
FRAME - CAST GRAY IRON ASTM A48 CLASS 40A  
3/8" DIA. X 1/16" DRILL START IN 4 LOCATIONS  
GRATE - CAST GRAY IRON ASTM A-48, CLASS 35B



**BOLT DOWN GRATE FOR TYPE "V" AND "VV-B" COVER**

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER NOTED AS TYPE "V-B" OR "VV-B" (FOR DOUBLE GRATE) ON DRAINAGE TABLE

TAP 1/2" -13 HOLES IN FOUR LOCATIONS PER GRATE IN FRAME TO BOLT GRATE(S).  
FRAME - CAST GRAY IRON ASTM A48 CLASS 40A

GRATE - CAST DUCTILE IRON ASTM A536, 55+KSI YIELD  
BOLTS - 1/2" -13 STAINLESS STEEL BOLTS WITH WASHERS  
TORQUE BOLTS TO MANUFACTURER SPECIFICATION DO NOT OVERTIGHTEN.

6

6

SDD 08A05-21d

SDD 08A05-21d

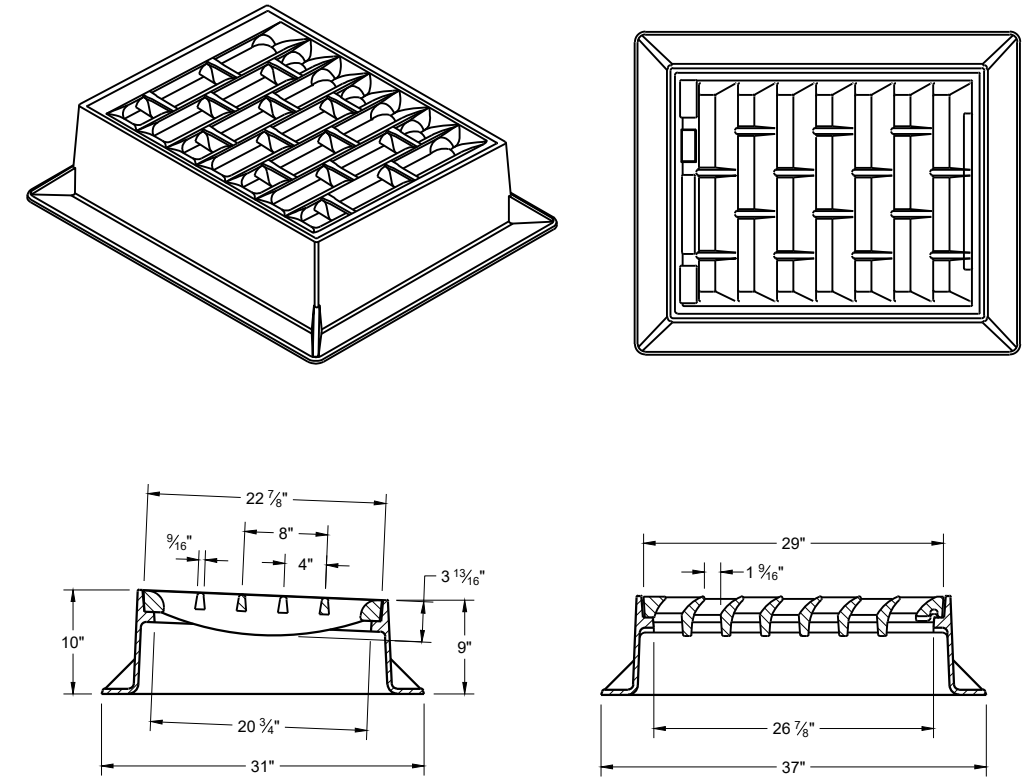
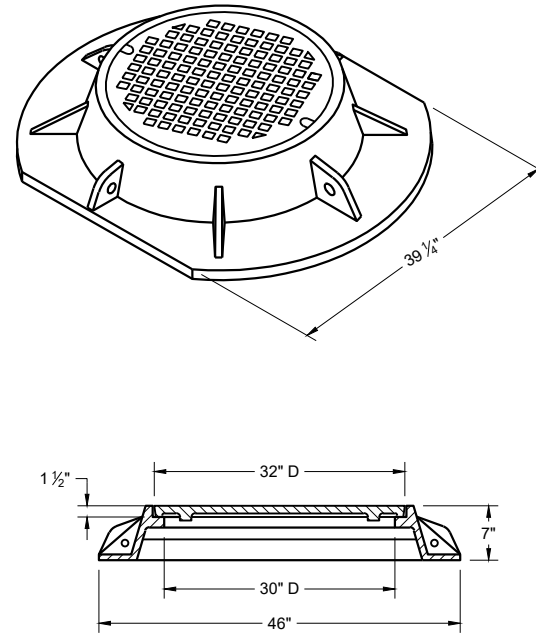
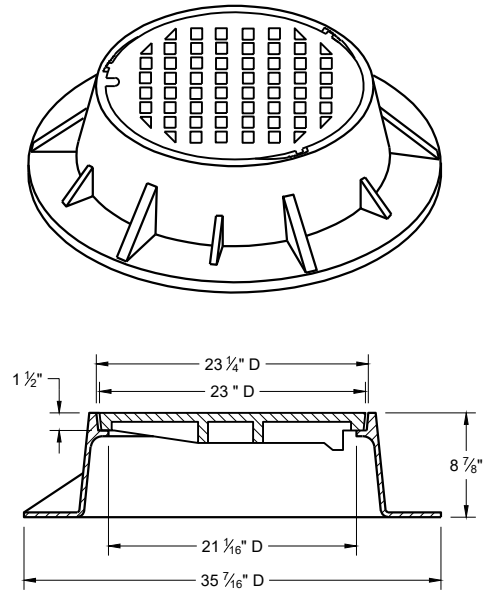
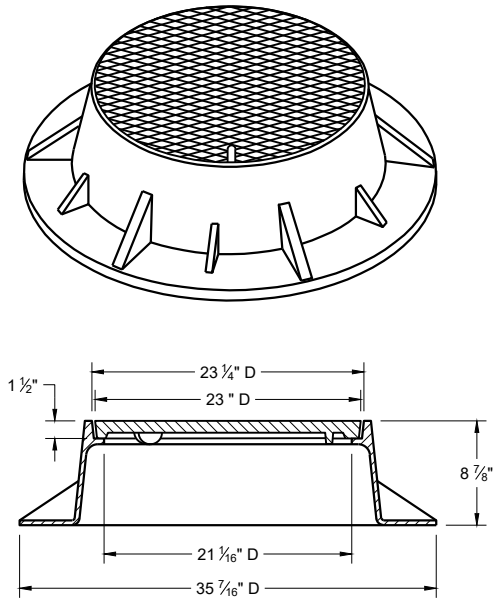
<b>INLET COVERS TYPES V, V-B, AND VV-B</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2023 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

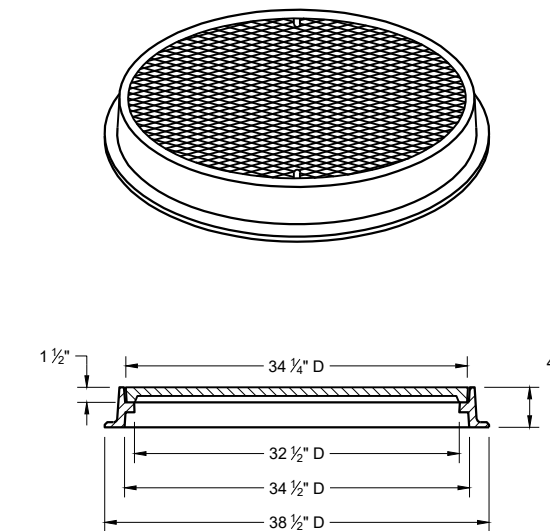
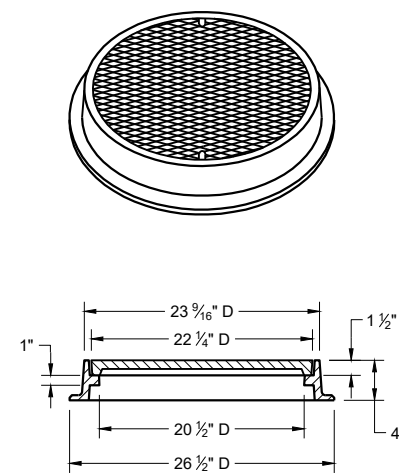
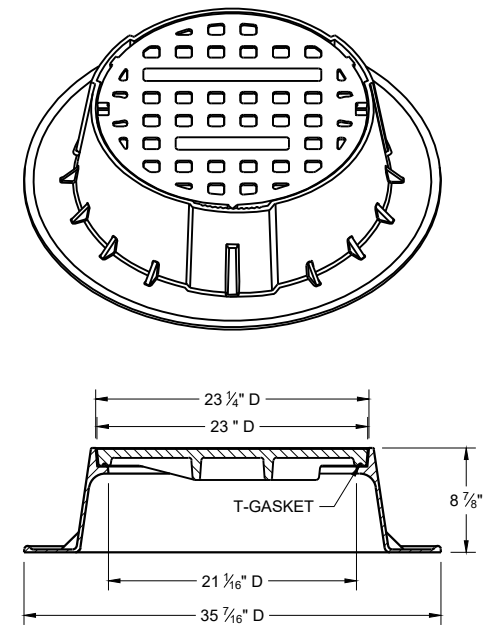
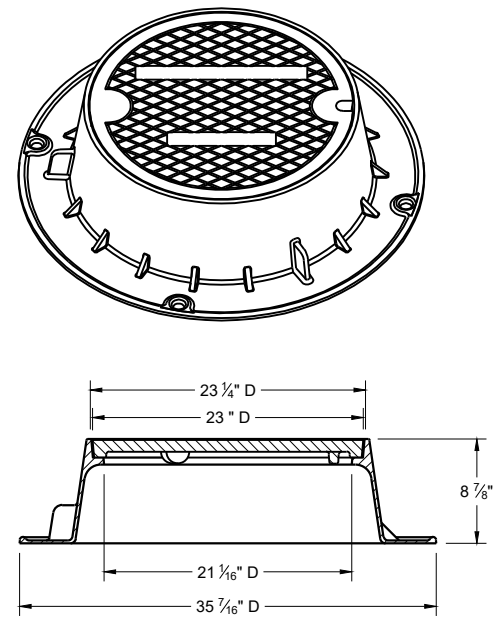
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



**TYPE "K"**

**INLET COVER TYPE "BW"**



**TYPE "J"**

NOTE: EITHER CASTING IS ACCEPTABLE

**TYPE "J" SPECIAL**

TYPE "B" NON-ROCKING SELF-SEAL LID (NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

NOTE: EITHER CASTING IS ACCEPTABLE

**TYPE "L"**

**TYPE "M"**

**INLET COVERS TYPES BW  
MANHOLE COVERS TYPES K,  
J, J-S, L, AND M**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
December 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR

*Inlet Covers Type A, H, A-S, H-S and Z***References:**[FDM 13-25-30](#)

Neenah Foundry Company Catalog "Construction Castings"

**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
611.0600	Inlet Covers Type A.....	EACH
611.0603	Inlet Covers Type A-S.....	EACH
611.0624	Inlet Covers Type H.....	EACH
611.0639	Inlet Covers Type H-S.....	EACH
611.0666	Inlet Covers Type Z.....	EACH

**Standardized Special Provisions associated with this drawing:**

<u>STSP NUMBER</u>	<u>TITLE</u>
NONE	

**Other SDDs associated with this drawing:**

NONE

**Design Notes:**

When special grates are required note as Type H-S or A-S on the drainage table and use the appropriate bid item number.

Inlet covers Type H and H-S are placed on Inlets and Catch Basins 2x3-FT. Type H and H-S covers may also be placed on Inlets 4-FT Diameter, Catch Basins 4-FT, 5-FT and 6-FT Diameter with a flat top 2'x3' opening.

Inlet covers Type A and A-S are placed on inlets 2x2 FT. Type A and A-S covers may also be placed on Inlets 3-FT and 4-FT Diameter and Catch Basins 3-FT, 4-FT, 5-FT and 6-FT Diameter with a flat top 2'x2' opening.

Inlet Cover Type Z is placed on Inlets 3-FT and 4-FT Diameter, Catch Basins 3-FT, 4-FT, 5-FT and 6-FT Diameter with a flat top 2-FT diameter opening.

Environmental logo can be changed. This will require a special and/or construction details.

**Contact Person:**

Rodney Taylor (608) 261-8207

*Inlet Covers Type B, B-A, C, MS, MS-A, and WM***References:**[FDM 13-25-30](#)

Neenah Foundry Company Catalog "Construction Castings"

**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
611.0606	Inlet Covers Type B.....	EACH
611.0609	Inlet Covers Type B-A.....	EACH
611.0612	Inlet Covers Type C.....	EACH
611.0642	Inlet Covers Type MS.....	EACH
611.0645	Inlet Covers Type MS-A.....	EACH
611.0660	Inlet Covers Type WM.....	EACH

**Standardized Special Provisions associated with this drawing:**

NONE

**Other SDDs associated with this drawing:**

NONE

**Design Notes:**

When alternative grates are required, note a Type B-A or MS-A and use the appropriate bid item number.

Inlet Covers Type B and B-A are placed on Inlets 2x2-FT. Type B and B-A covers may also be placed on Inlets 3-FT and 4-FT Diameter and Catch Basins 3-FT, 4-FT, 5-FT and 6-FT Diameter with a flat top 2x2-FT opening.

Inlet Covers Type C are placed on circular inlets, circular catch basins, and square or circular manholes with a 2' diameter opening size.

Inlet Covers Type MS and MS-A are to be placed on Inlet Median 1, 2, 3, or 4 Grates.

Inlet Covers Type WM is placed on Inlets 2x2.5-FT. Type WM Covers may also be placed on Inlets 4-FT Diameter and Catch Basins 4-FT, 5-FT and 6-FT Diameter with a flat top 2x2.5-FT opening.

**Contact Person:**

Rodney Taylor (608) 261-8207

*Inlet Covers Type F, HM, HM-S, S, T, HM-GJ, and HM-GJ-S***References:**[FDM 11-20-1](#)[FDM 11-45-50](#)[FDM 13-25-15](#)[FDM 13-25-30](#)

Neenah Foundry Company Catalog "Construction Castings"

**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
611.0615	Inlet Covers Type F.....	EACH
611.0627	Inlet Covers Type HM .....	EACH
611.0630	Inlet Covers Type HM-GJ.....	EACH
611.0633	Inlet Covers Type HM-GJ-S .....	EACH
611.0636	Inlet Covers Type HM-S.....	EACH
611.0651	Inlet Covers Type S.....	EACH
611.0652	Inlet Covers Type T.....	EACH

**Standardized Special Provisions associated with this drawing:**

<u>STSP NUMBER</u>	<u>TITLE</u>
NONE	

**Other SDDs associated with this drawing:**

NONE

**Design Notes:**

When special grate is required for Type HM cover, note the inlet as HM-S.

When special grate is required for Type HM-GJ cover, note the inlet as HM-GJ-S. Note alternative curb box for Type HM cover, note the inlet as Type HM-GJ.

Inlet cover Type F is placed on Inlets and Catch Basins 2.5x3-FT. Type F covers may also be placed on Inlets 4-FT Diameter and Catch Basins 4-FT, 5-FT and 6-FT Diameter with a flat top 2.5x3-FT opening.

Inlet Covers Type HM, HM-S, HM-GJ and HM-GJ-S are placed on Inlets and Catch Basins 2x3-FT. Type HM, HM-S, HM-GJ and HM-GJ-S covers may also be placed on Inlets 4-FT Diameter, Catch Basins 4-FT, 5-FT and 6-FT Diameter with a flat top 2x3-FT opening.

Inlet Cover Type S is placed on Inlets 2x2-FT or 2x2.5-FT. Inlet Cover Type S may also be placed on Inlets 3-FT and Catch Basin 3-FT Diameter with a flat top 2x2-FT opening or Inlets 4-FT Diameter and Catch Basins 4-FT, 5-FT and 6-FT Diameter with a flat top 2x2-FT or 2x2.5-FT opening.

Inlet Cover Type T is placed on Inlets 2x2.5-FT. Inlet Cover Type T may also be placed on Inlets 4-FT Diameter and Catch Basin 4-FT, 5-FT and 6-FT Diameter with a flat top 2x2.5-FT opening. Type T covers are used on Type R and T curb and gutter.

**Contact Person:**

Rodney Taylor (608) 261-8207



Inlet Covers Type V, V-B, and VV-B

References:

- [FDM 11-20-1](#)
- [FDM 11-45-50](#)
- [FDM 13-25-15](#)
- [FDM 13-25-30](#)

Neenah Foundry Company Catalog "Construction Castings"

Bid items associated with this drawing:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
611.0654	Inlet Covers Type V .....	EACH
611.0655	Inlet Covers Type V-B.....	EACH
611.0656	Inlet Covers Type VV-B .....	EACH

Standardized Special Provisions associated with this drawing:

<u>STSP NUMBER</u>	<u>TITLE</u>
NONE	

Other SDDs associated with this drawing:

NONE

Design Notes:

Inlet Cover Type V can be placed on Inlets 2x2-FT or 2x2.5-FT. However, Type V and V-B have unique dimensions that don't fit these inlets well. Consider using Inlet 3-FT or Catch Basin 3-FT to 6-FT with a 24x21-Inch centered opening. A special construction detail will be required.

Use the Inlet Cover Type V-B where construction staging may cause the standard V-inlets to lie in the wheel path of traffic. Discuss with regional maintenance as to whether the covers are to be unbolted after construction is complete. If this is the case include a special provision article (not an SPV) for Inlet Cover Type V-B that requires the contractor to remove the bolts upon completion of the project. The article should also require a manufacturer recommended anti-seize compound be used on the threads during installation.

Inlet Cover Type VV-B is placed on 5-ft diameter manhole with a flat top with 2x3.5-ft opening. Only place this casting on the 2x3.5-FT inlet where cover conditions will not allow for a round structure with a lid. This size inlet is not an industry standard and may need to be custom manufactured adding to cost and potentially increased delivery time. Discuss with WisDOT project manager and regional maintenance on the need to remove bolts upon completion of the project. If this is the case include a special provision article (not an SPV) for Inlet Cover Type VV-B that requires the contractor to remove the bolts upon completion of the project. The article should also require a manufacturer recommended anti-seize compound be used on the threads during installation.

Inlet Cover Type VV-B's will come predrilled and tapped with grates oriented to intercept flow along the long edge of the frame as shown on the standard detail. The standard detail assumes the frame will be placed with the long edge perpendicular to centerline and the short edge along a curb face or barrier wall. If the designer wishes for the grates to be oriented to intercept flow along the short edge of the frame include this in a special provision article and indicate this in the miscellaneous quantities/storm sewer table.

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Inlet Covers Type BW; Manhole Covers Type J, J-S, K, L and M

References:

[FDM 13-25-30](#)

Neenah Foundry Company Catalog "Construction Castings"

Bid items associated with this drawing:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
611.0530	Manhole Covers Type J .....	EACH
611.0535	Manhole Covers Type J-Special .....	EACH
611.0540	Manhole Covers Type K.....	EACH
611.0545	Manhole Covers Type L .....	EACH
611.0550	Manhole Covers Type M .....	EACH
611.0610	Inlet Covers Type BW .....	EACH

Standardized Special Provisions associated with this drawing:

<u>STSP NUMBER</u>	<u>TITLE</u>
NONE	

Other SDDs associated with this drawing:

NONE

Design Notes:

- Manhole Covers Type J and J-Special are placed on manholes with flat top 2-FT diameter openings.
- Manhole Cover Type K is placed on manholes with a flat top 3-FT diameter opening.
- Manhole Cover Type L is placed on manholes with a flat top 2-FT diameter opening.
- Manhole Cover Type M is placed on manholes with a flat top 3-FT diameter opening.
- Inlet Cover Type BW is placed on Inlets 2x2.5-FT. Type BW covers may also be placed on Inlets 4-FT Diameter, Catch Basins 4-FT, 5-FT and 6-FT Diameter with a flat top 2x2.5-FT opening. These inlets were designed to be used in front of barrier walls.
- Environmental logo can be changed. This will require a special and/or construction details.

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