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9 TRENCH CASTINGS

10 VALVES & GATES

11 ACCESS & HATCH COVERS

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Manufacturer's Representatives are located in many principal cities throughout the U.S. Please visit www.neenahfoundry.com or call for the location nearest you.

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GENERAL INFORMATION ABOUT CASTINGS

GENERAL: Castings are manufactured true to pattern; component parts will fit together in a satisfactory manner. They shall be smooth and well cleaned by shotblasting.

QUALITY: Metal used in the manufacturing of Neenah castings shall be ASTM-A-48, Class 35B gray iron or ASTM A536 Grade 80-55-06 for ductile iron, unless otherwise specified in your order and/or acknowledged at the time of order.

TOLERANCES: As-cast dimensions may vary one-half the maximum shrinkage possessed by the metal or +/- 1/16 inch per foot.

BEARING SURFACES: All circular manhole frames and covers are furnished with machined horizontal bearing surfaces unless otherwise noted within or acknowledged at the time of order. All square or rectangular units are furnished with as-cast bearing surfaces unless otherwise noted within or acknowledged at the time of order.

UNPAINTED CASTINGS: Castings are furnished unpainted. See page 8 for additional information on Neenah's no paint policy.

WEIGHTS: Weights are not shown in the catalog. Overall shape and function, rather than weight, are the major considerations to be used in evaluating castings. Focus on basic dimensions and application when creating your casting specifications and specify Neenah catalog number. Current weights are always available from Neenah (see "Casting Weights" on page 6 for more information).

SUBMITTALS: Manufacturer's shop drawings shall be submitted to the engineer for approval prior to manufacture or shipment of castings to job site. The engineer shall retain the right to reject castings not conforming to this specification and/or approved submittal drawings.

GRAY IRON: Best for Construction Castings

The use of gray iron offers many advantages over other materials for construction castings.

Of all the common castable ferrous materials, gray irons exhibit the best corrosion and wear resistance, as well as the desirable quality of high compressive strength. These are valuable qualities for load-bearing street hardware.

STRENGTH:

Gray iron produced by Neenah Foundry is laboratory tested from specimens to verify tensile strengths. Tensile strength is determined through the use of separately cast test bar specimens. Unless otherwise indicated within, or acknowledged at the time of order, 35,000 p.s.i. minimum tensile strength iron is furnished. See "Test Bars Disclaimer" on page 9 for further information.

WHEN TO USE DUCTILE IRON:

Ductile iron is an ideal material for construction castings when standard gray iron castings do not have the load-bearing capabilities for a particular application.

While having the advantages of gray iron, ductile iron has greater strength characteristics than structural carbon steel without steel's inherent corrosion characteristics.

Ductile iron is often used in areas subjected to loads greater than H20 loadings such as:

- Industrial Facilities with forklift traffic
- Container Ports
- Airports

Due to the excellent compressive strength of gray iron and the way these qualities relate to iron frames, mating ductile iron lids or grates with gray iron frames is often a cost-effective recommended approach.

There are many factors involved in choosing a grade of ductile iron. When there are unusual loading conditions or locations subjected to extreme heat or cold, please contact our Product Engineering Department for more information.

CASTINGS FOR DIFFERENT TRAFFIC CONDITIONS

To assist in selecting castings which meet a general load-bearing requirement, we have classified our castings into three separate categories. These are referenced as follows:

WHEEL LOAD CAPACITY: Visit www.neenahfoundry.com to review wheel load capacities as they relate to product selection.

EXTRA HEAVY DUTY: For airports and concentrated loads. These applications require special castings to accommodate wheel loads of 100 p.s.i. or greater. When selecting castings for heavy concentrated loads, advise loading conditions: total wheel load, tire or wheel contact area and tire pressure. We will furnish you with information to assist you with your choice.

HEAVY DUTY: Castings in this category exceed proof loads of 16,000 lbs. Many of the castings in this catalog are suitable for much heavier proof loads.

LIGHT DUTY: These castings are recommended for sidewalks, terraces, and very light traffic. Specifiers are cautioned that it is possible for a site to be changed to a heavy duty requirement at some future date. If this happens, we strongly recommend that the installation be replaced with heavy duty castings. If in doubt, Neenah recommends specifying heavy duty castings.

LOAD-BEARING CAPABILITIES:

Responsible consulting and public works engineers need to know how castings will perform in the field. For years, empirical formulas have been erroneously used to determine loading capacities. Neenah offers full scale destructive testing as an accurate method of determining true load-bearing capabilities.

FULL SCALE DESTRUCTIVE TESTING:

Proof load test is the recommended method of providing load performance of a casting's service. You will find this testing procedure explained in Federal Specification A-A 60005 and AASHTO-M 306-05. The essential elements of the test are:

- 1) A specified load is applied on a 9" x 9" contact area
- 2) The cover, grating or frame will be inspected for cracks or detrimental permanent deformation
- 3) Any crack or detrimental permanent deformation will cause the castings to be rejected

Most tests are performed on our 200,000 lb. compression testing machine. Tests can take a casting beyond the A-A 60005 and AASHTO-M 306-05 specifications, even to destruction.

AVAILABLE PUBLISHED SPECIFICATIONS:

There are several published specifications that are available to assist designers in specifying iron castings. It is the responsibility of the designer to determine if one or all of these specifications are appropriate for a given application. These specifications are referenced as follows:

For Gray Iron

A-A 60005 -----	Federal Specification: Frames, covers, gratings, steps, sump and catch basins, manhole castings
ASTM-A-48 -----	Standard Specification for Gray Iron Castings
AASHTO-M 105 -----	Standard Specification for Gray Iron Castings
AASHTO-M 306-05 -----	Standard Specification for Drainage Structure Castings

For Ductile Iron

ASTM-A-536 -----	Standard Specification for Ductile Iron Castings
ASTM-A-897 -----	Standard Specification for Austempered Ductile Iron Castings

For Airport Castings

FAA AC: 150/5370-10, Item D-751 -----	Manholes, Catch Basins, Inlets and Inspection Holes
FAA AC: 150/5320-6, Appendix 3 -----	Designs of Structures for Heavy Aircraft

For Handicapped Compliance

Americans With Disabilities Act (ADA), Sections 4 Accessible Routes and Section 4.5.4 Gratings

There may be applicable requirements and specifications other than those shown above that need to be consulted before a designer specifies his requirements.

MODERN CASTINGS FOR TOMORROW'S WORLD

BREAKTHROUGHS IN CASTING CONCEPTS

Neenah makes a continual effort to provide customers with the most modern and cost-effective castings available.

PERFORMANCE CRITERIA

In times past, limited knowledge of the properties of gray iron caused specifiers to rely on weight as specifying criteria when calling for gray iron castings. In reality, the material properties of gray iron allow castings to be lighter in weight and thinner in section, while still meeting or exceeding performance expectations. Proof load criteria, rather than casting weights, should be used in specifying construction castings. Various published specifications are available to assist with choices (see page 5).

CASTING WEIGHTS

The weights of Neenah Foundry castings are not shown in this catalog. Casting weights, section thicknesses and non-critical dimensions are periodically adjusted in a continued effort to bring our customers the best and most economical products available from our modern production facilities. Due to these occasional changes and adjustments, weights are not shown in this catalog in an effort to avoid confusion. Current weights are always available from Neenah.

MODERN PLATEN LIDS

Neenah Engineers have known for some time that platen (plate shaped) lids are improved manhole covers, which are pound per pound stronger than ribbed lids. Advantages of lighter weight, platen lids include:

- Increased load capacity
- Increased deflection resulting in increased energy absorption
- Decreased weight
- Easier to handle

MODERN LIGHTER WEIGHT FRAMES

Manhole frames have an inherently strong shape. In the past, metal sections had to be thicker because foundry molding equipment was imprecise. To compensate, generous tolerances were required to ensure minimum section thickness.

Today's molding machines are capable of holding tight tolerances, allowing specifiers to reduce weights and section thicknesses. Technology now allows modern construction casting manufacturers to take advantage of the frame's inherently strong shape.

Modern frames are significantly reduced in weight and section thickness, without a reduction in relevant performance characteristics.

Lighter frames are viable because gray iron is stronger in compression than in tension. The lighter frames are still so substantial that, under load testing, gray iron covers will fail well before failure of the frame.

FOR MORE INFORMATION, REQUEST A COPY OF OUR "MODERNIZED CASTINGS BROCHURE."



In support of the Green Initiative, Neenah Foundry is pleased to report that our products contain a minimum of 85% recycled content in the form of a minimum of 35% consumer generated scrap metal and a minimum of 50% industrial generated scrap metal.

***For more information about Neenah Foundry products and services,
please visit our website at www.neenahfoundry.com.***

IMPORTANT INFORMATION ON CHOOSING THE RIGHT CASTING FOR YOUR APPLICATION

THESE PRODUCTS SHOULD BE SPECIFIED AND INSTALLED BY TRAINED, QUALIFIED PROFESSIONALS!

AS PROUD AS WE ARE OF OUR PRODUCTS, WE RECOGNIZE THAT ULTIMATELY, THEIR SAFETY AND EFFECTIVENESS DEPEND UPON WHETHER A PROJECT DESIGNER HAS SELECTED THE CORRECT CASTING FOR THE JOB. WE OFFER A BROAD RANGE OF PRODUCTS FROM WHICH THAT CORRECT CASTING CAN BE CHOSEN, BUT THE PROPER SELECTION OF A NEENAH CASTING REQUIRES THE SERVICES OF A QUALIFIED PROFESSIONAL WHO KNOWS HOW AND WHERE IT WILL BE USED, AND HAS THE TRAINING AND EXPERIENCE TO TAKE INTO CONSIDERATION ALL THE CIRCUMSTANCES OF THE INTENDED APPLICATION, DETERMINE REQUIRED STRENGTH, CAPACITY, AND FUNCTION, AND ASSESS A PARTICULAR DESIGN'S SUITABILITY FOR THE SETTING IN WHICH IT WILL BE INSTALLED, INCLUDING ANY PEDESTRIAN, BICYCLE AND OTHER TRAFFIC TO WHICH IT WILL BE EXPOSED. ***THIS IS NOT A JOB FOR A NON-PROFESSIONAL.*** ALTHOUGH WE HOPE THE INFORMATION IN THIS CATALOG WILL BE INFORMATIVE TO OTHER READERS AS WELL, WE EMPHASIZE THAT IT IS WRITTEN FOR USE BY SUCH QUALIFIED PROFESSIONALS. ***NO ONE SHOULD SELECT OR SPECIFY ANY NEENAH CASTING WITHOUT FIRST OBTAINING THE ADVICE OF SUCH A PROFESSIONAL.***

PEDESTRIAN, BICYCLE AND HANDICAP CONSIDERATIONS

IN ADDITION TO CONSIDERATIONS OF FUNCTION AND PERFORMANCE, PROJECT DESIGNERS AND SPECIFIERS MUST CAREFULLY CONSIDER PEDESTRIAN, BICYCLE AND HANDICAP ISSUES, INCLUDING THOSE ARISING UNDER THE AMERICANS WITH DISABILITIES ACT (ADA) AND RELATED REGULATIONS, WHEN SPECIFYING THE USE OF OUR CONSTRUCTION CASTINGS, TAKING INTO CONSIDERATION THE SPECIFIC CIRCUMSTANCES OF EACH PROPOSED APPLICATION. BECAUSE WE DO NOT KNOW THOSE SPECIFIC CIRCUMSTANCES, WE CANNOT RECOMMEND THE CASTINGS TO BE USED IN THEM, THOUGH WE POINT OUT BELOW SOME GENERAL CONSIDERATIONS ON WHICH WE EXPECT A QUALIFIED PROFESSIONAL PROJECT DESIGNER WILL ADVISE.

WHILE CASTINGS MUST ALWAYS BE SELECTED IN LIGHT OF SPECIFIC CIRCUMSTANCES AND FORESEEABLE USE, PLEASE REMEMBER THAT INSTALLATIONS DO CHANGE OVER TIME, IN CONCEPT, SCOPE OR USAGE PATTERNS. PROJECT DESIGNERS AND USERS MUST BE ALERT TO SUCH CHANGES, AND MUST RECONSIDER WHETHER THE CHOSEN CASTINGS CONTINUE TO MEET THE REQUIREMENTS OF THOSE CHANGED CIRCUMSTANCES OR WHETHER THEY SHOULD BE REPLACED WITH OTHER DESIGNS.

GRATES AND OTHER CASTINGS FOR PEDESTRIANS AND HANDICAPPED PERSONS: LAWS, REGULATIONS OR CUSTOMS MAY DICTATE THE USE OF SPECIFIC TYPES OF GRATES OR OTHER CASTINGS WHERE PEDESTRIANS AND/OR HANDICAPPED PERSONS MAY BE PRESENT. FOR INSTANCE, GRATES MAY BE REQUIRED WITH OPENINGS NO GREATER THAN 1/4" OR 1/2". PROJECT DESIGNERS MUST CAREFULLY EVALUATE THE LOCATION AND PLACEMENT OF GRATES AND OTHER CASTINGS AGAINST APPLICABLE LAWS, REGULATIONS AND OTHER SPECIFICATIONS TO ENSURE THEY ARE USING DESIGNS THAT WILL SATISFY ALL SUCH REQUIREMENTS, AND PROVIDE A PATHWAY AND ACCESSIBLE ROUTE FOR PEDESTRIANS AND HANDICAPPED PERSONS. AMONG OTHER SOURCES, PROJECT DESIGNERS MAY FIND USEFUL INFORMATION, SPECIFICATIONS AND GUIDELINES IN THE AMERICANS WITH DISABILITIES ACT.

BICYCLE SAFETY: GRATES AND OTHER CASTINGS MUST BE CHOSEN FOR SAFE USE BY BICYCLISTS. THE FOLLOWING ARE SOME IMPORTANT CONSIDERATIONS THAT WE EXPECT WILL BE CONSIDERED BY THE QUALIFIED PROFESSIONAL PROJECT DESIGNER:

1. THE STYLE OF GRATE OR OTHER CASTING SHOULD ALLOW BICYCLE TRAFFIC FROM ALL ACCESSIBLE DIRECTIONS. FOR INSTANCE, GRATES LOCATED IN OPEN AREAS, OR ADJACENT TO DRIVEWAYS, OR IN OTHER LOCATIONS WHERE THEY ARE NOT ADJACENT TO BARRIERS SUCH AS CURBS, REQUIRE SPECIAL ATTENTION IN THIS REGARD.
2. IN GENERAL, WE SUGGEST CONSIDERATION OF NEENAH'S TYPE L VANE STYLE GRATES WHERE BICYCLISTS ARE A FACTOR IN THE CHOICE OF A GRATE DESIGN, BEARING IN MIND THAT THERE IS NO SINGLE DESIGN FACTOR THAT WILL MAKE A GRATE OR OTHER CASTING APPROPRIATE IN ALL SUCH SITUATIONS.
3. IF SLOTTED GRATES OR VANE-TYPE GRATES OTHER THAN NEENAH'S TYPE L ARE CONSIDERED FOR APPLICATIONS WHERE BICYCLE TRAFFIC IS A FACTOR IN THE CHOICE OF A GRATE DESIGN, THE PROJECT DESIGNER SHOULD ENSURE THAT CASTINGS INCORPORATE SUFFICIENTLY NARROW OPENINGS, AND/OR APPROPRIATELY SPACED TRANSVERSE (CROSS) BARS, TO ENSURE THAT ANY FORESEEABLE WIDTH AND DIAMETER OF A BICYCLE TIRE CANNOT SUFFICIENTLY DROP DOWN INTO OPENINGS CREATING UNSAFE CONDITIONS.
4. GUTTER SLOPES SHOULD NOT BE SUBSTANTIALLY SWALED INTO THE CURB SO AS TO CREATE A DISTURBANCE IN A ROADWAY, WHICH MIGHT AFFECT THE ABILITY OF BICYCLISTS OR OTHER TRAFFIC TO TRAVERSE THEM.

OTHER IMPORTANT INFORMATION FOR USERS OF OUR CASTINGS

FASTENING FRAMES AND COVERS TOGETHER (FASTENING DEVICES)

THIS NEENAH FOUNDRY CATALOG CONTAINS MANY ITEMS THAT HAVE COVERS FASTENED TO FRAMES USING BOLTS OR OTHER FASTENING DEVICES. SPECIFIERS AND USERS MUST RECOGNIZE THAT BOLTS AND OTHER FASTENING DEVICES MAY HAVE A TENDENCY TO WORK LOOSE OVER A PERIOD OF TIME DUE TO TRAFFIC PATTERNS, VIBRATIONS, TEMPERATURE CYCLES, ETC. AND THAT ROUTINE INSPECTION AND MAINTENANCE SCHEDULES SHOULD BE IMPLEMENTED TO ASSURE THESE FASTENERS REMAIN TIGHT AND FUNCTIONAL. THEY MUST DETERMINE THE NECESSITY AND FREQUENCY OF THESE INSPECTION AND MAINTENANCE INTERVALS FOR EACH INSTALLATION. PROCEDURES SHOULD BE ESTABLISHED TO ASSURE THAT MAINTENANCE CREWS CHECK FASTENING DEVICES FOR PROPER FUNCTION AND TORQUE BOLTS TO YOUR ESTABLISHED REQUIREMENTS. CREWS MUST REPAIR OR REPLACE FASTENING DEVICES, STRIPPED BOLTS AND THREADS PROMPTLY. CONSIDER EACH INSTALLATION INDIVIDUALLY TO BE SURE TRAFFIC OR USAGE PATTERNS WILL ALLOW THE USE OF FASTENING DEVICES [SEE SECTION TITLED "GASKETED FRAMES AND COVERS" BELOW].

GASKETED FRAMES AND COVERS

THE NEENAH FOUNDRY CATALOG CONTAINS MANY ITEMS THAT HAVE NEOPRENE OR EPDM GASKETS PLACED BETWEEN THE FRAME AND COVER. SPECIFIERS AND AGENCIES MUST RECOGNIZE THAT THESE GASKETS COMPRESS UNDER LOAD AND CAN RELEASE THIS COMPRESSED ENERGY IN THE FORM OF UPWARD MOTION WHEN RELEASED RAPIDLY (SUCH AS NORMAL TRAFFIC LOADING). THIS ENERGY RELEASE MAY HAVE A TENDENCY TO DISLodge COVERS OR LOOSEN BOLTS IN BOLTED AND GASKETED UNITS. CONSIDER EACH INSTALLATION INDIVIDUALLY AND CAREFULLY TO BE SURE TRAFFIC OR USAGE PATTERNS WILL ALLOW THE USE OF GASKETS [SEE SECTION TITLED "FASTENING FRAMES AND COVERS TOGETHER (FASTENING DEVICES) ABOVE].

TEST BARS: IMPORTANT DISCLAIMER

MOST GENERAL IRON CASTINGS SPECIFICATIONS REQUIRE PRODUCING FOUNDRIES TO MAINTAIN MINIMUM TENSILE STRENGTH PROPERTIES. THESE PROPERTIES ARE TO BE MEASURED ON TEST SPECIMENS MACHINED FROM STANDARDIZED TEST COUPONS POURED FROM THE SAME IRON, BUT SEPARATELY FROM THE CASTINGS. TEST COUPON DESIGN, DETAILS OF THE MACHINED TENSILE TEST BAR AND TEST CONDITIONS HAVE BEEN DEVELOPED SUCH AS ASTM-A-48 AND AASHTO-M 306-05 TO PROVIDE MEANINGFUL EVALUATIONS OF SOUND, DEFECT-FREE METAL UNDER STANDARDIZED CONDITIONS. THIS IS ONE OF THE FUNDAMENTAL PRINCIPLES UPON WHICH FOUNDRY OPERATION AND QUALITY PRACTICES ARE BASED.

SIGNIFICANTLY, THESE SPECIFICATIONS EXPLICITLY CAUTION THAT TENSILE PROPERTIES DETERMINED FROM SEPARATELY CAST COUPONS DEMONSTRATE THE POTENTIAL OF THE IRON USED TO MAKE THE CASTING. THEY ARE NOT THE ACTUAL PROPERTIES POSSIBLE, LIKELY, OR TO BE EXPECTED IN THE CASTING. THE ACTUAL PROPERTIES DEVELOPED IN THE CASTING MAY DIFFER GREATLY FROM THOSE OF SEPARATELY CAST SPECIMENS AND THEY ARE, TO THE GREATEST DEGREE, DETERMINED BY FEATURES OF CASTING DESIGN. THIS IS MOSTLY BEYOND THE CONTROL OF THE PRODUCING FOUNDRY.

FOR THOSE PRIVATE CASTING SPECIFICATIONS, WHICH REQUIRE TENSILE PROPERTIES TO BE DETERMINED FROM TEST BARS MACHINED FROM CASTINGS OR FROM ATTACHED COUPONS, THE DETAILS OF COMPLIANCE WITH THESE SPECIFICATIONS AND THE COSTS THEREOF SHALL BE AS SPECIFICALLY AGREED BETWEEN THE PARTIES. ABSENT SUCH AN AGREEMENT, NEENAH FOUNDRY COMPANY DOES NOT WARRANT OR IMPLY THAT TENSILE PROPERTIES CALLED FOR IN A SEPARATE CASE SPECIMEN WILL BE ACHIEVED AT ANY LOCATION IN THE CASTING(S).

OUR CASTINGS ARE HEAVY! WORKING WITH HEAVY CASTINGS CAN CAUSE INJURY!

CAST IRON PARTS, SUCH AS THOSE SOLD BY NEENAH FOUNDRY COMPANY, TEND TO BE HEAVY. IN AN EFFORT TO AVOID INJURY, NEENAH RECOMMENDS USERS ALWAYS USE LIFTING DEVICES WHEN HANDLING CASTINGS. PARTICULAR ATTENTION SHOULD BE PAID TO PROTECTING WORKERS' BACKS AND EXTREMITIES. IT IS THE USER'S RESPONSIBILITY TO DETERMINE WHICH LIFTING DEVICE IS SUITABLE TO EACH SITUATION.

USERS SHOULD NEVER ALLOW ANY PART OF THEIR BODIES TO ENTER THE OPENING AREA OF AN OPEN HATCH COVER UNLESS THE LID HAS BEEN SECURED IN A FASHION THAT WILL MAKE IT IMPOSSIBLE TO ACCIDENTALLY CLOSE. IT IS THE USER'S RESPONSIBILITY TO BE SURE THE CASTINGS ARE SECURE AND THE SITE IS SAFE BEFORE PROCEEDING.

TERMS AND CONDITIONS OF SALE

EXCLUSIVE TERMS: THE TERMS AND CONDITIONS OF SALE SET FORTH HEREIN (THE "TERMS") CONSTITUTE THE COMPLETE AND EXCLUSIVE AGREEMENT BETWEEN SELLER AND BUYER PERTAINING TO THE PRODUCTS IDENTIFIED IN ANY ORDER BETWEEN SELLER AND BUYER. BUYER'S ORDER IS ACCEPTED ONLY ON THE FOLLOWING TERMS AND CONDITIONS, AND SELLER'S ACCEPTANCE OF ANY ORDER IS EXPRESSLY CONDITIONED ON BUYER'S ASSENT TO THE TERMS CONTAINED HEREIN. SELLER HEREBY OBJECTS TO ANY ADDITIONAL OR DIFFERENT TERMS CONTAINED IN ANY PURCHASE ORDER, ACKNOWLEDGEMENT, CONFIRMATION OR OTHER DOCUMENT PERTAINING TO THE SALE OF THE PRODUCTS HEREUNDER. No action by Seller shall be construed as acceptance of any additional or different terms in any purchase order, acknowledgement, confirmation or other document. Buyer shall be deemed to have accepted the Terms hereof by signing and returning a copy hereof or by other written indication of acceptance, by accepting any whole or partial shipment of goods from Seller or by making any whole or partial payment to Seller, or by any other means commonly signaling lawful agreement to be bound; provided that, the only effect thereof shall be to agree to the Terms hereof. Seller reserves the right to accept or reject all orders including but not limited to orders entered pursuant to an expired quotation.

SELLER PRESUMES THAT BUYER POSSESSES SUFFICIENT KNOWLEDGE REGARDING CONSTRUCTION CASTINGS OR BUYER HAS RETAINED PERSONNEL WITH SUFFICIENT KNOWLEDGE REGARDING CONSTRUCTION CASTINGS IN ORDER TO ORDER THE APPROPRIATE PRODUCTS TO MEET BUYER'S NEEDS AND SUBSEQUENTLY INSTALL SUCH PRODUCTS. SELLER PRESUMES THAT BUYER AND/OR BUYER'S PERSONNEL HAVE READ AND UNDERSTOOD SELLER'S APPLICABLE PRODUCT CATALOG.

TAXES AND FEES: Unless otherwise specified, prices do not include any manufacturer's, sales, use, excise or similar taxes, charges or duties ("taxes"), and the amount on any such taxes Seller is required to pay or collect will be invoiced to Buyer unless Buyer provides Seller with the appropriate evidence that Buyer is exempt from the payment of such taxes. Buyer shall also pay any collection fees and reasonable attorneys' fees incurred by Seller in enforcing these Terms or any order hereunder or defending against any claim for breach thereof.

PRICES, QUOTATIONS: All orders, whether or not submitted pursuant to a quotation, are subject to acceptance by Seller. Unless held open for a specific length of time on Seller's quotation, all prices are subject to change without notice and any unshipped balances on purchase orders will be invoiced to and paid by Buyer at prices in effect at the time of delivery. Unless otherwise specified, all quotations expire automatically 30 calendar days after the date issued, but any quotation may be amended or terminated by written notice from Seller to Buyer within that period.

PAYMENT: Payment terms are net cash 30 days from the date of invoice, or as specified on the Seller's current quotation. A service charge at the maximum rate allowed by law may be charged on overdue balances. If the financial condition of Buyer is or becomes unsatisfactory in the exclusive judgment of Seller, Seller may, by written notice, require full or partial cash payment in advance of performance or continuance of performance of Seller's obligations hereunder or cancel this order in whole or part. Seller may set off any amount due from Buyer, whether or not under any order pursuant to these Terms, against any amount that may become due to Buyer hereunder.

RISK OF LOSS; SHIPMENT; TITLE: Unless otherwise agreed to in writing, all shipments are F.O.B. Neenah Foundry Company, Neenah, Wisconsin. Risk of loss shall pass to Buyer at the moment of Seller's delivery of products to the carrier. Any delivery schedule quoted by Seller is its best estimate of lead-time as of the date of quotation and is subject to change by Seller. Delivery schedules are also contingent upon Buyer's prompt provision of all necessary, complete and correct specifications, information and data. Seller shall not be responsible for failure to meet any estimated delivery date. If Buyer requires special production service for unusual shipments, an additional charge shall be imposed, as agreed upon by the parties. Seller shall retain, and Buyer hereby grants to Seller, a security interest in any product sold by Seller hereunder until payment in full is received. Title to the products shall remain with Seller until Buyer remits the entire invoiced cash price for such products to Seller.

INTELLECTUAL PROPERTY OWNERSHIP: Seller shall retain all rights, title and interest in and to any and all patents, copyrights, trademarks and other intellectual property and proprietary rights and the goodwill associated thereby pertaining to the products sold per the Terms, as well as any associated developments Seller creates, realizes or reduces to practice during Seller's fulfillment of the Terms or any order hereunder. Except as otherwise particularly provided, no license, transfer or assignment of proprietary rights shall occur as a result of the Terms or any order.

WARRANTY: Seller warrants the products to be free from defects in materials and workmanship for a period of one year from the date of invoice. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. This warranty is valid only if the products have been subjected to normal use of the purpose for which the goods were designed; have not been subject to misuse, negligence or accident; and have not been modified, altered or repaired by persons other than the Seller or Seller's designees in any respect which in the judgment of Seller affects the condition or operation of the Products. Seller neither assumes nor authorizes any employee, distributor, representative, agent or other person to assume for Seller any other liability in connection with the sale or use of the products sold and there are no oral agreements or warranties collateral to or affecting these Terms or any order hereunder.

EXCLUSIVE REMEDY: Should Buyer wish to make a claim that any product does not conform to the foregoing warranty, Buyer must give prompt written notice to Seller. Such notice shall include a specific description of such non-conformity as well as the original job or invoice number for the affected product. Any such product or part shall be, if requested by Seller, returned freight prepaid to Seller's facility for inspection. If, upon evaluation of Buyer's claim, Seller deems the non-conformity to be in violation of the above warranty and Seller confirms that such claim was made within the warranty period, Seller will, at its option, repair or replace the non-conforming product or product part. Seller shall not be responsible for providing labor or the cost of labor for the removal of the defective part or parts and the installation of any replacement part or parts. Replacement parts shall be warranted for the balance of the original warranty.

RETURNS: Products may not be returned unless authorized by Seller, and the Seller reserves the right in its sole and absolute discretion to refuse to accept certain products for return, including nonstock or custom products. A return goods authorization number must accompany each return, and Buyer must abide by any requirements accompanying the Seller's transmission of such return goods authorization number. Buyer shall pay Seller a restocking charge of twenty percent (20%) the total purchase price of all goods returned. Seller may refuse to refund Buyer for products that are not returned in clean or resalable condition.

LIMITATION OF LIABILITY: SELLER'S LIABILITY FOR ANY CLAIMS, DAMAGES, LOSSES OR LIABILITIES ARISING OUT OF OR RELATING TO ITS PERFORMANCE OF AN ORDER MADE HEREUNDER SHALL NOT EXCEED THE PURCHASE PRICE OF THE PRODUCTS SOLD PER SUCH ORDER. SELLER SHALL HAVE NO LIABILITY TO BUYER OR TO BUYER'S AFFILIATES, EMPLOYEES, REPRESENTATIVES, CUSTOMERS OR AGENTS OR TO ANY THIRD PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT OR SPECIAL DAMAGES, INCLUDING WITHOUT LIMITATION LOST PROFITS, MACHINING OR LABOR COSTS, DAMAGE TO OTHER EQUIPMENT OR LIABILITY OR INJURY TO A THIRD PARTY, ARISING FROM THE SALE, USE OR INSTALLATION OF THE PRODUCTS, FROM THE PRODUCTS BEING INCORPORATED INTO OR BECOMING A COMPONENT OF ANOTHER PRODUCT OR FROM ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON WARRANTY (EXPRESS OR IMPLIED) OR OTHERWISE BASED ON CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY, REGARDLESS OF ANY ADVICE OR REPRESENTATION THAT MAY HAVE BEEN RENDERED BY SELLER REGARDING THE GOODS OR SELLER'S PERFORMANCE HEREUNDER.

INDEMNIFICATION: Buyer agrees to indemnify and hold Seller and its successors, assigns and customers harmless against any claim, demand, action, proceeding, liability, loss, cost or expense, including reasonable attorneys' fees, arising in connection with any claim or cause of action alleging that: Seller's incorporation or use of a specification, design, modification or drawing provided to Seller by Buyer or Buyer's use of the products in combination with other products: (a) infringes or proximately infringes a proprietary or intellectual property right of a third party; or (b) causes or proximately causes personal injury (including death) or property damage.

FORCE MAJEURE: Seller shall not be liable for delays or failure in performance of an order or default in delivery arising out of, or resulting from, any accident, fire, quarantine restriction, act of terrorism or suspected terrorism, breakdown, strike, sabotage, riot, insurrection, war, delay, severe weather, interruption in or failure of sources or subcontractors to supply materials and equipment, labor or transportation problems, act of God, order, contract, priority, directive, requisition or request of any governmental entity, whether or not voluntarily assumed, or other cause and condition, whether of like or different nature, that is similarly beyond Seller's control.

CLAIMS, CANCELLATION, CHANGES, SUSPENSION: All claims for error in weight or quantity of castings or freight damage must be made by Buyer in writing within 10 days of receipt of the product with respect to which the claim is being made. Seller reserves the right to accept or reject any such claim in whole or in part. Cancellation, modification, suspension, or delay in shipment of Buyer's order will not be accepted on terms that will not fully indemnify and reimburse Seller against loss. Such indemnity shall include recovery of all direct costs incurred, including normal indirect and overhead charges and a normal profit. No change proposed by Buyer in any terms and conditions shall be valid or binding upon Seller unless approved in writing by Seller's duly authorized personnel. Seller will not approve any change proposed by Buyer once the work is in process, and in no event may Buyer cancel, modify, suspend or delay shipment if notice of such proposed change is not received before the time work goes in process. If the work is in process, Buyer shall be charged for any castings made as well as the costs of cores, molds, or equipment discarded because of such changes. Seller may cancel any order without penalty: (a) if Buyer fails to comply with the terms or conditions of these Terms or such order; (b) if Buyer files a voluntary petition under any federal or state bankruptcy or insolvency act, an involuntary bankruptcy petition is filed against Buyer, or Buyer is declared insolvent or has a receiver or trustee appointed for it or its assets, or if Buyer makes an assignment for the benefit of creditors or commences proceedings under any state insolvency or similar law; or (c) as otherwise provided herein.

GOVERNING LAW; VENUE; JURISDICTION: The validity, construction and enforcement of these Terms and any order hereunder shall be governed by the internal laws of the State of Wisconsin, without regard to its conflicts of laws principles. The 1980 United Nations Convention on Contracts for the International Sale of Goods shall not apply. Buyer hereby consents to the jurisdiction and venue of the courts located in the State of Wisconsin.

CONFIDENTIALITY: All information furnished by Seller or any other person acting on behalf of Seller and all information learned about Seller or its operations through performance of an order or the Terms is confidential, and Buyer shall not disclose any such information to any other person, or use such information for any purpose other than performing any order or the Terms without Seller's express written consent.

MISCELLANEOUS: If any provision of these Terms is held to be invalid or unenforceable, the remainder of these Terms shall not be affected thereby. No waiver or modification of any of the provisions hereof shall be binding upon Seller unless in writing and signed by an authorized representative of Seller. Buyer may not assign the Terms, any order or any interest therein without the written consent of Seller. Any such actual or attempted assignment without Seller's prior written consent shall be void and shall entitle Seller to cancel any applicable order upon written notice to the Buyer.

NEENAH'S NO PAINT POLICY

Painting of Neenah Castings has been discontinued for several reasons.

1) Asphaltic base paint contains volatile organic compounds or VOC's. VOC's are those air emissions coming from petroleum refineries, surface coating operations, and organic chemical manufacturing plants, to name a few. These compounds contribute to "air pollution" and are controlled under the authority of the United States Environmental Protection Agency and the Wisconsin Department of Natural Resources. In order to comply with the regulations of these agencies which limit the allowable amount of VOC's emitted per gallon of paint, Neenah Foundry construction castings will not be painted.

2) Cast iron corrosion can best be described when compared to the corrosion of steel. The physical characteristics that differ between the two include the greater concentrations of carbon and silicon in cast iron. These elements provide substantial corrosion resistance in gray iron.

Much of the carbon in gray iron occurs in the form of graphite flakes. This graphite is inert in most corrosive environments and provides a protective physical barrier against corrosion of the metal matrix. Technically speaking, it's called graphitization. However, the graphite layer can technically be worn away exposing the iron to further oxidation.

Silicon in gray iron occurs in the metal matrix. When oxidation due to moisture initially occurs, a bright orange oxide results. This loosely adhering oxide is water soluble and is easily washed or worn away. The presence of silicon in the iron eventually causes a much tighter adhering, insoluble, black oxide-iron silicate scale which inhibits further corrosion.

3) Painting of castings is cosmetic and, in fact, conceals defects which would be visible if the castings were unpainted.

4) Painted castings interferes with the significant and desirable bond between the frame and concrete.

5) The study, "A Guide To Standardized Highway Drainage Products," states that painting, welding or plugging of cast iron castings is not allowed. This study was conducted by Task Force No. 13 under the sponsorship of the Joint Committee of the American Association of State Highway and Transportation officials, the Associated General Contractors, and the American Road and Transportation Builders Association.

6) Attesting to its long life, cast iron water pipe is still in service today at Versailles, France supplying the famous fountains since its installation in 1664!

Neenah Foundry is continually upgrading its manufacturing facilities to provide the customer with a quality product. We also must protect the environment in which we live.

Neenah's Unpainted Castings Brochure is available on request or on our website at www.neenahfoundry.com.

DO NOT PAINT...

...if environmental protection is a concern (the painting process emits VOC's into the environment).

...to allow concrete to properly adhere to the castings (paint creates a barrier to adhesion).

...to visually inspect the quality of the casting (paint hides manufacturing defects).

Non-Rocking Type Manhole Covers and Catch Basin Grates

**NO NOISE
DOES AWAY WITH LOCKS**

Simple, Quick Adjustment

Adjustment of the Non-Rocking Cover/Grate is made by placing it in the frame, and then rotating until the pointed lug on its edge engages a corresponding slot in the frame. There are multiple slots, each of which changes the diameter of the opening. Moving into place is readily accomplished by placing a hook in the pickhole and drawing the lid around until it fits snugly. When properly positioned, the Non-Rocking Cover/Grate will remain firmly seated in the frame. Removal may be accomplished with equal ease.

FIG.1

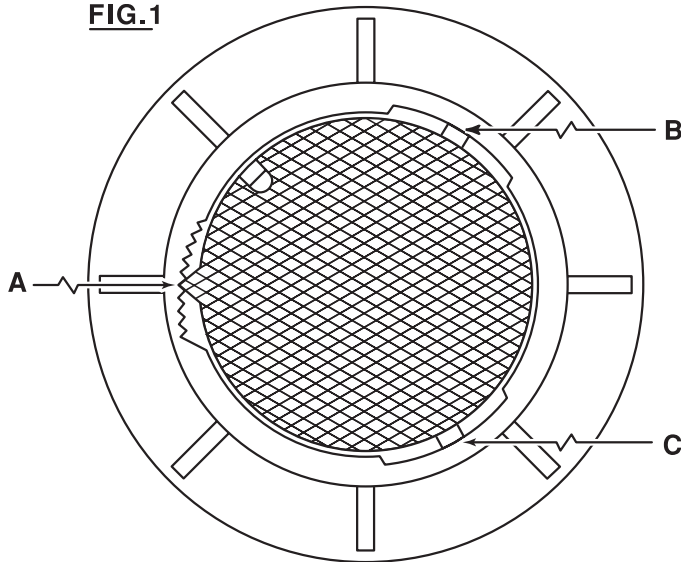


Fig. 1 is a top plan of manhole cover showing side-bearing lugs on lid at A, B and C. Lug at A is pointed and, by rotation of the lid, may be fitted to an appropriate slot in the rack of graduated teeth of frame. Properly seated, lid cannot rock.

FIG.2

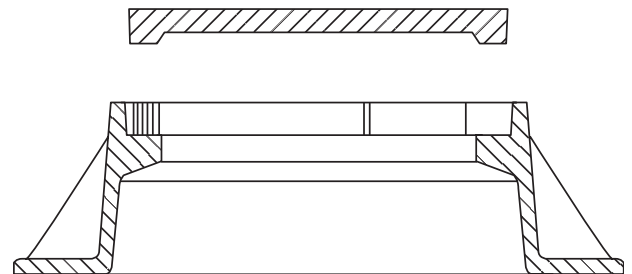
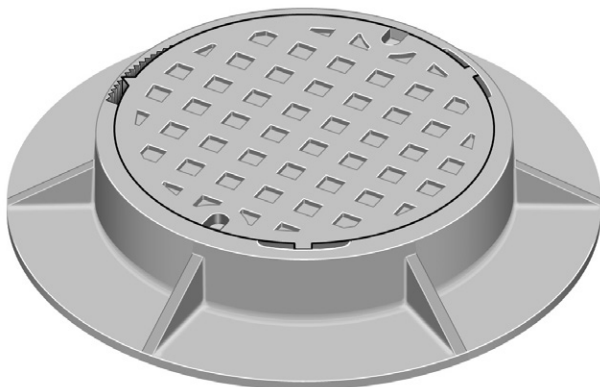


Fig 2. is a sectional view of manhole cover with lid removed.



Illustrating Non-Rocking feature applied to R-1689 with Type B lid.

FIG.3

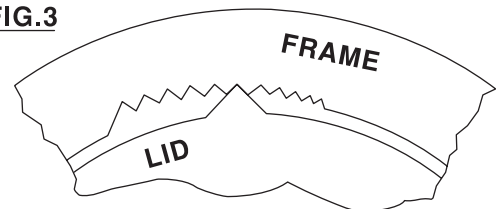


Fig 3 is an enlarged view of A, showing pointed lug and graduated rack. The three bearing points, plus the tooth rack feature which receives and adjusts the pointed lug, combine to prevent movement of the lid. The lid remains properly seated in the frame.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

LiftMate Hinge System

Neenah Foundry has advanced municipal castings to a whole new level of function and safety. Our patent pending LiftMate Hinge System eases operation and access while virtually eliminating many traditional hazards of working with covers for manholes, grates and trenches.

The LiftMate Hinge System provides a controlled motion pivot that helps protect workers from excess strain or off-balance maneuvering. That helps prevent on-the-job accidents as well as reduces lost-time injuries.



Illustrating R-3210-LLM

Premium Performance

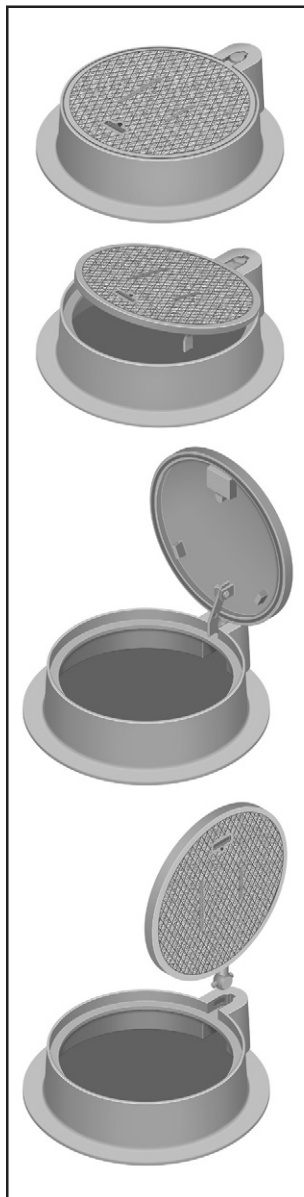
- Strong yet light platen gray iron lids provide excellent sound dampening
- Excellent strength and wear resistance – almost indestructible
- High-quality precision castings in a range of sizes

Ball-and-Socket Hinge

- Unique design provides stability when opening or closing cover
- Handhole allows opening with a simple lever or pickaxe to significantly reduce lifting effort
- "Hold-open" safety arm prevents accidental closure
- Performance tested to more than 13,000 open-and-close cycles
- Cover easily disengages for removal or replacement
- Allows closure without having to lift full weight of cover
- Helps prevent back injuries and lost time

Functional Flexibility

- Optional watertight application
- Security bolting options available
- Custom logo lids available
- Compatible with most internal sealing boots



LiftMate Frame, Solid Gasketed Lid

	Clear Opening	Frame Height
R-1550-LM	21" dia.	9"
R-1642-LM	24 1/8" dia.	7"
R-1650-LM	24 1/8" dia.	4"
R-1739-ALM	36" dia.	6"
R-1743-LM	30" dia.	6"
R-1753-ALM	27 1/8" dia.	7"
R-1755-F2LM	25" dia.	7"

LiftMate Inlet Frame, Grate

	Clear Opening	Frame Height
R-3210-ALM	22" x 22"	6"
R-3210-LLM	22" x 22"	6"
R-3222-1ALM	22" x 19 1/2"	7"

LiftMate Trench Frames, Airport Grates

	Clear Opening	Frame Height
R-4994-HALM	22" trench	6"

Refer to the specific catalog pages for complete details on the above items.

Neenah Foundry is continually adding additional LiftMate offerings, please contact us for your needs.



Illustrating R-1753-ALM



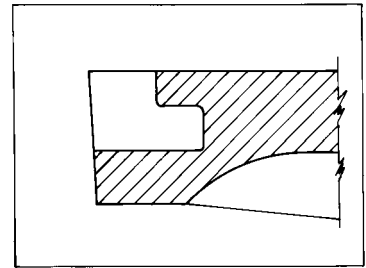
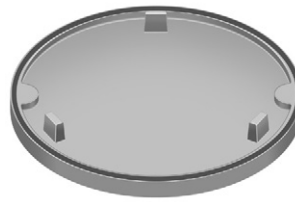
Illustrating R-1755-F2LM

Self-Sealing Manhole Covers

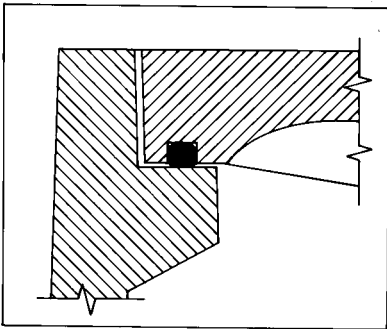
How Self-Sealing Neenah Lids Prevent Surface Water Inflow

You may be getting as much as 45 gallons of inflow per minute through some of your manhole covers. Now you can stop unwanted inflow with Neenah Self-Sealing lids.

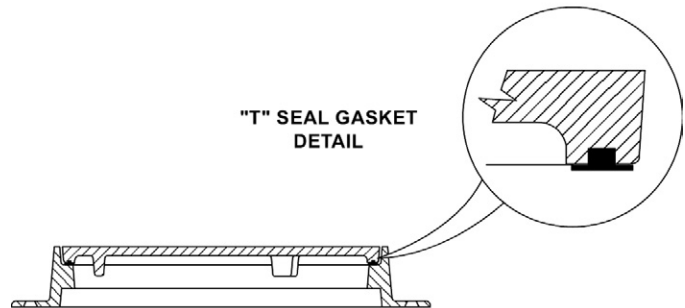
At the heart of Neenah's Self-Sealing system is a gasket which fits firmly and securely within the castings precisely machined groove. The gasket material is of special composition with good sealing qualities, abrasion resistance and low compression set.



Neenah Self-Sealing lids include concealed pickholes, which allow no water to enter. The lid can be easily removed using various common tools.



Self-Seal lids are shipped with gaskets pre-installed and glued firmly in place for ease of installation and extended life.



"T" SEAL GASKET
DETAIL

Most of our Self-Seal lids are furnished with our T-Seal gasket as shown above.

How to Specify Neenah Self-Sealing Lids

Neenah Self-Sealing lids are available in most sizes to fit existing frames without digging, caulking or plugging. For new work, casting sets can be furnished with Self-Sealing lids in almost any size.

For New Construction

Specify: The Neenah catalog number – frame and lid with Self-Sealing application.

For Replacement Neenah Lids Only

Specify: Self-Sealing replacement lids only per Neenah catalog number.

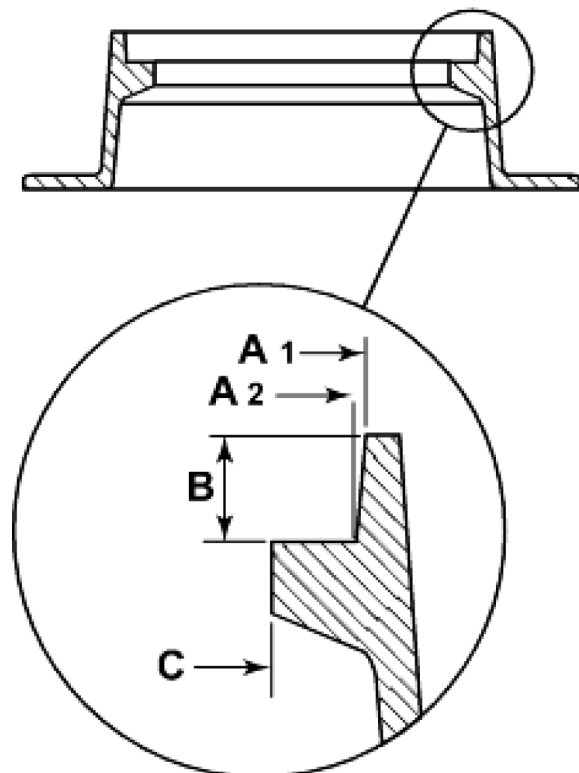
For lids of unknown origin:

Specify: Neenah Self-Sealing lids only to fit essential frame dimensions as follows: see drawing at right.

CAUTION: Existing frames with seating surface narrower than 7/8" may require a T-seal gasket to create an effective seal.

IMPORTANT:

Be sure to include all dimensions as shown in sketch.

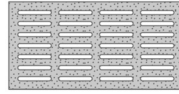


■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

Narrow Slot Grates

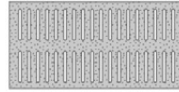
Castings available with Type Q Grates

Catalog No.	Outside Dimensions	Thickness
R-2750	31 7/8 dia.	1 3/8
R-1878-A1G	13 3/4 x 13 3/4	1 1/2
R-1878-A6G	25 3/4 x 25 3/4	1 1/2
R-1878-A9G	31 3/4 x 31 3/4	1 1/2
R-1881-H1	12 x 23 7/8	1 1/2
R-2569	16 x 16	1/2
R-3067	17 3/4 x 35 1/4	2
R-3540	31 3/4 x 33	3
R-3573-Q	26 1/2 x 23 13/16	2 1/2
R-3919	18 1/4 x 23 1/4	2 1/2
R-4441-1	12 x 12	1
R-4808-A	24 x 24	2
R-4859-Q	27 1/2 x 27 1/2	1
R-4990-CX	12 x 23 7/8	1 1/2
R-4990-DX	14 x 23 7/8	1 1/2
R-4990-HX	26 x 23 7/8	1 1/2
R-4996-A	8 x 29 7/8	1
R-4996-B	10 x 29 7/8	1
R-6133	25 dia.	1



Type Q

*Type Q Grates have a
3/8" to 1/2" slot width*

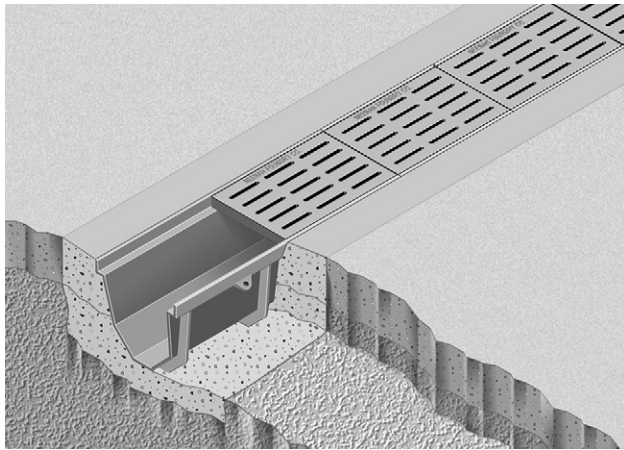


Type P

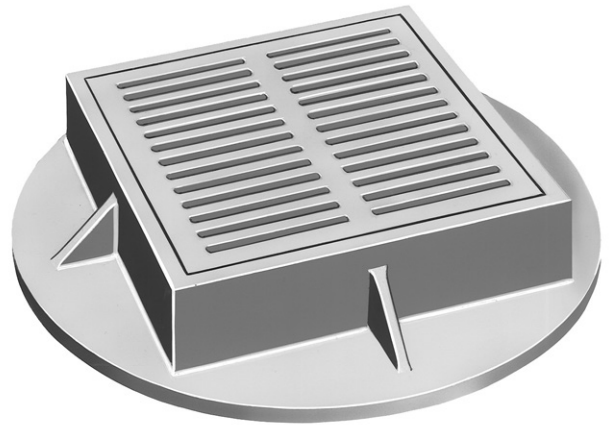
*Type P Grates have a
1/4" slot width*

Castings available with Type P Grates

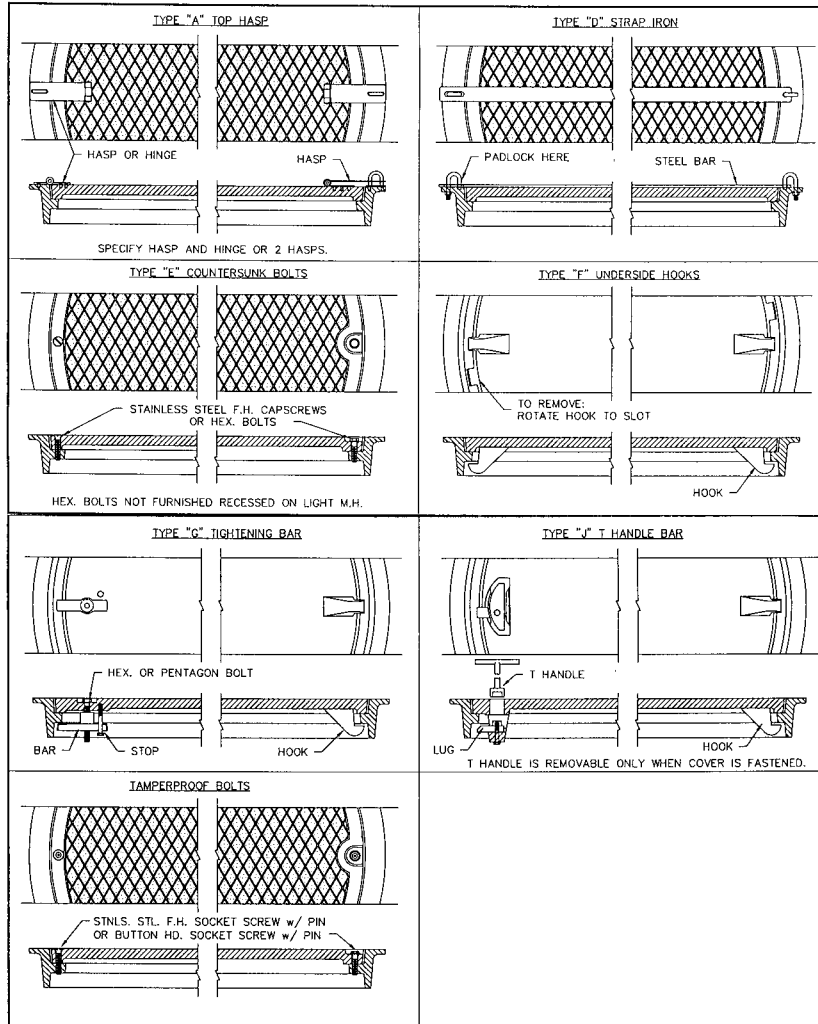
Catalog No.	Outside Dimensions	Thickness
R-3169	10 7/8 x 20	1 11/16
R-3205	17 x 22	1 3/4
R-4001-B	8 1/8 x 13 15/16	1
R-4015-A	9 x 11	1
R-4406-P	9 x 23 7/8	1 1/2
R-4430-1	11 x 23 7/8	1 1/8
R-4990-AX	8 x 23 7/8	1 1/2
R-4990-BX	10 x 23 7/8	1 1/2
R-4990-CX	12 x 23 7/8	1 1/2
R-4990-DX	14 x 23 7/8	1 1/2
R-4990-EX	17 x 23 7/8	1 1/2
R-4990-FX	20 x 23 7/8	1 1/2
R-4995-A1	11 1/2 x 23 7/8	3/4
R-4996-A1	11 1/2 x 23 7/8	1 1/2



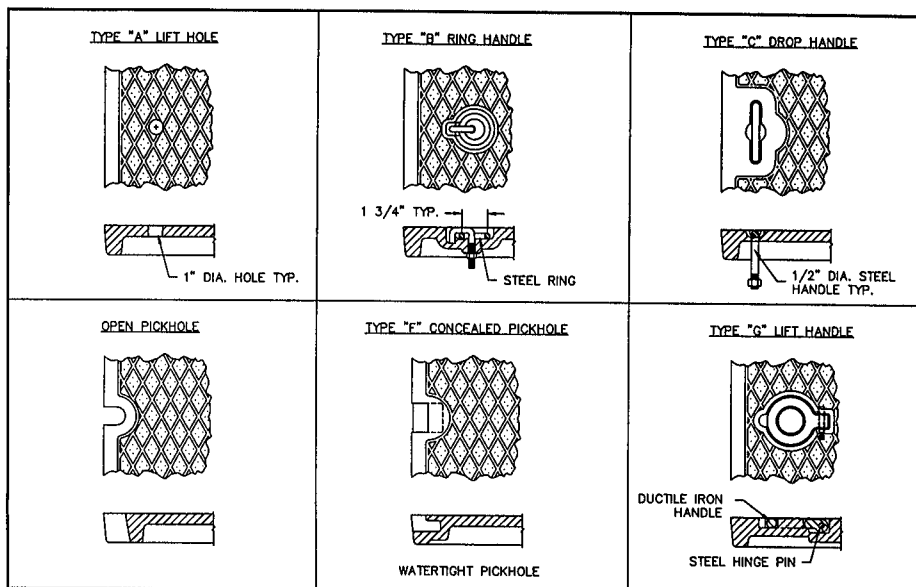
Illustrating R-4996-A trench with Type Q Grate



Fastening Devices



Lift Handles and Pickholes



INSTRUCTIONS FOR READING TABLES ON FOLLOWING PAGES

Tables on the following pages listing standard and special size manhole castings include most of the more popular types shown in order of their clear opening, arranged from smaller to larger.

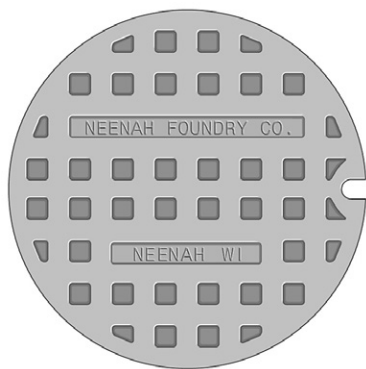
The lid types shown below provide a selection of patterns available for the items shown in the following pages. Not all styles are available for each number.

When ordering, please specify any or all of the following:

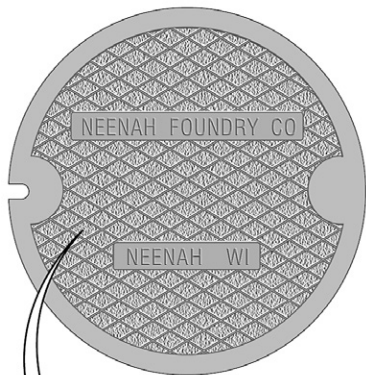
- 1 --- **Catalog number**
- 2 --- **Lid type required**
- 3 --- **Lettering requirement**
- 4 --- **Fastening device requirement**
- 5 --- **Other considerations**

Many of the sizes shown in the tables are available with special lettering or fastening devices on special order. See page 16 for a description of the various fastening devices.

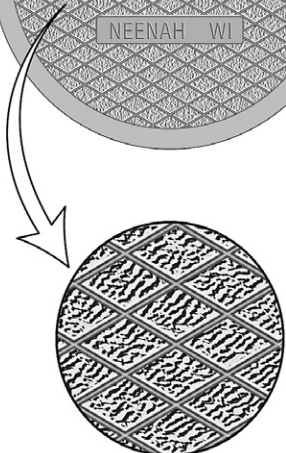
LID TYPES AND KEY TO DIMENSIONS IN TABLES



Type "B" Lid
Indented Top Design

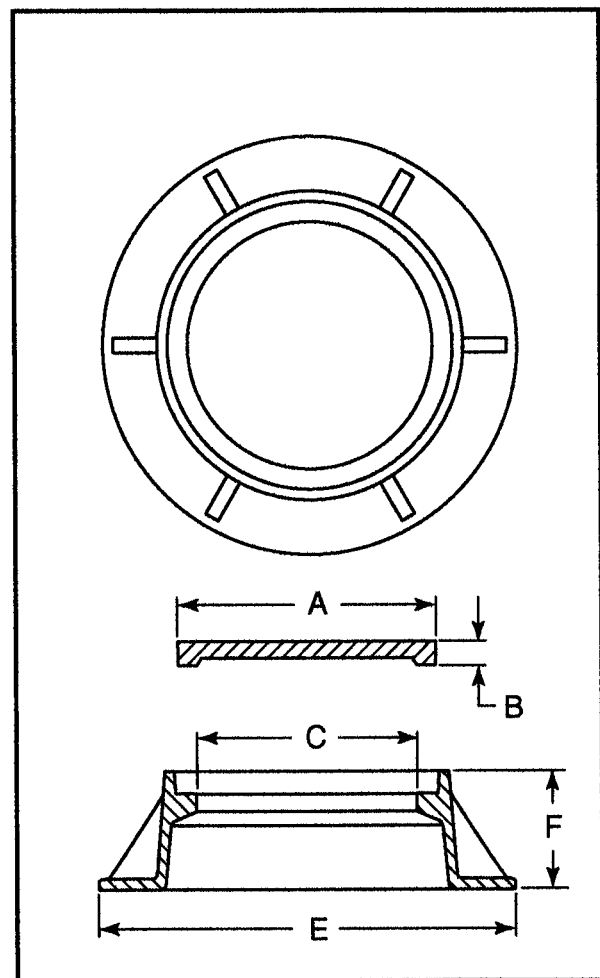


Type "C" Lid
Diamond Top Design



Perma-Grip Surface

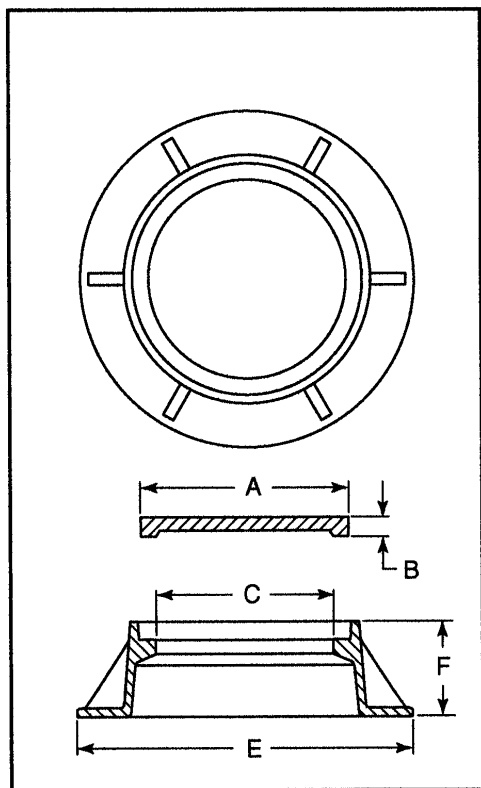
Neenah's Perma-Grip cover surface is now available on most of our Type "C" lids. Perma-Grip provides a rough cobbled-type surface for improved traction.



Manhole Frames and Lids

The following table summarizes many of the standard and special manhole frames and lids currently available. The table is organized by clear opening "C" to assist you in dimensional searching. All catalog items are organized numerically in the pages that follow.

Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-1970	7	2 1/8	5 3/4	13 1/8	7
R-1971	8	3/4	6 1/2	10 1/2	10
R-1973-1	7 3/4	3/4	6 3/4	13 1/4	7
R-1973-A	8 7/8	11/16	7 3/4	15 3/4	8
R-1974-A	9	1	8	16	6 1/2
R-1792-AL	10 1/4	1 1/2	8 1/2	14 1/2	4
R-1975	9 1/2	1/2	8 1/2	20	11
R-1977	11 1/2	1 1/2	8 1/2	16	12
R-1975-A	9 7/8	7/8	9	15 1/2	6
R-1975-A2	10	1	9 1/4	16	8
R-1976	11 1/4	1 1/4	10	20	8
R-1791-A	12	1	11	19	4
R-1795-A	12 1/16	1	11	19 x 19	4
R-1914-A	12	1/2	11	20	4
R-1914-B	12	1/2	11	20	4
R-1916-A	12	1 1/8	11	19	4
R-1792-BL	13 1/4	1 1/2	11 1/2	17 1/2	4
R-1911-B	15	1	11 3/4	27 1/4	4
R-1748	13 3/8	3/8	12 1/2	16	4
R-1791-B	15 1/4	3/8	14 1/2	20 1/2	4 1/4
R-1792-CL	16 1/4	1 1/2	14 1/2	20 1/2	4
R-1910-E	15 1/4	3/8	14 1/2	20 1/2	4 3/4
R-1910-B	15 5/8	1 3/8	14 11/16	23	4 11/16
R-1791-C	15 5/8	1 3/8	14 3/4	21	4 3/4
R-1910-C	15 5/8	1 3/8	14 3/4	21	4 3/4
R-1795-B	15 5/8	1 3/8	15	23 x 23	5
R-1910-D	15 5/8	1 3/8	15	22	3
R-1891	16 9/16	1	15 1/8	21 3/4	4 3/8
R-1792-DL	18 1/4	1 1/2	16 1/2	22 1/2	4



Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-1900-A	18	1 1/4	16 3/4	30	8
R-1791-E	18	1	17	25	4 1/2
R-1910-A	18	1	17	25	4 1/2
R-1916-B	18	1	17	25	4 1/2
R-1799-D	19 3/4	1	17 1/2	21 3/4	1 5/8
R-1795-C	19 1/2	1 1/2	17 3/4	29 1/2 x 29 1/2	5 1/2
R-1566	20	2 3/16	18	29	4
R-1755-B	23	1 1/2	18	36	9
R-1758-B	23	1 1/2	18	36	9
R-1791-F	20 1/2	5/8	18	30	5
R-1791-G	19 1/2	1 1/2	18	29	5 1/2
R-1796-B	19 1/2	1 1/2	18	29	5 1/2
R-1799-E	19 1/2	1 1/2	18	21 1/4	2
R-1892	20 1/16	1	18 5/8	29	5 3/8
R-1645-A	20 3/8	1 1/2	18 7/8	19 5/8	4
R-1551	21 1/8	1 3/8	19 1/2	37	9 5/8
R-1890	20 5/8	3/4	19 1/2	34	9
R-1920	21 3/4	1	19 3/4	32 1/4	8 3/4
R-1500	22	1 1/2	20	33	8
R-1510-A	22	1 1/2	20	32	6
R-1645	22 3/4	1 3/4	20	25	4 1/2
R-1700-A	22	1 1/2	20	36	6 1/2
R-1705	21 3/4	1 3/8	20	30	9 3/4
R-1707	22 1/2	1 1/2	20	34	9 1/2
R-1710	22	1 1/2	20	35	9
R-1755-C	24	1 1/2	20	35	7 1/2
R-1758-C	24	1 1/2	20	35	7 1/2
R-1765	22 1/4	1 1/2	20	32	8 3/4
R-1784	21 3/4	1 1/8	20	36	8 1/2
R-1795-D	22	1 1/2	20	32 x 32	6
R-1795-E	22	1 1/2	20	33 x 33	8
R-1796-C	22	1 1/2	20	32	6
R-1897	21 3/4	1 1/4	20	30 1/2 x 30 1/2	6 1/4
R-1915-S1	21 1/2	7/8	20 1/16	32	5
R-1661	22 3/4	1 1/2	20 3/32	37 13/32	9 27/32
R-1661-A	22 3/4	1 1/2	20 3/32	37 13/32	6
R-1570-A	22 7/8	1 1/4	20 1/8	32	7
R-1524-B	22 1/2	2 5/8	20 1/4	34 1/4	6 1/4
R-1799-G	22 1/4	1 1/2	20 3/8	24 3/8	2 1/4
R-1690	22	1 1/2	20 15/32	27 9/16	4
R-1580	22 1/2	1 3/4	20 1/2	36	6
R-1689	23	1 1/2	20 1/2	36	4
R-1690-A	22	1 1/2	20 1/2	28	4
R-1696	21 7/8	5/8	20 1/2	39	6
R-1711-A	22	1 1/2	20 1/2	30	6
R-1711-B	22	1 1/2	20 1/2	30	6
R-1761	22	1 1/2	20 1/2	28 1/4	6
R-1779	21 3/4	1	20 1/2	33	8 1/4
R-1792-EL	22 1/4	1 1/2	20 1/2	26 1/2	4
R-1799-H	22 3/4	1 3/4	20 1/2	25 1/2	3
R-1916-C1	24	1 3/8	20 5/8	31	6
R-1537	22 1/4	1	20 3/4	24 7/8	4
R-1919	22 3/4	1 3/4	20 3/4	32 3/8	5 1/2
R-1530	23	1 3/4	20 7/8	36	9
R-1540	23	1 1/2	21	36	9
R-1916-C	23	1 1/2	21	36	9
R-1550-LM	23	1 1/2	21	36	9
R-1672	22 3/4	1 3/4	21	31 1/8	14 1/2
R-1677-A	22 3/4	1 3/4	21	36	9
R-1680	22 5/8	2 1/4	21	32	7
R-1712	22 3/4	1 3/4	21	36	9
R-1713	22 3/4	1 3/4	21	34	9
R-1715	22 3/4	1 3/4	21	36	9
R-1737	22 1/4	1 1/8	21	24 7/8	4

Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-1758-D	25	1 1/2	21	38	9
R-1762	22 1/4	1	21	30	9 3/4
R-1762-A	22 1/4	1	21	28 1/2	4 3/4
R-1772	22 3/4	1 3/4	21	34	7
R-1775	23 5/8	1 1/4	21	37 1/2	7 1/16
R-1788-A	23 3/4	3	21	31 3/4	7
R-1900-B	23	1 1/2	21	36	9
R-1911-A	26	1 1/2	21	30 1/2	5
R-1916-C2	24 1/4	1 3/4	21	36	9
R-1926	22 3/4	1 3/4	21	34	7
R-1927	22 3/4	1 3/4	21	34	9
R-1550	23	1 1/2	21 1/16	35 7/16	8 7/8
R-1550-A	23	1 1/2	21 1/16	35 7/16	8 7/8
R-1788-A1	23 13/16	3	21 1/16	31 1/2	7 1/16
R-1788-B	23 13/16	3	21 1/16	31 1/2	7 1/16
R-1774	23 3/8	3/4	21 1/8	34 1/4	4
R-1788-D	23 5/8	3	21 1/8	34 3/4	7
R-1960	22 3/4	1 3/4	21 1/8	29	6
R-1646	22 3/4	1 3/4	21 1/4	34	4 1/4
R-1647-A	22 3/4	1 3/4	21 1/4	34	4
R-1536-1	23 1/4	1 1/4	21 5/16	33 1/2	8 3/4
R-1536-B	23 1/4	1 1/4	21 3/8	34	9
R-1785	23 3/4	1	21 15/32	37 13/32	8 7/8
R-1654	23 1/4	7/8	21 1/2	36	7 3/4
R-1776	22 1/2	1 1/4	21 1/2	29	6
R-1917	28	1 1/2	21 1/2	38	5 1/4
R-1916-D	24	1 1/2	21 5/8	35	7 1/2
R-1664-A	23 3/4	1	21 21/32	37 13/32	7 3/32
R-1714	23 13/16	1 25/32	21 21/32	33 15/32	6 7/8
R-1799-K	24	3/4	21 3/4	26	1 1/4
R-1555	24	1 3/8	21 3/4	34	8
R-1678-A	23 3/4	1	21 3/4	35	7
R-1697	23 7/8	1 1/8	21 3/4	48	8
R-1789-B	23 1/4	1	21 3/4	32 1/4	6 5/8
R-1924	23 1/2	1 1/2	21 3/4	32 1/4	4 1/2
R-1925	24	1 1/8	21 7/8	36	8
R-1536	23 1/4	1 1/4	22	33 1/2	8 3/4
R-1538	23 1/4	1 1/4	22	34	3
R-1579	23 5/8	1	22	26	1 1/2
R-1585	24	1 1/2	22	31 3/4	4 1/2
R-1596	23 3/4	2 1/2	22	32	5
R-1656	23 3/4	1 3/4	22	36	8
R-1669-A1	24	1	22	34	7
R-1673-A	24	1 1/2	22	31	14 1/2
R-1676-A	23 1/2	1	22	33 1/2	8 1/2
R-1703	23 7/8	1 3/16	22	34	8 1/16
R-1736	23 1/4	1 1/4	22	34	9
R-1736-A	23 1/4	1 1/4	22	33 1/2	8 3/4
R-1755-E	26	1 1/2	22	38	7
R-1758-E	26	1 1/2	22	38	7
R-1771	23 3/4	1	22	37 1/2	9
R-1780-A	24	2	22	35	7
R-1795-F	24	1 1/2	22	35 x 35	7 1/2
R-1795-G	24 3/4	1 1/4	22	36 x 36	9
R-1797	23 1/4	1	22	33 1/2	8
R-1915-E	25 1/4	1	22	28 1/2	6
R-1915-E2	25 1/4	1	22	28 1/2	6
R-1921	23 3/4	1	22	33	5
R-1924-1	23 1/4	1	22	33	9
R-1940-A	24	1 1/2	22	35	6 1/4
R-1552	24	1 3/8	22 1/8	33	6
R-1706	23 7/8	1	22 1/8	34	7 1/2
R-1572	25 11/16	1 1/2	22 1/4	33	6
R-1598	23 3/4	1	22 1/4	32	6
R-1648	23 7/8	1 1/4	22 1/4	35	6
R-1649	23 7/8	1 1/4	22 1/4	35	8
R-1668	23 3/4	1 1/2	22 1/4	34	7
R-1670-A	24	1 1/2	22 1/4	34 21/32	7 15/32
R-1687	24	2 1/2	22 1/4	31	6
R-1694	23 1/2	1	22 1/4	27	4
R-1706-1	23 7/8	1	22 1/4	30	4

Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-1726-A	24	1 1/2	22 1/4	34 21/32	7 15/32
R-1734-B	24 1/2	2	22 1/4	35 1/2	8
R-1764	24	1 1/2	22 1/4	37	7
R-1786	23 3/4	3/4	22 1/4	34	7
R-1796-D	24	1 1/2	22 1/4	34 21/32	7 15/32
R-1900-B1	24	1 1/2	22 1/4	35	7 1/2
R-1657-1	24	1	22 3/8	34	7
R-1688	24	2	22 3/8	30	5
R-1781	24	2	22 3/8	35	7
R-1553	24	1 3/8	22 1/2	31 3/4	3
R-1554	24	1 3/8	22 1/2	34	7
R-1923	24	1 1/2	22 1/2	35	6 1/2
R-1534-A	24 1/32	1 9/16	22 5/8	31 1/2	4 17/32
R-1535-A	24 1/32	1 9/16	22 5/8	34 1/16	9 1/16
R-1535-C	24 1/32	1 9/16	22 5/8	34 1/16	9 1/16
R-1671	24 3/4	1	22 5/8	36	7 1/4
R-1767	24 3/4	1	22 5/8	36	7 1/4
R-1767-4	24 3/4	1	22 5/8	29 1/2	4
R-1599-A	24	1 5/16	22 3/4	32	5 7/8
R-1658	24	1	22 3/4	36 3/4	9
R-1782	24	2	22 3/4	35	8
R-1787-A	23 3/4	1	22 13/16	31 1/4	4 5/8
R-1560	25 3/8	2	23	39	8
R-1590	25 3/4	7/8	23	30 1/2	7
R-1729	25 1/2	2	23	38	10 1/2
R-1760	25	1 1/2	23	38	9
R-1760-1	25	1 1/2	23	38	4
R-1760-A	25	1 1/2	23	38	9
R-1787	23 3/4	1	23	31 1/4	4 5/8
R-1889	25 3/8	1 1/4	23	38 1/2	7
R-1916-E	25	1 1/2	23	38	9
R-1955	25 3/4	7/8	23	35 1/2	11 1/2
R-1728-B	25 5/8	1	23 1/8	31 7/8	4
R-1915-G	25 3/4	1 1/2	23 1/8	36	7 1/2
R-1915-G2	25 3/4	1 1/2	23 1/8	30 3/4	7 1/2
R-1915-H	25 3/4	1	23 1/4	32	8
R-1915-H2	25 3/4	1	23 1/4	30 3/4	8
R-1573	24 7/8	1	23 5/16	34	6
R-1777	24 3/4	1	23 3/8	33 1/4	7
R-1723	26	1 7/8	23 1/2	35 3/4	8
R-1792-FL	25 1/4	1 1/2	23 1/2	29 1/2	4
R-1728	25 5/8	1	23 5/8	31 7/8	8
R-1574	25 1/4	1 1/2	23 13/16	31 5/8	4 3/16
R-1922	26 1/16	1 1/16	23 13/16	34 3/16	8
R-1653-D	26 3/4	1 5/8	23 7/8	40 1/2	8
R-1720	26	1 1/8	23 7/8	34 1/8	8 1/8
R-1556	25 3/4	1 3/8	24	34 1/2	8
R-1556-A	25 3/4	1 3/8	24	34 1/2	4
R-1559	25 3/4	1 3/8	24	38 1/4	8
R-1565	25 7/8	2 1/2	24	34	9
R-1565-A	25 7/8	2 1/2	24	34	4
R-1575	27 1/8	1 1/2	24	32 1/2	6
R-1593	25 3/4	1 1/8	24	32	4
R-1595	26 1/8	1 3/16	24	33 3/4	6
R-1597	25 3/4	2 1/4	24	28	2 3/4
R-1640-A	26	1 3/8	24	43	10
R-1642-A	26	1 1/2	24	34	5
R-1643	25 3/4	1 1/2	24	35	7 1/2
R-1653-A	26 5/8	1 3/8	24	39 1/4	6
R-1653-E	26 5/8	1 5/8	24	41	6
R-1653-F	26 5/8	1 5/8	24	46	9
R-1673-C	26 3/4	1 1/2	24	34 5/8	14 1/2
R-1684	25 1/2	2 1/2	24	36	7
R-1695	25 1/4	1 1/8	24	31 1/2	4 1/2
R-1720-A	26	1 1/8	24	34 1/2	8
R-1733	25 3/4	7/8	24	35 7/16	7
R-1733-1	25 3/4	7/8	24	35 7/16	4
R-1735	25 1/2	7/8	24	35	9
R-1750-A	26	1 3/8	24	43	10
R-1755-E1	30	1 1/2	24	39 3/16	6 1/2
R-1757-G	29	1 3/4	24	35	6

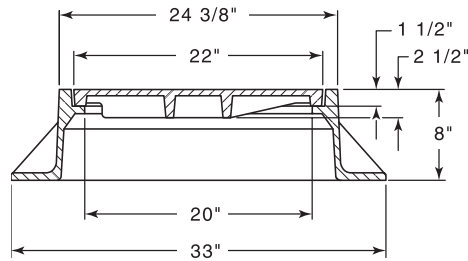
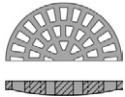
Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-1769-A	25 1/4	1 1/2	24	35 1/4	8
R-1783-A	25 3/8	1 7/16	24	33 1/2	5 1/8
R-1794-J	26	1 1/8	24	34 x 34	4
R-1916-F	26	1 1/2	24	36	7
R-1960-A	26	1 1/2	24	32 1/2	6
R-1642-LM	26	1 1/2	24	35 7/8	7
R-1642	26	1 1/2	24 1/8	35 7/8	6 15/16
R-1796-E	26	1 1/2	24 1/8	35 7/8	6 15/16
R-1900-C	26	1 1/2	24 1/8	35 7/8	6 15/16
R-1650-LM	25 7/8	1 1/2	24 1/8	34	4
R-1733-A	25 3/4	7/8	24 1/8	35 1/2	8
R-1733-B	25 3/4	7/8	24 1/8	35 1/2	9
R-1733-C	25 3/4	7/8	24 1/8	35 1/2	10
R-1755-F2	28 3/4	1 3/8	25	37 1/4	7
R-1755-F2LM	28 3/4	1 3/8	25	37 1/4	7
R-1916-T	28	1	25	35	5
R-1683	27 1/2	2 7/16	25 1/8	35 7/8	7
R-1773	27 1/2	1	25 3/4	34 1/2	4
R-1773-A	27 1/2	1	25 3/4	34 1/2	4
R-1635	28	3	26	37 1/2	12
R-1682	27 7/8	1 3/8	26	38 1/4	4 3/8
R-1682-1	27 7/8	1 3/8	26	38 1/4	4 3/8
R-1792-GL	28 1/4	1 1/2	26 3/8	32 1/2	4
R-1576	30 1/8	1 1/2	27	35 1/2	6
R-1640-B	29	1 3/8	27	46	10
R-1640-B1	29	1 3/8	27	46	5 5/8
R-1750-B	29	1 3/8	27	46	10
R-1750-B1	29	1 3/8	27	46	5 5/8
R-1750-B2	29	1 3/8	27	46	3 1/2
R-1751-A	33 7/16	1 1/2	27	43 1/2	11
R-1753-B	28 3/4	1 3/8	27	37 1/4	3
R-1915-J	29	1 3/4	27	35	6
R-1915-J2	29	1 3/4	27	34	6
R-1753-A	28 3/4	1 3/8	27 1/8	37 1/4	7
R-1753-ALM	28 3/4	1 3/8	27 1/8	37 1/4	7
R-1581-A	31	1	27 1/2	37	2
R-1749-A	29 1/4	3/4	27 3/4	32	1 1/2
R-1564	30	1 3/8	28	41	8
R-1754-A	29 5/8	1 1/2	28	36	4
R-1755-G	32	1 1/2	28	46	7
R-1755-G1	32	1 1/2	28	40	6 1/2
R-1758-G	32	1 1/2	28	46	7
R-1798	30	1 1/4	28	37 1/2	8
R-1798-1	30	1 1/4	28	36	4
R-1563	30	1 1/2	28 1/4	40	6 1/2
R-1557	31 3/4	1 3/8	30	41	6 1/2
R-1557-A4	32	1 1/2	30	36	4
R-1558	31 3/4	1 3/8	30	41	8
R-1582	32 1/4	1 1/4	30	38	6
R-1582-A	32 1/4	1 1/4	30	38	6

Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-1640-C	32	1 3/8	30	49	10
R-1640-C1	32	1 3/8	30	49	5 5/8
R-1640-C1S	32	1 3/8	30	46	5 5/8
R-1640-CS	32	1 3/8	30	46	10
R-1740-B	32	1 1/2	30	46	7
R-1743	31 3/4	1 3/4	30	39 1/4	6
R-1743-LM	31 3/4	1 1/2	30	39 1/4	6
R-1750-C	32	1 3/8	30	49	10
R-1750-C1	32	1 3/8	30	49	5 5/8
R-1750-C1S	32	1 3/8	30	46	5 5/8
R-1750-CS	32	1 3/8	30	46	10
R-1751-C	36 7/16	1 1/2	30	46 1/2	11
R-1795-K	32	1 1/2	30	46 x 46	7
R-1796-F	32	1 1/2	30	46	7
R-1799-O	32	1	30	34	2 1/4
R-1900-D	32	1 1/2	30	46	7
R-1900-D1	31 7/8	1 1/2	30	34	2 1/4
R-1916-H	32	1 1/2	30	46	7
R-1916-H1	31 3/4	1 3/4	30	39 1/4	6
R-1581	34 1/8	1	30 1/8	36	2
R-1557-A	32	1 1/2	30 9/32	40	6 1/2
R-1747	32 1/2	1 1/2	30 1/2	48	10
R-1749-B	32 1/4	3/4	30 3/4	35	1 1/2
R-1749-B1	32 1/4	3/4	30 3/4	40 1/2	1 1/2
R-1794-EB	34	1	32	40 1/2 x 40 1/2	3 1/2
R-1586	34 1/2	1 1/2	32 1/2	38 1/2	4
R-1740-C1	34 1/2	1 1/2	32 1/2	38 1/2	4
R-1792-HL	34 1/4	1 1/2	32 1/2	38 1/2	4
R-1794-M1	34	1	32 3/4	46 x 46	7 3/4
R-1752	36	1 1/2	34	45	8 5/8
R-1578	37 3/4	1 1/2	36	47 1/2	6
R-1640-D	38	1 1/2	36	49	10
R-1739-A	37 3/4	1 1/2	36	47 1/2	6
R-1740-D	38	1 1/2	36	49	10
R-1740-D2	38	1 1/2	36	49	10
R-1741-D	38	1 1/2	36	49	10
R-1795-M	38	1 1/2	36	47 x 47	10
R-1799-P	38	1 1/2	36	41	2 1/4
R-1900-E	38	1 1/2	36	49	10
R-1916-K	38	1 1/2	36	49	10
R-1742	38 3/4	1	37	47 3/4	6 1/2
R-1792-JL	40	1 1/2	38 1/2	44 1/2	4
R-1740-E	44	1 3/4	42	56	10
R-1740-E1	44	1 3/4	42	56	10
R-1741-E	44	1 3/4	42	62	10
R-1792-KL	46 1/8	1 1/2	44 1/2	50 1/2	4
R-1740-F	50	2	48	62	10
R-1741-F	50	2	48	62	10
R-1741-F1	50	2	48	62	6

R-1500
Manhole Frame, Solid Lid

Heavy Duty

Non-Rocking feature available, see p. 12.

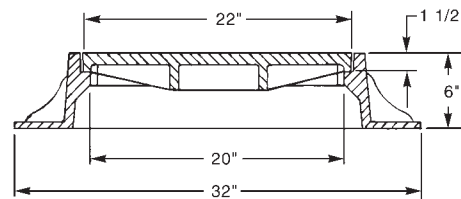


Available Grate: **R-2100**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1510-A
Manhole Frame, Solid Lid

Heavy Duty

Non-Rocking feature available, see p. 12.

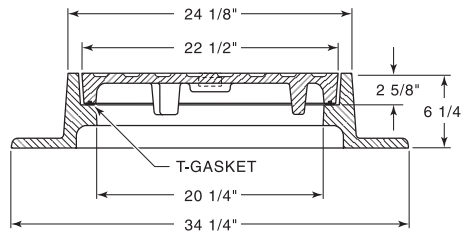


Available Grate: **R-2110**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1524-B
Manhole Frame, Solid Gasketed Lid

Heavy Duty

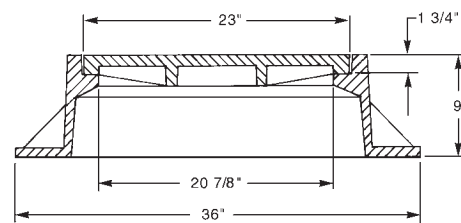
T-Seal gasket standard, see p. 12.



Available Grate: **R-2424-A**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1530
Manhole Frame, Solid Lid

Heavy Duty

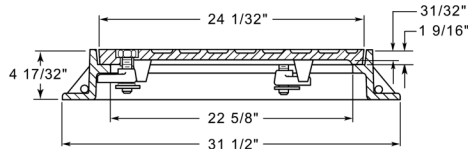


Available Grate: **R-2030**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1534-A
Manhole Frame, Solid Lid

Heavy Duty

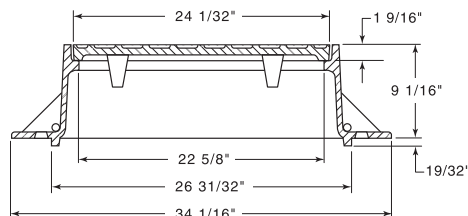
With cam lugs.
Also available without cam lugs.



R-1535-A
Manhole Frame, Solid Lid

Heavy Duty

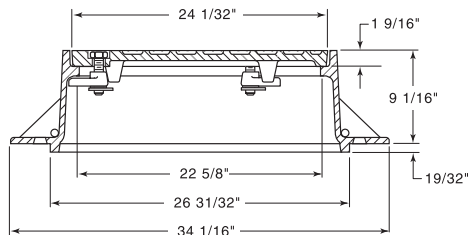
Furnished with four 1" anchor holes on
29-29/32" diameter bolt circle.



R-1535-C
Manhole Frame, Solid Lid

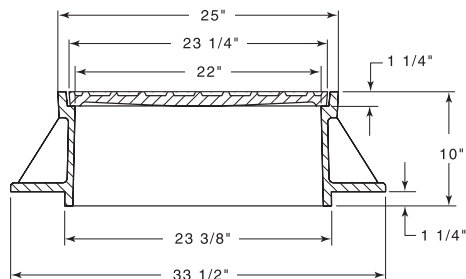
Heavy Duty

Furnished with four 1" anchor holes on
29-29/32" diameter bolt circle.
With cam lugs.



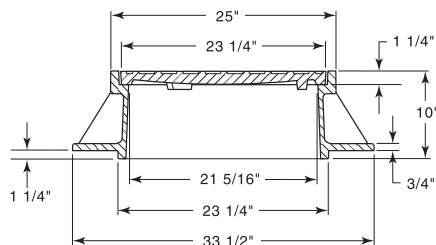
R-1536
Manhole Frame, Solid Lid

Heavy Duty



R-1536-1
Manhole Frame, Solid Lid

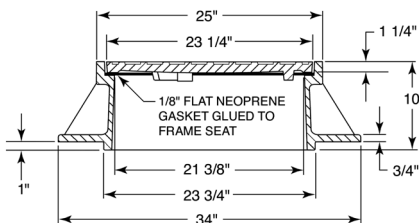
Heavy Duty



R-1536-B
Manhole Frame, Bolted/Gasketed Solid Lid

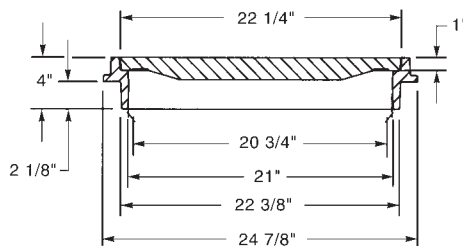
Heavy Duty

Furnished with six 3/4" anchor holes on 28" diameter bolt circle.



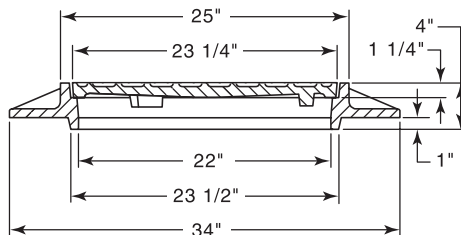
R-1537
Manhole Frame, Solid Lid

Heavy Duty



R-1538
Manhole Frame, Solid Lid

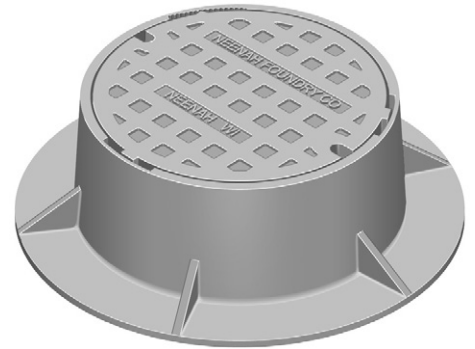
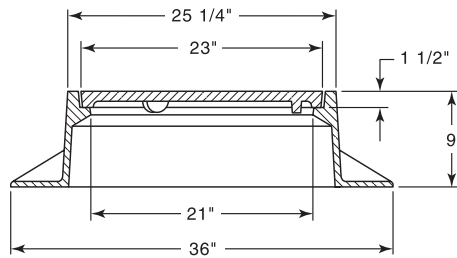
Heavy Duty



R-1540
**Non-Rock Manhole Frame,
Solid Lid**

Heavy Duty

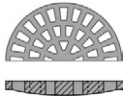
See p. 12 for Non-Rocking information.



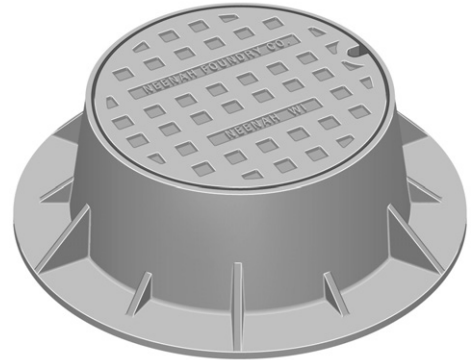
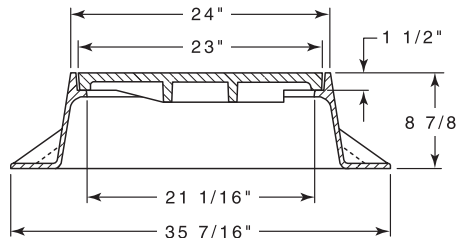
R-1550
Manhole Frame, Solid Lid

Heavy Duty

Non-Rocking feature available, see p. 12.

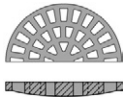


Available Grate: **R-2578**

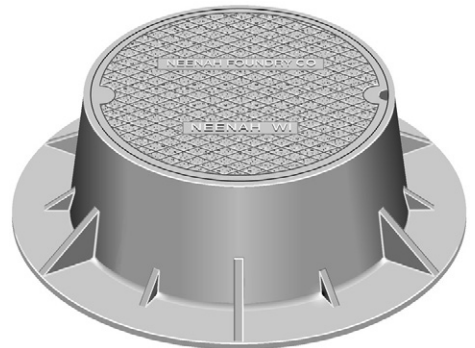
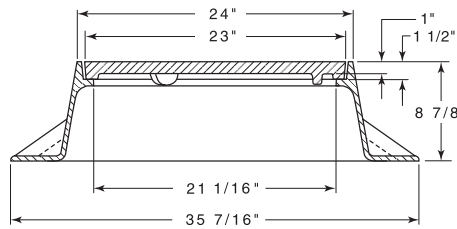


R-1550-A
Heavy Duty

Non-Rocking feature available, see p. 12.



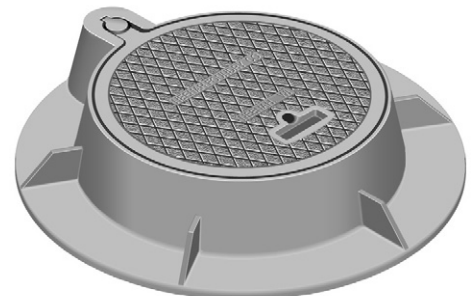
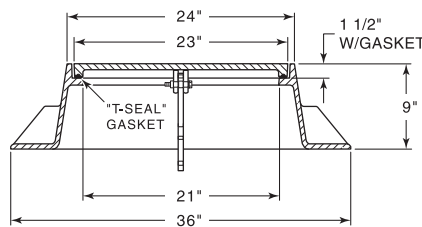
Available Grate: **R-2578**



R-1550-LM
**LiftMate Frame,
Solid Gasketed Lid**

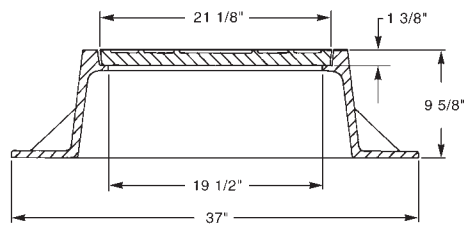
Heavy Duty

Hinge plug available for self-seal application.
See page 13 for LiftMate information.



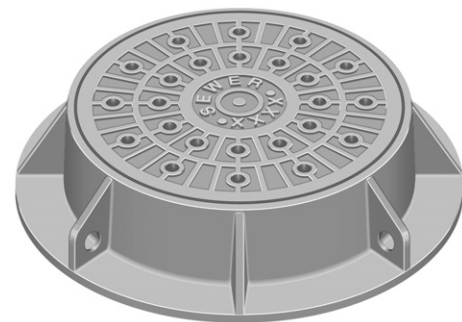
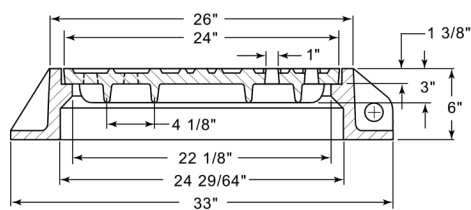
R-1551
Manhole Frame, Vented Lid

Heavy Duty



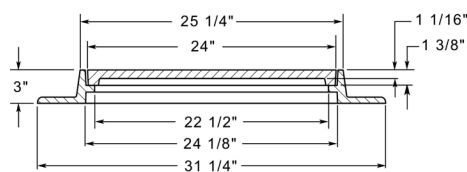
R-1552
Manhole Frame, Vented Lid

Heavy Duty



R-1553
Manhole Frame, Solid Lid

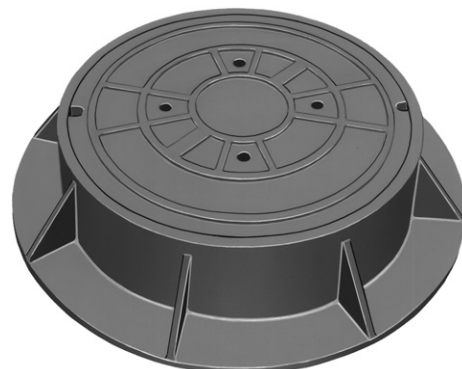
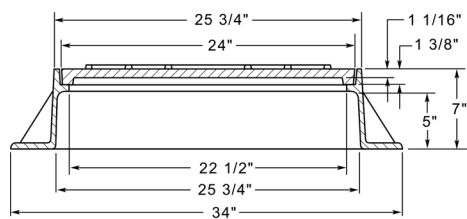
Heavy Duty



Available Grate: R-2553

R-1554
Manhole Frame, Vented Lid

Heavy Duty



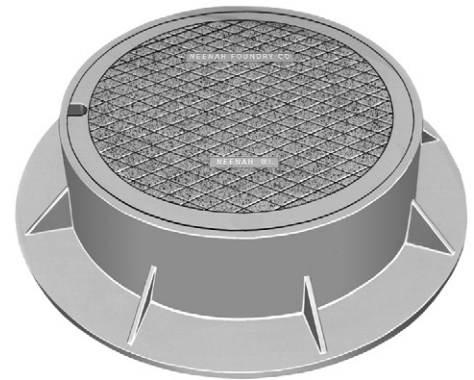
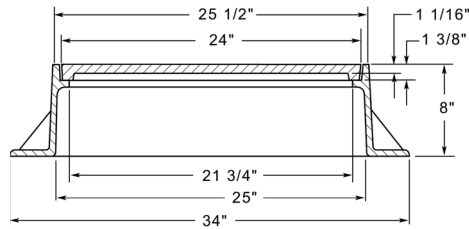
Available Grate: R-2554

R-1555
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: R-2555

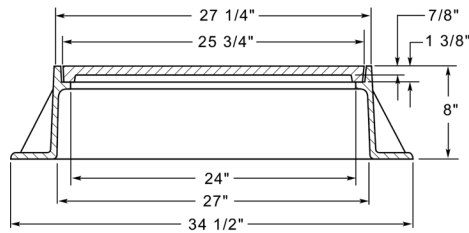


R-1556
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: R-2556

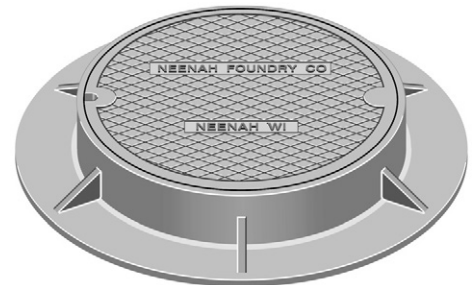
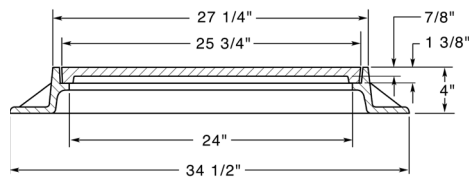


R-1556-A
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: R-2556-A

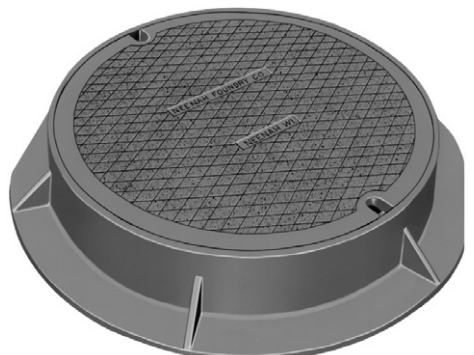
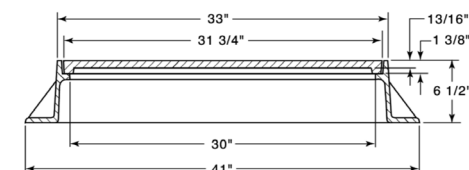


R-1557
Manhole Frame, Solid Lid

Heavy Duty

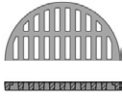


Available Grate: R-2557

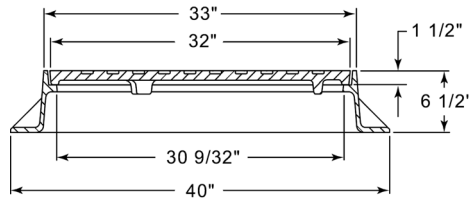


R-1557-A
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: R-2557-A

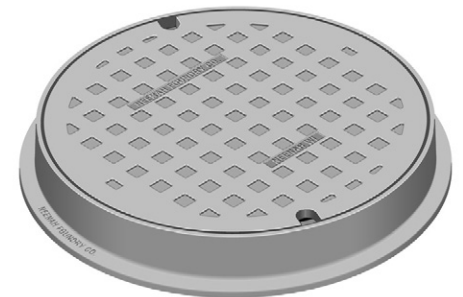
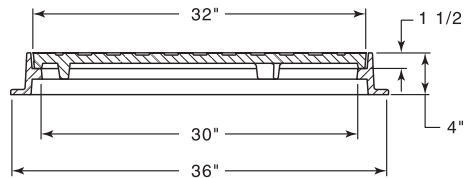


R-1557-A4
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: R-2557-A4

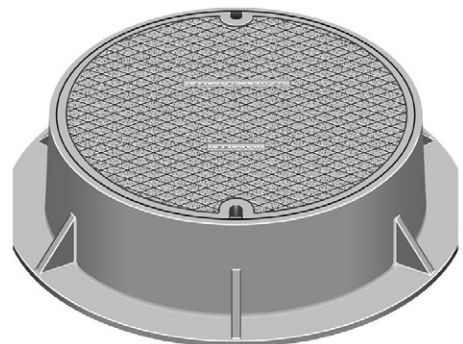
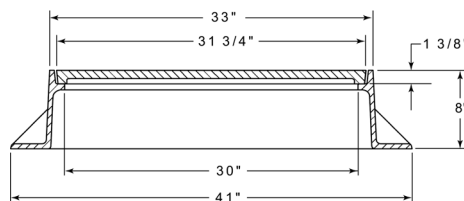


R-1558
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: R-2558

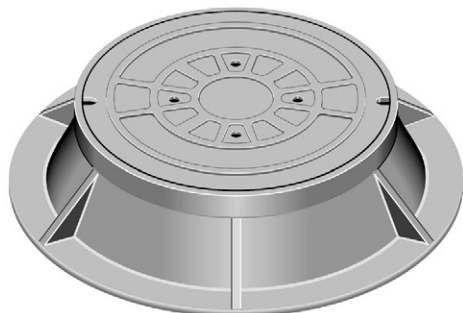
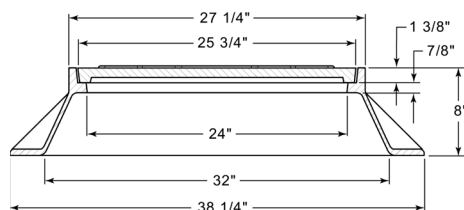


R-1559
Manhole Frame, Vented Lid

Heavy Duty

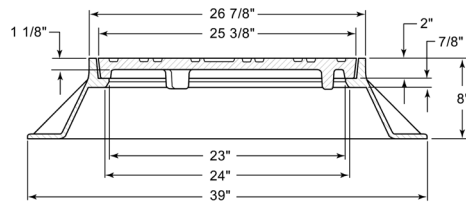


Available Grate: R-2559



R-1560
Manhole Frame, Solid Lid

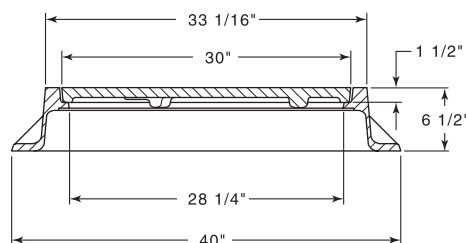
Heavy Duty



R-1563
Manhole Frame, Solid Lid

Heavy Duty

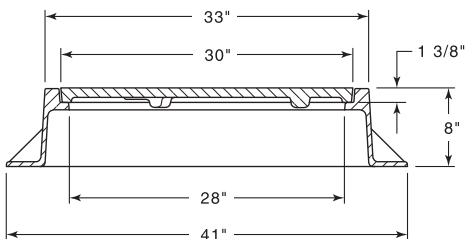
Furnished with four 1" x 2" anchor holes on 37" diameter bolt circle.



R-1564
Manhole Frame, Solid Lid

Heavy Duty

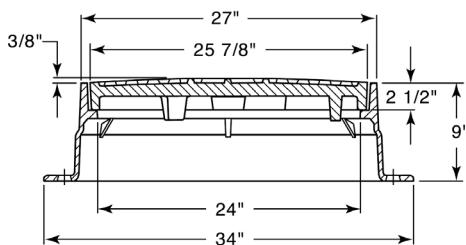
Furnished with four 1" x 2" anchor holes on 37" diameter bolt circle.



R-1565
Manhole Frame, Solid Lid

Heavy Duty

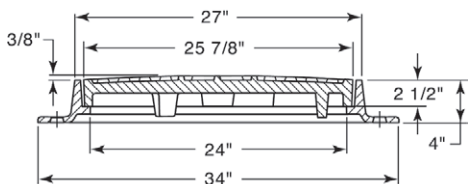
Furnished with four 1" anchor holes on 30-1/4" diameter bolt circle.



R-1565-A
Manhole Frame, Solid Lid

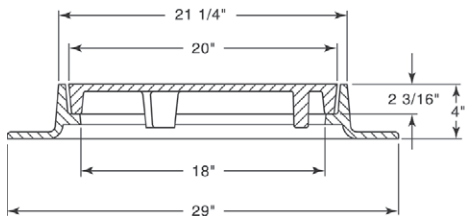
Heavy Duty

Furnished with four 1" anchor holes on 30-1/4" diameter bolt circle.



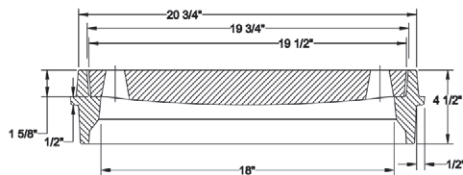
R-1566
Manhole Frame, Solid Lid

Heavy Duty



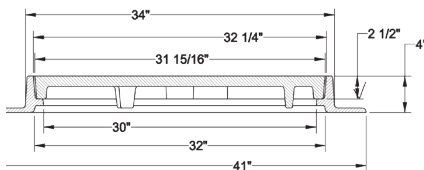
R-1567
Manhole Frame, Solid Lid

Heavy Duty



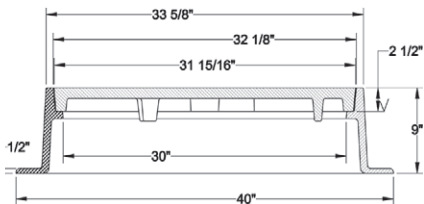
R-1568
Manhole Frame

Heavy Duty



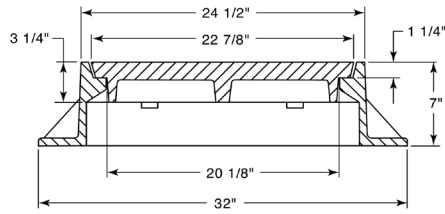
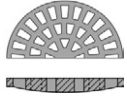
R-1569
Manhole Frame

Heavy Duty

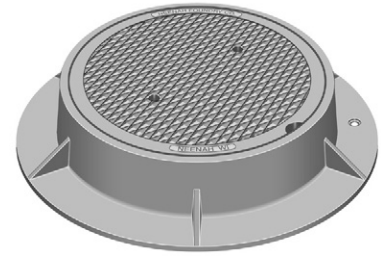


R-1570-A
Manhole Frame, Vented Lid

Heavy Duty



Available Grate: R-2534



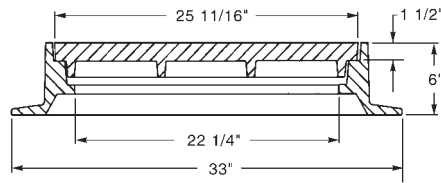
R-1571
Manhole Frame, Solid Lid

Heavy Duty



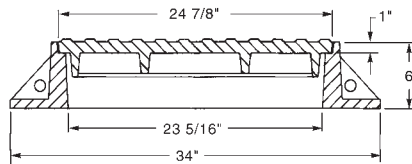
R-1572
Manhole Frame, Solid Lid

Heavy Duty



R-1573
Manhole Frame, Vented Lid

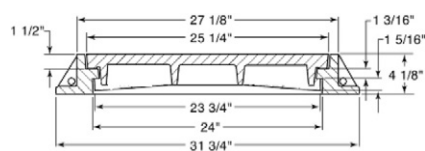
Heavy Duty



R-1574
Manhole Frame, Solid Lid

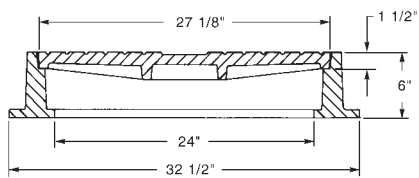
Heavy Duty

Cover locking lugs and
frame lug guides are standard.



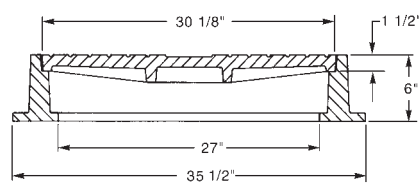
R-1575
Manhole Frame, Solid Lid

Heavy Duty



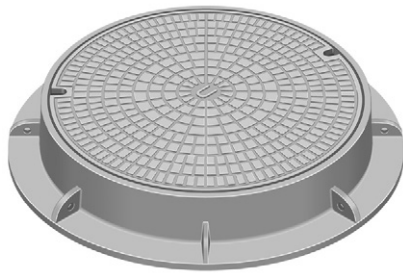
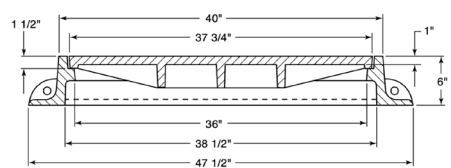
R-1576
Manhole Frame, Solid Lid

Heavy Duty



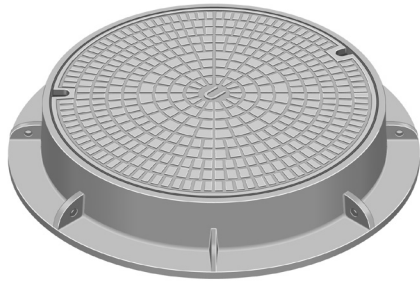
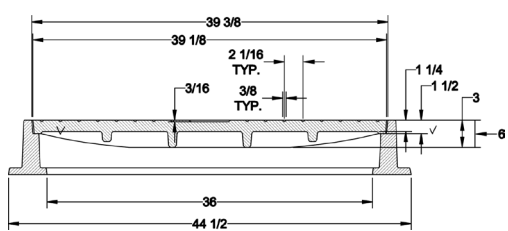
R-1578
Manhole Frame, Solid Lid

Heavy Duty



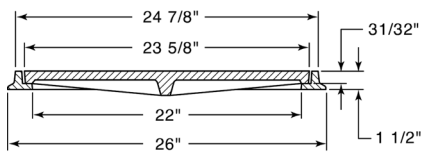
R-1578-A
Manhole Frame, Solid Lid

Heavy Duty



R-1579
Manhole Frame, Solid Lid

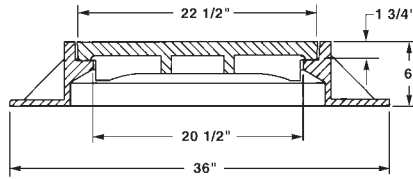
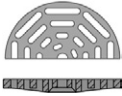
Heavy Duty



R-1580
Manhole Frame, Solid Lid

Heavy Duty

Non-Rocking feature available, see p. 12.
Also available with 38" diameter frame flange.

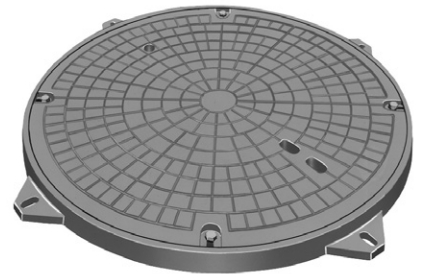
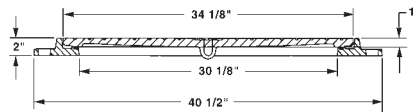


Available Grate: **R-2080**
(see **Catch Basin Inlets, R-2000 Series** table)

R-1581
Manhole Frame, Bolted Solid Lid

Heavy Duty

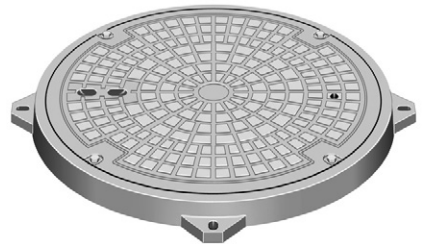
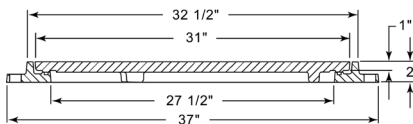
Gasket furnished if specified.



R-1581-A
Manhole Frame, Bolted Solid Lid

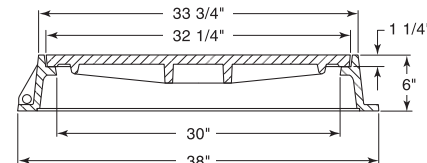
Heavy Duty

Gasket furnished if specified.



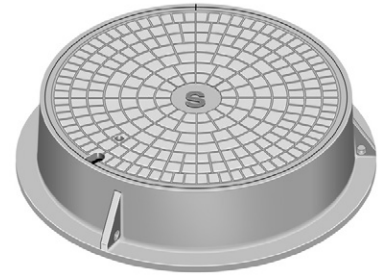
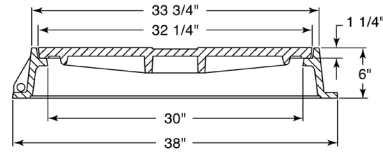
R-1582
Manhole Frame, Vented Lid

Heavy Duty



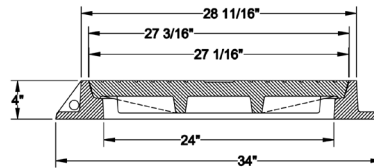
R-1582-A
Manhole Frame, Solid Lid

Heavy Duty



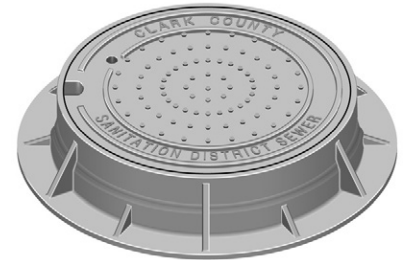
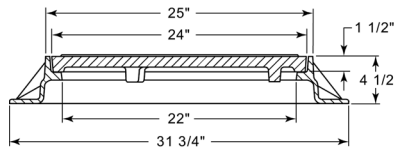
R-1583
Manhole Frame, Solid Lid

Heavy Duty



R-1585
Manhole Frame, Vented Lid

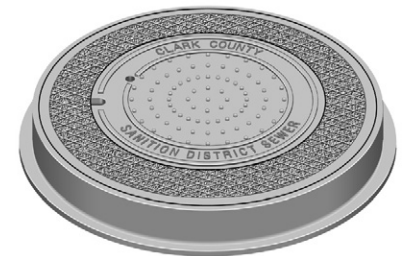
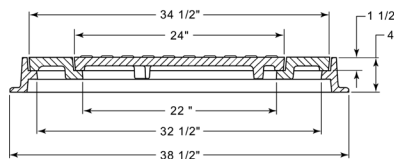
Heavy Duty



R-1586
Manhole Frame, Solid Lid with Vented Center Lid

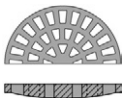
Heavy Duty

Frame is reversible for slab application with ground bearing surfaces.

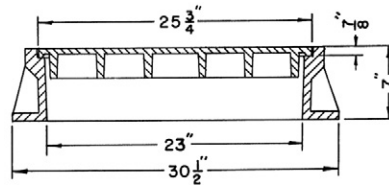


R-1590
Manhole Frame, Solid Lid

Heavy Duty



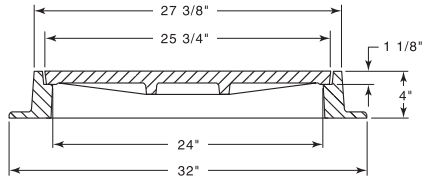
Available Grate: **R-2390**
(see **Inlet Frames & Grates, R-2000 Series** table)



R-1593
Manhole Frame, Solid Lid

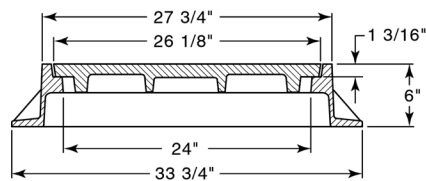
Heavy Duty

Also available bolted, or bolted and gasketed.



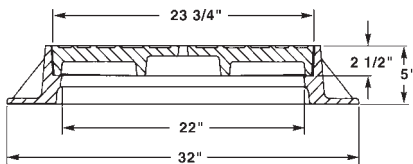
R-1595
Manhole Frame, Solid Lid

Heavy Duty



R-1596
Manhole Frame, Solid Lid

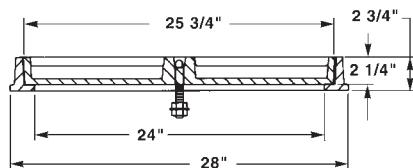
Heavy Duty



R-1597
Manhole Frame, Lid for Fill

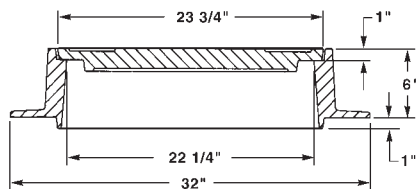
Light Duty

Only frames and lids furnished. Center filling material to be supplied by purchaser.
Designed for concrete, asphalt or terazzo fill.



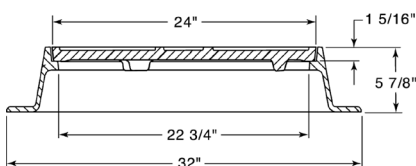
R-1598
Manhole Frame, Solid Lid

Heavy Duty



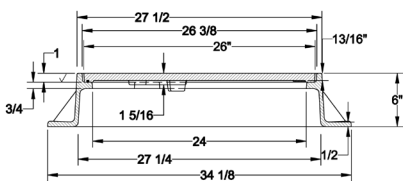
R-1599-A
Manhole Frame, Vented Lid

Heavy Duty



R-1600
Manhole Frame, Solid Lid

Heavy Duty

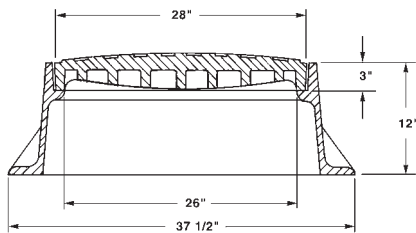


Available with 3 bolt option.



R-1635
Manhole Frame, Solid Lid

Heavy Duty



R-1640 Series Manhole Frame, Solid Lid

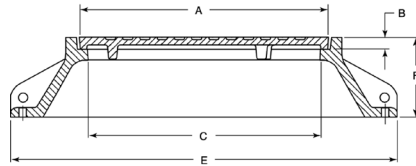
Heavy Duty

U.S. GOVERNMENT Standard Designs.
Standard for underground electric or
telephone construction.

Available with drop handles or open
pickholes – please specify.

Security Bolting available, see **R-1750** series.

Furnished with machined horizontal and vertical bearing surfaces
(except R-1640-D, machined horizontal only).



Illustrating R-1640-C

Dimensions in inches

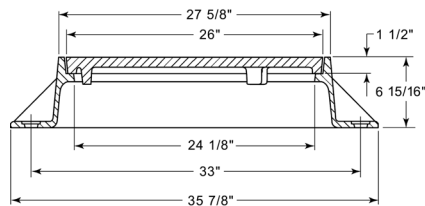
Catalog No.	A	B	C	E	F	Anchor Bolt Circle *	Grate Alt.
R-1640-A	26	1 3/8	24	43	10		R-2300
R-1640-B	29	1 3/8	27	46	10	43-1/2	R-2290
R-1640-B1	29	1 3/8	27	46	5 5/8	43-1/2	R-2290-A
R-1640-C	32	1 3/8	30	49	10	43-1/2	
R-1640-C1	32	1 3/8	30	49	5 5/8	43-1/2	
R-1640-C1S	32	1 3/8	30	46	5 5/8	43-1/2	R-2750
R-1640-CS	32	1 3/8	30	46	10	43-1/2	R-2255
R-1640-D	38	1 1/2	36	49	10	46	R-2580

*Four 1" diameter anchor holes

R-1642 Manhole Frame, Solid Lid

Heavy Duty

Non-Rocking feature available, see p. 12.
Furnished with four 1" anchor holes on 33"
diameter bolt circle.



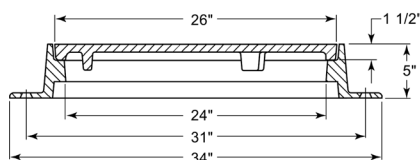
Available Grate: **R-2501**

R-1642-A Manhole Frame, Solid Lid

Heavy Duty

Furnished with four 3/4" anchor holes on 31"
diameter bolt circle.

Frame is reversible for slab application with
ground bearing surfaces.



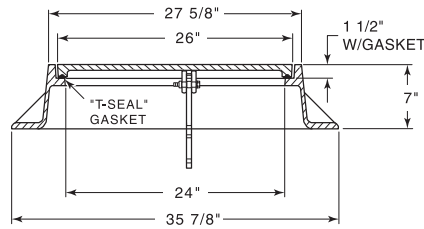
R-1642-LM
LiftMate Frame,
Solid Gasketed Lid

Heavy Duty

Furnished with four 1" anchor holes on 33" diameter bolt circle.

Hinge plug available for self-seal application.

See page 13 for LiftMate information.

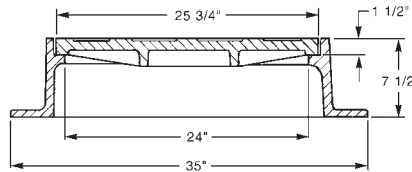


R-1643
Manhole Frame, Solid Lid

Heavy Duty



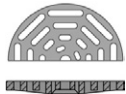
Available Grate: **R-2371**
(see **Inlet Frames & Grates, R-2000 Series** table)



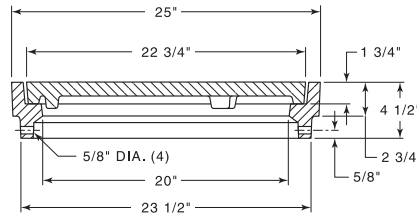
R-1645
Manhole Frame, Solid Lid

Heavy Duty

Furnished with four 5/8" holes in barrel of frame to fit in opening of 24" corrugated metal pipe.

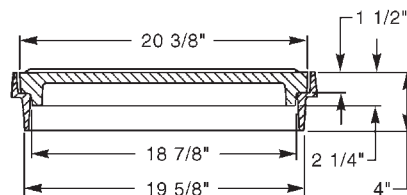


Available Grate: **R-2549**



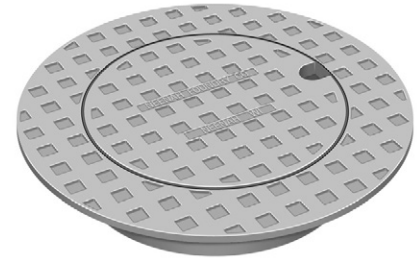
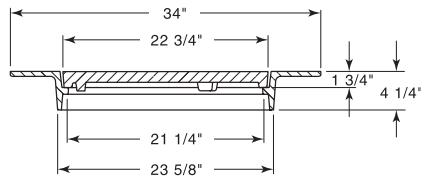
R-1645-A
Manhole Frame, Solid Lid

Heavy Duty



R-1646
Manhole Frame, Solid Lid

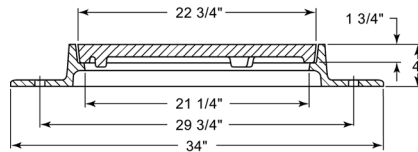
Heavy Duty



R-1647-A
Manhole Frame, Solid Lid

Heavy Duty

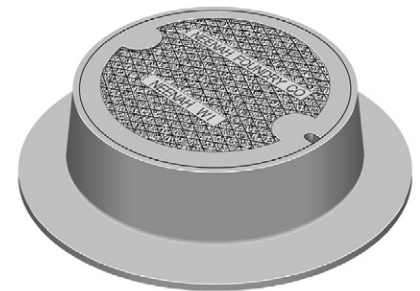
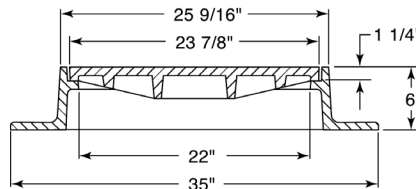
Furnished with six 3/4" anchor holes on 29-3/4" diameter bolt circle.



Available Grate: **R-2595-A**

R-1648
Manhole Frame, Solid Lid

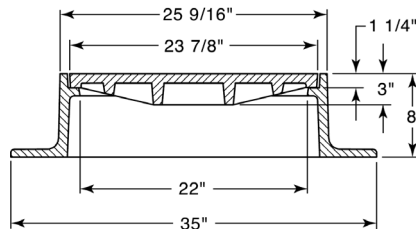
Heavy Duty



Available Grate: **R-2412-A5**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1649
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: **R-2412-A6**
(see **Inlet Frames & Grates. R-2000 Series** table)

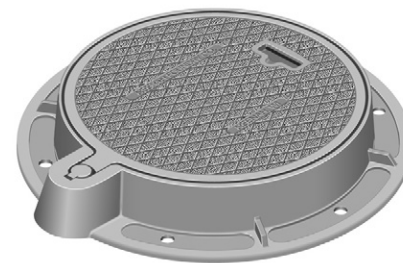
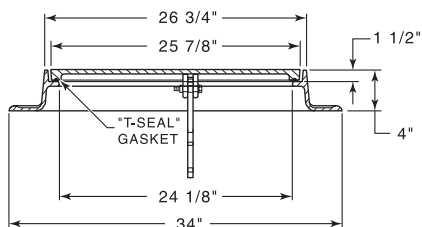
R-1650-LM
LiftMate Frame,
Solid Gasketed Lid

Heavy Duty

Furnished with six 1-1/8" anchor holes on 29-11/16" diameter bolt circle.

Hinge plug available for self-seal application.

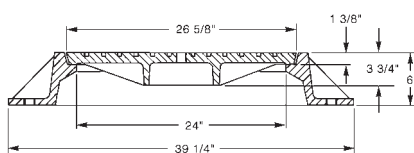
See page 13 for LiftMate information.



R-1653-A
Manhole Frame, Solid Lid

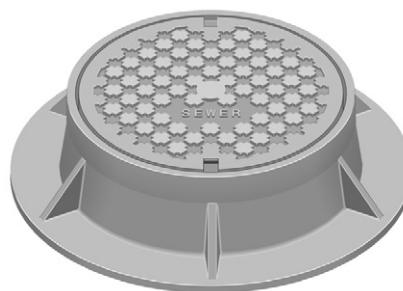
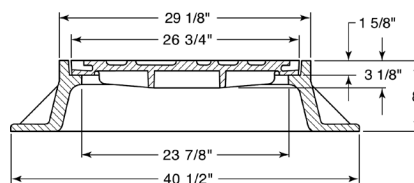
Heavy Duty

Furnished with two 7/8" anchor holes on 34" diameter bolt circle.



R-1653-D
Manhole Frame, Solid Lid

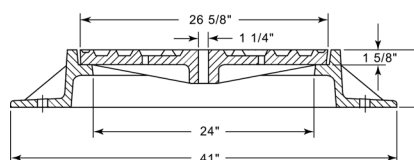
Heavy Duty



R-1653-E
Manhole Frame, Vented Lid

Heavy Duty

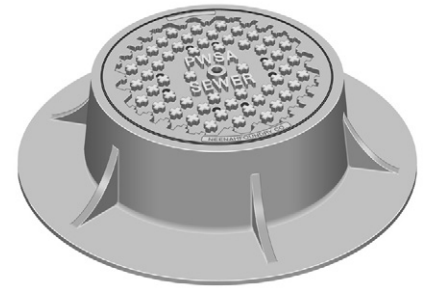
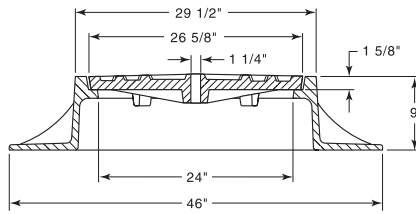
Furnished with two 1" anchor holes on 34-1/4" diameter bolt circle.



R-1653-F
Manhole Frame, Vented Lid

Heavy Duty

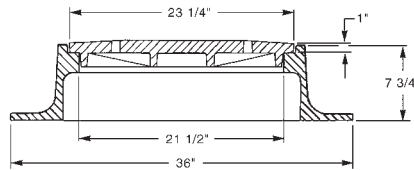
Furnished with two 1" anchor holes on 33-3/4" diameter bolt circle.



R-1654
Manhole Frame, Vented Lid

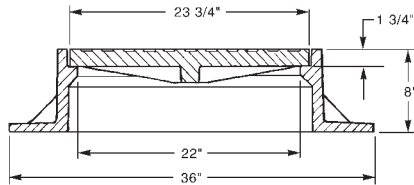
Heavy Duty

Specify if solid lid required.



R-1656
Manhole Frame, Solid Lid

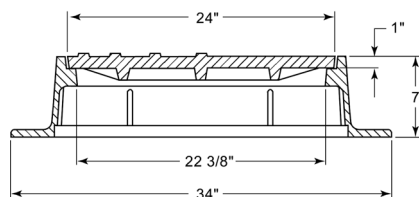
Heavy Duty



R-1657-1
Manhole Frame, Solid Lid

Heavy Duty

Lid has 1" diameter 1/4" raised knobs.

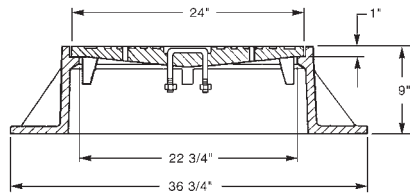


Available Grate: **R-2412-A3**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1658
Manhole Frame, Vented Lid

Heavy Duty

Furnished with twenty 1/2" diameter vent holes,
Type C drop handle and pickhole.
If vent holes not required, specify solid lid.

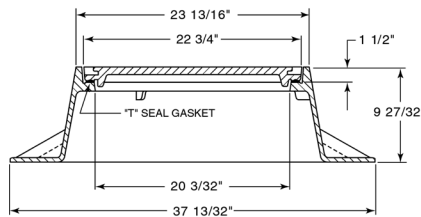
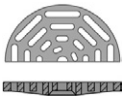


Available Grate: **R-2412-A1**
(see **Inlet Frames & Grates, R-2000 Series** table)

R-1661
**Manhole Frame,
Solid Gasketed Lid**

Heavy Duty

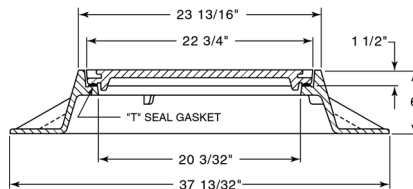
Non-Rocking feature available, see p. 12.



Available Grate: **R-2471**
(see **Catch Basin Inlets, R-2000 Series** table)

R-1661-A
**Manhole Frame,
Solid Gasketed Lid**

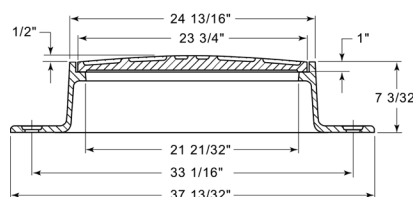
Heavy Duty



R-1664-A
Manhole Frame, Vented Lid

Heavy Duty

Furnished with four 1" anchor holes
on 33-1/16" diameter bolt circle.
Specify if solid lid required.

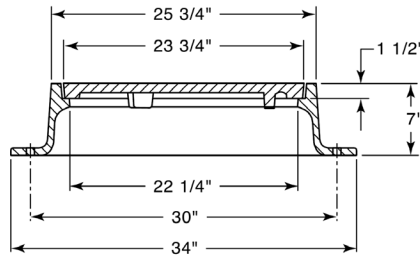
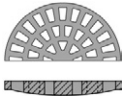


Available Grate: **R-2680**

R-1668
Manhole Frame, Vented Lid

Heavy Duty

Furnished with four 3/4" anchor holes on 30" diameter bolt circle.
Specify if solid lid required.

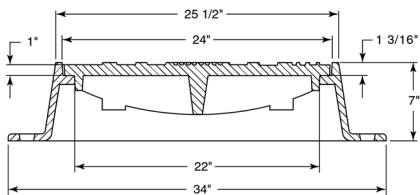


Available Grate: **R-2412-A4**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1669-A1
Manhole Frame, Solid Lid

Heavy Duty

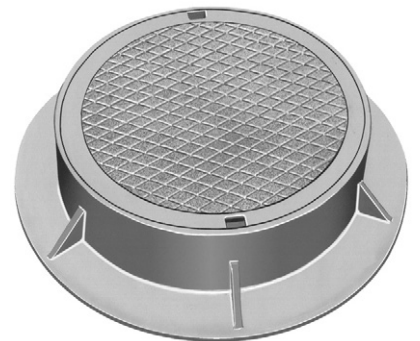
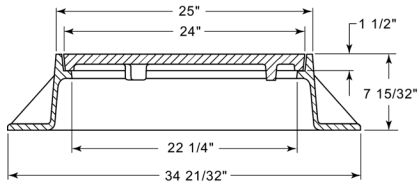
Furnished with two 1" anchor holes on 30-1/2" diameter bolt circle.



R-1670-A
Manhole Frame, Solid Lid

Heavy Duty

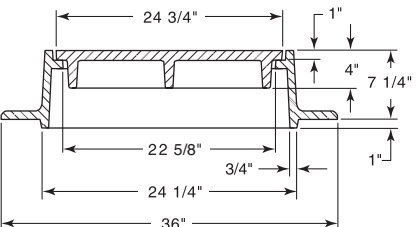
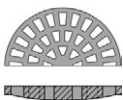
Non-Rocking feature available, see p. 12.



Available Grate: **R-2500**

R-1671
Manhole Frame, Solid Lid

Heavy Duty

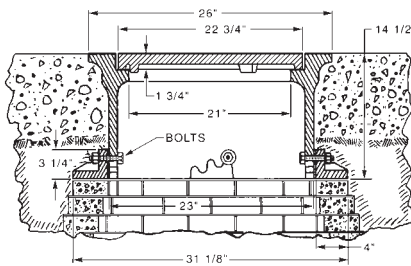


Available Grate: **R-2402**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1672
Manhole Frame, Flange, Solid Lid

Heavy Duty

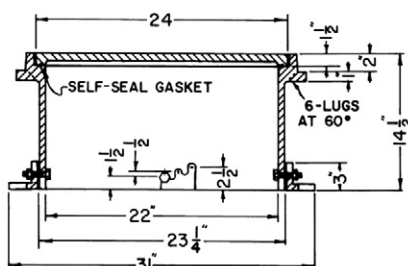
Manhole cover as shown in concrete pavement. Top flange lies flush with grade and prevents frame from settling below that level. Sleeve-ring construction allows frame to extend below slab, telescoping into base flange. Frame and pavement are not supported by manhole wall and are free to move together.



R-1673-A
Floating Manhole, Self-Sealing Lid

Heavy Duty

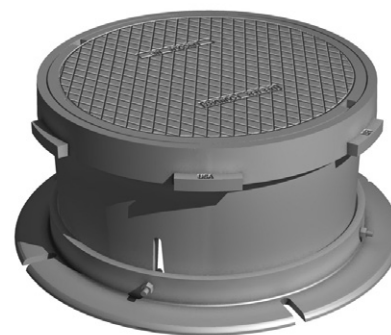
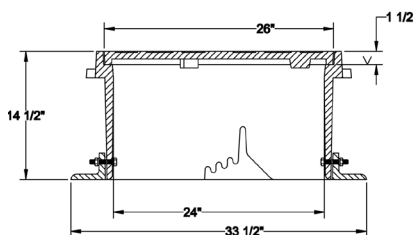
Specify if self-seal not required. Bolted lid available, please specify. Furnished with four 3/4" x 2" anchor slots on 28" diameter bolt circle.



R-1673-B
Floating Manhole, Solid Lid

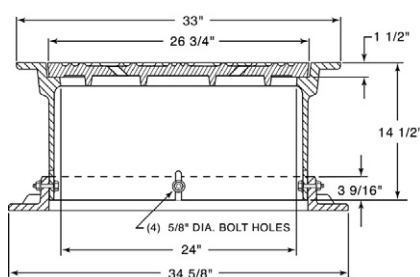
Heavy Duty

Lid bolted to frame is an option.



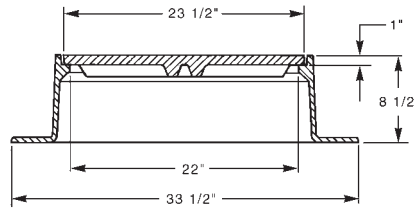
R-1673-C
Floating Manhole, Vented Lid

Heavy Duty



R-1676-A
Manhole Frame, Solid Lid

Heavy Duty



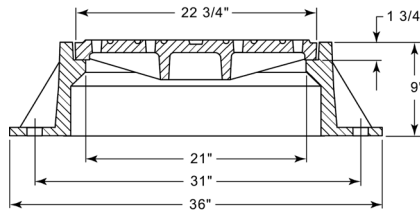
R-1677-A
Manhole Frame, Vented Lid

Heavy Duty

Furnished with twelve 1-1/2" anchor holes on 31" diameter bolt circle.

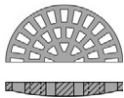
Specify if solid lid required.

Machined horizontal and vertical bearing surfaces.

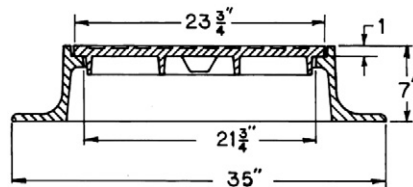


R-1678-A
Manhole Frame, Solid Lid

Heavy Duty

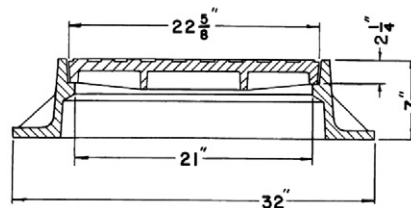


Available Grate: **R-2422-A1**
(see **Inlet Frames & Grates. R-2000 Series** table)



R-1680
Manhole Frame, Solid Lid

Heavy Duty



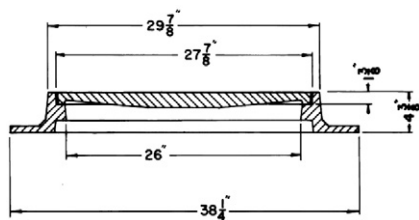
R-1682
Manhole Frame, Solid Lid

Heavy Duty

Frame is reversible for slab installation.



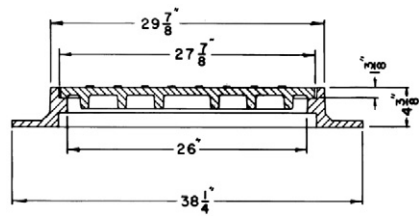
Available Grate: R-2682



R-1682-1
Manhole Frame, Solid Lid

Heavy Duty

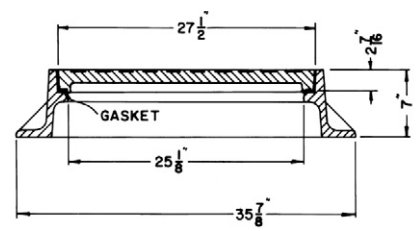
Frame is reversible for slab installation.
Specify solid or vented lid.



R-1683
Manhole Frame, Solid Gasketed Lid

Heavy Duty

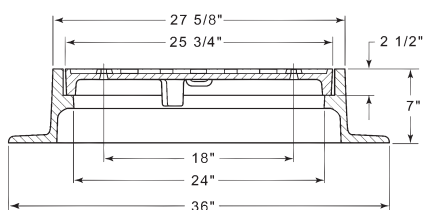
T-Seal gasket standard, see p. 14.



R-1684
Manhole Frame, Vented Lid

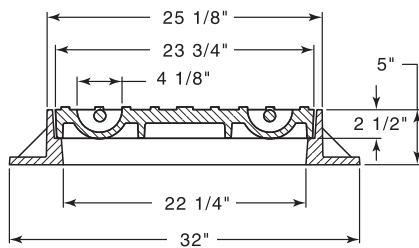
Heavy Duty

Furnished with two 3/4" lid vents on 18" diameter circle.



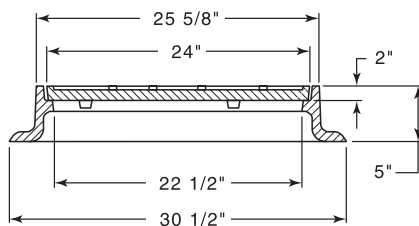
R-1687
Manhole Frame, Solid Lid

Heavy Duty



R-1688
Manhole Frame, Solid Lid

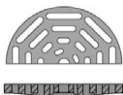
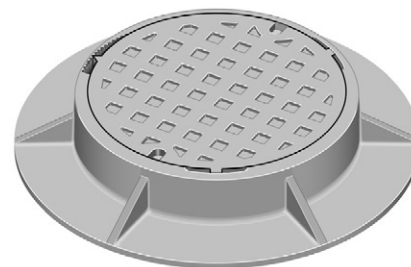
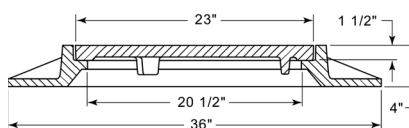
Heavy Duty



R-1689
Non-Rock Manhole Frame, Solid Lid

Heavy Duty

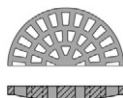
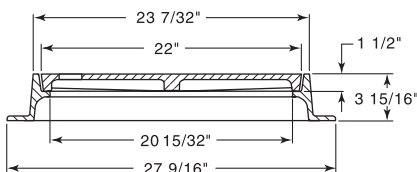
See p. 12 for Non-Rocking information.



Available Grate: **R-2464**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1690
Manhole Frame, Solid Lid

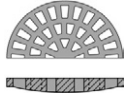
Light Duty



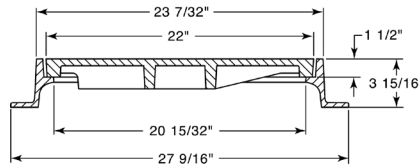
Available Grate: **R-2510**

R-1690-A
Manhole Frame, Solid Lid

Heavy Duty

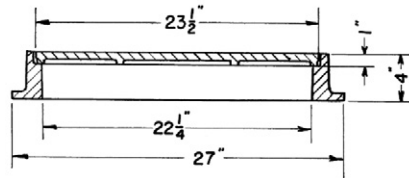


Available Grate: R-2510



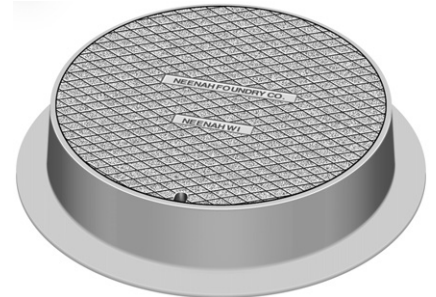
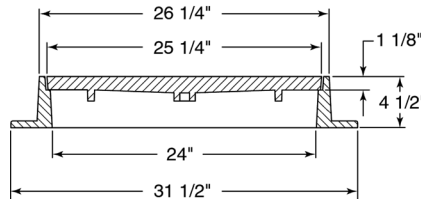
R-1694
Manhole Frame, Solid Lid

Light Duty



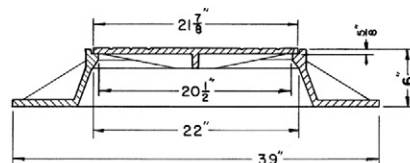
R-1695
Manhole Frame, Solid Lid

Heavy Duty



R-1696
Manhole Frame, Solid Lid

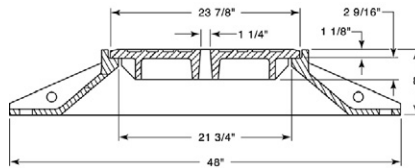
Light Duty



R-1697
Manhole Frame, Solid Lid

Heavy Duty

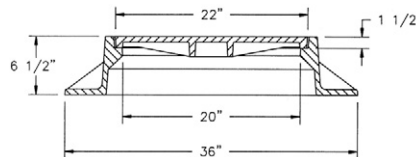
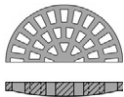
Furnished with eight 1-1/2" anchor holes on 42" diameter bolt circle.



R-1700-A
Manhole Frame, Solid Lid

Heavy Duty

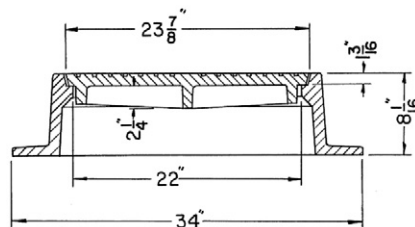
Non-Rocking feature available, see p. 12.



Available Grate: **R-2060**
(see **Inlet Frames & Grates. R-2000 Series** table)

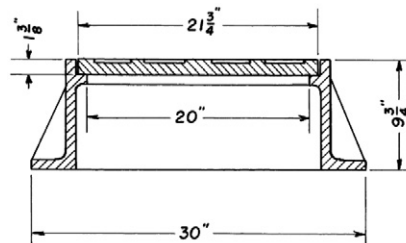
R-1703
Manhole Frame, Solid Lid

Heavy Duty



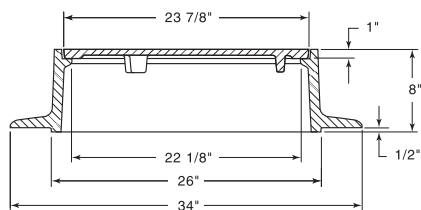
R-1705
Manhole Frame, Solid Lid

Heavy Duty



R-1706
Manhole Frame, Solid Lid

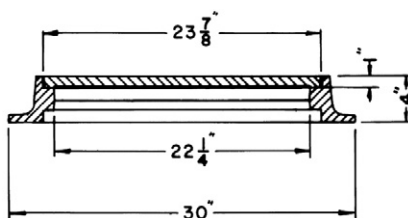
Heavy Duty



R-1706-1
Manhole Frame, Solid Lid

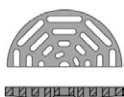
Heavy Duty

Reversible frame for slab installation,
order as **R-1706-1S**.

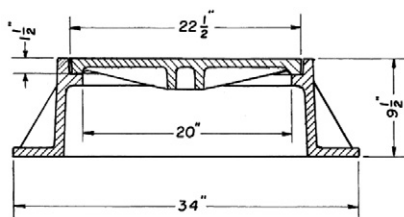


R-1707
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: **R-2471-B**
(see **Inlet Frames & Grates. R-2000 Series** table)



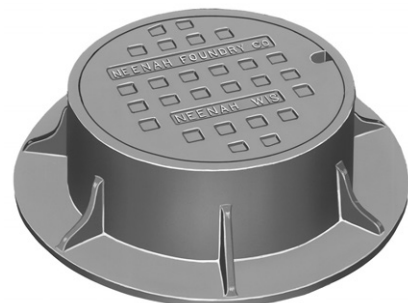
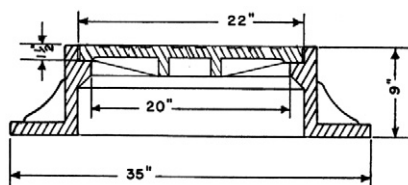
R-1710
Manhole Frame, Solid Lid

Heavy Duty

Non-Rocking feature available, see p. 12.

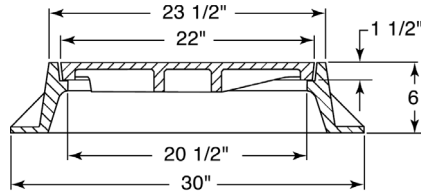
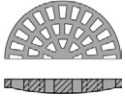


Available Grate: **R-2533**



R-1711-A
Manhole Frame, Solid Lid

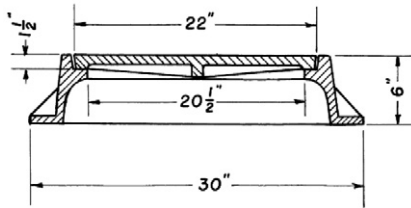
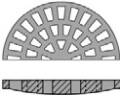
Heavy Duty



Available Grate: **R-2461-A**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1711-B
Manhole Frame, Solid Lid

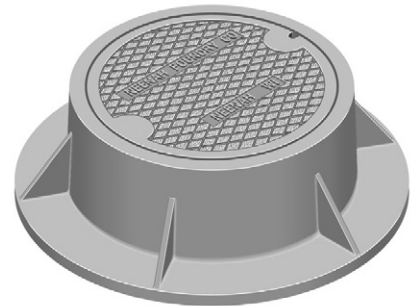
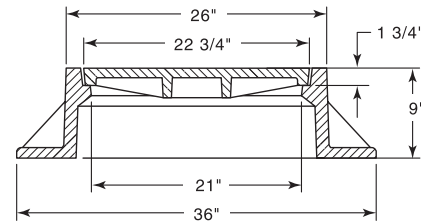
Light Duty



Available Grate: **R-2461-A**
(see **Inlet Frames & Grates. R-2000 Series** table)

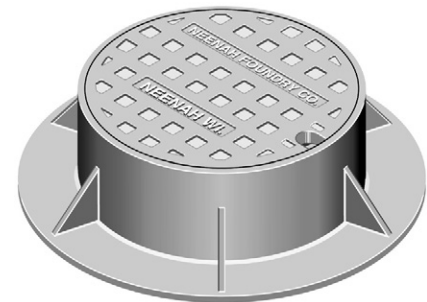
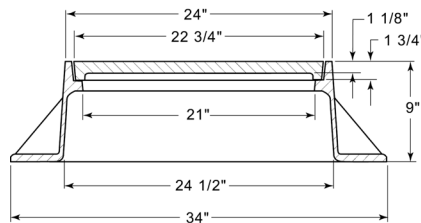
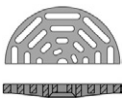
R-1712
Manhole Frame, Solid Lid

Heavy Duty



R-1713
Manhole Frame, Solid Lid

Heavy Duty

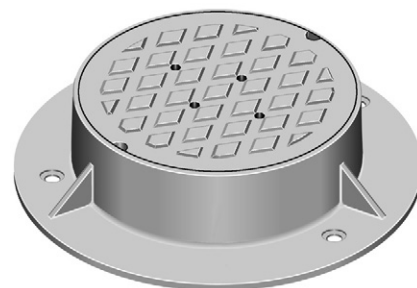
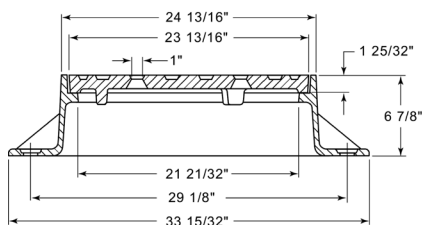


Available Grate: **R-2504**

R-1714
Manhole Frame, Vented Lid

Heavy Duty

Furnished with four 1" anchor holes on 29-1/8" diameter bolt circle.

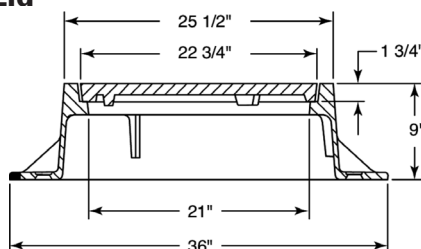


Available Grate: **R-2552**

R-1715
Non-Rock Manhole Frame, Solid Lid

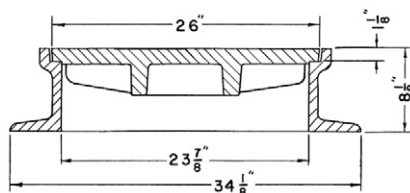
Heavy Duty

Furnished with three 1" anchor holes on 29-1/2" diameter bolt circle.



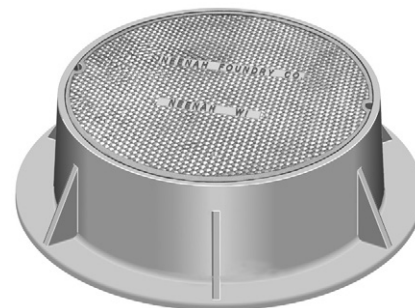
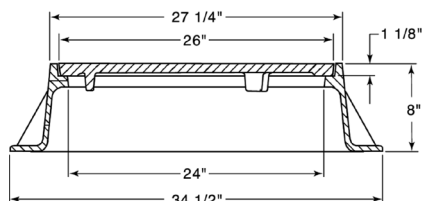
R-1720
Manhole Frame, Solid Lid

Heavy Duty



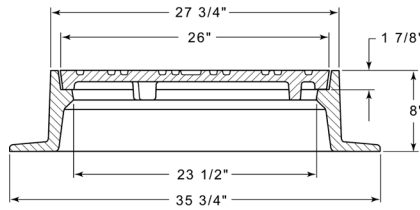
R-1720-A
Manhole Frame, Solid Lid

Heavy Duty



R-1723
Manhole Frame, Vented Lid

Heavy Duty

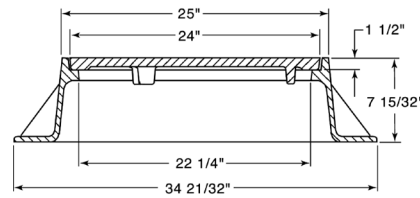
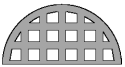


Available Grate: **R-2401**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1726-A
Manhole Frame, Solid Lid

Heavy Duty

Non-Rocking feature available, see p. 12.

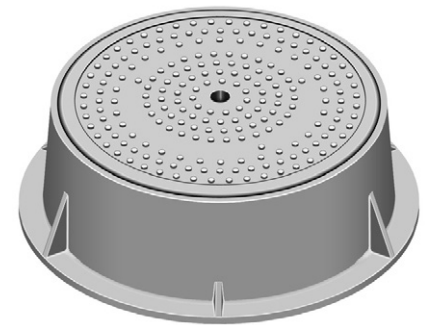
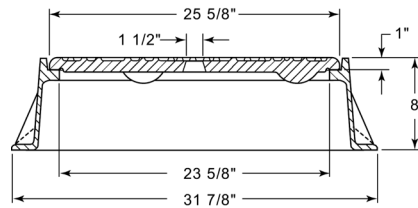


Available Grate: **R-2500**

R-1728-B
Manhole Frame, Solid Lid

Heavy Duty

Specify solid or vented lid.

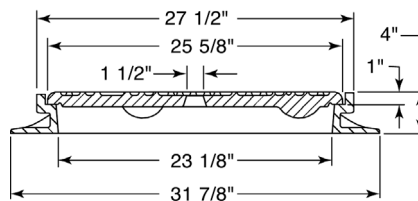


Available Vane Grate: **R-2548**

R-1728-B
Manhole Frame, Solid Lid

Heavy Duty

Specify solid or vented lid.



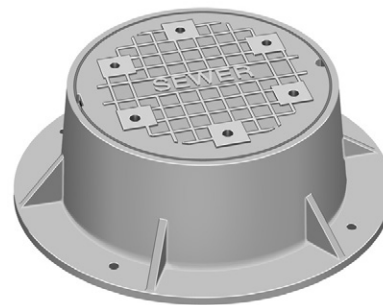
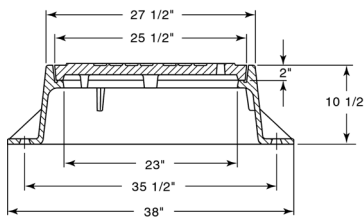
R-1729
Manhole Frame, Vented Lid

Heavy Duty

Furnished with four 1" anchor holes on 35-1/2" diameter bolt circle.



Available Grate: R-2650

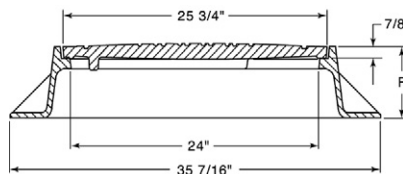


R-1733-Series
Manhole Frame, Vented Lid

Heavy Duty

Specify if solid lid with two lift holes required.

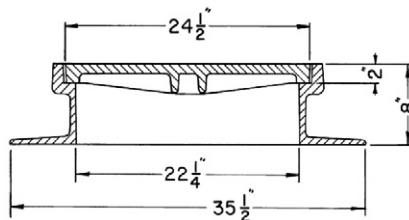
Catalog No.	F	Grate Alt.
R-1733	7"	R-2573
R-1733-1	4"	R-2573-1
R-1733-A	8"	R-2573-A
R-1733-B	9"	R-2573-B
R-1733-C	10"	R-2573-C



R-1734-B
Manhole Frame, Vented Lid

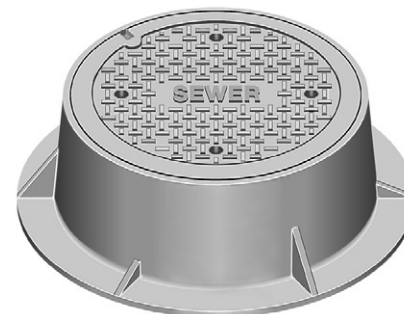
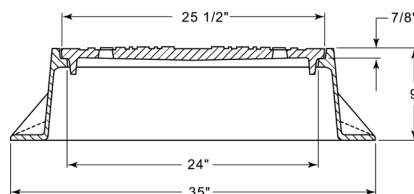
Heavy Duty

Specify if solid lid required.



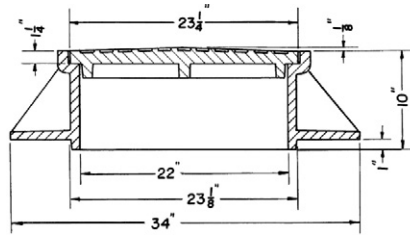
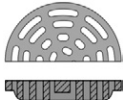
R-1735
Manhole Frame, Vented Lid

Heavy Duty



R-1736
Manhole Frame, Solid Lid

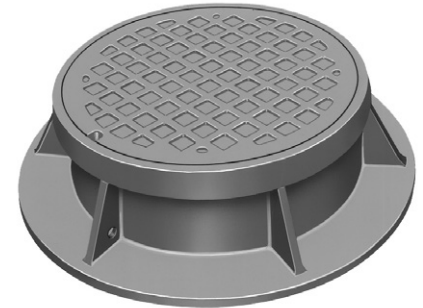
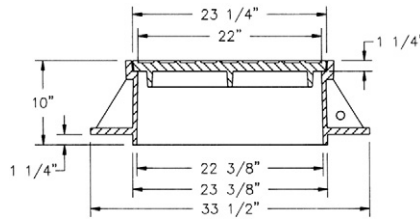
Heavy Duty



Available Grate: R-2421-A
(see Inlet Frames & Grates, R-2000 Series table)

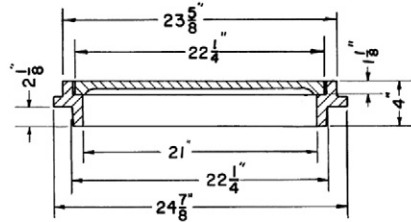
R-1736-A
Manhole Frame, Solid Lid

Heavy Duty



R-1737
Manhole Frame, Solid Lid

Light Duty

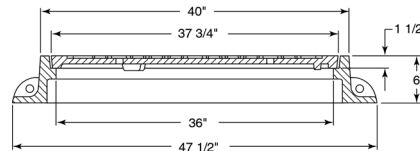


R-1739-A
Manhole Frame, Vented Lid

Heavy Duty

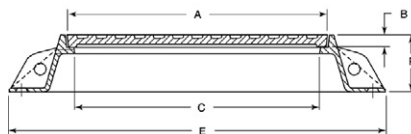
Furnished with machined horizontal and vertical bearing surfaces.

Specify if solid lid required.



R-1740 Series Manhole Frame, Solid Lid

Heavy Duty



Illustrating R-1740-B

Dimensions in inches

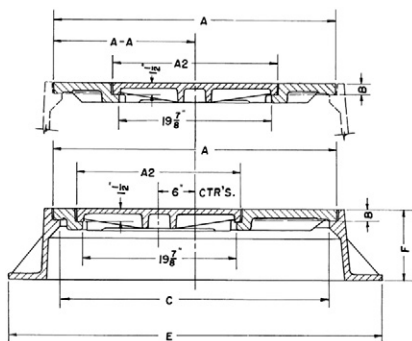
Catalog No.	A	B	C	E	F	Anchor Bolt Circle *	Grate Alt.
R-1740-B	32	1 1/2	30	46	7	43	R-2580-A
R-1740-D	38	1 1/2	36	49	10	46	R-2580-C

* Four 1" diameter anchor holes.

R-1740 to R-1741 Series Large Manhole Frame, Solid Lid with Removable Center Lid

Heavy Duty

Removable inner lid allows easy access to underground vault.



Illustrating R-1741-H

Dimensions in inches

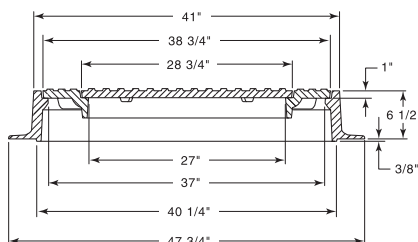
Catalog No.	A	AA	A2	B	C	E	F	Lid
R-1740-C1	34 1/2	17 1/4	24	1 1/2	32 1/2	38 1/2	4	Type C
R-1740-D2	38	19	22	1 1/2	36	49	10	Type B
R-1740-E	44	22	22	1 3/4	42	56	10	Type B
R-1740-E1	44	22	31 15/16	1 3/4	42	56	10	Type B
R-1740-F **	50	25	22	2	48	62	10	Type B
R-1741-D *	38	Offset	22	1 1/2	36	49	10	Type C
R-1741-E *	44	Offset	22	1 3/4	42	62	10	Type C
R-1741-F * **	50	Offset	22	2	48	62	10	Type C
R-1741-F1 *	50	Offset	23	2	48	62	6	Type C

* Center lid located 6" off center.

** Base flange (dimension E) is flattened to 59" at four quarter points.

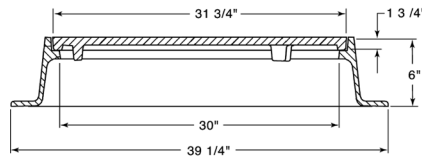
R-1742 Large Manhole Frame, Solid Lid with Removable Center Lid

Heavy Duty



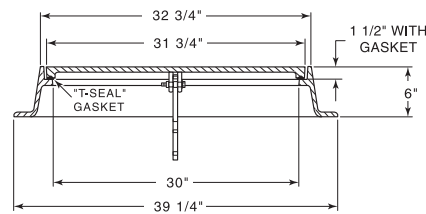
R-1743
Large Manhole Frame, Solid Lid

Heavy Duty



R-1743-LM
LiftMate Frame, Solid Gasketed Lid

Heavy Duty



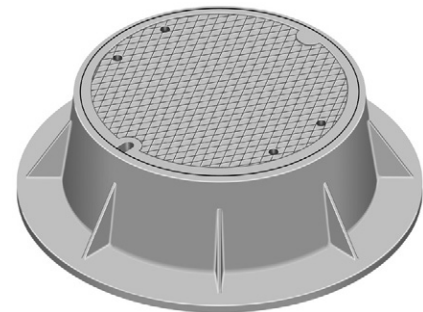
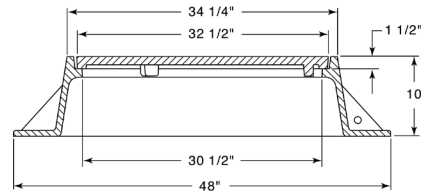
Furnished with four 1" anchor holes on 36-7/8" diameter bolt circle.

Hinge plug available for self-seal application.

See page 13 for LiftMate information.

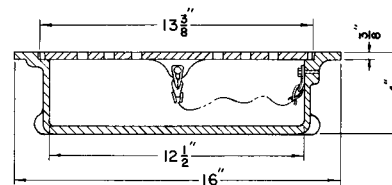
R-1747
Large Manhole Frame, Vented Lid

Heavy Duty



R-1748
Sump Frame, Vented Lid

Light Duty

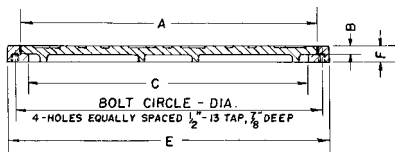
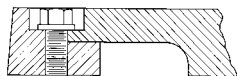


For use in electrical or telephone vaults to collect condensation or surface seepage. Cover is perforated to act as drain. Note attachment of cover to frame with vinyl coated galvanized aircraft strand.

R-1749 Series
Telephone Design Large
Manhole Frame, Solid Lid

Light Duty

Specify if security bolting required (2 per lid).



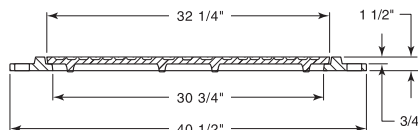
Dimensions in inches

Catalog No.	A	B	C	E	F	Anchor Bolt Circle
R-1749-A	29 1/4	3/4	27 3/4	32	1 1/2	30-1/2
R-1749-B	32 1/4	3/4	30 3/4	35	1 1/2	33-1/2

R-1749-B1
Manhole Frame, Solid Lid

Light Duty

Furnished with four 3/4" x 1" anchor slots on 37" diameter bolt circle.



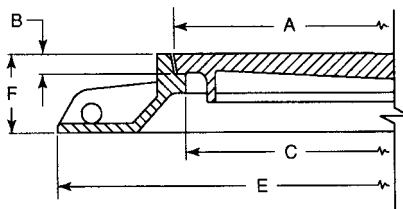
R-1750 Series
Telephone Design Large
Manhole Frame, Solid Lid

Heavy Duty

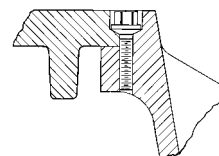
Furnished with machined horizontal and vertical bearing surfaces.

Covers can be bolted to frame with two pentagon head special monel security bolts upon request.

Wrenches available to fit special bolt at extra cost. Advise quantity required.



Illustrating R-1750-B



Dimensions in inches

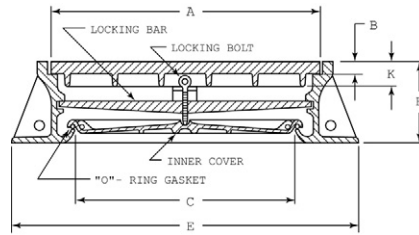
Catalog No. Standard	Catalog No. Security Bolted	A	B	C	E	F	Anchor Bolt Circle*	Grate Alt.
R-1750-A	R-1750-AB	26	1 3/8	24	43	10		R-2300
R-1750-B	R-1750-BB	29	1 3/8	27	46	10	43-1/2	R-2290
R-1750-B1	R-1750-B1B	29	1 3/8	27	46	5 5/8	43-1/2	R-2290-A
R-1750-B2	R-1750-B2B	29	1 3/8	27	46	3 1/2	43-1/2	
R-1750-C	R-1750-CB	32	1 3/8	30	49	10	43-1/2	
R-1750-C1	R-1750-C1B	32	1 3/8	30	49	5 5/8	43-1/2	
R-1750-C1S	R-1750-C1SB	32	1 3/8	30	46	5 5/8	43-1/2	R-2750
R-1750-CS	R-1750-CSB	32	1 3/8	30	46	10	43-1/2	R-2255

* Furnished standard with four 1" diameter holes in base flange, equally spaced.

R-1751 Series Telephone Design Large Manhole Frame, Solid Lid and Inner Lid

Heavy Duty

Inner lid with rubber gasket seal makes this series suitable for water-resistant construction. Note locking bar with tightening screw that can be locked in place preventing removal by unauthorized personnel.



Illustrating R-1751-A

Furnished standard with four 1" diameter anchor holes in base flange equally spaced 43 1/2" diameter bolt circle.

Note security saddle plate over eye bolt. When eye bolt is padlocked, saddle plate prevents bolt from being turned, so lock bar cannot be removed.

Furnished with machined horizontal and vertical bearing surfaces.



Security Saddle Plate

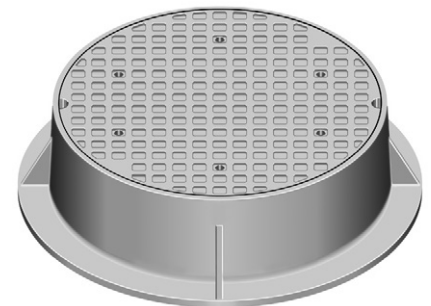
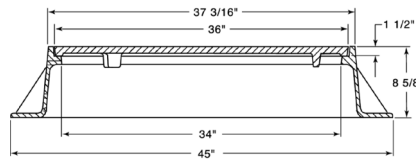
Catalog No.	Dimensions in inches					
	A	B	C	E	F	K
R-1751-A	33 7/16	1 1/2	27	43 1/2	11	3 1/2
R-1751-C	36 7/16	1 1/2	30	46 1/2	11	3 1/2

R-1752 Manhole Frame, Vented Lid

Heavy Duty



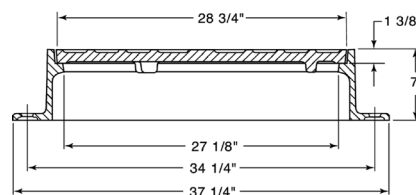
Available Grate: R-2251
(see Inlet Frames & Grates. R-2000 Series table)



R-1753-A Manhole Frame, Solid Lid

Heavy Duty

Furnished with four 7/8" anchor holes on 34-1/4" diameter bolt circle.



Available Grate: R-2290-B
(see Inlet Frames & Grates. R-2000 Series table)

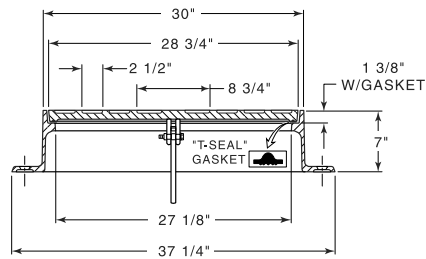
R-1753-ALM
**LiftMate Frame,
Solid Gasketed Lid**

Heavy Duty

Furnished with four 7/8" anchor holes
on 34-1/4" diameter bolt circle.

Hinge plug available for self-seal application.

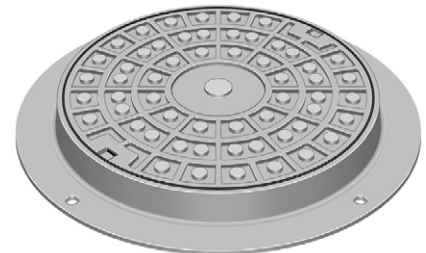
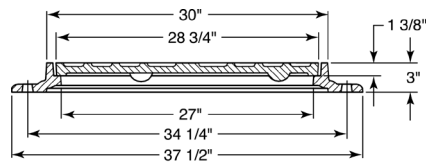
See page 13 for LiftMate information.



R-1753-B
Manhole Frame, Solid Lid

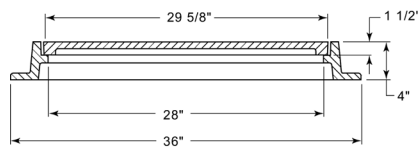
Heavy Duty

Furnished with four 1" anchor holes
on 34-1/4" diameter bolt circle.



R-1754-A
Manhole Frame, Solid Lid

Heavy Duty

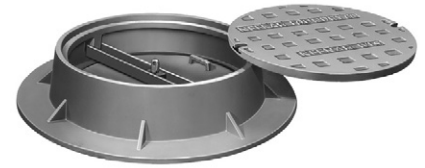
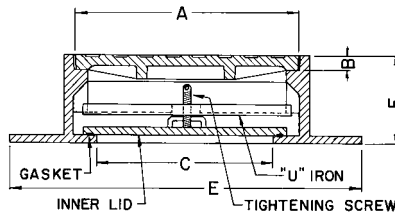


R-1755 Series
Gasket-Sealed, Frost and
Water-Resistant Frame,
Solid Lid and Inner Lid

Heavy Duty

All units furnished with neoprene gasket, tightening bolt and locking bar. Lids are provided with Type F concealed watertight pickhole (see page 14 for details). Not suitable for use as a pressure manhole.

Security saddle plate available upon request. When eye bolt is padlocked, saddle plate prevents bolt from being turned, so lock bar cannot be removed.



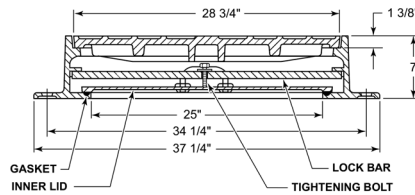
Security Saddle Plate

Dimensions in inches

Catalog No.	A	B	C	E	F	Lid
R-1755-B	23	1 1/2	18	36	9	Type B
R-1755-C	24	1 1/2	20	35	7 1/2	Type C
R-1755-E	26	1 1/2	22	38	7	Type C
R-1755-E1	30	1 1/2	24	39 3/16	6 1/2	Type C
R-1755-G	32	1 1/2	28	46	7	Type B
R-1755-G1	32	1 1/2	28	40	6 1/2	Type B

R-1755-F2
Frost/Watertight Frame,
Solid and Inner Lid

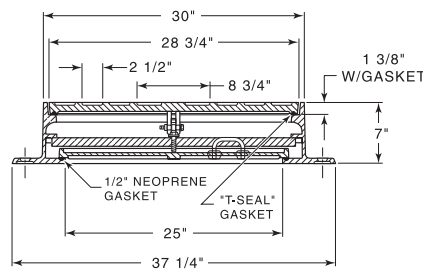
Heavy Duty



R-1755-F2LM
Frost/Watertight LiftMate
Frame, Solid Gasketed Lid
and Inner Lid

Heavy Duty

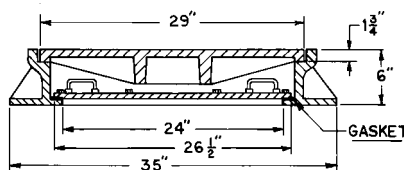
Hinge plug available for self-seal application. See page 13 for LiftMate information.



R-1757-G
Gas/Water/Steamtight Frame,
Solid Lid and Inner Lid

Heavy Duty

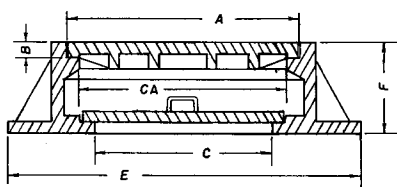
Furnished with stainless steel hex head cap screws and neoprene gasket. Lids are furnished with Type F concealed pickholes. Units are shipped assembled with gasket glued to frame.



R-1758 Series
Frost-Retardant Frame,
Solid Lid and Inner Lid

Heavy Duty

Available with machined horizontal bearing surface on top lid, if requested.

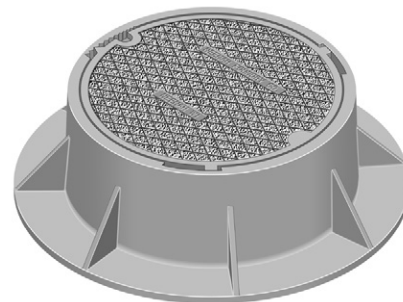
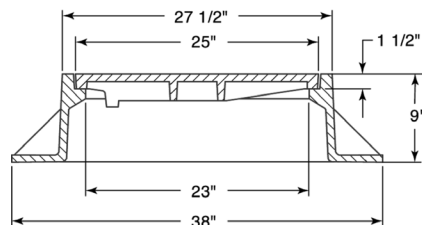


Dimensions in inches

Catalog No.	A	B	C	CA	E	F	Lid
R-1758-B	23	1 1/2	18	20 1/2	36	9	Type B
R-1758-C	34	1 1/2	20	22 1/2	35	7 1/2	Type C
R-1758-D	25	1 1/2	21	23	38	9	Type C
R-1758-E	26	1 1/2	22	24	38	7	Type C
R-1758-G	32	1 1/2	28	30 1/2	46	7	Type B

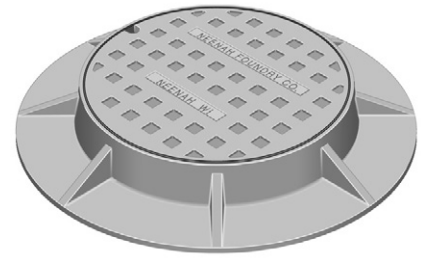
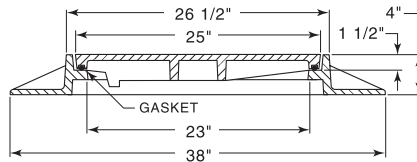
R-1760
Non-Rock Manhole Frame,
Solid Lid

Heavy Duty



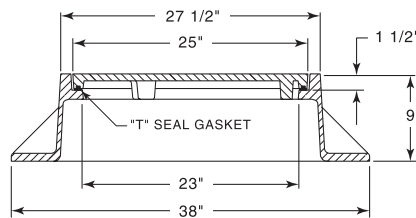
R-1760-1
Manhole Frame, Solid Gasketed Lid

Heavy Duty



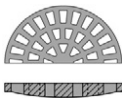
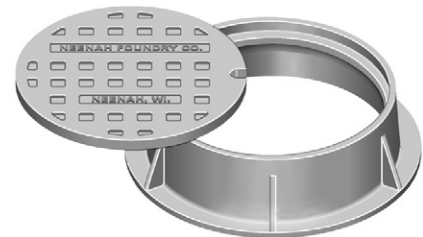
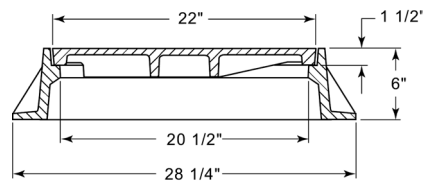
R-1760-A
Manhole Frame, Solid Gasketed Lid

Heavy Duty



R-1761
Manhole Frame, Solid Lid

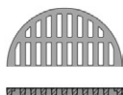
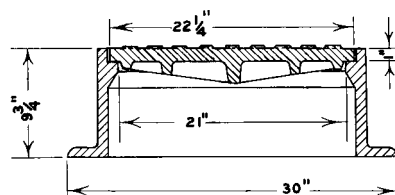
Heavy Duty



Available Grate: R-2112

R-1762
Manhole Frame, Solid Lid

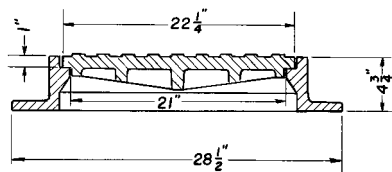
Heavy Duty



Available Grate: R-2435
(see Inlet Frames & Grates, R-2000 Series table)

R-1762-A
Manhole Frame, Solid Lid

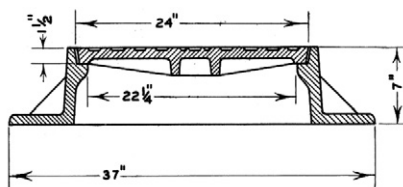
Heavy Duty



Available Grate: **R-2437-B**
(see **Inlet Frames & Grates. R-2000 Series** table)

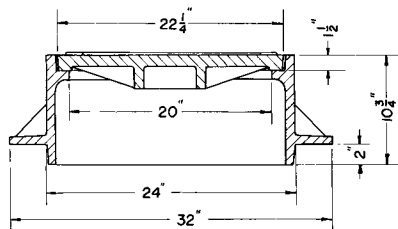
R-1764
Manhole Frame, Solid Lid

Heavy Duty



R-1765
Manhole Frame, Solid Lid

Heavy Duty

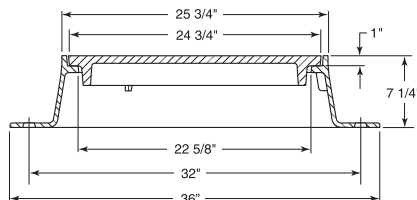


Available Grate: **R-2466-A**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1767
Manhole Frame, Vented Lid

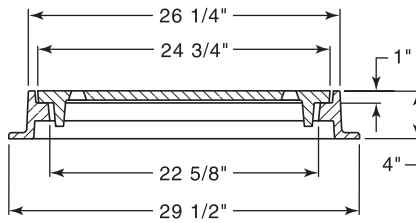
Heavy Duty

Furnished with four 1" anchor holes on 32" diameter bolt circle.
Specify if solid lid required.



R-1767-4
Manhole Frame, Vented Lid

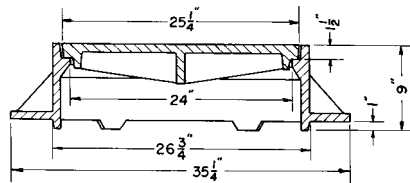
Heavy Duty



R-1769-A
Manhole Frame, Solid Lid

Heavy Duty

Bottom anchor lugs located at 60° intervals.

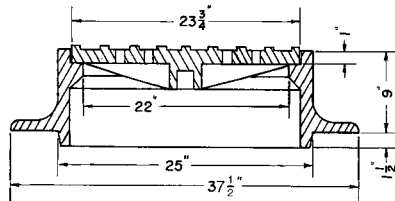


Available Grate: **R-2395-1**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1771
Manhole Frame, Vented Lid

Heavy Duty

Specify if solid lid required.

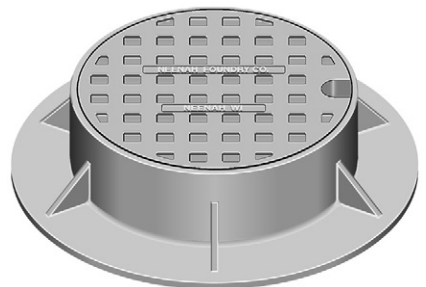
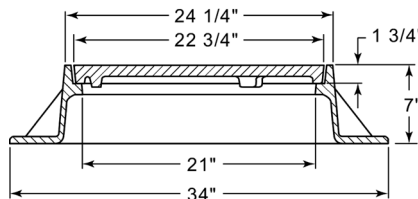


Available Grate: **R-2418**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1772
Manhole Frame, Solid Lid

Heavy Duty

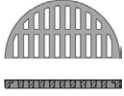
Non-Rocking feature available, see p. 12.



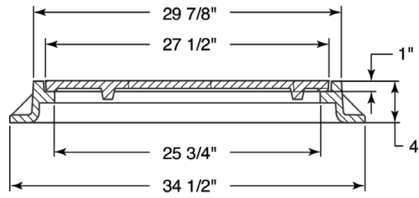
Available Grate: **R-2502**

R-1773
Manhole Frame, Solid Lid

Light Duty

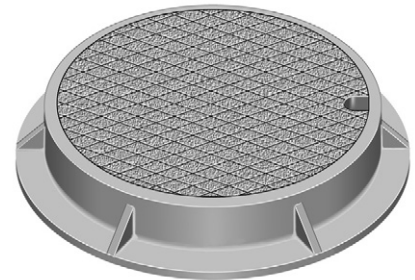
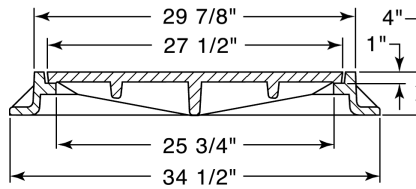


Available Grate: R-2510-2



R-1773-A
Manhole Frame, Solid Lid

Heavy Duty

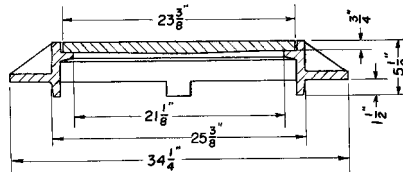


R-1774
Manhole Frame, Solid Lid

Heavy Duty



Available Grate: R-2425
(see **Catch Basin Inlets. R-2000 Series** table)

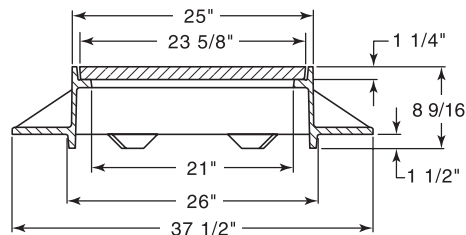


R-1775
Manhole Frame, Solid Lid

Heavy Duty

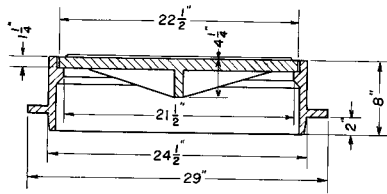


Available Grate: R-2427-A
(see **Inlet Frames & Grates. R-2000 Series** table)



R-1776
Manhole Frame, Solid Lid

Heavy Duty

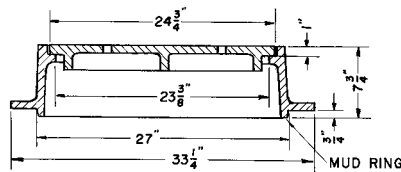


Available Grate: **R-2420-B**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1777
Manhole Frame, Vented Lid

Heavy Duty

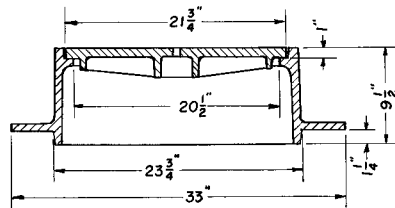
Specify if solid lid required.



Available Grate: **R-2401-A**
(see **Inlet Frames & Grates. R-2000 Series** table)

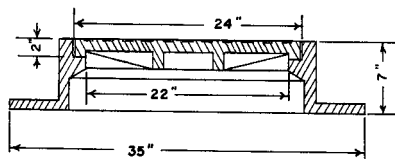
R-1779
Manhole Frame, Solid Lid

Heavy Duty



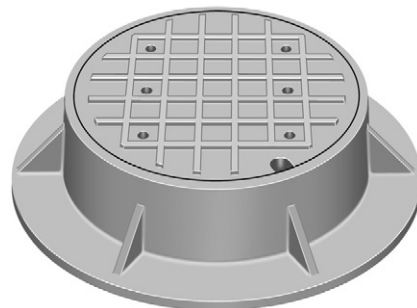
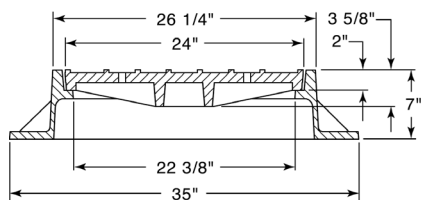
1780-A
Manhole Frame, Solid Lid

Heavy Duty



R-1781
Manhole Frame, Vented Lid

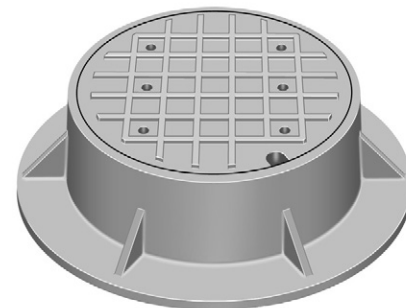
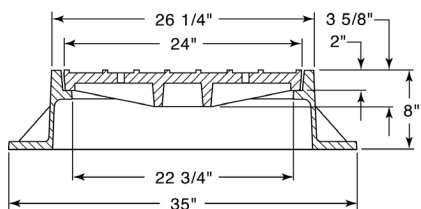
Heavy Duty



R-1782
Manhole Frame, Vented Lid

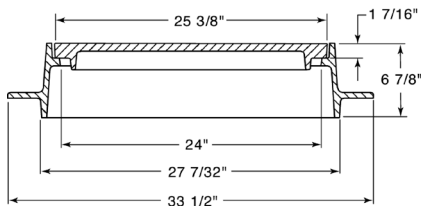
Heavy Duty

Specify if solid lid required.



R-1783-A
Manhole Frame, Solid Lid

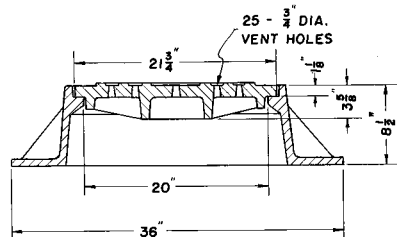
Heavy Duty



R-1784
Manhole Frame, Vented Lid

Heavy Duty

Specify if solid lid required.

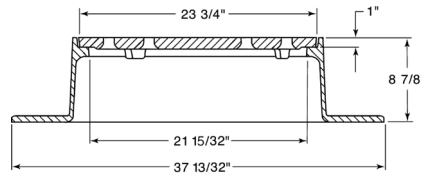


Available Grate: **R-2474**
(see **Inlet Frames & Grates, R-2000 Series** table)

R-1785
Manhole Frame, Vented Lid

Heavy Duty

Furnished with four 1" anchor holes on 33" diameter bolt circle.
Specify if solid lid required.

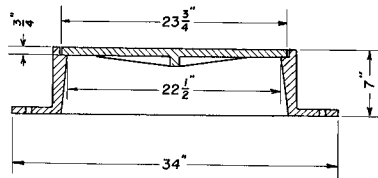


Available Grate: **R-2423**
(see **Inlet Frames & Grates. R-2000 Series** table)

R-1786
Manhole Frame, Solid Lid

Light Duty

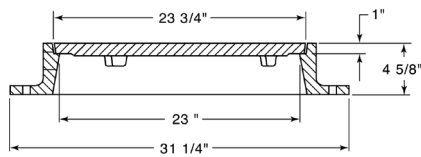
Furnished with four 1" anchor holes on 30-1/2" diameter bolt circle.
Specify if vented lid required.



R-1787
Manhole Frame, Vented Lid

Heavy Duty

Furnished with four 1" anchor holes on 28-3/4" diameter bolt circle.
Specify if solid lid required.

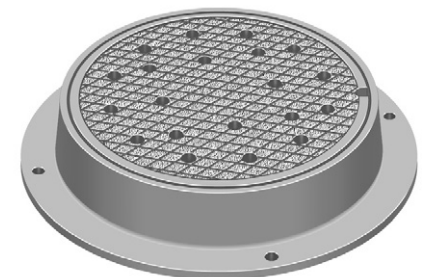
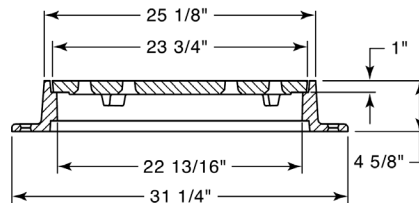


Available Grate: **R-2412-A**
(see **Catch Basin Inlets. R-2000 Series** table)

R-1787-A
Manhole Frame, Vented Lid

Heavy Duty

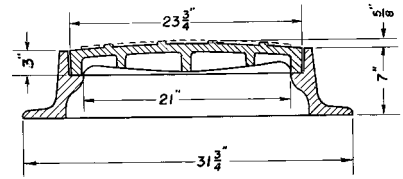
Furnished with four 1" anchor holes on 28-3/4" diameter bolt circle.



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-1788-A
Manhole Frame, Solid Lid

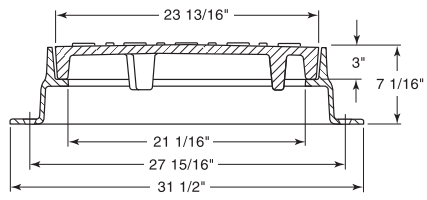
Heavy Duty



R-1788-A1
Manhole Frame, Solid Lid

Heavy Duty

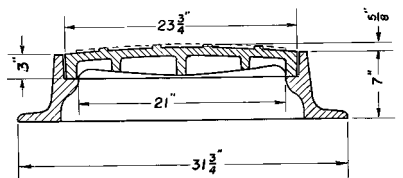
Furnished with four 7/8" anchor holes on 27-15/16" diameter bolt circle.
Available with integral cast stainless steel handles.



R-1788-B
Manhole Frame, Vented Lid

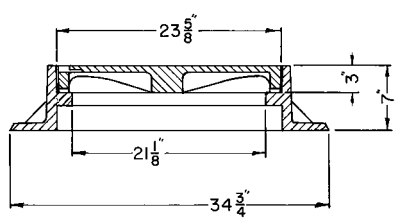
Heavy Duty

Lid has 12 slots, 1-5/8" x 4-7/8".



R-1788-D
Manhole Frame, Solid Lid

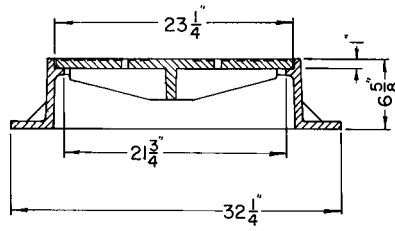
Heavy Duty



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

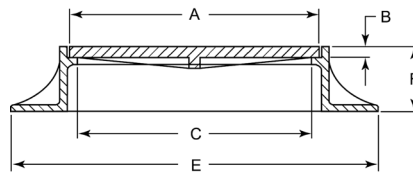
R-1789-B
Manhole Frame, Vented Lid

Heavy Duty



R-1791 Series
Small Manhole Frame, Solid Lid

Light Duty



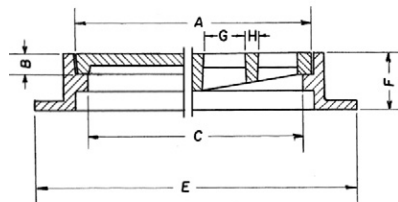
Illustrating R-1791-F

Dimensions in inches

Catalog No.	A	B	C	E	F	Grate Alt.
R-1791-A	12	1	11	19	4	R-2525-A
R-1791-B	15 1/4	3/8	14 1/2	20 1/2	4 1/4	-
R-1791-C	15 5/8	1 3/8	14 3/4	21	4 3/4	R-2525-C
R-1791-E	18	1	17	25	4 1/2	R-2525-E
R-1791-F	20 1/2	5/8	18	30	5	R-2525-F
R-1791-G	19 1/2	1 1/2	18	29	5 1/2	R-2525-G

R-1792 Series
Manhole Frame, Grate or Lid

Heavy Duty



These units are reversible. See R-5900-1 Series for top flange.
For bolted units, see R-6461-2 Series.

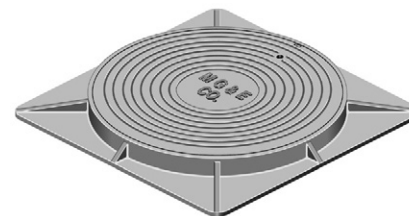
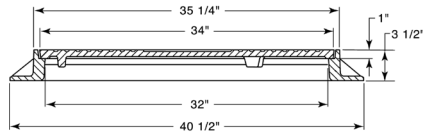
Dimensions in inches

Catalog No. Solid Lid	Catalog No. Open Grate	A	B	C	E	F	G	H
R-1792-AL	R-1792-AG	10 1/4	1 1/2	8 1/2	14 1/2	4	1 x 3 3/4	7/8
R-1792-BL	R-1792-BG	13 1/4	1 1/2	11 1/2	17 1/2	4	1 x 5	1
R-1792-CL	R-1792-CG	16 1/4	1 1/2	14 1/2	20 1/2	4	1 x 6 3/4	7/8
R-1792-DL	R-1792-DG	18 1/4	1 1/2	16 1/2	22 1/2	4	1 1/8 x 7 1/8	1
R-1792-EL	R-1792-EG	22 1/4	1 1/2	20 1/2	26 1/2	4	1 1/8 x 4	1
R-1792-FL	R-1792-FG	25 1/4	1 1/2	23 1/2	29 1/2	4	1 1/8 x 4	3/4
R-1792-GL	R-1792-GG	28 1/4	1 1/2	26 3/8	32 1/2	4	1 x 5	7/8
R-1792-HL *	R-1792-HG	34 1/4	1 1/2	32 1/2	38 1/2	4	1 x 7	1
R-1792-JL	R-1792-JG	40	1 1/2	38 1/2	44 1/2	4	1 1/8 x 8 3/4	1
R-1792-KL	R-1792-KG	46 1/8	1 1/2	44 1/2	50 1/2	4	1 1/16 x 5 1/2	1

* Available with removable center lid, see R-1586.

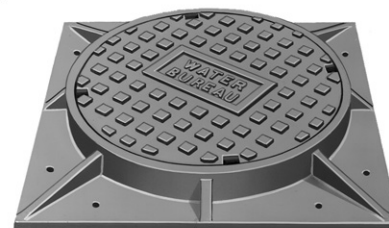
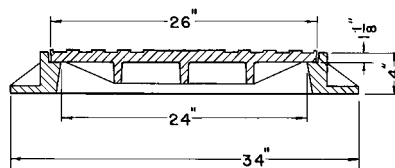
R-1794-EB
Manhole Frame,
Square Base, Solid Lid

Heavy Duty



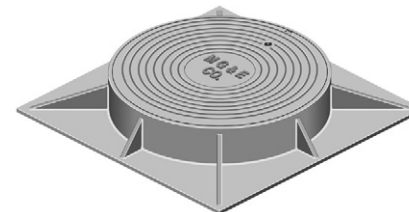
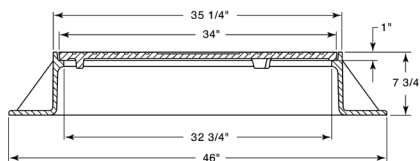
R-1794-J
Manhole Frame,
Square Base, Solid Lid

Heavy Duty



R-1794-M1
Manhole Frame,
Square Base, Solid Lid

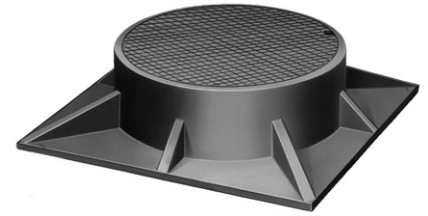
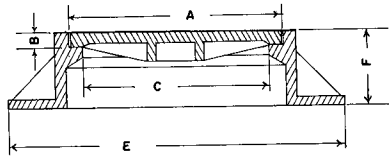
Heavy Duty



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-1795 Series
Manhole Frame,
Square Base, Solid Lid

Heavy Duty



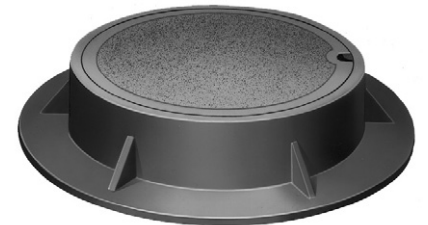
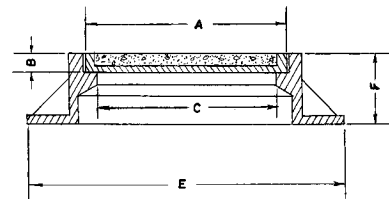
Illustrating R-1795-E

Catalog No.	Dimensions in inches					
	A	B	C	E	F	Lid Grate Alt.
R-1795-A	12 1/16	1	11	19 x 19	4	C*
R-1795-B	15 5/8	1 3/8	15	23 x 23	5	C*
R-1795-C	19 1/2	1 1/2	17 3/4	29 1/2 x 29 1/2	5 1/2	C*
R-1795-D	22	1 1/2	20	32 x 32	6	B,C
R-1795-E	22	1 1/2	20	33 x 33	8	B,C
R-1795-F	24	1 1/2	22	35 x 35	7 1/2	SPEC
R-1795-G	24 3/4	1 1/4	22	36 x 36	9	SPEC
R-1795-K	32	1 1/2	30	46 x 46	7	B R-2580-A
R-1795-M	38	1 1/2	36	47 x 47	10	B R-2580-C

* Furnished with as-cast bearing surfaces.

R-1796 Series
Manhole Frame, Lid for Fill

Light Duty



Illustrating R-1796-D

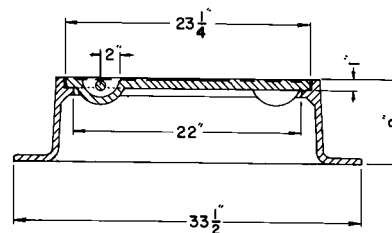
Only frames and lids furnished. Center filling material to be supplied by purchaser. Designed for concrete, asphalt or terazzo fill.
Most lids in this series have anchors cast into top surface to hold fill. If these would interfere with your type of fill application, advise when ordering.

Catalog No.	Dimensions in inches					
	A	B	C	E	F	Grate Alt.
R-1796-B	19 1/2	1 1/2	18	29	5 1/2	R-2525-G
R-1796-C	22	1 1/2	20	32	6	R-2535
R-1796-D	24	1 1/2	22 1/4	34 21/32	7 15/32	R-2500
R-1796-E	26	1 1/2	24 1/8	35 7/8	6 15/16	R-2501
R-1796-F*	32	1 1/2	30	46	7	R-2560-G

* Heavy Duty

R-1797
Manhole Frame, Solid Lid

Heavy Duty

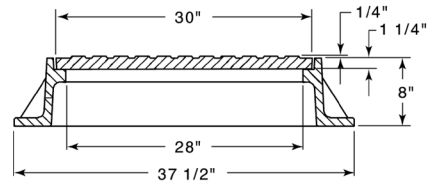


■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-1798
Manhole Frame, Solid Lid

Heavy Duty

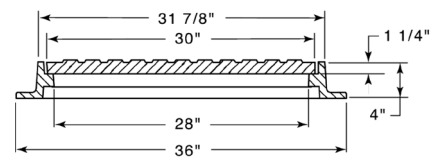
Available with self-seal gasket and concealed pickholes if required.



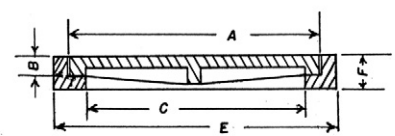
R-1798-1
Manhole Frame, Solid Lid

Heavy Duty

If application requires flange at top for slab-type installation, order as **R-1798-1S**.



R-1799 Series
Angle Frame, Solid Lid

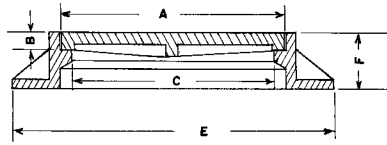


Catalog No.	Duty	Dimensions in inches					Grate Alt.	Grate Duty
		A	B	C	E	F		
R-1799-D ***	Light	19 3/4	1	17 1/2	21 3/4	1 5/8	R-2586-D	Light
R-1799-E	Heavy	19 1/2	1 1/2	18	21 1/4	2	R-2586-E	Light
R-1799-G	Heavy	22 1/4	1 1/2	20 3/8	24 3/8	2 1/4	R-2586-G	Heavy
R-1799-H	Heavy	22 3/4	1 3/4	20 1/2	25 1/2	3	R-2586-H	Heavy
R-1799-K	Light	24	3/4	21 3/4	26	1 1/4	R-2586-K	Light
R-1799-O	Heavy	32	1	30	34	2 1/4	R-2586-O	Light
R-1799-P	Heavy	38	1 1/2	36	41	2 1/4	R-4370-27A	Heavy

* Furnished with Type G handle.
** Furnished with cover Type B.

**R-1800 to 1801 Series
Frame, Solid Lid**

Heavy Duty



Illustrating R-1800-C with Square Base flange

Catalog No.	Dimensions in inches					Grate Alt.
	A	B	C	E	F	
Square						
R-1800-A *	20 x 20	1 3/4	18 x 18	31 x 31	5	R-3430
R-1800-B	23 1/2 x 23 1/2	1 1/2	22 x 22	28 x 28	4	R-1878-A5G
R-1800-C *	24 x 24	2	22 x 22	35 x 35	6	R-3210-A
R-1800-D +	32 x 32	1 1/2	30 x 30	36 x 36	6	-
R-1800-E **	50 x 50	1 3/4	48 x 48	59 x 59	8	R-3438-A
Rectangular						
R-1801-A	11 1/2 x 14 3/4	1 1/4	10 x 13	19 x 22	4	
R-1801-B	14 1/2 x 21 1/2	2	13 x 20	23 x 30	5 1/2	R-3460-A
R-1801-C	18 x 30	2	16 x 28	26 x 38	8 1/2	-
R-1801-D	18 x 36	2	16 x 34	28 x 46	7	-
R-1801-E	23 1/2 x 35 1/2	2	22 x 33	34 x 46	6 1/4	R-3416
R-1801-F	23 7/8 x 35 3/4	1 3/4	22 x 34	36 x 48	9	R-3455-C
R-1801-G ***	36 x 48	1 3/4	33 x 45	42 x 54	5 1/2	R-3457-C2

* Furnished with round base flange if specified.

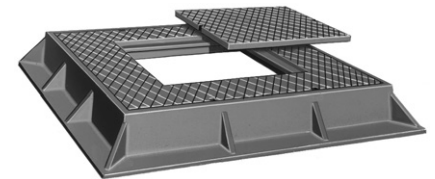
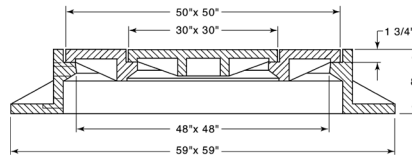
** Lid furnished in two pieces.

*** Lid in two pieces (also frame).

+ Built-up / slab frame

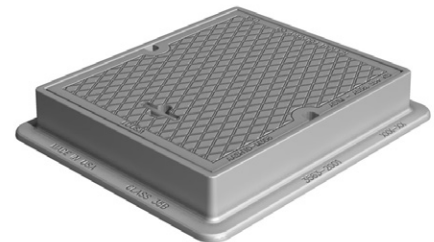
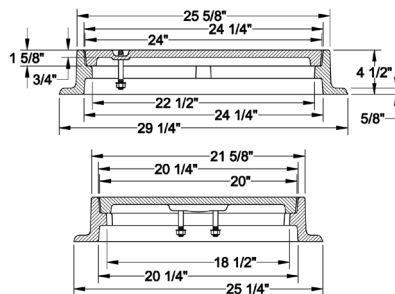
**R-1860-A
Large Frame, Solid Lid
with Removable Center Lid**

Heavy Duty



**R-1863
Frame**

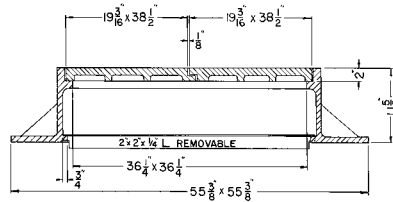
Heavy Duty



R-1868
Street Electric Vault Frame,
2-Piece Top Lid

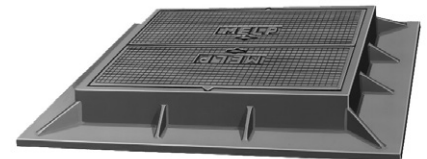
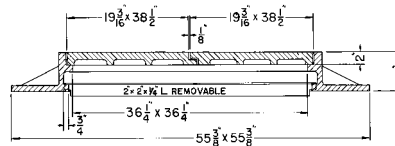
Heavy Duty

Specify lettering as shown,
special lettering or no lettering.



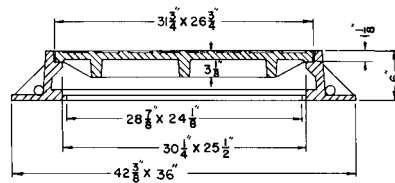
R-1869
Sidewalk Electric Vault Frame,
2-Piece Top Lid

Heavy Duty



R-1870
Electric Vault Frame,
Vented Lid

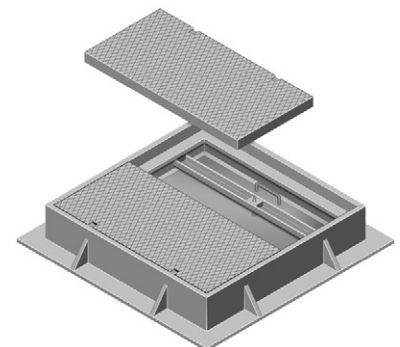
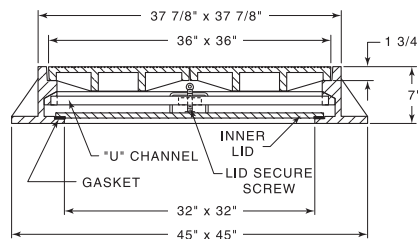
Heavy Duty



R-1871-D
Square Frame, 2-Piece Outer Lid,
Inner Lid and Locking Bars

Heavy Duty

Inner lid with machined seat and gasket for
water-resistant function.
Security saddle plate available upon request.
When eye bolt is padlocked, saddle plate
prevents bolt from being turned, so lock bar
cannot be removed.

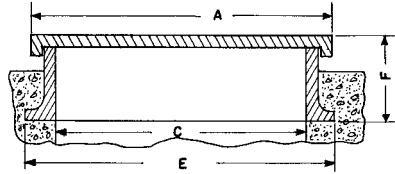


Security Saddle Plate

R-1872 Series Tank Type Manhole Frame, Solid Lid

Heavy Duty

Designed for reservoir or tank manholes.
Lid caps frame, making manhole water repellant.
Top of frame should extend several inches above
slab to prevent surface water from entering pit.



Lid can be secured to frame with four stainless steel
bolts when specified.

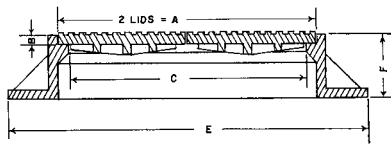
Dimensions in inches

Catalog No.	A	C	E	F
R-1872-BB	21 x 21	18 1/2 x 18 1/2	24 x 24	4
R-1872-CB	24 x 24	21 1/2 x 21 1/2	28 1/2 x 28 1/2	5
R-1872-DB	26 3/8 x 26 3/8	24 x 24	30 x 30	5
R-1872-EB	33 x 33	30 x 30	36 x 36	5
R-1872-FB	39 x 39	36 x 36	42 x 42	6

R-R-1877 Series Rectangular Frame, Double Lid

Heavy Duty

Large rectangular frame with double lid allows
easy access to valves, water meters,
transformers, or conduit lines in street manholes.



Illustrating R-1877-EM

Dimensions in inches

Catalog No.	A	B	C	E	F	Grate Alt.
R-1877-E1 *	25 5/8 x 49 5/8	1 1/2	24 x 48	34 x 58	4	
R-1877-EM	23 x 58	1	21 x 56	35 x 70	8 1/2	R-3415
R-1877-ESM	23 x 58	1	21 x 56	35 x 70	4	

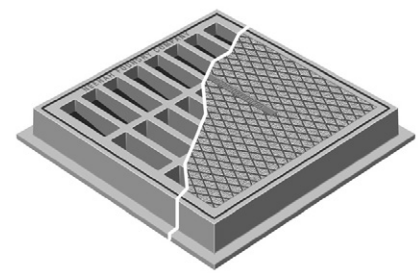
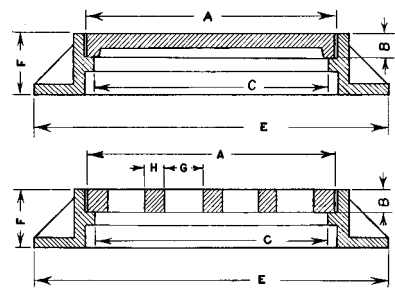
* Furnished with as-cast bearing surfaces.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-1878 Series
Frame, Solid Lid/Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-1878-A1G	A or C	0.5	4.6
R-1878-A2G	A or C	0.8	6.0
R-1878-A3G	A or C	1.0	6.7
R-1878-A4G	A or C	1.1	7.3
R-1878-A5G	A or C	1.8	7.8
R-1878-A6G	A or C	2.7	8.6
R-1878-A7G	A or C	2.1	9.2
R-1878-A8G	A or C	2.3	9.8
R-1878-A9G	A or C	2.5	10.6
R-1878-A10G	A or C	3.0	12.3
R-1878-B1G	A	0.6	5.7
R-1878-B2G	A	0.9	6.5
R-1878-B3G	A	1.2	7.5
R-1878-B4G	A	2.1	8.5
R-1878-B5G	A	2.5	9.6
R-1878-B6G	C	2.6	9.5
R-1878-B7G	A	2.6	10.5
R-1878-B8G	A	3.7	12.6
R-1878-B9G	C	3.3	11.6
R-1878-B10G	C	4.9	13.5
R-1878-B11G	A	5.0	14.7

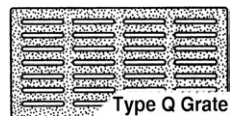


These shallow frames are suitable for use in thin or deep concrete slabs. All sizes of frames are reversible and can be installed with flange at base or top.
For additional selections, see **R-6672-3 Series**.

Dimensions in inches

Catalog No. Solid Lid	Catalog No. Open Grate	A	B	C	E	F	G	H
Square								
R-1878-A1L	R-1878-A1G ***	13 3/4 x 13 3/4	1 1/2	12 x 12	18 x 18	4	1 x 5 1/2	1
R-1878-A2L	R-1878-A2G	18 x 18	1 1/2	16 x 16	22 x 22	4	1 1/4 x 4 1/4	1
R-1878-A3L	R-1878-A3G	20 x 20	1 1/2	18 x 18	24 x 24	4	1 15/16 x 3 3/8	1
R-1878-A4L	R-1878-A4G	21 1/2 x 21 1/2	1 1/2	20 x 20	26 x 26	4	1 3/8 x 3 5/8	1
R-1878-A5L	R-1878-A5G	23 1/2 x 23 1/2	1 1/2	22 x 22	28 x 28	4	1 1/2 x 6 3/8	1
R-1878-A6L	R-1878-A6G **	25 3/4 x 25 3/4	1 1/2	24 x 24	30 x 30	4	2 3/8 x 7 1/4	3/4
R-1878-A7L	R-1878-A7G	27 1/2 x 27 1/2	1 1/2	26 x 26	32 x 32	4	1 x 5	1
R-1878-A8L	R-1878-A8G	29 1/2 x 29 1/2	1 1/2	28 x 28	34 x 34	4	1 1/8 x 5 1/2	1
R-1878-A9L	R-1878-A9G **	31 3/4 x 31 3/4	1 1/2	30 x 30	36 x 36	4	1 x 6 3/8	1 1/8
R-1878-A10L *	R-1878-A10G *	37 x 37	1 1/2	36 x 36	42 x 42	4	1 3/4 x 3 1/2	1 1/2
Rectangular								
R-1878-B1L	R-1878-B1G	14 x 20	1 1/2	12 x 18	18 x 24	4	3/4 x 5 1/2	1
R-1878-B2L	R-1878-B2G	13 1/2 x 25 1/2	1 1/2	12 x 24	18 x 30	4	1 x 4 1/2	1
R-1878-B3L	R-1878-B3G	19 1/2 x 25 1/2	1 1/2	18 x 24	24 x 30	4	7/8 x 5	1
R-1878-B4L	R-1878-B4G	19 1/2 x 31 1/2	1 1/2	18 x 30	24 x 36	4	2 x 5	1
R-1878-B5L	R-1878-B5G	19 3/4 x 37 3/4	1 1/2	18 x 36	24 x 42	4	2 x 5	1
R-1878-B6L	R-1878-B6G	25 1/2 x 31 1/2	1 1/2	24 x 30	30 x 36	4	1 3/8 x 5	1
R-1878-B7L	R-1878-B7G	25 1/2 x 37 1/2	1 1/2	24 x 36	30 x 42	4	1 1/8 x 7 1/8	3/4
R-1878-B8L *	R-1878-B8G *	25 3/4 x 49 3/4	1 1/2	24 x 48	30 x 54	4	1 5/16 x 6 13/16	1
R-1878-B9L *	R-1878-B9G *	31 3/4 x 37 3/4	1 1/2	30 x 36	36 x 42	4	1 3/8 x 4 5/8	1
R-1878-B10L *	R-1878-B10G *	31 1/2 x 49 1/2	1 1/2	30 x 48	36 x 54	4	1 1/2 x 4 3/4	1
R-1878-B11L *	R-1878-B11G *	38 x 50	1 1/2	36 x 48	44 1/2 x 56 1/2	4	1 1/16 x 7 5/8	1

* Cover/Grate in 2 pieces.
** Type Q Grate available, 1/2" wide grate slots.
*** Type Q Grate available, 3/8" wide grate slots.

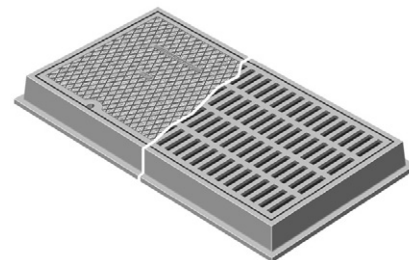
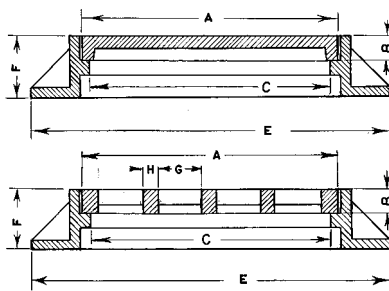


■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-1879 Series Frame, Solid Lid/Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-1879-A1G	A or C	0.4	4.6
R-1879-A2G	A or C	0.8	6.0
R-1879-A3G	A or C	1.2	6.7
R-1879-A4G	A or C	1.4	7.3
R-1879-A5G	A or C	1.9	7.8
R-1879-A6G	A or C	2.0	8.6
R-1879-A7G	A or C	1.7	9.2
R-1879-A8G	A or C	2.2	9.8
R-1879-A9G	A or C	2.8	10.6
R-1879-A10G	A or C	3.7	12.3
R-1879-B1G	A	0.6	5.7
R-1879-B2G	C	0.9	6.5
R-1879-B3G	C	1.0	7.5
R-1879-B4G	A	1.4	8.5
R-1879-B5G	A	1.9	9.6
R-1879-B6G	A	2.4	9.5
R-1879-B7G	A	3.0	10.6
R-1879-B8G	A	3.2	12.6
R-1879-B9G	A	3.2	11.6
R-1879-B10G	C	4.2	13.5



These shallow frames are suitable for use in thin or deep concrete slabs. All sizes of frames are reversible and can be installed with flange at base or top.

For additional selections, see **R-6672-3 Series**.

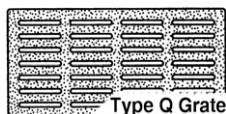
Dimensions in inches

Catalog No. Solid Lid	Catalog No. Open Grate	A	B	C	E	F	G	H
Square								
R-1879-A1L	R-1879-A1G ***	13 3/4 x 13 3/4	1 1/2	12 x 12	18 x 18	4	1 x 3	1
R-1879-A2L	R-1879-A2G	18 x 18	1 1/2	16 x 16	22 x 22	4	1 1/4 x 4 1/4	3/4
R-1879-A3L	R-1879-A3G	20 x 20	1 1/2	18 x 18	24 x 24	4	3/4 x 5	3/4
R-1879-A4L	R-1879-A4G	21 1/2 x 21 1/2	1 1/2	20 x 20	26 x 26	4	3/4 x 4	3/4
R-1879-A5L	R-1879-A5G	23 1/2 x 23 1/2	1 1/2	22 x 22	28 x 28	4	3/4 x 6 1/2	3/4
R-1879-A6L	R-1879-A6G **	25 3/4 x 25 3/4	1 1/2	24 x 24	30 x 30	4	1 x 5	3/4
R-1879-A7L	R-1879-A7G	27 1/2 x 27 1/2	1 1/2	26 x 26	32 x 32	4	3/4 x 7 5/8	3/4
R-1879-A8L	R-1879-A8G	29 1/2 x 29 1/2	1 1/2	28 x 28	34 x 34	4	1 1/8 x 5 7/16	1
R-1879-A9L	R-1879-A9G **	31 3/4 x 31 3/4	1 1/2	30 x 30	36 x 36	4	1 x 4 1/4	3/4
R-1879-A10L *	R-1879-A10G *	37 x 37	1 1/2	36 x 36	42 x 42	4	1 x 4 7/8	1
Rectangular								
R-1879-B1L	R-1879-B1G	14 x 20	1 1/2	12 x 18	18 x 24	4	3/4 x 5 1/2	1
R-1879-B2L	R-1879-B2G	13 1/2 x 25 1/2	1 1/2	12 x 24	18 x 30	4	3/4 x 4 1/2	1
R-1879-B3L	R-1879-B3G	19 1/2 x 25 1/2	1 1/2	18 x 24	24 x 30	4	7/8 x 5 1/4	1
R-1879-B4L	R-1879-B4G	19 1/2 x 31 1/2	1 1/2	18 x 30	24 x 36	4	3/4 x 5	1
R-1879-B5L	R-1879-B5G	19 3/4 x 37 3/4	1 1/2	18 x 36	24 x 42	4	1 1/8 x 5	1
R-1879-B6L	R-1879-B6G	25 1/2 x 31 1/2	1 1/2	24 x 30	30 x 36	4	1 x 5 1/8	3/4
R-1879-B7L	R-1879-B7G	25 1/2 x 37 1/2	1 1/2	24 x 36	30 x 42	4	1 x 5 1/8	3/4
R-1879-B8L *	R-1879-B8G *	25 3/4 x 49 3/4	1 1/2	24 x 48	30 x 54	4	3/4 x 5 1/8	1
R-1879-B9L *	R-1879-B9G *	31 3/4 x 37 3/4	1 1/2	30 x 36	36 x 42	4	1 x 6 1/2	1
R-1879-B10L *	R-1879-B10G *	31 1/2 x 49 1/2	1 1/2	30 x 48	36 x 54	4	1 x 5	1

* Cover/Grate in 2 pieces

** Type Q Grate available, 1/2" wide grate slots.

*** Type Q Grate available, 3/8" wide grate slots.



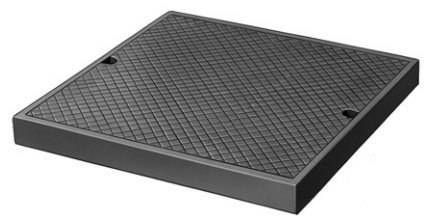
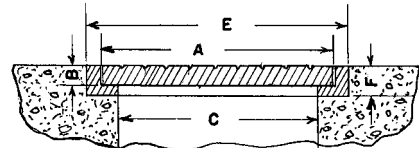
Type Q Grate

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-1883 to R-1885 Series
Angle Frame, Lid

Heavy Duty

For angle frames with open grates, see the **R-4400 Series**.



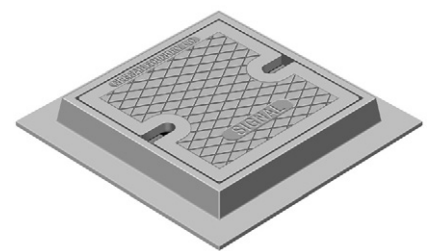
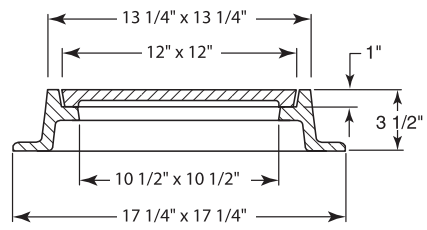
Illustrating R-1883-G1

Catalog No.	Dimensions in inches				
	A	B	C	E	F
Square					
R-1883-A	10 x 10	1	8 x 8	11 1/4 x 11 1/4	1 1/2
R-1883-B1	12 x 12	1	10 x 10	13 1/4 x 13 1/4	1 1/2
R-1883-C1	14 x 14	1	12 x 12	15 1/4 x 15 1/4	1 1/2
R-1883-D	18 x 18	1 1/2	16 x 16	19 1/2 x 19 1/2	2
R-1883-E1	20 x 20	1 3/4	18 x 18	21 1/2 x 21 1/2	2 1/4
R-1883-E2	20 x 20	1	18 3/4 x 18 3/4	21 1/4 x 21 1/4	1 1/2
R-1883-E4	22 x 22	1 3/4	20 x 20	23 1/2 x 23 1/2	2 1/4
R-1883-G1	24 x 24	2	22 x 22	25 1/2 x 25 1/2	2 1/2
R-1883-G4	26 1/4 x 26 1/4	1 1/8	24 x 24	27 1/8 x 27 1/8	1 5/8
R-1883-H1	27 x 27	2	24 x 24	28 1/2 x 28 1/2	2 1/2
R-1883-H3	27 1/2 x 27 1/2	1	25 5/8 x 25 5/8	29 x 29	1 7/16
R-1883-J1	30 x 30	2	28 x 28	31 1/2 x 31 1/2	2 1/2
R-1883-J2	32 3/8 x 32 3/8	1 1/2	30 x 30	34 x 34	2
R-1883-J3	34 x 34	2	31 3/4 x 31 3/4	35 1/4 x 35 1/4	2 1/2
R-1883-K *	36 x 36	2	34 x 34	38 x 38	2 1/2
Rectangular					
R-1885-D2	12 x 24	1	10 x 22	13 1/4 x 25 1/4	1 1/2
R-1885-D2B	12 x 30	2	10 x 28	13 1/2 x 31 1/2	2 1/2
R-1885-F1	14 x 28	1	12 x 26	15 1/4 x 29 1/4	1 1/2
R-1885-K1	18 x 36	1 1/2	16 x 34	19 1/2 x 37 1/2	2
R-1885-M1 *	20 x 40	1 3/4	18 x 38	21 1/2 x 41 1/2	2 1/4

* Lid in 2 pieces.

R-1883-B1MA
Square Angle Frame, Lid

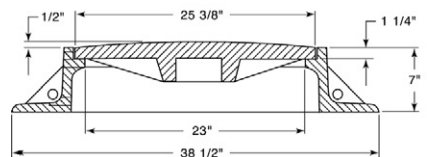
Heavy Duty



R-1889
Valve Manhole Frame, Vented Lid

Heavy Duty

Furnished with machined horizontal and vertical bearing surfaces.
Lid furnished with two 1" diameter vent holes.

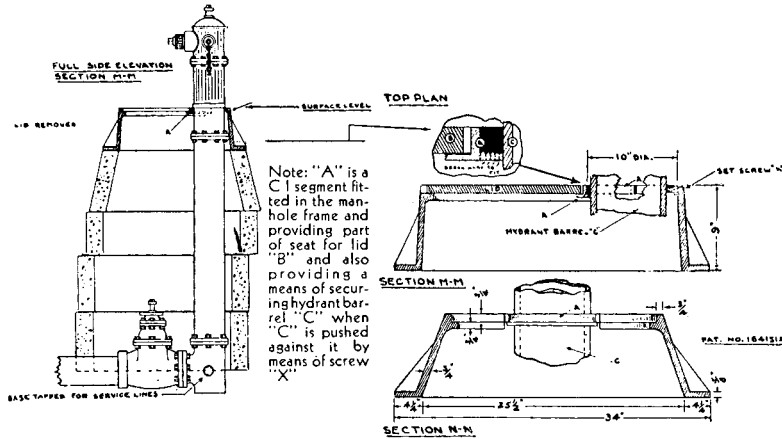
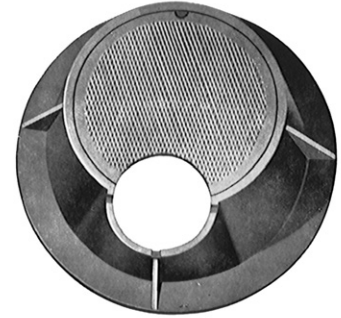


Available Grate: **R-2411-A**

R-1890
Hydrant Manhole Frame, Lid

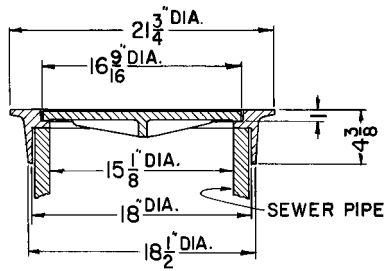
Light Duty

Set screw 1/2" x 1" used to tighten hydrant barrel.



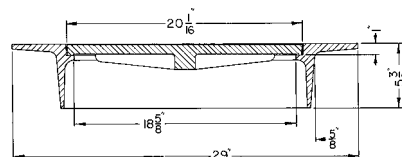
R-1891
Meter Frame, Solid Lid

Heavy Duty



R-1892
Meter Frame, Solid Lid

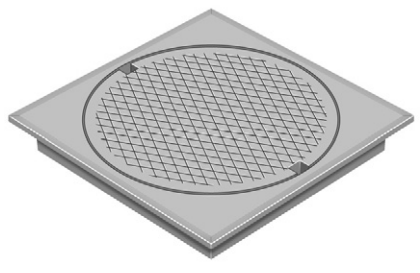
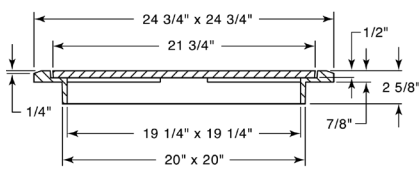
Heavy Duty



R-1896
Meter/Valve Box Frame, Solid Lid

Light Duty

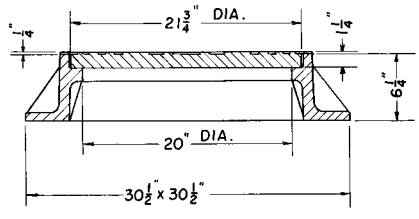
Locate outdoor meter vaults in terraces.
Provides convenient servicing and reading of meters as well as privacy to consumers. 50# lid easily removed. To prevent unauthorized personnel from gaining access to vault, see Fastening Devices on page 16. Fastening devices available on special order.



R-1897
Valve Manhole Frame, Solid Lid

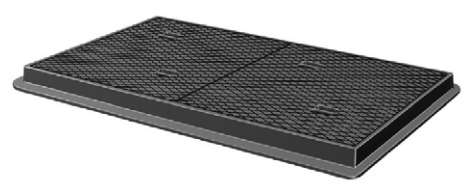
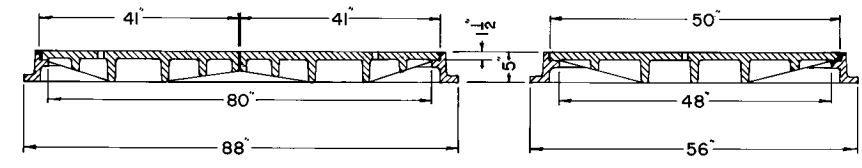
Heavy Duty

Furnished with machined horizontal and vertical bearing surfaces.



R-1899-1
Utility Access Frame with Double Lid

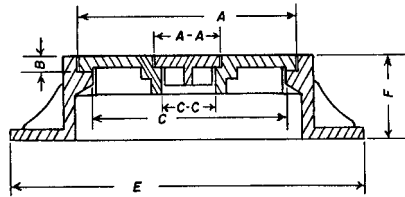
Heavy Duty



R-1900 Series
Valve Manhole Frame,
Solid Lid and Center Lid

Heavy Duty

Small inner lid permits easy access to valve without need of removing larger lid.

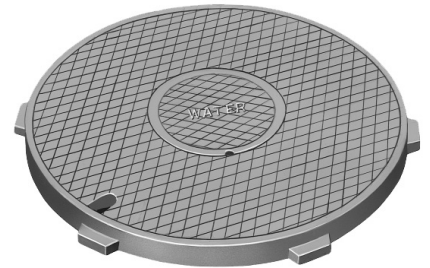
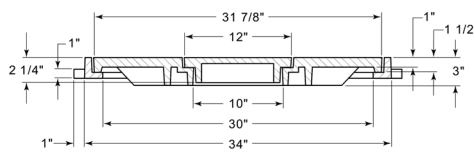


Catalog No.	Dimensions in inches						
	A	AA	B	C	CC	E	F
R-1900-A	18	7 1/4	1 1/4	16 3/4	6	30	8
R-1900-B	23	6	1 1/2	21	5	36	9
R-1900-B1	24	7 1/4	1 1/2	22 1/4	6 1/8	34 21/32	7 15/32
R-1900-C	26	9 3/4	1 1/2	24 1/8	8 1/2	35 7/8	6 15/16
R-1900-D	32	12	1 1/2	30	10	46	7
R-1900-E	38	12	1 1/2	36	10	49	10

R-1900-D1
Valve Manhole Frame,
Solid Lid and Center Lid

Heavy Duty

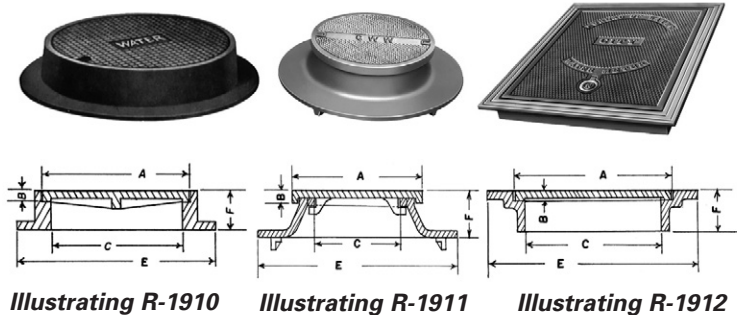
Small inner lid permits easy access to valve without need of removing larger lid.



R-1909-R to R-1912 Series Water Meter Frame, Solid Lid

Light Duty

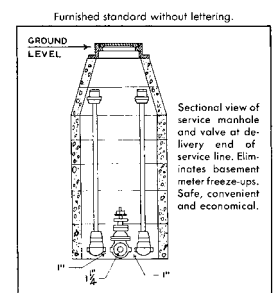
Outdoor location of water meters offers an advantage to the Water Department and to the consumer. Metering ahead of service lines records all water used, including leakage and wastage. Meter reading is simplified both as to time and accuracy. Meters can be changed without inconvenience, and an unauthorized person cannot gain access to a consumer's home by posing as a meter reader.



Illustrating R-1910 Illustrating R-1911 Illustrating R-1912

Catalog No.	Dimensions in inches					
	A	B	C	E	F	Grate Alt.
Round						
R-1909-6	6 1/2	1 1/2	5 1/16	7 7/16	6 1/2	-
R-1910-A	18	1	17	25	4 1/2	R-2525-E
R-1910-B	15 5/8	1 3/8	14 11/16	23	4 11/16	R-2525-D
R-1910-C	15 5/8	1 3/8	14 3/4	21	4 3/4	R-2525-C
R-1910-D	15 5/8	1 3/8	15	22	3	R-2510-1
R-1910-E	15 1/4	3/8	14 1/2	20 1/2	4 3/4	-
Round						
R-1911-A	26	1 1/2	21	30 1/2	5	-
R-1911-B	15	1	11 3/4	27 1/4	4	-
Square/Rectangular						
R-1912-1 *	49 1/2 x 25 1/2	3/4	48 x 24	54 x 30	4	-
R-1912-A1	37 5/8 x 31 5/8	5/8	36 x 30	43 x 36	4	-
R-1912-A2	38 x 26	5/8	36 x 24	42 x 30	4	-
R-1912-B	32 x 32	3/4	30 x 30	36 x 36	4	-
R-1912-B1	32 x 26	5/8	30 x 24	36 x 30	4	-
R-1912-C	30 x 30	3/4	28 x 28	34 x 34	4	-
R-1912-C1	26 x 14	3/4	24 x 12	30 x 18	4	-
R-1912-D	25 1/2 x 25 1/2	3/4	24 x 24	30 x 30	4	-
R-1912-D1	17 3/4 x 21 3/4	1/2	21 x 17	27 x 23	3	-
R-1912-E	19 3/4 x 19 3/4	3/4	18 x 18	24 x 24	4	-

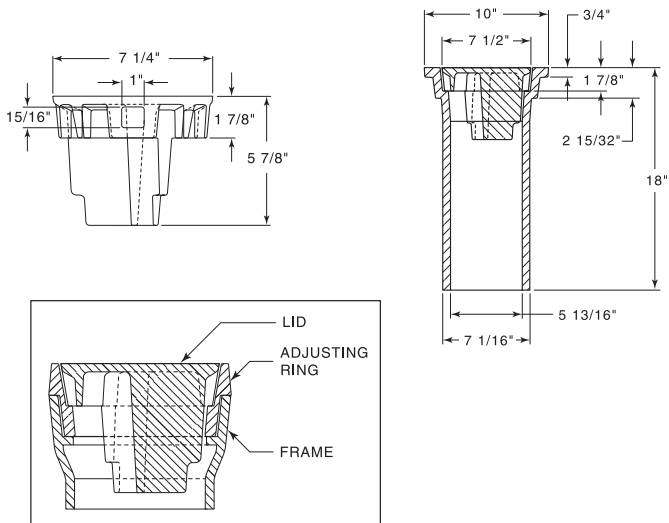
* Lid in two pieces.



R-1913 Water Meter Frame, Lid

Heavy Duty

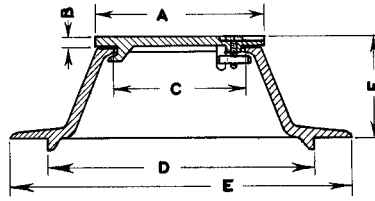
Adjusting rings available:
1", order **1913-7100**
1-1/2", order **1913-7150**



R-1914 Series Water Meter Frame, Solid Lid

Light Duty

Note locked cover.



Dimensions in inches

Catalog No.	A	B	C	D	E	F
R-1914-A	12	1/2	11	14 1/2	20	4
R-1914-B	12	1/2	11	17 1/2	20	4

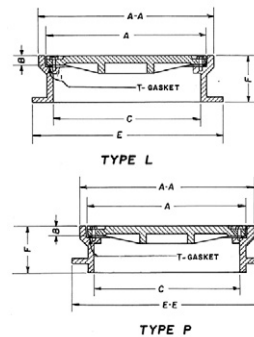
R-1915 Series Watertight Manhole Frame, Bolted Lid

Heavy Duty

Suitable for watertight, low pressure gas or steamtight application up to 20 psi. For higher pressure application, please send specifications. Bearing surfaces are sealed with a gasket. Countersunk stainless steel hexagonal-head cap screws fasten lid to frame, making seal. Lids are furnished with concealed pickhole, Type "F" design (see page 16). Anchor holes furnished only when specified. Anchor bolts not furnished.

Note: Bolting pads reduce effective clear opening (dimension C) by 2" to 3".
If "C" dimension is critical, select larger size.

Units are shipped assembled with gasket glued to frame.



Dimensions in inches

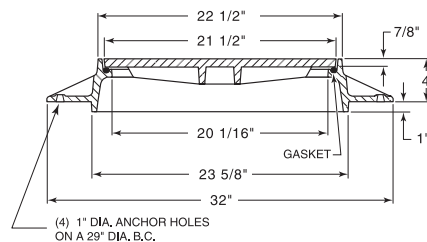
Catalog No.	Frame Type	A	AA	B	C	E/EE	F	Cover Bolt Quantity
R-1915-E	Type L	25 1/4	27	1	22	28 1/2	6	4
R-1915-E2	Type P	25 1/4	27	1	22	28 1/2	6	4
R-1915-G	Type L	25 3/4	28	1 1/2	23 1/8	36	7 1/2	4
R-1915-G2	Type P	25 3/4	28	1 1/2	23 1/8	30 3/4	7 1/2	4
R-1915-H	Type L	25 3/4	27 3/4	1	23 1/4	32	8	4
R-1915-H2	Type P	25 3/4	27 3/4	1	23 1/4	30 3/4	8	4
R-1915-J	Type L	29	31	1 3/4	27	35	6	6
R-1915-J2	Type P	29	31	1 3/4	27	34	6	6

R-1915-S1 Watertight Manhole Frame, Gasket, Bolted Lid

Heavy Duty

Units are shipped assembled with gasket glued to frame.

Note: Bolting pads reduce effective clear opening (dimension C) by 2" to 3".



R-1916 Series Watertight Manhole Frame, Bolted Lid

Heavy Duty

Gasket sealed and bolted lid (stainless steel bolts are standard) make this casting ideal for subaqueous installation. For built-up manholes only. Also suited for low pressure, gas or steamtight application up to 20 psi. For higher pressure application, please send specifications. Lids furnished with Type "F" concealed pickholes (see page 14). Units are furnished with four 1" anchor holes – anchor bolts not furnished.

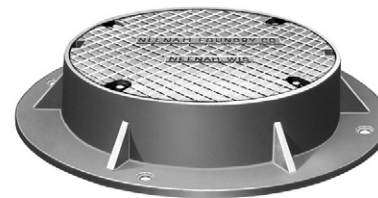
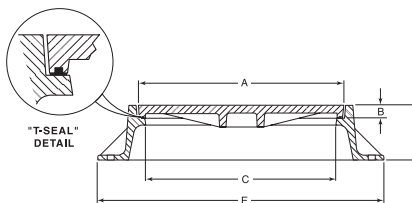
Units are shipped assembled with T-gasket glued to lid, except

R-1916-A and **R-1916-B** which have flat gasket.

Note: Bolting pads reduce effective clear opening (Dimension C) by 2"

to 3". If "C" dimension is critical, select larger size.

See **R-6462 Series** for more watertight units in 4" height.



Illustrating R-1916-F

Dimensions in inches

Catalog No.	A	B	C	E	F	Cover Bolt Quantity	Anchor Bolt Circle
R-1916-A	12	1 1/8	11	19	4	4	17
R-1916-B	18	1	17	25	4 1/2	4	22
R-1916-C	23	1 1/2	21	36	9	4	30
R-1916-C1	24	1 3/8	20 5/8	31	6	6	28
R-1916-D	24	1 1/2	21 5/8	35	7 1/2	4	31-3/4
R-1916-E	25	1 1/2	23	38	9	4	34
R-1916-F	26	1 1/2	24	36	7	4	33
R-1916-H	32	1 1/2	30	46	7	6	42
R-1916-H1	31 3/4	1 3/4	30	39 1/4	6	4	36-1/4
R-1916-K	38	1 1/2	36	49	10	6	46

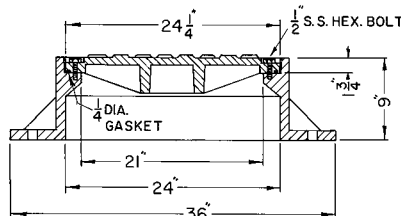
R-1916-C2 Water-Resistant Manhole Frame, Bolted Lid

Heavy Duty

Standard frame is furnished with twelve 1-1/2" anchor holes on 31" diameter bolt circle.

Note: Frame is also available with four 1" anchor holes on 31" diameter bolt circle.

Furnished only when specified.



R-1916-T Water-Resistant Manhole Frame, Gasket, Bolted Lid

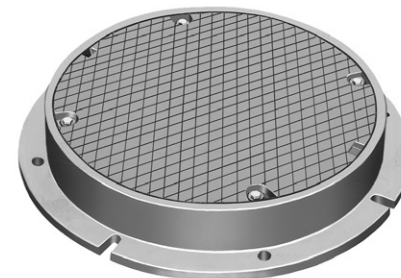
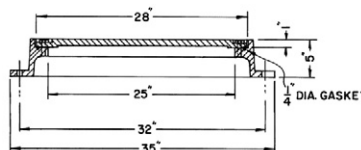
Heavy Duty

Furnished with four 1" anchor holes on 32" diameter bolt circle.

Four 1/2" radius slots for anchor bolts.

Furnished with machined horizontal and vertical bearing surfaces.

Units are shipped assembled with gasket glued to frame.



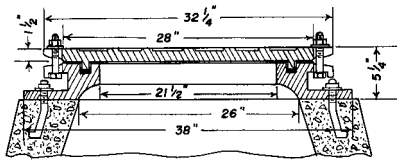
R-1917
Watertight Ventilating Frame, Lid

Heavy Duty

Furnished with four 1" anchor holes on 33" diameter bolt circle.

Furnished with round neoprene or jute gasket in groove. If specified, can be furnished with pipe spacers and longer bolts to permit slight raising of cover when ventilation is required.

Units are shipped assembled with gasket glued to frame.



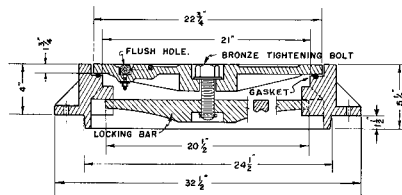
R-1919
Water-Resistant Manhole Frame, Lid with Locking Bar

Heavy Duty

Furnished with six 3/4" anchor holes on 29-1/2" diameter bolt circle.

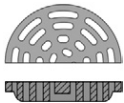
Neoprene gasket seal makes casting water-resistant. Pentagon-head bolt and wrench are available on special order. Specify when required.

Units are shipped assembled with gasket glued to frame.

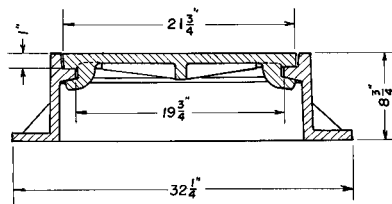


R-1920
Manhole Frame, Vented Lid with Type F Lock

Heavy Duty

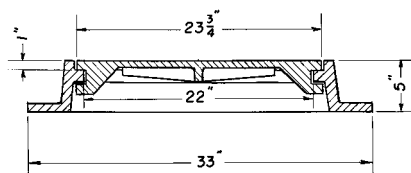


Available Grate: R-2481



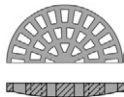
R-1921
Manhole Frame, Lid with Type F Lock

Heavy Duty

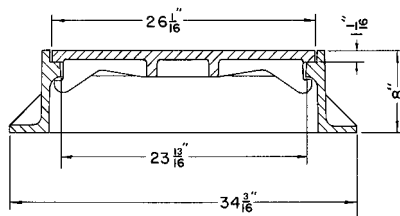


R-1922
**Manhole Frame,
Lid with Type F Lock**

Heavy Duty

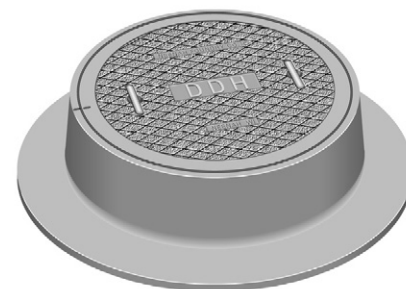
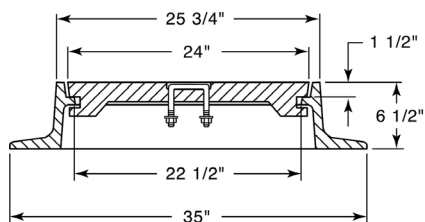


Available Grate: R-2373



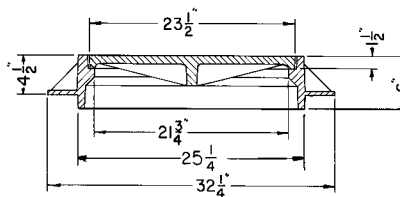
R-1923
**Manhole Frame,
Lid with Type F Lock**

Heavy Duty



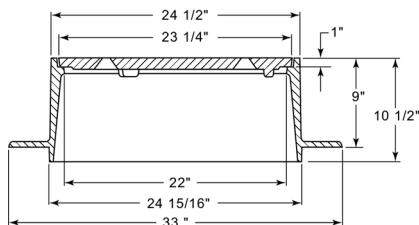
R-1924
Manhole Frame, Vented Lid

Heavy Duty



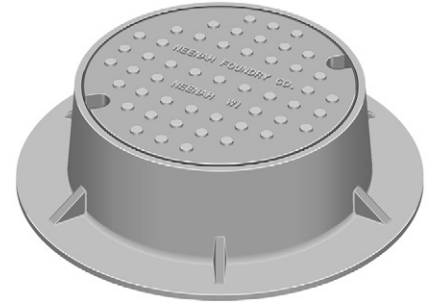
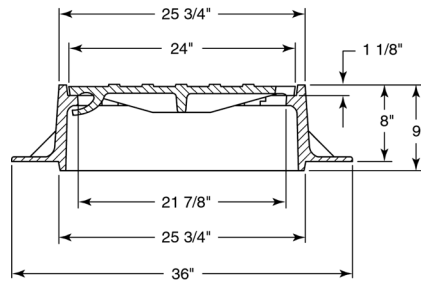
R-1924-1
Manhole Frame, Vented Lid

Heavy Duty



R-1925
Manhole Frame, Solid Lid

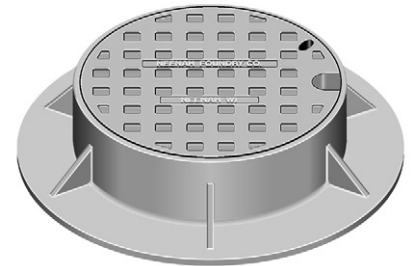
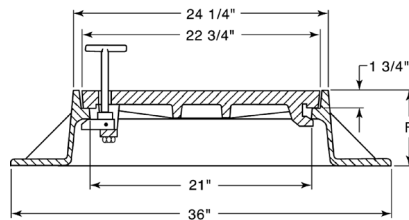
Heavy Duty



R-1926-7 Series
Manhole Frame,
Lid with Type J -"T" Handle,
Bar Lock

Heavy Duty

Specify number of "T" handles required.



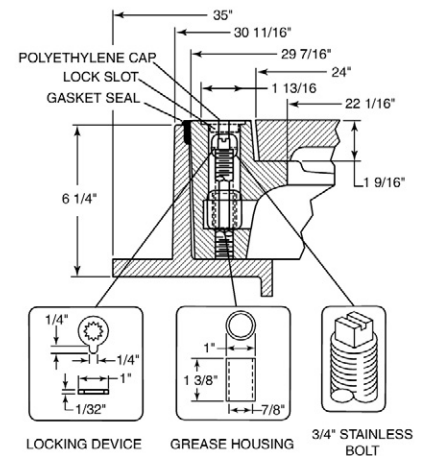
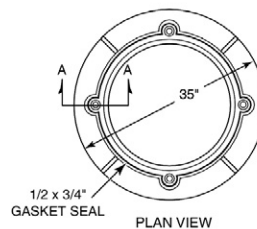
Catalog No. F

R-1926	7"
R-1927	9"

R-1940-A
Adjustable Manhole Frame, Solid Lid

Heavy Duty

Use for new construction, replacement pavement, or jobs where resurfacing is anticipated. Set consists of barrier support frame, adjusting frame and lid. For new construction, barrier frame is positioned so that it will be slightly below finished road surface. Pave over top edge of barrier frame and gasket up to and flush with the top edge of the adjusting frame. When road is to be resurfaced, simply turn down the 4 adjusting screws and raise frame to desired grade. The lubricating grease cups around each bolt at the time of initial installation provide lubricant for adjustment. Then insert the lock nuts for the bolt heads, replace the bolt well polyethylene caps, reinstall the 1/2" x 3/4" sponge neoprene gasket and the installation is ready for paving. All adjustments accomplished in a matter of minutes. Illustrating adjustable frame tilted for crowned roadway. Maximum adjustment is 3".

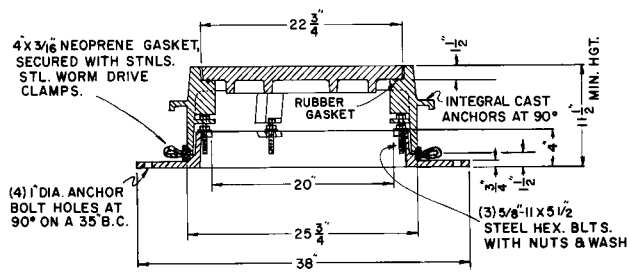
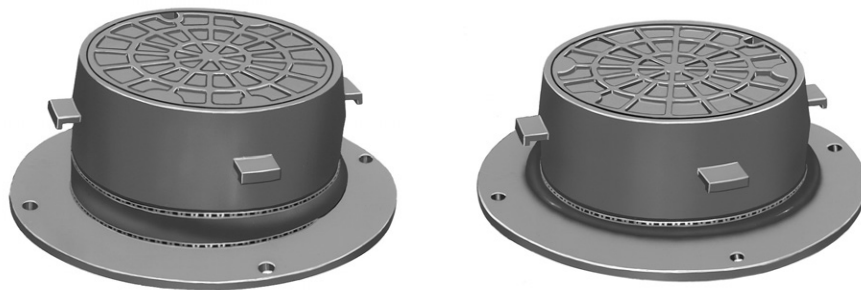


R-1955 Floating Manhole

Heavy Duty

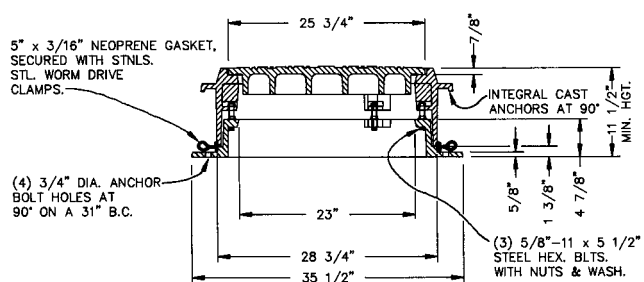
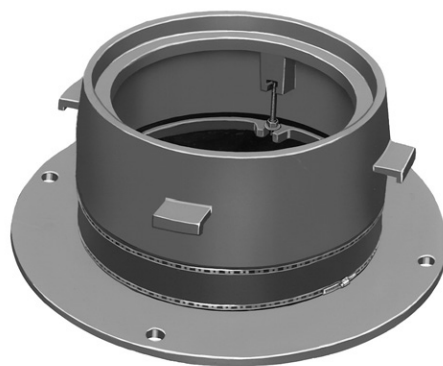
The "Floating Manhole" now provides an effective way of eliminating the inflow of water at the junction of the cast iron frame and the concrete portion of the manhole. This is accomplished by utilizing a two-piece frame with a molded rubber gasket connecting the two halves and held in place with stainless steel bands. The upper half becomes an integral part of the pavement with the shear lugs transferring the wheel load to the concrete pavement. The lower halves of the frame become part of the manhole by imbedding threaded rods into the riser and bolting. This allows the manhole frame to "float" with the frost action and maintain the integrity of the manhole.

When installed at the lowest position, approximately 3 inches of rise can be handled effectively. The unit can be positioned to the correct grade at the time of installation by adjusting the three bolts. Additional advantages include the ability to tilt the upper half coinciding with the longitudinal and transverse slopes of the streets to provide a smooth uninterrupted driving surface. If resurfacing at a future time, adjustment can be accomplished by breaking the existing pavement around the top half of the frame and adjusting to the correct grade by using the three bolts and the R-1979 adjusting rings.



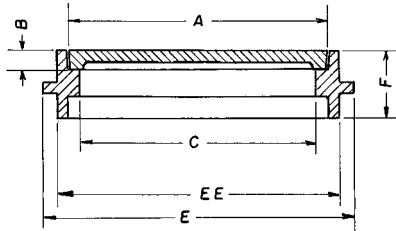
R-1955-1 Floating Manhole

Heavy Duty



R-1960 Series
Frame, Solid Lid

Heavy Duty

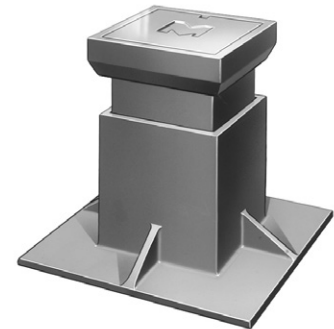
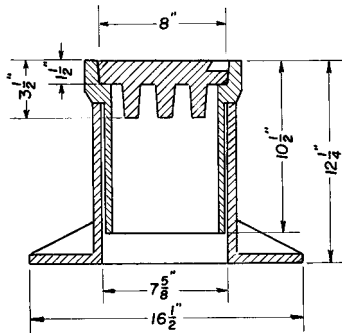


Illustrating R-1960

Dimensions in inches							
Catalog No.	A	B	C	EE	E	F	Grate Alt.
R-1960	22 3/4	1 3/4	21 1/8	24	29	6	R-2502
R-1960-A	26	1 1/2	24	26 3/4	32 1/2	6	R-2501

R-1968
Adjustable Monument Box,
Type 36-B

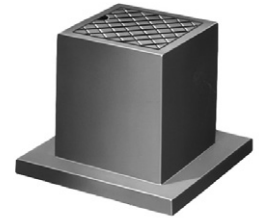
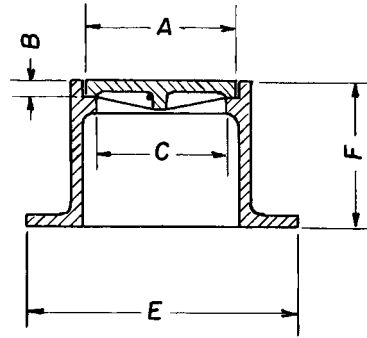
Heavy Duty



**R-1970 to R-1978 Series
Lamphole/Monument/Inspection Frame, Solid Lid**

Heavy Duty

Furnished standard with as-cast bearing surfaces unless otherwise noted.



Illustrating R-1978



Illustrating R-1976

Catalog No.	Dimensions in inches				
	A	B	C	E	F
Round					
R-1970	7	2 1/8	5 3/4	13 1/8	7
R-1971 *	8	3/4	6 1/2	10 1/2	10
R-1973	7 1/2	3/4	6 1/2	13 1/4	7
R-1973-1	7 3/4	3/4	6 3/4	13 1/4	7
R-1973-A	8 7/8	11/16	7 3/4	15 3/4	8
R-1974-A	9	1	8	16	6 1/2
R-1975	9 1/2	1/2	8 1/2	20	11
R-1975-A	9 7/8	7/8	9	15 5/8	6
R-1975-A2	10	1	9	16	8
R-1976	11 1/4	1 1/4	10	20	8
R-1977 ** ***	11 1/2	1 1/2	8 1/2	16	12
Square					
R-1978 **	6 7/8 x 6 7/8	1	5 x 5	13 x 13	10
R-1978-A3	7 7/8 x 7 7/8	7/8	6 1/2 x 6 1/2	16 1/2 x 16 1/2	6 7/8
R-1978-A10	7 7/8 x 7 7/8	7/8	6 1/2 x 6 1/2	16 3/4 x 16 3/4	10
R-1978-A15	7 7/8 x 7 7/8	7/8	6 5/8 x 6 5/8	17 1/4 x 17 1/4	15
R-1978-B	12 x 12	3/4	10 5/8 x 10 5/8	20 1/2 x 20 1/2	7 3/8

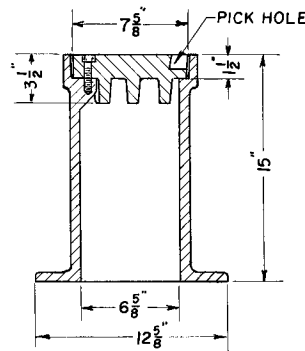
* Base consists of 4 bolting lugs for 1/2" bolt on 9-1/2" bolt circle instead of full flange.

** Furnished with machined horizontal bearing surfaces.

*** Lid bolted to frame.

**R-1978-A2
Lamphole/Monument/Inspection Frame, Solid Lid**

Heavy Duty



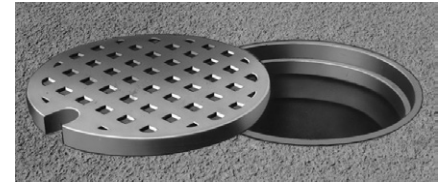
R-1979 Series Manhole Adjusting Rings

Heavy Duty

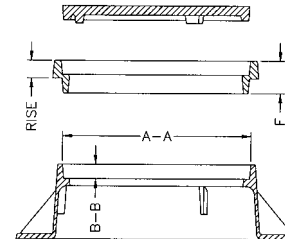
For raising manhole covers when pavement is resurfaced.

Adjusting rings (or extension rings, as they are sometimes called) eliminate the necessity of raising or replacing existing manhole frames on resurfacing projects. The cover recess is the same depth and diameter as the existing manhole frame. Amount of raise coincides with thickness of resurfacing material, thereby bringing the manhole lid to new position flush with refinished roadway surfaces.

Manhole adjusting rings can be placed rapidly and are a permanent installation. Use of adjusting rings may reduce raising costs to as little as 20% of digging up the old manhole frame and resetting it to a new grade.



Adjusting Ring Installed



Cutaway View of Adjusting Ring Installation

CAUTION WHEN ORDERING

Be sure existing lid diameters are smaller than "AA" dimension in table. "AA" dimension in table is opening size in extension ring. Lid should measure 1/4" to 3/8" less in diameter than this dimension.

Ref. Number	Dimensions in inches			
	A-A	B-B	F	Rise
1913-7100	7 5/8	2	2 7/8	1
1913-7150	7 5/8	2	3 3/8	1 1/2
1979-0245	9 5/16	5/8	2 1/8	1 1/2
1979-0246	9 5/16	5/8	2 5/8	2
1979-0166	18 3/8	1	3	1 15/16
1979-0167	18 3/8	1	4	2 15/16
1979-0008	21 1/2	1	3	2
1979-0115	21 1/2	1	3 1/2	2 1/2
1979-0022	21 1/2	1	4	3
1915-7200 **	21 3/4	1	2 31/32	2
1692-7200	21 7/8	1 1/4	3 1/8	2
1979-0223	22 1/8	1 1/8	3 1/8	2
1500-7200	22 1/4	1 1/2	3 1/2	2
1979-0035 *	22 1/4	1 1/2	3 1/2	2
1500-7250	22 1/4	1 1/2	4	2 1/2
1979-0036 *	22 1/4	1 1/2	4	2 1/2
1500-7300	22 1/4	1 1/2	4 1/2	3
1979-0119 *	22 1/4	1 1/2	4 1/2	3
1979-0270 *	22 5/16	1 1/2	3	1 1/2
1979-0258	22 3/8	1	3	2
1762-7150	22 1/2	1	2 1/2	1 1/2
1979-0215	22 1/2	1	5	4
1979-0034	22 1/2	1 1/2	3 1/2	2
1979-0116	22 1/2	1 1/2	4 1/2	3

Ref. Number	Dimensions in inches			
	A-A	B-B	F	Rise
1979-0047	22 3/4	1 1/2	3 1/2	2
1979-0131	22 3/4	1 1/2	4	2 1/2
1979-0019	22 3/4	1 1/2	4 1/2	3
1580-7150 *	22 3/4	1 3/4	3 1/4	1 1/2
1979-0129 *	22 3/4	1 3/4	3 3/4	2
1979-0170 *	22 3/4	1 3/4	4 3/4	3
2424-7200	22 3/4	2 5/8	4 5/8	2
1661-7100	22 7/8	1 1/2	2 1/2	1
1661-7158 ***	22 7/8	1 1/2	3 1/8	1 9/16
1661-7200	23	1 1/2	3 1/2	2
1979-0004	23	1 1/2	4	2 1/2
1979-0005	23	1 1/2	4 1/2	3
1713-7101	23	1 3/4	2 3/4	1
1713-7150	23	1 3/4	3 1/4	1 1/2
1713-7200	23	1 3/4	3 3/4	2
1979-0177	23	1 3/4	4	2 3/16
1713-7250	23	1 3/4	4	2 1/2
1713-7300	23	1 3/4	4 3/4	2 15/16
1715-7176	23 1/16	1 3/4	3 1/2	1 3/4
1979-0139 *	23 1/8	1 3/4	4 1/4	2 1/2
1979-0146 *	23 1/8	1 3/4	4 3/4	3
1979-0023 *	23 7/32	1 1/2	4 1/2	3
1550-7150	23 1/4	1 1/2	3	1 1/2
1550-7151 *	23 1/4	1 1/2	3	1 1/2
1550-7200	23 1/4	1 1/2	3 1/2	2
1550-7201 *	23 1/4	1 1/2	3 1/2	2
1979-0010	23 1/4	1 1/2	4	2 1/2
1979-0106	23 1/4	1 1/2	4 1/2	3
1979-0128 *	23 3/8	1 1/2	4	2 1/2
1979-0181 *	23 3/8	1 3/4	3 3/4	2

* Adjusting ring is for Non-Rocking applications

** Gasketed for self-seal application

*** Ring furnished in ductile iron

≠ 5 degree draft

‡ 10 degree draft

§ for R-1750-B only

Ref. Number	Dimensions in inches			
	A-A	B-B	F	Rise
1979-0006 *	23 7/16	1 1/2	3 1/2	2
1979-0180	23 1/2	1	2 5/8	1 1/2
1797-7300	23 1/2	1	4	3
1979-0024	23 1/2	1 1/2	3 1/2	2
1979-0025	23 1/2	1 1/2	4	2 1/2
1979-0026	23 1/2	1 1/2	4 1/2	3
1979-0275	23 3/4	1	2 5/8	1 5/8
1979-0150	23 3/4	1	3	2
1979-0265	24	1	2 1/2	1 7/16
1979-0253	24	1	2 1/2	1 1/2
0000-0034	24	1	2 9/16	1 1/2
1979-0065	24	1	2 5/8	1 5/8
1979-0264	24	1	3	1 15/16
0000-0545	24	1	3 1/16	2
0000-1309	24	1	3 9/16	2 1/2
0000-0814	24	1	4 1/16	3
1979-0273	24	1	4 1/4	2 1/2
1979-0254	24	1	4 1/2	2
1979-0012	24	1 1/2	3 1/2	2
1979-0042 *	24	1 1/2	3 1/2	2
1979-0046	24	1 3/4	4 1/4	2 1/2
1979-0044	24	1 3/4	4 3/4	3
1979-0145	24 3/16	1 1/8	2 9/16	1 7/16
1979-0143	24 1/4	1	3	2
1979-0033	24 1/2	1 1/2	3 1/2	2
1979-0040	24 1/2	1 3/4	4 1/4	2 1/2
1979-0041	24 1/2	1 3/4	4 3/4	3
1767-7100	25	1	2	1
1979-0160	25	1	2 1/2	1 1/2
1979-0171	25	1	3	2
1979-0272	25	1	3 1/2	2
1979-0058	25	1 1/2	3 1/2	2
1979-0134	25	1 3/4	4 1/4	2 1/2
1979-0144	25	1 3/4	4 3/4	3
1979-0271 *	25 5/16	1 1/2	3	1 1/2
1979-0266	25 1/2	1 1/4	3 1/2	2
1979-0158	25 1/2	1 1/4	3 3/4	2 3/8
1979-0037	25 1/2	1 1/2	3 1/2	2
1979-0118 *	25 1/2	1 1/2	3 3/4	2
1979-0117 *	25 1/2	1 1/2	4 3/4	3
1979-0137	25 1/2	1 3/4	4 1/4	2 1/2
1979-0124	25 1/2	1 3/4	4 3/4	3
1979-0074	25 7/8	7/8	3 3/8	2 1/2
1979-0076	25 7/8	7/8	4 3/8	3 1/2
1979-7200	25 15/16	1	3	2
4353-0019	26	7/8	2 3/8	1 1/2
4353-0017	26	7/8	2 7/8	2
4353-0013	26	7/8	3 7/8	3
1979-0278	26	1	2	1
1979-0279	26	1	2 1/2	1 3/8
1979-0280	26	1	3	1 7/8
1979-0055	26	1 3/8	3 3/8	1 15/16
1979-0102	26	1 3/8	3 7/8	2 1/2
1979-0051	26	1 3/8	4 3/8	2 15/16
1979-0176	26	1 1/2	3 1/2	1 15/16
1642-7150	26 1/8	1 1/2	3	1 1/2
1642-7200	26 1/4	1 1/2	3 1/2	2
1642-7250	26 1/4	1 1/2	4	2 1/2
1642-7300	26 1/4	1 1/2	4 1/2	3
1979-0062	27	1 3/8	3 3/8	2
1979-0263	28	1	2 1/2	1 7/16
1979-0250	28	1	3	1 15/16
1979-0251	28	1	4	3

Ref. Number	Dimensions in inches			
	A-A	B-B	F	Rise
1979-0091 §	28 1/4	1	3	2
1979-7190	28 1/4	1 3/8	3 3/8	1 7/8
1753-7200	29	1 3/8	3 3/8	1 15/16
1979-0054 ¥	29	1 3/8	3 3/8	1 15/16
1979-0043	29	1 3/8	3 13/16	2 1/2
1979-0015	29	1 3/8	4 3/8	2 15/16
6052-7218	29 3/8	1 3/4	4	2 3/16
6052-7293	29 3/8	1 3/4	4 3/4	2 15/16
1979-0203	30 3/8	1 1/2	4 1/2	3
1743-7200	31 15/16	1 3/4	3 3/4	2
1743-7300	31 15/16	1 3/4	4 3/4	3
1979-0052	32	1 3/8	4 3/8	2 15/16
1743-7150	32	1 3/4	3 1/4	1 1/2
1979-0053	32	1 3/8	3 3/8	1 15/16
1979-0057	33 1/2	1 1/2	3 1/2	1 15/16
1979-0049	33 1/2	1 1/2	4 1/2	2 15/16
1979-0092	35 1/2	2	4 1/2	2 1/2
1979-0268	36	1 1/4	2 1/4	1
1979-0269	36	1 1/4	2 3/4	1 1/2
1979-0056	36 1/2	1 1/2	3 1/2	1 15/16
1979-0050	36 1/2	1 1/2	4 1/2	2 15/16
1979-0093	38	1 1/2	3 1/2	2
1979-0136	38 1/4	1 1/2	3 1/2	2
1742-7200	39	1	3	2
1979-0252	40 1/16	3	4 1/2	3 3/4

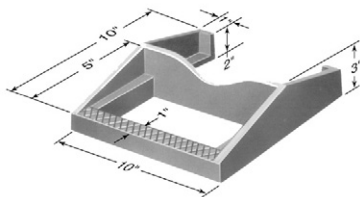
Square/Rectangular

1978-0022	8 1/8 x 8 1/8	7/8	2 7/8	2
1979-0249	8 1/8 x 8 1/8	7/8	2 1/8	1 1/4
0000-1090	13 3/8 x 19 3/8	1 1/4	3 1/4	2
3278-7225	16 3/4 x 22 1/4	1 3/4	4	2 1/4
0000-1029	19 3/8 x 20 3/8	1 1/4	3 1/4	2
0000-1081	19 3/8 x 19 3/8	1 1/4	3 1/4	2
3278-0015	22 1/4 x 16 15/16	1 3/4	4 1/8	2 1/2
3287-7250	22 3/4 x 45 3/8	2	4 7/16	2 1/2

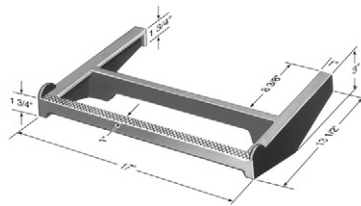
* Adjusting ring is for Non-Rocking applications
 ** Gasketed for self-seal application
 *** Ring furnished in ductile iron
 ≠ 5 degree draft
 ¥ 10 degree draft
 § for R-1750-B only

R-1980-1-2 Series Manhole Steps

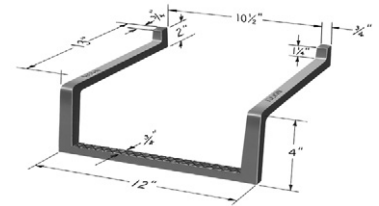
Manhole Steps shown in this series are for use in conical shaped sanitary sewer manholes equipped with standard cast iron frames and covers. Furnished in cast gray iron, except as noted.



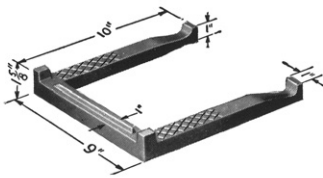
R-1980-E



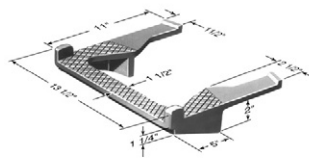
R-1980-M Wide Tread



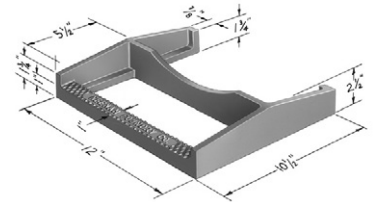
R-1981-W4 Ductile Iron
for Precast Manholes



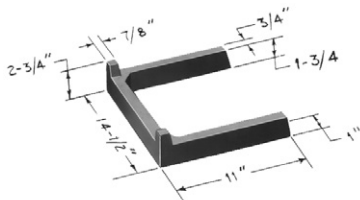
R-1980-C



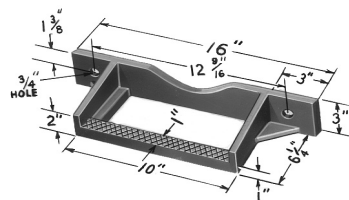
R-1980-I for Circular Walls



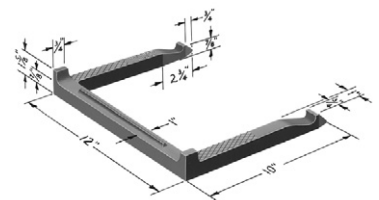
R-1981-Y for ALL Construction



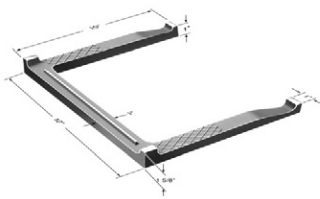
R-1980-J Heavy Construction



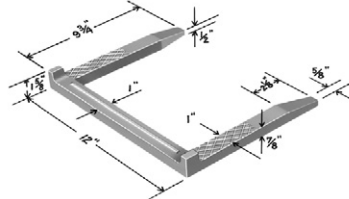
R-1980-T for Bolting



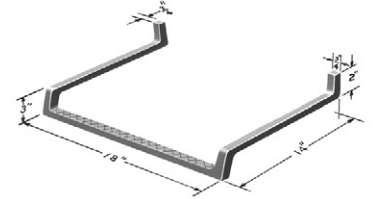
R-1982-F for Precast Manholes



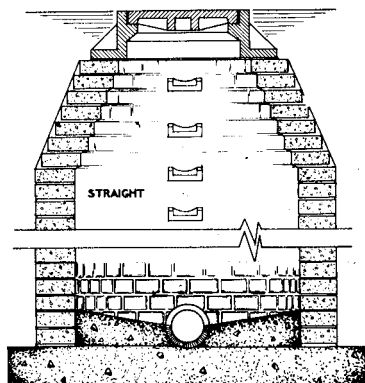
R-1981-J Wide Tread



R-1981-N for Precast Manholes

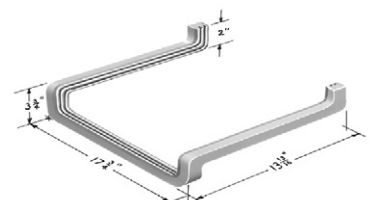


R-1982-J Ductile Iron



Steps should be installed in a vertical row on 16" centers.

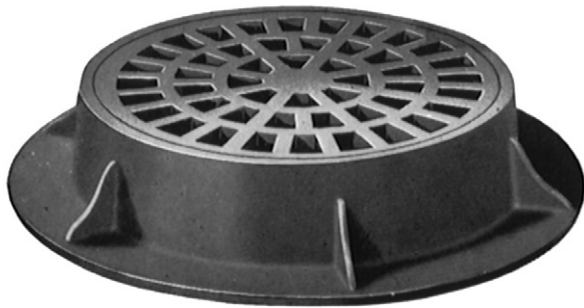
Cast iron manhole steps are manufactured from high tensile iron, which has a minimum **tensile strength of 35,000 lb. per square inch**. Actual load tests on castings have shown a generous safety factor. Cast iron steps with their inherent corrosion resistant qualities, are easily installed in concrete, brick or block manholes. The tread is scored to meet safety requirements.



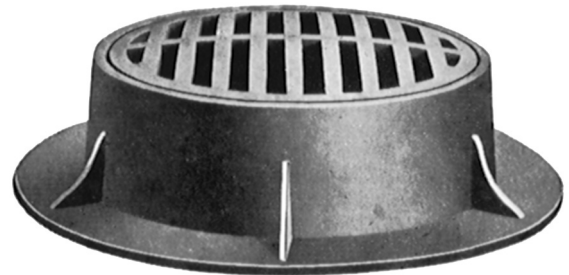
R-1982-W Extruded Aluminum

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

GRATE TYPES AND KEY TO DIMENSIONS IN SCHEDULES



Type C - Radial



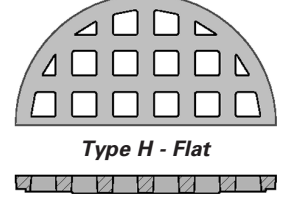
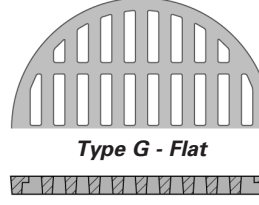
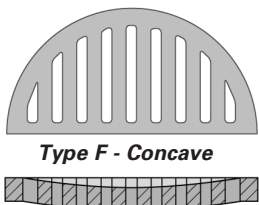
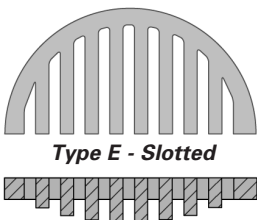
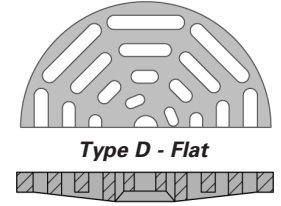
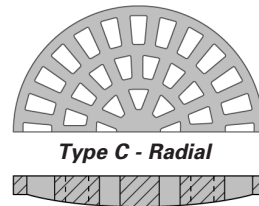
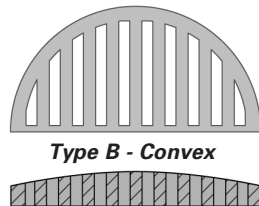
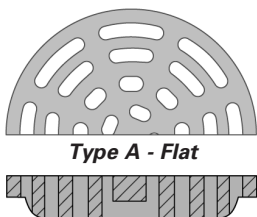
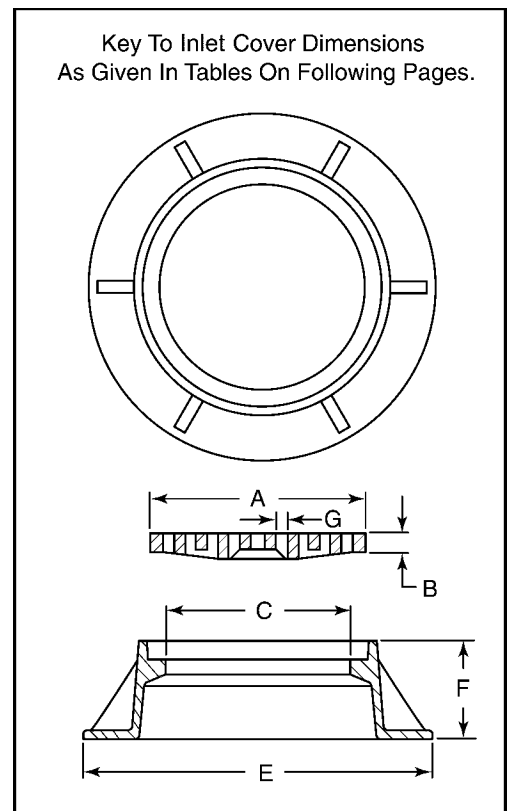
Type B - Convex



Type A - Flat



Type D - Flat



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

INLET FRAMES AND GRATES STANDARD AND SPECIAL SIZES

The table shown below summarizes the various standard and special inlet frames and grates currently available. The reference column in most cases identifies the summary number and size with an illustrated number, which is essentially the same casting. These catalog numbers are listed in numerical sequence in subsequent pages of this catalog. The type grate column indicates the standard grate style for the size you have chosen. Other grate types as shown on page 90 may also be available for the catalog number you have selected. For verification of alternate grate styles, check with your Neenah representative or contact our main office in Neenah, Wisconsin.

All inlet castings are furnished with machined bearing surfaces, unless otherwise noted.

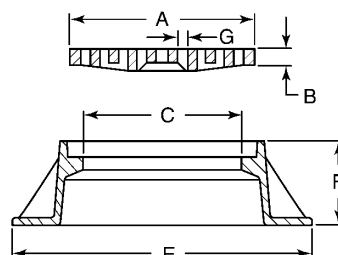
Those catalog numbers marked with an asterisk are available with our Non-Rocking feature.

Free open area and interactive Hydraulic Calculations for most grates in this section are available at www.neenahfoundry.com.

Sorted by Catalog Reference

Catalog Reference	Dimensions in inches						Grate Type	Frame Reference
	A	B	C	E	F	G		
R-2014 *	22 3/4	1 3/4	21	34	9	-	D, C, E	R-2504
R-2030	23	1 3/4	20 7/8	36	9	1 1/8 to 1 1/2	D	R-1530
R-2050 *	23	1 1/2	21 1/16	35 7/16	8 7/8	-	D, C, F, G	R-1550-A
R-2060 *	22	1 1/2	20	36	6 1/2	-	C, A, B	R-1700-A
R-2070 *	23	1 1/2	21 1/16	35 7/16	8 7/8	-	G, D	R-1550-A
R-2080 *	22 1/2	1 3/4	20 1/2	36	6	-	D, B, C	R-2540
R-2090 *	22	1 1/2	20	35	9	-	A, B, C, E, G	R-2533
R-2100 *	22	1 1/2	20	33	8	-	C, A, E, F, G	R-1500
R-2110 *	22	1 1/2	20	32	6	-	A, E	R-1510-A
R-2112	22	1 1/2	20 1/2	28 1/4	6	-	C, A, B, E, F, G	R-1761
R-2120	22	1 1/2	20 15/32	27 9/16	3 15/16	-	C, A, F, G	R-2510
R-2250	38	1 1/2	36	49	10	1 x 8	G	R-2580-C
R-2251	36	1 1/2	34	45	8 5/8	1	G	R-1752
R-2255	32	1 3/8	30	46	10	-	C, G	R-1640-CS
R-2270	32	1 1/2	30	46	7	-	G, C	R-2580-A
R-2275	32	1 3/8	30	46	5 5/8	1 x 6 1/4	G	R-1640-C1S
R-2290	29	1 3/8	27	46	10	-	Special	R-1640-B
R-2290-A	29	1 3/8	27	46	5 5/8	-	Special	R-1640-B1
R-2290-B	28 3/4	1 3/8	27 1/8	37 1/4	7	-	Special	R-1753-A
R-2293	27 1/2	1	25 3/4	34 1/2	4	7/8	G	R-1773
R-2296	25 3/4	7/8	24	35 7/16	7	-	B, C, F	R-2577
R-2297	25 3/4	7/8	24 1/8	35 1/2	8	-	B, C, F	R-2577-A
R-2298	25 3/4	7/8	24 1/8	35 1/2	9	1 1/8	B	R-2577-B
R-2299	25 3/4	7/8	24 1/8	35 1/2	10	-	B, C, F	R-2577-C
R-2300	26	1 3/8	24	43	10	-	G, C	R-1640-A
R-2370	26	1 1/2	24 1/8	35 7/8	6 15/16	-	G, A, C, F	R-2501
R-2371	25 3/4	1 1/2	24	35	7 1/2	1	G	R-1643
R-2373	25 3/4	1	23 13/16	34 3/16	8	-	C	R-1922
R-2390	25 3/4	7/8	23	30 1/2	7	-	C	R-1590
R-2395-1	25 1/4	1 1/2	24	35 1/4	8	1 1/8	G	R-1769-A
R-2398	25 3/4	1, 7/8	23 5/8	31 7/8	8	1 1/8	G, F	R-2572
R-2401	26	1 7/8	23 1/2	35 3/4	8	1	G	R-1723
R-2401-A	24 3/4	1	23 3/8	33 1/4	7	3/4	G	R-1777
R-2402	24 3/4	1	22 5/8	36	7 1/4	-	C, G	R-1671
R-2404	25 5/8	2	23	38	10 1/2	1 1/16	G	R-2650
R-2405 *	25	1 1/2	23	38	9	-	C, A	R-1760

* Available with Non-Rocking feature if specified.
 ** Furnished standard with Non-Rocking feature.
 *** Light Duty.



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

Catalog Reference	Dimensions in inches						Grate Type	Frame Reference
	A	B	C	E	F	G		
R-2410 **	24	1 1/2	22 1/4	34 21/32	7 15/32		H	R-1726-A
R-2411-A	25 3/8	1 1/4	23	38 1/2	7	3/4 x 5 1/2	G	R-1889
R-2412-A	23 3/4	1	23	31 1/4	4 5/8	1 3/8	G	R-1787
R-2412-A1	23 7/8	1	22 3/4	36 3/4	9	-	E	R-1658
R-2412-A3	23 7/8	1	22 3/8	34	7	-	E	R-1657-1
R-2412-A4	23 3/4	1 1/2	22 1/4	34	7	-	C	R-2668
R-2412-A5	23 7/8	1 1/4	22	35	6	2 1/4	H	R-1648
R-2412-A6	23 7/8	1 1/4	22	35	8	1 3/8	G	R-1649
R-2418	23 3/4	1	22	37 1/2	9	1 3/8	G	R-1771
R-2420-B	22 1/2	1 1/4	21 1/2	29	6	1 1/2 x 6 1/4	G	R-1776
R-2421-A	23 1/4	1 1/4	22	34	9	1 1/2	A	R-1736
R-2422-A1	23 3/4	1	21 3/4	35	7	-	C	R-1678-A
R-2422-C	23 3/4	1	21 21/32	37 13/32	7 3/32	1 3/8	G	R-2680
R-2423	23 3/4	1	21 15/32	37 13/32	8 7/8	-	G, C	R-1785
R-2424-A	22 1/2	2 5/8	20 1/4	34 1/4	6 1/4	1 1/8	G	R-1524-B
R-2425	23 3/8	3/4	21 1/8	34 1/4	4	1/2	G	R-1774
R-2427	22 3/4	1 3/4	20 1/2	36	5 1/2	-	D	R-1677
R-2427-A	23 3/4	1 1/4	21	37 1/2	7 1/16	1 3/8	G	R-1775
R-2428	23	1 1/2	21 1/16	35 7/16	8 7/8	-	C, D, F	R-1550-A
R-2429	22 3/4	1 3/4	21	31 1/8	14 1/2	Adjustable	E, D, G	R-1672
R-2435	22 1/4	1	21	30	9 3/4	2 x 3 1/2	G	R-1762
R-2437	22 3/4	1 3/4	21	32 1/2	4	-	D, E	R-1647
R-2437-B	22 1/4	1	21	28 1/2	4 3/4	2 x 3 1/2	G	R-1762-A
R-2438	22 3/4	1 3/4	21 1/8	29	6	-	D, E	R-1960
R-2461-A	22	1 1/2	20 1/2	30	6	-	A, B, C, F	R-1711-A
R-2464 **	23	1 1/2	20 1/2	36	4	1 1/4	D	R-1689
R-2466-A	22	1 1/2	20	32	8 3/4	-	B, E	R-1765
R-2467	22 3/4	1 1/2	20	38	10	-	D, C, E	n/a
R-2471 *	22 3/4	1 1/2	20 3/32	37 13/32	9 27/32	-	D, E	R-1661
R-2471-B	22 1/2	1 1/2	20	34	9 1/2	-	D	R-1707
R-2474	21 3/4	1 1/8	20	36	8 1/2	-	A, E, G	R-1784
R-2475 *	22	1 1/2	20	36	6 1/2	-	C, A	R-1700-A
R-2481	21 3/4	1	19 3/4	32 1/4	8 3/4	-	A, Beehive	R-1920
R-2494	19 1/2	1 1/2	18	29	5 1/2	3/4	G	R-2525-G***
R-2496	18	1	17	25	4 1/2	1 1/8	G	R-2525-E
R-2498	15 3/4	1 3/8	14 11/16	23	4 11/16	3/4	G	R-2525-D
R-2498-A	15 3/4	1 3/8	14 3/4	21	4 3/4	3/4	G	R-2525-C
R-2498-B	15 3/4	1 3/8	15	22	3	3/4	G	R-1910-D
R-2499	12	1	11	19	4	1	G	R-2525-A
R-2500 *	24	1 1/2	22 1/4	34 21/32	7 15/32	2 1/4	H	R-1670-A
R-2501	26	1 1/2	24 1/8	35 7/8	6 15/16	-	G, A, F	R-1642
R-2502	22 3/4	1 3/4	21	34	7	-	D, C, E, G	R-1772
R-2504	22 3/4	1 3/4	21	34	9	-	D, C, G	R-1713
R-2510	22	1 1/2	20 15/32	27 9/16	3 15/16	-	C, A, E	R-1690
R-2510-1	15 3/4	1 3/8	15	22	3	3/4	G	R-1910-D
R-2510-2	27 1/2	1	25 3/4	34 1/2	4	7/8	G	R-1773
R-2510-A	22	1 1/2	20 1/2	28 1/4	6	-	Beehive	R-1761
R-2525-A	12	1	11	19	4	1	G	R-1791-A
R-2525-C	15 3/4	1 3/8	14 3/4	21	4 3/4	3/4	G	R-1910-C
R-2525-D	15 3/4	1 3/8	14 11/16	23	4 11/16	3/4	G	R-1910-B
R-2525-E	18	1	17	25	4 1/2	1 1/8	G	R-1791-E
R-2525-F	20 1/2	5/8	18	30	5	1	G	R-1791-F
R-2525-G	19 1/2	1 1/2	18	29	5 1/2	3/4	G	R-1791-G
R-2533 *	22	1 1/2	20	35	9	-	A, B, C, E, G	R-1710
R-2534	22 7/8	1 1/4	20 1/8	32	7	-	C	R-1570-A
R-2535	22	1 1/2	20	32	6	-	C, A, B, F	R-1510-A
R-2535-A	22	1 1/2	20 3/8	32	4	-	C, A, B, F	n/a
R-2540	22 1/2	1 3/4	20 1/2	36	6	-	D, C	R-1580
R-2540-A	22 1/2	1 3/4	20 1/2	38	6	-	D, C	n/a
R-2545	16	4	12 1/2	21 1/2	5	-	Special	n/a
R-2546	12 1/2	2 7/8	9 3/4	18	3	-	Special	n/a

* Available with Non-Rocking feature if specified.
 ** Furnished standard with Non-Rocking feature.
 *** Light Duty.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

Dimensions in inches

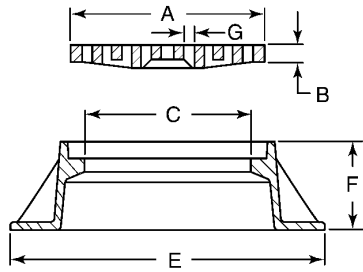
Catalog Reference	A	B	C	E	F	G	Grate Type	Frame Reference
R-2548	25 5/8	1	23 5/8	31 7/8	8	3 1/2	V	R-1728
R-2549	22 3/4	1 3/4	20	25	4 1/2	-	D, E	R-1645
R-2552	23 13/16	1 25/32	21 21/32	33 15/32	6 7/8	-	Special	R-1714
R-2553	24	1 3/8	22 1/2	31 1/4	3	1 3/32	G	R-1553
R-2554	24	1 3/8	22 1/2	34	7	1 3/32	G	R-1554
R-2555	24	1 3/8	21 3/4	34	8	1 3/32	G	R-1555
R-2556	25 3/4	1 3/8	24	34 1/2	8	-	G, F	R-1556
R-2556-A	25 3/4	1 3/8	24	34 1/2	4	-	G, F	R-1556-A
R-2557	31 3/4	1 3/8	30	41	6 1/2	1	G	R-1557
R-2557-A	31 7/8	1 1/2	30 9/32	40	6 1/2	1	G	R-1557-A
R-2557-A4	31 7/8	1 1/2	30	36	4	1	G	R-1557-A4
R-2558	31 3/4	1 3/8	30	41	8	1	G	R-1558
R-2559	25 3/4	1 3/8	24	38 1/4	8	-	F, G	R-1559
R-2560-A	12	1	11	19	4	-	Beehive	R-1791-A
R-2560-C	18 1/4	1 1/4	16 3/4	30	8	-	Beehive	R-1900-A
R-2560-C1	22	1 1/2	20 15/32	27 9/16	3 15/16	-	Beehive	R-1690
R-2560-C2	22	1 1/2	20 1/2	28 1/4	6	-	Beehive	R-1761
R-2560-D	22	1 1/2	20	35	9	-	Beehive	R-1710
R-2560-D1	22	1 1/2	20 15/32	27 9/16	3 15/16	-	Beehive	R-1690
R-2560-D2	22	1 1/2	20 1/2	28 1/4	6	-	Beehive	R-1761
R-2560-D3	22	1 1/2	20	35	9	-	Beehive	R-1710
R-2560-D5	22 3/4	1 1/2	21 1/4	34	4	-	Beehive	R-1647-A
R-2560-D6	22 3/4	1 1/2	21	34	9	-	Beehive	R-1713
R-2560-D7	22 3/4	1 1/2	21 1/4	34	4	-	Beehive	R-1647-A
R-2560-D8	22 3/4	1 1/2	21	34	9	-	Beehive	R-1713
R-2560-E	23	1 1/2	21 1/16	35 7/16	8 7/8	-	Beehive	R-1550-A
R-2560-E1	25 3/4	7/8	24	35 7/16	6 7/8	-	Beehive	R-1733
R-2560-E2	25 3/4	7/8	24	35 7/16	6 7/8	-	Beehive	R-1733
R-2560-E5	25 3/4	7/8	24 1/8	35 1/2	8	-	Beehive	R-1733-A
R-2560-E6	25 3/4	7/8	24 1/8	35 1/2	8	-	Beehive	R-1733-A
R-2560-E7	25 3/4	7/8	24 1/8	35 1/2	9	-	Beehive	R-1733-B
R-2560-E8	25 3/4	7/8	24 1/8	35 1/2	9	-	Beehive	R-1733-B
R-2560-E9	25 3/4	7/8	24 1/8	35 1/2	10	-	Beehive	R-1733-C
R-2560-E10	25 3/4	7/8	24 1/8	35 1/2	10	-	Beehive	R-1733-C
R-2560-EA	25 3/4	7/8	24 1/8	35 7/16	4	-	Beehive	R-1733-1
R-2560-EB	25 3/4	7/8	24 1/8	35 7/16	4	-	Beehive	R-1733-1
R-2560-G	32	1 1/2	30	46	7	-	Beehive	R-1740-B
R-2561	25 3/4	7/8	24	35 7/16	6 7/8	-	Beehive	R-1733
R-2561-A	25 3/4	7/8	24	35 7/16	6 7/8	-	Beehive	R-1733
R-2563	22	1 1/2	20 15/32	27 9/16	3 15/16	-	Beehive	R-1690
R-2564	22	1 1/2	20 1/2	28 1/4	6	-	Beehive	R-1761
R-2565-A	21	2 1/2	18	27 1/2	5	1 1/4	G	R-6110
R-2565-C	23	1 1/4	20	29 3/4	4	1 3/8	G	R-6111
R-2565-E	27	1 1/4	23 1/2	33 1/2	4	1 1/2	G	R-6114
R-2565-F	27	2 1/2	24	33 1/2	5	1 1/2	G	R-6115
R-2565-G	27	2 1/2	24	33 1/2	5	1 1/2	G	R-6115
R-2565-H	29	1 3/4	27	35	6	1	G	R-6116
R-2565-J	32 3/8	2	30	39 1/2	6	1 1/2	G	R-6117
R-2569	16 x 16	1/2	14 x 14	27	5	1/2	Q	n/a
R-2570	20 1/2	5/8	18	30	5	1	G	R-1791-F
R-2571-A	22	1 1/2	20 15/32	27 9/16	3 15/16	1 3/8	F	R-1690
R-2571-B	22	1 1/2	20	32	6	1 3/8	F	R-1510-A
R-2571-C	22	1 1/2	20	35	9	1 3/8	F	R-1710
R-2571-D	23	1 1/2	21 1/16	35 7/16	8 7/8	1 3/8	F	R-1550-A
R-2571-E	26	1 1/2	24 1/8	35 7/8	6 15/16	1 1/8	F	R-1642
R-2572	25 3/4	7/8	23 5/8	31 7/8	8	1 1/8	F, C	R-1728
R-2573	25 3/4	7/8	24	35 7/16	7	-	F, C	R-1733
R-2573-1	25 3/4	7/8	24	35 7/16	4	-	F, C	R-1733-1
R-2573-A	25 3/4	7/8	24	35 7/16	8	1 1/8	F, C	R-1733-A
R-2573-B	25 3/4	7/8	24	35 7/16	9	1 1/8	F, C	R-1733-B
R-2573-C	25 3/4	7/8	24	35 7/16	10	1 1/8	F, C	R-1733-C

* Available with Non-Rocking feature if specified.
 ** Furnished standard with Non-Rocking feature.
 *** Light Duty.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

Catalog Reference	Dimensions in inches						Grate Type	Frame Reference
	A	B	C	E	F	G		
R-2577	25 3/4	7/8	24	35 7/16	7	-	B, C	R-1733
R-2577-1	25 3/4	7/8	24	35 7/16	4	-	B, C	R-1733-1
R-2577-A	25 3/4	7/8	24	35 7/16	8	1 1/8	B	R-1733-A
R-2577-B	25 3/4	7/8	24	35 7/16	9	1 1/8	B	R-1733-B
R-2577-C	25 3/4	7/8	24	35 7/16	10	1 1/8	B	R-1733-C
R-2578	23	1 1/2	21 1/16	35 7/16	8 7/8	-	C	R-1550-A
R-2579	22	1 1/2	20	35	9	1 1/4	B	R-1710
R-2580-A	31 7/8	1 1/2	30	46	7	1	G	R-1740-B
R-2580-A1	32	1 1/2	30	46	7	-	C	R-1740-B
R-2580-C	38	1 1/2	36	49	10	1 x 8	G	R-1740-D
R-2586-A	14 1/4	3/4	13	16	1 1/2	7/8	E	R-4380-9
R-2586-B	16	1	13 1/2	18 1/4	1 5/8	1 1/8	G	R-4380-13
R-2586-C	18	3/4	16	19 1/4	1 1/4	7/8	E	R-4380-14
R-2586-D	19 3/4	1	17 1/2	21 3/4	1 5/8	1	G	R-1799-D
R-2586-E	19 1/2	1 1/2	18	21 1/4	2	3/4	G	R-1799-E
R-2586-F	20 1/2	3/4	18 3/4	23	1 1/4	1	G	n/a
R-2586-G	22 1/4	1 1/2	20 3/8	24 3/8	2 1/4	1	G	R-1799-G
R-2586-H	22 3/4	1 3/4	20 1/2	25 1/2	3	1 1/2	E	R-1799-H
R-2586-K	24	3/4	21 3/4	26	1 1/4	1/2	G	R-1799-K
R-2586-M	26 5/8	3/4	24	28 1/4	1 3/8	7/8	G	R-4380-22
R-2586-N	30	1	27 1/2	33	1 3/4	1 1/4	G	n/a
R-2586-O	32	1	30	34	2	7/8	G	R-1799-O
R-2588-A	21 15/16	1 1/2	20	26	2 1/4	1 9/16	G	n/a
R-2588-B	25	1 1/2	23 1/2	30	2 1/4	7/8	G	n/a
R-2588-C	29	3	24	37	3 1/2	3/4	G	n/a
R-2595-A	22 3/4	1 3/4	21 1/4	34	4	-	D	R-1647-A
R-2650	25 5/8	2	23	38	10 1/2	-	G	R-1729
R-2668	23 3/4	1 1/2	22 1/4	34	7	-	C	R-1668
R-2680	23 3/4	1	21 21/32	37 13/32	7 3/32	1 3/8	G	R-1664-A
R-2682	27 7/8	1 3/8	26	38 1/4	4 3/8	-	A	R-1682
R-2750	31 7/8	1 3/8	30	46	5 5/8	1/2	Q	R-1750-C1S

* Available with Non-Rocking feature if specified.
 ** Furnished standard with Non-Rocking feature.
 *** Light Duty.



Illustrating R-2050

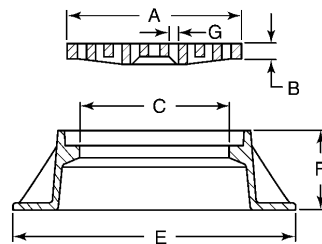
Sorted by Clear Opening, Dimension "C"

Catalog Reference	Dimensions in inches						Grate Type	Frame Reference
	A	B	C	E	F	G		
R-2250	38	1 1/2	36	49	10	1 x 8	G	R-2580-C
R-2580-C	38	1 1/2	36	49	10	1 x 8	G	R-1740-D
R-2251	36	1 1/2	34	45	8 5/8	1	G	R-1752
R-2557-A	31 7/8	1 1/2	30 9/32	40	6 1/2	1	G	R-1557-A
R-2565-J	32 3/8	2	30	39 1/2	6	1 1/2	G	R-6052-J
R-2586-O	32	1	30	34	2	7/8	G	R-1799-O
R-2255	32	1 3/8	30	46	10	-	C, G	R-1640-CS
R-2275	32	1 3/8	30	46	5 5/8	1 x 6 1/4	G	R-1640-C1S
R-2750	31 7/8	1 3/8	30	46	5 5/8	1/2	Q	R-1750-C1S
R-2270	32	1 1/2	30	46	7	-	G, C	R-2580-A
R-2560-G	32	1 1/2	30	46	7	-	Beehive	R-1740-B

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
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Dimensions in inches

Catalog Reference	A	B	C	E	F	G	Grate Type	Frame Reference
R-2580-A1	32	1 1/2	30	46	7	-	C	R-1740-B
R-2557-A4	31 7/8	1 1/2	30	36	4	-	G	R-1557-A4
R-2580-A	31 7/8	1 1/2	30	46	7	1	G	R-1740-B
R-2557	31 3/4	1 3/8	30	41	6 1/2	1	G	R-1557
R-2558	31 3/4	1 3/8	30	41	8	1	G	R-1558
R-2586-N	30	1	27 1/2	33	1 3/4	1 1/4	G	n/a
R-2290-B	28 3/4	1 3/8	27 1/8	37 1/4	7	-	Special	R-1753-A
R-2290	29	1 3/8	27	46	10	-	Special	R-1640-B
R-2290-A	29	1 3/8	27	46	5 5/8	-	Special	R-1640-B1
R-2565-H	29	1 3/4	27	35	6	1	G	R-6116
R-2682	27 7/8	1 3/8	26	38 1/4	4 3/8	-	A	R-1682
R-2293	27 1/2	1	25 3/4	34 1/2	4	7/8	G	R-1773
R-2510-2	27 1/2	1	25 3/4	34 1/2	4	7/8	G	R-1773
R-2501	26	1 1/2	24 1/8	35 7/8	6 15/16	-	G, A, F	R-1642
R-2297	25 3/4	7/8	24 1/8	35 1/2	8	-	B, C, F	R-2577-A
R-2298	25 3/4	7/8	24 1/8	35 1/2	9	1 1/8	B	R-2577-B
R-2299	25 3/4	7/8	24 1/8	35 1/2	10	-	B, C, F	R-2577-C
R-2560-E5	25 3/4	7/8	24 1/8	35 1/2	8	-	Beehive	R-1733-A
R-2560-E6	25 3/4	7/8	24 1/8	35 1/2	8	-	Beehive	R-1733-A
R-2560-E7	25 3/4	7/8	24 1/8	35 1/2	9	-	Beehive	R-1733-B
R-2560-E8	25 3/4	7/8	24 1/8	35 1/2	9	-	Beehive	R-1733-B
R-2560-E9	25 3/4	7/8	24 1/8	35 1/2	10	-	Beehive	R-1733-C
R-2560-E10	25 3/4	7/8	24 1/8	35 1/2	10	-	Beehive	R-1733-C
R-2560-EA	25 3/4	7/8	24 1/8	35 7/16	4	-	Beehive	R-1733-1
R-2560-EB	25 3/4	7/8	24 1/8	35 7/16	4	-	Beehive	R-1733-1
R-2370	26	1 1/2	24 1/8	35 7/8	6 15/16	-	G, A, C, F	R-2501
R-2571-E	26	1 1/2	24 1/8	35 7/8	6 15/16	1 1/8	F	R-1642
R-2296	25 3/4	7/8	24	35 7/16	7	-	B, C, F	R-2577
R-2560-E1	25 3/4	7/8	24	35 7/16	6 7/8	-	Beehive	R-1733
R-2560-E2	25 3/4	7/8	24	35 7/16	6 7/8	-	Beehive	R-1733
R-2588-C	29	3	24	37	3 1/2	3/4	G	n/a
R-2565-F	27	2 1/2	24	33 1/2	5	1 1/2	G	R-6052-F
R-2565-G	27	2 1/2	24	33 1/2	5	1 1/2	G	R-6052-G
R-2586-M	26 5/8	3/4	24	28 1/4	1 3/8	7/8	G	R-4388-22



R-2300	26	1 3/8	24	43	10	-	G, C	R-1640-A
R-2556	25 3/4	1 3/8	24	34 1/2	8	-	G, F	R-1556
R-2556-A	25 3/4	1 3/8	24	34 1/2	4	-	G, F	R-1556-A
R-2559	25 3/4	1 3/8	24	38 1/4	8	-	F, G	R-1559
R-2371	25 3/4	1 1/2	24	35	7 1/2	1	G	R-1643
R-2561	25 3/4	7/8	24	35 7/16	6 15/16	-	Beehive	R-1733
R-2561-A	25 3/4	7/8	24	35 7/16	6 15/16	-	Beehive	R-1733
R-2573	25 3/4	7/8	24	35 7/16	7	-	F, C	R-1733
R-2573-1	25 3/4	7/8	24	35 7/16	4	-	F, C	R-1733-1
R-2573-A	25 3/4	7/8	24	35 7/16	8	1 1/8	F	R-1733-A
R-2573-B	25 3/4	7/8	24	35 7/16	9	1 1/8	F	R-1733-B
R-2573-C	25 3/4	7/8	24	35 7/16	10	1 1/8	G	R-1733-C
R-2577	25 3/4	7/8	24	35 7/16	7	-	B, C	R-1733
R-2577-1	25 3/4	7/8	24	35 7/16	4	-	B, C	R-1733-1
R-2577-A	25 3/4	7/8	24	35 7/16	8	1 1/8	B	R-1733-A
R-2577-B	25 3/4	7/8	24	35 7/16	9	1 1/8	B	R-1733-B
R-2577-C	25 3/4	7/8	24	35 7/16	10	1 1/8	B	R-1733-C

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

Catalog Reference	Dimensions in inches						Grate Type	Frame Reference
	A	B	C	E	F	G		
R-2395-1	25 1/4	1 1/2	24	35 1/4	8	1 1/8	G	R-1769-A
R-2373	25 3/4	1	23 13/16	34 3/16	8	-	C	R-1922
R-2572	25 3/4	7/8	23 5/8	31 7/8	8	1 1/8	F	R-1728
R-2548	25 5/8	1	23 5/8	31 7/8	8	3 1/2	V	R-1728
R-2398	25 3/4	1 7/8	23 5/8	31 7/8	8	1 1/8	G, F	R-2572
R-2565-E	27	1 1/4	23 1/2	33 1/2	4	1 1/2	G	R-6052-D
R-2401	26	1 7/8	23 1/2	35 3/4	8	-	G	R-1723
R-2588-B	25	1 1/2	23 1/2	30	2 1/4	7/8	G	n/a
R-2401-A	24 3/4	1	23 3/8	33 1/4	7	3/4	G	R-1777
R-2390	25 3/4	7/8	23	30 1/2	7	-	C	R-1590
R-2404	25 5/8	2	23	38	10 1/2	1 1/16	G	R-2650
R-2650	25 5/8	2	23	38	10 1/2	-	G	R-1729
R-2411-A	25 3/8	1 1/4	23	38 1/2	7	3/4 x 5 1/2	G	R-1889
R-2405 *	25	1 1/2	23	38	9	-	C, A	R-1760
R-2412-A	23 3/4	1	23	31 1/4	4 5/8	1 3/8	G	R-1787
R-2412-A1	23 7/8	1	22 3/4	36 3/4	9	-	E	R-1658
R-2402	24 3/4	1	22 5/8	36	7 1/4	-	C, G	R-1671
R-2553	24	1 3/8	22 1/2	31 1/4	3	1 3/32	G	R-1553
R-2554	24	1 3/8	22 1/2	34	7	1 3/32	G	R-1554
R-2412-A3	23 7/8	1	22 3/8	34	7	-	E	R-1657-1
R-2410 **	24	1 1/2	22 1/4	34 21/32	7 15/32	-	H	R-1726-A
R-2500 *	24	1 1/2	22 1/4	34 21/32	7 15/32	2 1/4	H	R-1670-A
R-2412-A4	23 3/4	1 1/2	22 1/4	34	7	-	C	R-2668
R-2668	23 3/4	1 1/2	22 1/4	34	7	-	C	R-1668
R-2418	23 3/4	1	22	37 1/2	9	1 3/8	G	R-1771
R-2421-A	23 1/4	1 1/4	22	34	9	1 1/2	A	R-1736
R-2412-A5	23 7/8	1 1/4	22	35	6	2 1/4	H	R-1648
R-2412-A6	23 7/8	1 1/4	22	35	8	1 3/8	G	R-1649
R-2555	24	1 3/8	21 3/4	34	8	1 3/32	G	R-1555
R-2422-A1	23 3/4	1	21 3/4	35	7	-	C	R-1678-A
R-2586-K	24	3/4	21 3/4	26	1 1/4	1/2	G	R-1799-K
R-2552	23 13/16	1 25/32	21 21/32	33 15/32	6 7/8	-	Special	R-1714
R-2680	23 3/4	1	21 21/32	37 13/32	7 3/32	1 3/8	G	R-1664-A
R-2422-C	23 3/4	1	21 21/32	37 13/32	7 3/32	1 3/8	G	R-2680
R-2420-B	22 1/2	1 1/4	21 1/2	29	6	1 1/2 x 6 1/4	G	R-1776
R-2423	23 3/4	1	21 15/32	37 13/32	8 7/8	-	G, C	R-1785
R-2560-D7	22 3/4	1 1/2	21 1/4	34	4	-	Beehive	R-1647-A
R-2595-A	22 3/4	1 3/4	21 1/4	34	4	-	D	R-1647-A
R-2560-D5	22 3/4	1 1/2	21 1/4	34	4	-	Beehive	R-1647-A
R-2425	23 3/8	3/4	21 1/8	34 1/4	4	1/2	G	R-1774
R-2438	22 3/4	1 3/4	21 1/8	29	6	-	D, E,	R-1960
R-2050 *	23	1 1/2	21 1/16	35 7/16	8 7/8	-	D, C, F, G	R-1550-A
R-2070 *	23	1 1/2	21 1/16	35 7/16	8 7/8	-	G, D	R-1550-A
R-2428	23	1 1/2	21 1/16	35 7/16	8 7/8	-	C, D, F	R-1550-A
R-2560-E	23	1 1/2	21 1/16	35 7/16	8 7/8	-	Beehive	R-1550-A
R-2571-D	23	1 1/2	21 1/16	35 7/16	8 7/8	1 3/8	F	R-1550-A
R-2578	23	1 1/2	21 1/16	35 7/16	8 7/8	-	C	R-1550-A
R-2427-A	23 3/4	1 1/4	21	37 1/2	7 1/16	1 3/8	G	R-1775
R-2437	22 3/4	1 3/4	21	32 1/2	4	-	D, E	R-1647
R-2560-D6	22 3/4	1 1/2	21	34	9	-	Beehive	R-1713
R-2560-D8	22 3/4	1 1/2	21	34	9	-	Beehive	R-1713
R-2014 *	22 3/4	1 3/4	21	34	9	-	D, C, E	R-2504
R-2429	22 3/4	1 3/4	21	31 1/8	14 1/2 Adjustable	-	E, D, G	R-1672
R-2502	22 3/4	1 3/4	21	34	7	-	D, C, E, G	R-1772
R-2504	22 3/4	1 3/4	21	34	9	-	D, C, G	R-1713
R-2435	22 1/4	1	21	30	9 3/4	2 x 3 1/2	G	R-1762
R-2437-B	22 1/4	1	21	28 1/2	4 3/4	2 x 3 1/2	G	R-1762-A
R-2030	23	1 3/4	20 3/4	36	9	1 1/8 x 1 1/2	D	R-1530
R-2427	22 3/4	1 3/4	20 1/2	36	5 1/2	-	D	R-1677
R-2464 **	23	1 1/2	20 1/2	36	4	1 1/4	D	R-1689
R-2586-H	22 3/4	1 3/4	20 1/2	25 1/2	3	1 1/2	E	R-1799-H
R-2080 *	22 1/2	1 3/4	20 1/2	36	6	-	D, B, C	R-2540
R-2540	22 1/2	1 3/4	20 1/2	36	6	-	D, C	R-1580
R-2540-A	22 1/2	1 3/4	20 1/2	38	6	-	D, C	n/a

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

Dimensions in inches

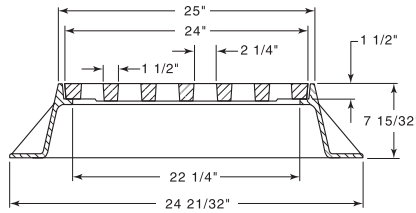
Catalog Reference	A	B	C	E	F	G	Grate Type	Frame Reference
R-2112	22	1 1/2	20 1/2	28 1/4	6	-	C, A, B, E, F, G	R-1761
R-2461-A	22	1 1/2	20 1/2	30	6	-	A, B, C, F	R-1711-A
R-2510-A	22	1 1/2	20 1/2	28 1/4	6	-	Beehive	R-1761
R-2560-C2	22	1 1/2	20 1/2	28 1/4	6	-	Beehive	R-1761
R-2560-D2	22	1 1/2	20 1/2	28 1/4	6	-	Beehive	R-1761
R-2564	22	1 1/2	20 1/2	28 1/4	6	-	Beehive	R-1761
R-2563	22	1 1/2	20 15/32	27 9/16	3 15/16	-	Beehive	R-1690
R-2510	22	1 1/2	20 15/32	27 9/16	3 15/16	-	C, A, E	R-1690
R-2120	22	1 1/2	20 15/32	27 9/16	3 15/16	-	C, A, F, G	R-2510
R-2560-C1	22	1 1/2	20 15/32	27 9/16	3 15/16	-	Beehive	R-1690
R-2560-D1	22	1 1/2	20 15/32	27 9/16	3 15/16	-	Beehive	R-1690
R-2571-A	22	1 1/2	20 15/32	27 9/16	3 15/16	1 3/8	F	R-1690
R-2586-G	22 1/4	1 1/2	20 3/8	24 3/8	2 1/4	1	G	R-1799-G
R-2535-A	22	1 1/2	20 3/8	32	4	-	C, A, B, F	n/a
R-2424-A	22 1/2	2 5/8	20 1/4	34 1/4	6 1/4	1 1/8	G	R-1524-B
R-2534	22 7/8	1 1/4	20 1/8	32	7	-	C	R-1570-A
R-2471 *	22 3/4	1 1/2	20 3/32	37 13/32	9 27/32	-	D, E	R-1661
R-2565-C	23	1 1/4	20	29 3/4	4	1 3/8	G	R-6052-C
R-2549	22 3/4	1 3/4	20	25	4 1/2	-	D, E	R-1645
R-2467	22 3/4	1 1/2	20	38	10	-	D, C, E	n/a
R-2471-B	22 1/2	1 1/2	20	34	9 1/2	-	D	R-1707
R-2466-A	22	1 1/2	20	32	8 3/4	-	B, E	R-1765
R-2060 *	22	1 1/2	20	36	6 1/2	-	C, A, B	R-1700-A
R-2090 *	22	1 1/2	20	35	9	-	A, B, C, E, G	R-2533
R-2100 *	22	1 1/2	20	33	8	-	C, A, E, F, G	R-1500
R-2110 *	22	1 1/2	20	32	6	-	A, E	R-1510-A
R-2475 *	22	1 1/2	20	36	6 1/2	-	C, A, B	R-1700-A
R-2533 *	22	1 1/2	20	35	9	-	A, B, C, E, G	R-1710
R-2535	22	1 1/2	20	32	6	-	C, A, B, F	R-1510-A
R-2560-D	22	1 1/2	20	35	9	-	Beehive	R-1710
R-2560-D3	22	1 1/2	20	35	9	-	Beehive	R-1710
R-2571-B	22	1 1/2	20	32	6	1 3/8	F	R-1510-A
R-2571-C	22	1 1/2	20	35	9	1 3/8	F	R-1710
R-2579	22	1 1/2	20	35	9	1 1/4	B	R-1710
R-2588-A	21 15/16	1 1/2	20	26	2 1/4	1 9/16	G	n/a
R-2474	21 3/4	1 1/8	20	36	8 1/2	-	A, E, G	R-1784
R-2481	21 3/4	1	19 3/4	32 1/4	8 3/4	-	A, Beehive	R-1920
R-2586-F	20 1/2	3/4	18 3/4	23	1 1/4	1	G	n/a
R-2565-A	21	2 1/2	18	27 1/2	5	1 1/4	G	R-6052-A
R-2525-F	20 1/2	5/8	18	30	5	1	G	R-1791-F
R-2570	20 1/2	5/8	18	30	5	1	G	R-1791-F
R-2494	19 1/2	1 1/2	18	29	5 1/2	3/4	G	R-2525-G***
R-2525-G	19 1/2	1 1/2	18	29	5 1/2	3/4	G	R-1791-G
R-2586-E	19 1/2	1 1/2	18	21 1/4	2	3/4	G	n/a
R-2586-D	19 3/4	1	17 1/2	21 3/4	1 5/8	1	G	n/a
R-2496	18	1	17	25	4 1/2	1 1/8	G	R-2525-E
R-2525-E	18	1	17	25	4 1/2	1 1/8	G	R-1791-E
R-2560-C	18 1/4	1 1/4	16 3/4	30	8	-	Beehive	R-1900-A
R-2586-C	18	3/4	16	19 1/4	1 1/4	7/8	E	n/a
R-2498-B	15 3/4	1 3/8	15	22	3	3/4	G	R-1910-D
R-2510-1	15 3/4	1 3/8	15	22	3	3/4	G	R-1910-D
R-2525-C	15 3/4	1 3/8	14 3/4	21	4 3/4	3/4	G	R-1910-C
R-2498-A	15 3/4	1 3/8	14 3/4	21	4 3/4	3/4	G	R-2525-C
R-2525-D	15 3/4	1 3/8	14 11/16	23	4 11/16	3/4	G	R-1910-B
R-2498	15 3/4	1 3/8	14 11/16	23	4 11/16	3/4	G	R-2525-D
R-2569	16 x 16	1/2	14 x 14	27	5	1/2	Q	n/a
R-2586-B	16	1	13 1/2	18 1/4	1 5/8	1 1/8	G	n/a
R-2586-A	14 1/4	3/4	13	16	1 1/2	7/8	E	n/a
R-2499	12	1	11	19	4	1	G	R-2525-A
R-2525-A	12	1	11	19	4	1	G	R-1791-A
R-2560-A	12	1	11	19	4	-	Beehive	R-1791-A

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2500 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2500	H	0.9	6.2



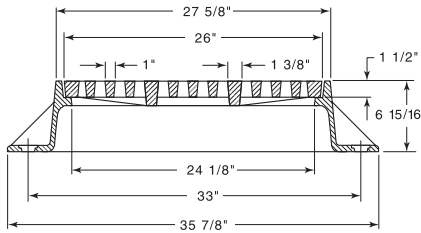
Non-Rocking feature available, see page 12.

Available Lid: R-1670-A

R-2501 Inlet Frame, Grate

Heavy Duty

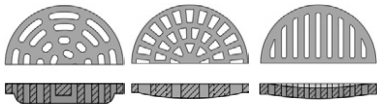
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2501	G	1.1	6.8
R-2501	A	1.1	6.8
R-2501	C	1.2	6.8
R-2501	F	1.4	6.8



Furnished with four 1" anchor holes on 33" diameter bolt circle.

Standard Grate (shown): Type G

Alternate Grate(s):

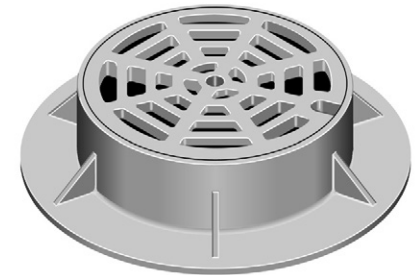
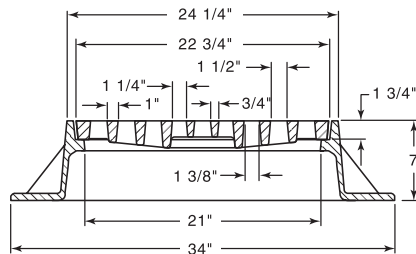


Available Lid: R-1642

R-2502 Inlet Frame, Grate

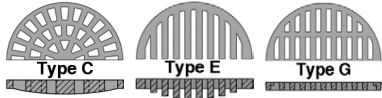
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2502	D	0.9	6.0
R-2502	G	1.3	6.0
R-2502	C	1.2	6.0
R-2502	E	1.5	6.0



Standard Grate (shown): Type D

Alternate Grate(s):

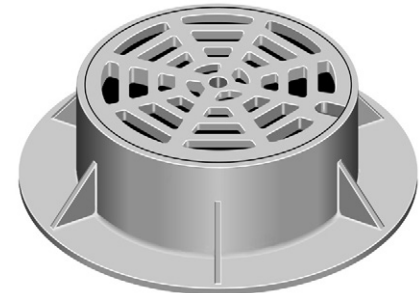
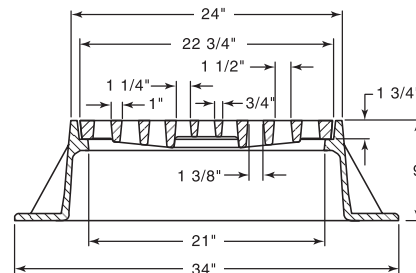


Available Lid: R-1772

R-2504 Inlet Frame, Grate

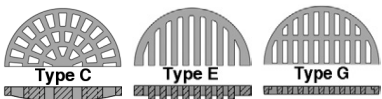
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2504	G	1.3	6.0
R-2504	D	0.9	6.0
R-2504	C	1.2	6.0



Standard Grate (shown): Type D

Alternate Grate(s):



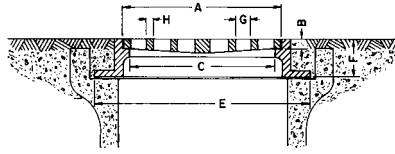
Available Lid: R-1772

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2510 Series Pipe Bell Frame, Grate

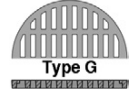
Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2533	A	1.1	5.8
R-2533	C	1.0	5.8
R-2533	B	1.2	5.8



Illustrating R-2510 with Type C Grate

Bell and spigot vitrified clay and concrete pipe are made under many specifications and dimensions vary. Check the sizes in the table to be sure they will fit the pipe you are using.

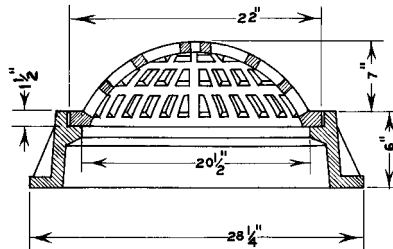


Dimensions in inches

Catalog No.	A	B	C	E	F	G	H	Pipe Size	Grate Type	Frame/Lid
R-2510	22	1 1/2	20 15/32	27 9/16	3 15/16	2 1/4	3/4	24	C	R-1690
R-2510-1	15 3/4	1 3/8	15	22	3	3/4	1	18	G	R-1910-D
R-2510-2	27 1/2	1	25 3/4	34 1/2	4	7/8	3/4	30	G	R-1773

R-2510-A Inlet Frame, Beehive Grate

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2510-A	Beehive	1.1	5.8



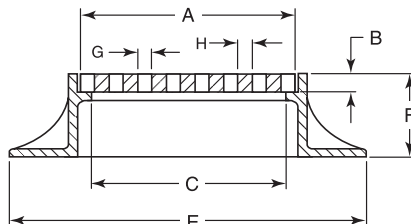
For additional beehive grates, see the R-2560 Series.

Available Lid: R-1761

R-2525 Series Inlet Frame, Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2525-A	E	0.2	3.1
R-2525-C	G	0.4	4.1
R-2525-D	G	0.4	4.1
R-2525-E	E	0.6	4.7
R-2525-F	G	0.8	5.4
R-2525-G	G	0.8	5.1



Illustrating R-2525-A

Dimensions in inches

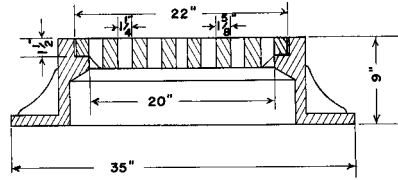
Catalog No.	A	B	C	E	F	G	H	Frame/Lid
R-2525-A	12	1	11	19	4	1	1	R-1791-A
R-2525-C	15 3/4	1 3/8	14 3/4	21	4 3/4	3/4	1	R-1910-C
R-2525-D	15 3/4	1 3/8	15	23	4 3/4	3/4	1	R-1910-B
R-2525-E	18	1	17	25	4 1/2	1 1/8	1 1/4	R-1791-E
R-2525-F	20 1/2	5/8	18	30	5	1	7/8	R-1791-F
R-2525-G	19 1/2	1 1/2	18	29	5 1/2	3/4	3/4	R-1791-G

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2533 Inlet Frame, Grate

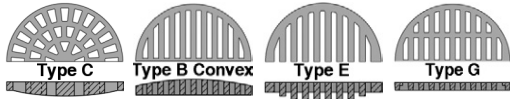
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2533	A	1.1	5.8
R-2533	C	1.0	5.8
R-2533	B	1.2	5.8



Non-Rocking feature available, see page 10.

Standard Grate (shown): Type A
 Alternate Grate(s):

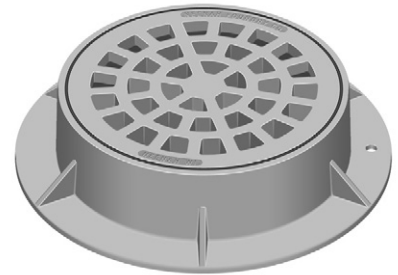
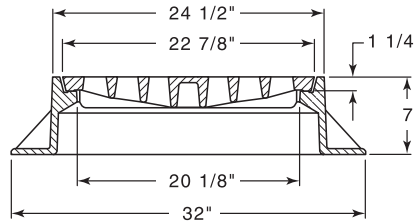


Available Lid: R-1710

R-2534 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2534	C	0.9	6.0

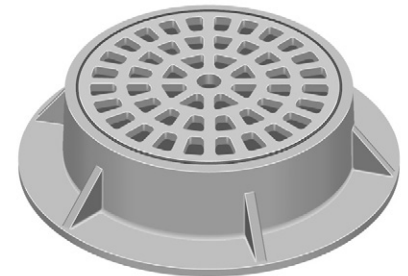
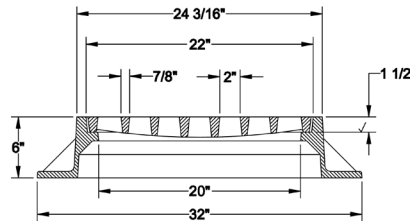


Available Lid: R-1570-A

R-2535 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2535	C	1.1	5.8
R-2535-A	C	1.1	5.8



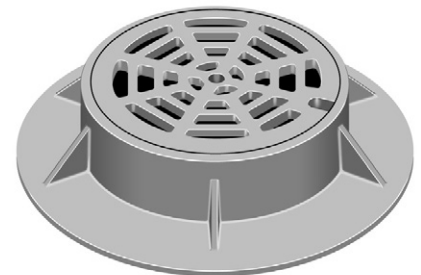
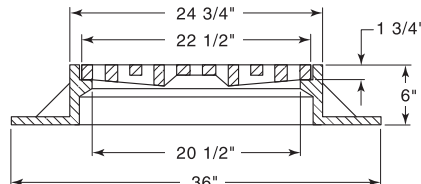
Available with 4" high frame, order as R-2535-A.
 Also available with 38" diameter frame flange.

Available Lid: R-1510-A

R-2540 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2540	D	1.1	5.9
R-2540-A	D	1.1	5.9



Available with 38" diameter frame, order as R-2540-A.

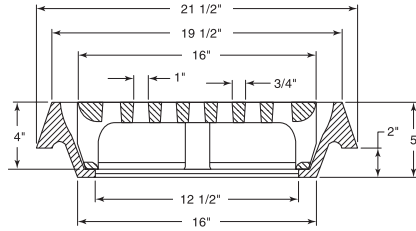
Available Lid: R-1580

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2545
Special Drain, Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2545	K	0.4	4.7

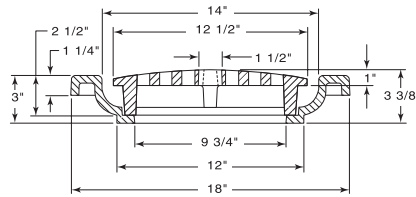


Storm drain for 18" tile pipe. Fits bell or spigot end.
 Grate is removable. Opening in outer diameter permits leaves and debris to wash through, eliminating clogging.

R-2546
Special Drain, Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2546	K	0.4	3.5

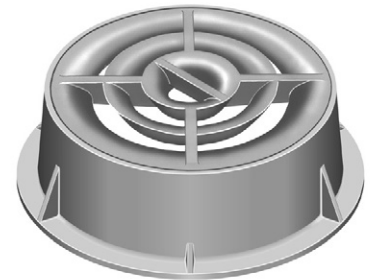
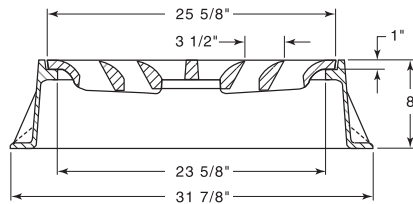


Storm drain for 15" tongue and groove reinforced concrete pipe. Fits bell or spigot end.
 Grate is removable. Opening in outer diameter permits leaves and debris to wash through, eliminating clogging.

R-2548
Inlet Frame, Vane Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2548	V	0.8	6.7

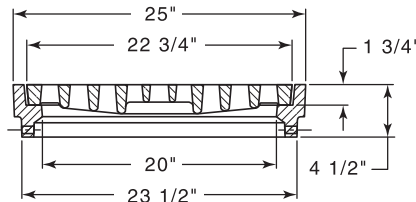


Available Lid: **R-1728**

R-2549
Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2549	D	0.9	6.0



Four 5/8" holes in side for bolting to corrugated pipe.
 Furnished only when specified.
 Fits inside 24" corrugated metal pipe.

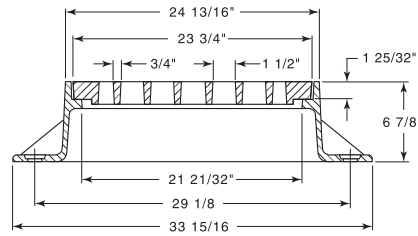
Available Lid: **R-1645**

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2552
Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2552	K	0.8	6.2



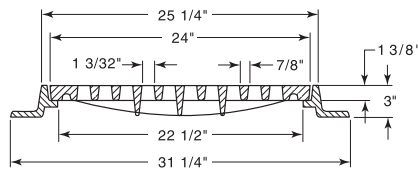
Furnished with four 1" anchor holes on 29-1/8" diameter bolt circle.

Available Lid: R-1714

R-2553
Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2553	G	1.1	6.3

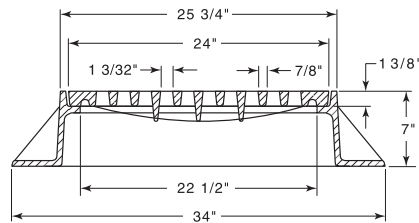


Available Lid: R-1553

R-2554
Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2554	G	1.1	6.3

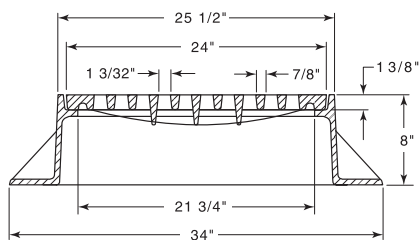


Available Lid: R-1554

R-2555
Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2555	G	1.1	6.3



Available Lid: R-1555

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2556 Inlet Frame, Grate

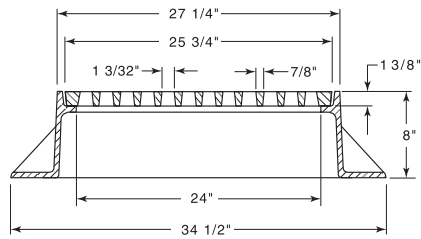
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2556	G	1.5	6.7
R-2556	F	1.4	6.7

Standard Grate (shown): Type G
 Alternate Grate(s):



Available Lid: R-1556

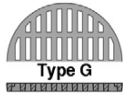


R-2556-A Inlet Frame, Concave Grate

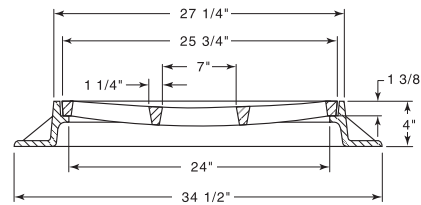
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2556-A	F	1.4	6.7
R-2556-A	G	1.5	6.7

Standard Grate (shown): Type F
 Alternate Grate(s):



Available Lid: R-1556

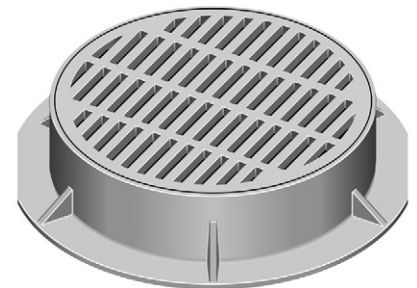
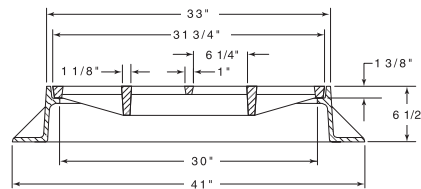


R-2557 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2557	G	2.0	8.4

Available Lid: R-1557

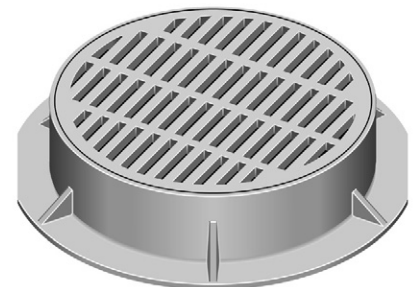
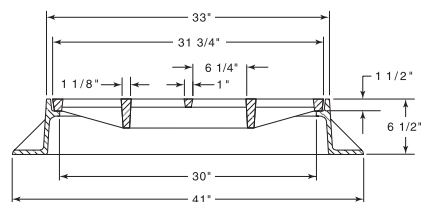


R-2557-A Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2557-A	G	2.0	8.4

Available Lid: R-1557-A

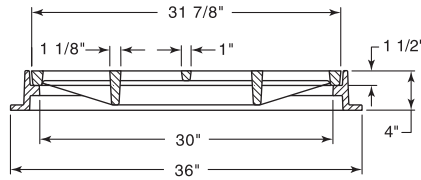


■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2557-A4
Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2557-A4	G	2.0	8.4

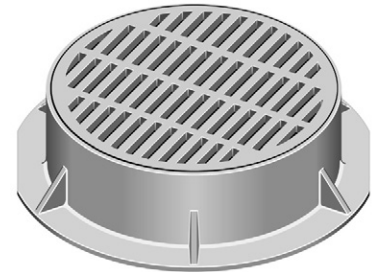
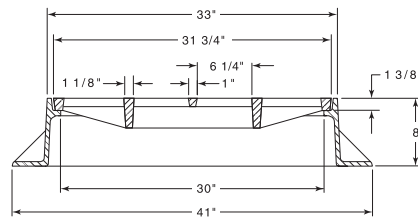


Available Lid: R-1557-A4

R-2558
Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2558	G	2.0	8.4

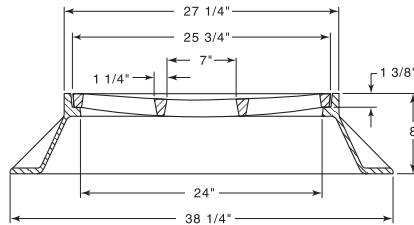


Available Lid: R-1558

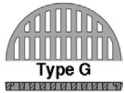
R-2559
Inlet Frame, Concave Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2559	F	1.4	6.7
R-2559	G	1.4	6.7



Standard Grate (shown): Type F Concave
 Alternate Grate(s):

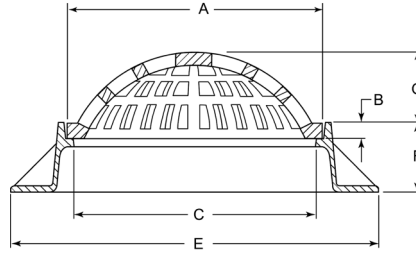


Available Lid: R-1559

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2560 Series Inlet Frame, Beehive Grate

Suitable for drainage in circumstances where clogging of a flat grating is a problem. Excellent for roadside or earth ditch inlets.



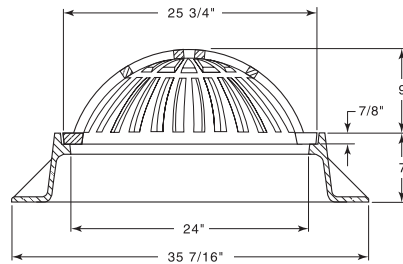
Illustrating R-2560-E

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2560-A	Beehive	0.3	3.1
R-2560-C	Beehive	0.7	4.7
R-2560-C1	Beehive	0.7	5.8
R-2560-C2	Beehive	0.7	5.8
R-2560-D	Beehive	1.0	5.1
R-2560-D1	Beehive	1.2	5.8
R-2560-D2	Beehive	1.2	5.8
R-2560-D3	Beehive	1.2	5.8
R-2560-D5	Beehive	1.0	5.1
R-2560-D6	Beehive	1.0	5.1
R-2560-D7	Beehive	1.3	5.3
R-2560-D8	Beehive	1.3	5.3
R-2560-E	Beehive	1.2	6.0
R-2560-EA	Beehive	1.2	6.7
R-2560-EB	Beehive	1.8	6.7
R-2560-E1	Beehive	1.4	6.7
R-2560-E2	Beehive	2.0	6.7
R-2560-E5	Beehive	1.2	6.7
R-2560-E6	Beehive	1.8	6.7
R-2560-E7	Beehive	1.2	6.7
R-2560-E8	Beehive	1.8	6.7
R-2560-E9	Beehive	1.2	6.7
R-2560-E10	Beehive	1.8	6.7
R-2560-G	Beehive	1.5	8.4

Catalog No.	Dimensions in inches						Frame/Lid
	A	B	C	E	F	G	
R-2560-A	12	1	11	19	4	3 1/4	R-1791-A
R-2560-C	18 1/4	1 1/4	16 3/4	30	8	4	R-1900-A
R-2560-C1	22	1 1/2	20 15/32	27 9/16	3 15/16	4 1/2	R-1690
R-2560-C2	22	1 1/2	20 1/2	28 1/4	6	4 1/2	R-1761
R-2560-D	22	1 1/2	20	35	9	4 1/2	R-1710
R-2560-D1	22	1 1/2	20 15/32	27 9/16	3 15/16	7	R-1690
R-2560-D2	22	1 1/2	20 1/2	28 1/4	6	7	R-1761
R-2560-D3	22	1 1/2	20	35	9	7	R-1710
R-2560-D5	22 3/4	1 1/2	21 1/4	34	4	4 1/2	R-1647-A
R-2560-D6	22 3/4	1 1/2	21	34	9	4 1/2	R-1713
R-2560-D7	22 3/4	1 1/2	21 1/4	34	4	7	R-1647-A
R-2560-D8	22 3/4	1 1/2	21	34	9	7	R-1713
R-2560-E	23	1 1/2	21 1/16	35 7/16	8 7/8	7	R-1550-A
R-2560-E1	25 3/4	7/8	24	35 7/16	7	6	R-1733
R-2560-E2	25 3/4	7/8	24	35 7/16	7	9	R-1733
R-2560-E5	25 3/4	7/8	24 1/8	35 1/2	8	6	R-1733-A
R-2560-E6	25 3/4	7/8	24 1/8	35 1/2	8	9	R-1733-A
R-2560-E7	25 3/4	7/8	24 1/8	35 1/2	9	6	R-1733-B
R-2560-E8	25 3/4	7/8	24 1/8	35 1/2	9	9	R-1733-B
R-2560-E9	25 3/4	7/8	24 1/8	35 1/2	10	6	R-1733-C
R-2560-E10	25 3/4	7/8	24 1/8	35 1/2	10	9	R-1733-C
R-2560-EA	25 3/4	7/8	24 1/8	35 7/16	4	6	R-1733-1
R-2560-EB	25 3/4	7/8	24 1/8	35 7/16	4	9	R-1733-1
R-2560-G	32	1 1/2	30	46	7	4	R-1740-B

R-2561 Inlet Frame, Beehive Grate

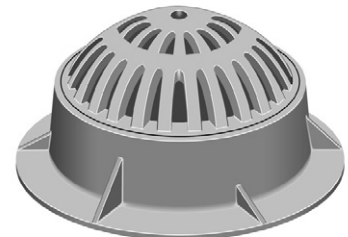
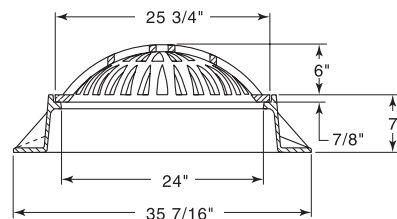
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2561	Beehive	2.0	6.7



Available Lid: R-1733

R-2561-A Inlet Frame, Beehive Grate

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2561-A	Beehive	1.2	6.7

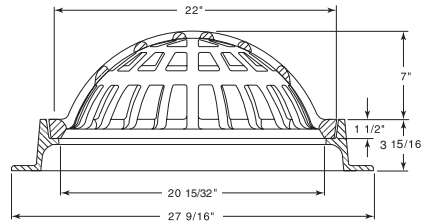


Available Lid: R-1733

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2563 Inlet Frame, Beehive Grate

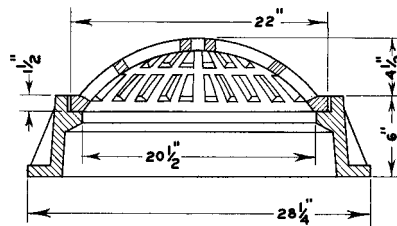
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2563	Beehive	1.2	5.8



Available Lid: **R-1690**

R-2564 Inlet Frame, Beehive Grate

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2564	Beehive	1.0	5.8

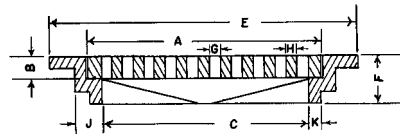


Available Lid: **R-1761**

R-2565 Series Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2565-A	G	0.8	5.5
R-2565-C	G	1.2	6.0
R-2565-E	G	1.8	7.1
R-2565-F	G	1.8	7.1
R-2565-G	G	1.6	7.1
R-2565-H	G	1.9	7.6
R-2565-J	G	2.4	8.5



For Frame/Lid alternatives, see the **R-6052 Series**.

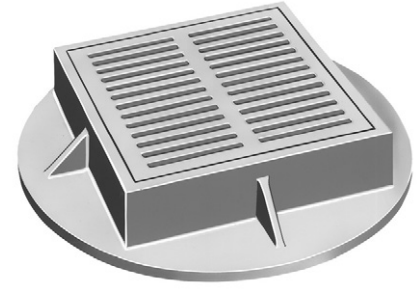
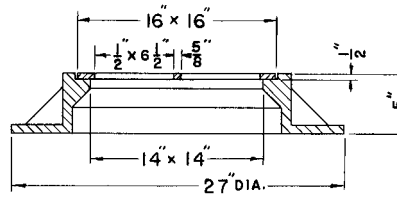
Catalog No.	Dimensions in inches									Frame/Lid
	A	B	C	E	F	G	H	J	K	
R-2565-A	21	2 1/2	18	27 1/2	5	1 3/8	1	2 7/8	1	R-6052-A
R-2565-C	23	1 1/4	20	29 3/4	4	1 3/8	1	2 1/2	1	R-6052-C
R-2565-E	27	1 1/4	23 1/2	33 1/2	4	1 1/2	1	2 1/4	3/4	R-6052-D
R-2565-F	27	2 1/2	24	33 1/2	5	1 1/2	1	2 7/8	1	R-6052-G
R-2565-G	27	2 1/2	24	33 1/2	5	1 1/2	1	2 7/8	1	R-6052-G
R-2565-H	29	1 3/4	27	35	6	1	1	2 7/8	1	R-6052-H
R-2565-J	32 3/8	2	30	39 1/2	6	1 1/2	1	2 7/8	1	R-6052-J

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2569
Inlet Frame, Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2569	Q	0.6	5.3

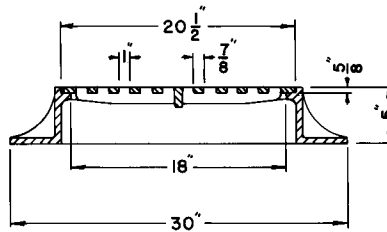


Type Q grate with small 1/2" wide openings.
 Especially suited for use in walkways, park shelter buildings and commercial basement drains.

R-2570
Inlet Frame, Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2570	G	0.8	5.4

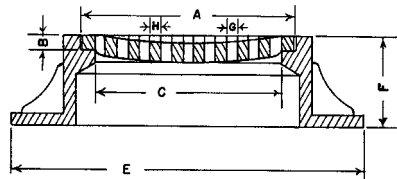


Available Lid: R-1791-F

R-2571 Series
Inlet Frame, Concave Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2571-A	F	0.9	5.8
R-2571-B	F	1.1	5.8
R-2571-C	F	0.9	5.8
R-2571-D	F	0.7	6.0
R-2571-E	F	1.2	6.8



Illustrating R-2571-C

Dimensions in inches

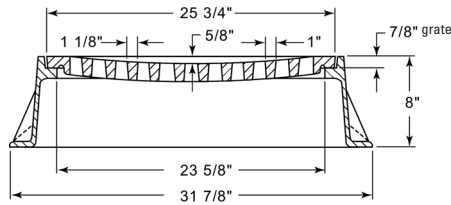
Catalog No.	A	B	C	E	F	G	H	Conc. Frame/Lid
R-2571-A	22	1 1/2	20 15/32	27 9/16	3 15/16	1 3/8	1	R-1690
R-2571-B	22	1 1/2	20	32	6	1 3/8	1	R-1510-A
R-2571-C	22	1 1/2	20	35	9	1 3/8	1	R-1710
R-2571-D	23	1 1/2	21 1/16	35 7/16	8 7/8	1 3/8	1	R-1550-A
R-2571-E	26	1 1/2	24 1/8	35 7/8	6 15/16	1 1/8	1	R-1642

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2572 Inlet Frame, Concave Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2572	F, C	1.3	6.7



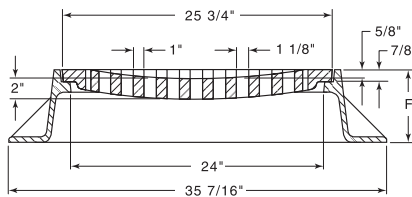
Frame 1"

Available Lid: R-1728
 Available with C grate

R-2573 Series Inlet Frame, Concave Grate

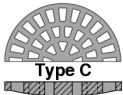
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2573-Series	F	1.3	6.7
R-2573-Series	C	1.6	6.7



Illustrating R-2573-B with Type F Concave Grate

Alternate Grate(s):

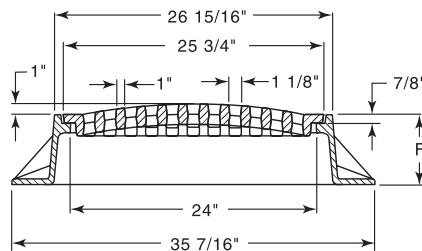


Catalog No.	F	Frame/Lid
R-2573	7	R-1733
R-2573-1	4	R-1733-1
R-2573-A	8	R-1733-A
R-2573-B	9	R-1733-B
R-2573-C	10	R-1733-C

R-2577 Series Inlet Frame, Convex Grate

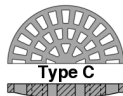
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2577-Series	B	1.0	6.7
R-2577-Series	C	1.6	6.7



Illustrating R-2577-B with Type B Concave Grate

Alternate Grate(s):



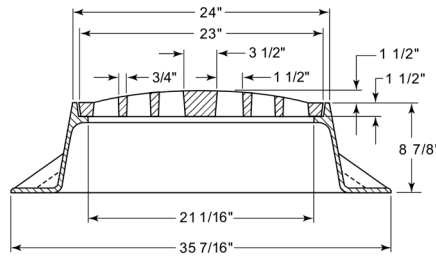
Catalog No.	F	Frame/Lid
R-2577	7	R-1733
R-2577-1	4	R-1733-1
R-2577-A	8	R-1733-A
R-2577-B	9	R-1733-B
R-2577-C	10	R-1733-C

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

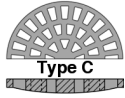
R-2578 Inlet Frame, Convex Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2578	C	1.0	6.0



Standard Grate (shown): Type C Convex
 Alternate Grate(s):

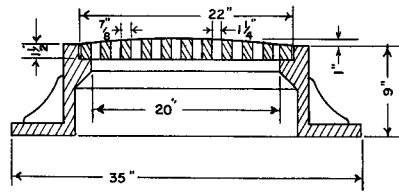


Available Lid: R-1550-A

R-2579 Inlet Frame, Convex Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2579	B	1.3	5.8

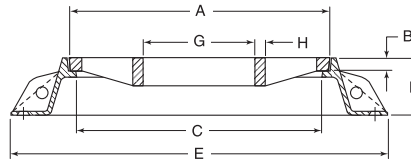


Available Lid: R-1710

R-2580 Series Inlet Frame, Grate

Heavy Duty

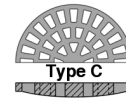
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2580-A1	C	1.1	8.4
R-2580-A	G	1.9	8.4
R-2580-C	G	3.0	9.9



Illustrating R-2580-A with Type G Grate

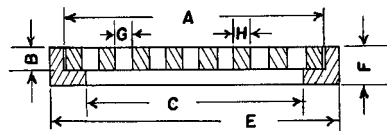
Square flange available, see R-1795 Series.

Catalog No.	Dimensions in inches								Type	Frame/Lid
	A	B	C	E	F	G	H			
R-2580-A	31 7/8	1 1/2	30	46	7	1 x 6 1/4	1	G	R-1740-B	
R-2580-A1	32	1 1/2	30	46	7	-	1	C	R-1740-B	
R-2580-C	38	1 1/2	36	49	10	1 x 6	1	G	R-1740-D	

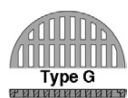


R-2586 Series Angle Frame, Grate

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2586-A	E	0.4	3.8
R-2586-B	G	0.5	4.2
R-2586-C	E	0.6	4.7
R-2586-D	G	0.8	5.2
R-2586-E	G	0.8	5.1
R-2586-F	G	0.8	5.4
R-2586-G	G	1.0	5.8
R-2586-H	E	1.3	6.0
R-2586-K	G	1.3	6.3
R-2586-M	G	1.8	7.0
R-2586-N	G	1.7	7.9
R-2586-O	G	1.9	8.4



Illustrating R-2586-A with Type E Grate



Catalog No.	Dimensions in inches								Type	Duty
	A	B	C	E	F	G	H			
R-2586-A	14 1/4	3/4	13	16	1 1/2	3/4	1	E	Light	
R-2586-B *	16	1	13 1/2	18 1/4	1 5/8	1 1/8	1	G	Heavy	
R-2586-C **	18	3/4	16	19 1/4	1 1/4	7/8	3/4	E	Light	
R-2586-D * **	19 3/4	1	17 1/2	21 3/4	1 5/8	1	3/4	G	Light	
R-2586-E **	19 1/2	1 1/2	18	21 1/4	2	3/4	3/4	G	Light	
R-2586-F *	20 1/2	3/4	18 3/4	23	1 1/4	1	1	G	Light	
R-2586-G **	22 1/4	1 1/2	20 3/8	24 3/8	2 1/4	1 1/4	1	G	Heavy	
R-2586-H *	22 3/4	1 3/4	20 1/2	25 1/2	3	1 1/2	1	E	Heavy	
R-2586-K	24	3/4	21 3/4	26	1 1/4	1/2	1/2	G	Light	
R-2586-M	26 5/8	3/4	24	28 1/4	1 3/8	7/8	11/16	G	Light	
R-2586-N	30	1	27 1/2	33	1 3/4	1 1/4	1	G	Light	
R-2586-O	32	1	30	34	2 1/4	1 1/4	1	G	Light	

* Furnished standard with machined horizontal bearing surfaces. All others have as-cast surfaces.

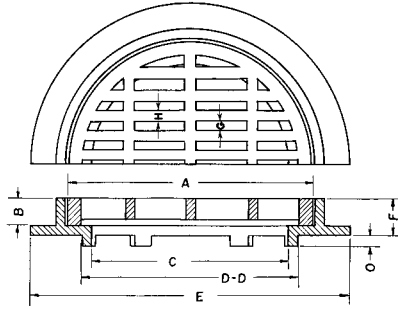
** Cast integral frame anchors available if specified.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2588 Series Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2588-A	G	1.1	5.8
R-2588-B	G	1.0	6.5
R-2588-C	G	1.9	7.6



Illustrating R-2588-C

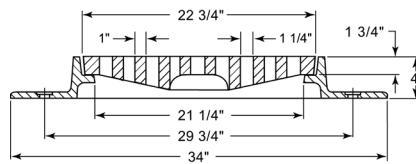
Catalog No.	Dimensions in inches									
	A	B	C	D-D	E	F	G	H	O	Pipe Size
R-2588-A *	21 15/16	1 1/2	20	21 1/8	26	2 1/4	1 9/16	1	3/4	18
R-2588-B	25	1 1/2	23 1/2	25	30	2 1/4	7/8	1 1/2	1 1/4	21
R-2588-C	29	3	24	25 1/4	37	3 1/2	3/4	1	1 1/4	24

* With continuous anchor ring in place of bottom lugs as illustrated.

R-2595-A Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2595-A	D	1.2	6.0



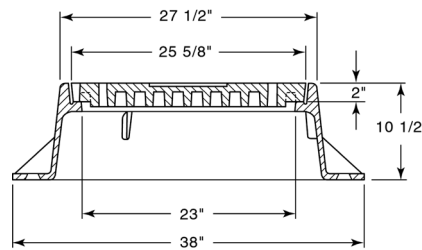
Furnished with six 3/4" anchor holes on 29-3/4" diameter bolt circle.

Available Lid: R-1647-A

R-2650 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2650	G	1.1	6.7



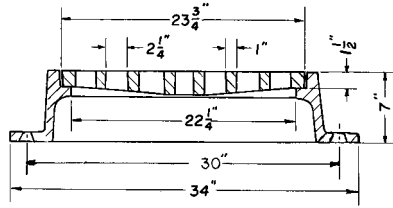
Furnished with four 1" anchor holes on 35-1/2" diameter bolt circle.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-2668 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2668	C	0.9	6.2



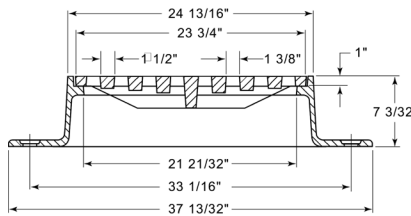
Furnished with four 3/4" anchor holes on 30" diameter bolt circle.

Available Lid: **R-1668**

R-2680 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2680	G	1.1	6.2



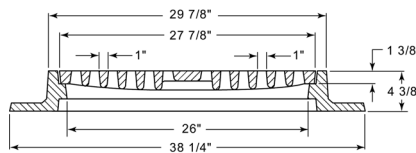
Furnished with four 1" anchor holes on 33-1/16" diameter bolt circle.

Available Lid: **R-1664-A**

R-2682 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2682	A	1.5	7.3

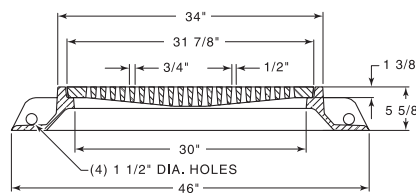


Available Lid: **R-1682**

R-2750 Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2750	Q	1.8	8.3



Furnished with four 1" anchor holes on 43-1/2" diameter bolt circle.

Available Lid: **R-1640-C1S**

CHOOSING THE PROPER INLET GRATE

Adopting an inlet grate design requires an analysis of the functions the grate should perform. A designer must review the drainage requirements and then specify which functions will be necessary for satisfactory grate and all other performance requirements of each application. For example, if the only consideration is for the grate to efficiently intercept large quantities of stormwater from the gutter, then a grate with the proper geometry and flow-through area is the one to choose. Although capacity is an important function, there are other considerations that must be evaluated to satisfy the requirements of a functional, correctly located, safe grate. Designers must note that there may be other considerations in addition to those listed below that should be evaluated prior to making a choice. **SEE, ESPECIALLY, "IMPORTANT INFORMATION ON CHOOSING THE RIGHT CASTING FOR YOUR APPLICATION," BEGINNING ON PAGE 7 OF THIS CATALOG, INCLUDING THE MATERIAL THERE CONCERNING HANDICAPPED PERSON, PEDESTRIAN AND BICYCLE SAFETY CONCERNS.**

CONSIDERATIONS FOR HANDICAPPED PERSONS, BICYCLES AND PEDESTRIANS

Design and placement of the grate must be suitable for use in areas where handicapped persons, bicycles and pedestrians may be present.

The adoption of the Americans with Disabilities Act (ADA), the prominence of narrow-tired bicycles and concern for pedestrian safety dictates that designers carefully consider the safety of the type of grating selected for various applications. If the installation is changed in concept, scope or usage pattern at some future date, designers must at that time reconsider the types of gratings used and determine if they still meet their safety requirements. If not, designers must replace these existing grates with more appropriate styles.

GRATES FOR BICYCLES

The designer must determine the appropriate grate design and inlet location for safe use by bicycle traffic, having in mind the specific details of location and foreseeable use. The following are some important considerations:

1. The style of grate employed should allow bicycle travel from all accessible directions. Grates located in open areas, or adjacent to driveways, or in other locations where they are not adjacent to barrier curbs require special attention in this regard.
2. In general, we suggest consideration of our Type "L" vane style grates. Certain grates shown in our catalog are generally not suitable for use where bicycle traffic is a consideration. The designer is responsible for making the appropriate grate selection.
3. If slotted grates or vane-type grates other than our Type "L" are considered, they should have sufficiently narrow openings and/or should have appropriately spaced transverse (cross) bars to ensure that any foreseeable width and diameter of bicycle tire cannot drop down into openings to an unsafe extent.
4. Gutter slopes should not be substantially swaled into the curb so as to create a disturbance in the roadway, which might affect the ability of bicycles or other traffic to traverse them.

GRATES FOR PEDESTRIANS AND HANDICAPPED

Various regulations or customs may dictate the use of specific types of grates, such as gratings with longitudinal slope openings no greater than 1/4" or 1/2". Designers must carefully evaluate the location and placement of grates against applicable specifications to be sure they are using grates that will satisfy the specification's requirement and provide a pathway (accessible route) for pedestrians and handicapped persons. The Americans with Disabilities Act (ADA) provides grating specification guidelines that can be used in creating accessible routes for handicapped individuals.

HYDRAULIC EFFICIENCY

The ability of a grate to intercept stormwater or its hydraulic efficiency is an important function. The main considerations in design are the geometry and the flow-through area of the openings for each individual grate. Neenah has recognized the designers need for hydraulic information on individual grates. We studied individual grate performance by establishing our own hydraulic testing program and are now capable of supplying grate capacity information on the grates shown in this catalog. Please contact us for specific charts and information.

SCREENING OUT HARMFUL DEBRIS

An inlet grate must act as a strainer and prevent harmful debris from entering sewer lines. Objects such as branches, large sheets of semi rigid material, sticks, chunks of wood, etc. which are easily passed by large curb openings (open throat) are conveniently prevented from entering the catch basin by a well chosen grate.

If large debris gets into the catch basin, it can often float or wash into the lines, clogging them at inaccessible locations and making the drainage system ineffective.

Should clogging of the grate occur at the upstream end, grates of longer lengths usually provide the extra flow-through capacity necessary to accommodate the gutter flow as well as some of the side flow.

ABILITY TO PASS UNOBJECTIONABLE DEBRIS

Organic material such as grass clippings, leaves, small stones, scraps of paper and even small twigs should be passed into the catch basin. Because of their size and configuration they are not a hazard for the sewer lines.

Grates designed with closely spaced bars for strength and safety become easily clogged from very small but always present debris. The problem is magnified even more as this debris is packed into the openings by passing traffic creating a hard, semi-solid surface. If the velocity of the gutter flow is insufficient to dislodge the packed debris, the grate becomes ineffective.

The answer then is to provide grate openings wide enough, of suitable length or of special design to pass this debris and still meet the other requirements. Neenah has many sizes and styles that can be implemented into your designs.

STRENGTH

Inlet grates placed in roadways must be designed to withstand heavy traffic loads. A common designation for standard highway loads is described as H20-44 loading for single axle trucks and HS20-44 for tandem axle trucks (tractor semi-trailer units). The maximum axle loading in both cases is 32,000 lbs, or 16,000 lbs. for each set of dual wheels. There may be cases where more extreme design loads are necessary such as airports, commercial applications, industrial sites or installations where extra heavy loads and/or extremely hard tires are present. Refer to page 5, "**Castings for Different Traffic Conditions**" for additional information.

DURABILITY

A gutter inlet grate should be designed to match or exceed the expected life of the installation. The inherent rust-resisting properties of unpainted cast iron and its time-tested performance insures long life. The strength of cast iron grates resists earth and pavement pressures – qualities one should question in other non-cast iron materials.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

STORMWATER MANAGEMENT WITH NEENAH GRATES

An important consideration in any stormwater management plan is the proper selection and use of drainage grates. The Neenah line of inlet, area and drainage grates offers hundreds and hundreds of choices. Different shapes, sizes and geometry provide varying capacities which can match your inlet and outlet control requirements.

When runoff conditions overtax sewer lines or treatment capacity, engineers frequently detain excess stormwater by temporarily impounding storm water in suitable depressed open space areas, parking lots or other available basin type structures. With Neenah capacity rated grates, ponded water can be slowly released at a controlled rate as sewer lines and treatment facilities are able to accept new discharges.

SEE "IMPORTANT INFORMATION ON CHOOSING THE RIGHT CASTING FOR YOUR APPLICATION," BEGINNING ON PAGE 7 OF THIS CATALOG, INCLUDING THE MATERIAL THERE CONCERNING HANDICAPPED PERSONS, PEDESTRIANS AND BICYCLE SAFETY CONCERNS.

Specific applications of Neenah drainage grate products include:



MEDIAN DRAIN AND FREEWAY DRAINAGE

Stormwater management on freeways is important so that roads are safe for motorists during wet weather. Neenah offers a variety of choices for inlet boxes, median inlets or ditch checks.



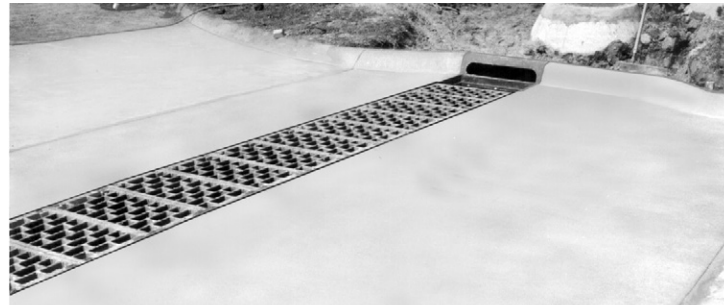
TRENCH FRAME AND GRATE

For draining large impervious areas, many designers specify Neenah trench drains. Sizes range from 6" to 48" widths. Drains can be installed in any length with direction changes to suit the area and drainage conditions.



HIGH CAPACITY VANE STYLE TYPE "L"

Neenah's high capacity vane style grates offer designers the best combination of hydraulic efficiency and safety for triangular gutter slope applications.



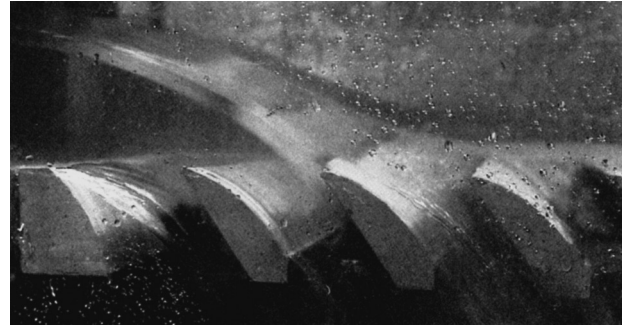
SHEET FLOW INTERCEPTING GRATES

There are numerous occasions when designers desire to remove sheet flow from streets or parking lots. Neenah has addressed this need with specialized castings suited for various situations.

TYPE "L" VANE STYLE GRATES

CAPACITY

An important function of an inlet grate is capacity – the ability to intercept the stormwater from the gutter. Hydraulic tests prove the Type "L" Vane Style Grates will accept more water than any of the conventional grate styles under virtually all flow conditions. Even with extremely high volume and velocity conditions in the gutter, there will be very little if any water that the grate will not capture, providing the water passes over it. The efficiency of these grates can be as much as 20% greater than conventional designs. For this reason, an ever increasing number of states, counties and municipalities have adopted the Type "L" Vane Style Grate as a standard.



Cross section of Vane Style Grate in testing flume showing hydraulic performance at 2 cfs.

GRATE PLACEMENT

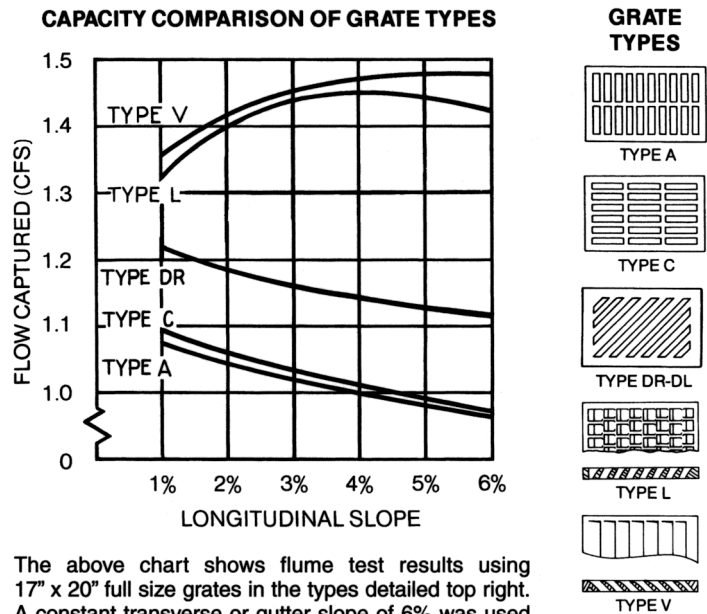
Type "L" Vane Style Grates are being used in grate replacement programs in many cities throughout the country, not only because of their stormwater capacity features, but also because they are more likely to be safe for bicycles than many other styles of grates. A replacement high capacity Type "L" grate can be dimensioned to fit most catch basin inlets. Our Product Engineering and Sales Departments are available to assist you in developing your grate replacement program.

BICYCLE GRATES

Please read in its entirety "**Pedestrian, Bicycle and Handicap Considerations**" on page 7, in which we suggest consideration of Type "L" vane style grates where bicycles are a factor in the choice of a casting.

DEBRIS

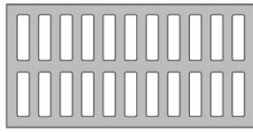
A properly functioning inlet grate such as the Type "L" Vane Style Grate must screen out the larger harmful debris and prevent it from entering and clogging the sewer pipe. Small debris, which can be easily handled by the underground portions of the storm sewer, are allowed to pass through the grate openings to prevent blockage on the surface of the grate.



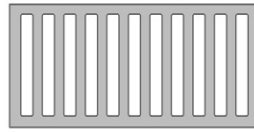
The above chart shows flume test results using 17" x 20" full size grates in the types detailed top right. A constant transverse or gutter slope of 6% was used to contain more water over the grate. The gutter flow in the channel was set at 2 cfs. Note the improved performance of the Type "L" and "V" Vane Grates.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

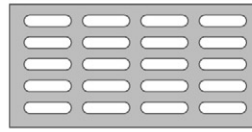
INLET GRATE TYPES CURB FACE TYPES



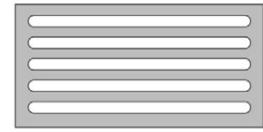
Type A



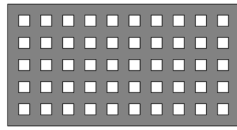
Type B



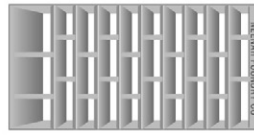
Type C



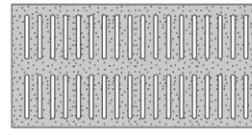
Type D



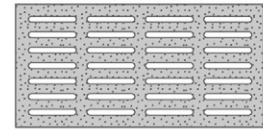
Type H



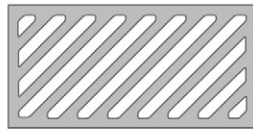
Type L



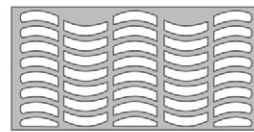
Type P



Type Q



Type R

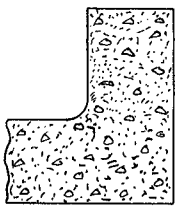


Type S

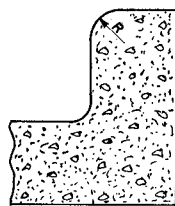


Type V

The templates shown illustrate a few of the many types of curb sections, which can be properly matched with the catch basin inlets shown on the following pages. As noted, curb boxes can be adjusted to match concrete curb heights.



SQUARE



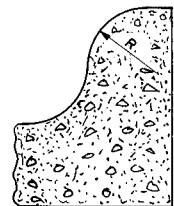
VERTICAL 1' & 2' RAD.



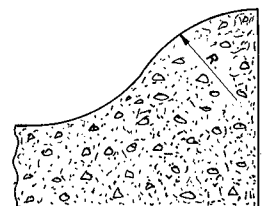
6" D' 6" RAD.



TAPER 1' & 2' RAD.



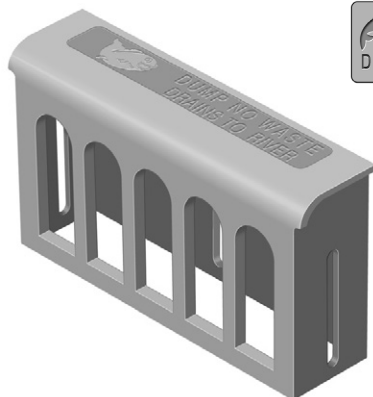
SEMI ROLL 3" RAD.



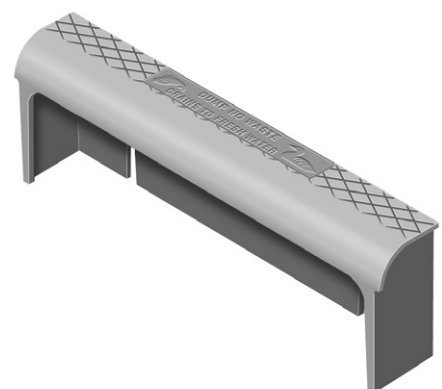
ROLL 6" RAD.

ENVIRO-CURB LOGOS

As noted on the following catalog items, our curb boxes and curb plates can be furnished with Environmental Notices, which address specific drainage situations. If your installation requires such a notice, please contact Neenah for specific availability and needs.



Illustrating R-3000-A



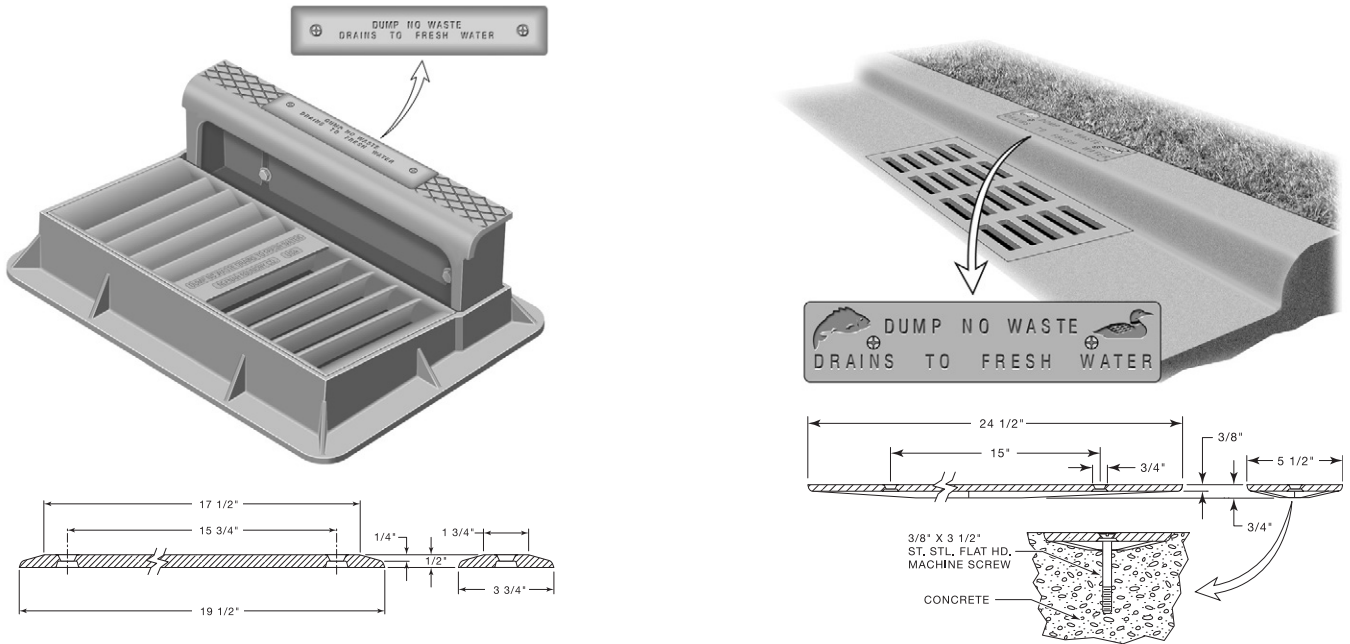
■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3000 Series EnviroNotice Plates

Catalog No.	Type
R-3000-A	Cast into Curb
R-3000-B	Surface Mount

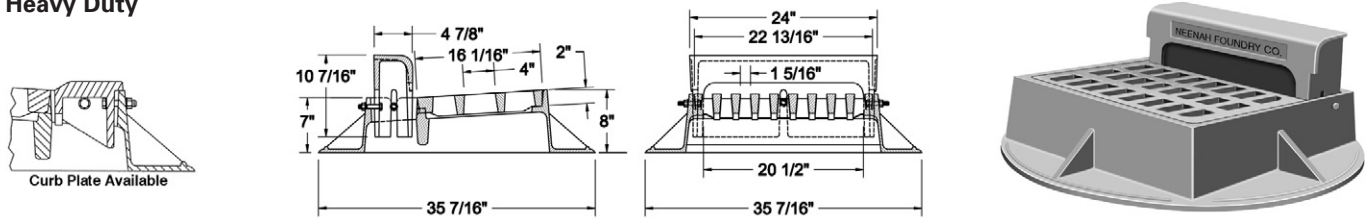
COMBINATION
 INLETS

3



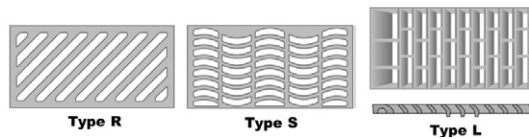
R-3010 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3010	S	1.0	4.6
R-3010	A	1.0	4.6
R-3010	L	0.9	4.6
R-3010	R	1.1	4.6

Standard Grate (shown): Type A
 Alternate Grate(s):

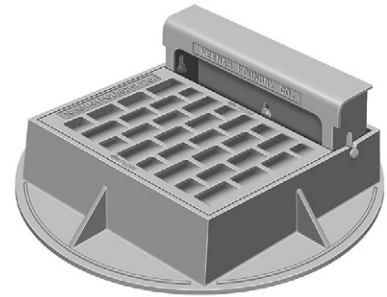
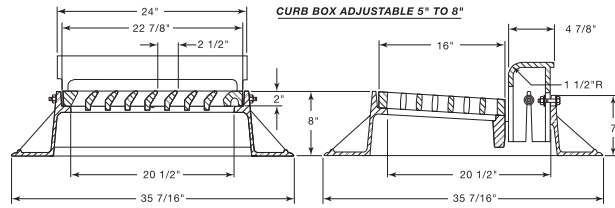


Available Curb Boxes: 1-1/2" Radius Open (standard), 3" Radius Open, 1-1/2" Radius Barred, 6" Radius Open
 Enviro-Curb Boxes and Enviro-Curb Plates available, see above and page 121.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3010-L Combination Inlet Frame, Grate, Curb Box

Heavy Duty



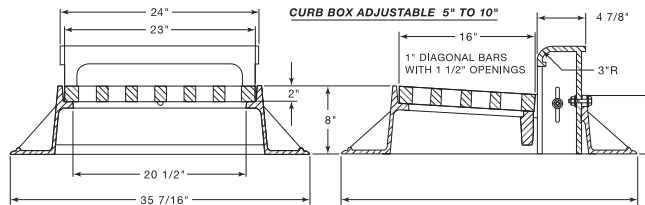
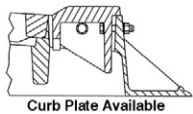
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3010-L	L	0.9	4.6

Available Curb Boxes: 1-1/2" Radius Open (standard)
 Enviro-Curb Boxes available, see page 121.

COMBINATION INLETS
3

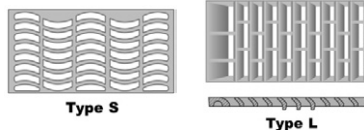
R-3015 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3015	L	0.9	4.6
R-3015	R	1.1	4.6
R-3015	S	1.0	4.6
R-3015	A	1.0	4.6

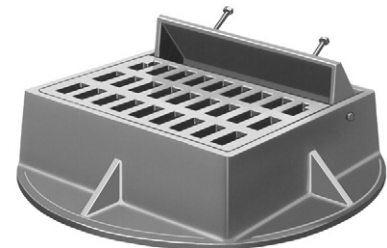
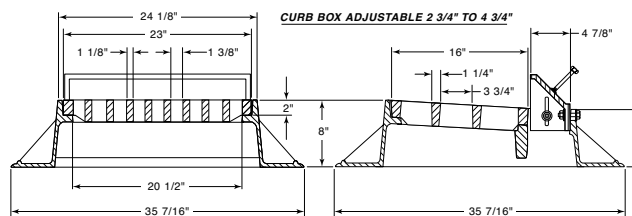
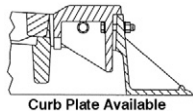
Standard Grate (shown): Type R-diagonal
 Alternate Grate(s):



Available Curb Boxes: 1-1/2" Radius Open (standard), 3" Radius Open, 1-1/2" Radius Barred, 6" Radius Open
 Enviro-Curb Boxes and Enviro-Curb Plates available, see above and page 121.

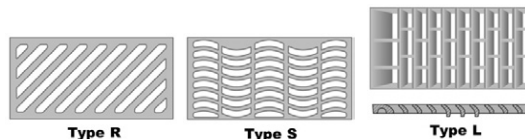
R-3030 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3030	A	1.0	4.6
R-3030	R	1.1	4.6
R-3030	L	0.9	4.6
R-3030	S	1.0	4.6

Standard Grate (shown): Type A
 Alternate Grate(s):



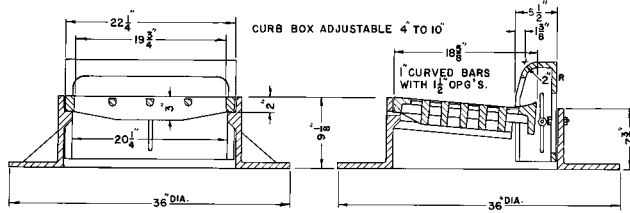
Available Curb Boxes: 1-1/2" Radius Open (standard), 3" Radius Open, 6" Radius Open
 Enviro-Curb Boxes available, see page 121.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3031-B
Combination Inlet Frame, Grate, Curb Box

Heavy Duty

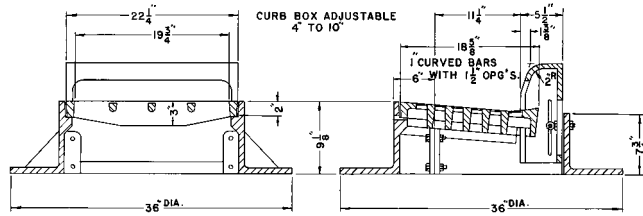
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3031-B	S	0.8	4.8



R-3032-B
Split Combination Inlet Frame, Grate, Curb Box

Heavy Duty

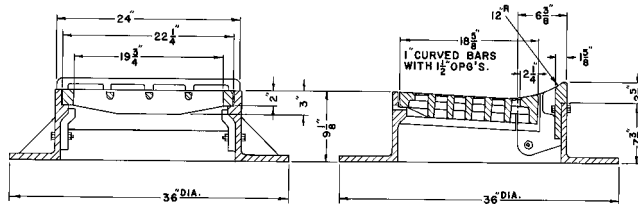
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3032-B	S	0.8	4.8



R-3034-B
Roll Type Inlet Frame, Grate, Curb Box

Heavy Duty

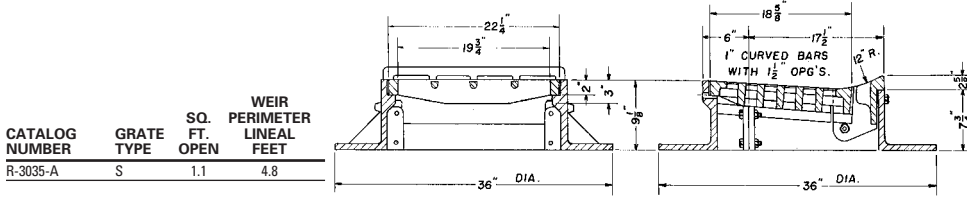
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3034-B	S	1.1	4.8



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3035-A Split Roll Type Inlet Frame, Grate, Curb Box

Heavy Duty



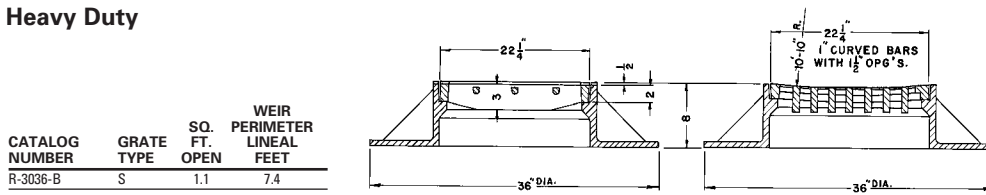
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3035-A	S	1.1	4.8



Suitable for 24" curb and gutter, split frame facilitates forming and eliminates boxing out. When paving roadway, simply place small section of frame against the form on the pavement side at catch basin location. After forms are removed, attach large frame section and curb box using bolts provided, and pour curb and gutter section. If curb and gutter are installed first, reverse the procedure.

R-3036-B Concave Inlet Frame, Grate

Heavy Duty

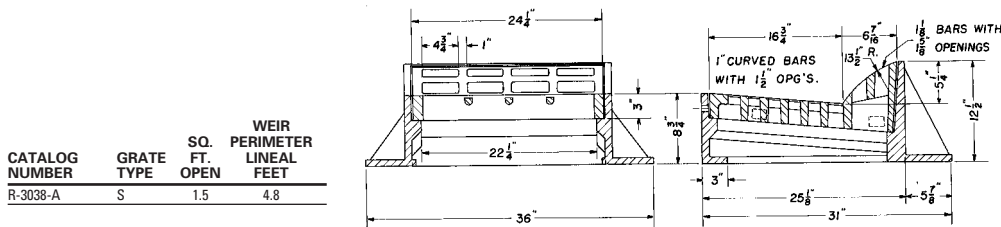


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3036-B	S	1.1	7.4



R-3038-A Expressway Inlet Frame, Grate

Heavy Duty

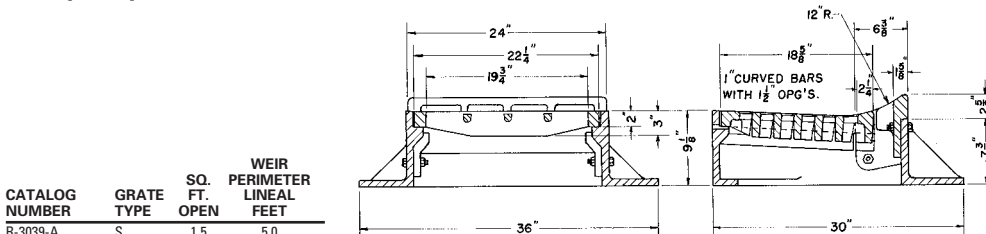


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3038-A	S	1.5	4.8



R-3039-A Roll Type Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3039-A	S	1.5	5.0

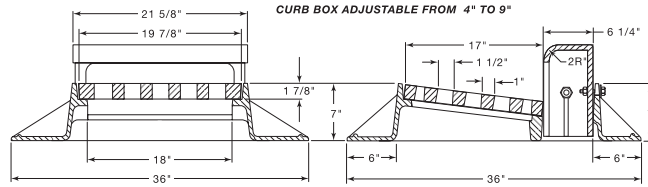


COMBINATION
INLETS
3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

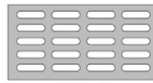
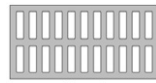
R-3065 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type R-diagonal

Alternate Grate(s):



Type A

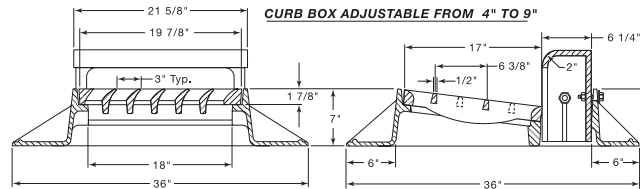
Type C

Available with Type "L" grate, see R-3065-L.
 Available with Type "V" grate, see R-3065-V.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3065	R	0.9	4.5
R-3065	C	0.7	4.5
R-3065	A	0.9	4.5

R-3065-L Combination Inlet Frame, Grate, Curb Box

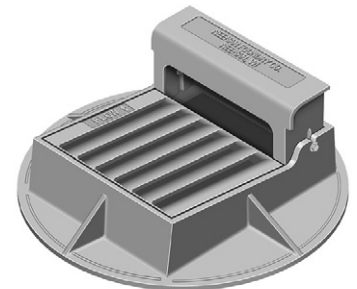
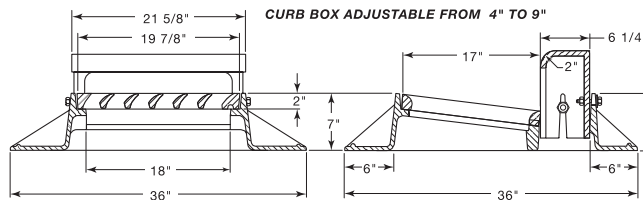
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3065-L	L	0.8	4.5

R-3065-V Combination Inlet Frame, Grate, Curb Box

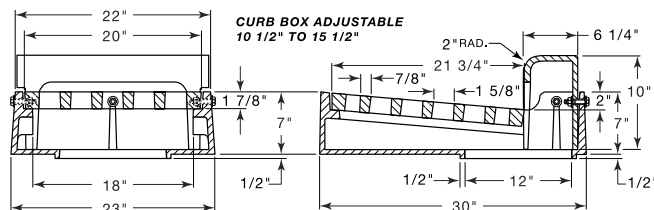
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3065-V	V	1.3	4.5

R-3066 Combination Inlet Frame, Grate, Curb Box

Heavy Duty

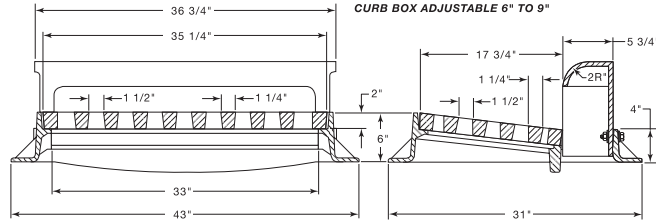
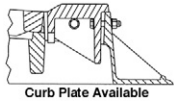


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3066	R	1.4	5.3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

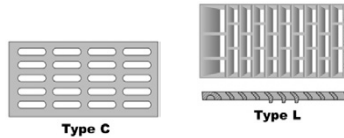
R-3067 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3067	R	2.0	5.8
R-3067	C	1.6	5.8
R-3067	L	2.1	5.8

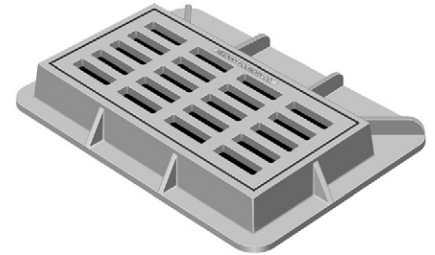
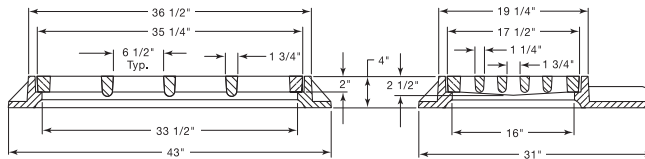
Standard Grate (shown): Type R-diagonal
 Alternate Grate(s):



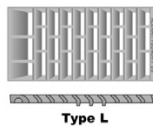
Available Curb Boxes: 2" Radius Open, 3" Radius Open, 6" Radius Open, 10" Radius Open, Mountable/Barred
 Enviro-Curb Boxes available, see page 121.
 For Double and Triple units, refer to R-3295-2 and R-3295-3.

R-3067-C Combination Inlet Frame, Grate

Heavy Duty



Standard Grate (shown): Type C
 Alternate Grate(s):

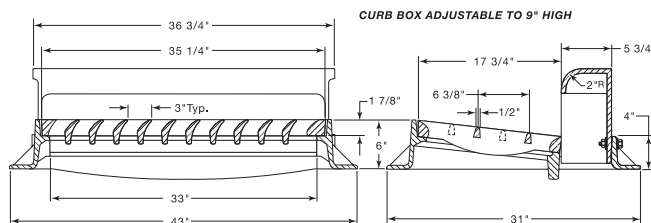
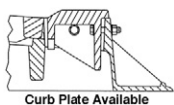


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3067-C	C	2.1	8.8
R-3067-C	L	2.1	8.8

Furnished without curb box for use at driveway locations.

R-3067-L Combination Inlet Frame, Grate, Curb Box

Heavy Duty



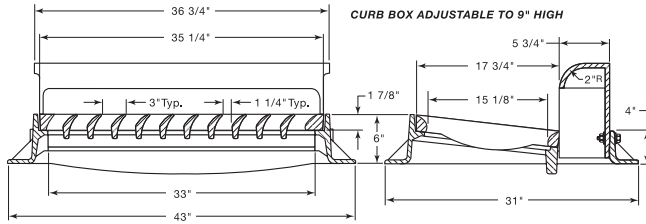
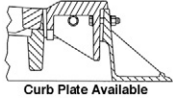
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3067-L	L	2.1	5.8

Available Curb Boxes: 2" Radius Open, 3" Radius Open.
 Enviro-Curb Boxes available, see page 121.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3067-V Combination Inlet Frame, Grate, Curb Box

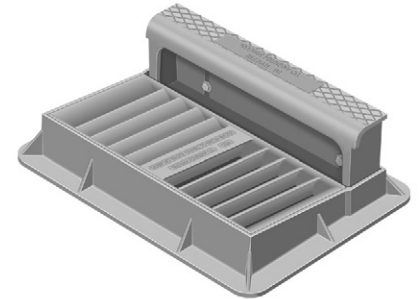
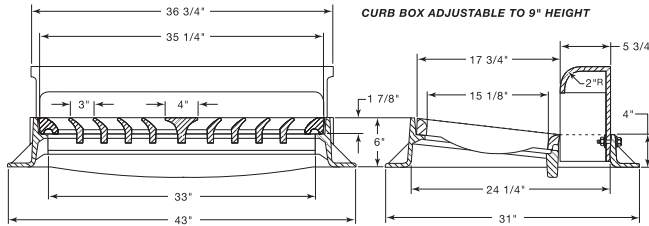
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3067-V	V	2.4	5.8

R-3067-VB Combination Inlet Frame, Grate, Curb Box

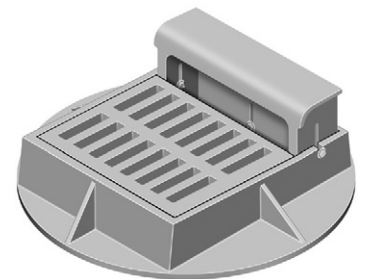
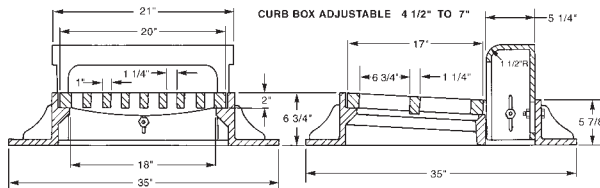
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3067-VB	V	2.7	5.8

R-3070 Combination Inlet Frame, Grate, Curb Box

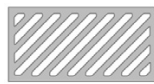
Heavy Duty



Standard Grate (shown): Type A

Alternate Grate(s):

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3070	A	0.9	4.5
R-3070	L	0.8	4.5
R-3070	R	0.9	4.5
R-3070	V	1.3	4.5



Type R



Type L



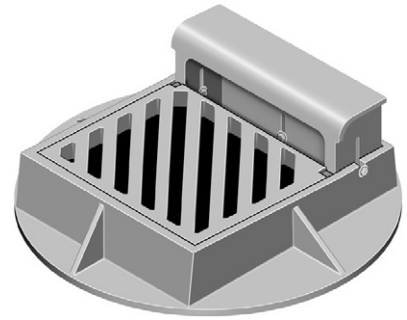
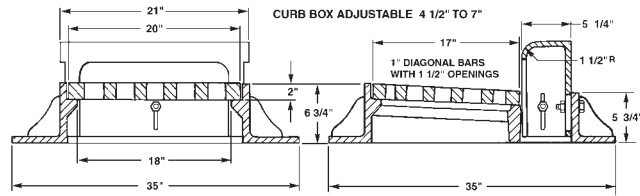
Type V

Available Curb Boxes: 1-1/2" Radius Open (standard), 1-1/2" Radius Barred, 3" Radius Open
 Enviro-Curb Boxes available, see page 121.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3075
Combination Inlet Frame, Grate, Curb Box

Heavy Duty



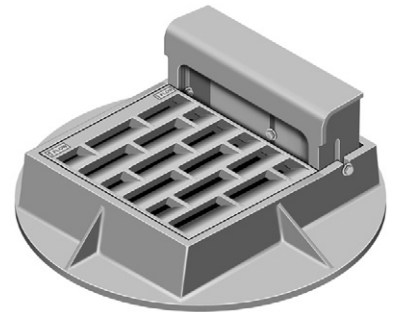
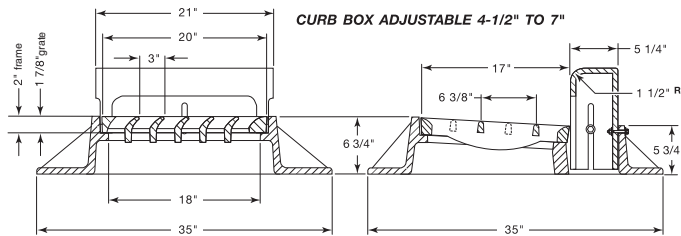
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3075	R	0.9	4.5

Available Curb Boxes: 1-1/2" Open (standard), 1-1/2" Barred, 3" Open

COMBINATION INLETS
3

R-3075-L
Combination Inlet Frame, Grate, Curb Box

Heavy Duty

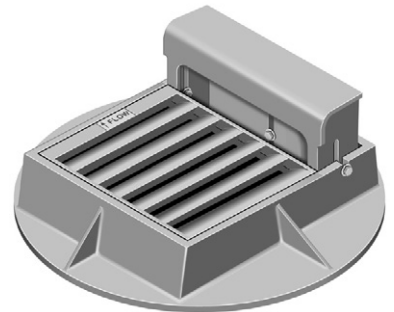
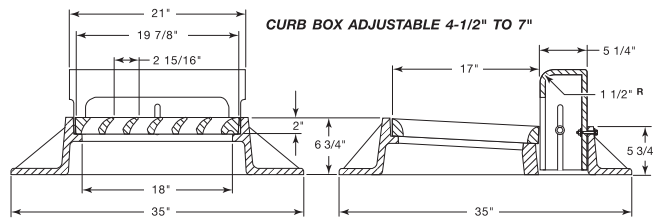


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3075-L	L	0.8	4.5

Enviro-Curb Boxes available, see page 121.

R-3075-V
Combination Inlet Frame, Grate, Curb Box

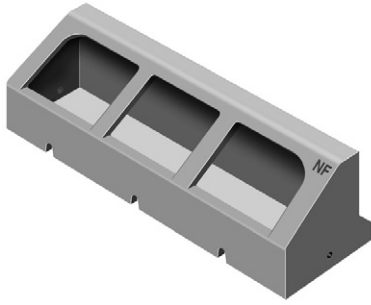
Heavy Duty



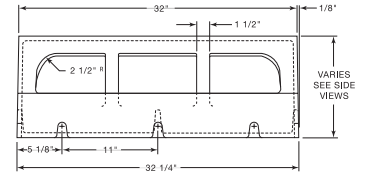
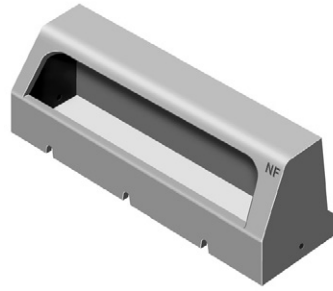
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3075-V	V	1.3	4.5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3076-4M Curb Hood

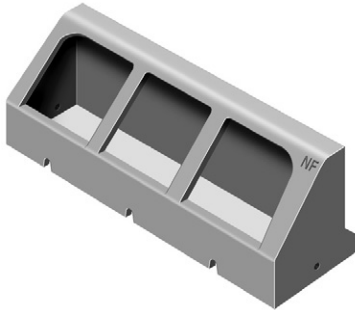


R-3076-6B Curb Hood

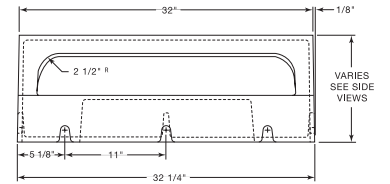
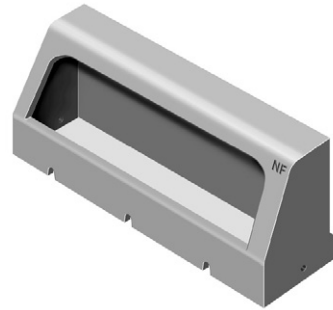


FRONT VIEW FOR R-3076-4M AND R-3076-6M

R-3076-6M Curb Hood



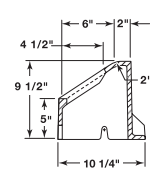
R-3076-8B Curb Hood



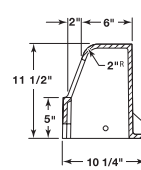
FRONT VIEW FOR R-3076-6B AND R-3076-8B

Bolt Slots on hoods for attachment to R-3076, R-3077, R-3078 and R-3079 Gutter Inlets.

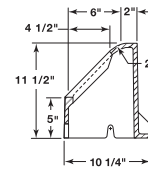
Illustrated unit composed of R-3077-L, R-3078, R-3077-R and R-3076-6B curb hoods.



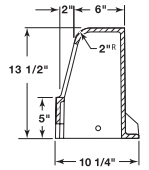
4" MOUNTABLE CURB HOOD
R-3076-4M



6" BARRIER CURB HOOD
R-3076-6B



6" MOUNTABLE CURB HOOD
R-3076-6M

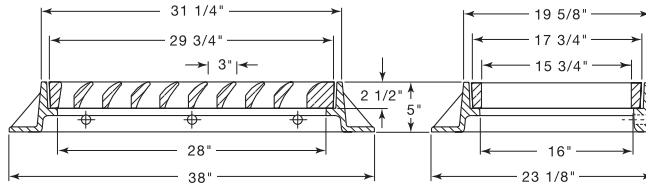


8" BARRIER CURB HOOD
R-3076-8B

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3076 3-Flange Gutter Inlet Frame, Grate

Heavy Duty



Standard Grate (shown): Type V
 Alternate Grate(s):

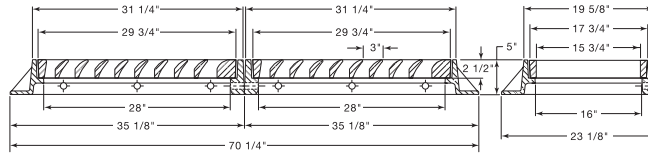


Type L

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3076	V	1.5	7.9
R-3076	L	1.4	7.9

R-3077 Double Unit Inlet Frame, Grate

Heavy Duty



Standard Grate (shown): Type V
 Alternate Grate(s):



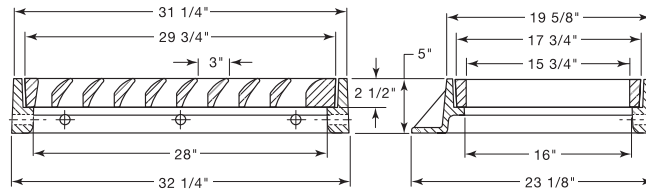
Type L

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3077	V	3.0	12.9
R-3077	L	2.8	12.9
R-3077-L	V	1.5	7.9
R-3077-L	L	1.4	7.9
R-3077-R	V	1.5	7.9
R-3077-R	L	1.4	7.9

For left section only, order **R-3077-L**.
 For right section only, order **R-3077-R**.

R-3078 Inlet Frame, Grate (Center Only)

Heavy Duty



Illustrated between **R-3077-L** and **R-3077-R**.

Standard Grate (shown): Type V
 Alternate Grate(s):



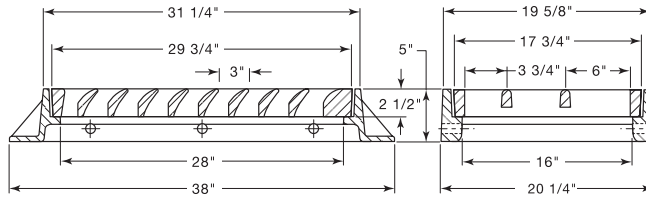
Type L

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3078	V	1.5	5.0
R-3078	L	1.4	5.0

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3079 Inlet Frame, Grate (Center Only)

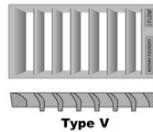
Heavy Duty



Illustrated with R-3076.

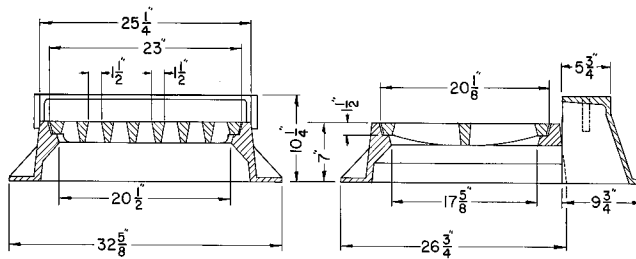
Standard Grate (shown): Type L
 Alternate Grate(s):

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3079	L	1.4	5.5
R-3079	V	1.5	5.5



R-3157-1 Combination Inlet Frame, Grate, Curb Box

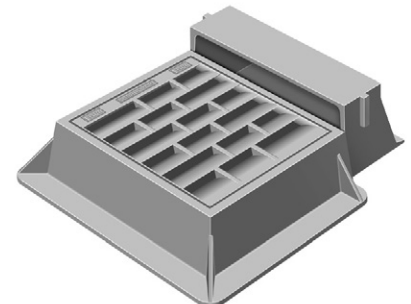
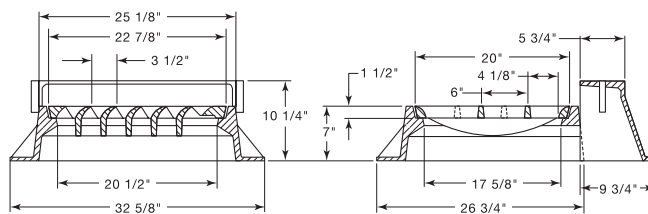
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3157-1	A	1.1	5.2

R-3157-2 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



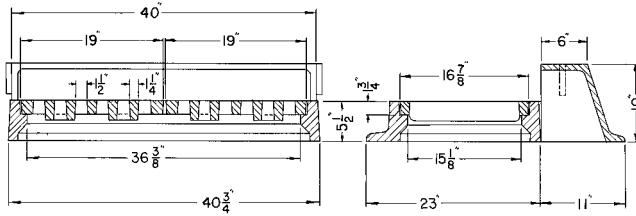
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3157-2	L	1.6	5.2

Enviro-Curb Boxes available, see page 121.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

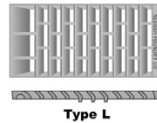
R-3157-A Combination Inlet Frame, Double Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type K
 Alternate Grate(s):

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3157-A	K	2.1	6.0
R-3157-A	L	1.2	6.0

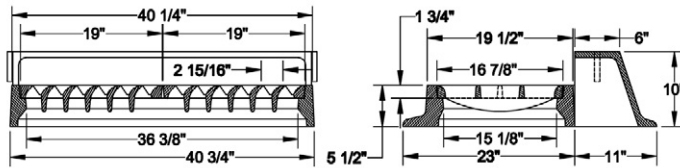


If no curb required, refer to R-3425-A or R-3425-B.

COMBINATION INLETS
3

R-3157-AL Combination Inlet Frame, Double Grate, Curb Box

Heavy Duty

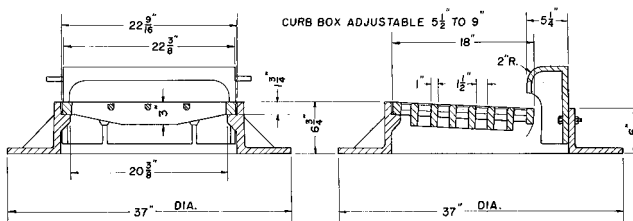


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3157-AL	L	2.3	6.0

Enviro-Curb Boxes available, see page 121.

R-3159-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty

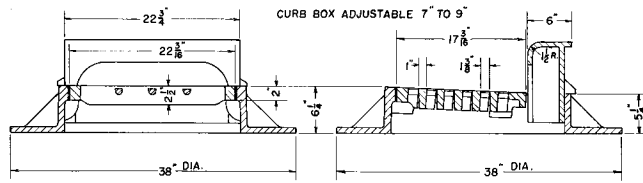


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3159-A	S	1.3	4.9

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3161 Combination Inlet Frame, Grate, Curb Box

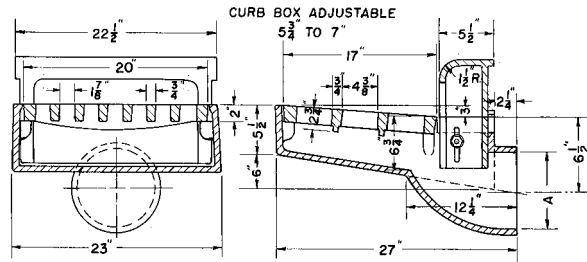
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3161	S	1.3	4.7

R-3165 Combination Inlet Frame, Grate, Curb Box

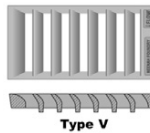
Heavy Duty



Furnished standard with Ductile Iron grate.
 For use where conditions do not permit catch basin under inlet.
 Drainage is to catch basin behind curb.
 Available with 8", 10" or 12" rear outlet – specify when ordering.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3165	A	1.4	4.5
R-3165	V	1.2	4.5

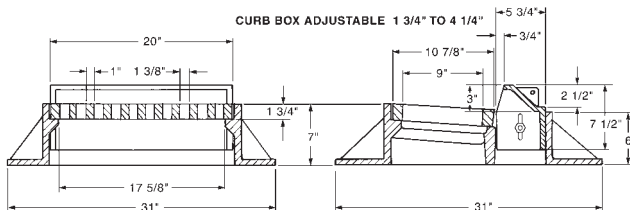
Standard Grate (shown): Type A
 Alternate Grate(s):



Available Curb Boxes: 1-1/2" open (shown), 3" open
 Available with Curb Plate

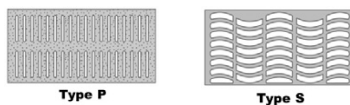
R-3169 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3169	B	0.7	3.5
R-3169	P	0.2	3.5
R-3169	S	0.5	3.5

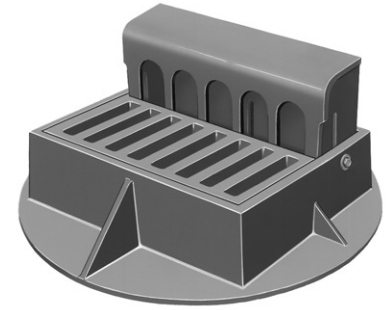
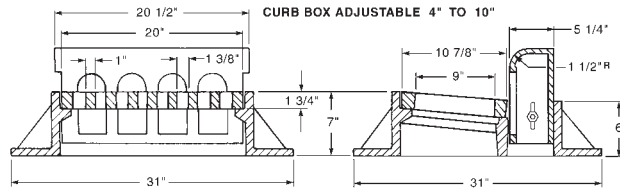
Standard Grate (shown): Type B
 Alternate Grate(s):



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3170 Combination Inlet Frame, Grate, Curb Box

Heavy Duty

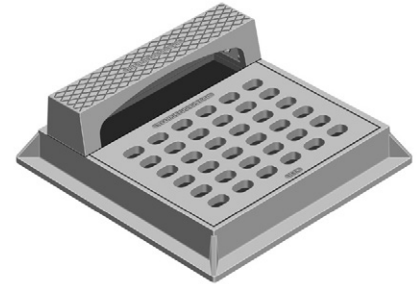
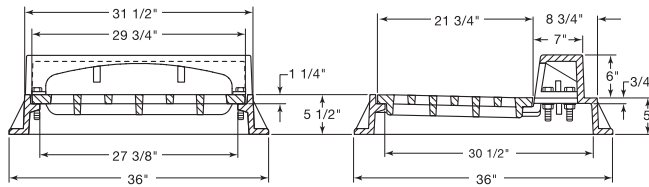


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3170	B	0.7	3.5

Available with open curb box if specified.
 Available without front flange if specified.

R-3188 Combination Inlet Frame, Grate, Curb Box

Heavy Duty

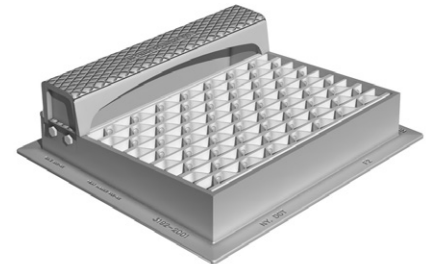
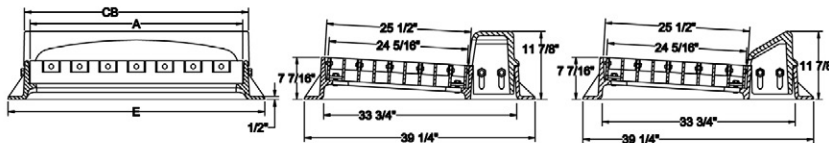


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3188	C	0.5	8.6

R-3191, R-3192, R-3193 Series Frame Grate & Unmountable or Mountable Curb Box

Heavy Duty

Furnished with Reticuline Steel Grate.



A	CB	E	UNMOUNTABLE CATALOG NO.	MOUNTABLE CATALOG NO.
27 1/2"	29 1/2"	35 1/4"	R-3191-CU1	R-3191-CM1
38"	39 1/2"	45 1/2"	R-3192-CU2	R-3192-CM2
47 1/2"	49 1/2"	55 1/4"	R-3193-CU3	R-3193-CM3

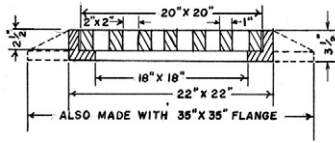
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3191	K	3.2	6.2
R-3192	K	4.4	7.8
R-3193	K	5.6	8.6

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3203 Series Flat Drain Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3203-A	H	1.0	6.6
R-3203-B	H	1.0	6.6
R-3203-C	H	1.0	6.6

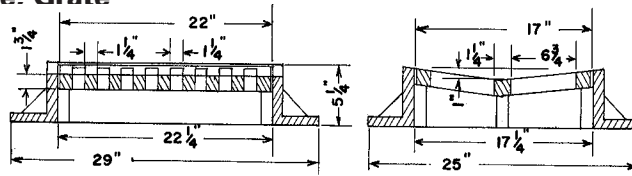


Illustrating R-3203-B with 27" x 27" frame.

Catalog No.	Description
R-3203-A	With 22" x 22" base
R-3203-B	With top 27" x 27"
R-3203-C	With flange 35" x 35"

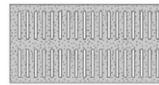
R-3205 Concave Inlet Frame, Grate

Heavy Duty



Standard Grate (shown): Type K
 Alternate Grate(s):

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3205	K	0.9	6.5
R-3205	P	0.3	6.5

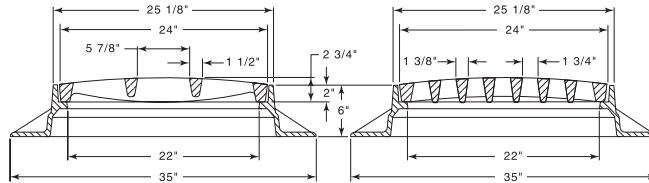


Type P



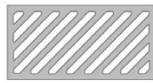
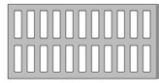
R-3210-A Catch Basin Frame, Convex Grate

Heavy Duty



Standard Grate (shown): Type C convex
 Alternate Grate(s):

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3210-A	C	1.5	8.0
R-3210-A	A	1.5	8.0
R-3210-A	R	1.6	8.0



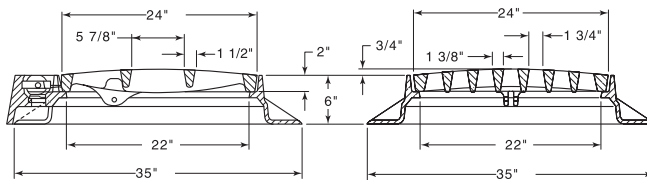
Type A

Type R

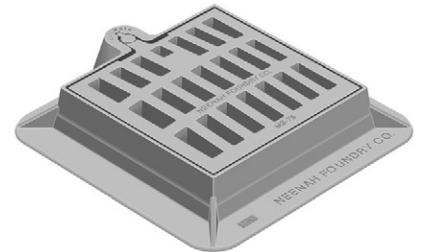


Available with Type L grate, see R-3210-L.
 Available with Type Q grate, see R-3210-Q.

R-3210-ALM Catch Basin Frame, LiftMate Convex Grate



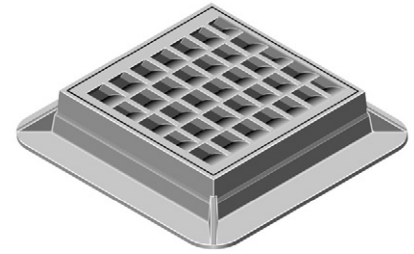
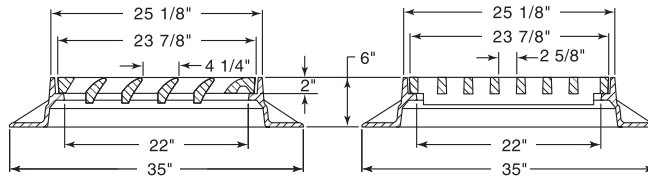
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3210-ALM	C	1.5	8.0



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3210-L Catch Basin Frame, Grate

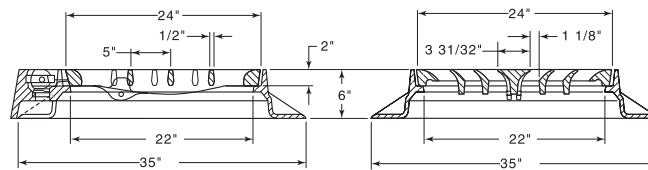
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3210-L	L	1.5	8.0

R-3210-LLM Catch Basin Frame, LiftMate Grate

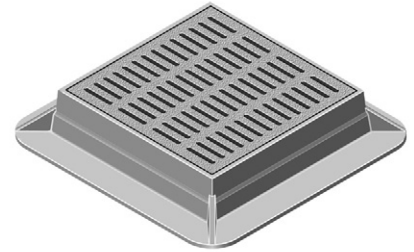
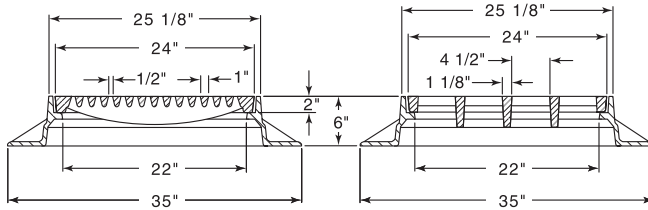
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3210-LLM	L	1.4	8.0

R-3210-Q Catch Basin Frame, Grate

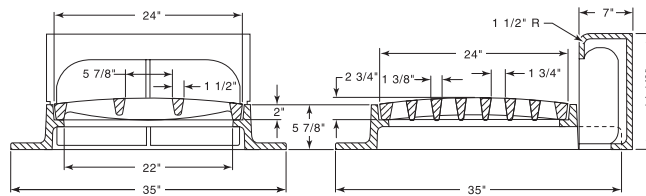
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3210-Q	Q	0.8	8.0

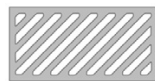
R-3220 Combination Inlet Frame, Convex Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type C

Alternate Grate(s):



Type R

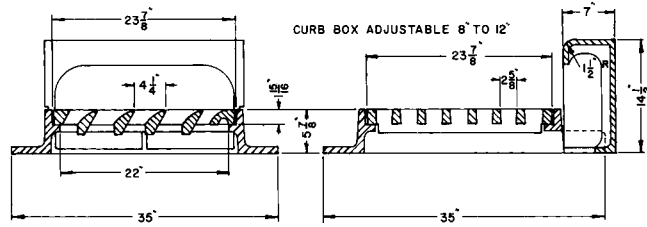
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3220	C	1.5	8.0
R-3220	R	1.6	8.0

Available with square curb face or radius face of 1", 1-1/2", 2" or 3".

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3220-L Combination Inlet Frame, Grate, Curb Box

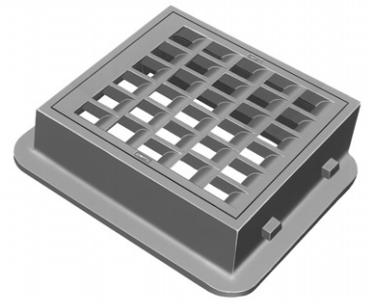
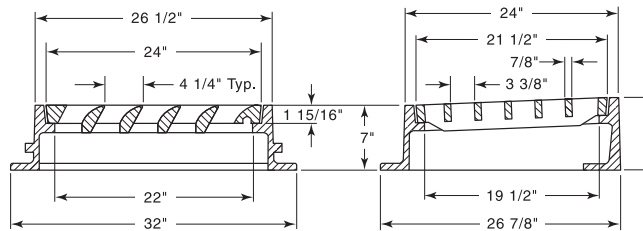
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3220-L	L	1.5	6.0

R-3222-1A Catch Basin Frame, Grate

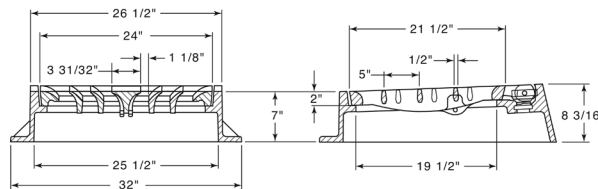
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3222-1A	L	1.0	7.6

R-3222-1ALM Catch Basin Frame, LiftMate Grate

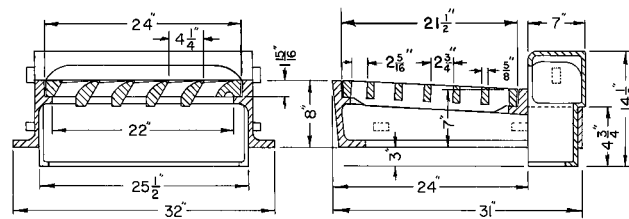
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3222-1ALM	L	1.5	8.0

R-3222-LA Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3222-LA	L	1.0	5.6



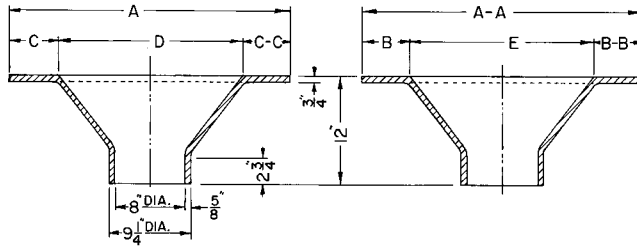
Also available with Type C grate, order as R-3222-C.

COMBINATION INLETS
3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3223 Series
Cast Iron Sub-Basin Bowl

Heavy Duty



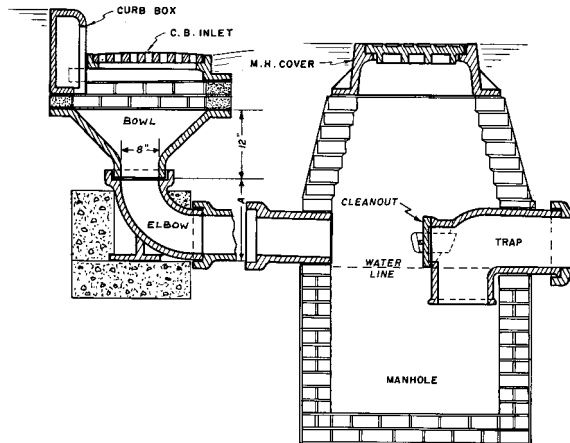
COMBINATION
INLETS
3

Dimensions in inches

Catalog No.	A	A-A	B	B-B	C	C-C	D	E
R-3223	37 3/4	35	5 1/4	5 1/4	3 1/2	5 1/4	29	24 1/2
R-3223-A	37	31	5 1/4	5 1/4	5 1/4	5 1/4	20 1/2	20 1/2
R-3223-B	31	31	5 1/4	5 1/4	5 1/4	5 1/4	20 1/2	20 1/2

R-3226 Series
Catch Basin Elbow

Heavy Duty

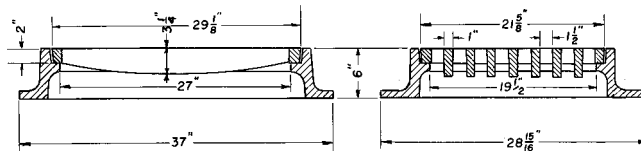


Section showing one method of catch basin assembly. Note catch basin frame, grate, curb box, catch basin bowl and elbow. See R-3705 series for catch basin trap detail.

Catalog No.	Elbow Height "A"
R-3226-A	12 1/2
R-3226-B	20

R-3227
Expressway Inlet, Frame, Grate

Heavy Duty

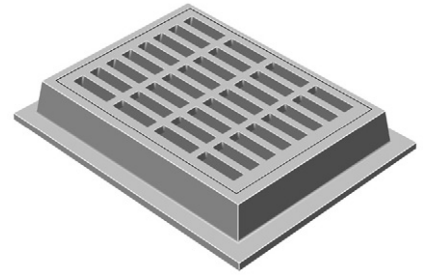
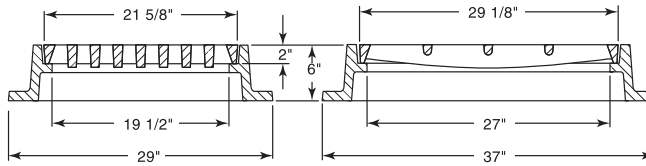


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3227	D	2.3	8.5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3227-C
Expressway Inlet, Frame, Grate

Heavy Duty

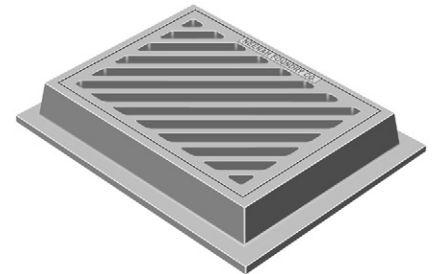
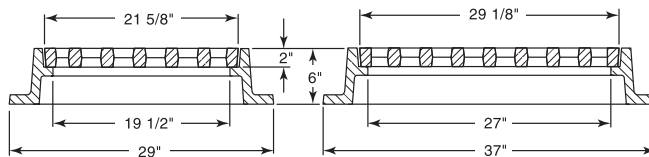


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3227-C	C	1.9	8.5

32 slotted openings, 1-7/16 x 5-3/4".

R-3227-D
Expressway Inlet, Frame, Grate

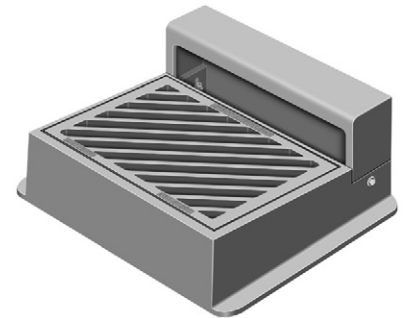
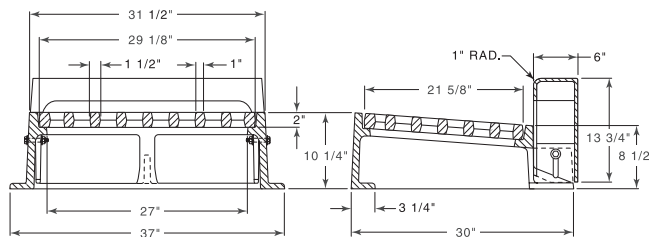
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3227-D	R	2.3	8.5

R-3228-BD
Combination Inlet Frame, Diagonal Grate, Curb Box

Heavy Duty



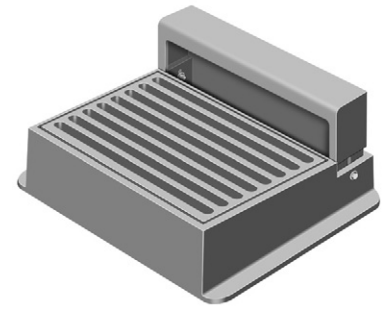
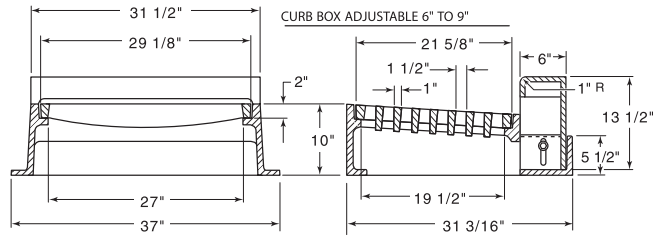
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3228-BD	R	2.3	6.0

Curb box adjustable 6" to 9".
 Also available with Type C grate, order as **R-3228-BC**.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3228-G
Expressway Inlet, Frame, Grate, Curb Box

Heavy Duty



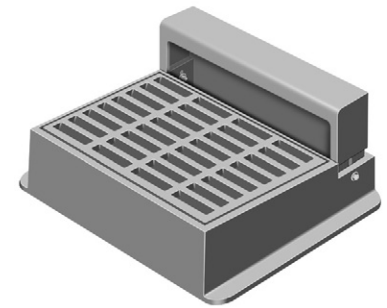
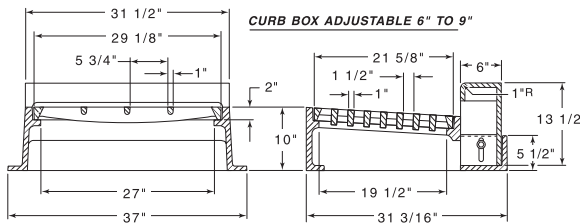
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3228-G	D	2.2	6.0

Curb box adjustable 6" to 9".
 Also available with Type R-diagonal grate, order as R-3228-GD.

COMBINATION INLETS 3

R-3228-H
Expressway Inlet, Frame, Grate, Curb Box

Heavy Duty

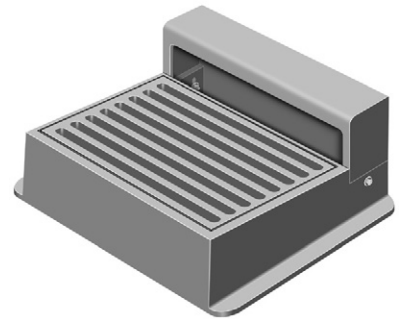
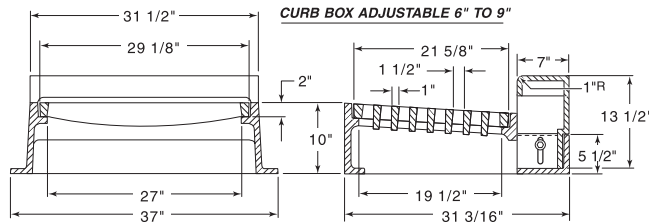


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3228-H	C	1.9	6.0

Curb box adjustable 6" to 9".

R-3228-J
Expressway Inlet, Frame, Grate, Curb Box

Heavy Duty

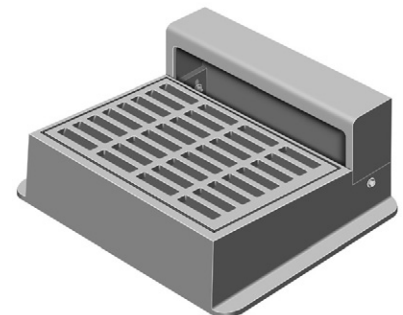
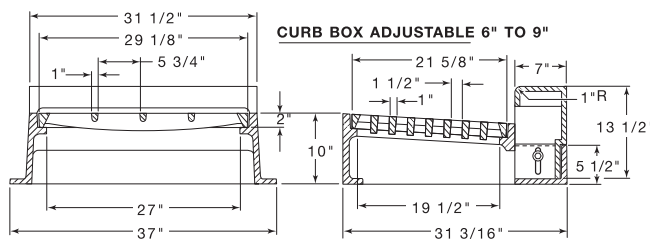


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3228-J	D	2.2	6.0

Curb box adjustable 6" to 9".
 Also available with Type R-diagonal grate, order as R-3228-JD.

R-3228-K
Expressway Inlet, Frame, Grate, Curb Box

Heavy Duty



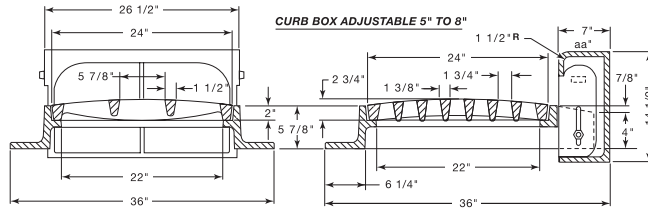
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3228-K	C	1.9	6.0

Curb box adjustable 6" to 9".

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

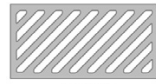
R-3229-A Combination Inlet Frame, Convex Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type C
 Alternate Grate(s):

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3229-A	C	1.5	8.0
R-3229-A	R	1.6	8.0
R-3229-A	D	1.6	8.0

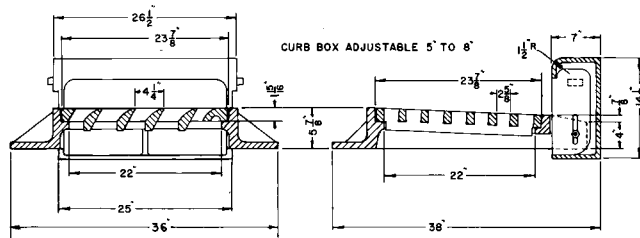


Type R

Type D

R-3229-L Combination Inlet Frame, Grate, Curb Box

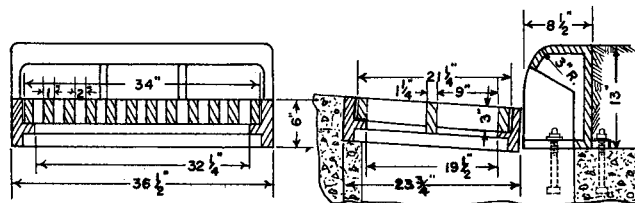
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3229-L	L	1.5	6.0

R-3233 Large Combination Inlet Frame, Grate, Curb Box

Heavy Duty



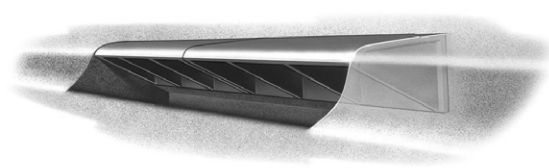
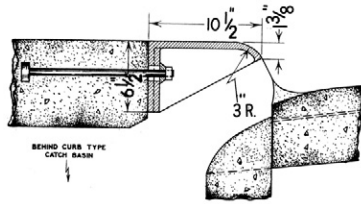
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3233	A	2.8	6.4

To order without curb box, see R-3469.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3233-A
Combination Inlet Drain

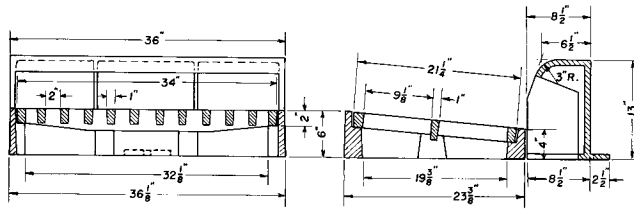
Heavy Duty



Multiple sections usually furnished in heavy drainage areas. Concrete catch basin constructed behind curb, using **R-6040**. Behind-the-curb manhole illustrated with **R-3469**.
 Not recommended for use in areas where large gutter trash objects are prevalent. Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.
 7/8" diameter anchor bolts furnished by others.
 Can be used either single or in combination as shown.

R-3233-D
Large Combination Inlet Frame, Grate, Curb Box

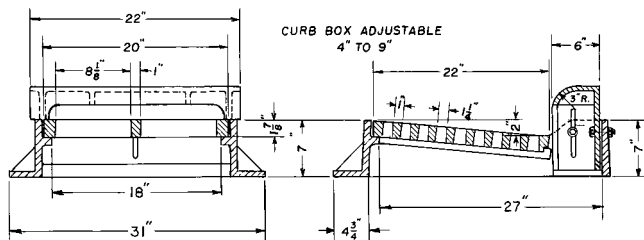
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3233-D	A	2.8	6.4

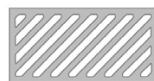
R-3234-B1
Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3234-B1	A	1.1	5.3
R-3234-B1	R	1.4	5.3

Standard Grate (shown): Type A
 Alternate Grate(s):

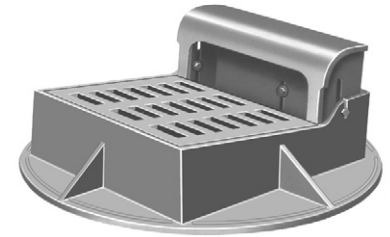
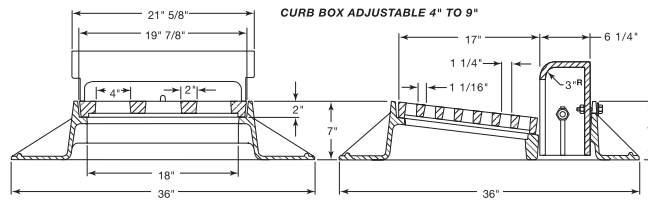


Type R

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

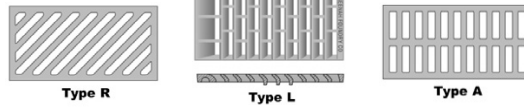
R-3235 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



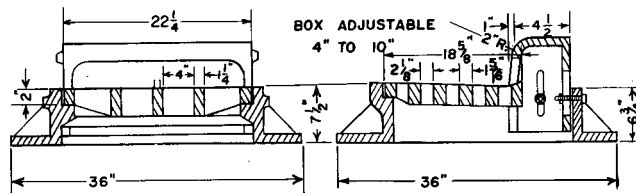
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3235	C	0.7	4.5
R-3235	A	0.9	4.5
R-3235	L	0.8	4.5
R-3235	R	0.9	4.5

Standard Grate (shown): Type C
 Alternate Grate(s):



R-3236 Combination Inlet Frame, Grate, Curb Box

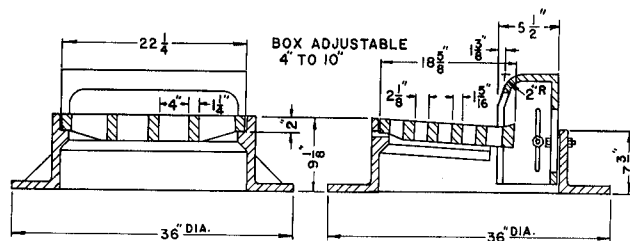
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3236	C	1.2	4.9

R-3236-1 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



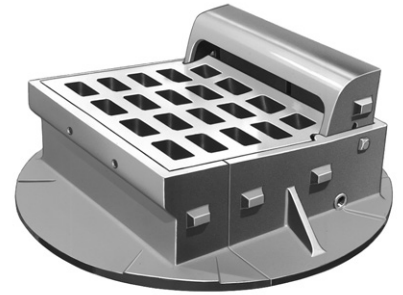
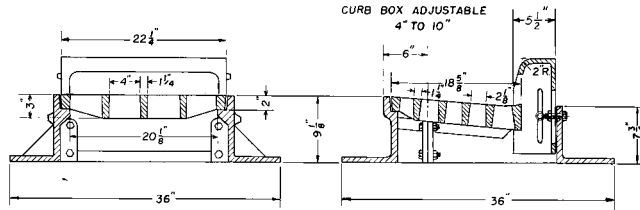
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3236-1	C	1.2	4.9

Weep holes furnished standard.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3236-A Split Combination Inlet Frame, Grate, Curb Box

Heavy Duty



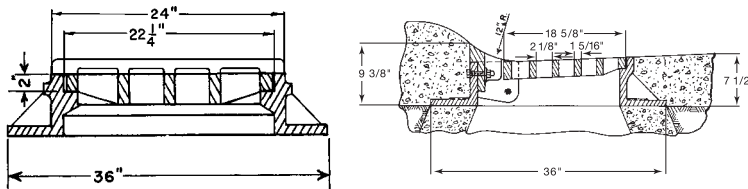
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3236-A	C	1.2	4.9

Weep holes furnished standard.

Split design facilitates forming for pavement or gutter. NO BOXING OUT, NO SPECIAL FORMS REQUIRED. Either the curb-side portion or the street-side portion of the casting may be placed against the form at the prescribed location so that concrete may be poured with the unit in place. When form is removed, the corresponding portion of the casting may be bolted to the portion in position to form a complete unit.

R-3237 See pages 201-205 for more Roll Type products Roll Type Inlet Frame, Grate, Curb Box

Heavy Duty

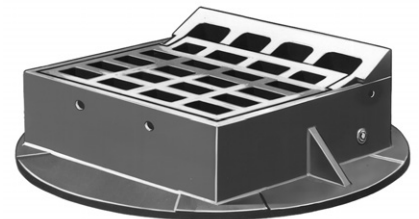
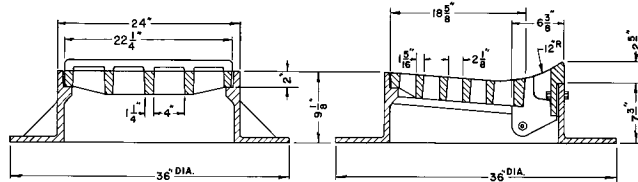


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3237	C	1.3	4.9

Same as R-3236 except curb box is designed for roll type curb.

R-3237-1 Roll Type Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3237-1	C	1.3	4.9

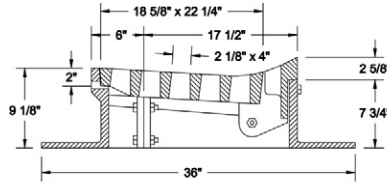
COMBINATION
 INLETS
 3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3237-A Split Roll Type Inlet Frame, Grate, Curb Box

Heavy Duty

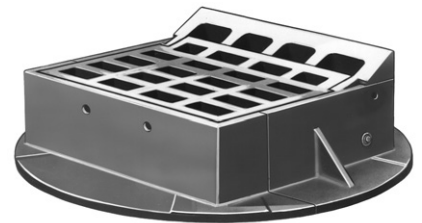
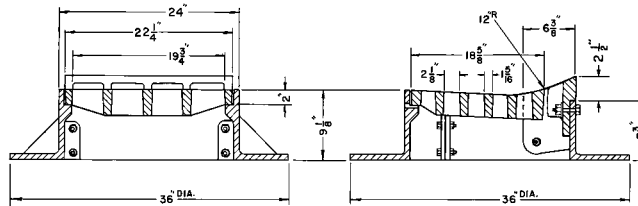
Same as R-3236-A except curb box is designed for roll type curb.



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3237-A	C	1.3	4.9

R-3237-B Split Roll Type Inlet Frame, Grate, Curb Box

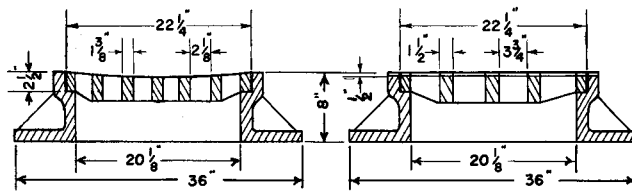
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3237-B	C	1.3	4.9

R-3238 Concave Inlet Frame, Grate

Heavy Duty

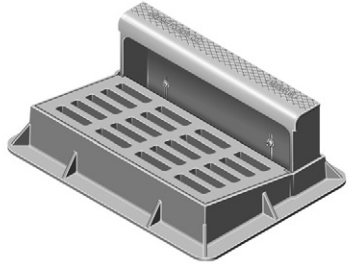
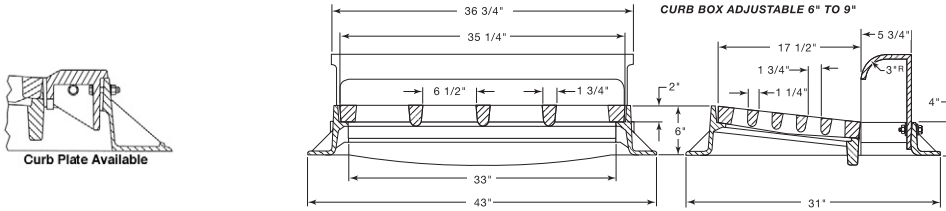


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3238	C	1.3	7.4

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3246 Combination Inlet Frame, Grate, Curb Box

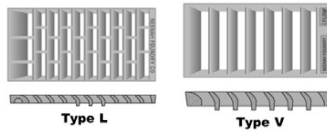
Heavy Duty



COMBINATION
 INLETS
 3

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3246	C	1.6	5.8
R-3246	L	2.1	5.8
R-3246	V	2.4	5.8

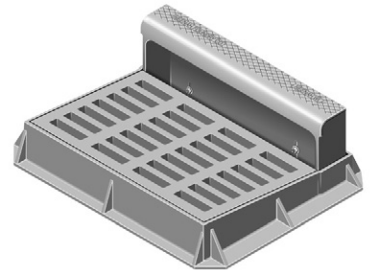
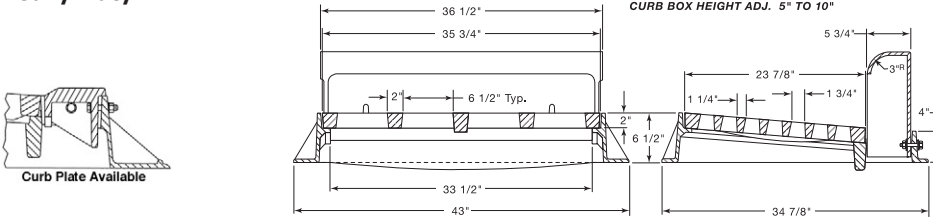
Standard Grate (shown): Type C
 Alternate Grate(s):



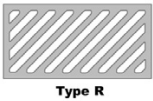
Available with Type R Grate
 Also available with square, 1" radius or 2" radius
 Order **R-3246-1** for curb plate
 Available option: 6" radius box

R-3246-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type C
 Alternate Grate(s):



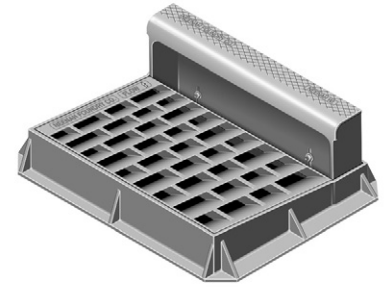
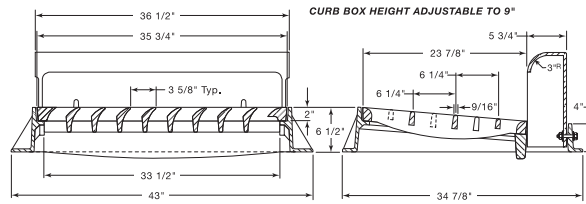
Also available with square or 2" radius
 Order **R-3246-AP** for curb plate

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3246-A	C	2.2	7.0
R-3246-A	R	2.7	7.0

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3246-AL Combination Inlet Frame, Grate, Curb Box

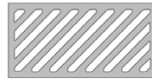
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3246-AL	L	3.1	7.0
R-3246-AL	R	2.7	7.0

Standard Grate (shown): Type L

Alternate Grate(s):

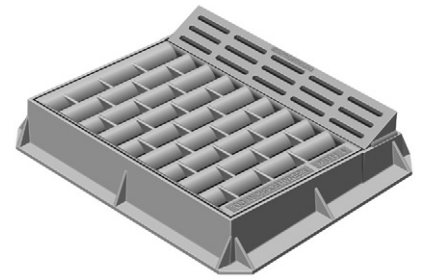
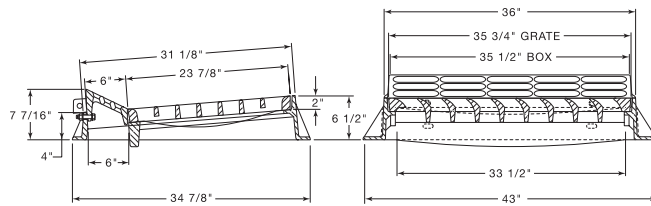


Type R

Also available with square, 1" radius, 2" radius or D-shaped curb face.

R-3246-AM Combination Inlet Frame, Grate, Mountable Curb Box

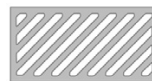
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3246-AM	R	1.9	5.8
R-3246-AM	L	3.1	5.8

Standard Grate (shown): Type L

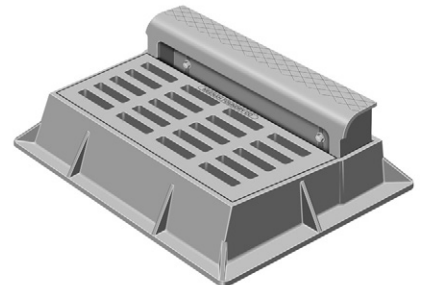
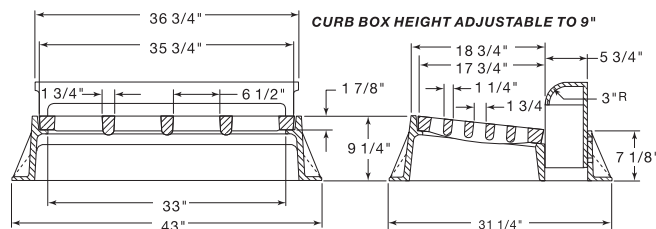
Alternate Grate(s):



Type R

R-3246-CC Combination Inlet Frame, Grate, Curb Box

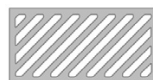
Heavy Duty



Standard Grate (shown): Type C

Also available with grate Type R-diagonal.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3246-CC	C	1.8	5.8
R-3246-CC	R	1.9	5.8

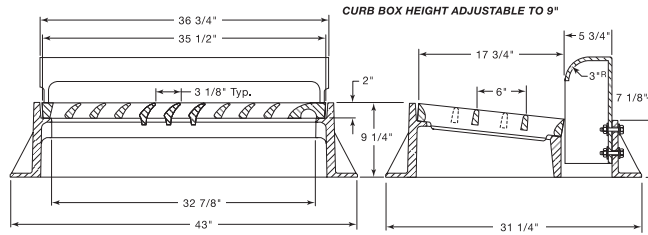


Type R

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

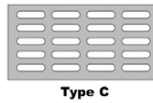
R-3246-CL Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3246-CL	L	1.6	5.8
R-3246-CL	C	2.1	5.8

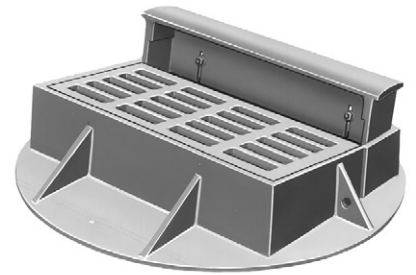
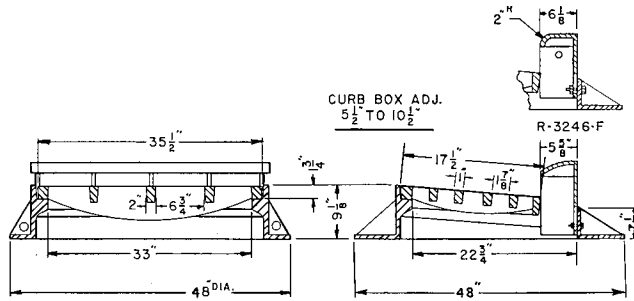
Standard Grate (shown): Type L
 Also available with grate Type C.



COMBINATION INLETS
3

R-3246-E Combination Inlet Frame, Grate, Mountable Curb Box

Heavy Duty

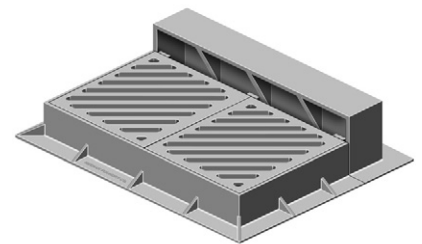
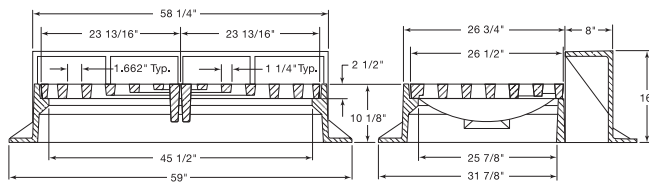


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3246-E	C	1.6	5.8

Also available with 2" radius curb box, order R-3246-F.

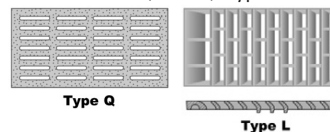
R-3247-2D Combination Inlet Frame, Grates, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3247-2D	R	3.8	8.4
R-3247-2L	L	4.6	8.4
R-3247-2Q	Q	1.8	8.4

Standard Grate (shown): Type R

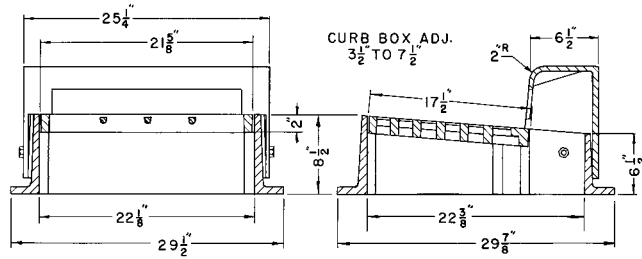


Can be furnished without curb box, see R-3572 and R-3573 series.
 Available with 2-piece Type Q grate, order R-3247-2Q.
 Available with 2-piece Type L grate, order R-3247-2L.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3249-F Combination Inlet Frame, Grate, Curb Box

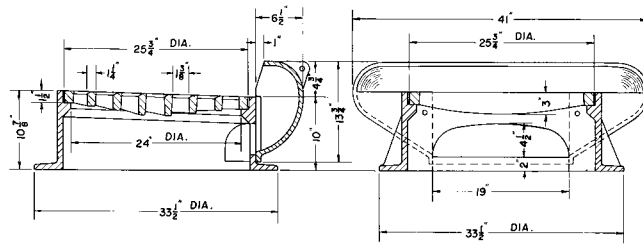
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3249-F	S	1.1	4.7

R-3250-1 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-1	K	1.5	5.5

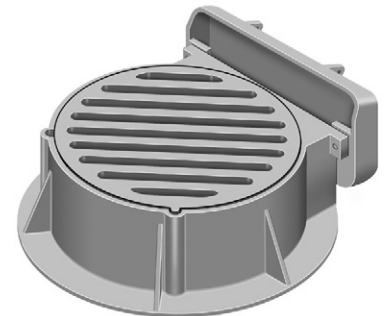
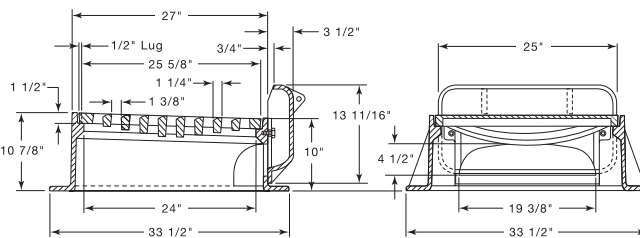
Note lug preventing grate rotation.

Extended curb box provides additional drainage capacity through curb. Note sweeping radius for efficiency in self-cleaning and reduction of turbulence.

IMPORTANT: remove cap screws from curb box when concrete curb has set.

R-3250-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-A	K	1.5	5.5

Note lug preventing grate rotation.

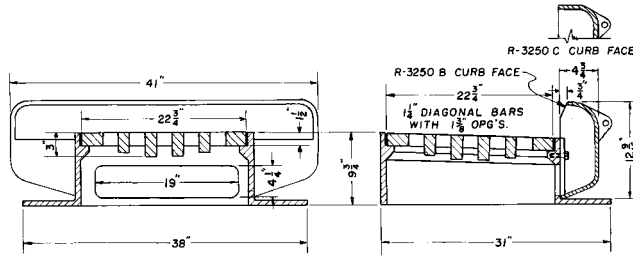
Also available with straight face curb.

IMPORTANT: remove cap screws from curb box when concrete curb has set.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3250-B Combination Inlet Frame, Grate, Curb Box

Heavy Duty

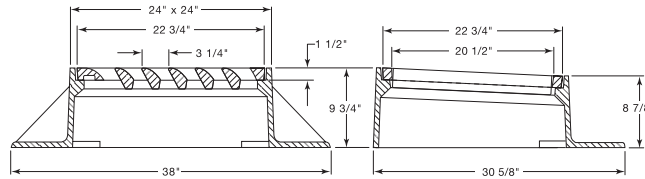


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-B	R	1.4	5.8
R-3250-C	R	1.4	5.8

Also available with straight face curb box, order **R-3250-C**.

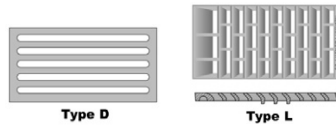
R-3250-BSP Catch Basin Frame, Grate

Heavy Duty



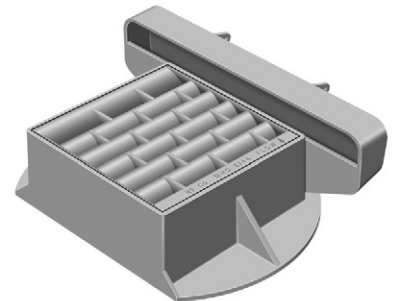
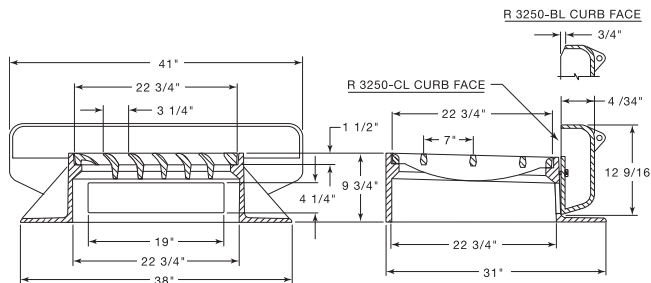
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-BSP	V	1.3	7.6
R-3250-BSP	D	1.4	7.6
R-3250-BSP	L	1.0	7.6

Standard Grate (shown): Type V
 Also available with grate Type D or Type L.



R-3250-CL Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-CL	L	1.0	5.8
R-3250-BL	L	1.0	5.8

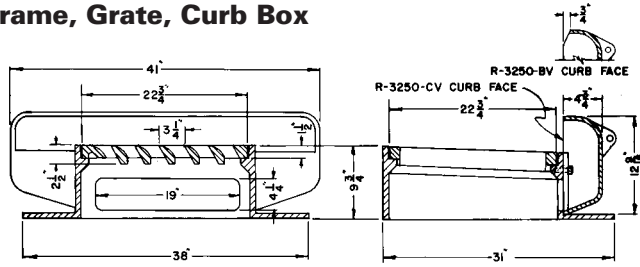
Also available with tapered face curb box, order **R-3250-BL**.

COMBINATION
 INLETS
 3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3250-CV Combination Inlet Frame, Grate, Curb Box

Heavy Duty

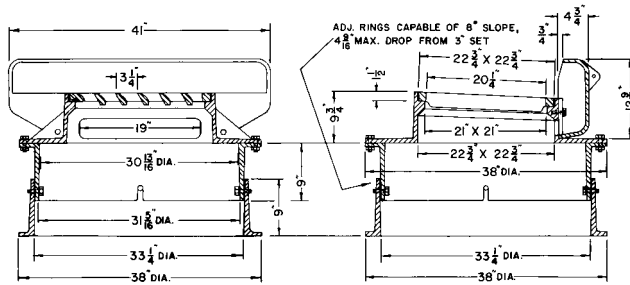


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-CV	L	1.3	5.8
R-3250-BV	L	1.3	5.8

Also available with tapered face curb box, order R-3250-BV.

R-3250-DV Adjustable Combination Inlet

Heavy Duty

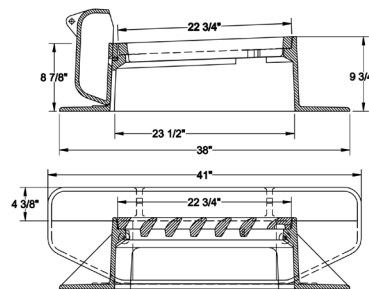


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-DV	V	1.3	5.8



R-3250-DVSP Combination Inlet Frame, Grate, Curb Box

Heavy Duty

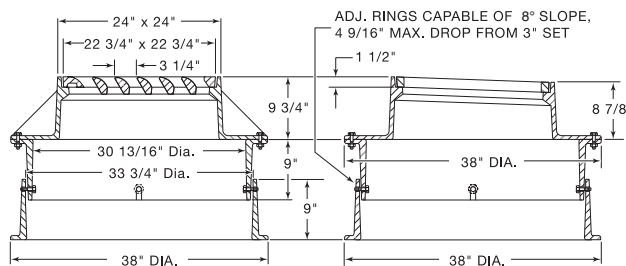


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-DVSP	V	1.3	5.8



R-3250-EV Adjustable Combination Inlet

Heavy Duty



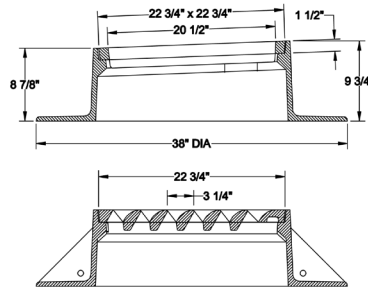
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-EV	V	1.3	7.6



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3250-EVSP
Combination Inlet Frame, Grate, Curb Box

Heavy Duty

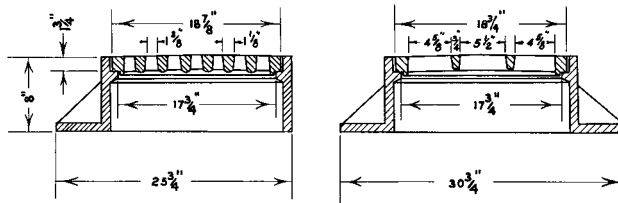


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3250-EVSP	V	1.3	7.6

COMBINATION INLETS
3

R-3251
Catch Basin Inlet Frame, Convex Grate

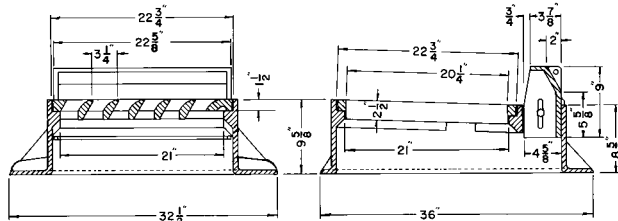
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3251	C	1.0	6.3

R-3252-A
Combination Inlet Frame, Grate, Curb Box

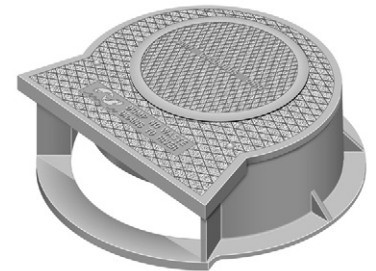
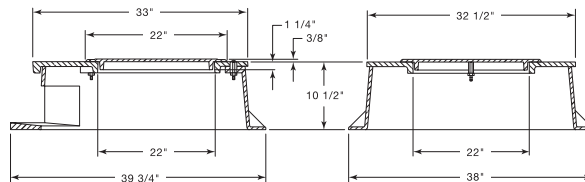
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3252-A	V	1.3	5.8

R-3256
Inlet Frame, Lid, Access Lid

Heavy Duty

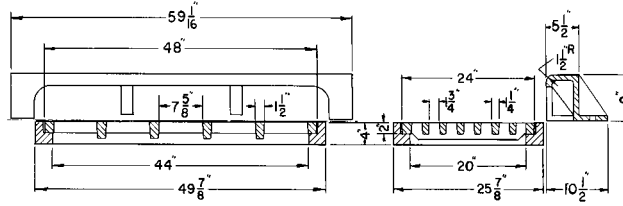


Large lid furnished standard with straight face as shown.
 Also available for 8-foot or 20-foot corner radius.
 Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3260-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty



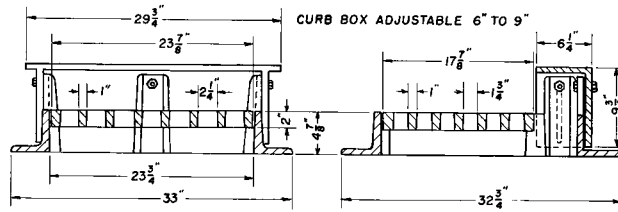
Standard Grate (shown): Type C
 Also available with 2-piece grate Type L.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3260-A	A	3.2	8.0
R-3260-A	L	3.0	8.0



Type L

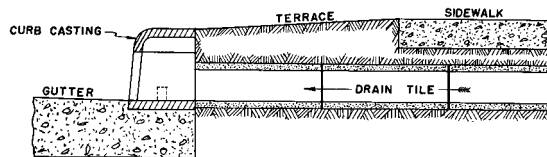
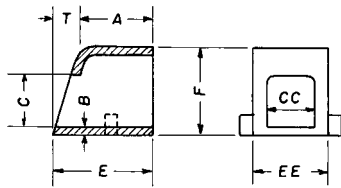
R-3261-A Combination Inlet Frame, Grate, Curb Box



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3261-A	H	1.1	5.5

R-3262 Series Storm Water Curb Openings

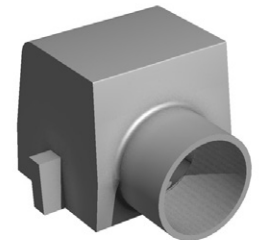
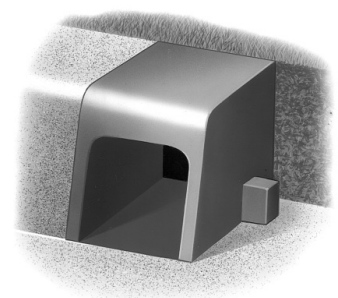
Heavy Duty



Curb opening castings are used as shown, where it is advantageous to transmit stormwater from downspout in shallow drains and discharge it through the curb to the street gutter.

Catalog No.	Dimensions in inches							
	A	B	C	C-C	E	E-E	F	T
R-3262-1	5	1/2	4	4	6	5	7	1
R-3262-2	6	1/2	4	4	8 1/4	5	6	2 1/4
R-3262-3*	5	1/2	4	5 1/2	6	6 1/2	6 1/2	1
R-3262-4	5	1/2	4	16	7	17	6 3/8	2
R-3262-6	6	1/2	6	6	8	7 1/4	9	2

*4" ID outlet is optional

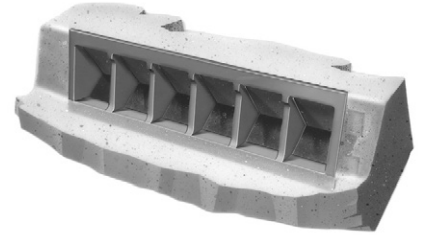
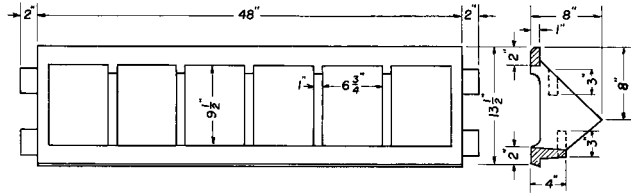


Rear view of R-3262-3 only.
 (optional)

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3264
Stormwater Curb Opening

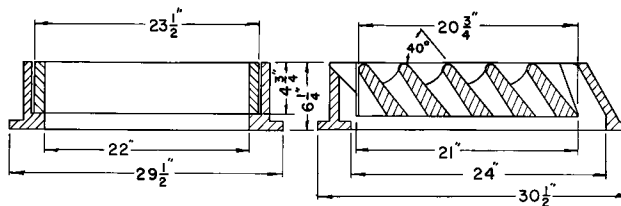
Heavy Duty



COMBINATION
 INLETS
 3

R-3266
Torrent Inlet Frame, Grate

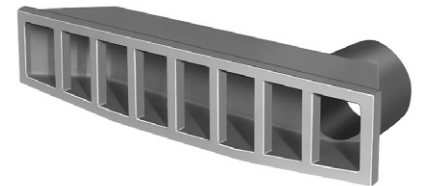
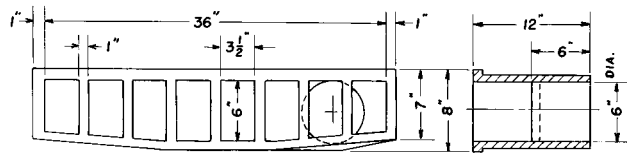
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3266	V	1.8	7.3

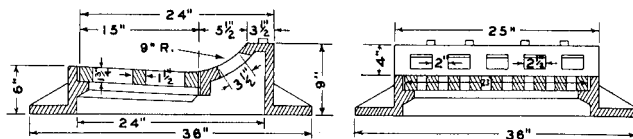
R-3268
Stormwater Curb Opening

Heavy Duty



R-3270
Roll Type Inlet Frame, Grate

Heavy Duty



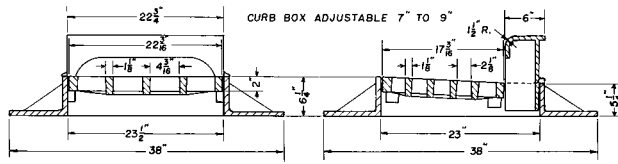
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3270	A	0.9	4.4

Image shows casting installed in roll type curb.
 Concrete over top of frame is reinforced to prevent breaking away.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

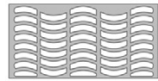
R-3273-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type C
 Also available with grate Type S.

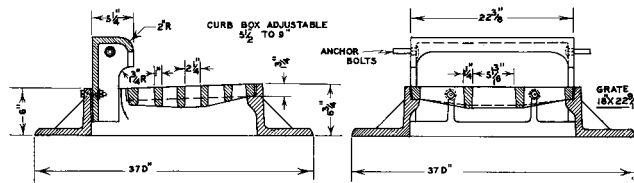
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3273-A	C	1.2	4.7
R-3273-A	S	1.0	4.7



Type S

R-3274 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type C
 Also available with grate Type S, order R-3159-A.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3274	C	1.2	4.9
R-3159-A	S	1.3	4.9

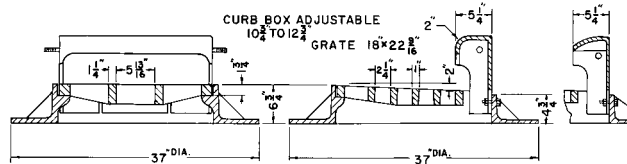


Type S

Available with 3" radius semi-roll curb box.

R-3274-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type C
 Also available with grate Type S.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3274-A	C	1.4	4.9
R-3274-A	S	1.3	4.9
R-3274-B	C	1.4	4.9
R-3274-B	S	1.3	4.9



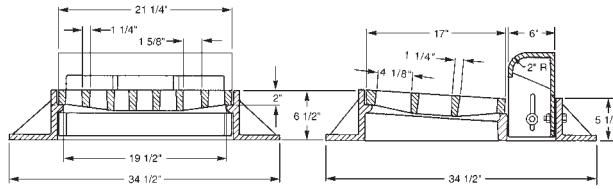
Type S

Available with mountable curb box, order R-3274-B.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3275 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



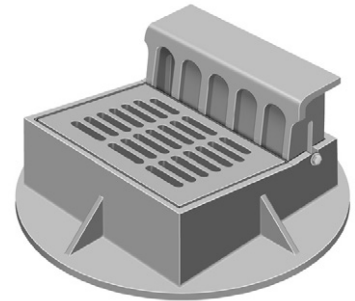
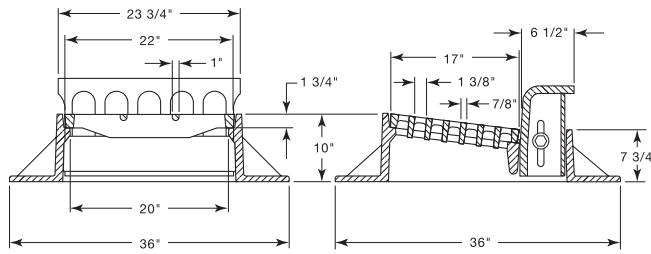
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3275	A	1.0	4.6

Available with barred curb box.

COMBINATION INLETS
3

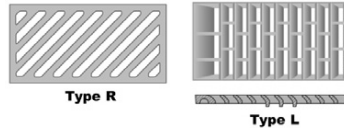
R-3277-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty



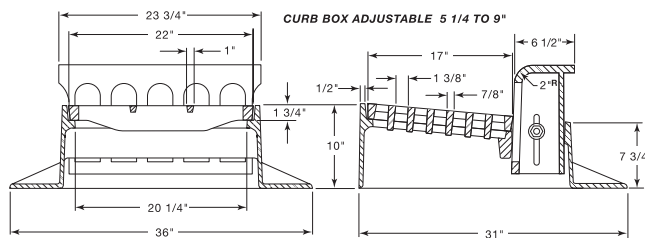
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3277-A	C	1.2	4.6
R-3277-A	R	1.2	4.6
R-3277-A	L	0.7	4.6

Standard Grate (shown): Type C
 Also available with grate Type R or Type L.



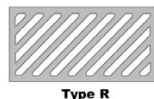
R-3278-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3278-A	C	1.2	4.6
R-3278-AR	R	1.2	4.6

Standard Grate (shown): Type C
 Also available with grate Type R-diagonal, order **R-3278-AR**.



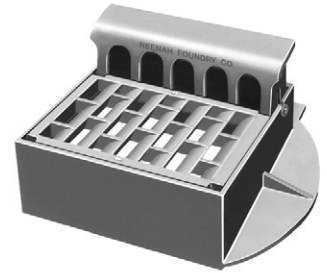
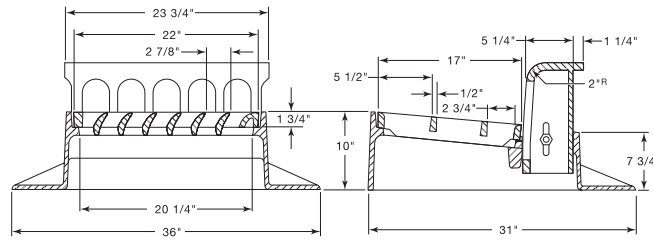
Available with Type L grate, see R-3278-AL.

Available with open curb box.
 Frame available with 4-sided flange support.
 2-1/4" adjusting ring available, see **R-1979** series.

Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

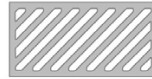
R-3278-AL Combination Inlet Frame, Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type L
 Also available with grate Type R-diagonal, order R-3278-AR.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3278-AL	L	0.7	4.6
R-3278-AR	R	1.2	4.6

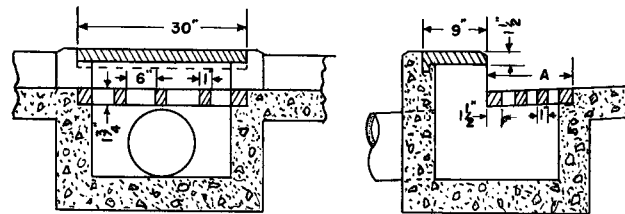


Available with Type C grate, see R-3278-A.

Available with open curb box.
 Frame available with 4-sided flange support.
 2-1/4" adjusting ring available, see R-1979 series.

R-3280 Series Curb Plate, Grate

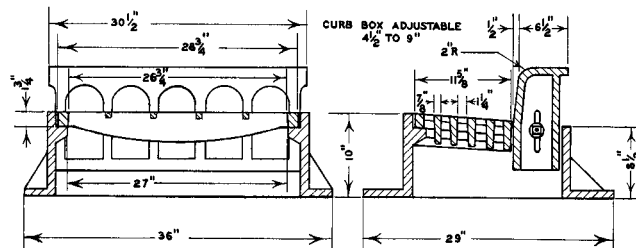
Heavy Duty



Catalog No.	A	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3280-A	18	R-3280-A	C	1.8	5.5
R-3280-B	12	R-3280-B	C	1.2	4.5

R-3281-A Combination Inlet Frame, Grate, Curb Box

Heavy Duty



Available with open curb box, or curb grate.
 Enviro-Curb Boxes available, see page 121.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3281-A	C	1.0	4.3

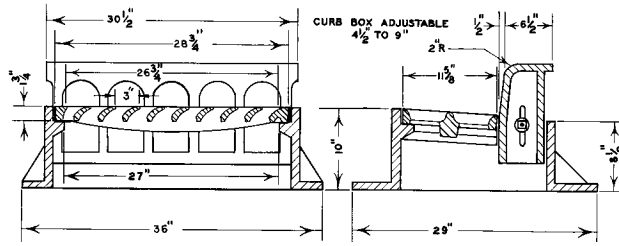
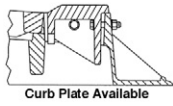
COMBINATION INLETS

3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3281-AL Combination Inlet Frame, Grate, Curb Box

Heavy Duty



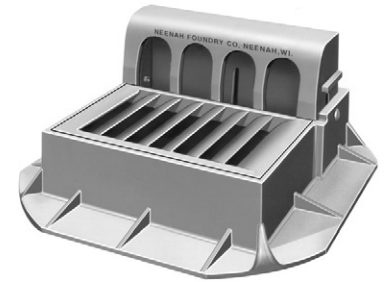
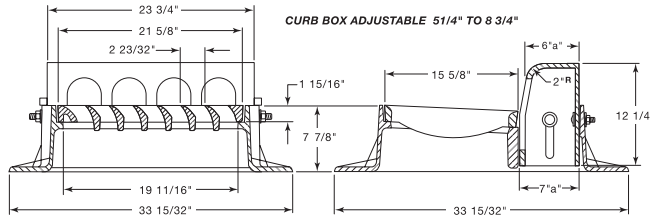
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3281-AL	L	0.5	4.3

Available with open curb box.
 Enviro-Curb Boxes available, see page 121.

COMBINATION INLETS
3

R-3286-8V Combination Inlet Frame, Grate, Curb Box

Heavy Duty

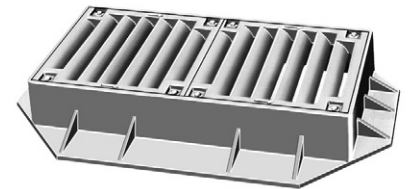
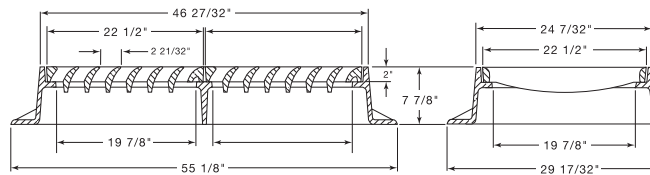


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3286-8V	V	0.7	4.4

Available with 3" radius curb box.

R-3287-5 Combination Inlet Frame, Grate

Heavy Duty

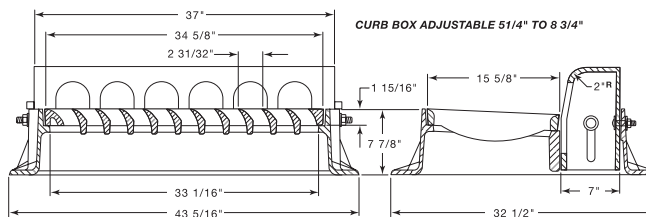


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-5	V	3.2	11.3

2-1/2" adjusting ring available, see R-1979 series.

R-3287-10V Combination Inlet Frame, Grate, Curb Box

Heavy Duty



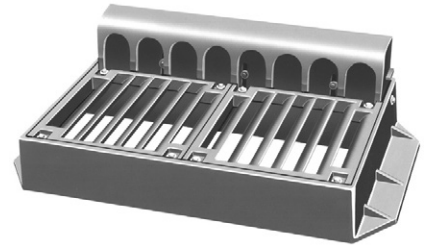
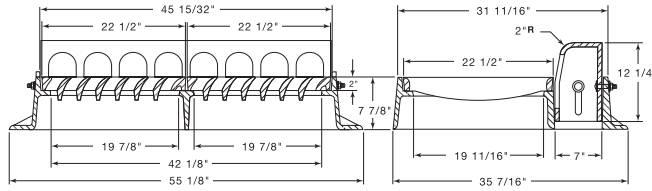
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-10V	V	2.1	5.5

Available with 3" radius curb box.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3287-15 Combination Inlet Frame, Grate, Curb Box

Heavy Duty

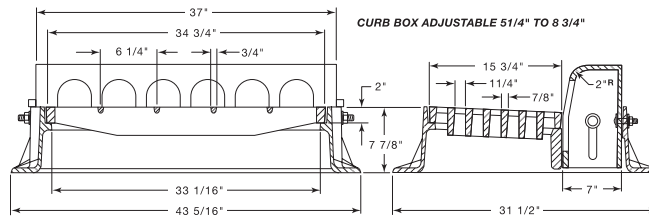


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-15	V	3.2	7.5

Available with 3" radius curb box.

R-3287-SB10 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



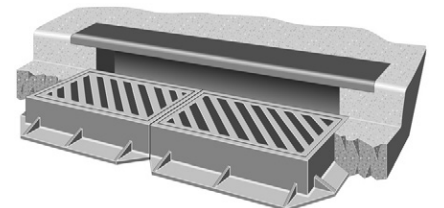
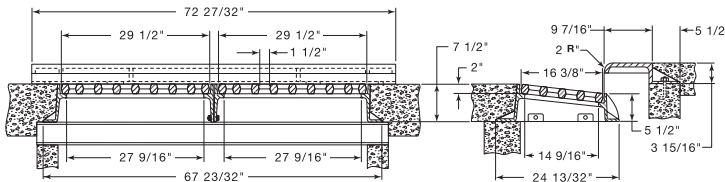
CURB BOX ADJUSTABLE 5 1/4" TO 8 3/4"



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-SB10	S	1.5	5.5

R-3288-E2 Double Inlet Frame, Two-Piece Grate, Curb Plate

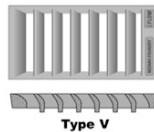
Heavy Duty



Optional cast support beam available.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3288-E2	R	2.6	7.6
R-3288-E2	V	2.8	7.6

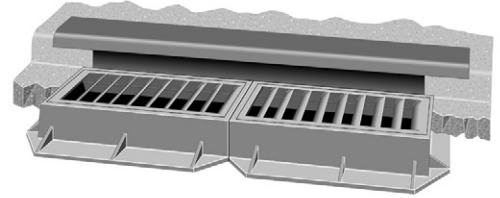
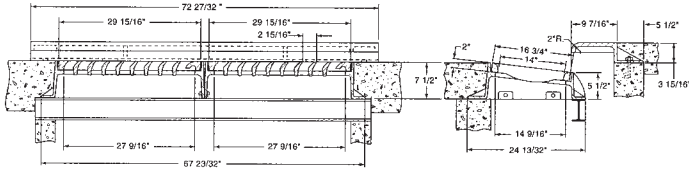
Standard Grate (shown): Type R-diagonal
 Also available with grate Type V.



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3288-HV2
Double Inlet Frame, Two-Piece Grate, Curb Plate

Heavy Duty

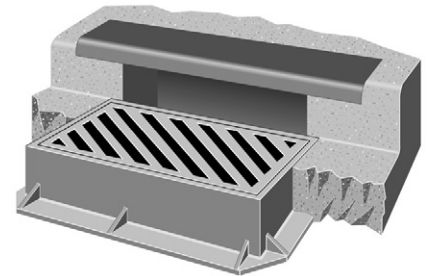
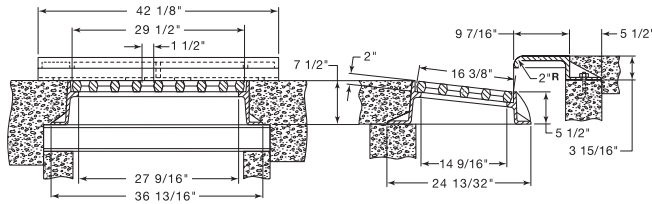


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3288-HV2	V	2.8	7.6

COMBINATION INLETS
3

R-3289-C
Single Inlet Frame, Grate, Curb Plate

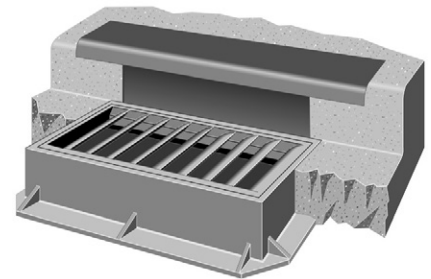
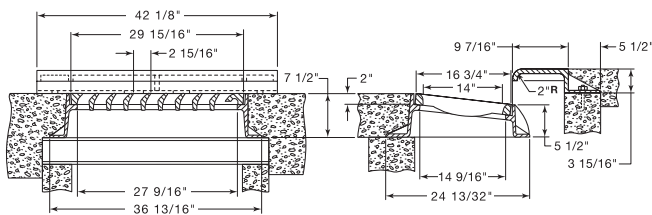
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3289-C	R	1.3	5.2

R-3289-HV
Single Inlet Frame, Grate, Curb Plate

Heavy Duty

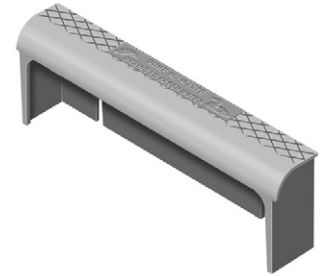
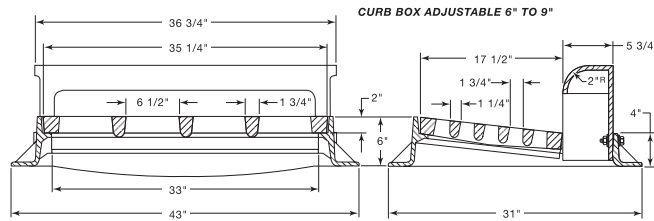
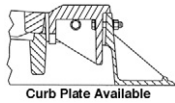


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3289-HV	V	1.4	5.2

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

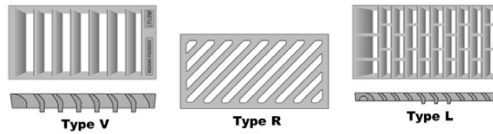
R-3290 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



Standard Grate (shown): Type C
 Also available with grate Type V, Type R-diagonal or Type L.

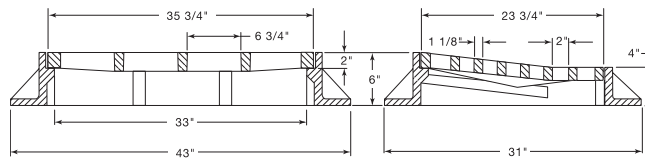
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3290	C	1.6	5.8
R-3290	V	2.4	5.8
R-3290	R	1.9	5.8
R-3290	L	2.1	5.8



Available Curb Boxes: 2" Radius Open (standard), 3" Radius Open
 Enviro-Curb Boxes available, see page 121.

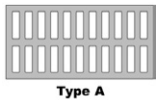
R-3290-A Gutter Inlet Frame, Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3290-A	C	2.6	9.9
R-3290-A	A	2.6	9.9

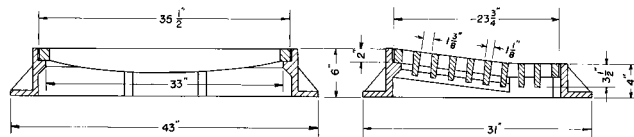
Standard Grate (shown): Type C
 Also available with grate Type A.



Furnished without curb box for use at driveway locations and in gutters.

R-3290-B Gutter Inlet Frame, Grate

Heavy Duty

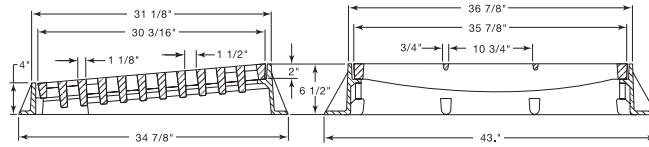


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3290-B	D	3.5	9.9

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3290-C Gutter Inlet Frame, Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3290-C	D	3.7	11.0
R-3290-C	C	3.7	11.0

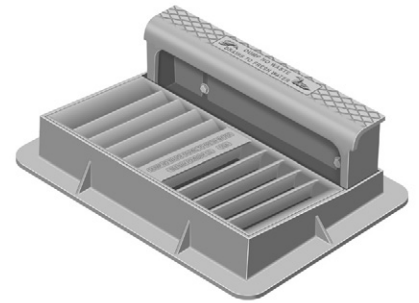
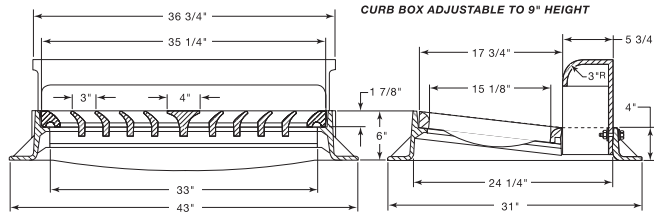
Standard Grate (shown): Type D
 Also available with grate Type C.



Type C

R-3290-VB Gutter Inlet Frame, Grate

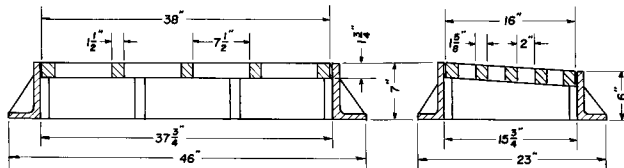
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3290-VB	V	2.7	5.8

R-3291 Gutter Inlet Frame, Grate

Heavy Duty

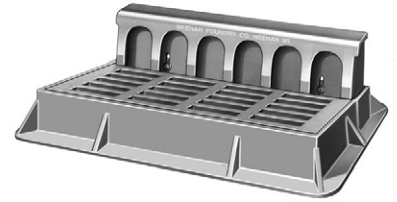
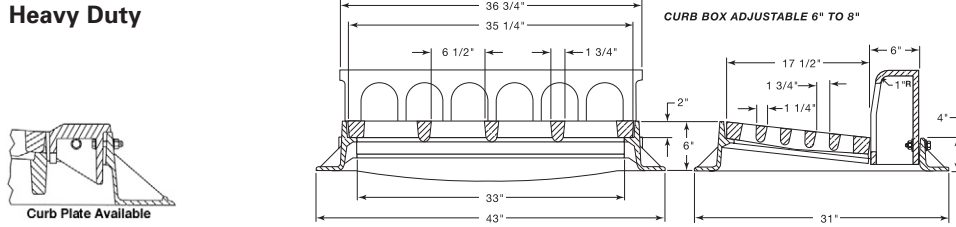


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3291	C	1.7	9.0

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3292 Combination Inlet Frame, Grate, Curb Box

Heavy Duty

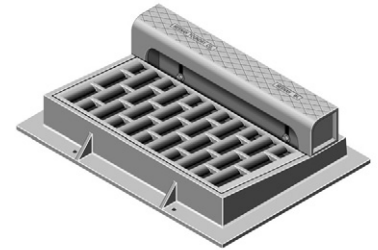
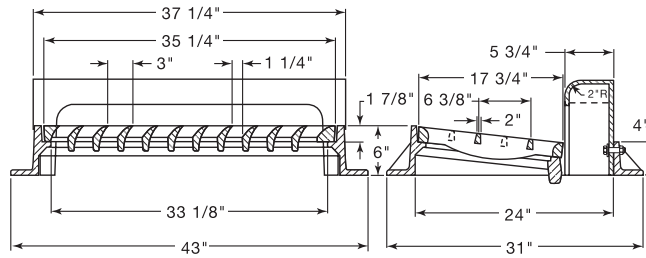


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3292	C	1.6	5.8

Available with mountable grated or solid curb plate in place of curb box.

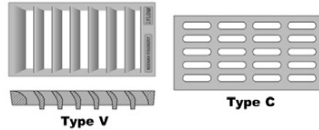
R-3295 Combination Inlet Frame, Grate, Curb Box

Heavy Duty



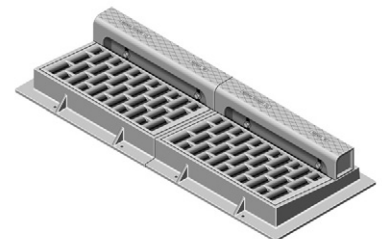
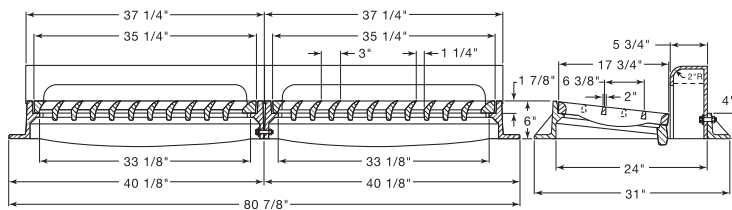
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3295	L	2.1	5.8
R-3295	C	2.1	5.8
R-3295	V	2.4	5.8

Standard Grate (shown): Type L
 Also available with grate Type V or Type C.



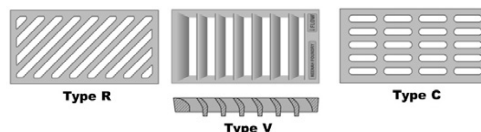
R-3295-2 Double Unit Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3295-2	L	4.2	8.8
R-3295-2	V	4.8	8.8
R-3295-2	C	4.2	8.8
R-3295-2	R	3.8	8.8

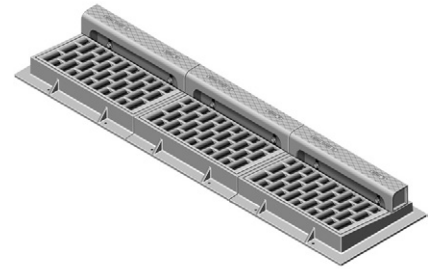
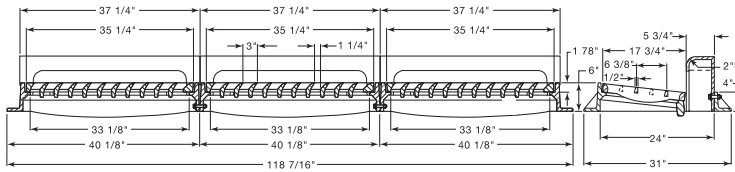
Standard Grate (shown): Type L
 Also available with grate Type R-diagonal, Type C or Type V.



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3295-3 Triple Unit Frame, Grate, Curb Box

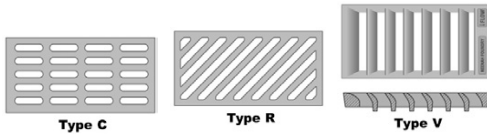
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3295-3	L	6.3	11.8
R-3295-3	V	7.2	11.8
R-3295-3	C	6.3	11.8
R-3295-3	R	5.7	11.8

Standard Grate (shown): Type L

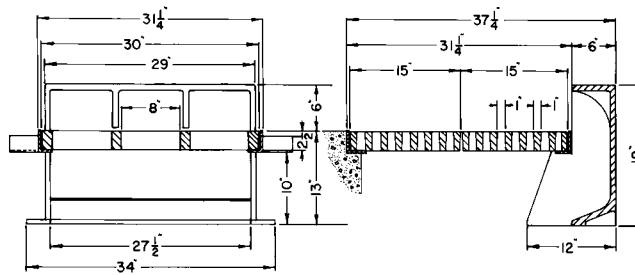
Also available with grate Type C, Type R-diagonal or Type V.



Additional center sections can be added for greater overall length – please specify.

R-3297-1 Combination Inlet Frame, Grate, Curb Box

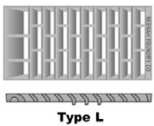
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3297-1	C	2.3	7.5
R-3297-1	L	2.4	7.5

Standard Grate (shown): Type C

Also available with grate Type L.

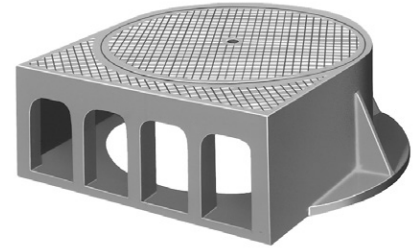
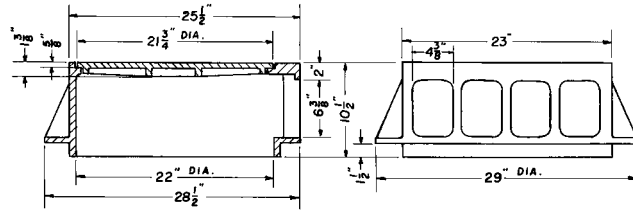


Fabricated steel frame, Gray iron grates and curb box.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3303
Catch Basin Frame, Lid

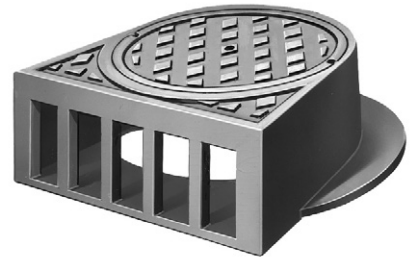
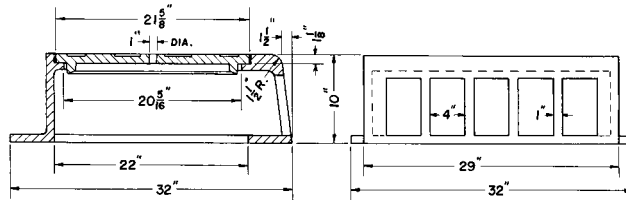
Heavy Duty



For behind-the-curb construction.

R-3305
Catch Basin Frame, Lid

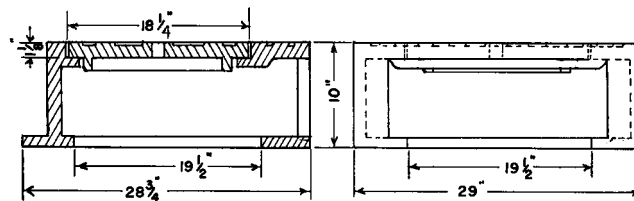
Heavy Duty



For behind-the-curb construction.

R-3308
Catch Basin Frame, Lid

Heavy Duty

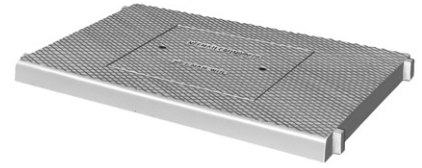
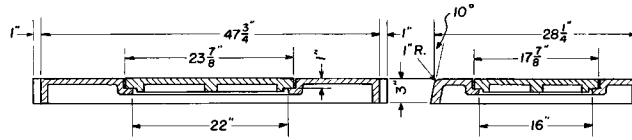


For behind-the-curb construction.
 Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3312-A
Single Catch Basin Frame, Lid

Heavy Duty

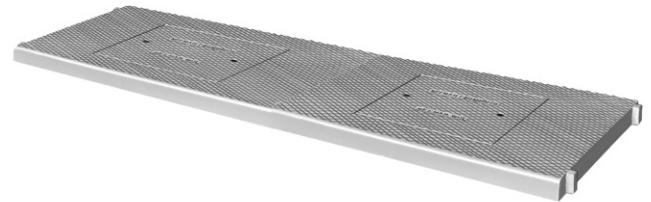
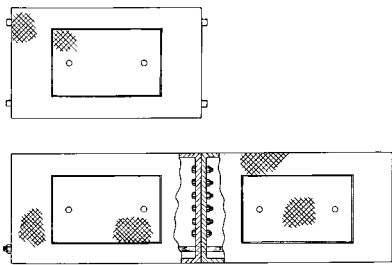


For behind-the-curb construction.
 Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

COMBINATION
INLETS
3

R-3312-B
Double Catch Basin Frame, Lid

Heavy Duty

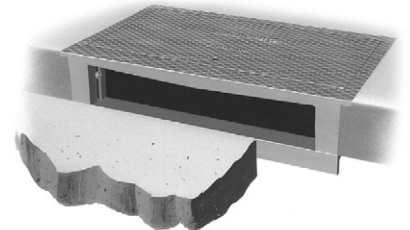
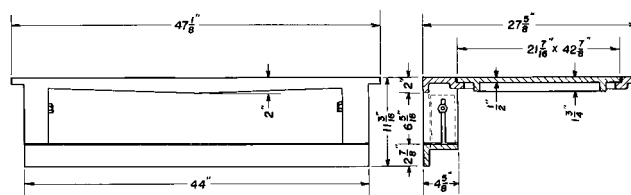


See 3312-A for additional dimensional information.

For behind-the-curb construction.
 Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.
 Double unit consists of two sections placed end to end with butting joint machine-finished.
 1" steel rod keeps frames tightly together.

R-3313
Catch Basin Frame, Lid

Heavy Duty

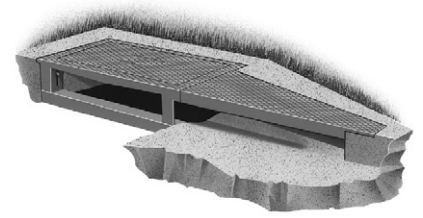
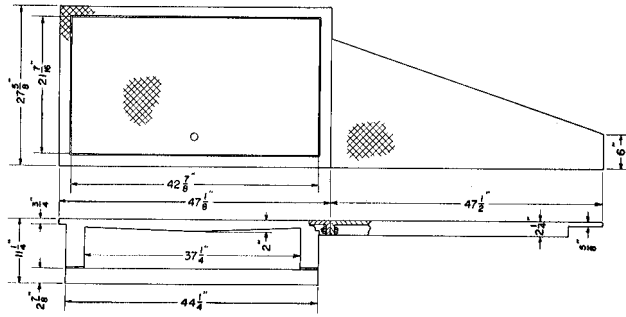


Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3317-R
Wing Type Inlet

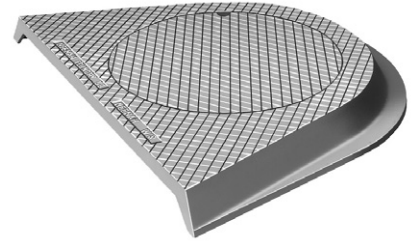
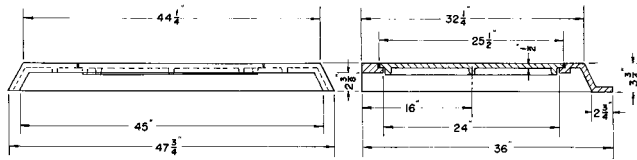
Heavy Duty



Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.
 For Left Hand inlet, order **R-3317-L**.

R-3318
Catch Basin Frame, Lid

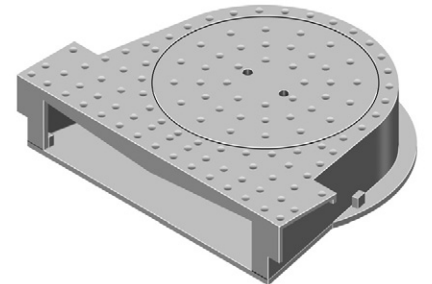
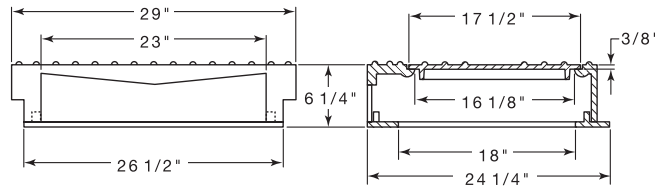
Heavy Duty



Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

R-3323
Inlet with Flat Pan Outlet

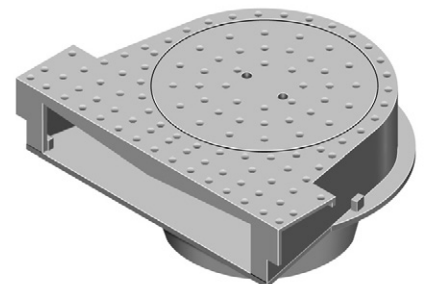
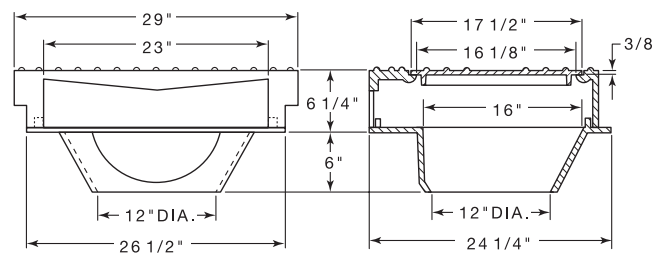
Heavy Duty



Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

R-3323-P
Inlet with Deep Pan Outlet

Heavy Duty

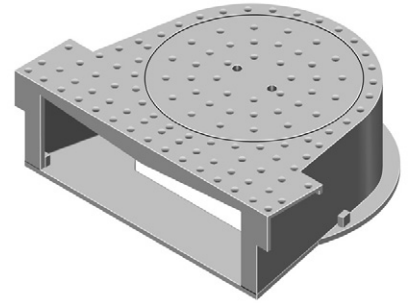
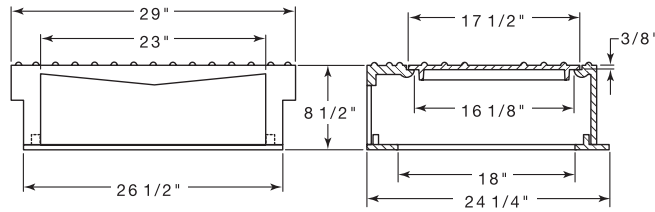


Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3324
Inlet with Flat Pan Outlet

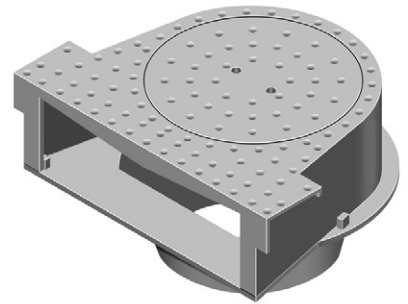
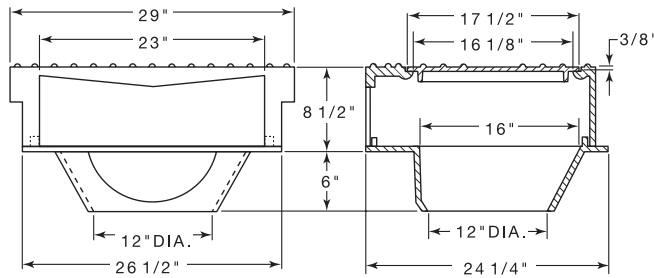
Heavy Duty



Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

R-3324-P
Inlet with Deep Pan Outlet

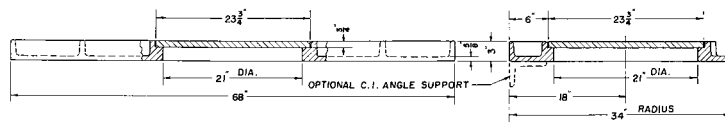
Heavy Duty



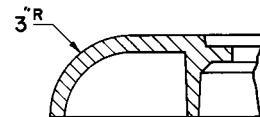
Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

R-3326
Large Catch Basin Frame, Lid

Heavy Duty



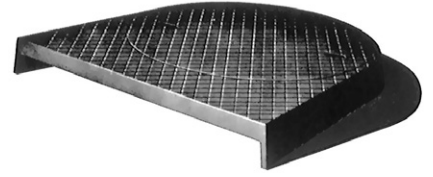
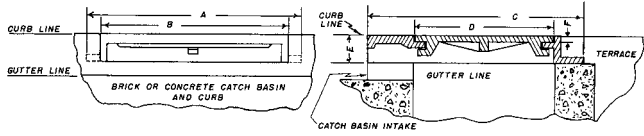
Available with 3" radius curb front, order **R-3326-A**.
 Specify cast iron angle support if required.
 Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.



Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3330 Series
Catch Basin Frame, Lid

Heavy Duty



Illustrating R-3330

Not recommended for use in areas where large gutter trash objects are prevalent.
 Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

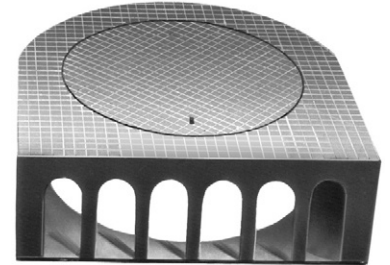
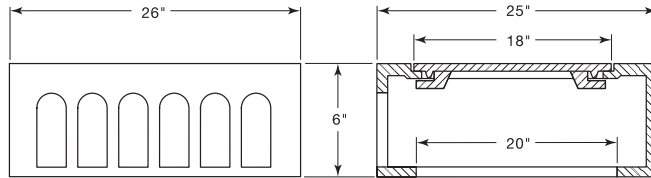
COMBINATION
 INLETS

3

Catalog No.	Dimensions in inches					
	A	B	C	D	E	F
R-3330	34 1/2	30	34	23 1/2	4	1
R-3331	34	30	31 3/4	22 3/4	4	7/8

R-3333-A
Catch Basin Frame, Lid

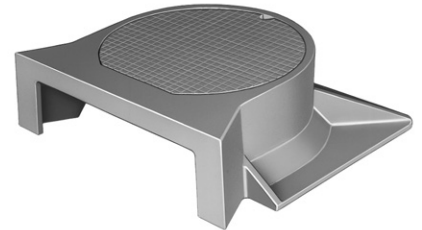
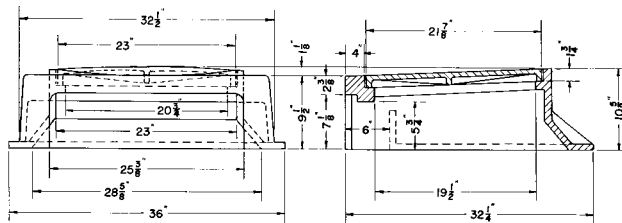
Heavy Duty



For behind-the-curb construction.
 Lids furnished standard with type "F" locks.
 Openings are 3" x 4-1/2".

R-3334-F
Catch Basin Frame, Lid

Heavy Duty

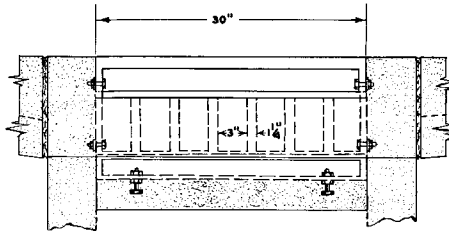


For behind-the-curb construction.
 Not recommended for use in areas where large gutter trash objects are prevalent. Curb opening, without gutter grate, allows large trash to enter catch basin and clog lines.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3335-1
Combination Inlet Gutter Plate, Curb Box, Solid Lid

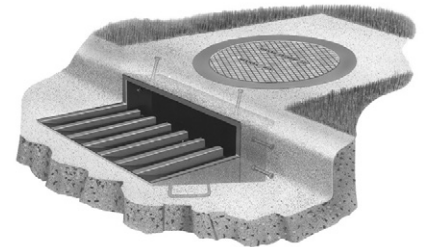
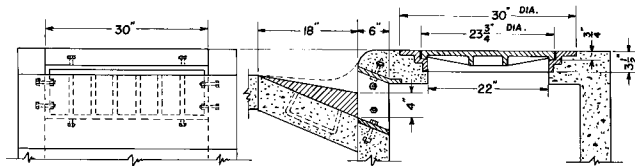
Heavy Duty



For behind-the-curb construction.
 Has removable cast iron cover.
 Also furnished with curb casting for 10 and 20 foot corner radius in double unit. Used in multiples of 3 or 4 single units for heavy drainage area. Specify when multiples or radius units are required.

R-3335-B
Combination Inlet Gutter Plate, Curb Box, Access Frame, Lid

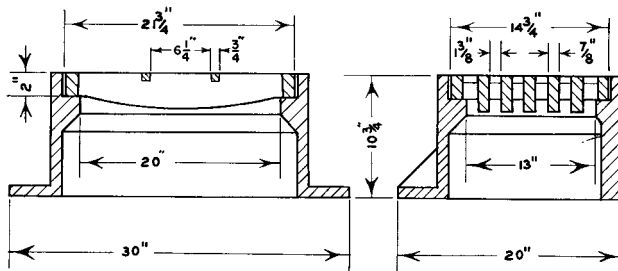
Heavy Duty



For behind-the-curb construction.
 For heavy drainage areas, can be supplied in multiples of 2, 3 or 4 single units with one catch basin access cover. Specify the number of curb and gutter units required for multiple design.

R-3337-A
Gutter Inlet Frame, Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3337-A	C	1.1	6.0

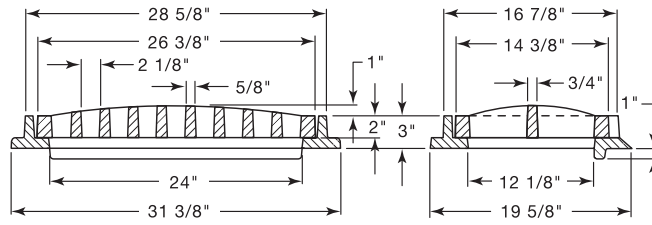
COMBINATION INLETS
3



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3338-F Single Convex Inlet Frame, Grate

Heavy Duty

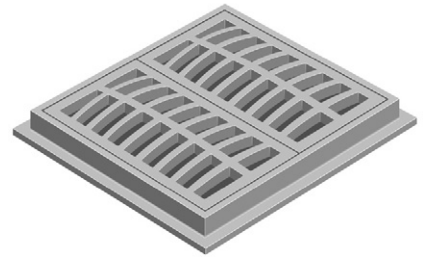
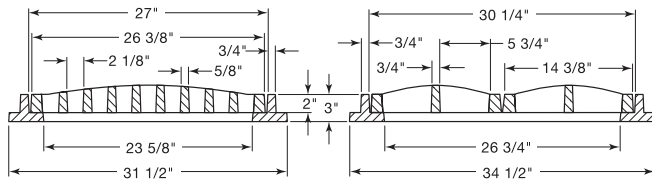


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3338-F	A	1.4	6.5

Grate reversible if flat top inlet is required.
 Four wall frame is also available.

R-3338-G Single Convex Inlet Frame, Double Grate

Light Duty

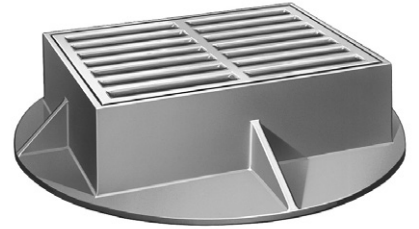
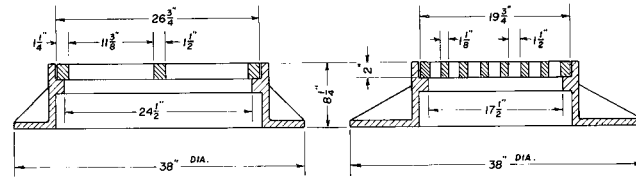


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3338-G	A	2.8	9.5

Grate reversible if flat top inlet is required.

R-3339 Catch Basin Inlet Frame, Grate

Heavy Duty

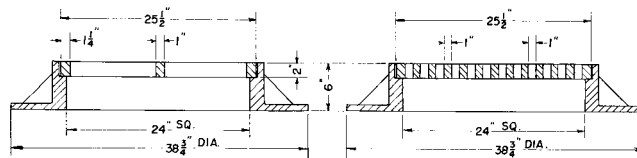


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3339	C	1.6	7.8
R-3339-1	C	1.4	7.8

Alternate grate available (1-1/2" x 4-15/16" slots), order as R-3339-1.

R-3339-A Catch Basin Inlet Frame, Grate

Heavy Duty



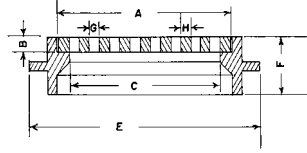
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3339-A	A or C	1.8	8.5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3340 Series Slab-Type Frame, Grate with Anchor Flange

Heavy Duty

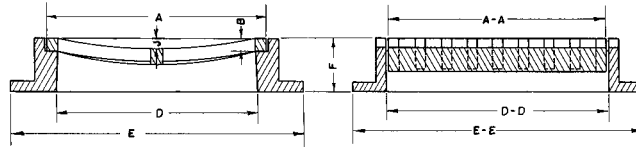
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3340-B	C	1.3	6.8
R-3340-D	C	1.2	7.5



Catalog No.	Dimensions in inches							
	A	B	C	D	E	F	G	H
R-3340-B	17 1/4 x 23 3/4	2	15 1/8 x 22	17 1/2 x 24	23 1/2 x 30	5	2 x 6	1 1/8
R-3340-D	20 x 25	2	18 x 23	20 x 25	26 x 31	5	1 1/2 x 4 3/4	1 5/8

R-3341 to R-3351 Series Concave Gutter Inlet Frame, Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3341	K	0.3	3.2
R-3342	K	0.5	4.4
R-3344	K	1.1	6.2
R-3345	A	1.1	6.8
R-3346	C	1.4	8.9
R-3347	C	1.3	7.4
R-3347-A	C	2.3	10.4
R-3348	A	1.9	8.0
R-3349-A	K	1.8	7.7
R-3350	K	2.2	9.3
R-3351	C	2.7	9.3

Catalog No.	Dimensions in inches								
	A	A-A	B	D	D-D	E	E-E	F	J
R-3341	7 1/2	11 1/2	1 1/2	8	11 1/2	15 1/2	19	6	3/4
R-3342 *	11 1/2	15	1	10	15	30	-	9 1/2	1
R-3344 ***	13	24	2	13	24	23	34	9 1/2	1
R-3345	15	26	1 1/2	12	26	20	34	6	1 1/2
R-3346	15	38 1/2	1 1/4	16 1/2	40	23	47	7 1/2	1
R-3347	22 1/4	22 1/4	2 1/2	20 1/8	20 1/8	36	Dia.	8	1/2
R-3347-A	22 7/8	39 5/8	2	18 1/2	35 1/4	29 3/4	46 1/2	6	1
R-3348	24	24	2	26 1/2	26 1/2	35	35	7	1
R-3349-A	18	28	2 1/4	16	26	25	35	4 1/2	3/4
R-3349-B	18	28	2 1/4	16	28 3/16	25	35	4 1/2	3
R-3350	28	28	1 3/4	29	29	35	35	6	1 3/8
R-3351 **	28	28	1 1/2	29	29	35	35	6	1 3/4

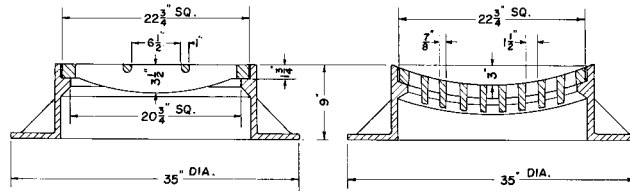
* Only available with 30" diameter base flange.
 ** Furnished with openings parallel with gutter.
 *** Grate supported by lugs.

COMBINATION
INLETS
3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3356-A Concave Gutter Inlet Frame, Grate

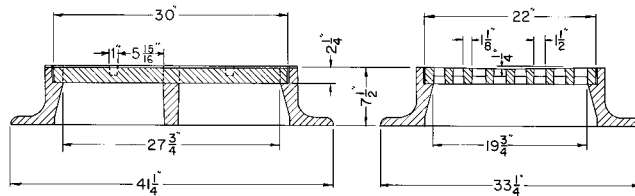
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3356-A	C	1.5	7.6

R-3357-A Concave Gutter Inlet Frame, Grate

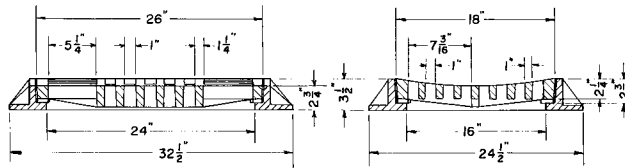
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3357-A	C	2.0	8.7

R-3359 Concave Gutter Inlet Frame, Grate

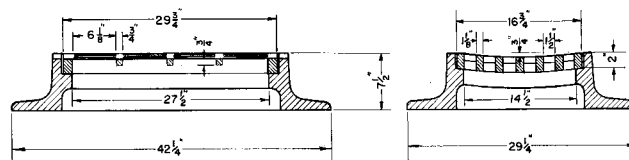
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3359	K	1.1	7.3

R-3360-A Single Valley Gutter Inlet Frame, Grate

Heavy Duty



Standard Grate (shown): Type C
 Also available with grate Type D.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3360-A	C	1.6	7.8
R-3360-A	D	1.7	7.8

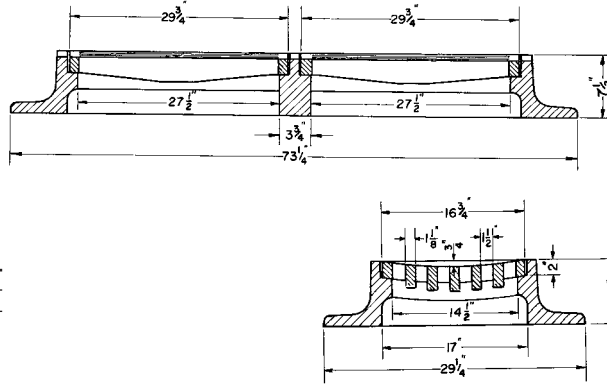


Type D

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3361 Double Valley Gutter Inlet Frame, Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3361	K	3.4	12.7
R-3361	C	3.2	12.7

Standard Grate (shown): Type D
 Also available with grate Type C.

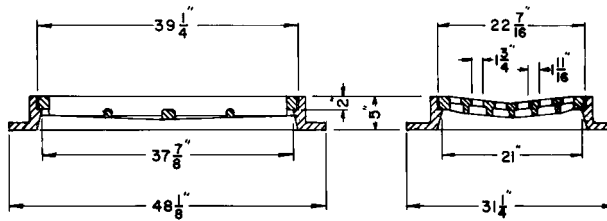


Type C

COMBINATION
 INLETS
 3

R-3362 Concave Gutter Inlet Frame, Grate

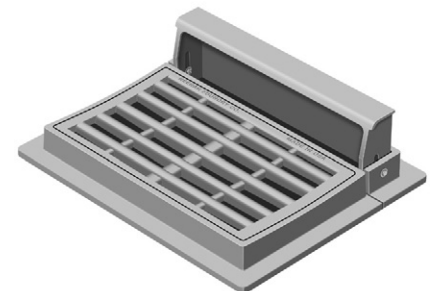
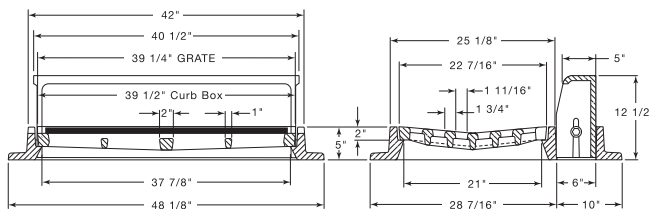
Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3362	C	2.3	10.3

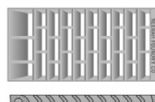
R-3362-1 Concave Gutter Inlet Frame, Grate, Curb Box

Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3362-1	C	2.3	7.0
R-3362-1	L	2.9	7.0

Standard Grate (shown): Type C
 Also available with grate Type L.

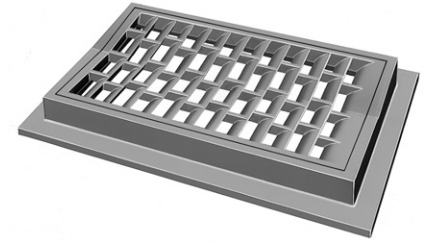
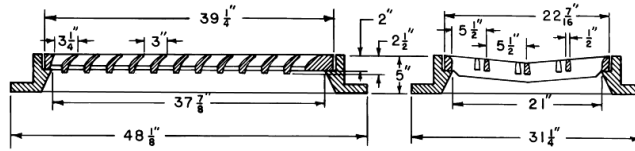


Type L

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3362-L Concave Gutter Inlet Frame, Grate

Heavy Duty

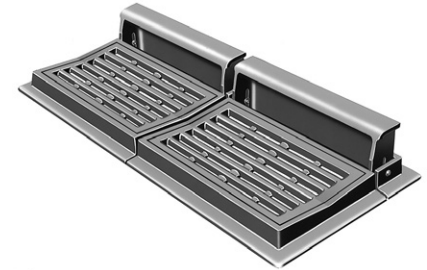
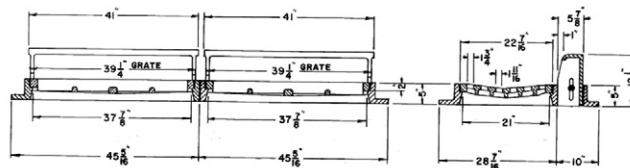


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3362-L	L	2.9	10.3

Can be furnished as double unit with side flanges removed as shown in R-3363-1.

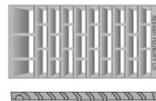
R-3363-1 Double Unit Inlet Frame, Grate, Curb Box

Light Duty



Standard Grate (shown): Type C
 Type L grate available.

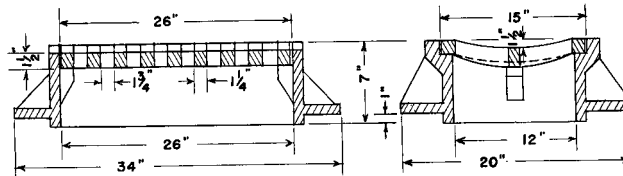
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3363-1	C	4.6	10.3
R-3363-1	L	5.8	10.3



Type L

R-3381 Concave Gutter Inlet Frame, Grate

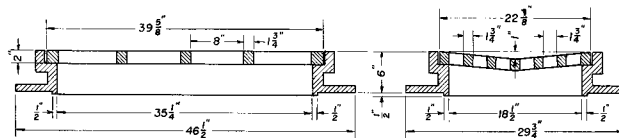
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3381	A	1.0	6.8

R-3382 Concave Gutter Inlet Frame, Grate

Heavy Duty

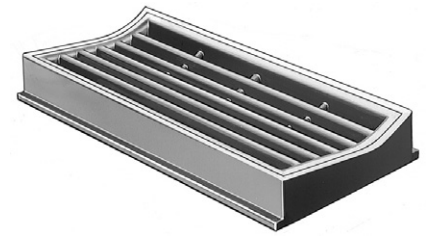
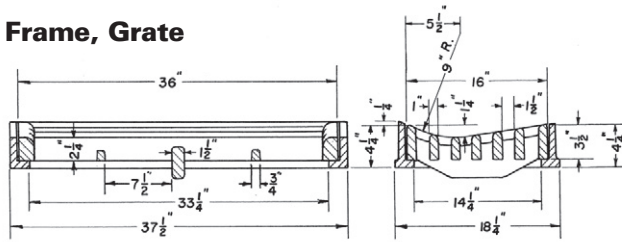


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3382	C	2.3	10.4

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3393-A
Concave Gutter Inlet Frame, Grate

Heavy Duty

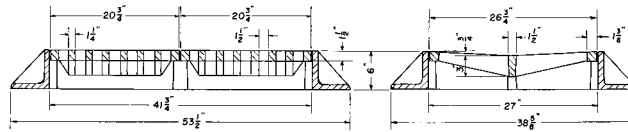


Grates are bolted to frame.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3393-A	C	2.0	8.7

R-3396
Concave Gutter Inlet Frame, Grate

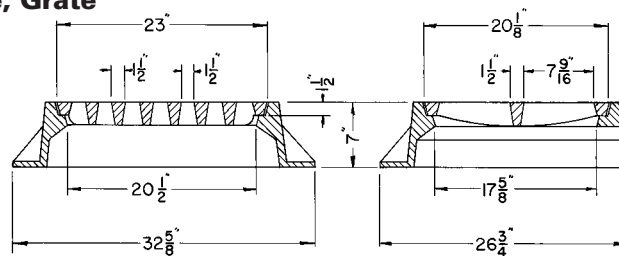
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3396	C	3.2	11.4

R-3397
Gutter Inlet Frame, Grate

Heavy Duty

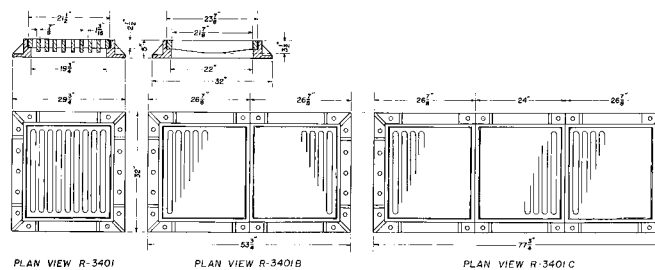


Note opening at rear of frame.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3397	A	1.1	7.2

R-3401 Series
Gutter Inlet Frame, Grate

Heavy Duty



Illustrating R-3401

Catalog No.	No. of grates	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3401	Single grate	R-3401	D	1.9	7.6
R-3401-B	Double grate	R-3401-B	B	3.8	11.2
R-3401-C	Triple grate	R-3401-C	B	5.7	14.7

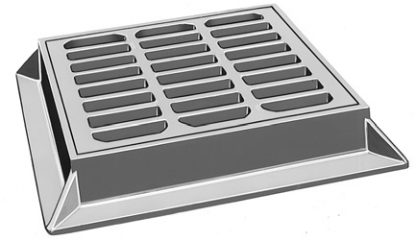
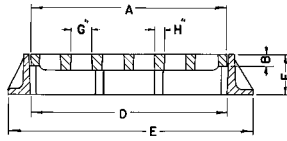
Click [HERE](#) to go back to the Table of Contents

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3402 to R-3403 Series Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3402	H	0.4	4.0
R-3402-E	A or C	2.1	8.0
R-3403	A	1.1	6.5

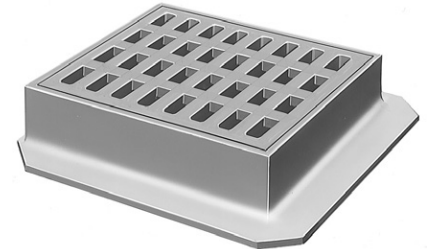
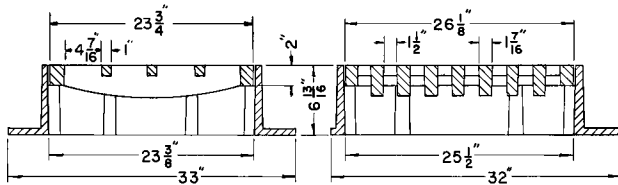


Illustrating R-3402-E

Catalog No.	Dimensions in inches						
	A	B	D	E	F	G	H
Square							
R-3402	11 7/8 x 11 7/8	1 1/8	11 7/8 x 11 7/8	17 x 17	4	1 1/2 x 1 1/2	5/8
R-3402-E	24 x 24	1 1/2	24 x 24	29 3/4 x 29 3/4	5	2 5/8 x 6 1/2	1
Rectangular							
R-3403	16 3/4 x 22 1/4	1 13/16	16 3/4 x 22 1/4	25 x 30 3/8	5 7/8	1 7/8 x 4 1/16	1

R-3403-A1 Gutter Inlet Frame, Grate

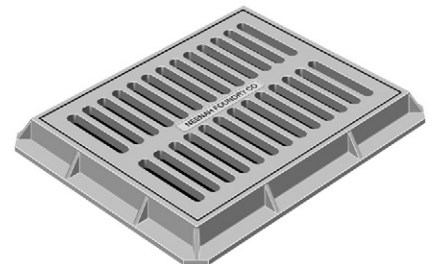
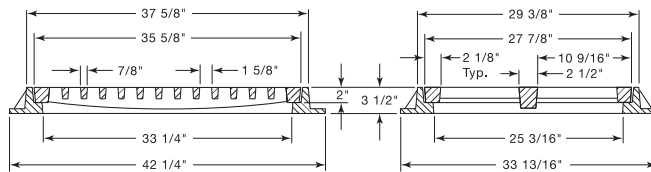
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3403-A1	A	1.5	8.3

R-3403-F Gutter Inlet Frame, Grate

Heavy Duty



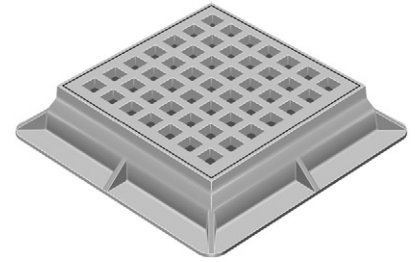
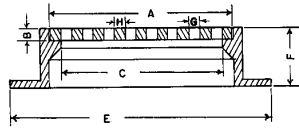
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3403-F	A	3.2	10.6

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3404 to R-3405 Series Gutter Inlet Frame, Grate

Heavy Duty

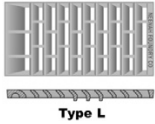
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3404	H	1.4	7.2
R-3405	H	1.5	7.9
R-3405-A	H	1.3	8.0
R-3405-A	L	1.5	8.0
R-3405-B	H	1.3	8.0
R-3405-B	L	1.5	8.0



Illustrating R-3405

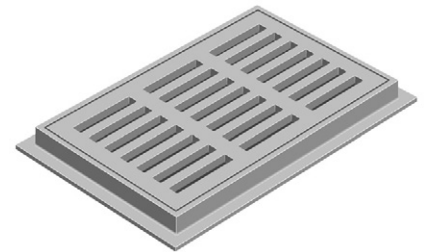
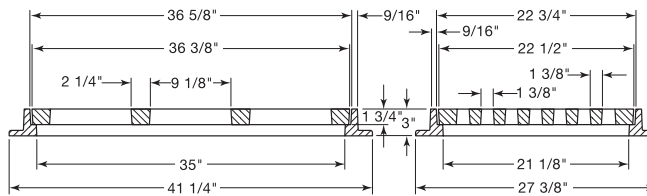
Catalog No.	A	B	C	E	F	G	H
R-3404	21 1/2 x 21 1/2	1 1/2	20 1/8 x 20 1/8	30 5/8 x 30 5/8	5 1/8	2 x 2	15/16
R-3405	23 5/8 x 23 5/8	1 1/2	22 x 22	32 3/4 x 32 3/4	6	2 1/8 x 2 1/8	1
R-3405-A **	23 7/8 x 23 7/8	2	22 x 22	32 1/8 x 32 1/8	6 1/8	2 1/4 x 2 1/4	1 7/16
R-3405-B * **	23 7/8 x 23 7/8	2	22 x 22	32 1/8 x 29	6 1/8	2 1/4 x 2 1/4	1 7/16

* Same as R-3405-A except base flange on 3 sides only.
 ** Also available grate Type L.



R-3406 Single Gutter Inlet Frame, Grate

Heavy Duty



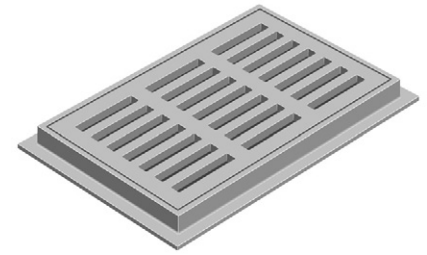
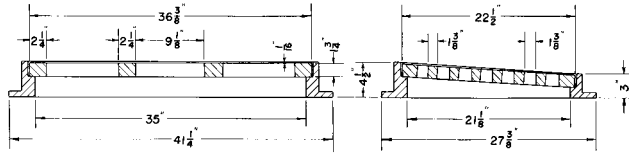
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3406	C	1.8	9.8
R-3406-2	C	3.7	15.9

Double unit available with 27 3/8" x 79" outside frame dimension, order **R-3406-2**.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3406-A Single Gutter Inlet Frame, Grate

Heavy Duty

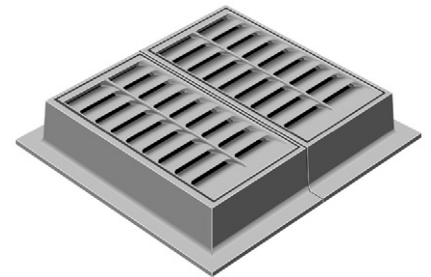
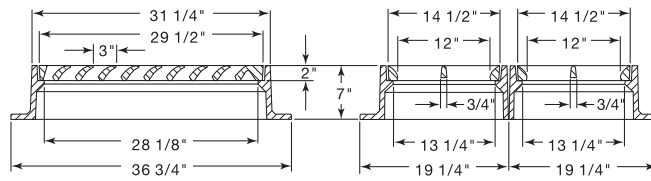


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3406-A	C	1.8	9.8
R-3406-A2	C	3.7	15.9

Note sloping top.
 Double unit available with 27 3/8" x 79" outside frame dimension, order R-3406-A2.

R-3408-AL Double Gutter Inlet Frames, Grates

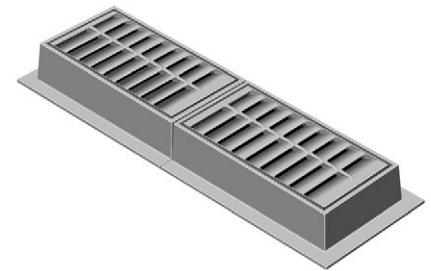
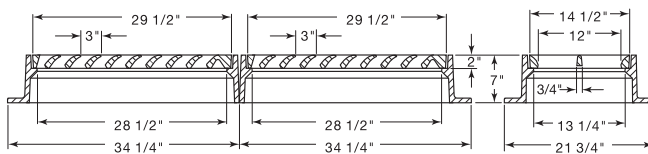
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3408-AL	L	2.4	9.7

R-3408-BL Double Gutter Inlet Frames, Grates

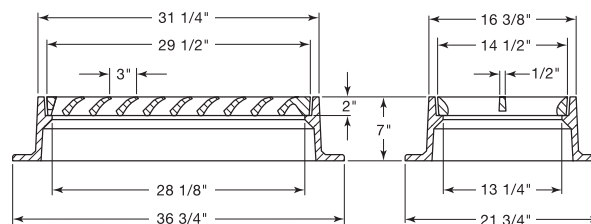
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3408-BL	L	2.4	12.5

R-3408-L Single Gutter Inlet Frame, Grate

Heavy Duty

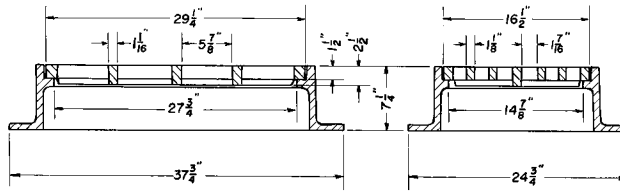


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3408-L	L	1.2	7.3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3409 Gutter Inlet Frame, Grate

Heavy Duty

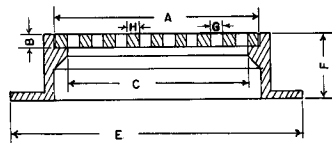


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3409	C	1.5	7.6

R-3413 to R-3416 Series Long Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3413	C	1.5	9.0
R-3415	A	4.1	13.5
R-3416	A	1.4	9.8



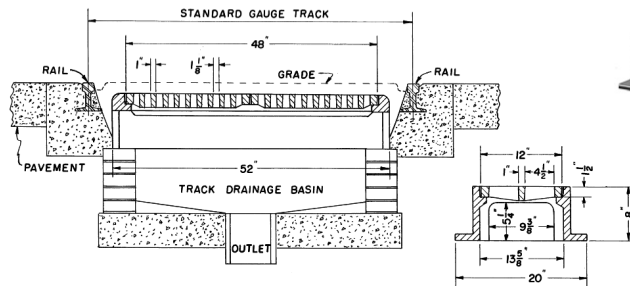
Dimensions in inches

Catalog No.	A	B	C	E	F	G	H
R-3413	17 3/4 x 35 3/4	2	16 x 34	28 x 46	7	1 3/4 x 6 1/4	1 1/8
R-3415 *	23 x 58	1	21 x 56	35 x 70	8 1/2	1 x 8	1
R-3416	23 1/2 x 35 1/2	2	22 x 33	34 x 46	6 1/4	2 x 9 3/4	1 1/4

* Grate in two sections.

R-3420 Track and Bridge Drain Frame, Grate

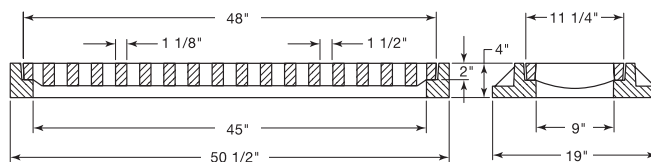
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3420	A	1.2	10.0

R-3423 Track and Bridge Drain Frame, Grate

Heavy Duty



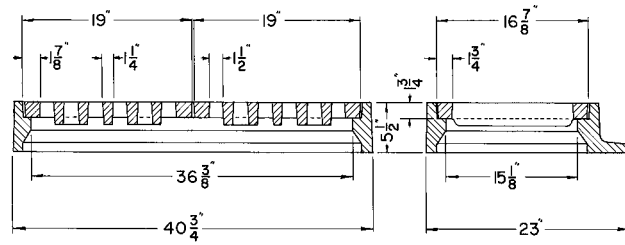
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3423	B	1.6	9.9

COMBINATION
INLETS
3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3425-A Single Flange Gutter Inlet Frame, Double Grate

Heavy Duty



Standard Grate (shown): Type K
 Also available with grate Type L.

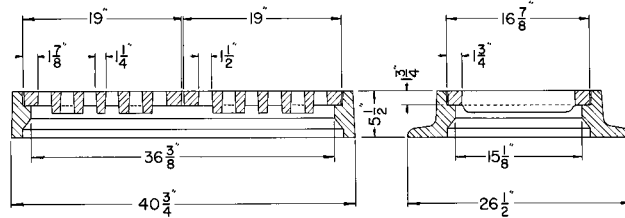
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3425-A	K	2.1	9.4
R-3425-A	L	2.3	9.4



Type L

R-3425-B Double Flange Gutter Inlet Frame, Double Grate

Heavy Duty



Standard Grate (shown): Type K
 Also available with grate Type L.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3425-B	K	2.1	9.4
R-3425-B	L	2.3	9.4

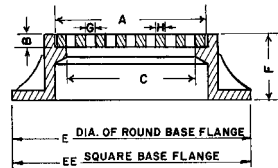


Type L

R-3429 to R-3438 Series Square and/or Round Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3429-A	A or C	1.0	6.0
R-3430	A or C	0.9	6.6
R-3433	A or C	1.5	8.0
R-3433	L	1.6	7.9
R-3437	A or C	3.3	12.0
R-3438-A	A or C	7.0	16.6



Illustrating R-3430

Dimensions in inches

Catalog No.	A	B	C	E	EE	F	G	H
R-3429-A	18 x 18	1 1/2	16 1/4 x 16 1/4	30" Dia	-	6	2 1/4 x 4 1/4	1
R-3430	20 x 20	1 3/4	18 x 18	36" Dia	31 x 31	5	1 3/8 x 3 1/2	1 1/4
R-3433 **	24 x 24	2	22 x 22	38" Dia	35 x 35	6	1 3/4 x 6	1 3/8
R-3437 *	36 x 36	1 3/4	34 x 34	-	45 x 45	7	2 x 4	1 3/8
R-3438-A *	50 x 50	1 3/4	48 x 48	-	59 x 59	8	1 1/2 x 6 1/4	1 1/8

* Grate furnished in two pieces.

** Also available with grates A/C or Type L.

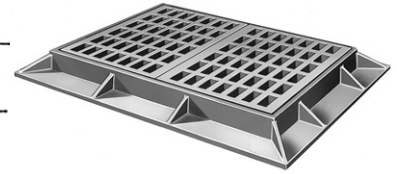
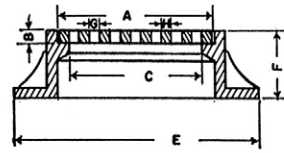
■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3448 to R-3457 Series Rectangular Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3448-B	A	1.1	6.8
R-3448-C	C	0.9	6.8
R-3448-D	S	1.2	6.8
R-3449	A	0.9	6.8
R-3451	C	1.5	7.3
R-3451-B	C	1.7	7.8
R-3454	A	4.1	13.2
R-3454-B	D	2.5	9.9

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3454-BL	L	3.1	7.0
R-3454-C	C	2.9	13.2
R-3455-A	A	2.6	9.8
R-3455-C	A	2.6	10.0
R-3457-C2	A	6.0	14.0



COMBINATION INLETS
3

Dimensions in inches

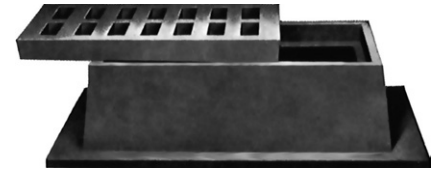
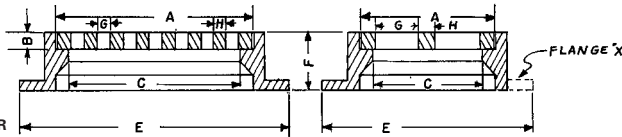
Catalog No.	A	B	C	E	F	G	H
R-3448-B	17 3/4 x 22 3/4	1 3/4	***	23 3/4 x 32	6 3/4	1 5/8 x 3 1/4	1 1/8
R-3448-C	17 3/4 x 22 3/4	1 3/4	***	34	6 3/4	1 1/2 x 3	1 1/4
R-3448-D **	17 3/4 x 22 3/4	1 3/4	***	34	6 3/4	1 1/2 x 5 3/8	1
R-3449	18 x 23	2	***	24 x 29	5	1 1/4 x 7	1 1/8
R-3451	17 3/4 x 35 3/4	2	16 x 34	28 x 46	7	1 3/4 x 6 1/4	1 1/8
R-3451-B	19 3/4 x 26 3/4	2	17 1/2 x 24 1/2	38	8 1/4	1 1/2 x 11 3/8	1 1/2
R-3454 *	22 5/8 x 56 3/4	1	21 x 56	35 x 70	8 1/2	1 x 6 1/4	1
R-3454-B	23 3/4 x 35 7/8	2	21 3/4 x 33 3/8	31 x 45	6 1/2	1 x 32 3/8	1
R-3454-BL §	23 3/4 x 35 7/8	2	21 3/4 x 33 3/8	31 x 45	6 1/2		1
R-3454-C	23 3/4 x 35 7/8	2	21 3/4 x 33 3/8	31 x 45	6 1/2	1 3/4 x 6 1/2	1 1/4
R-3455-A	23 1/2 x 35 1/2	2	22 x 33	34 x 46	6 1/4	2 x 9 3/4	1 1/4
R-3455-C	24 x 36	1 3/4	22 x 34	36 x 48	9	1 3/4 x 6	1
R-3457-C2 ¥	36 x 48	1 3/4	***	42 x 54	5 1/2	1 7/8 x 21 3/8	1 1/4

* Grate in two sections.
 ** Sinusoidal style (Type S) grate.
 *** Frames provided with lugs supporting grates at corners.
 ¥ Frame and Grate furnished in two pieces. Frame with center support bar.
 § Vane style (Type L) grate.

R-3460 Series Special Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3460-A	A	0.8	6.0
R-3460-A	C	1.1	6.0
R-3460-D	A	0.8	6.0
R-3460-D	C	0.8	6.0



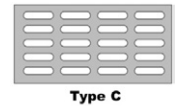
Illustrating R-3460-D

Type A grate furnished, Type C available on request.

Dimensions in inches

Catalog No.	A	B	C	E	F	G	H
R-3460-A	14 1/2 x 21 1/2	2	13 x 20	23 x 30	5 1/2	1 21/32 x 5 11/32	1 1/4
R-3460-D *	14 1/2 x 21 1/2	2	13 x 20	20 x 30	10 1/2	1 21/32 x 5 11/32	1 1/4

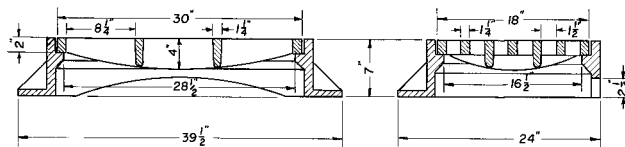
* Flange "x" removed making 3-flange inlet.



R-3461 3-Flange Gutter Inlet Frame, Grate

Heavy Duty

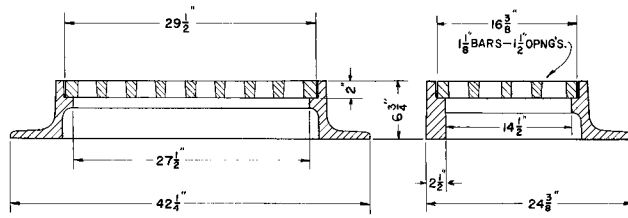
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3461	C	1.5	8.0



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3462-B Single Gutter Inlet Frame, Grate

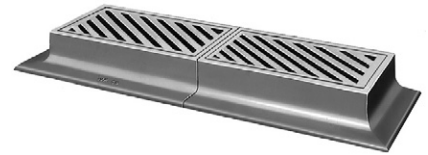
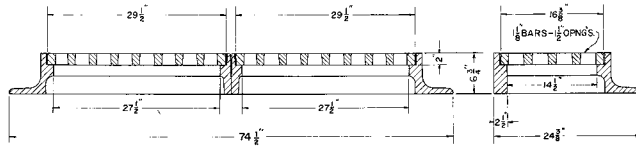
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3462-B	R	1.8	7.6

R-3463-B Double Gutter Inlet Frames, Grates

Heavy Duty



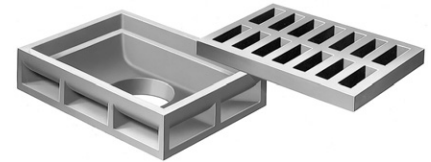
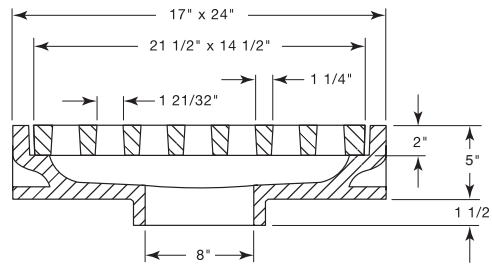
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3463-B	R	3.5	12.6

R-3465 Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3465	A	0.8	6.0
R-3465	C	1.1	6.0

Standard Grate (shown): Type A
 Also available with grate Type C.



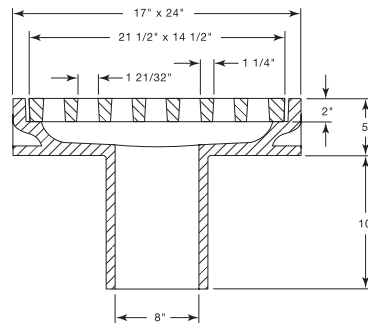
Type C

R-3466-A Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3466-A	A	0.8	6.0
R-3466-A	C	0.8	6.0

Standard Grate (shown): Type A
 Also available with grate Type C.

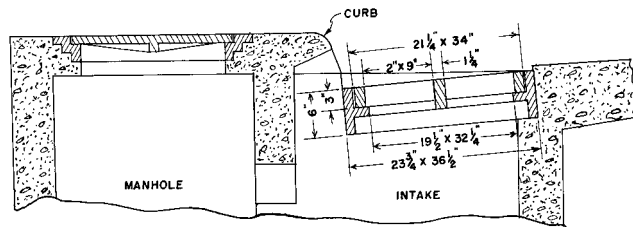


Type C

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3469 Gutter Inlet Frame, Grate

Heavy Duty



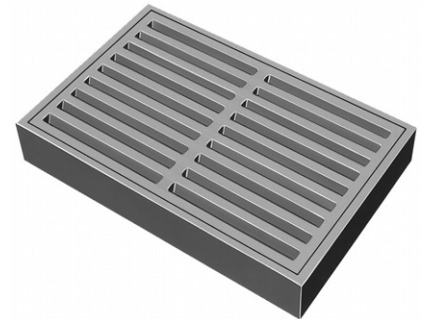
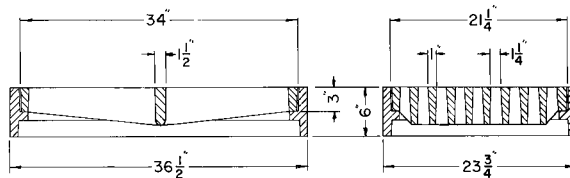
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3469	A	2.7	9.2

The drawing shows one method of installing as a combination intake and manhole. The cleanout manhole listed under Neenah **R-6040** is not furnished as part of this combination and should be ordered separately.

When increased drainage is required, two or more inlets are placed end-to-end in combinations over large basins or trench drains.

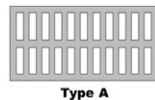
R-3469-E2 Gutter Inlet Frame, Grate

Heavy Duty



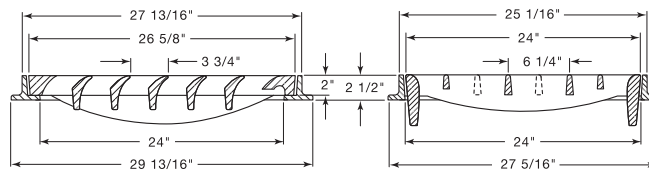
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3469-E2	C	2.3	9.2
R-3469-E2	A	2.7	9.2

Standard Grate (shown): Type C
 Also available with grate Type A.



R-3470 Gutter Inlet Frame, Grate

Heavy Duty



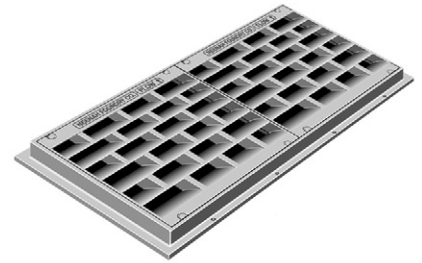
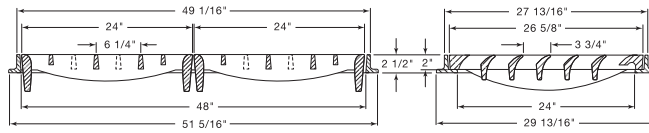
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3470	L	2.2	8.4

COMBINATION INLETS
3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3470-2 Double Gutter Inlet Frame, Grates

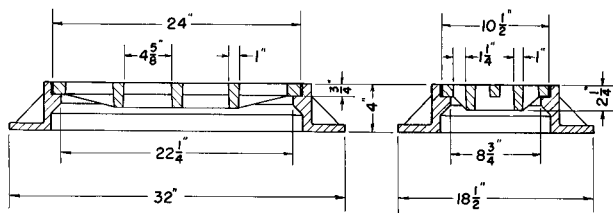
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3470-2	L	4.4	12.4

R-3471 Narrow Gutter Inlet Frame, Grate

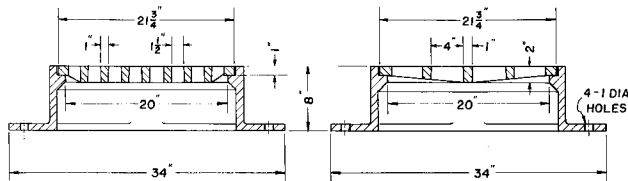
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3471	C	0.6	5.8

R-3472 Gutter Inlet Frame, Grate

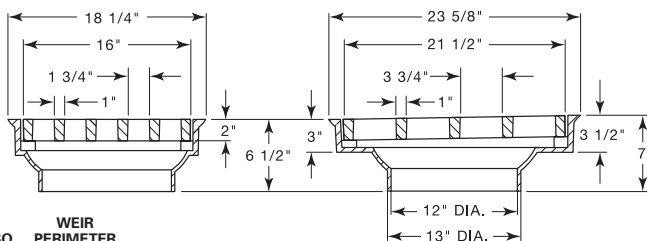
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3472	A or C	1.3	7.3

R-3473 Gutter Inlet Frame, Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3473	C	0.9	6.3

AIRPORT CONSTRUCTION CASTINGS



As of this writing, airport construction castings should be selected to sustain the loading requirements of a Boeing 727-200 and Lockheed L1011-500 aircraft. Although not the heaviest aircraft, load concentrations on these gear configurations currently represent the most severe loads exerted upon castings in a commercial airfield setting.

For heavier, dual-gear aircraft, an assumed spacing of 34" between the centerline of the tires has been considered reasonable by the FAA. The Boeing 727-200 (see Figure 1) is considered because the spacing of the wheels is such that 2 wheels may be concentrated on one casting. Based on this assumption, construction castings with clear openings greater than 34" can be subjected to loadings greater than that of one wheel. However, due to the distribution of this loading on the casting, the effective loading may not necessarily be as critical as a single concentrated wheel load in the center of the casting.

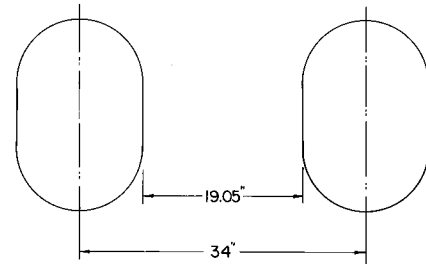


Figure 1
Boeing 727-200 Gear Configuration
Contact Area 290 Sq. In. — Tire Pressure 167 psi

Notes to project designer:

THE REFERENCES TO AIRCRAFT AND TO FAA MATERIALS CONTAINED ON THIS PAGE ARE CURRENT AS OF THIS WRITING, BUT MAY NOT BE CURRENT WHEN YOU READ THIS CATALOG. ALWAYS CHECK WITH THE FAA OR A QUALIFIED EXPERT TO ENSURE YOU ARE WORKING WITH UP-TO-DATE INFORMATION.

- All items shown in Neenah's Airport Series are capable of withstanding minimum 100,000-pound loads as called for in FAA Advisory Circular AC 150/5320-6D Appendix 3 Item 2.d.(1).

- All items shown in Neenah's Airport Series will be furnished with covers or grates fastened to frames as called for in FAA Advisory Circular AC 150/5370-10A.

- All items shown in Neenah's Airport Series will be furnished unpainted per FAA Advisory Circular AC 150/5370-10A.

- Slotted vane drain (R-3599-B) is furnished per FAA Advisory Circular AC 150./5370-10A

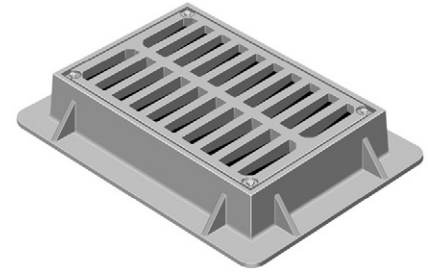
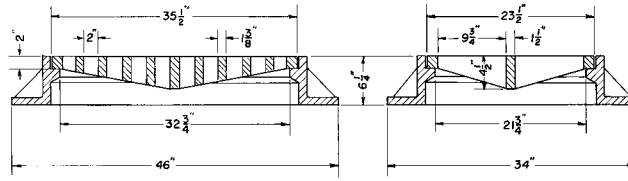
Military installations, container ports and industrial applications may have aircraft or equipment exerting heavier loads than those expected on commercial airports. The product designer must determine tire pressure, contact area and wheel spacing information for each such application, after which Neenah Product Engineering will be glad to provide the designer with product information to assist in the selection of appropriate castings.

Aircraft	Wheels Per Strut	Vehicle Main Gear* Pounds	Max. Load Per Tire Pounds
727-100	2	76,900	34,450
727-200 STD	2	79,900	39,950
727-200 ADV	2	96,800	48,400
737-300	2	62,200	31,100
737-400	2	70,600	35,300
737-500	2	61,800	30,900
737-700	2	71,500	35,750
737-800	2	82,100	41,050
737-900	2	84,300	42,150
L1011-100	4	204,120	51,030
L1011-500	4	230,000	57,500
747-100B/300	4	174,000	43,500
747-400F	4	204,600	51,150
757-300	4	125,500	31,375
767-200ER	4	180,000	45,000
767-300ER	4	188,200	47,050
777	6	297,500	49,583
DC-10-10	4	212,535	53,134
DC-10-40	4	210,532	52,633
MD-11	4	242,000	60,500
MD-80-83	2	76,280	38,140
MD-90-30	2	75,740	37,870
A380	6	353,475	58,912
	4	235,650	58,912
A380F	6	372,025	62,004
	4	248,025	62,006

* Maximum static load per strut at the most aft center of gravity.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3475
Airport Drainage Inlet Frame, Deep Vertical Bar Grate

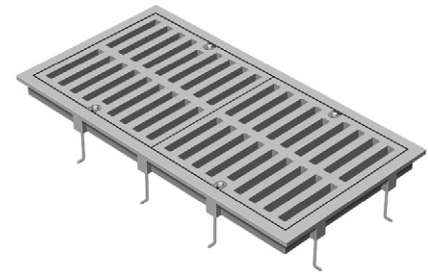
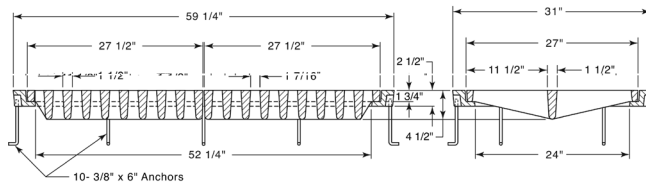


Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3475	A	2.7	9.8

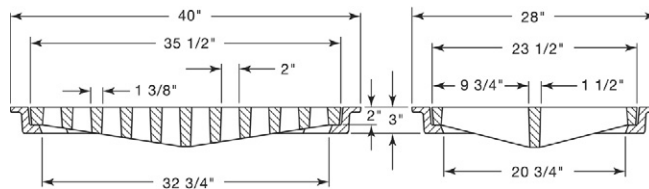
Also available with special Type C solid cover.
 Also available with 3 1/2" adjusting frame.

R-3475-3
Airport Drainage Inlet Frame, Double Grate



Grates are bolted to frames.

R-3475-A
Airport Drainage Inlet Frame, Deep Vertical Bar Grate

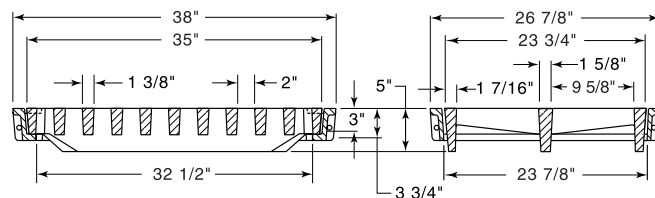


Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3475-A	A	2.7	9.8

Also available with 3 1/2" adjusting frame.

R-3475-E
Airport Drainage Inlet, Single Ductile Iron Grate



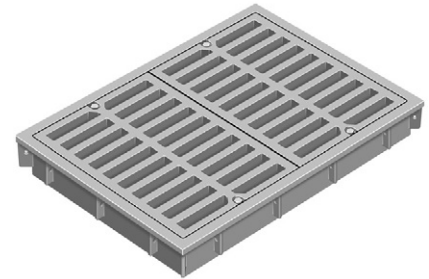
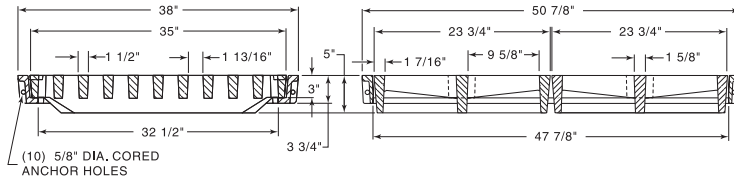
Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3475-E	A	2.4	9.8

Each grate has a free open area of approximately 2.4 sq. ft.
 Features easy to install one-piece frame.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3475-F Airport Drainage Inlet, Double Ductile Iron Grate

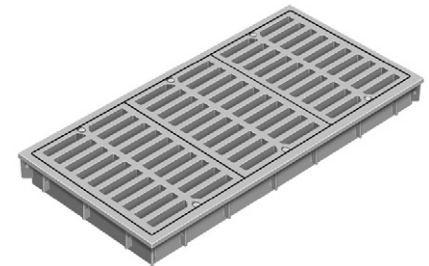
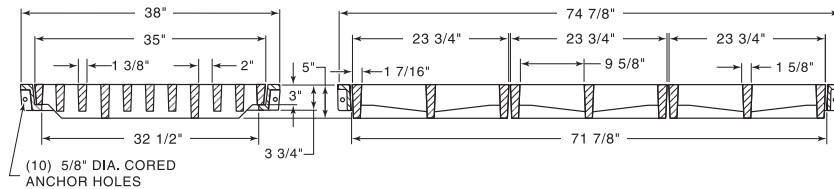


Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3475-F	C	4.8	13.8

Each grate has a free open area of approximately 2.4 sq. ft.
 Features easy to install one-piece frame.

R-3475-G Airport Drainage Inlet, Triple Ductile Iron Grate

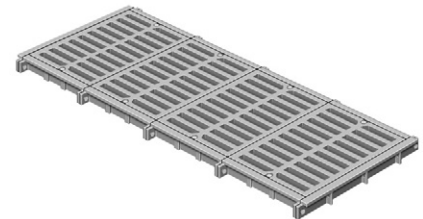
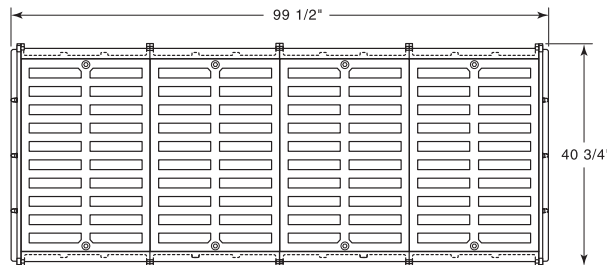


Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3475-G	C	7.2	17.8

Each grate has a free open area of approximately 2.4 sq. ft.
 Features easy to install one-piece frame.

R-3475-H Airport Drainage Inlet, Quad Ductile Iron Grate



Grates are bolted to frames.

- NOTE:**
- 1-CLEAR OPENING IS 32" x 96"
 - 2-FRAME HEIGHT IS 3 3/4"
 - 3-USE SAME GRATES AS R-3475-G

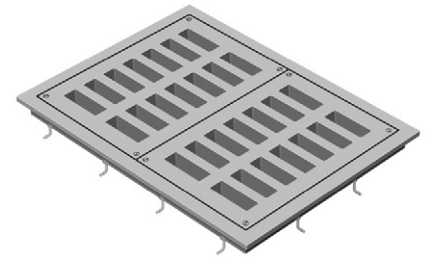
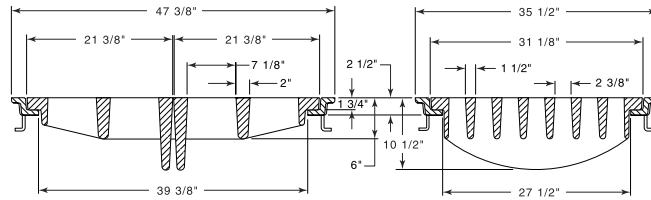
Each grate has a free open area of approximately 2.4 sq. ft.
 Frame/Grate units can be combined for longer length runs if specified.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3475-H	C	9.6	21.8

AIRPORT CASTINGS

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3477-A
Airport Drainage Inlet Frame, Double Grate

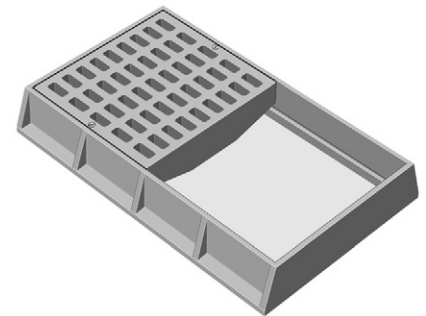
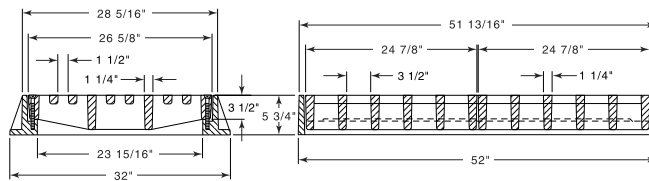


Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3477-A	C	3.3	12.3

Anchors 12" on center.

R-3480
Airport Drainage Inlet Frame, Double Grate

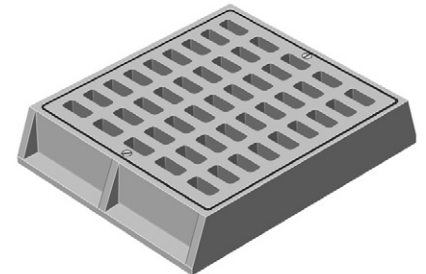
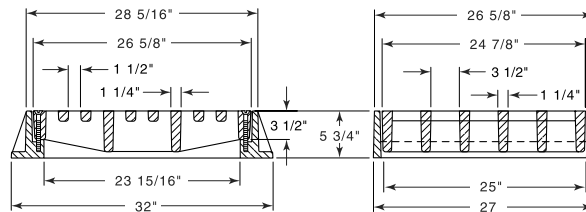


Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3480	C	3.3	12.7

Available with solid Type C cover upon request.

R-3480-A
Airport Drainage Inlet Frame, Single Grate

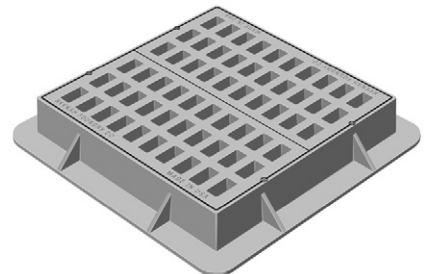
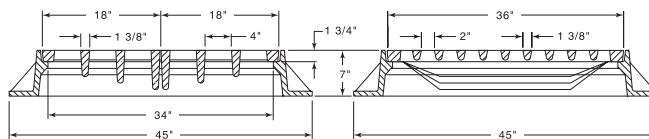


Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3480-A	A	1.6	8.5

Available with solid Type C cover upon request.

R-3481
Airport Inlet, Double Grate



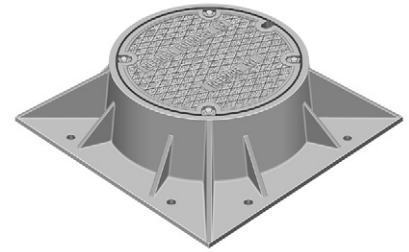
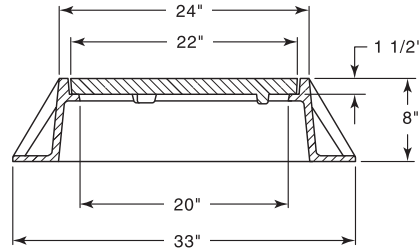
Grates are bolted to frames.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3481	C	3.3	12

Grate furnished in Ductile Iron.

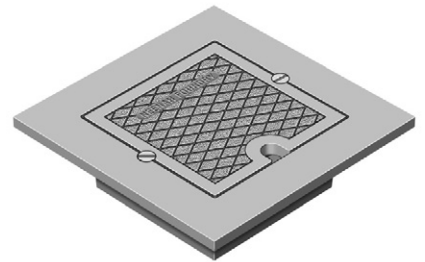
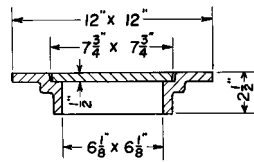
■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3485-B
Airport Frame, Solid Lid



Lids are bolted to frame.

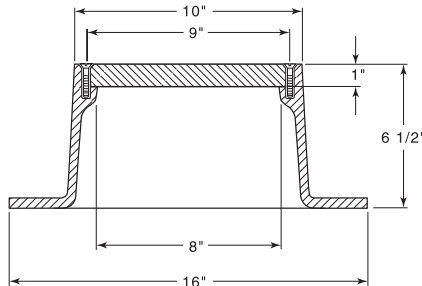
R-3486
Airport Tie-Down Frame, Lid



Lids are bolted to frame.

Will cover deeply anchored large tie-down eyes for heavy aircraft.
 Meets FAA 250 psi tire pressure requirement.
 Due to small size, 100,000 lb. load not applicable.

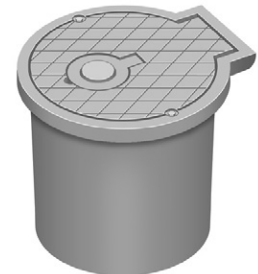
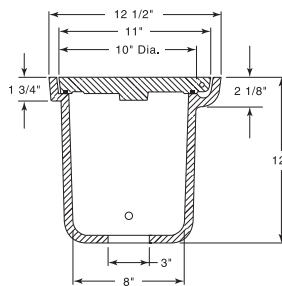
R-3487
Airport Inspection Frame, Lid



Lids are bolted to frame.

Meets FAA 250 psi tire pressure requirement.
 Due to small size, 100,000 lb. load not applicable.

R-3488
Airport Control Box Frame, Lid

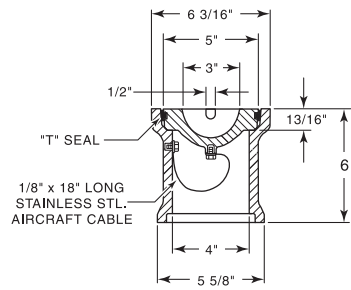


Lids are bolted to frame.

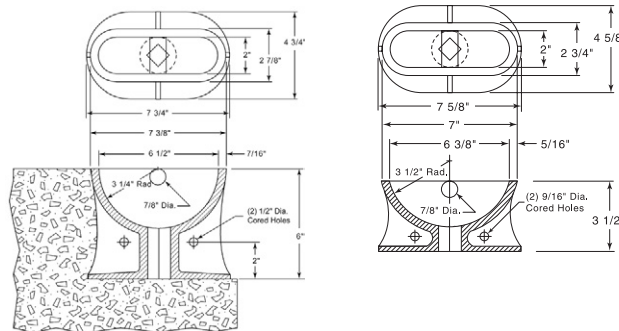
Lid furnished standard in Ductile Iron.
 Polyisoprene gasket is set in machined groove.
 Lid pivots on stainless steel hinge pin with compression springs.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3489
Airport Fuel Valve Frame, Lid



R-3490 Series
Airport Mooring Eye

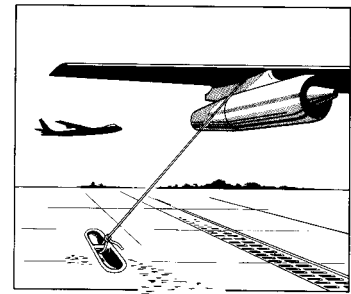


Illustrating R-3490

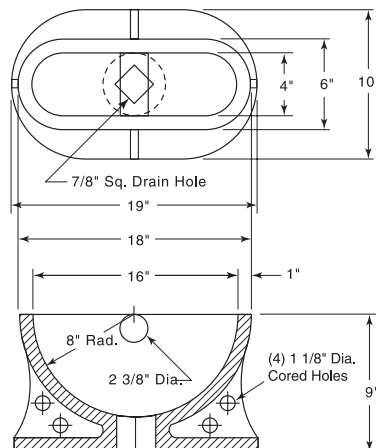
Mooring Eye is placed on subgrade and filled with sand to exclude concrete during the pouring and finishing operation. Sand is easily washed out when paving is completed. Socket opening at bottom Mooring Eye for wood or metal stake to bring to grade. Square socket design prevents displacement while concrete is being poured and, if required, the hole provides drainage to the subgrade after Mooring Eye in place. Alternative method of setting is to push the Mooring Eye in position in the wet concrete. Both methods are approved.

When used with bituminous slab, the Mooring Eye should be set in concrete base before paving. Design permits in-flowing of concrete, and the wide base insures proper anchorage.

Ribs on the R-3490 and R-3490-A have 1/2" holes for reinforcing rods, if needed. R-3490-B has 1-1/8" cored holes in ribs.



Catalog No.	Height
R-3490	3 1/2
R-3490-A	6
R-3490-B	9

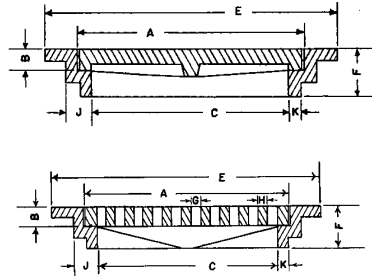


Illustrating R-3490-B

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3491 Series Airport Catch Basin Frame, Grate

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3491-AG	G	0.9	5.5
R-3491-GG	G	1.6	7.1
R-3491-HG	G	1.9	7.6
R-3491-JG	G	2.4	8.5



Lids/Grates are bolted to frame.

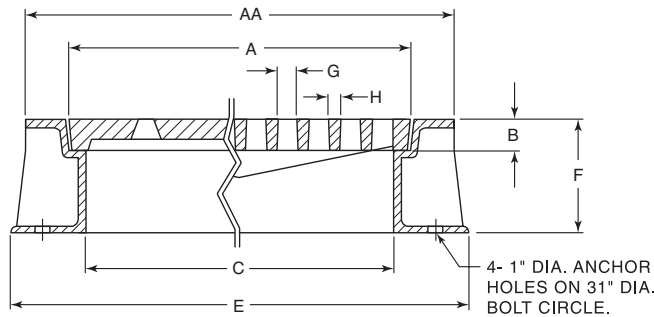
For slab Manhole construction

		Dimensions in inches									
Catalog No. Solid Lid	Catalog No. Open Grate	A	B	C	E	F	G	H	J	K	
R-3491-AL	R-3491-AG *	21	2 1/2	18	27 1/2	5	1 1/4	1	2 7/8	1	
R-3491-GL *	R-3491-GG *	27	2 1/2	24	33 1/2	5	1 1/2	1	2 7/8	1	
R-3491-HL	R-3491-HG	29	1 3/4	27	35	6	1 1/2	1	2 7/8	1	
R-3491-JL	R-3491-JG	32 3/8	2	30	39 1/2	6	1 1/2	1	2 7/8	1	

Frames in gray iron, grates/covers in ductile unless noted otherwise.

* Gray iron grate/cover.

R-3492 Series Airport Manhole Frame, Lid



Lids/Grates are bolted to frame.

For slab or built-up Manhole construction

Top and bottom flange provide complete anchorage, so frame becomes an integral part of the slab. Can be gasket sealed for watertight application if specified.

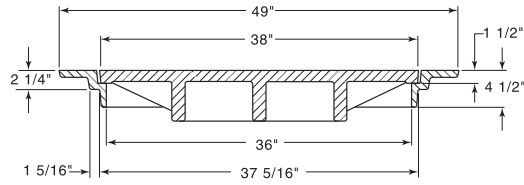
		Dimensions in inches									Lid/Grate Material
Catalog No. Solid Lid	Catalog No. Open Grate	A	AA	B	C	E	F	G	H		
R-3492	R-3492-1	27	33 1/2	2 1/2	24	36	9	1 1/2	1	Gray Iron	
R-3492-A	R-3492-A1	32 3/8	39 1/2	2	30	42	9	1 1/2	1	Ductile Iron	

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3492-1	G	1.6	7.1
R-3492-A1	G	2.4	8.5

AIRPORT CASTINGS

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

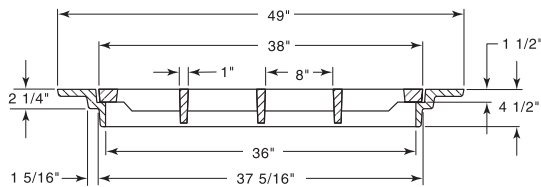
R-3492-B
Airport Manhole Frame, Solid Lid



Lids are bolted to frame.

For slab Manhole construction

R-3492-BG
Airport Manhole Frame, Ductile Iron Grate

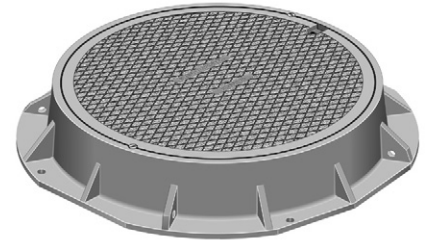
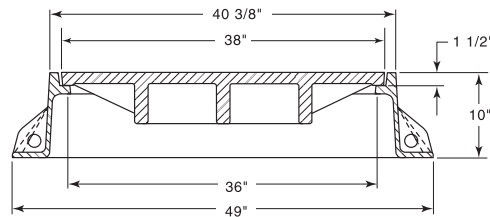


Grates are bolted to frame.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3492-BG	G	2.6	9.9

For slab Manhole construction

R-3492-C
Airport Manhole Frame, Solid Lid

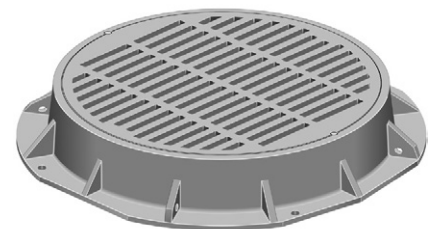
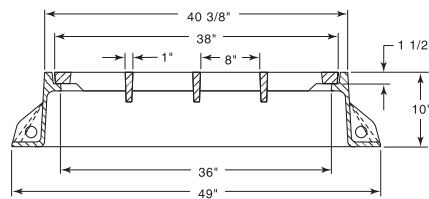


Lids are bolted to frame.

For built-up Manhole construction
 Available with square base flange, see R-1795-M.

R-3492-CG
Airport Manhole Frame, Ductile Iron Grate

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3492-CG	G	2.6	9.9

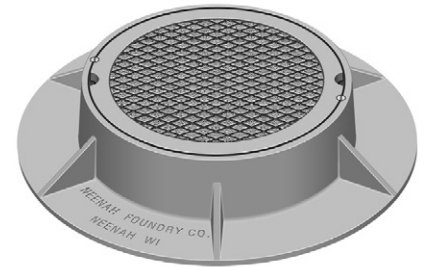
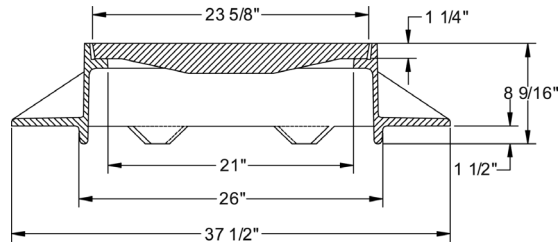


Grates are bolted to frame.

For built-up Manhole construction
 Available with square base flange, see R-1795-M.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

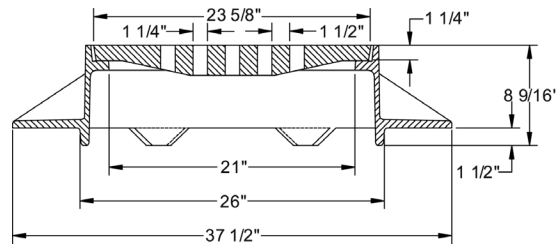
R-3493-A
Airport Manhole Frame, Solid Lid



Lids are bolted to frame.

For built-up Manhole construction
 Frame ring consists of 6 equally spaced lugs

R-3493-C
Airport Manhole Frame, Ductile Iron Grate

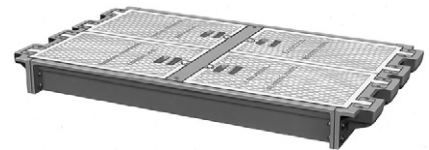
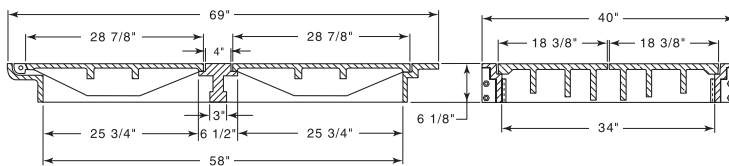


Grates are bolted to frame.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3493-C	G	0.6	6.2

For built-up Manhole construction
 Frame ring consists of 6 equally spaced lugs

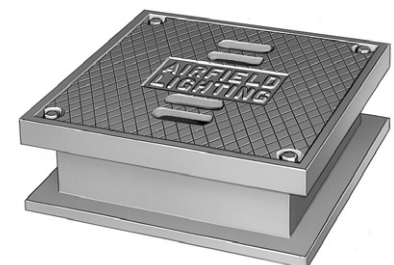
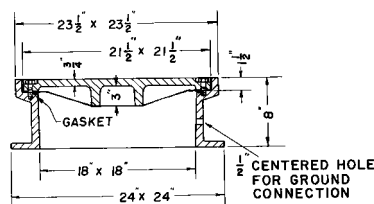
R-3494
Airport Hinged Frame, Ductile Iron 4-Piece Lid



Lids are bolted to frame.

For built-up Manhole construction

R-3495
Airport Manhole Frame, Ductile Iron Lid, Bolted/Gasket Sealed



Lids are bolted to frame.

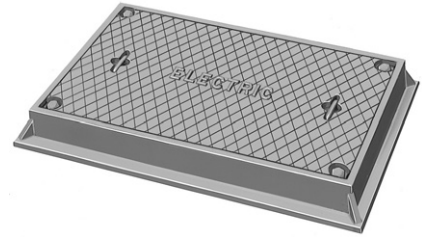
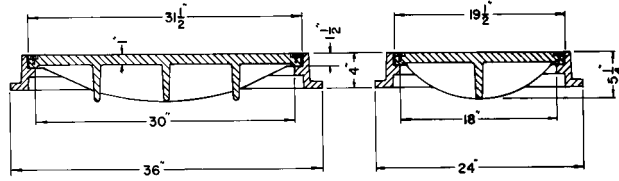
For slab or built-up Manhole construction

AIRPORT CASTINGS

4

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3497-A
Airport Manhole Frame, Lid

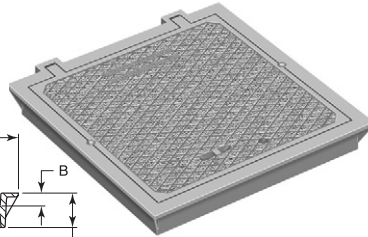
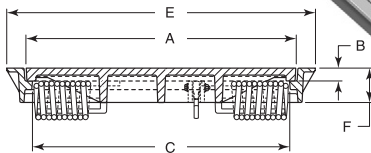


Lids are bolted to frame.

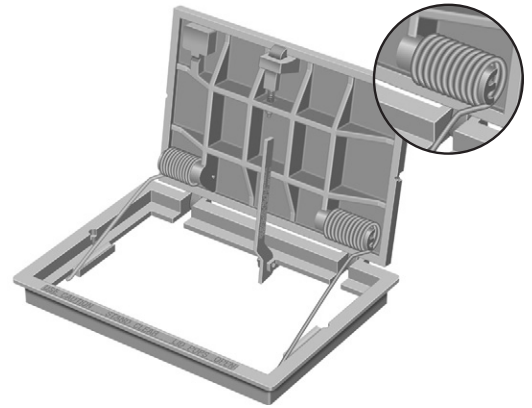
For built-up Manhole construction

R-3498 Spring-Assist Hatch Series
Gray Iron Frames with Ductile Iron Lids
Proof Load Tested to 200,000#
Patent #7216459

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3498-K2GS	A or C	1.5	8.6
R-3498-P2GS	A or C	2.1	10.5
R-3498-R2GS	A or C	3.0	12.8
R-3498-R3GS	A	6.0	19.0



Illustrating R-3498-P2S

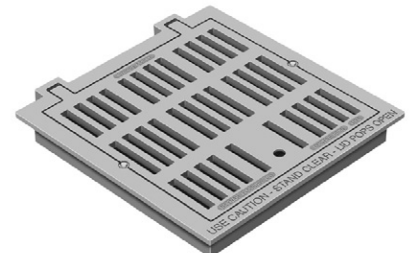


Illustrating R-3498-J3S

Castings strong enough to handle severe loads are inherently heavy. Lifting these heavy lids/grates to gain access to sub-ground utilities has been an issue for maintenance crews. Lifting these heavy covers requires multiple personnel and lifting equipment. With Neenah's Spring-Assist Hatches, a single maintenance worker can quickly open the lid, secure it in the upright position with Neenah's hold-open device and perform the necessary work.

FEATURES UNIQUE to the NEENAH R-3498 SERIES:

- Lid mounted springs move out of the free open area, exposing the free opening.
- Spring position allows more spring rotation, thus more spring power.
- Slam-latch enables opening and closing with ease. Simply pop the lid open and slam it shut.
- Self-contained frame, lid and spring assembly pushes on itself, not external wall structures.
- Easy spring removal and replacement.
- Neenah's Perma-Grip non-skid surface.
- Optional tool-less latch release for fire hydrant or quick access applications.



Illustrating R-3498-K2GS

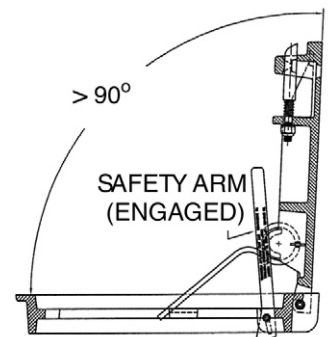
Dimensions in inches

Catalog No. Solid Lid	Catalog No. Open Grate	A	B	C	E	F	Lid Weight
Square							
R-3498-K2S	R-3498-K2GS	25 3/4 x 25 3/4	1 1/2	24 x 24	30 x 30	4	251#
R-3498-P2S	R-3498-P2GS	32 x 32	1 1/2	30 x 30	36 x 36	4	358#
R-3498-R2S	R-3498-R2GS	38 3/8 x 38 3/8	1 1/2	36 x 36	42 x 42	4	471#
R-3498-T2S *		50 x 50	1 1/2	48 x 48	56 x 56	4	571# *
Rectangular							
R-3498-J3S	-	25 7/8 x 37 7/8	1 1/2	36 x 24	42 x 30	4	340#
R-3498-R3S ***	R-3498-R3GS ***	76 9/16 x 38 3/8	1 1/2	74 3/16 x 36	80 3/16 x 42	4	471#

* 2-piece cover

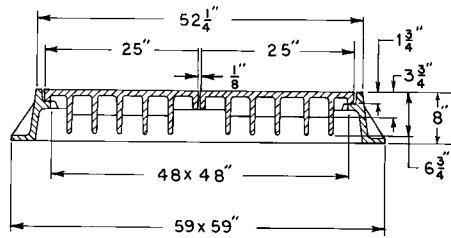
** With support bar

Optional threaded hole in frame for Grounding Strap — specify if required.

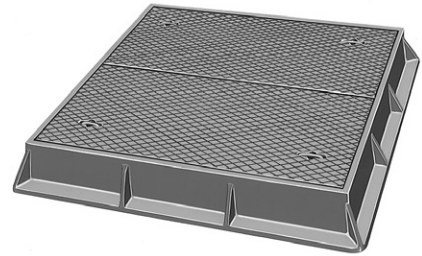


■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3499
Airport Utility Frame, Ductile Iron Cover



Available with Type C Grate.



Lids are bolted to frame.

R-3599-B
Airport Slotted Vane Drain

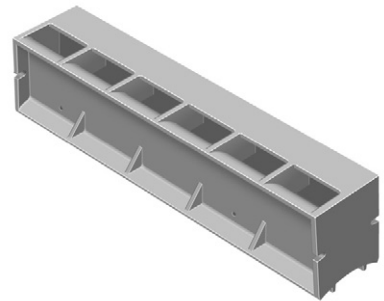
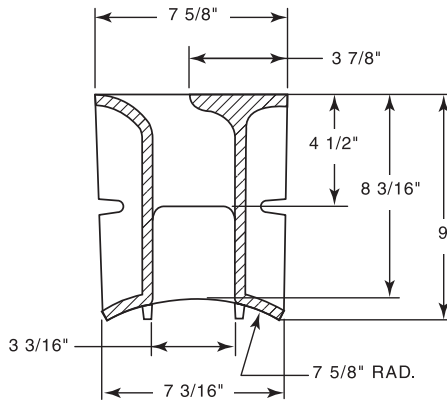
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3599-B	L	0.2	2 per ft.

Neenah's Cast Iron Slotted Vane Drain offers ease of installation, along with the superior vaned configuration to capture previously unexpected quantities of water when placed perpendicular to the flow. Installation is accomplished by sawing a slot in the top of conventional PVC pipe, placing the pipe on grade, installing the Cast Iron Slotted Vane Drain in place and pouring the concrete. When used in conjunction with a vane grate inlet, virtually all the surface water which would normally bypass the catch basin, can be captured. This permits the spacing between inlets to be increased.

An additional benefit is the added safety factor obtained should the catch basin be plugged or covered with snow. The unit may also be installed wherever sheet flow capture is required.

Slotted vane drains shown are allowed per FAA Advisory Circular AC 150/5370-10A Change 11.

For installation information, refer to **R-3599-A**.



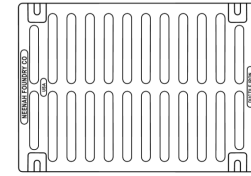
AIRPORT CASTINGS

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

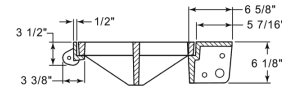
R-4990 Airport, Port & Heavy Industrial Series Bolted Trench for Extra Heavy Duty Applications

These trench drains are capable of supporting the heavy wheel loads of today's commercial environments. For larger trench widths or greater loading requirements, please contact our Product Engineering Department.
 Grates are bolted to gray iron frames.

Suitable for aircraft loading per AC150/5320-6D.
 Refer to R-4990 Series for installation information.

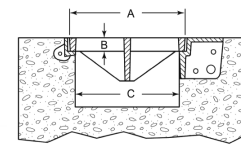


TYPE 'A'
 GRATE OPENINGS



STANDARD
 TYPE 'X'
 FRAME

ALTERNATE
 R-4993 TYPE T
 FRAME SHOWN
 R-4994 TYPE S FRAME
 ALSO AVAILABLE

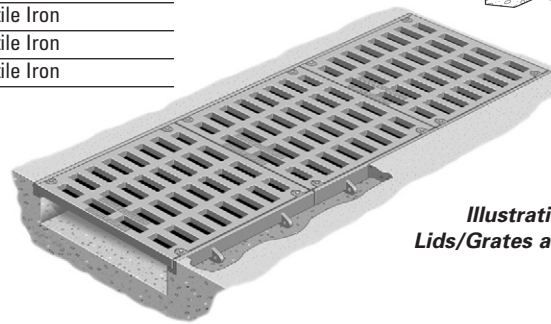


Catalog No.	Dimensions in inches			Grate/Cover Material
	A	B	C	
R-4990-AA	8	2	6	Gray Iron Class 35
R-4990-BA	10	2	8	Gray Iron Class 35
R-4990-CA	12	2	10	Ductile Iron
R-4990-DA * **	14	2	12	Ductile Iron
R-4990-EA *	17	2	15	Ductile Iron
R-4990-FA *	20	2	18	Ductile Iron
R-4990-HA *	26	2	24	Ductile Iron
R-4990-KA2 *	34	2	31	Ductile Iron
R-4990-OA *	51	2	48	Ductile Iron

* Type D solid cover available.

** Type C grate available.

Ductile Iron furnished in Grade 80-55-06.



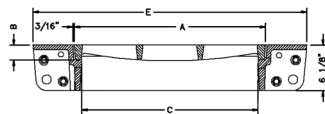
Illustrating R-4990-HA
 Lids/Grates are bolted to frame.

R-4993 and R-4994 Superior Durability Frame Series for Airports, Ports, Industrial Sites and Roads

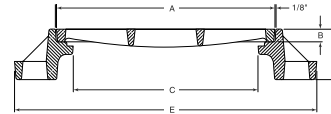
Superior Duty Frames

Designers have the option to utilize either of these new frames in locations where it is deemed that traditional angle frames could break lose from concrete due to extraordinary conditions. A few examples of such conditions are: braking forces of ultra heavy vehicles; torsional forces due to turning aircraft and container port vehicles; heavy airfield and industrial applications; highway tunnels; certain highway applications.

Neenah offers two frame choices each with its own unique benefits. For complete information, please refer to the R-4993 and R-4994 Series in the Trench section of our catalog.



Illustrating R-4993 Type T Frame



Illustrating R-4994 Type S Frame

Type T Catalog No.	Type S Catalog No.	Dimensions in inches						Type A	Type C	Type D
		A	B	Type T		Type S				
				C	E	C	E			
<i>Airport, Port, Industrial Loads</i>										
R-4993-AAB	R-4994-AAB	8	2	6	19 1/4	4	18	x		
R-4993-BAB	R-4994-BAB	10	2	8	21 1/4	6	20	x		
R-4993-CAB	R-4994-CAB	12	2	10	23 1/4	8	22	x		
R-4993-DAB	R-4994-DAB	14	2	12	25 1/4	10	24	x	x	x
R-4993-EAB	R-4994-EAB	17	2	15	28 1/4	13	27	x		x
R-4993-FAB	R-4994-FAB	20	2	18	31 1/4	16	30	x		x
R-4993-HAB	R-4994-HAB	26	2	24	37 1/4	22	36	x		x
R-4993-KAB	R-4994-KAB	34	2	32	45 1/4	30	44	x		x
R-4993-OAB	R-4994-OAB	51	2	49	62 1/4	47	61	x		x

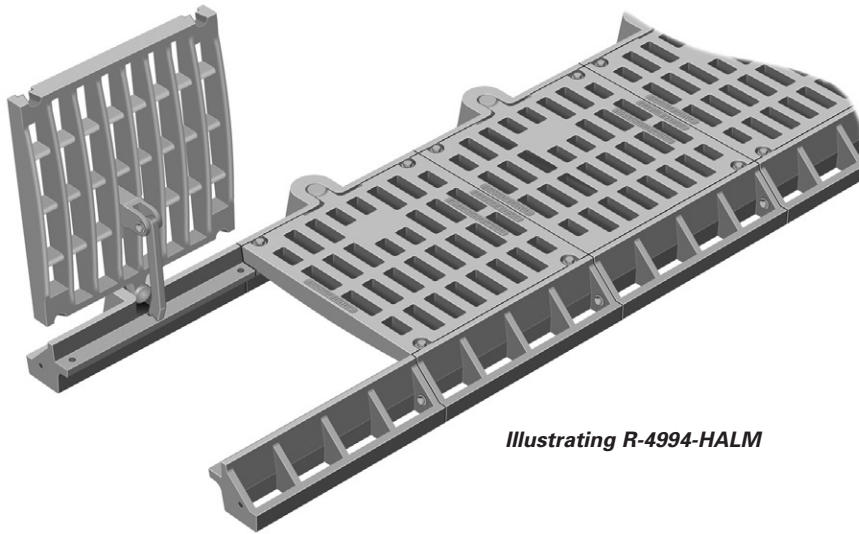
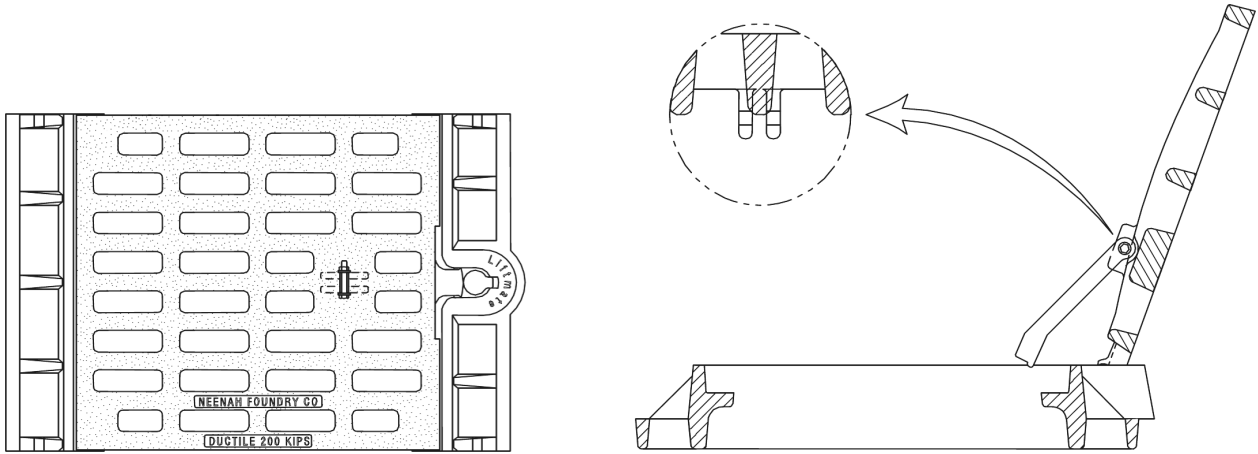
x - Indicates availability

■ Note: When specifying/ordering grates, refer to “Choosing the Proper Inlet Grate” on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4994 LiftMate Series Superior Durability Frames for Airports, Ports, Industrial Sites and Roads

Superior Duty LiftMate Frames

Neenah's new LiftMate Hinge System is now being applied to our R-4994 Type S Frame trench series. These trench drains are capable of supporting the heavy wheel loads of today's commercial environments. Please see page 13 for additional LiftMate information and contact our office regarding your project needs. Visit www.neenahfoundry.com for more information on the LiftMate series.



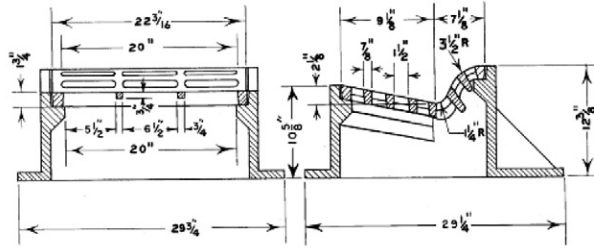
Illustrating R-4994-HALM

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3501-D2A
Inlet for Roll Type Curb

See pages 145-146-148 & 155 for additional Roll Type products

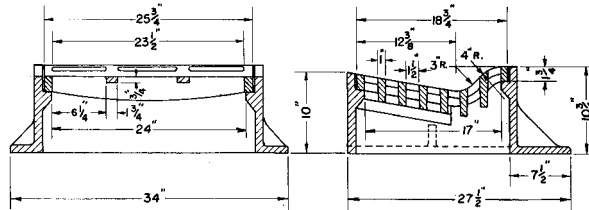
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-D2A	C	1.0	3.4

R-3501-E2
Inlet for Roll Type Curb

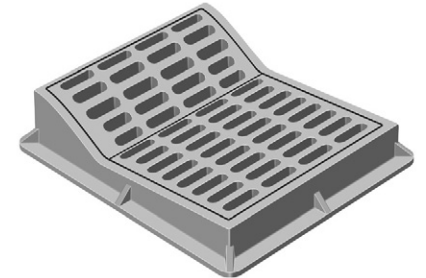
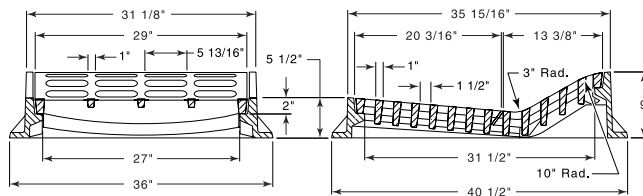
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-E2	C	1.4	4.2

R-3501-H4
Inlet for Roll Type Curb

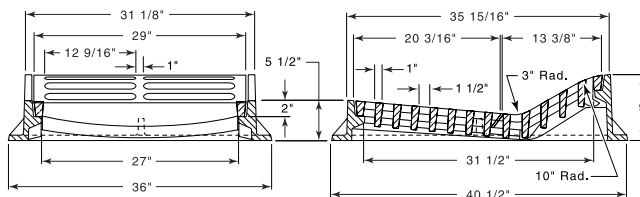
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-H4	C	2.8	6.8

R-3501-HL
Mountable Curb Frame, Grate

Heavy Duty



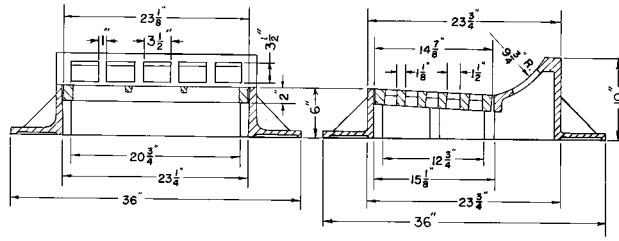
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-HL	D	3.3	5.8

ROLL & GUTTER INLETS
5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3501-L1A
Inlet for Roll Type Curb

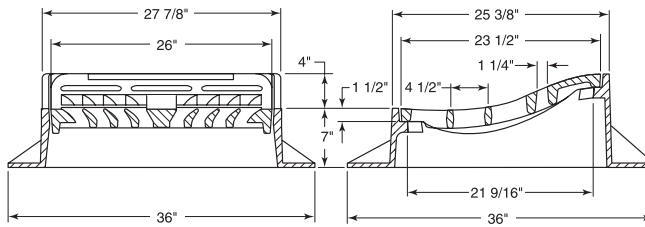
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-L1A	C	1.2	4.4

R-3501-L2
Inlet for Roll Type Curb

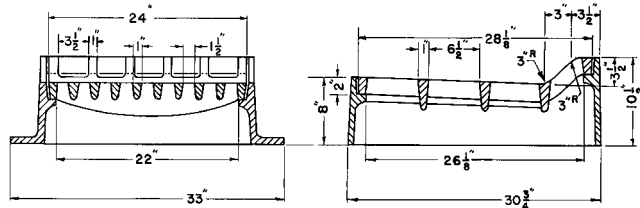
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-L2	V	1.3	3.7

R-3501-M
Inlet for Roll Type Curb

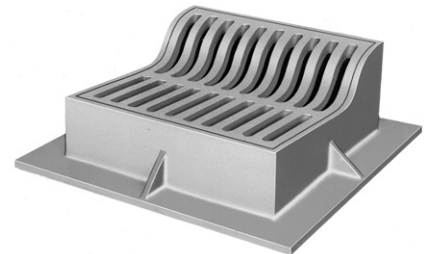
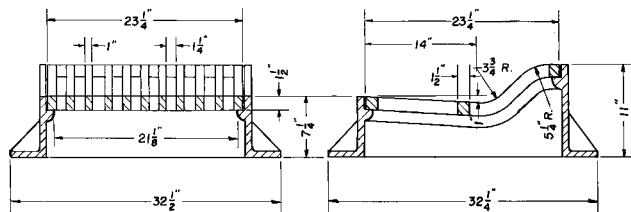
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-M	A	2.3	5.6

R-3501-N
Inlet for Roll Type Curb

Heavy Duty



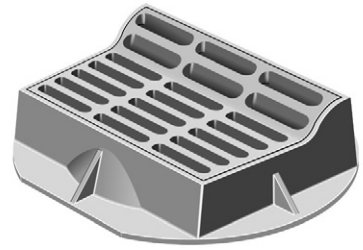
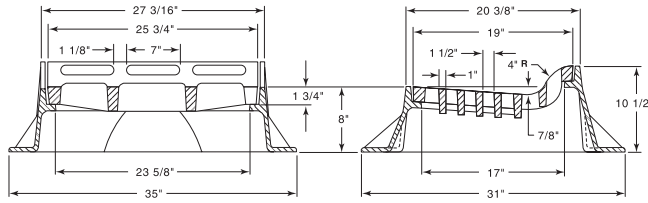
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-N	A	1.6	4.3

ROLL & GUTTER INLETS

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3501-P Inlet for Roll Type Curb

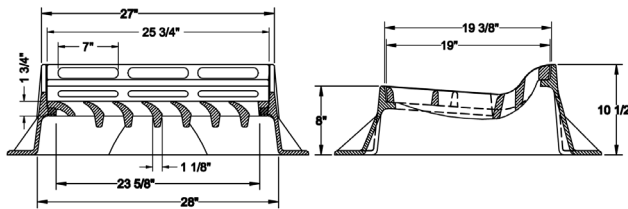
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-P	C	1.5	4.3

R-3501-PR Inlet for Roll Type Curb

Heavy Duty

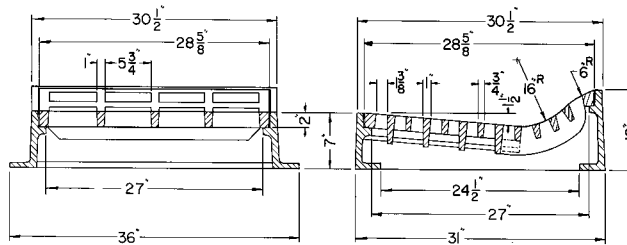


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-PR	L	1.6	4.7
R-3501-PL	L	1.6	4.7

Illustrating R-3501-PR (flow right).
 If flow left required, order R-3501-PL.

R-3501-R Inlet for Roll Type Curb

Heavy Duty

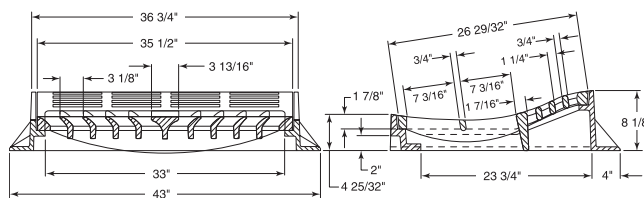


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-R	C	2.6	5.5

Available with 4-flange frame, order R-3501-RA.

R-3501-TB Inlet for Roll Type Curb

Heavy Duty



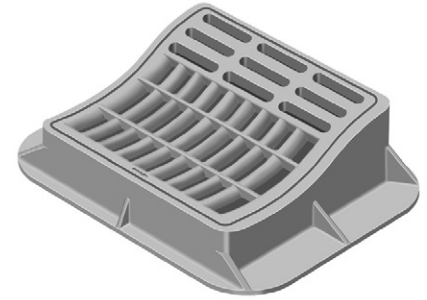
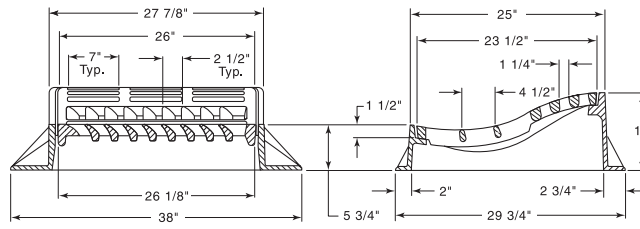
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-TB	L	3.1	5.7

ROLL & GUTTER INLETS
5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3501-TR Inlet for Roll Type Curb

Heavy Duty

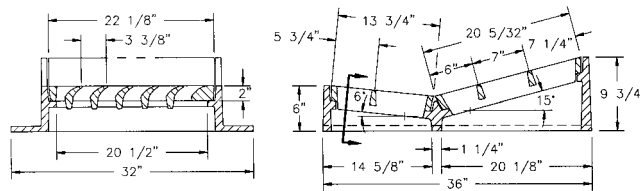


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-TR	L	1.4	4.6
R-3501-TL	L	1.4	4.6

Illustrating R-3501-TR (flow right). If flow left required, order R-3501-TL.

R-3501-U Series Inlet for Roll Type Curb

Heavy Duty

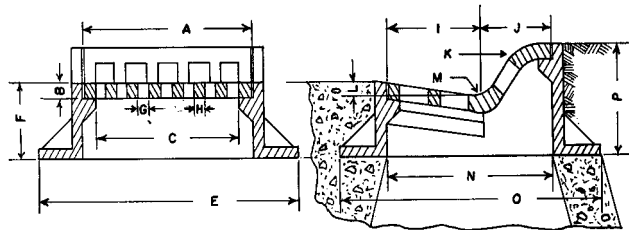


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-U	L	2.4	5.0
R-3501-U1	L	2.4	5.0

Catalog No.	F
R-3501-U	9 3/4"
R-3501-U1	6"

R-3502 Series Inlet for Roll Type Curb

Heavy Duty



Dimensions in inches

Catalog No.	A	B	C	E	F	G	H	I	J	K	L	M	N	O	P
R-3502-A *	22	1 3/4	20 1/4	36	10	1 7/8	1	13 7/8	8 7/8	4	1 3/4	3	23	36	15 5/8
R-3502-B	21 1/2	1 3/4	20 1/4	36	10	1 7/8	1	14	8	4	2 3/4	3	22	36	13 5/8

* Frame furnished in two pieces as shown on R-3502-D2.

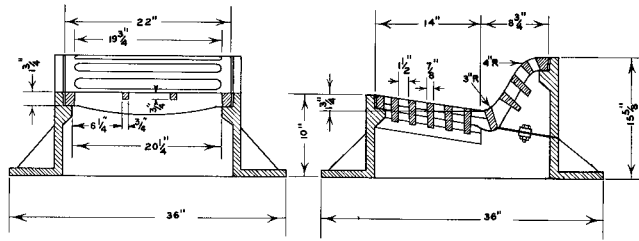
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3502-A	A	1.4	4.1
R-3502-B	A	1.4	4.2

ROLL & GUTTER INLETS
5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3502-D2
Inlet for Roll Type Curb

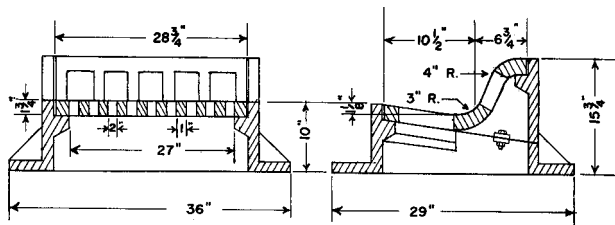
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3502-D2	C	1.9	4.2

R-3503-A
Inlet for Roll Type Curb

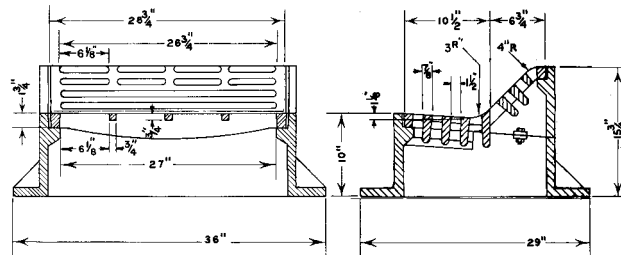
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3503-A	B	1.3	4.1

R-3503-B
Inlet for Roll Type Curb

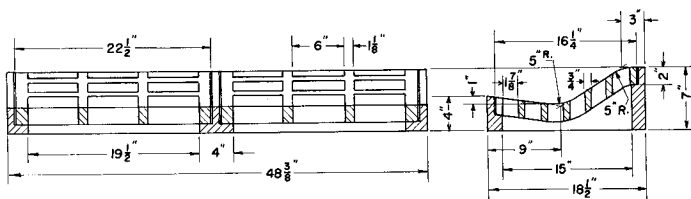
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3503-B	C	2.0	4.1

R-3504-F
Inlet Frame and Double Grate for Driveway and Mountable Curb

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3504-F	C	2.8	5.1

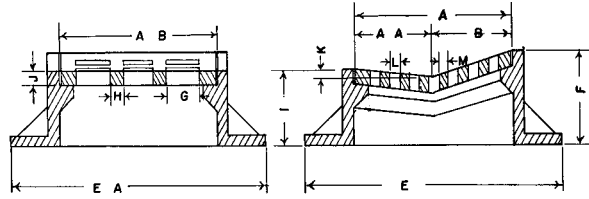
ROLL & GUTTER INLETS
5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3506 to R-3517 Series Inlet Frame and Grate for Driveway and Mountable Curb

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3506-A2	C	1.4	2.9
R-3506-B	C	1.2	2.9
R-3507-C	D	1.6	3.7
R-3507-D	D	1.6	3.7
R-3508-A2	C	1.7	3.8
R-3508-B	C	1.8	3.8
R-3508-B1	D	1.9	3.8
R-3508-B2	K	1.4	7.5
R-3508-C	C	1.4	3.8
R-3509	K	0.9	2.8
R-3510	C	2.9	4.1
R-3511	C	2.0	2.9
R-3513	A	1.4	4.7
R-3514-F	C	2.6	5.5
R-3514-F2	C	5.1	7.7
R-3517	C	1.8	3.7



Illustrating R-3508-A2

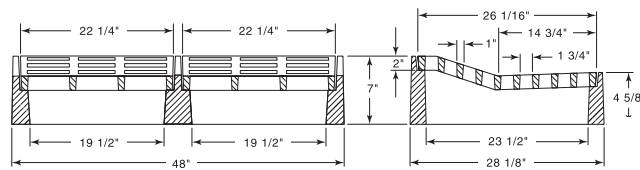
Catalog No.	Dimensions in inches													
	A	AB	AA	B	E	EA	F	G	H	I	J	K	L	M
R-3506-A2 *	19 1/4	19 1/4	8 1/8	11 1/8	28 1/4	30	12 1/2	6 1/4	3/4	10	1 1/2	1 1/4	1 1/2	7/8
R-3506-B *	19 1/4	19 1/4	8 1/8	11 1/8	28 1/4	30	11	4 3/4	1	10	1 1/2	1 1/2	1 7/8	1
R-3507-C	22	22	11	11	35	35	10	19 3/4	-	10	1 3/4	2	1 1/2	7/8
R-3507-D **	22	22	11	11	30	35	10	19 3/4	-	10	1 3/4	2	1 1/2	7/8
R-3508-A2	22 3/4	22 3/4	11 3/8	11 3/8	35	Dia.	12	6 1/4	3/4	10	1 3/4	2	1 1/2	7/8
R-3508-B	22 3/4	22 3/4	11 3/8	11 3/8	35	Dia.	10	6	1	10	1 3/4	1 3/4	2	1
R-3508-B1	22 3/4	22 3/4	11 3/8	11 3/8	35	Dia.	10	20 3/4	-	10	1 3/4	1 3/4	1 1/2	7/8
R-3508-B2 *	22 1/2	22 1/2	11 1/4	11 1/4	35	Dia.	10	6	1	10	1 3/4	1 3/4	1	7/8
R-3508-C *	22 3/4	22 3/4	11 3/8	11 3/8	38	Dia.	13 1/2	4 1/4	1 3/16	10	2 3/8	1/2	1 3/8	1
R-3509	17	22	8 1/2	8 1/2	25	29	5 1/4	1 1/4	1 1/4	5 1/4	1 3/4	1	6 3/4	1 1/4
R-3510	21 3/4	35 3/4	13 7/8	7 7/8	30	44	9 1/2	10 3/8	1 1/8	6	2	1	1 7/8	1 1/8
R-3511	19	30	8 1/4	10 7/8	27	38	8	8 1/2	1 1/8	7	2	1 3/8	1 7/8	1 1/8
R-3513	24	24	16 1/4	7 3/4	36	35 5/8	7	1 1/4	1	7	1 7/8	2 1/2	4	2 1/4
R-3514-F ***	29 3/8	28 1/8	19 1/8	10 1/4	38 1/4	36 1/4	11 1/2	7 1/2	1	8	2	1 1/2	1 1/2	1
R-3514-F2 +	29 3/8	28 1/8	19 1/8	10 1/4	38 1/4	69 1/2	11 1/2	7 1/2	1	8	2	1 1/2	1 1/2	1
R-3517	22 1/4	22 1/4	11 1/8	11 1/8	36	Dia.	6	6	1	6	2	1/2	2	1

* No base flange at rear.
 ** No base flange on front.
 *** Also available with 44" diameter base flange.
 + Two piece frame, two piece grate.

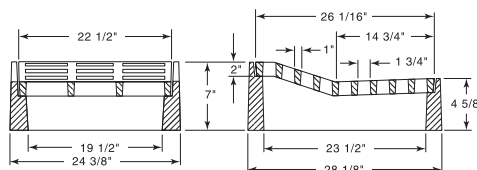
R-3516 Series Inlet Frame, Grate for Driveway and Mountable Curb

Heavy Duty

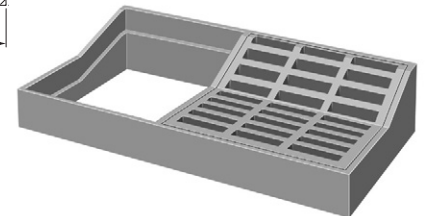
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3516	C	4.0	6.2
R-3516-1	C	2.0	4.3



R-3516 Double Unit



R-3516-1 Single Unit



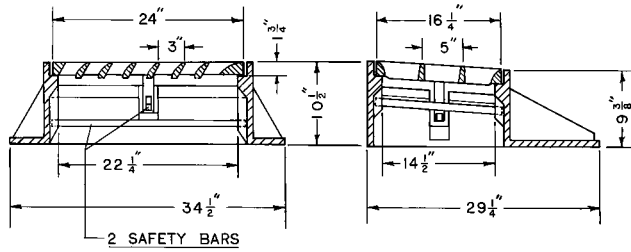
Illustrating R-3516 with one grate removed

Catalog No.	Type
R-3516	Double Unit
R-3516-1	Single Unit

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3525-L
Expressway Inlet for Barrier or Mountable Curb

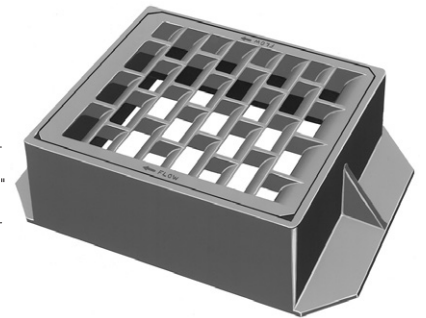
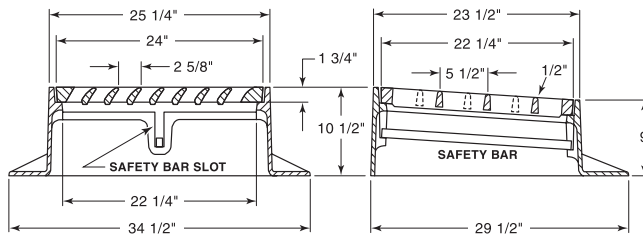
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3525-L	L	1.1	4.7

R-3526-L
Expressway Inlet for Barrier or Mountable Curb

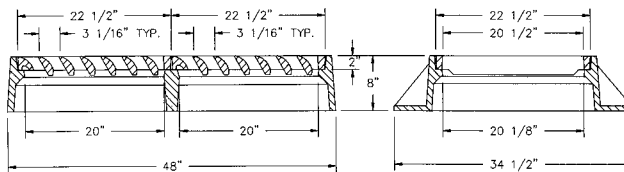
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3526-L	L	1.9	5.7

R-3527-M
Expressway Frame, Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3527-M	V	3.4	11.3

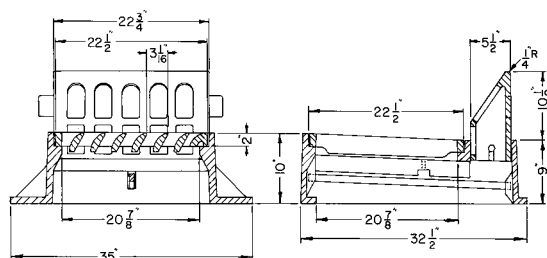
R-3527-V
Median Barrier Inlet Frame, Grate, Curb Box

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3527-V	V	1.7	5.6

Available with bolting options.

Fits Jersey Type barrier wall.



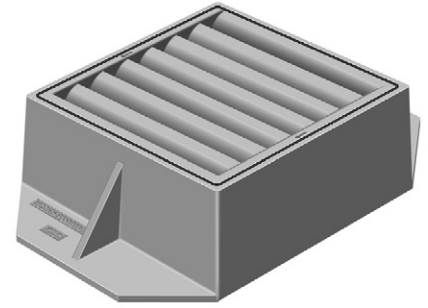
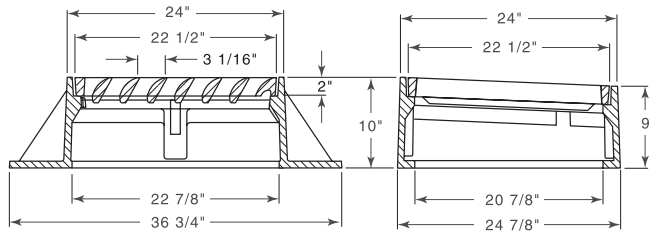
ROLL & GUTTER INLETS
5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3528-V Median Barrier Inlet Frame, Grate, Curb Box

Heavy Duty

Available with bolting options.

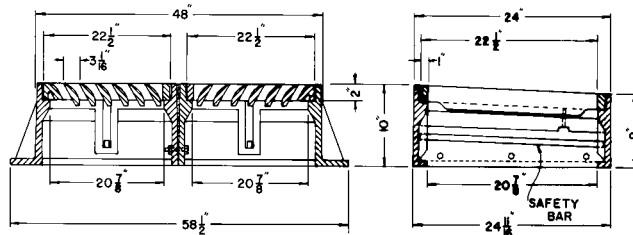


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3528-V	V	1.7	7.5

R-3529-V Double Median Barrier Frame, Grate

Heavy Duty

Available with bolting options.

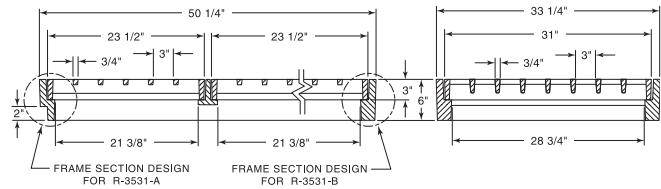


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3529-V	V	3.4	11.3

Typically used at sag locations of concrete barrier wall or non-pedestrian areas of combination concrete curb and gutter.

R-3531-A & R-3531-B Turnpike Inlet Frame, Double Grate

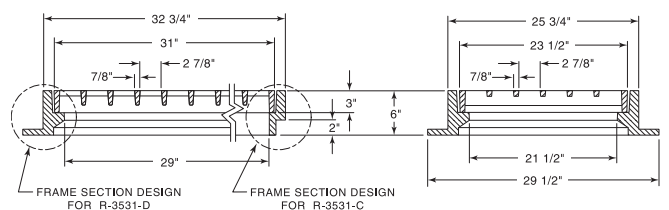
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3531-A	H	6.0	13.0
R-3531-B	H	6.0	13.0

R-3531-C & R-3531-D Turnpike Inlet Frame, Single Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3531-C	H	3.0	9.1
R-3531-D	H	3.0	9.1

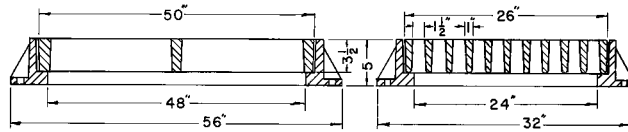
ROLL & GUTTER INLETS

5

■ Note: When specifying/ordering grates, refer to “Choosing the Proper Inlet Grate” on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3531-E Turnpike Inlet Frame, Single Grate

Heavy Duty

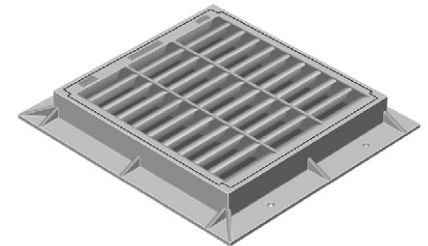
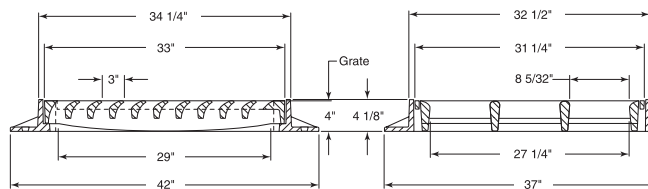


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3531-E	C	4.7	12.7

Grate furnished in Ductile Iron.

R-3540 3-Flange Gutter Inlet Frame, Grate

Heavy Duty

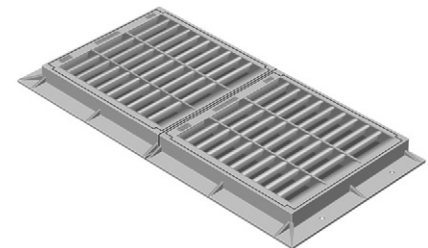
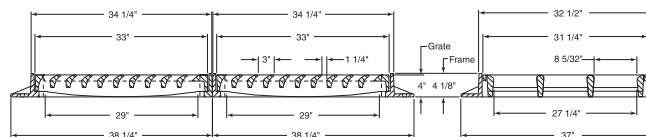


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3540	L	3.2	10.6

Frame available with full 4-sided frame flange on request.

R-3540-2 3-Flange Double Gutter Inlet Frame, Grate

Heavy Duty

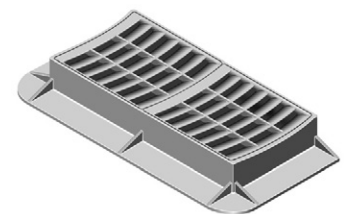
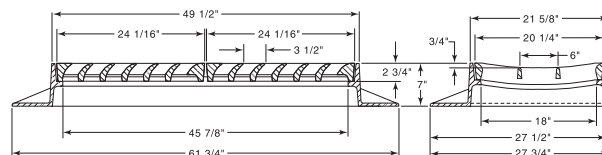


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3540-2	L	6.4	16.3

Frame available with full 4-sided frame flange on request.

R-3541 3-Flange Double Gutter Inlet Frame

Heavy Duty



Illustrating R-3541

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3541	L	1.6	7.3

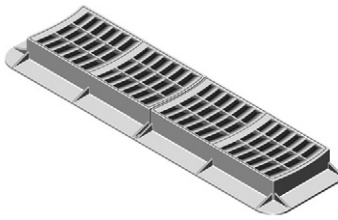
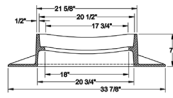
Frame available with full 4-sided frame flange, order as R-3541-A.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

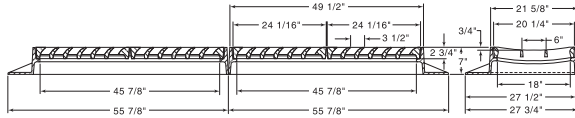
R-3541-2 3-Flange Double Gutter Inlet Frame, Multiple Grates

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3541-2	L	3.2	11.3



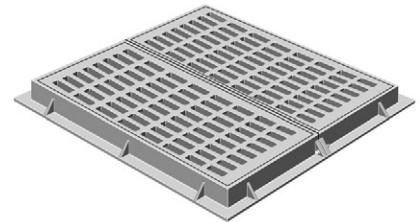
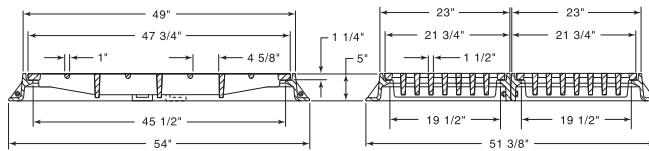
Also available in 4 flange.



R-3550-2 Double Gutter Inlet Frame, Grate

Heavy Duty

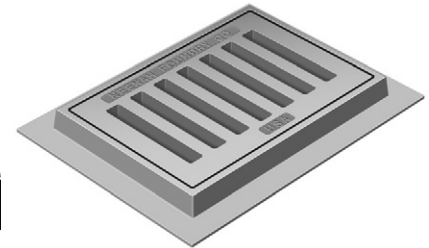
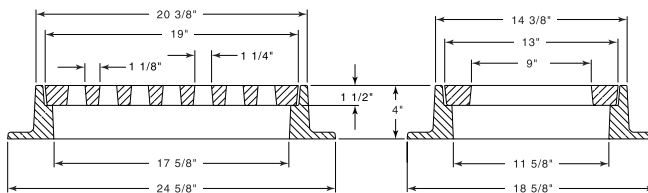
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3550-2	C	5.8	15.2



R-3555 Gutter Inlet Frame, Grate

Heavy Duty

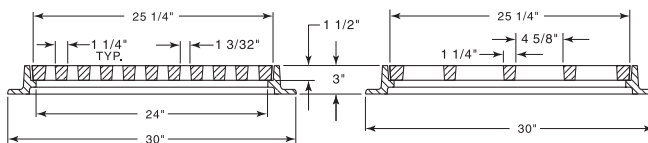
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3555	B	0.5	5.3



R-3560 Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3560	A or C	1.5	8.4



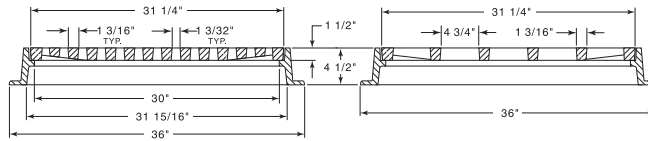
ROLL & GUTTER INLETS

5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3561 Gutter Inlet Frame, Grate

Heavy Duty

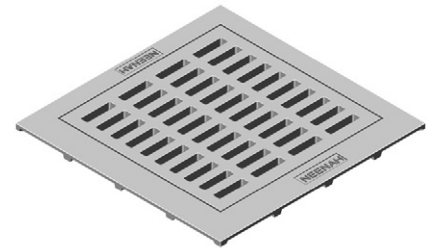
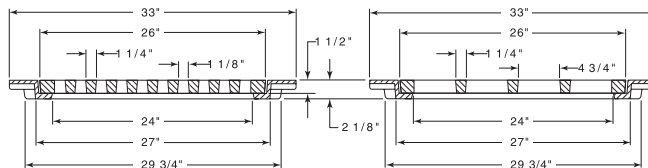


Solid Type C lid available.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3561	A or C	2.3	10.4

R-3562 Gutter Inlet Frame, Grate

Heavy Duty

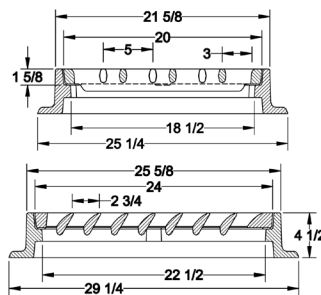


Top surface of frame and grate have Perma-grip texture.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3562	C	1.5	8.7

R-3563-L Gutter Inlet Frames, Grate

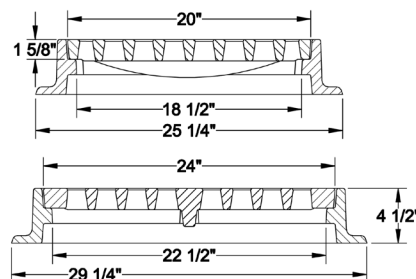
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3563-L	L	1.4	7.3

R-3563-HB Gutter Inlet Frames, Grate

Heavy Duty



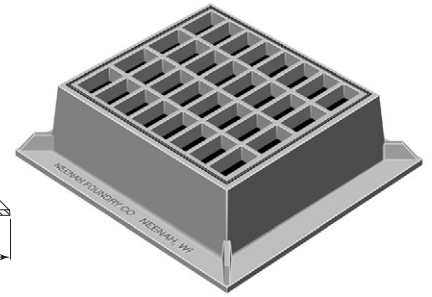
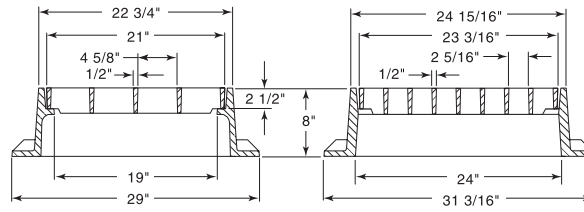
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3563-HB	K	1.3	7.3

ROLL & GUTTER INLETS
5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3570
4-Flange Gutter Inlet Frame, Grate

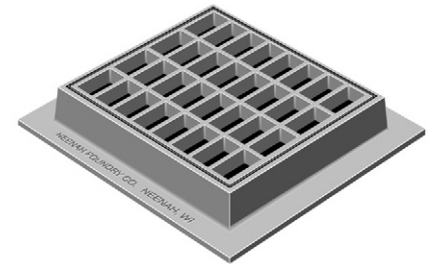
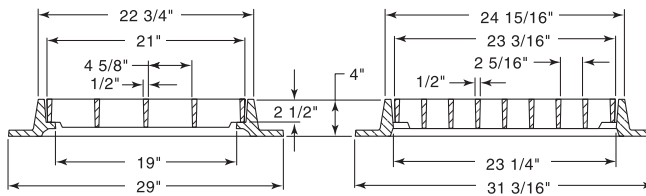
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3570	A	2.4	7.4

R-3570-A
4-Flange Gutter Inlet Frame, Grate

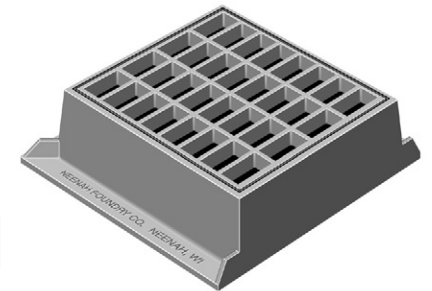
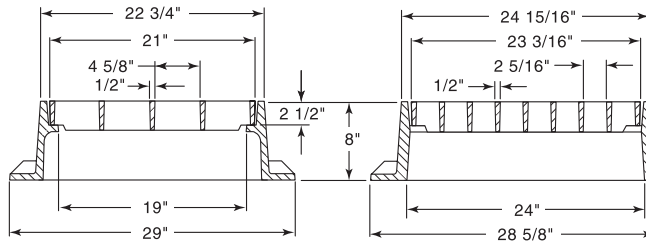
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3570-A	A	2.4	7.4

R-3571
3-Flange Gutter Inlet Frame, Grate

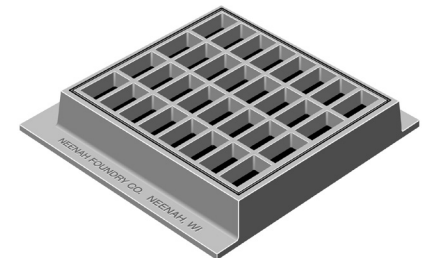
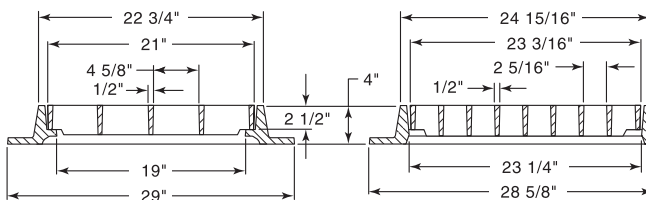
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3571	A	2.4	7.4

R-3571-A
3-Flange Gutter Inlet Frame, Grate

Heavy Duty



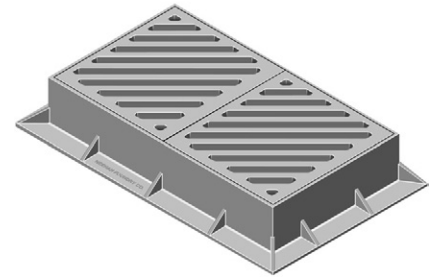
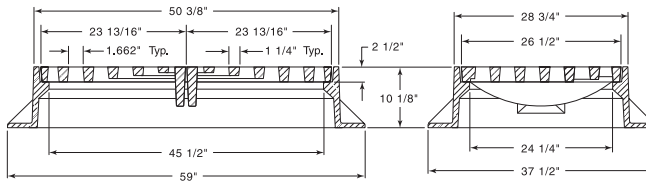
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3571-A	A	2.4	7.4

ROLL & GUTTER INLETS
 5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

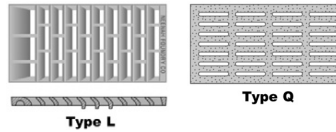
R-3572 Series 4-Flange Gutter Inlet Frame, Double Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3572-2D	R	3.8	12.3
R-3572-2L	L	4.6	12.3
R-3572-2Q	Q	1.8	12.3

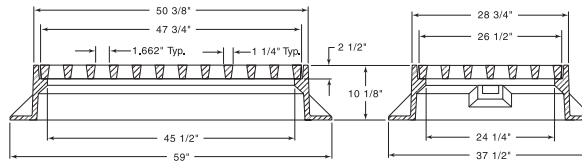
Standard Grate (shown): Type R



Available with two-piece Type L grates, order **R-3572-2L**.
 Available with two-piece Type Q grates, order **R-3572-2Q**.

R-3572-A 4-Flange Gutter Inlet Frame, Diagonal Bar Grate

Heavy Duty

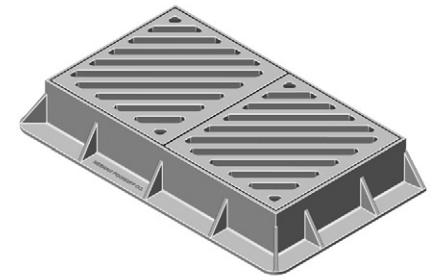
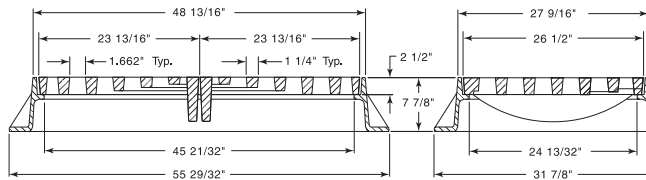


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3572-A	R	4.4	12.3

Grate is reversible for right or left hand flow.

R-3573-2D 3-Flange Gutter Inlet Frame, Double Grate

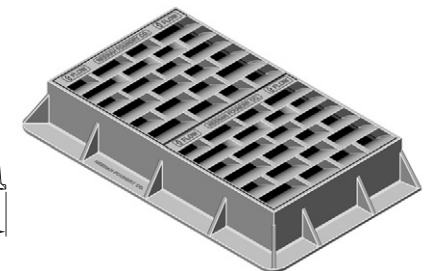
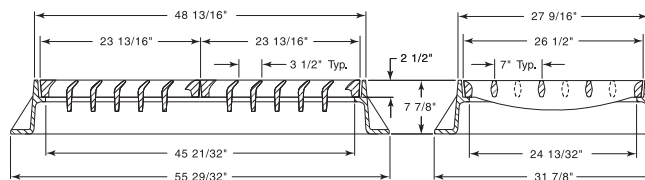
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3573-2D	R	3.8	12.3

R-3573-2L 3-Flange Gutter Inlet Frame, Double Grate

Heavy Duty

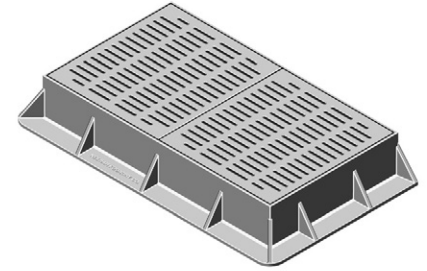
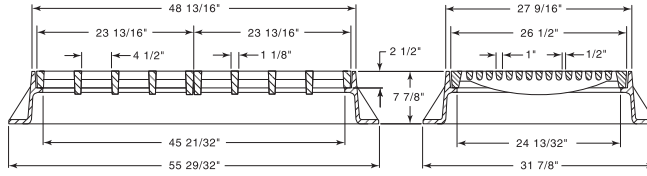


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3573-2L	L	4.6	12.3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3573-2Q
3-Flange Gutter Inlet Frame, Double Grate

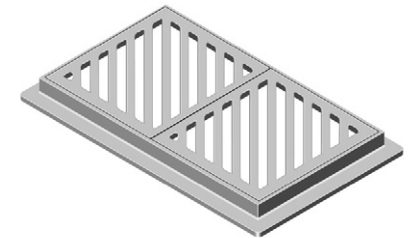
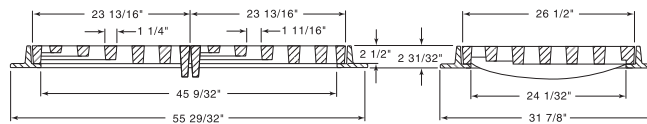
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3573-2Q	Q	1.8	12.3

R-3574-2D
4-Flange Gutter Inlet Frame, Double Grate

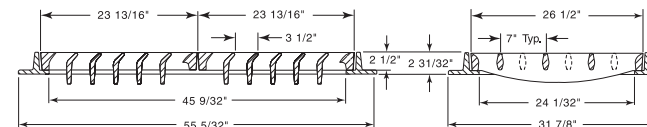
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3574-2D	R	3.8	12.3

R-3574-2L
4-Flange Gutter Inlet Frame, Double Grate

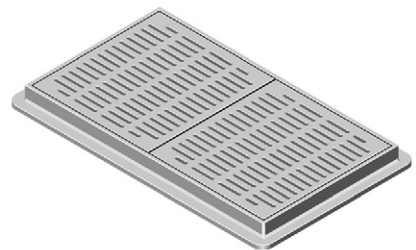
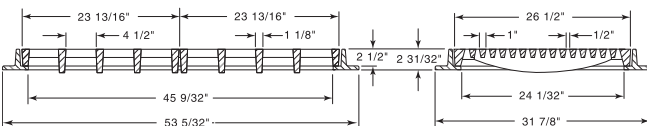
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3574-2L	L	4.6	12.3

R-3574-2Q
4-Flange Gutter Inlet Frame, Double Grate

Heavy Duty



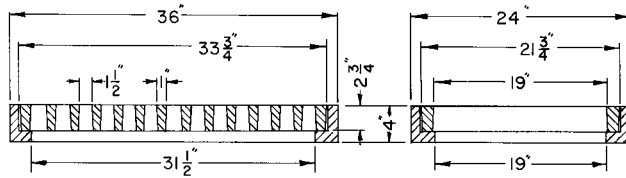
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3574-2Q	Q	1.8	12.3

ROLL & GUTTER INLETS
 5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3575
Gutter Inlet Frame, Grate

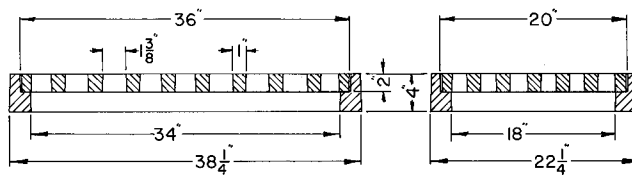
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3575	B	2.6	9.5

R-3576
Gutter Inlet Frame, Grate

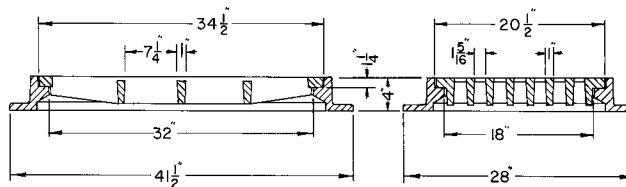
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3576	R	2.4	9.3

R-3577
Gutter Inlet Frame, Grate

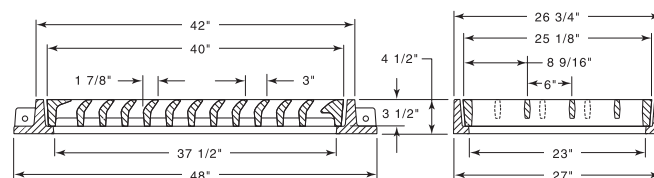
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3577	D	1.8	9.2

R-3578
Gutter Inlet Frame, Grate

Heavy Duty



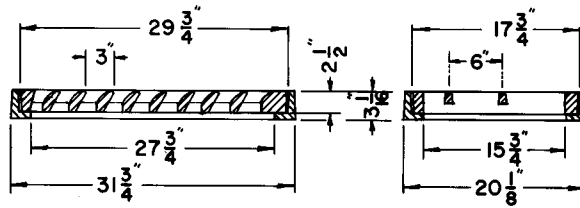
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3578	L	2.3	10.9

ROLL & GUTTER INLETS
5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3580
Gutter Inlet Frame, Grate

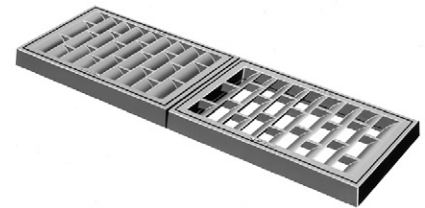
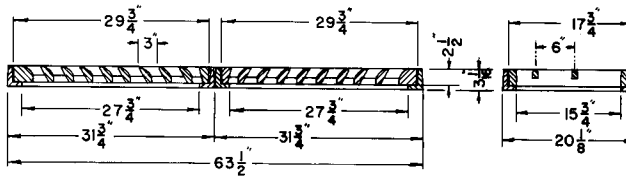
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3580	L	1.4	7.9

R-3580-1
Double Inlet Frame, Grate

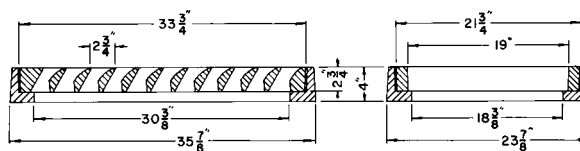
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3580-1	L	2.8	12.9

R-3581
Gutter Inlet Frame, Grate

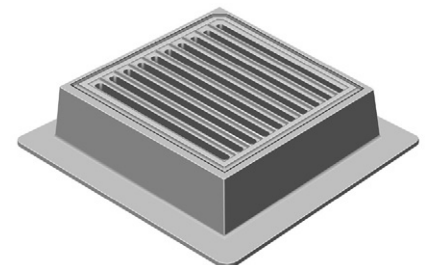
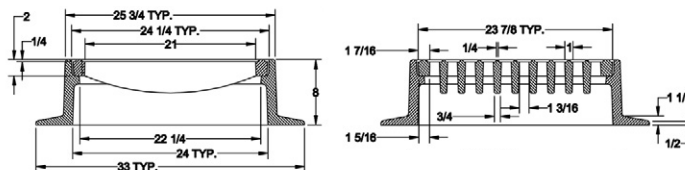
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3581	V	2.2	9.3

R-3588
4-Flange Gutter Inlet Frame, Grate

Heavy Duty



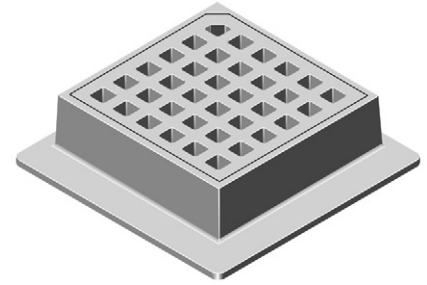
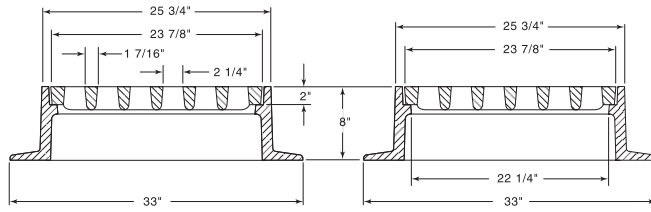
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3588	D	1.8	7.9

ROLL & GUTTER INLETS

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3588-A 4-Flange Gutter Inlet Frame, Grate

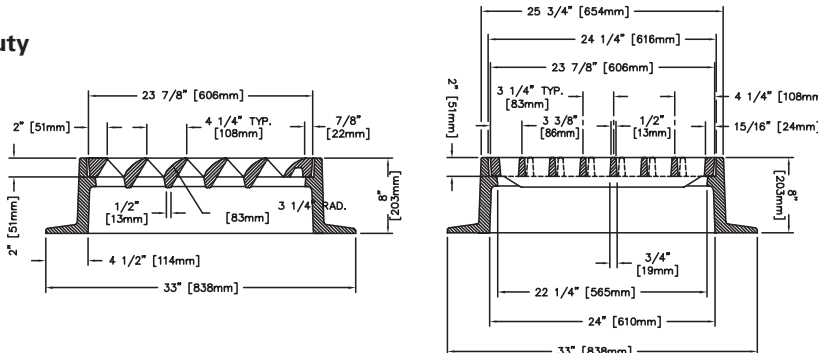
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3588-A	H	1.2	7.9

R-3588-LL 4-Flange Gutter Inlet Frame, Grate

Heavy Duty

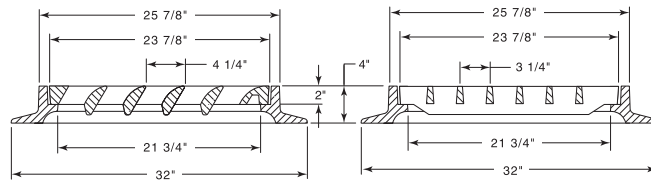


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3588-LL	L	1.6	7.9
R-3588-LR	L	1.6	7.9

Unit illustrated is for flow to the left. If flow to the right is required, order R-3588-LR.

R-3588-LL4 4-Flange Gutter Inlet Frame, Grate

Heavy Duty



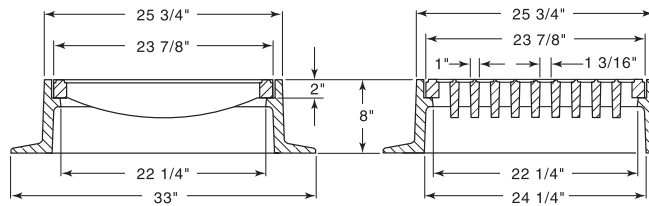
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3588-LL4	L	1.6	7.9
R-3588-LR4	L	1.6	7.9

Unit illustrated is for flow to the left. If flow to the right is required, order R-3588-LR4.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3589
3-Flange Gutter Inlet Frame, Grate

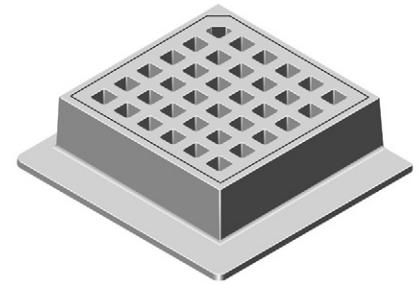
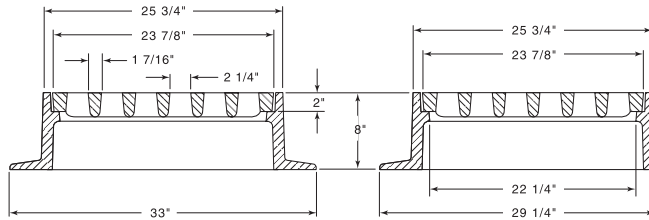
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3589	D	1.8	7.9

R-3589-A
3-Flange Gutter Inlet Frame, Grate

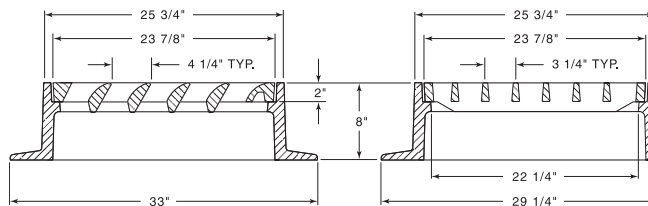
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3589-A	H	1.2	7.9

R-3589-LL
3-Flange Gutter Inlet Frame, Grate

Heavy Duty



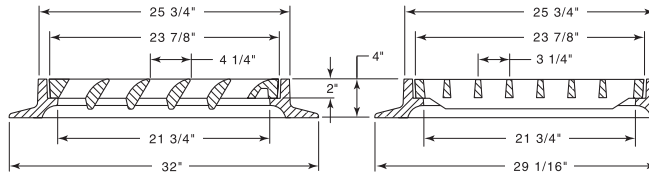
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3589-LL	L	1.5	7.9
R-3589-LR	L	1.5	7.9

Unit illustrated is for flow to the left. If flow to the right is required, order **R-3589-LR**.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3589-LL4
3-Flange Gutter Inlet Frame, Grate

Heavy Duty

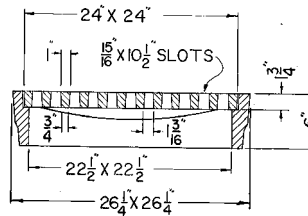


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3589-LL4	L	1.5	7.9
R-3589-LR4	L	1.5	7.9

Unit illustrated is for flow to the left. If flow to the right is required, order **R-3589-LR4**.

R-3591
Gutter Inlet Frame, Grate

Heavy Duty

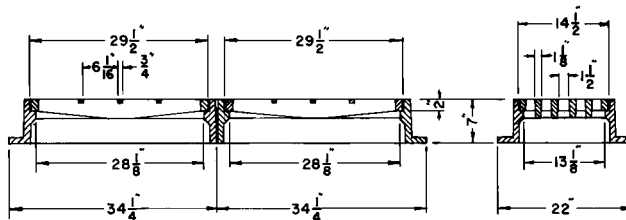


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3591	A	1.5	8.0

ROLL & GUTTER INLETS
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R-3593
Double Unit Inlet Frame, Grate

Heavy Duty



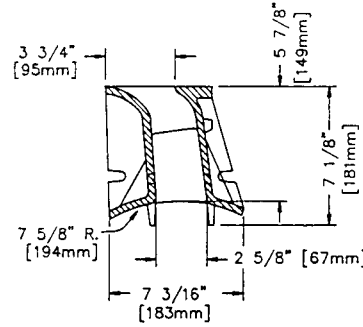
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3593	C	2.5	12.3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3599 Series Slotted Vane Drain, Sheetflow

Heavy Duty

Neenah's Cast Iron Slotted Vane Drain offers ease of installation along with the superior vaned configuration to capture previously unexpected quantities of water when placed perpendicular to the flow. Installation is accomplished by sawing a slot in the top of conventional PVC pipe, placing the pipe on grade, installing the Cast Iron Slotted Vane Drain in place and pouring the concrete. When used in conjunction with a vane grate inlet, virtually all of the water in the street, which would normally bypass the catch basin, can be captured. This permits the spacing between inlets to be increased. An additional benefit is the added safety factor obtained should the catch basin be plugged or covered with snow. The unit may also be installed wherever sheet flow capture is required.

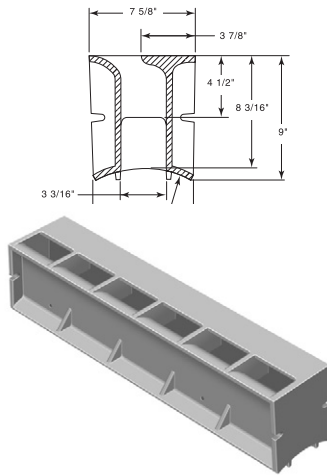


Illustrating R-3599-A

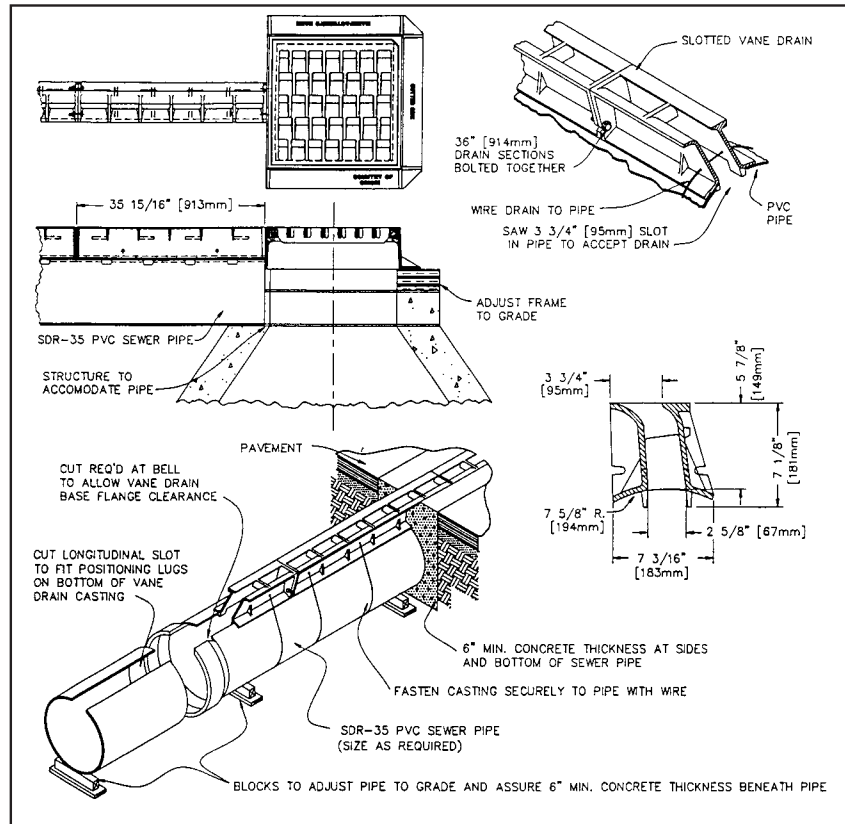
ROLL & GUTTER INLETS

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3599-A	L	0.2 per ft.	2 per ft.
R-3599-B	L	0.2 per ft.	2 per ft.

Catalog No.	Type
R-3599-A	Heavy Duty
R-3599-B	Extra Heavy Duty



Illustrating R-3599-B

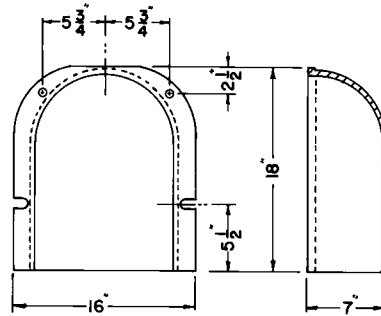


■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3700 to R-3708 Catch Basin Traps

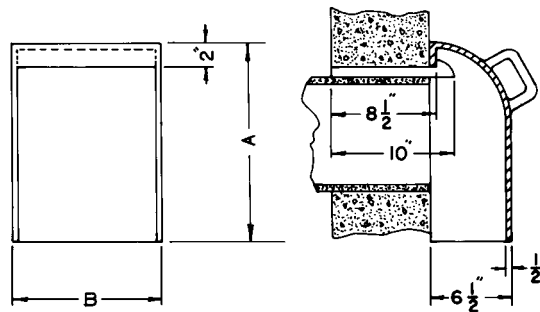
Cast iron catch basin traps are used extensively on sewer catch basins or manholes to prevent clogging on sanitary systems. They provide a waterseal against escaping gases. Traps with drop type catch basins provide effective means of keeping pipe lines entirely clean. The drop portion of inlet retains all solid material, and the trap prevents all floating debris from entering outlet pipe.

R-3700 Catch Basin Trap



Pipe size to 12".
 Setting method — 4 anchor bolts.
 Install on flat wall only.

R-3701 Series Catch Basin Trap

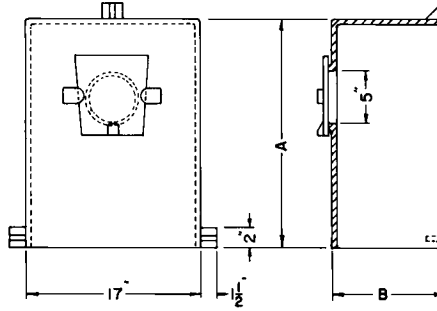


Cast iron handle.
 Locate bottom of trap minimum 6" below flow line.
 Install on flat wall only.

Catalog No.	Dimensions in inches			Setting Method
	A	B	Pipe Size	
R-3701-6	16	12	to 6	on 2 hooks
R-3701-8	18	12	8	on 2 hooks
R-3701-10	20	12	10	on 2 hooks
R-3701-12	22	16	12	on 2 hooks
R-3701-15	25	19	15	on 2 hooks
R-3701-18	28	22	18	on 2 hooks

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3703 Series
Catch Basin Trap



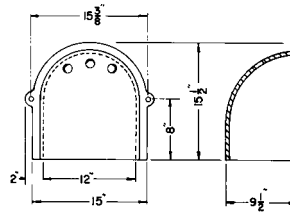
Cast in concrete wall only.

Dimensions in inches

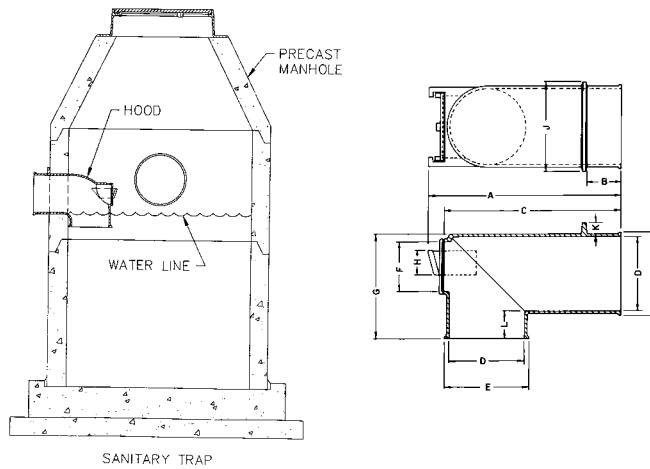
Catalog No.	A	B	Pipe Size	Setting Method
R-3703-12	19	8 1/2	to 12	in wall
R-3703-15	22	11	15	in wall

R-3704

Note vent holes.
 Pipe size to 12".



R-3705 Series
Catch Basin Trap



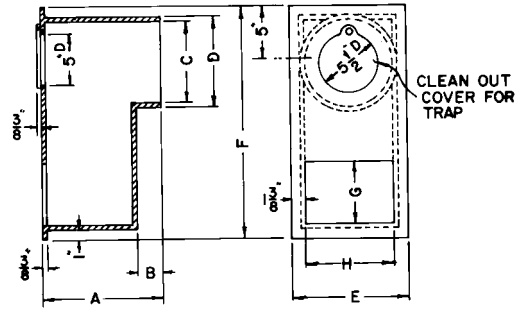
Cast or grouted in manhole wall. Pipe bell is not the structural support.
 Specify whether gas sealed cleanout cover is required. Will be furnished plain if not requested.

Dimensions in inches

Catalog No.	A	B	C	D	E	F	G	H	J	K	L
R-3705-4	23 1/2	10	22	4	5 1/4	3	9	2	6	1 1/2	4 11/16
R-3705-6	25 3/4	9 1/4	24	6	7 1/2	4	11	2 1/2	8	1	4 13/16
R-3705-8	28	6 1/2	26	8	9 1/2	5	13	3	11	1 3/4	4 5/8
R-3705-10	28 1/2	5 1/2	26	10	11 1/2	6	16	3 1/2	13	2	-
R-3705-12	31 1/4	6	28 5/8	12	13 5/8	8	18	4	14	2	6
R-3705-15	34	6	31 1/2	15	16 5/8	8	21 1/4	4	16	2	5 5/8

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

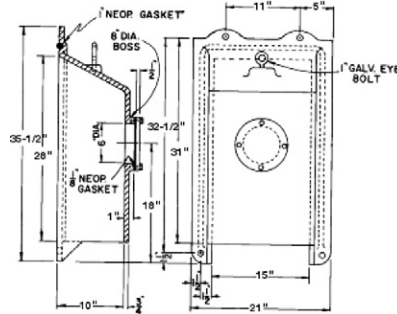
R-3707 Series
Catch Basin Trap



Available without flange on box if required.

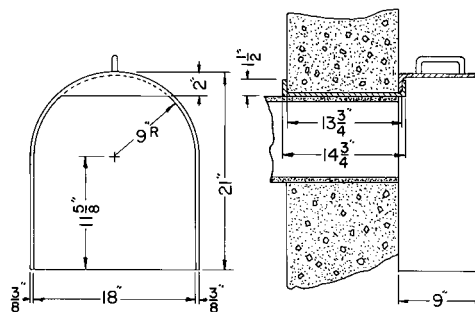
Catalog No.	Dimensions in inches							
	A	B	C	D	E	F	G	H
R-3707-12	11 1/2	2 1/2	12	12 3/4	14 3/4	28	9 1/2	12
R-3707-15	13	4	15	15 3/4	17 3/4	34 1/8	12	15

R-3708-12
Catch Basin Trap



Unit bolts to existing flat concrete wall.

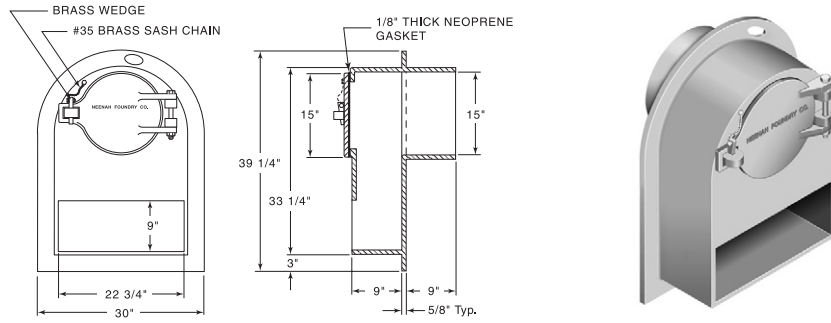
R-3711
Catch Basin Hood with Hook



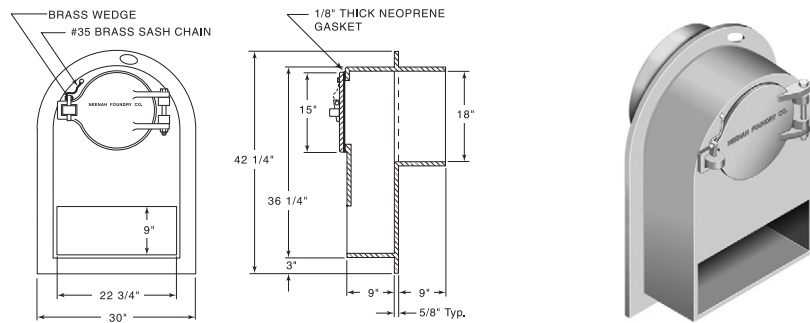
Install on flat wall only.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3712 Catch Basin Trap



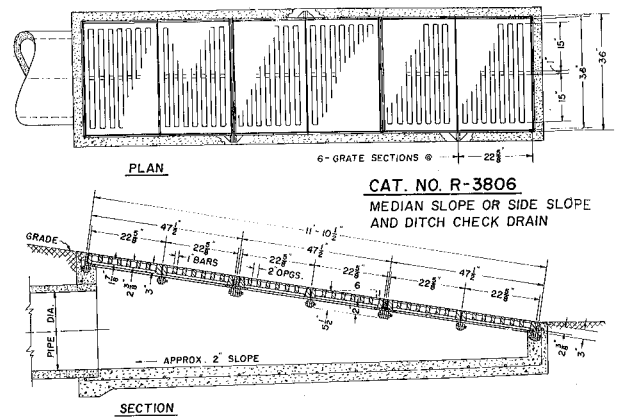
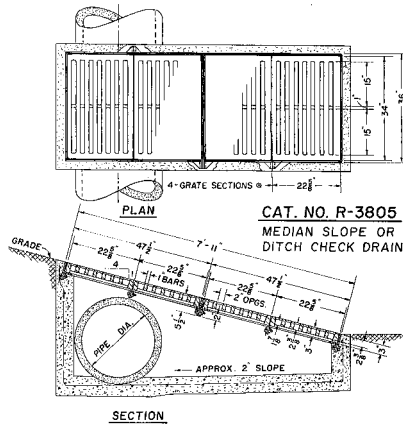
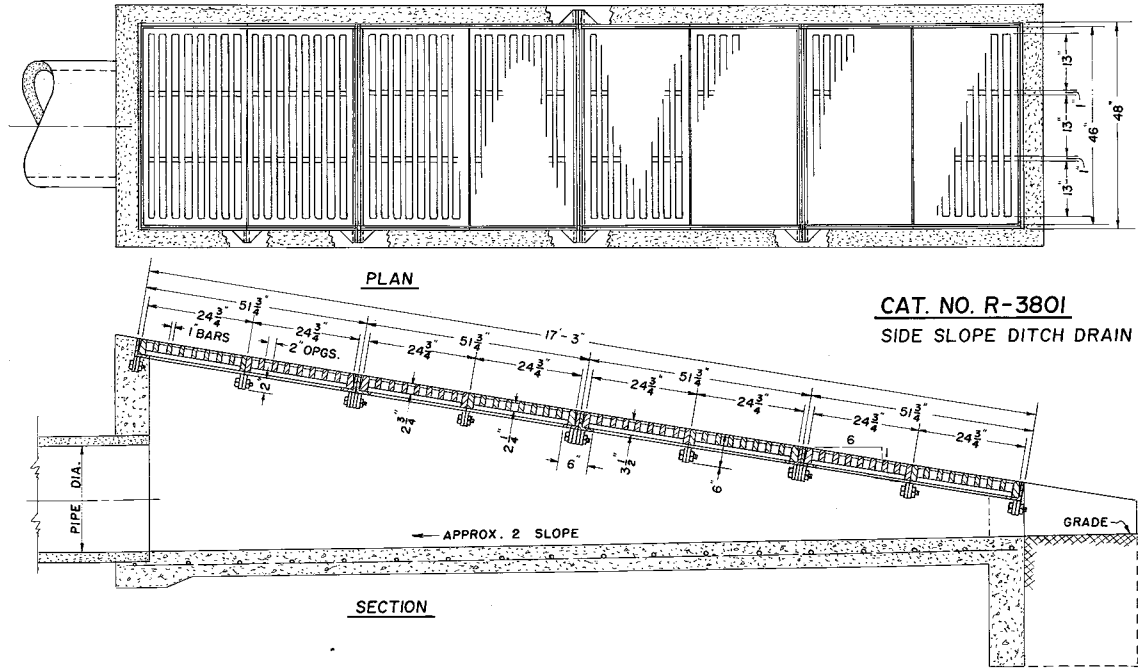
R-3713 Catch Basin Trap



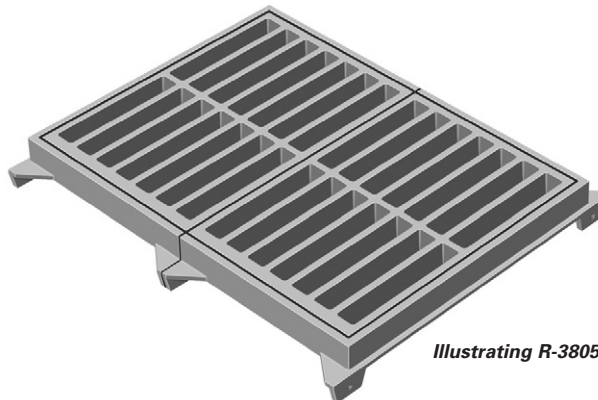
■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3801 - 3806 Series
Median Drain Frame, Grate

Heavy Duty



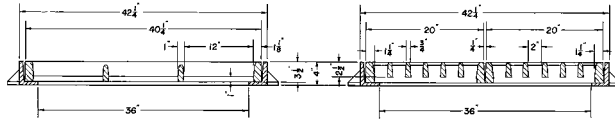
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3801	C	34.6	42.5
R-3805	C	11.6	21.8
R-3806	C	17.5	29.8



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3807
Median Drain Frame, Double Grate

Heavy Duty

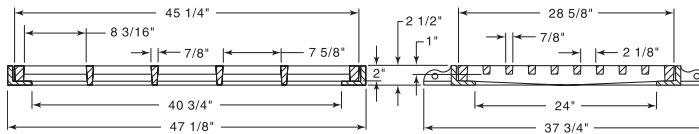


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3807	D	6.0	13.4

For flush-type inlet box in locations where median narrows. Recommended installation with load-bearing bars parallel to roadway.

R-3808-1
Median Drain Frame, Grate

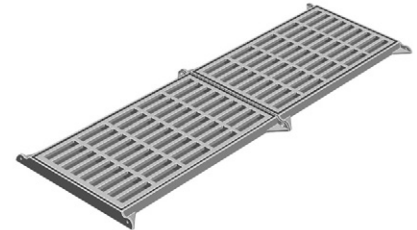
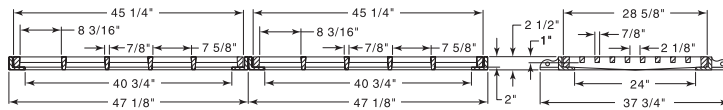
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3808-1	C	5.2	12.3

R-3808-2
Double Median Drain Frame, Grate

Heavy Duty



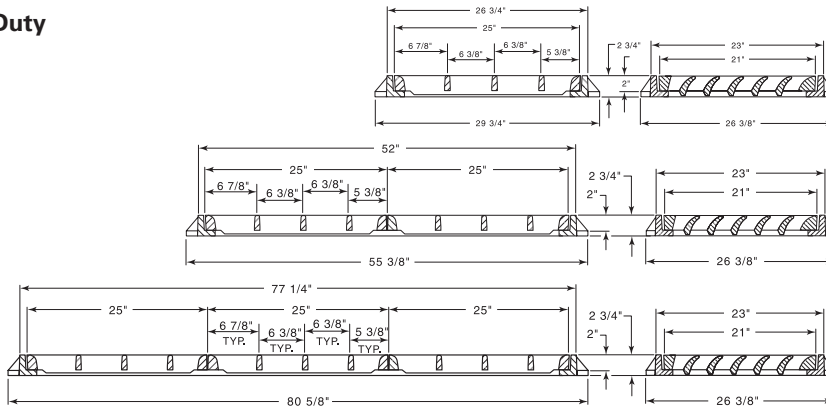
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3808-2	C	10.3	19.9

Neenah Foundry has two pattern shops operating 24 hours a day. On any given day, the pattern shops are in the process of building between 15 and 20 new patterns. Using CNC machines, they construct metal, plastic, and wood patterns for municipal castings. Everything from simple changes to existing patterns, to completely new patterns are built to customer specifications every day.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3900 Series Bridge Approach Drain Frame, Grate

Heavy Duty



Triple Unit, R-3900-D

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3900-B	L	1.9	7.7
R-3900-C	L	3.8	11.8
R-3900-D	L	5.7	16.0

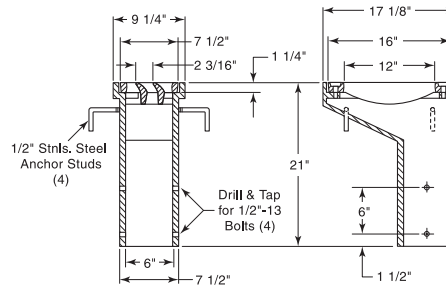
Catalog No.	Type
R-3900-B	Single Unit
R-3900-C	Double Unit
R-3900-D	Triple Unit

Grate(s) furnished in Ductile Iron grade 100-70-03.

R-3910-V Bridge Drain Frame, Grate

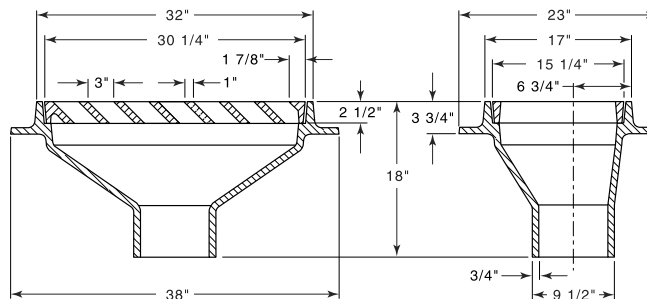
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3910-V	V	0.3	3.1



R-3918 Bridge Drain Frame, Grate

Heavy Duty

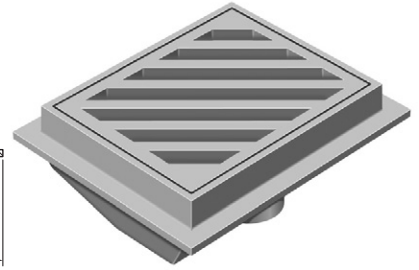
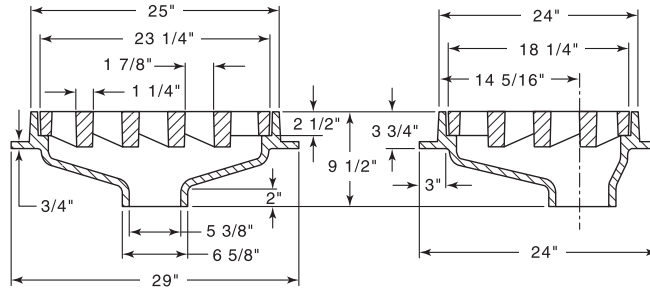


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3918	L	0.44	7.6

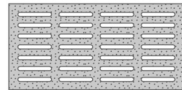
■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3919 Bridge Drain Frame, Grate

Heavy Duty



Standard Grate (shown): Type R
 Alternate grate(s):

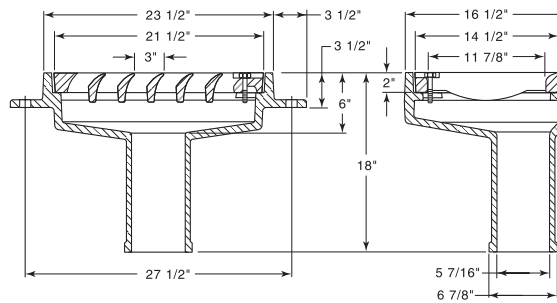


Type Q

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3919	R	1.4	6.9
R-3919	Q	0.9	6.9

R-3920-V Bridge Drain Frame, Grate

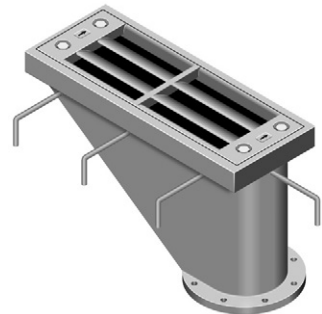
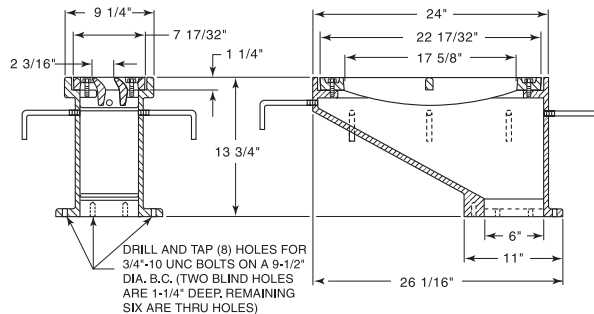
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3920-V	V	0.9	4.2

R-3921-V1 Bridge Drain Frame, Bolted Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3921-V1	V	0.5	4.1
R-3921-L1	L	0.3	4.1
R-3921-B1	B	0.7	4.5

Standard 125# flanged template downspout furnished by others.

Standard Grate (shown): Type V

Available with Type L grate, order **R-3921-L1**.

Available with Type B grate, order **R-3921-B1**.



Type L

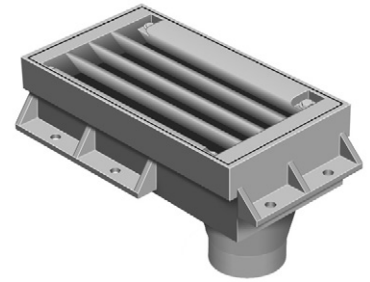
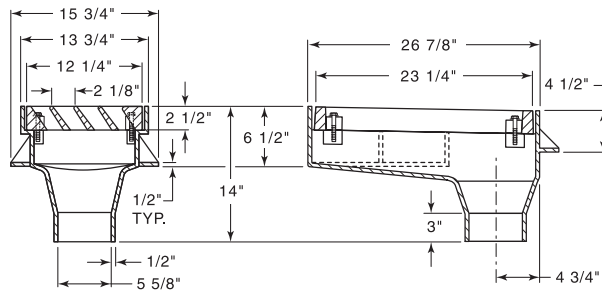


Type B

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3922
Bridge Drain Frame, Bolted Grate

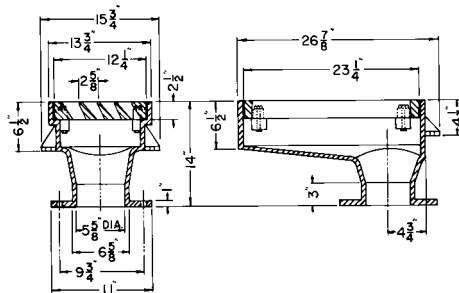
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3922	V	1.0	5.9

R-3922-A
Bridge Drain Frame, Bolted Grate

Heavy Duty

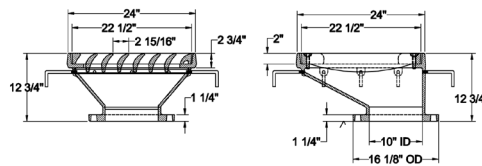


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3922-A	V	1.0	5.9

Downspout furnished by others.

R-3923
Bridge Drain Frame, Bolted Grate

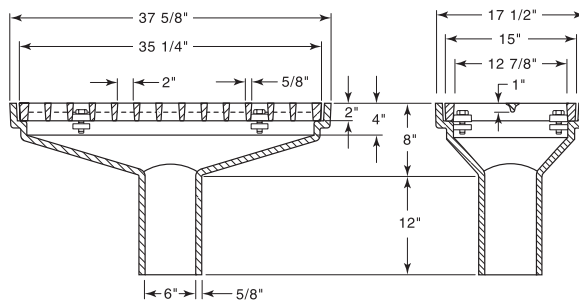
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3923	V	1.6	5.6

R-3924
Bridge Drain Frame, Bolted Grate

Heavy Duty



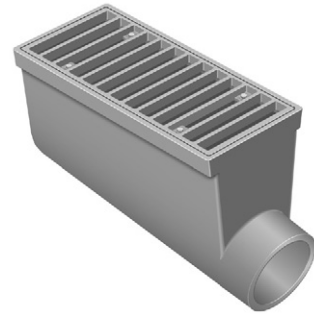
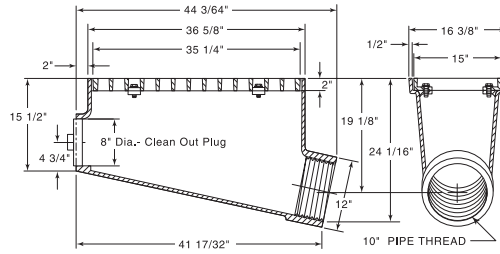
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3924	A	2.3	8.4

BRIDGE SCUPPERS
6

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3927
Bridge Drain Frame, Bolted Grate

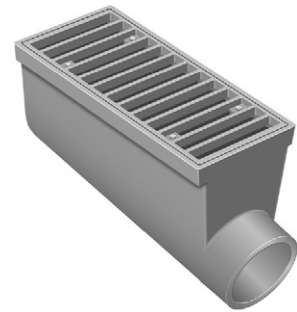
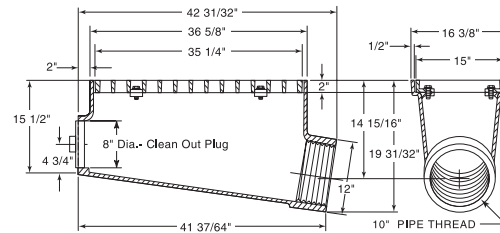
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3927	B	2.3	8.5

R-3927-A
Bridge Drain Frame, Bolted Grate

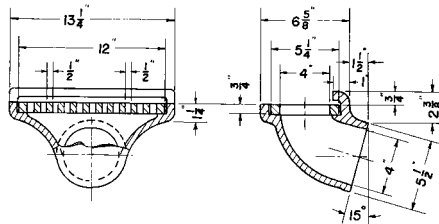
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3927-A	B	2.3	8.5

R-3928
Bridge Drain Frame, Grate

Heavy Duty

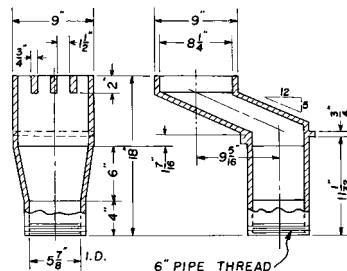


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3928	B	0.5	1.9

Rear angled outlet permits placement of drain pipe to avoid obstructing girders.

R-3930
Offset Bridge Scupper

Heavy Duty

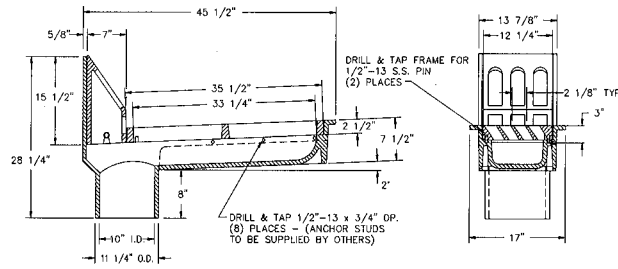


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3930	B or D	0.3	3.0

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3943
Bridge Scupper

Heavy Duty

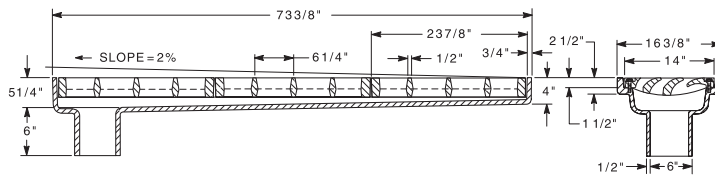


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3943	V	1.2	6.9

Grate in Ductile Iron.

R-3945
Bridge Scupper, Bolted Grates

Heavy Duty

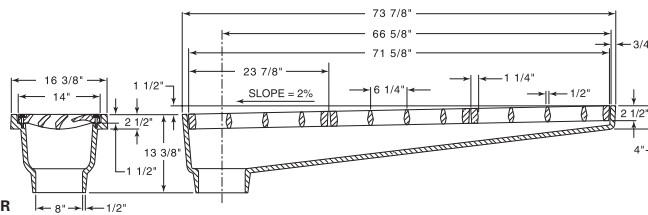


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3945	L	2.4	13.0

Specify: Spigot Outlet 6" or 8" inside diameter.

R-3945-A
Bridge Scupper, Bolted Grates +2% Slope

Heavy Duty

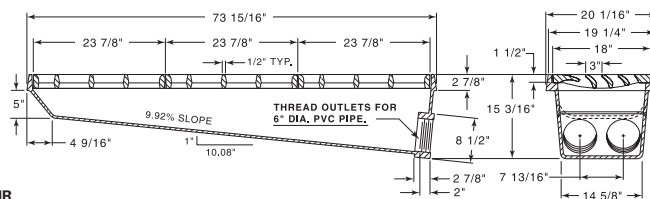


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3945-A	L	2.4	13.0
R-3945-2	L	2.4	13.0
R-3945-8	L	2.4	13.0

Available with -2% and -8% slope. Order as: R-3945-2, R-3945-8.

R-3946
Bridge Scupper, Bolted Grates

Heavy Duty

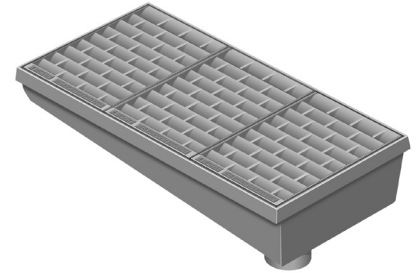
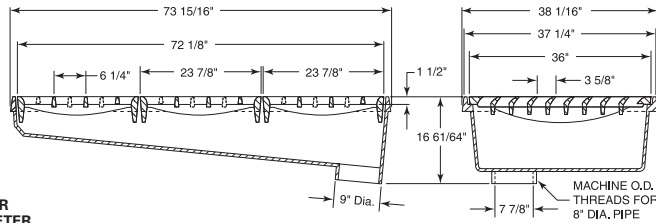


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3946	L	2.9	13.5

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3946-A
Bridge Scupper, Bolted Grates

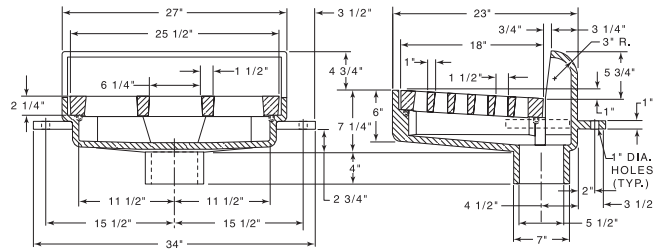
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3946-A	L	9.2	15.0

R-3948-A
Bridge Scupper, Bolted Grate

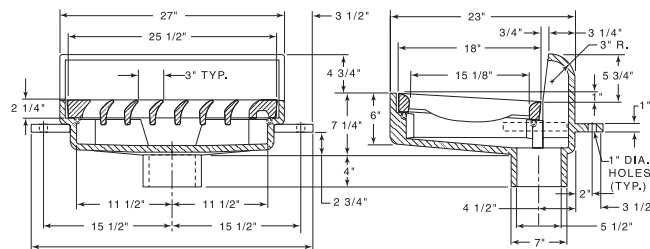
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3948-A	C	1.1	5.1

R-3948-V
Bridge Scupper, Bolted Grate

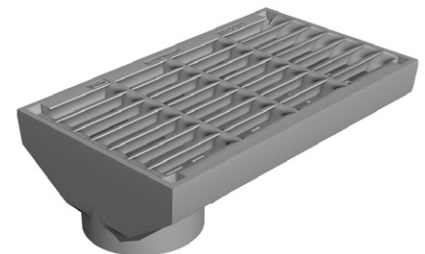
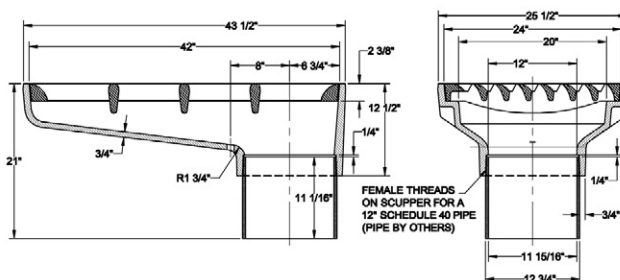
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3948-V	V	1.5	5.1

R-3949-A
Bridge Scupper, Bolted Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3949-A	L	2.5	8.9

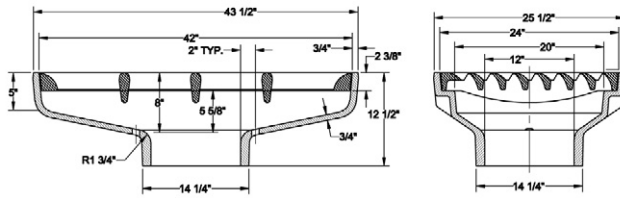
BRIDGE SCUPPERS

6

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3949-B
Bridge Scupper, Bolted Grate

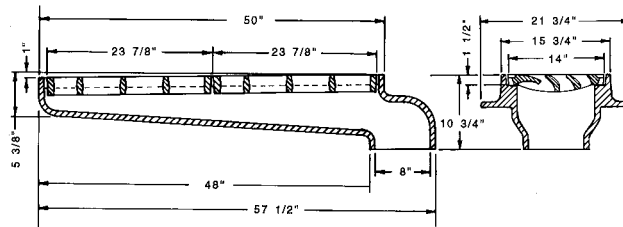
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3949-B	L	2.5	8.9

R-3951
Bridge Scupper, Bolted Grates

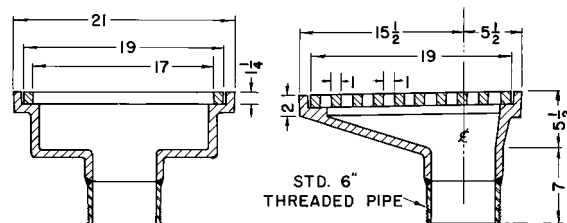
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3951	L	1.6	9.0

R-3952
Bridge Scupper

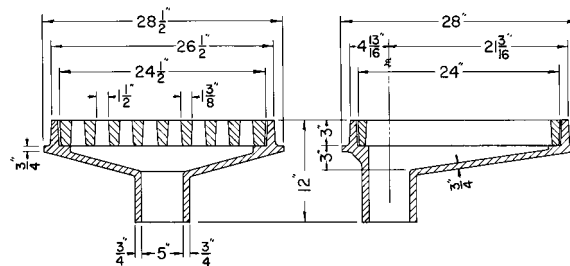
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3952	B or D	1.1	6.3

R-3954
Bridge Scupper

Heavy Duty



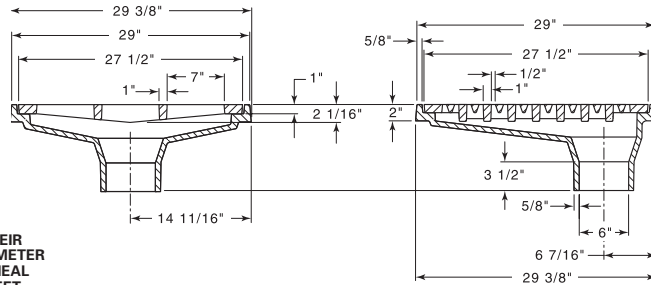
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3954	B	1.8	8.1

BRIDGE SCUPPERS

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3956
Bridge Scupper

Heavy Duty

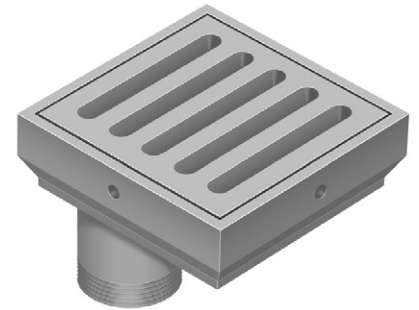
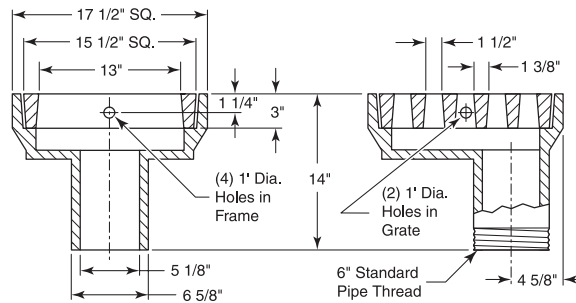


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3956	Q	1.2	6.9

Grate is supplied as Ductile Iron.

R-3961
Bridge Drain

Heavy Duty

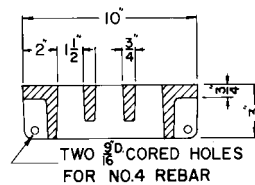


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3961	D	0.7	5.2

Note weep holes on each side of frame.

R-3976
Bridge Drain Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3976	B	0.2	3.3

BRIDGE SCUPPERS
6

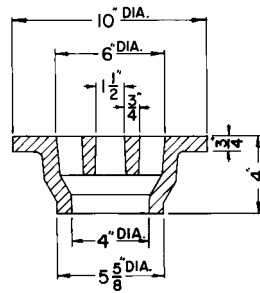
■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-3977 Bridge Drain Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3977	B	0.1	2.6

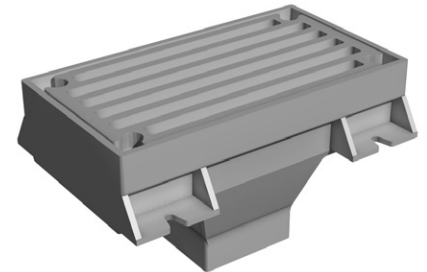
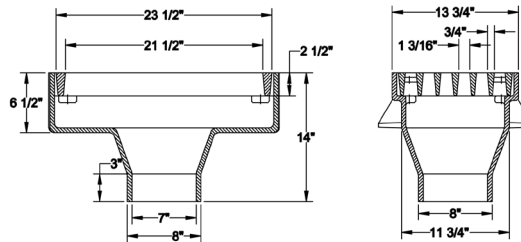
Cored #4 rebar anchors.



R-3978 Bridge Drain Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3978	D	1.0	4.0

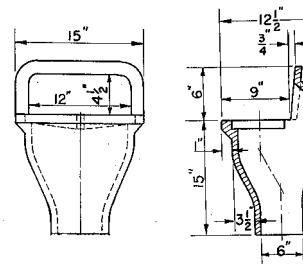


R-4001-B Bridge Drain

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4001-B	C	0.3	2.5

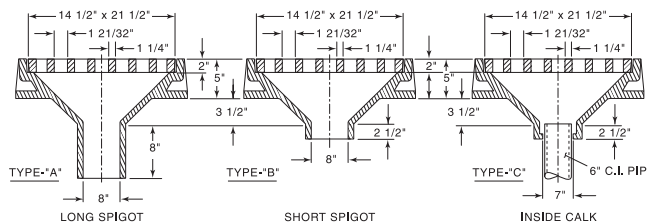
Standard Grate (shown): Type C



GRATE SIZE $8\frac{1}{2} \times 13\frac{15}{16} \times 1"$

R-4003 Series Roadway Drain

Heavy Duty



Suited for use on elevated highways. Sloping basin provides self-cleaning and eliminates clogging.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4003-A	A	0.9	6.1
R-4003-B	A	0.9	6.1
R-4003-C	A	0.9	6.1

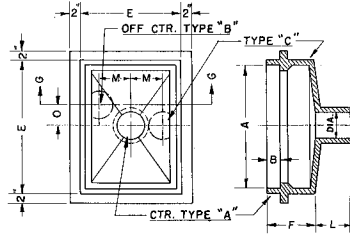
Catalog No.	Type
R-4003-A	Type A, Long Spigot
R-4003-B	Type B, Short Spigot
R-4003-C	Type C, Inside Caulk

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4004 Series Scupper Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4004-B	B	1.5	7.4
R-4004-C	B	1.5	7.4
R-4004-G1	B or D	1.9	7.3



Spigot variations adapted to facilitate placement on overhead or bridge superstructures.

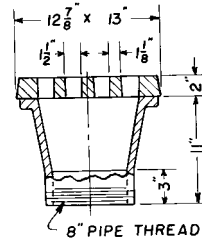
Catalog No.	Dimensions in inches								Spigot Type
	A	B	E	F	L	Dia.	O	M	
R-4004-B	20 3/8 x 23 3/4	2	22 5/8 x 26	6 3/4	5 1/4	8	5	6 5/16	B
R-4004-C	20 3/8 x 23 3/4	2	22 5/8 x 26	6 3/4	5 1/4	8	-	6 5/16	C
R-4004-G1 *	22 x 22	1 3/4	24 1/4 x 24 1/4	7	3 3/4	8	-	5	C

* Inside caulk

R-4005-A2 Scupper Frame, Grate

Heavy Duty

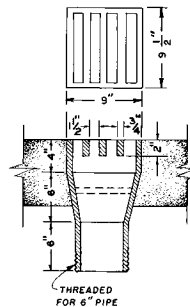
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4005-A2	B	0.4	4.3



R-4006 Bridge Scupper

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4006	D	0.3	3.1



Integral cast bars.

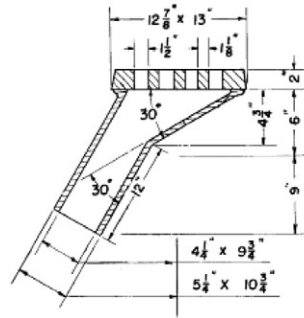
BRIDGE SCUPPERS
6

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4007-A6 Bridge Scupper

Heavy Duty

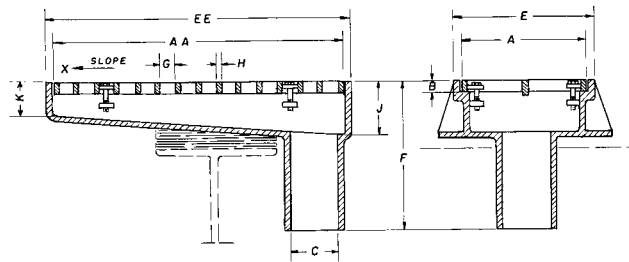
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4007-A6	B	0.4	4.3



R-4014 Series Overhead Scupper Drain, Bolted Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4014-B1	A	2.8	9.7
R-4014-B1	C	1.3	9.7
R-4014-C1	A	2.3	8.4
R-4014-C2	A	2.4	8.4



Side bolting flanges for fastening to superstructure. Variation in elevation is accomplished by use of shims or adjusting bolts.
 Standard Grate (shown): Type A

Catalog No.	Dimensions in inches											Slope
	A	AA	B	C	E	EE	F	G	H	J	K	
R-4014-B1 *	15	43 1/8	1 1/2	6	17 1/2	45 1/8	9 1/4	2 x 6 1/2	5/8	6 1/2	4	x = 3/16"
R-4014-C1	15	35 5/8	1 1/2	6	17 1/2	37 5/8	11	1 7/8 x 6 1/2	5/8	6 1/2	4	x = 9/16"
R-4014-C2	15	35 5/8	1 1/2	8	17 1/2	37 5/8	11	1 7/8 x 6 1/2	5/8	6 1/2	4	x = 9/16"

* Available with Type C grate.

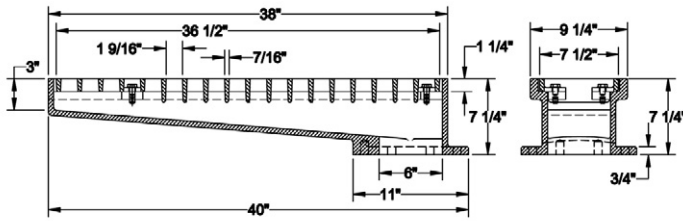


Type C

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4014-T Overhead Scupper Drain, Bolted Grate

Heavy Duty

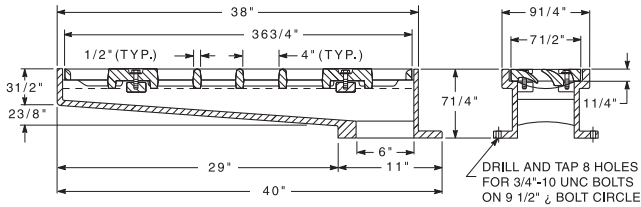


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4014-T	B	1.2	7.3

Standard 125# flanged template downspout furnished by others.

R-4014-TL Overhead Scupper Drain, Bolted Grate

Heavy Duty

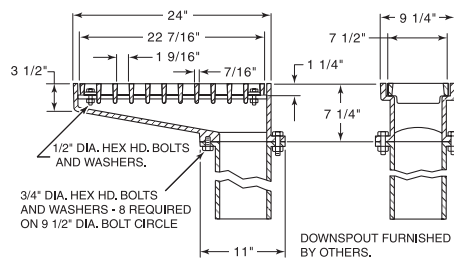


CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4014-TL	L	0.5	7.3

Standard 125# flanged template downspout furnished by others.

R-4014-T2 Overhead Scupper Drain, Bolted Grate

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4014-T2	B	0.7	4.5
R-4014-T2L	L	0.3	4.1
R-4014-T2V	V	0.3	4.1

Standard 125# flanged template downspout furnished by others.

Standard Grate (shown): Type B

Available with Type L grate, order **R-4014-T2L**.

Available with Type V grate, order **R-4014-T2V**.



Type L



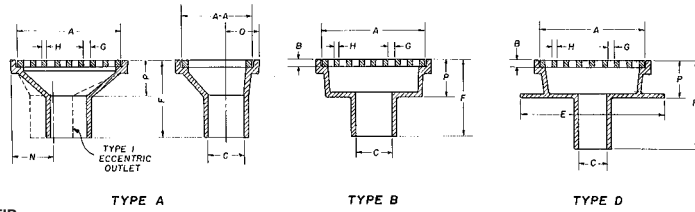
Type V

BRIDGE SCUPPERS
6

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4015 to R-4016 Series Roadway and Deck Drain

Heavy Duty



Illustrating R-4015-A

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4015-A	B	0.2	3.6
R-4015-A	P	0.1	3.6
R-4015-A1	B	0.2	3.6
R-4015-B	C	0.4	3.6
R-4015-C	B	0.3	3.6
R-4015-D	B	0.2	3.6
R-4015-D	P	0.1	3.6
R-4016-B	C	0.5	4.8
R-4016-H1	A	0.6	5.3
R-4016-K	B or D	1.0	6.3

For use on decks of elevated parking garages, access ramps, roadways, and viaducts.

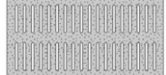
Catalog No.	Dimensions in inches										Spigot Type
	A	AA	B	C	E	F	G	H	O	P	
R-4015-A	11	9	1	4	-	12 1/2	1 x 7	1	3 5/8	5 1/2	A
R-4015-A1 ***	11	9	1	4	-	16 1/2	1 x 7	1	3 5/8	5 1/2	A
R-4015-B	11	9	1	4	-	12 1/2	1 1/2 x 4	1	3 5/8	5 1/2	A
R-4015-B1	11	9	1	4	-	20	1 1/2 x 4	1	3 5/8	5 1/2	A
R-4015-C	11	9	1	5	-	10 5/8	1 x 7	1	-	5 5/8	B
R-4015-D	11	9	1	5	16 1/2 x 18 1/2	14	1 x 7	1	-	6 1/8	D
R-4016-B	17	12	1 1/4	6	-	12 1/2	1 1/8 x 4 1/4	1 1/8	5 3/8	6	A
R-4016-C	17	12	1 1/4	6	13 3/4	20	1 1/8 x 4 1/4	1 1/8	9 3/8	6	B
R-4016-H1 **	13	19	1 1/4	6	-	12 1/2	1 x 5 3/16	1	5 3/8	5 1/2	1
R-4016-K *	19	19	1 1/4	6	-	12 1/2	1 x 17	1	5 3/8	5 1/2	A

* 2" adjusting ring available, see R-1979 Series.

** Type 1 eccentric outlet furnished only on R-4016-H1. N = 5-3/8"

*** Outlet adapted for 6" inside pipe tap (6" internal NPT).

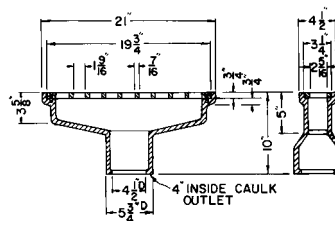
R-4015-A & R-4015-D are also available with grate Type P.



Type P

R-4018 Parking Garage Drain

Heavy Duty



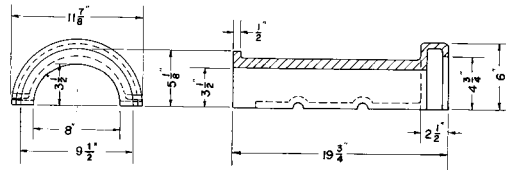
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4018	B	0.2	3.8

Grate furnished in Ductile Iron.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4028 Cast Iron Underdrain

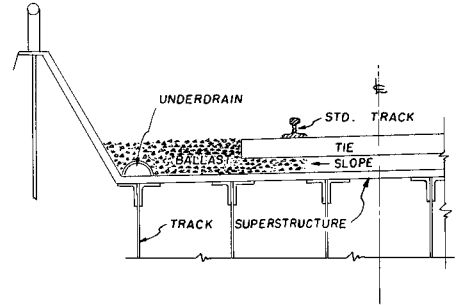
Heavy Duty



Drawing demonstrates cast iron underdrain sections used along railroad right-of-way. Ballast or gravel-filled road bed permits ready drainage of surface water into underdrain where it is conducted to the storm sewer.

Laying length is 18".

Note drainage intake holes in each section of cast iron underdrain.

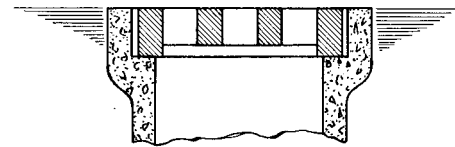


R-4030 to R-4040 Series Sewer Pipe Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4030-4	H	0.1	1.5
R-4030-6	H	0.1	2.1
R-4030-8	H	0.2	2.7
R-4030-10	H	0.3	3.3
R-4030-12	H	0.4	3.9
R-4030-15	H	0.8	4.8
R-4030-18	B	1.1	5.8
R-4030-21	B	1.3	6.7
R-4030-24	B	2.1	7.6
R-4030-27	G	2.8	8.6
R-4030-30	G	3.4	9.4

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4040-6	E	0.1	2.1
R-4040-8	E	0.2	2.7
R-4040-10	E	0.3	3.3
R-4040-12	E	0.5	3.9
R-4040-15	E	0.7	4.8
R-4040-18	E	0.9	5.8
R-4040-21	G	1.4	6.7
R-4040-24	G	1.6	7.6
R-4040-27	G	2.3	8.6
R-4040-30	G	2.9	9.4



Fits in bell end of standard sewer pipe.

Bell and spigot vitrified clay and concrete pipe are made under many specifications and dimensions vary. Check the grate sizes in the table to be sure they will fit the pipe you are using.

If specified, special setback lug arrangement is available on R-4040 series, which modifies grate to fit corrugated metal pipe in sizes indicated. Not available on R-4030 series.

Dimensions in inches

Catalog No. Heavy Duty	Catalog No. Light Duty	Pipe Size	Grate Dia.	Grate * Thickness
R-4030-4 £	n/a	4	5 3/4	1 1/2
R-4030-6 £	R-4040-6	6	8	2
R-4030-8 £	R-4040-8	8	10 3/8	2 1/4
R-4030-10 £	R-4040-10	10	12 5/8	2 1/2
R-4030-12 £	R-4040-12	12	14 3/4	2 1/2
R-4030-15 £	R-4040-15	15	18 1/4	2 3/4
R-4030-18 + **	R-4040-18	18	22	2 3/4
R-4030-21 + **	R-4040-21	21	25 1/2	3
R-4030-24 + **	R-4040-24	24	29	3 1/4
R-4030-27 **	R-4040-27	27	32 3/4	3 1/2
R-4030-30 **	R-4040-30	30	36	3 3/4

* For Light Duty series, this figure includes legs.

** Slotted openings.

£ Square openings

+ Slight crown.



R-4030 type grates

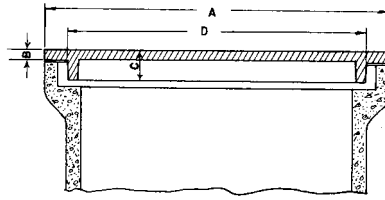


R-4040 type grate with legs

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4044 Series Manhole Lids for Pipe Bell

Light Duty

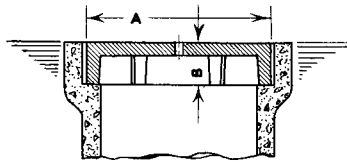


Dimensions in inches

Catalog No.	Pipe Size	A	B	C	D
R-4044-A	4	7 1/8	1/2	1 1/4	5 3/8
R-4044-B	6	9 1/2	1/2	1 1/2	7 3/4
R-4044-D	10	14 3/4	1/2	2 1/4	12 3/4
R-4044-E	12	17 1/4	5/8	2 1/4	14 1/2
R-4044-F	15	21 1/4	5/8	2 1/4	17
R-4044-G	18	25 1/2	5/8	2 1/2	21 3/4
R-4044-J	21	29 1/2	3/4	2 1/2	24 7/8
R-4044-K	24	33 1/4	3/4	2 1/2	29 1/4

R-4055 Series Sewer Pipe Bell Cover

Light Duty



Supplied with 1" lift hole as standard. Available without lift hole if specified.
 When ordering, please advise pipe size. Bell and spigot vitrified clay and concrete pipe are made under many specifications and dimensions vary. Check the cover sizes in the table to be sure they will fit the pipe you are using.

Dimensions in inches

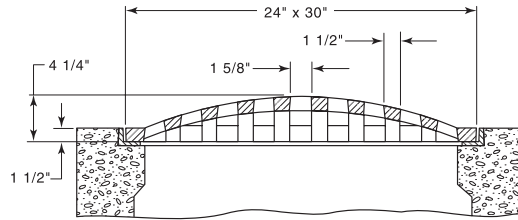
Catalog No.	Pipe Size	A	B
R-4055-4	4	5 3/4	1 1/2
R-4055-6	6	8	2
R-4055-8	8	10 3/8	2 1/4
R-4055-10	10	12 5/8	2 1/2
R-4055-12	12	14 3/4	2 1/2
R-4055-15	15	18 1/4	2 3/4
R-4055-18	18	22	2 3/4
R-4055-21	21	25 1/2	3
R-4055-24	24	29	3 1/4
R-4055-27	27	32 3/4	3 1/2
R-4055-30	30	36	3 3/4

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4215-A
Convex Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4215-A	Beehive	2.0	9.0

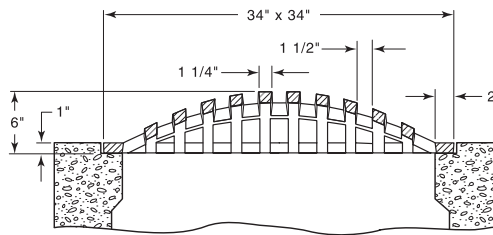


Available with or without angle frame, please specify.
 For side ditch drainage.

R-4215-C
Convex Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4215-C	Beehive	3.3	11.3

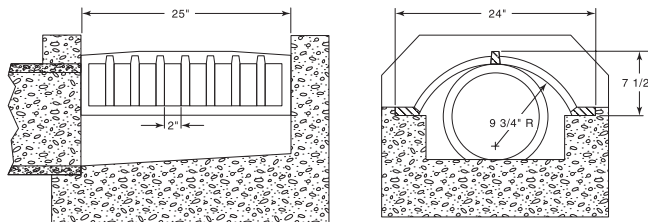


For side ditch drainage.

R-4216-B
Earth Ditch Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4216-B	Beehive	2.2	4.1

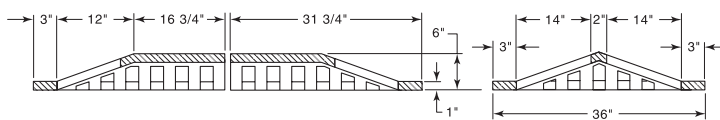


Allows maximum drainage of surface water in sod or cobbled ditch gutters.

R-4217
Basket Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4217	Beehive	4.9	7.1



Note grate made in two sections.

DRAINAGE GRATES
7

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4340 Series Round Beehive Grate

Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4340-A	Beehive	1.5	6.2
R-4340-B	Beehive	1.1	6.0
R-4340-C	Beehive	1.2	6.0
R-4340-F	Beehive	1.6	6.5

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4340-F1	Beehive	0.7	4.5
R-4340-G	Beehive	0.6	5.0
R-4340-H	Beehive	0.5	4.5

May be used in vitrified clay pipe bell, on a concrete catch basin, or in a cast iron frame as shown. Effective where debris may interfere with drainage, such as at a roadside or in a median strip.

Bell and spigot vitrified clay and concrete pipe are made under many specifications and dimensions vary. Check the grate sizes in the table to be sure they will fit the pipe you are using.



Illustrating R-4340-A



Illustrating R-4340-B

Dimensions in inches

Catalog No.	O Dia.	O.D. Lugs	Dia. Bhv.	Ht. Bhv.	No. Lugs	Size Bars	Size Op.	Pipe Size
R-4340-A	34	26 1/4	23 7/8	6	*	1 1/2	1	24
R-4340-B	33	23	23	3	6	2	1 1/2	24
R-4340-C	33	29	23	5 3/4	4	1	1 1/4	24
R-4340-F	33	28	25	5	4	1	1	24
R-4340-F1 **	25 1/2	21 3/4	17	3	4	1	1	18
R-4340-G **	28	18	19	3	3	1 3/4	2	15
R-4340-H	25	15	17	3	3	1 5/8	1 3/4	12

* Furnished with ring instead of lugs.

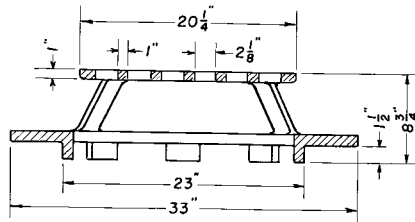
** Frame not available.

Grate flange lettered "DUMP NO WASTE - DRAINS TO RIVER"

R-4341-A Ditch Grate, Stool Type

Heavy Duty

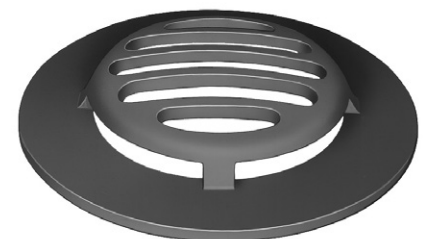
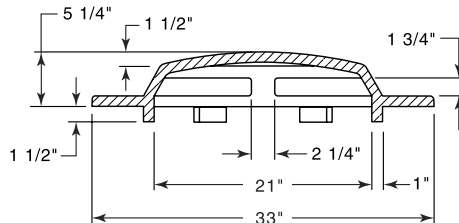
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4341-A	Beehive	2.5	6.0



R-4342 Ditch Grate, Stool Type

Light Duty

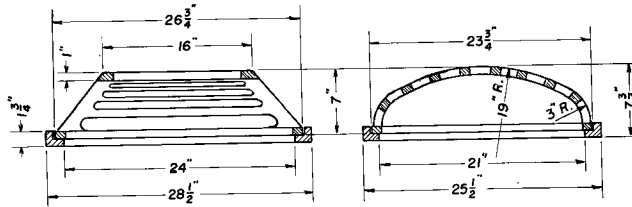
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4342	Beehive	2.0	6.0



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4343
Ditch Grate, Frame

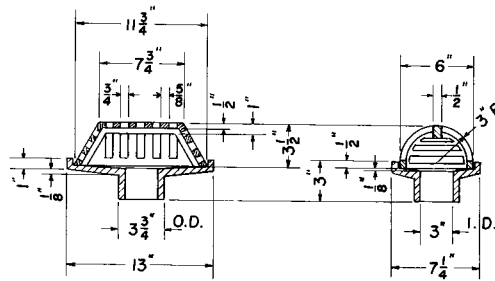
Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4343	Beehive	2.4	8.4

R-4344
Railroad Bridge Drain Grate, Frame

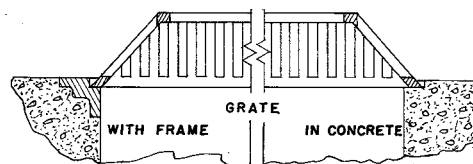
Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4344	Beehive	0.2	2.9

R-4345 to R-4347 Series
Square Beehive Drainage Grate, Frame

Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4345	Beehive	2.0	8.6
R-4346	Beehive	2.0	8.6
R-4347	Beehive	2.0	8.6

For off-roadway construction.
 These castings are suitable for use at low points of large graded areas and will drain a substantial volume of surface water from all sides.

Catalog No.	Dimensions in inches				
	Grate Overall	Grate Top Size	Frame Overall	Height Grate	Height Frame
R-4345	26 x 26	12 x 12	-	6 1/4	-
R-4346	26 x 26	12 x 12	30 x 30	6 1/4	4
R-4347	27 5/8 x 27 5/8	12 x 12	-	6 1/4	-

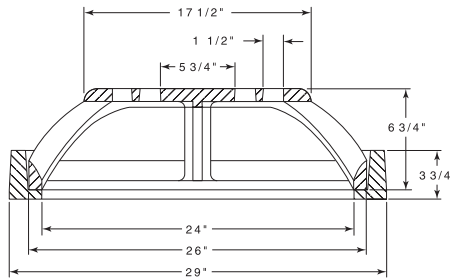
DRAINAGE GRATES 7

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4349-C Median Drain Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4349-C	Beehive	2.4	6.9

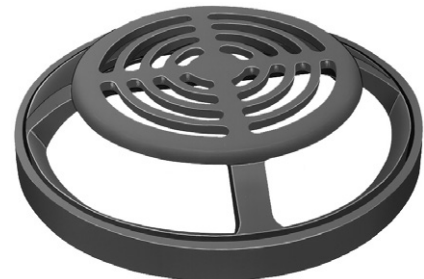
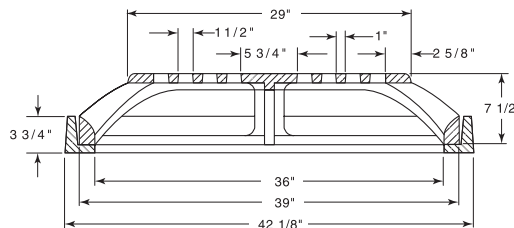


For use in narrow median on divided highways, freeways or expressways. Provides large capacity drainage when required during heavy rainfalls.

R-4349-D Median Drain Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4349-D	Beehive	5.4	10.2

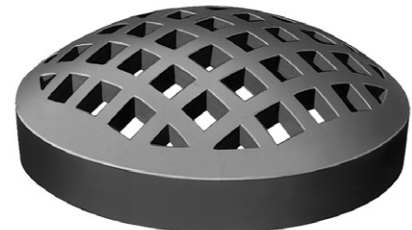
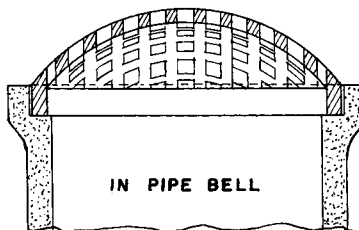


For use in narrow median on divided highways, freeways or expressways. Provides large capacity drainage when required during heavy rainfalls.

R-4350 Series Beehive Grate for Sewer Pipe Bell

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4350-1	Beehive	0.3	2.7
R-4350-A	Beehive	0.3	3.1
R-4350-B	Beehive	0.4	3.9
R-4350-C	Beehive	0.6	4.8
R-4350-D	Beehive	1.0	5.8
R-4350-E	Beehive	1.7	7.6



Bell and spigot vitrified clay and concrete pipe are made under many specifications and dimensions vary. Check the grate sizes in the table to be sure they will fit the pipe you are using.

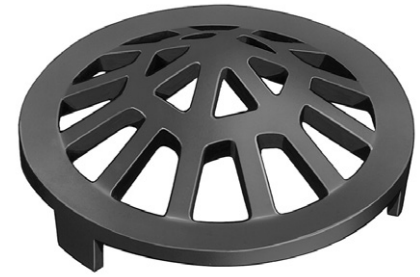
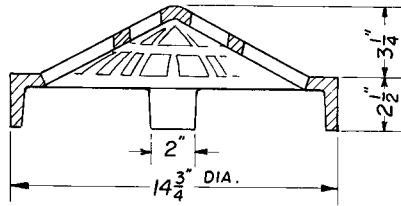
Catalog No.	Pipe Size	Dimensions in inches		
		Diameter	Thickness at Rim	Overall Height
R-4350-1	8	10 3/8	2	4
R-4350-A	10	12	1	4
R-4350-B	12	14 3/4	2 1/2	5 1/2
R-4350-C	15	18 1/4	2 1/2	6 1/4
R-4350-D	18	22	3	7 1/2
R-4350-E	24	29	3	9

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4351-B
Beehive Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4351-B	Beehive	0.5	3.9

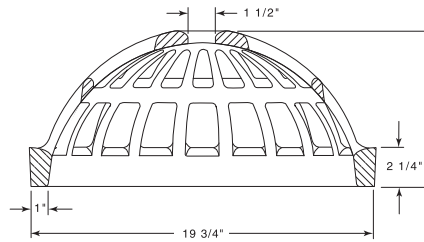


For bell of 12" bell and spigot pipe. Since pipe is made under many specifications, there is a wide variation in dimensions. Check the grate size as shown on the drawing to be sure it will fit the pipe you are using.

R-4351-C
Beehive Grate

Heavy Duty

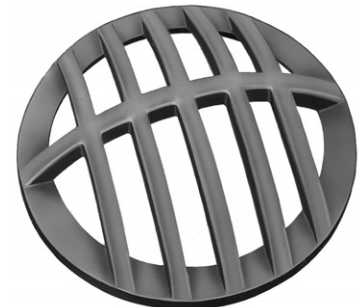
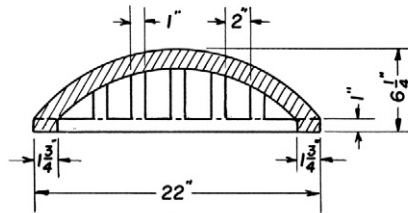
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4351-C	Beehive	1.2	5.2



R-4351-D
Beehive Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4351-D	Beehive	1.6	5.8



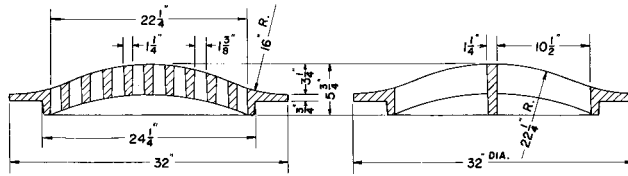
For bell of 18" tile or concrete bell and spigot pipe. Since pipe is made under manufacturers specifications, there is a wide variation in dimensions. Check the grate size as shown on the drawing to be sure it will fit the pipe you are using.

DRAINAGE GRATES
7

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4352
Beehive Grate

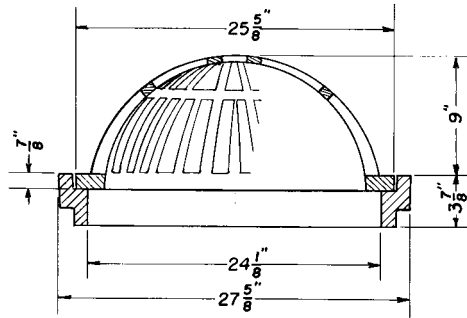
Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4352	Beehive	1.3	5.8

R-4353
Beehive Grate, Frame

Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4353	Beehive	1.8	6.7

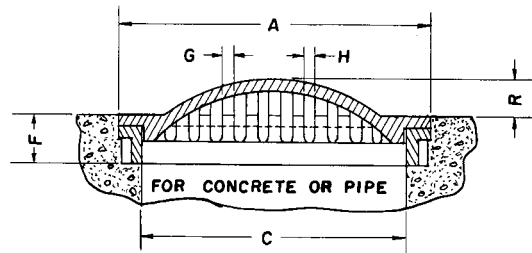
Also available with 2 7/8" tall frame, if requested.

DRAINAGE GRATES

7

R-4360 Series
Beehive Grate, Frame

Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4360-A	Beehive	0.6	4.3
R-4360-B	Beehive	0.8	4.7
R-4360-C	Beehive	1.4	4.5
R-4360-D	Beehive	0.7	6.3

Various kinds and types of pipe are made under many specifications and dimensions vary. Check the grate sizes in the table to be sure the grates and frames will fit the pipe you are using.

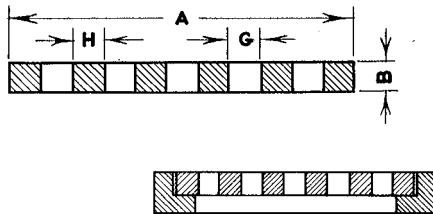
Catalog No.	Dimensions in inches					
	A	C	F	G	H	R
R-4360-A	18 1/4	16 1/4	2 3/4	1	1/2	1 5/8
R-4360-B	22	18	2 3/4	1	1/2	1 3/4
R-4360-C	23 1/4	17	3 1/2	2	1 1/2	1 3/4
R-4360-D	28 1/2	24	3 5/8	1	1	3

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4370 Series Round Drainage Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4370-1	C	0.1	1.7
R-4370-2	G	0.2	2.5
R-4370-3	E	0.4	3.9
R-4370-4	G	0.6	3.9
R-4370-5	G	0.8	4.7
R-4370-6	G	0.8	5.1
R-4370-7	G	0.8	5.2
R-4370-8	E	1.0	5.5
R-4370-9	C	1.3	5.8
R-4370-10	A	1.1	5.8
R-4370-12	F	0.9	5.8
R-4370-13	G	1.3	5.8
R-4370-15	D	1.0	5.9
R-4370-17	D	1.0	6.0
R-4370-18	E	1.3	6.0
R-4370-21	D	0.9	6.0
R-4370-22	D	1.1	6.0
R-4370-23	H	0.9	6.3
R-4370-25	G	1.9	7.6
R-4370-26	G	2.8	8.6
R-4370-27A	G	2.4	9.9



Illustrating R-4370-12

Most grates listed can be furnished with cast iron angle frame when specified.
 Frame is of 1/2" metal.

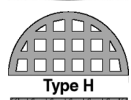
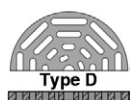
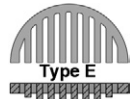
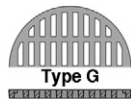
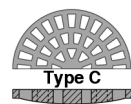
Catalog No.	Dimensions in inches				Type
	A	B	G	H	
R-4370-1	6 3/8	1 1/4	1 x 1	1/2	C
R-4370-2	9 1/2	2 1/2	1 1/2 x 3 1/2	5/8	G
R-4370-3	15	1 1/4	1 x 12 1/4	1	E
R-4370-4	15	1 1/4	3/4 x 2 1/4	3/4	G
R-4370-5	18	1 1/2	1 x 4 1/2	1 1/4	G
R-4370-6 *	19 1/2	1 1/2	3/4 x 5 1/4	3/4	G
R-4370-7	20	1 3/8	2 x 2	1	G
R-4370-8	21	1 1/4	3/4 x 19 1/2	3/4	E
R-4370-9	22	1 1/2	1 1/8	1	C
R-4370-10	22	1 1/2	1 1/4	1	§ A
R-4370-12	22	1 1/2	1 3/8 x 5	1	F
R-4370-13 *	22	1 1/2	2 x 6	1 1/4	G
R-4370-15 **	22 1/2	1 3/4	1 1/8	1	D
R-4370-17	22 3/4	1 3/4	1 1/2	1	D
R-4370-18	22 3/4	1 3/4	1 1/2	7/8	E
R-4370-21	23	1 1/2	1 1/4	1	D
R-4370-22 **	23	1 3/4	1	1 1/8	D
R-4370-23	24	1 1/2	2 1/4 x 2 1/4	1 1/2	H
R-4370-25	29	3	3/4	1	G
R-4370-26	33	2	1 1/2	1	G
R-4370-27A	38	1 1/2	1	1	G

* Light Duty.

** Frame not available.

§ Alternate Type G or Type C grates available.

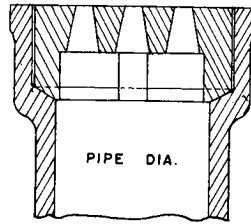
Alternate Type G grate available.



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4373 Series Soil Pipe Grate

Heavy Duty



Catalog No.	Dimensions in inches		
	Grate Diameter	Depth of Grate	Pipe Size
R-4373-2 *	2 5/8	2 1/2	2
R-4373-3	3 3/4	2 1/2	3
R-4373-4	4 3/4	2 7/8	4
R-4373-6	6 3/4	3	6
R-4373-8	9	3 1/2	8
R-4373-10	11	3 1/2	10
R-4373-12	13 1/8	4 1/4	12
R-4373-15	16	4 1/4	15

*Slotted openings

R-4375 Series Perforated Drain Lids

Light Duty



Holes standard as shown; variations as specified. Since bell and spigot pipe are made under many specifications, dimensions may vary. Check cover sizes in the table to be sure they will fit the pipe you are using.

Catalog No.	Dimensions in inches				
	Diameter	Thickness	Number of Holes	Dia. Holes	Pipe Bell Size
R-4375-A	7 1/8	1/2	12	3/4	4
R-4375-B	9 1/2	1/2	12	3/4	6
R-4375-F	21 1/4	5/8	24	3/4	15
R-4375-G	25 1/2	5/8	24	3/4	18
R-4375-K *	33 1/2	3/4	36	1	24

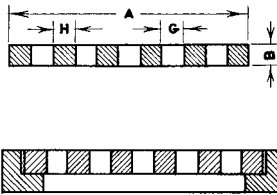
* Lid has six 2" tall lugs on bottom

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

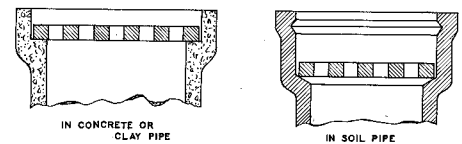
R-4380 Series Flat Bar Drainage Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4380-AA1	E	2.8 sq. in.	1.0
R-4380-A	E	3.7 sq. in.	1.1
R-4380-A1	E	6.0 sq. in.	1.2
R-4380-B1	E	4.8 sq. in.	1.3
R-4380-1	E	5.4 sq. in.	1.4
R-4380-3	E	6.0 sq. in.	1.6
R-4380-4	E	0.1	2.1
R-4380-4A1	E	0.1	2.2
R-4380-4A	E	0.2	2.6
R-4380-6	G	0.2	2.8
R-4380-7	G	0.3	3.1
R-4380-8	E	0.3	3.3
R-4380-9	E	0.4	3.7
R-4380-10	E	0.5	3.9
R-4380-11	E	0.5	3.9
R-4380-12	E	0.6	4.0
R-4380-13	G	0.7	4.2
R-4380-13A	E	0.9	4.7
R-4380-14	E	0.7	4.7



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4380-15	E	0.6	4.7
R-4380-16	E	0.8	5.0
R-4380-17	E	0.8	5.0
R-4380-18	G	0.7	5.2
R-4380-21	G	1.3	6.3
R-4380-22	G	1.5	7.0
R-4380-23	G	1.1	7.3
R-4380-24	G	1.7	7.9
R-4380-25	G	2.5	8.4
R-4380-26	G	2.7	8.8

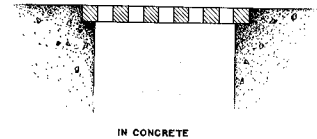


Angle frame as shown can be furnished with many grates, as noted.
 Special frame anchors furnished on request.

Dimensions in inches

Catalog No.	A	B	G	H
R-4380-AA1	3 3/4	3/8	3/8	3/8
R-4380-A	4	1/2	3/8	3/8
R-4380-A1 *	4 3/4	3/8	1/2	3/8
R-4380-B1	5	1/2	1/2	1/2
R-4380-1	5 1/2	1/2	1/2	1/2
R-4380-3 *	6	1	1/2	3/4
R-4380-4 *	8	1/2	5/8	5/8
R-4380-4A1	8 1/2	3/4	1	1
R-4380-4A *	10	3/4	1/2	1/2
R-4380-6	10 1/2	3/4	3 1/2 x 1 1/2	3/4
R-4380-7	11 3/4	1	3/4 x 4 1/4	1
R-4380-8 *	12 1/2	1	1	1
R-4380-9 *	14 1/4	3/4	7/8	15/16
R-4380-10 *	15	5/8	3/4	3/8
R-4380-11	15	1	5/8	3/4
R-4380-12	15 1/4	1/2	5/8	3/8
R-4380-13 *	16	1	1 1/8	1
R-4380-13A	17 3/4	1/2	1 x 3 1/2	1/2
R-4380-14 *	18	3/4	7/8	3/4
R-4380-15 *	18	1	1 1/8	1 1/4
R-4380-16 *	19	1/2	3/4	1
R-4380-17 *	19	1	3/4	1/2
R-4380-18 *	20	1	2 x 2	1 1/4
R-4380-21 *	24	3/4	1/2	1/2
R-4380-22 *	26 5/8	3/4	7/8	3/4
R-4380-23	28	1	2 1/8 x 4	2
R-4380-24	30	3/4	7/8	3/4
R-4380-25 *	32	3/4	1 3/8	1
R-4380-26	33 1/2	3/4	1 3/8	1
R-4380-32	39 3/4	3 1/2	1	1

* Frame available upon request

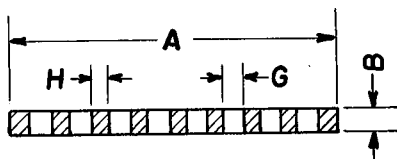


■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4385 Series Bar Grates

Light Duty

CATALOG NUMBER	GRATE TYPE	SO. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4385-B	E	0.1	2.1
R-4385-C	E	0.3	2.7
R-4385-E	E	0.5	3.9
R-4385-F	E	0.5	4.8
R-4385-G	E	1.0	5.8
R-4385-H	G	1.6	7.6
R-4385-J	G	2.5	8.6
R-4385-K	G	2.7	9.4

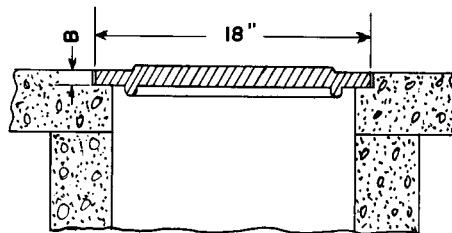


For heavy traffic grates, see the **R-4030 Series**. Check the grate sizes in the table to be sure they will fit the pipe you are using.

Catalog No.	Pipe Size	Dimensions in inches			
		A	B	G	H
R-4385-B	6	8	1/2	5/8	9/16
R-4385-C	8	10 3/8	1/2	1/2	7/16
R-4385-D	10	12 1/2	5/8	1/2	1/2
R-4385-E	12	14 3/4	3/4	7/8	7/8
R-4385-F	15	18 1/4	7/8	5/8	3/4
R-4385-G	18	22	1	1	1
R-4385-H	24	29	1 1/4	1 5/16	3/4
R-4385-J	27	32 3/4	1 1/2	1 5/16	3/4
R-4385-K	30	36	3/4	1 1/4	1

R-4388 Series Cast Iron Lid

Light Duty



Illustrating R-4388-A

Catalog No.	Dimensions in inches	
	B	Notes
R-4388-A	1/4	Solid
R-4388-B	1/2	Solid
R-4388-C	1/4	Grated
R-4388-E	1/2	*

* Six 1" holes, 18 1/4" diameter



Illustrating R-4388-C

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

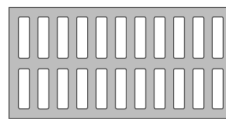
R-4400 to R-4899 Series Square and Rectangular Drainage Grates

The gratings in this series are rated heavy duty when supported on all four sides.

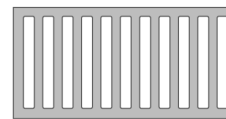
Other special sizes quoted on request in the event none of the standards shown in this series meet your requirements. In ordering replacement grates to be used on existing catch basins, be sure to specify the exact size of opening in which the grate will be used.

Many of the gratings in this series can be adapted to trench frames with support on two sides. Most are qualified as heavy duty when the short dimension spans the trench.

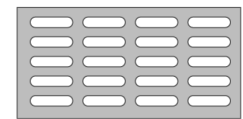
Advise loading requirements so we can assist you with your choice.



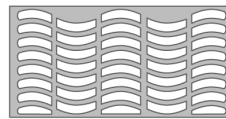
Type A



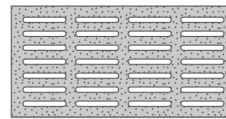
Type B



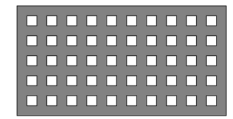
Type C



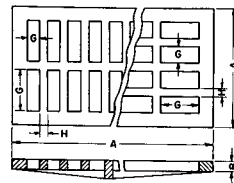
Type S



Type Q



Type H



Dimensions in inches						Dimensions in inches					
Catalog No.	A	B	G	H	Type	Catalog No.	A	B	G	H	Type
Square - Heavy Duty						Rectangular - Heavy Duty					
R-4400-A *	8 x 8	1	1 x 5 1/4	1	A	R-4389-0	6 x 12	1 1/4	3/4 x 4 1/2	1	B
R-4401 *	8 x 8	1	3/8 x 3	3/8	A	R-4390	6 x 24	1	3/4 x 2 1/8	1	B
R-4408 *	10 1/4 x 10 1/4	1	7/8 x 8 1/4	1	B	R-4403	8 x 14	1	1 1/2 x 5 7/8	1/2	A
R-4441-1 *	12 x 12	1	3/8 x 4 1/2	1	Q	R-4404-C	8 x 24	1	1 1/16 x 6	1	B
R-4511 *	14 x 14	1 1/2	1 1/2 x 5 1/8	1 1/8	A	R-4406	8 x 24	1 3/4	1 5/16 x 2 5/8	1	B
R-4550 *	15 x 15	1 1/4	3 1/2 x 3 1/2	3/4	H	R-4406-1	8 x 24	1 3/4	1 x 5	3/4	A
R-4552 *	16 x 16	1 3/4	1 1/4 x 6 1/4	1 1/4	A	R-4406-2	8 x 24	1 3/4	1 x 2	1	C
R-4557 *	16 x 16	1 1/4	1 3/16 x 3 3/8	3/4	A	R-4406-C	9 1/4 x 23 7/8	1	1 x 2 7/8	1	A
R-4558 *	17 5/8 x 17 5/8	1 1/4	1 x 5	1/2	C	R-4406-P	9 x 23 7/8	1 1/2	1/4 x 2 5/16	1	P
R-4660 *	18 x 18	1 1/2	3 x 4 1/2	1 1/4	C	R-4407-2A	9 1/2 x 24	1 3/4	1 x 7 1/2	1	B
R-4662	19 3/4 x 19 3/4	2 1/2	1 3/8 x 8 1/2	1	A	R-4409	10 x 17 3/4	1 1/2	1 x 3 1/2	1	A
R-4720 *	20 x 20	1 3/4	1 3/8 x 3 1/2	1 1/4	C	R-4409-A	10 x 24	1 3/4	1 1/4 x 4 3/4	1	C
R-4721-A *	21 x 21	1 3/4	1 1/2 x 8	1 1/4	A	R-4409-C *	10 x 24	1 3/4	1 x 7	1	B
R-4725 *	21 x 21	2	3 x 3	1	H	R-4409-E *	10 x 24	1 3/4	1 x 3 1/2	1	A
R-4760 *	22 x 22	1 3/4	3 x 5 1/5	1	C	R-4409-G	10 x 24	1 1/2	2 x 8	1	B
R-4765	23 x 23	2	1 x 6 1/2	1	A	R-4421 *	10 x 40	1 1/8	1 1/4 x 8 1/2	1	C
R-4808-A *	24 x 24	2	1/2 x 4 1/2	1 5/8	Q	R-4423-A	10 1/4 x 48	1 5/8	1 1/2 x 3 1/2	1	A
R-4810 * +	24 x 24	2	1 3/4 x 6	1 1/4	C	R-4424	10 1/2 x 23 1/8	1 3/4	2 x 2	1	H
R-4820 * †	24 x 24	2	1 3/4 x 5 7/8	1 3/8	C	R-4430-1	11 x 23 7/8	1 1/8	1/4 x 3 5/16	1	P
R-4826 **	24 x 24	2	1 x 6	1 1/4	A	R-4430-A	11 x 24	1 1/2	3/4 x 4 1/8	3/4	A
R-4832 *	24 x 24	1 5/8	1 1/16 x 4 3/4	1	C	R-4430-B	11 1/2 x 24	1 1/2	1 x 6 5/8	1	C
R-4832-B *	26 x 26	1 3/4	1 1/16 x 4	1	C	R-4435-1	11 7/8 x 14	2	1 x 5 1/2	1	C
R-4833 *	26 x 26	2	2 x 7	1	A	R-4443	12 x 14	1 3/4	1 1/2 x 5 1/4	1 1/4	A
R-4836	26 x 26	2	1 1/8 x 4 3/4	1 1/4	C	R-4449 *	12 x 24	1 1/2	1 1/2 x 4 1/4	1	A
R-4850 *	27 x 27	2	2 1/2 x 7 1/2	1	C	R-4450 *	12 x 24	1 3/4	1 x 4 1/2	1	A
R-4852 *	27 x 27	2	1 1/2 x 5	1	C	R-4450-A *	12 x 24	1 3/4	2 x 2	1	H
R-4852-A *	27 x 27	1	1 1/2 x 5	1	C	R-4451 *	12 x 24	2	1 1/2 x 3 3/4	1	C
R-4859-C *	27 1/2 x 27 1/2	1	2 x 7	1	A	R-4454	12 x 26	1 1/2	1/2 x 11 1/2	1/2	C
R-4859-Q *	27 1/2 x 27 1/2	1	3/8 x 7	1 1/8	Q	R-4460 *	12 x 30	2	1 1/4 x 4	1	A
R-4859-S *	27 1/2 x 27 1/2	1	1 1/2 x 4 3/4	1	S	R-4462 *	12 x 35 3/4	1 1/2	3/4 x 9	1	B
R-4871 * §	27 1/2 x 27 1/2	1	2 x 24	1	B	R-4470 *	12 x 48	1 3/4	1 x 4 1/2	1	A
R-4880 *	28 x 28	2	1 1/2 x 7 1/4	1	C	R-4523	14 x 23 7/8	1	1 1/16 x 5 1/2	1	A
R-4880-C *	30 x 30	1 1/2	1 1/4 x 5 7/8	1 1/4	C	R-4525 *	14 x 24	2	1 x 5 1/2	1	A
R-4882 *	34 x 34	2	2 x 14 1/2	1 1/8	A	R-4530	14 1/2 x 22	2	1 1/2 x 5 1/2	1 1/4	A
R-4882-A *	34 x 34	2	1 x 9	1 1/8	A	R-4780-A **	22 x 44	1 3/4	3 x 5 1/2	1 1/16	C
R-4884-A ***	36 x 36	1 3/4	2 x 4	1 3/8	C						

* Angle frame available

** Grate in two pieces

*** Grate in three pieces

§ Grate lettered "DUMP NO WASTE - DRAINS TO RIVER"

+ Available with Riverwalk Style grate

• Light Duty

† Convex

Meets traffic load called for in AA-6005 of 25,000# proof load

DRAINAGE GRATES 7

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4400 to R-4899 Series Square and Rectangular Drainage Grates (continued)

Catalog No.	Dimensions in inches				Type	Catalog No.	Dimensions in inches				Type
	A	B	G	H			A	B	G	H	
Rectangular - Heavy Duty						Rectangular - Heavy Duty					
R-4531	14 1/2 x 23 7/8	1	1 x 5	1	A	R-4730 •	19 1/2 x 32	1 1/2	2 x 5	1	A
R-4540	14 1/2 x 26 1/2	2	2 1/4 x 4	1	C	R-4731 •	19 1/2 x 39	1 1/2	2 x 4 1/2	1	C
R-4541 *	14 1/2 x 28	1 3/4	1 1/4 x 5	1 1/4	A	R-4732	19 1/2 x 39	1 3/4	1 x 7 1/2	1	A
R-4544	14 1/2 x 37 3/4	1 3/4	2 x 5 3/8	1 1/4	A	R-4735	20 x 23 7/8	1	1 1/16 x 8 1/4	1	A
R-4545	14 1/2 x 48	1 3/4	1 1/4 x 5	1 1/4	A	R-4736 *	20 x 24	2	1 1/2 x 2 1/2	1 1/4	C
R-4548	15 x 20 1/2	1 1/2	2 x 2	3/4	H	R-4738 *	20 x 24	2	1 x 5	1	A
R-4570-1	15 x 23	1 3/4	1 1/2 x 5 1/2	1 1/8	A	R-4739 *	20 x 24	2	1 1/8 x 4 3/4	1	C
R-4570-2	15 x 23 7/8	1 1/2	1 x 6	1	A	R-4740 *	20 x 28 1/2	2	1 3/4 x 8 1/4	1	C
R-4573 *	15 x 30	2 1/2	1 1/8 x 5 1/2	1	A	R-4750 *	20 x 30	2	1 3/4 x 6 1/4	1	C
R-4575-A *	15 x 36	1 3/4	1 13/16 x 6 1/2	3/4	A	R-4750-1	20 x 48	2	1 1/2 x 5	1	A
R-4579	15 1/8 x 23	1 1/2	1 3/8 x 5 1/2	1 3/8	A	R-4751	20 1/2 x 27	2	1 3/4 x 5 1/2	1	C
R-4583	15 1/2 x 22 1/4	1 3/4	1 5/8 x 5 1/2	1 3/8	A	R-4752	20 1/2 x 36	1 7/8	2 x 5 3/4	1 1/8	C
R-4584	15 1/2 x 36	1 3/4	1 1/2 x 5 1/4	1 3/8	A	R-4755-B *	21 x 42	1 1/2	1 1/2 x 5 1/2	1	A
R-4585	15 1/2 x 39	1 3/4	1 7/8 x 5 7/8	1 1/4	A	R-4755-C *	21 x 42	1 1/2	1 1/2 x 5 7/8	1	C
R-4586 *	15 3/4 x 36	1 3/4	1 1/2 x 5 1/4	1 3/8	A	R-4759	22 x 23	1 3/4	1 1/2 x 6	1	C
R-4600	16 x 23	2	1 1/4 x 3 3/4	1	A	R-4762 *	22 x 30	1 1/2	2 x 6 1/4	1	C
R-4603-A *	16 x 24	1 1/8	3/4 x 5 1/2	1	A	R-4780 *	22 x 37	2	2 x 8	1	C
R-4604	16 x 24	1 1/2	2 x 4	7/8	C	R-4781 *	22 x 48	2 1/2	1 5/8 x 5 3/8	1 1/4	C
R-4604-C *	16 x 24	2	2 x 5	2	A	R-4795 *	22 1/2 x 45	1 1/2	2 x 6	1	A
R-4604-D	16 x 24	2 1/2	2 1/2 x 6 5/8	3/4	A	R-4798	23 1/4 x 36 1/2	2 3/4	1 1/2 x 7 1/4	1	C
R-4608	16 1/2 x 19 3/4	1 1/2	1 1/4 x 6	1	A	R-4821-A *	23 7/8 x 26	2	1 9/16 x 4 15/16	1 1/4	C
R-4610	16 1/2 x 22	1 3/4	1 1/2 x 4	1	A	R-4825 *	24 x 30	1 1/2	1 1/2 x 4 1/4	1 1/4	C
R-4620	17 x 19	2	1 1/4 x 4 1/4	1 1/8	A	R-4825-A *	24 x 30	2 1/4	1 1/4 x 4 3/4	1	A
R-4630	17 x 20	1 1/2	1 1/4 x 6 1/2	1	C	R-4825-B *	24 x 30	2 1/4	1 1/2 x 6	1	C
R-4632	17 x 21	2	1 3/8 x 8 3/4	1	C	R-4828 *	24 x 33	2 1/4	1 x 4 1/2	1	A
R-4640	17 x 21 1/2	1 3/4	2 1/2 x 4 1/4	1	A	R-4829 *	24 x 33	2 1/4	1 1/2 x 6 1/2	1 1/4	C
R-4641	17 x 23 7/8	1	1 1/16 x 7	1	A	R-4837	24 x 35	2 1/2	1 1/2 x 6 1/2	1 1/2	A
R-4641-A *	17 x 24	2	1 x 7	7/8	A	R-4839 *	24 x 35 7/8	1 3/4	7/8 x 9 3/4	1	A
R-4641-C *	17 x 24	2	1 x 6 1/2	1	C	R-4840 *	24 x 36	2	2 x 4 3/4	1	C
R-4641-F *	17 x 34	1 1/2	1 1/2 x 6 3/4	1	A	R-4843 *	24 x 36	1 3/4	1 3/4 x 6	1	A
R-4649	17 1/4 x 24	1 3/4	1 x 6 1/2	1	A	R-4853	24 x 39	2 1/2	1 3/4 x 5 3/4	1 5/8	A
R-4652 *	17 3/4 x 29 3/4	2	1 1/2 x 4 1/2	1 1/8	A	R-4853-A	24 x 45	3	1 1/2 x 6 1/4	1 1/4	A
R-4670-A *	18 x 24	1 1/2	1 1/8 x 6 3/4	1 1/8	A	R-4853-B1	24 x 51	3	1 1/2 x 5	1 1/4	C
R-4671 *	18 x 24	2	1 x 6 1/2	1 1/16	A	R-4855	26 x 30	2	1 1/2 x 5	1 1/4	A
R-4672 *	18 x 24	2	1 3/8 x 4 1/2	1 1/8	C	R-4857	26 x 45	2	1 1/2 x 5 1/2	1	A
R-4689 *	18 x 27 1/4	2	2 x 6 3/4	1	C	R-4890 *	28 x 37	2	1 3/4 x 7 5/8	1 1/4	C
R-4692-A	18 x 34	2 1/4	1 7/16 x 8	1	C	R-4891 **	30 x 48	1 1/2	1 1/2 x 4 1/4	1 1/4	A
R-4698 *	18 x 36	1 3/4	2 x 4	1 3/8	A	R-4893 ***	30 x 78	2	1 1/2 x 5	1 1/4	C
R-4710 * +	17 3/4 x 35 3/4	2	1 3/4 x 6 1/4	1 1/8	C	R-4893-B *	32 x 34	2	1 x 2	1	C
R-4711 *	18 x 39	2	1 1/4 x 5 1/2	1 1/4	C	R-4894 *	33 x 36	2	1 1/2 x 6 1/2	1 1/4	C
R-4718	18 3/4 x 36 3/4	2	2 x 8	1	A	R-4895-2 **	36 x 66	2	1 1/2 x 6 1/2	1 1/4	A

* Angle frame available

** Grate in two pieces

*** Grate in three pieces

§ Grate lettered "DUMP NO WASTE - DRAINS TO RIVER"

+ Grate lettered "DUMP NO WASTE DRAINS TO WATERWAY"

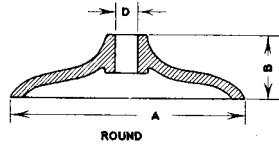
• Light Duty

¥ Convex

Meets traffic load called for in AA-6005 of 25,000# proof load

**R-4905 Series
Sign and Marker Bases**

Heavy Duty



Bases only furnished in cast iron. Special lettering available at additional cost. Cored hole for sign post is standard. Pipe tap is available if specified.

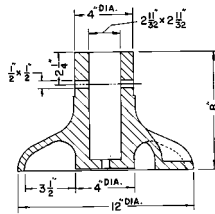
Catalog No.	Dimensions in inches		
	A	B	D *
R-4905-B	15	3	1 1/2
R-4905-C	20	5	1 3/4

* Dimensions revised if specified.



**R-4907
Base Casting for Telescoping Post**

Heavy Duty



Base furnished with three holes for rigid anchorage. Round base has opening for square telescoping post. Lettering on base as shown or special lettering if specified. Also available for use with 2" diameter galvanized pipe.

DRAINAGE GRATES 7

R-4926-29 Series Downspout Shoes (Rainwater Leaders)

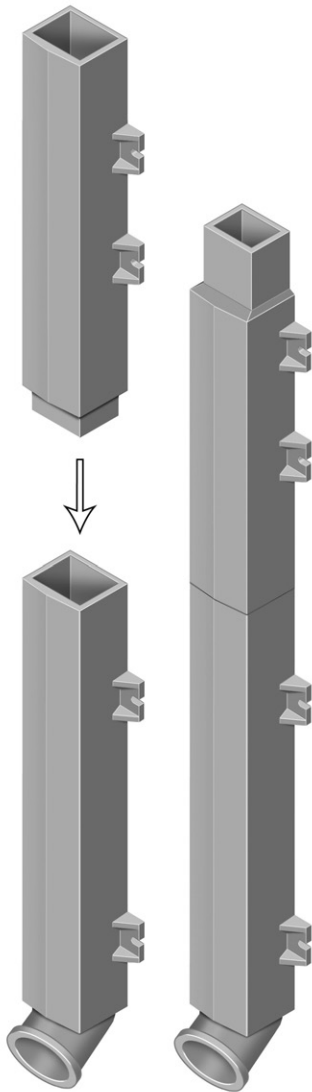
Traffic may cause damage to light sheet metal rainwater leaders. Cast iron downspout shoes at lower levels provide protection. Table shows various standard types in straight, offset and angular shoes. Fastening lug slots are 5/8". R-4927 downspout adapters are used between the sheet metal downspout and the surface drainage pipe. Cast iron adapters are made to fit cast iron soil pipe; however, they can be fitted to PVC pipe with the use of a no-hub coupling (furnished by others).

Can be furnished with a powdercoat finish or with one coat of black primer if requested.

Dimensions in inches												
Catalog No. Standard	Catalog No. w/ CleanOut	Inside Top Bell	L	Extension(s) Available *	D	Outside Spigot	N	O	P	S	X	Shape
R-4926-A		4 7/8 dia.	39		3	4 1/2 dia.						Straight
R-4926-B		4 7/8 dia.	51		3	4 1/2 dia.						Straight
R-4926-C		4 7/8 dia.	63		3	4 1/2 dia.						Straight
R-4926-G1	R-4926-G1C	4 3/8 dia.	30		3	4 7/8 dia.	10 3/4	2 1/2	6			Offset
R-4927-A		3 x 4	11 1/2		2 1/2	4 5/8 dia.						Straight
R-4927-A1		2 x 3	11 1/2		1 3/4	3 7/8 dia.						Straight
R-4927-B	R-4927-BC	3 x 4 3/4	13 3/4		2	4 7/8 dia.						Straight
R-4927-C		4 x 4	13 1/2		2 1/4	4 7/8 dia.						Straight
R-4927-D		4 3/8 x 5 3/8	14 1/2		2 3/4	4 7/8 dia.						Straight
R-4927-F		4 x 5	14 3/8		2 3/8	5 7/8 dia.						Straight
R-4927-G		5 x 7	14 3/8		1 3/8	7 5/8 dia.						Straight
R-4929-A1	R-4929-A1C	3 x 4	30	yes	5 1/4	4 7/8 dia.				3 1/4	30	Angular
R-4929-A2	R-4929-A2C	3 x 4	40	yes	5 1/4	4 7/8 dia.				3 1/4	30	Angular
R-4929-A3		4 x 5	14 1/2		3	4 7/8 dia.				4 3/8	45	Angular
R-4929-A4	R-4929-A4C	4 x 5	30	yes	5 1/4	4 7/8 dia.				3 1/4	30	Angular
R-4929-A5	R-4929-A5C	4 x 5	40	yes	5 1/4	4 7/8 dia.				3 1/4	30	Angular
R-4929-A6	R-4929-A6C	4 x 6	30	yes	5 1/4	4 7/8 dia.				3 1/4	30	Angular
R-4929-A7		4 x 6	36 1/4		4 1/2	4 x 6				8 1/2	60	Angular
R-4929-A8	R-4929-A8C	4 x 6	40	yes	5 1/4	4 7/8 dia.				3 1/4	30	Angular
R-4929-A9	R-4929-A9C	5 x 7	30	yes	5 1/4	4 7/8 dia.				3 1/4	30	Angular
R-4929-A10	R-4929-A10C	5 x 7	40	yes	5 1/4	4 7/8 dia.				3 1/4	30	Angular
R-4929-A11	R-4929-A11C	3 x 4	32	yes	5 1/4	6 1/4 dia.				4 1/16	45	Angular
R-4929-A12	R-4929-A12C	3 x 4	42	yes	5 1/4	6 1/4 dia.				4 1/16	45	Angular
R-4929-A14	R-4929-A14C	4 x 5	32	yes	n/a	6 1/4 dia.				4 1/16	45	Angular
R-4929-A15	R-4929-A15C	4 x 5	42	yes	n/a	6 1/4 dia.				4 1/16	45	Angular
R-4929-A17	R-4929-A17C	4 x 6	32	yes	5 1/4	6 1/4 dia.				4 1/16	45	Angular
R-4929-A18	R-4929-A18C	4 x 6	42	yes	5 1/4	6 1/4 dia.				4 1/16	45	Angular
R-4929-A19	R-4929-A19C	5 x 7	32	yes	5 1/4	6 1/4 dia.				4 1/16	45	Angular
R-4929-A20	R-4929-A20C	5 x 7	42	yes	5 1/4	6 1/4 dia.				4 1/16	45	Angular
R-4929-A21		6 1/2 x 9	36		3	7 x 9				10	90	Angular
R-4929-O1	R-4929-O1C	3 x 4	20 1/2		2 1/2	4 7/8 dia.	12 1/4	2 1/2	8 1/4			Offset
R-4929-O2	R-4929-O2C	3 x 4	30	yes	5 1/4	4 7/8 dia.	2 7/8	2 1/2	1 7/16			Offset
R-4929-O3		3 x 4	32		3 1/8	4 dia.	13 1/2	2 3/8	11			Offset
R-4929-O4	R-4929-O4C	3 x 4	40	yes	5 1/4	4 7/8 dia.	2 7/8	2 1/2	1 7/16			Offset
R-4929-O5	R-4929-O5C	4 x 5	28		2 1/4	4 7/8 dia.	19 1/2	2 1/4	11 3/4			Offset
R-4929-O6	R-4929-O6C	4 x 5	30	yes	5 1/4	4 7/8 dia.	2 7/8	2 1/2	1 7/16			Offset
R-4929-O7		4 x 5	36		2	4 7/8 dia.	8 1/2	2 1/2	4 1/4			Offset
R-4929-O8	R-4929-O8C	4 x 5	40	yes	5 1/4	4 7/8 dia.	2 7/8	2 1/2	1 7/16			Offset
R-4929-O9	R-4929-O9C	4 x 6	30	yes	5 1/4	4 7/8 dia.	2 7/8	2 1/2	1 7/16			Offset
R-4929-O10		4 x 6	39 3/4		3 1/2	4 7/8 dia.	9 1/2	3 3/8	6			Offset
R-4929-O11	R-4929-O11C	4 x 6	40	yes	5 1/4	4 7/8 dia.	2 7/8	2 1/2	1 7/16			Offset
R-4929-O12		5 x 6	39 1/4		2 1/2	6 5/8 dia.	7 1/2	2 1/2	5			Offset
R-4929-O13	R-4929-O13C	5 x 7	30	yes	5 1/4	4 7/8 dia.	2 7/8	2 1/2	1 7/16			Offset
R-4929-O14	R-4929-O14C	5 x 7	40	yes	5 1/4	4 7/8 dia.	2 7/8	2 1/2	1 7/16			Offset
R-4929-O15		6 5/8 x 8 1/4	28		5	8 5/8 dia.	2 7/8	2 1/2	1 1/2			Offset
R-4929-O16		4 x 6	30		5 1/4	7 7/8 dia.	5 3/4	2 1/2	1 7/16			Offset
R-4929-S1	R-4929-S1C	3 x 4	30	yes	5 1/4	4 7/8 dia.						Straight
R-4929-S2	R-4929-S2C	3 x 4	40	yes	5 1/4	4 7/8 dia.						Straight
R-4929-S3	R-4929-S3C	4 x 5	30	yes	5 1/4	4 7/8 dia.						Straight
R-4929-S4	R-4929-S4C	4 x 5	40	yes	5 1/4	4 7/8 dia.						Straight
R-4929-S5	R-4929-S5C	4 x 6	30	yes	5 1/4	4 7/8 dia.						Straight
R-4929-S6	R-4929-S6C	4 x 6	40	yes	5 1/4	4 7/8 dia.						Straight
R-4929-S7	R-4929-S7C	5 x 7	30	yes	5 1/4	4 7/8 dia.						Straight
R-4929-S8	R-4929-S8C	5 x 7	40	yes	5 1/4	4 7/8 dia.						Straight

* 28" and 38" extension sections are available.

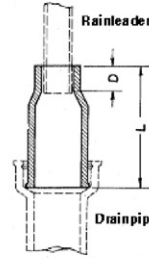
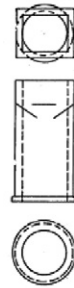
R-4926-29 Series
Downspout Shoes (Rainwater Leaders) continued



Illustrating R-4929 style Angular Downspout with optional Extension.



R-4929 style
Downspout with
Brass Cleanout.

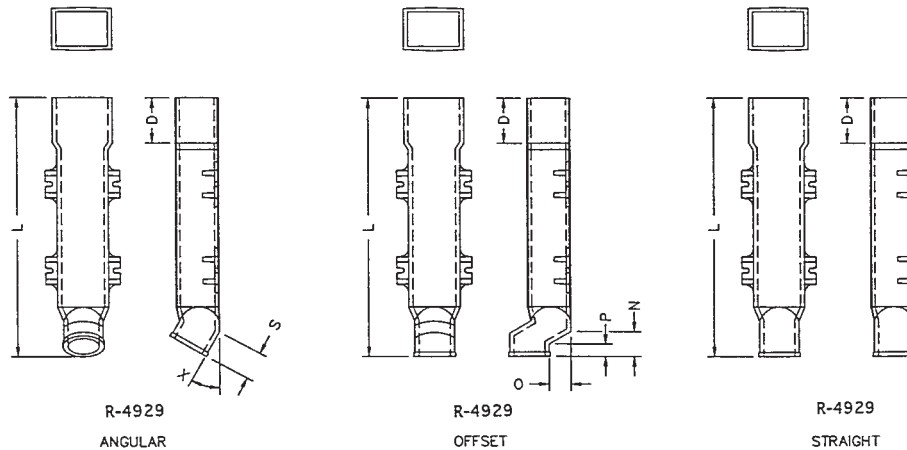


R-4927 style
Adapts square rainleader
to round drainpipe.



R-4926 Offset

Downspout extensions can be combined and cut to provide a wide range of lengths – contact your Neenah sales representative.



R-4929
ANGULAR

R-4929
OFFSET

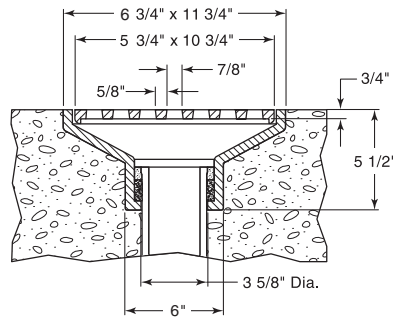
R-4929
STRAIGHT

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4937-A
Floor Drain, Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4937-A	B	0.2	2.7

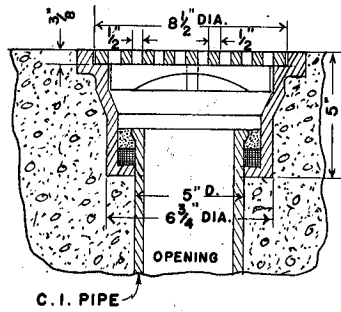


Outlet for 3" inside pipe caulk.

R-4937-B
Floor Drain, Grate

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4937-B	G	0.1	2.2

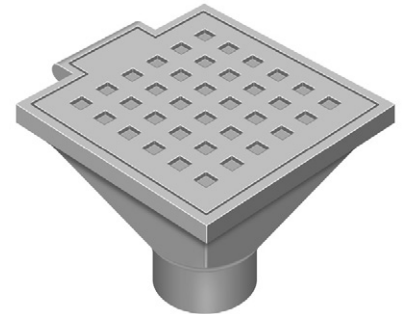
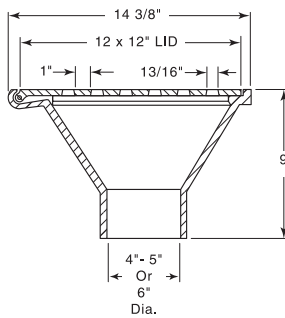


Outlet for 4" inside pipe caulk.

R-4937-C Series
Floor Drain Frame, Hinged Strainer

Light Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4937-C1	H	0.2	4.0
R-4937-C2	H	0.2	4.0
R-4937-C3	H	0.2	4.0

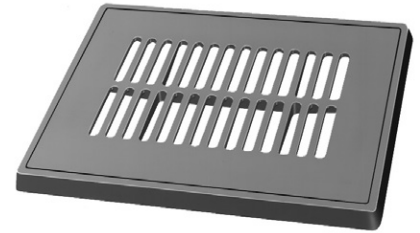
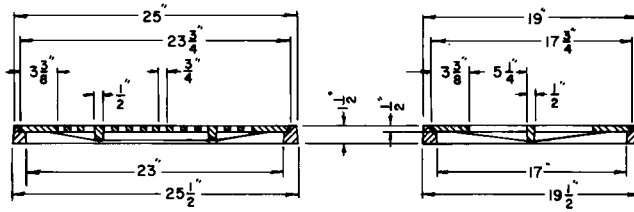


Catalog No.	Size
R-4937-C1	to fit 4" soil pipe
R-4937-C2	to fit 5" soil pipe
R-4937-C3	to fit 6" soil pipe

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4938
Transit Frame, Grate

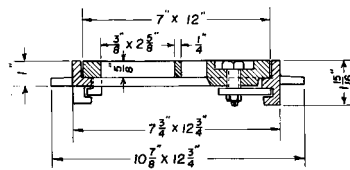
Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4938	A	0.8	6.9

R-4938-B
Gutter Drain Frame, Grate

Light Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4938-B	A	0.2	3.2

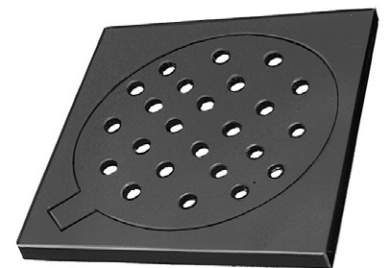
Note pavement anchors. Grate is secured in frame with countersunk pentagonal-head-bolt-operated locking device.

R-4939 Series
Hinged Drain Frame, Grate

Light Duty

Suitable for use in basements or garages.

Catalog No.	Size Outside	Dimensions in inches		Grate Thickness
		Grate diameter	Clear Opening	
R-4939-B	9 x 9	7	6 1/2	1/2
R-4939-C	13 x 13	10 1/2	10	1/2



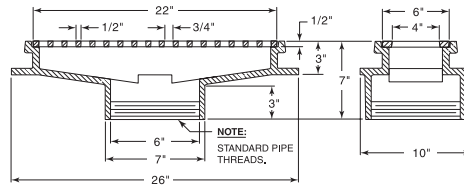
DRAINAGE GRATES
7

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4941-A Floor Drain Frame, Grate

Light Duty

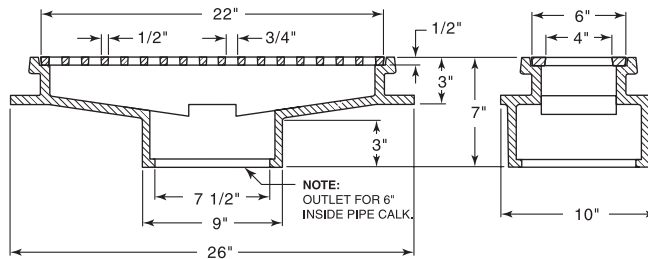
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4941-A	B	0.4	4.7



R-4941-B Floor Drain Frame, Grate

Light Duty

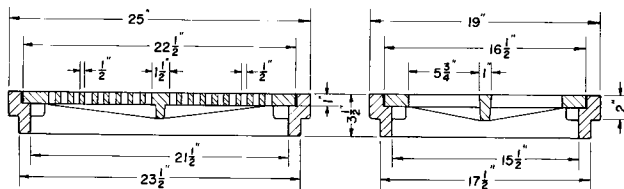
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4941-B	B	0.4	4.7



R-4942-A Floor Drain Frame, Grate

Light Duty

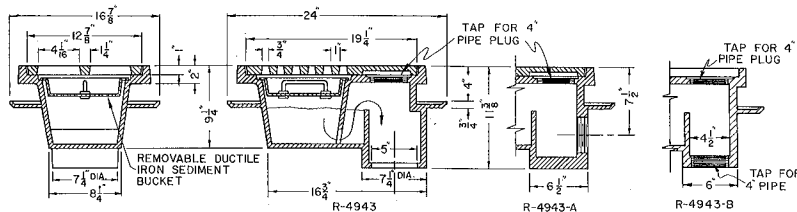
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4942-A	A	0.7	6.5



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4943 Series Trap Drain with Sediment Bucket

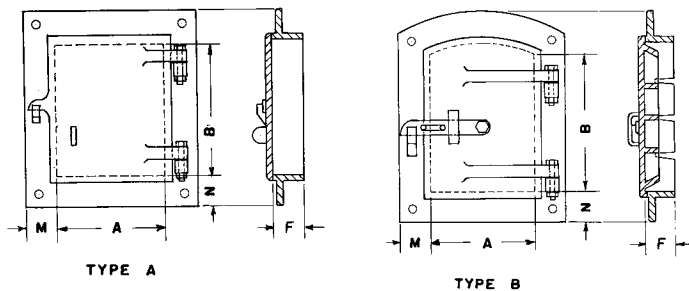
Heavy Duty



Ideal for use in manufacturing plants where organic debris is a problem. Frame is Class 35 gray iron, grate is Ductile Iron grade 55ksi for concentrated loading. Flashing clamps also available when specified for second floor installation.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	Catalog No.	Size
R-4943	K	0.3	5.4	R-4943	5" inside caulk
R-4943-A	K	0.3	5.4	R-4943-A	4" pipe, side outlet
R-4943-B	K	0.3	5.4	R-4943-B	4" pipe, bottom outlet

R-4950 to R-4951 Series Cleanout Frame, Door



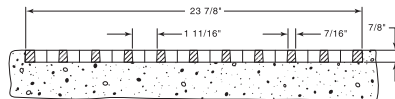
Type A Series medium duty cleanouts are for use in chimneys or for ash pit doors on incinerators. Not recommended for installations subjected to intense heat.
 Available for smoke-proof or gas-tight applications – please specify.

Catalog No.	Dimensions in inches				
	A	B	F	M	N
R-4950 Type A - Medium Duty					
R-4950 8x8	8	8	2	2	2
R-4950 10x10	10	10	2	2	2
R-4950 12x12	12	12	2	2	2
R-4950 12x16	12	16	3	3	3
R-4950 16x12	16	12	4	2 1/2	2 1/2
R-4950 16x16	16	16	3	3	3
R-4950 16x18	16	18	4	3	3
R-4950 16x20	16	20	4	3	3
R-4950 20x16	20	16	4	3	3
R-4950 20x20	20	20	4	3	3
R-4950 20x24	20	24	4	3	3
R-4950 24x24	24	24	4	3	3
R-4950 24x30	24	30	4	3	3
R-4951 Type B - Heavy Duty					
R-4951 16x18	16	18	4	3 1/2	3 1/2

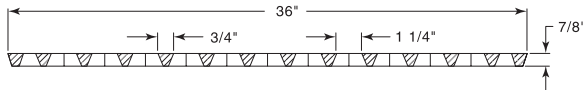
■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4972 Series Concrete Floor Protector

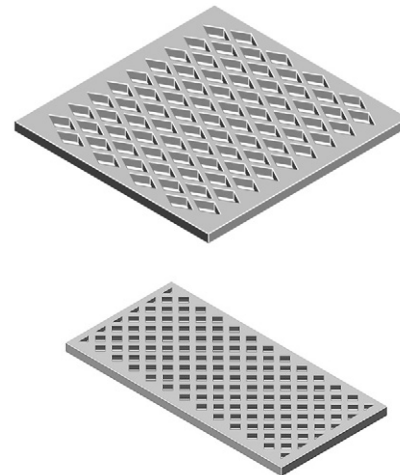
Heavy Duty



R-4972-C



R-4972-D



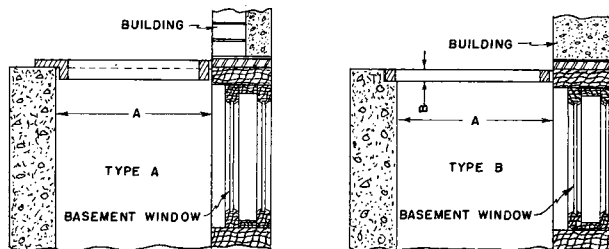
Cast iron grids provide a surface resistant to impact, abrasion and corrosion – afford better traction. Laid in areas subjected to heavy truck traffic, floor grids are invaluable in protecting the floor from excessive wear. Concrete is poured flush with the top of the casting so that the exposed iron protects the concrete. Grate is pushed into concrete as it is poured.

Dimensions in inches

Catalog No.	Size	Thickness
R-4972-C	24 x 24	7/8
R-4972-D	18 x 36	7/8

R-4976 to R-4977 Series Areaway Grate

Light Duty



Type A with lip to set on top of areaway wall.
 Type B to set in recess of areaway wall.



Illustrating R-4976



Illustrating R-4977

For use over window wells providing maximum light transmission. Also suitable for use as ventilating and shaft gratings.

Dimensions in inches

Catalog No. Type A	Catalog No. Type B	A	B	Openings	Bars
Half Round					
R-4976-1A	R-4976-1B	12 x 24	1	1 1/4	1/4
R-4976-2A	R-4976-2B	15 x 30	1	1 1/4	1/2
R-4976-3A	R-4976-3B	20 x 40	1 1/4	1 1/4	5/16
R-4976-4A	R-4976-4B	24 x 48	1 1/4	1 1/4	5/16
Rectangular					
R-4977-1A	R-4977-1B	12 x 24	1	1 1/4	1/4
R-4977-2A	R-4977-2B	15 x 30	1	1 1/4	1/4
R-4977-3A	R-4977-3B	20 x 40	1 1/4	1 1/4	5/15
R-4977-4A	R-4977-4B	24 x 48	1 1/4	1 1/4	5/16
R-4977-5A	R-4977-5B	30 x 60	1 1/4	1 1/4	5/16

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4976-1	A or B	0.9	3.1
R-4976-2	A or B	1.5	4.2
R-4976-3	A or B	2.5	5.2
R-4976-4	A or B	3.7	6.3
R-4976-5	B	5.2	8.1
R-4977-1	A or B	1.5	4.0
R-4977-2	A or B	2.0	5.0
R-4977-3	A or B	3.7	10.0
R-4977-4	A or B	5.3	12.0
R-4977-5	A or B	8.0	15.0

Note: on Type A, grate size exceeds dimension "A" by 1-1/2" on all except wall side.
 Note: on Type B, grate is 1" wider and 2" longer than dimension "A".

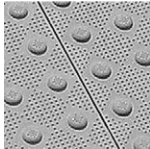
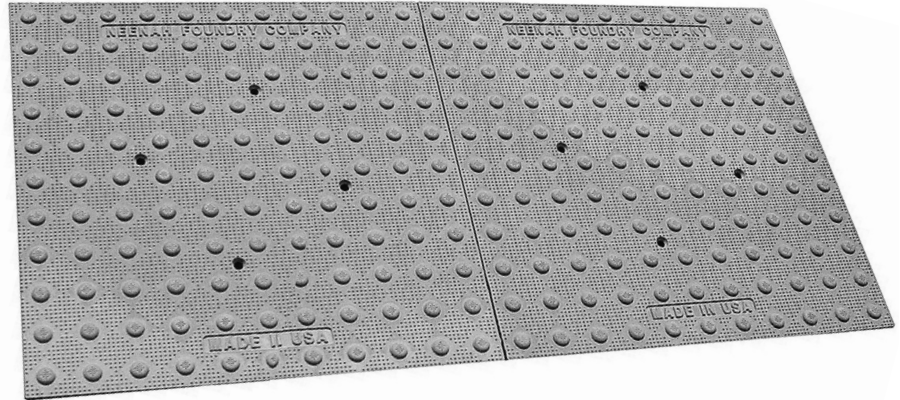
R-4984

Detectable Warning Plate

Neenah Detectable Warning Plates provide a durable cast iron solution for warning visually impaired people of pedestrian obstructions and hazards.

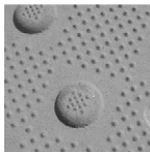
Detectable Warning Plates are available in three modular sizes: 24" x 24" square, 24" x 30" and 24" x 36" rectangular. When bolted together, plates can be combined for various lengths – most commonly, 2'x4' and 2'x5' sections are installed

Please specify finished installation size when ordering.



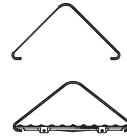
Modular Flexibility

- Precision 2-foot square plates
- Allows easy, accurate tiling
- Cover large areas with smooth, even seams
- Radius sections also available



Premium Material

- Low-maintenance cast gray iron
- Excellent wear resistance — virtually indestructible
- Cast iron far outlasts competitive substances
- Natural patina provides ample visual contrast



Trouble-free Installation

- Plates easily set in wet concrete
- Integral lugs ensure solid attachment
- Cap head screws can be added for extra anchorage
- Reusable spring lifting clips included

Lasting Form and Function

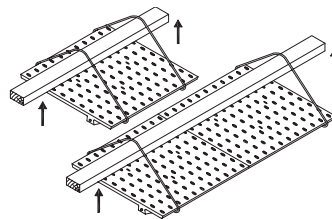
- Excellent non-skid characteristics (0.90 coefficient of friction)
- Highly resistant to snowplow damage
- Excellent adhesive properties to concrete
- Attractive natural finish requires no maintenance
- Optional powder-coated finishes available: federal yellow, optical white, brick red

■ NOTE: THE SUGGESTED FORMING PROCEDURES SHOWN IN THIS CATALOG ARE GENERAL SUGGESTIONS TO QUALIFIED PROFESSIONALS AND MAY NOT BE APPROPRIATE FOR EVERY INSTALLATION.

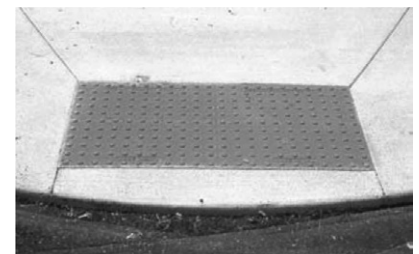
Installation Steps

1. If additional coverage is needed, bolt Detectable Warning Plates together
2. Use supplied lifting springs and 2"x4" lumber to lift plates
3. Pour concrete
4. Set plates in wet concrete at final position
5. Remove lifting springs
6. Press assembly into wet concrete to final elevation
7. Finish concrete around assembly

Note: Keep wet concrete off of the top surface of the plates at all times



The reusable lifting springs supplied with each order simplify the installation process.



R-4985 Series Curb and Sidewalk Guards

Heavy Duty

Used for protection of concrete curb, traffic islands, parking areas, driveways and similar installations.

Cast iron guard is securely bonded to concrete and eliminates damage to concrete curb. Coefficients of expansion of cast iron and concrete are identical for all practical purposes, making the bond between metal and concrete unaffected by temperature changes. Cast iron elements resist abrasion and corrosion and are a permanent installation. Impact will not cause surface damage.

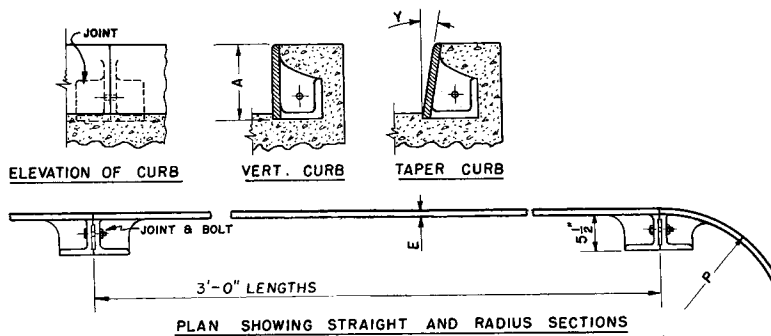
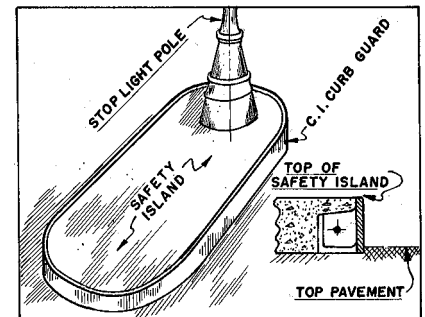
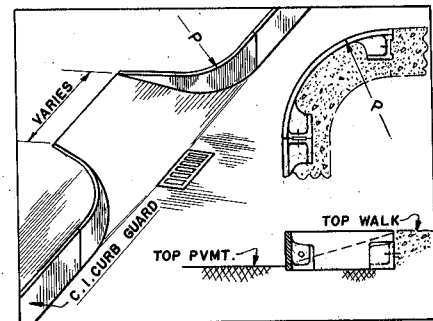
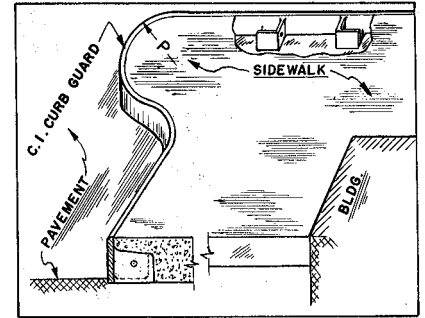
Any curb guard on this page can be furnished in Ductile Iron for special applications. Ductile Iron has all the advantages of gray iron, plus the high strength, toughness, ductility and wear-resistance of steel.

Guard sections are manufactured in maximum 36" lengths; corner radii can be made to fit any irregular-shaped area around which a curb is necessary, on special request.

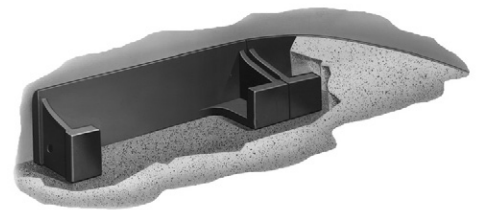
Specify:

1. Catalog Number
2. Type of Curb
3. Complete dimensional information including variables as shown in table key
4. Special requirements (send sketch)

Catalog No.	Type	Dimension Data
R-4985-A	Vertical Curb	A - as specified E - 3/4 inch P - as required
R-4985-B	Taper Curb	A - as specified E - 3/4 inch P - as required Y - any degree required



Cutaway from street, showing curb guard.



Cutaway of rear section imbedded in concrete.

DETECTABLE
WARNING
PLATES

8

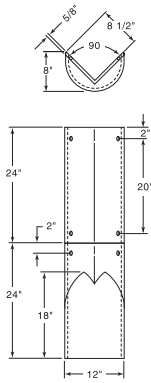
R-4986-D and R-4986-DG
Wheel Guard

Heavy Duty

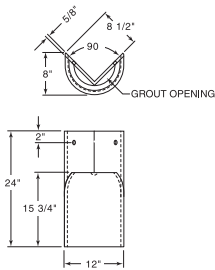
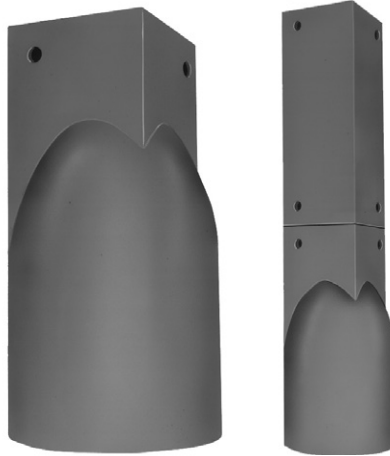
Wheel Guards are 3/4 round castings manufactured to be installed at garage door type entrances or outside corners of buildings. They provide protection from impact of vehicles that may be entering or traveling very close to these areas of the building. Anchor holes are furnished in the guards for bolting directly to the building. If the specification requires the Wheel Guards to be filled with grout, openings are provided to accommodate this (order **R-4986-DG**).

Guards are available with or without extensions.

Guard bases are normally imbedded about 1" in concrete to ensure proper base anchorage.



Illustrating R-4986-D

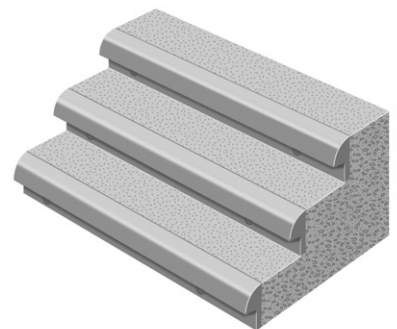
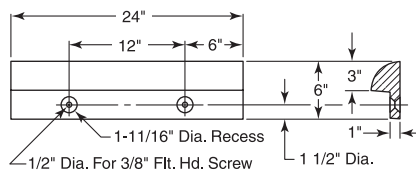


Illustrating R-4986-DG



R-4987
Stair Nosing

Heavy Duty



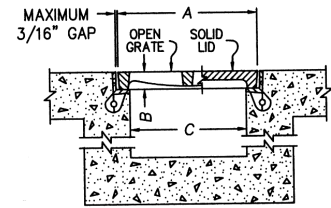
**DETECTABLE
 WARNING
 PLATES**
 8

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-4990 and R-4999 Series Heavy Duty Trench

Materials: All frames and grates/lids are furnished standard in gray iron, Class 35-B for heavy-duty use. For extra heavy-duty use or superior durability requirements, see our Airport and Port Grating Series on page 198 and our R-4993 & R-4994 Series on page 269.

Neenah recommends project designers avoid the use of light duty trench installations because it is likely that applications will be subjected to heavy delivery vehicle traffic at some time. Furthermore, the use of a site could be changed to heavy duty use patterns at some unanticipated future date.



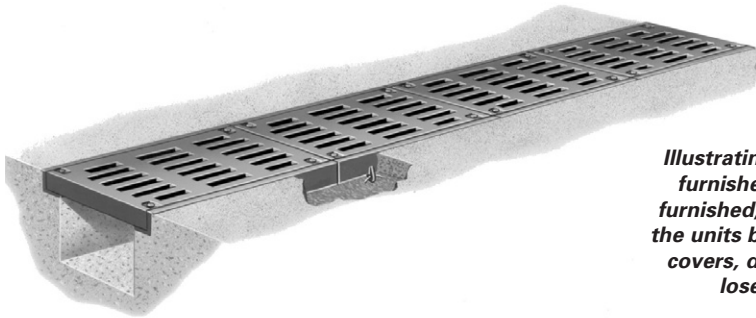
HEAVY DUTY

General schematic shown may not apply to all designs. Bar and rib depths, plate thicknesses, and seating widths vary on different sizes and styles. If your project has design restrictions, contact your sales representative or product engineering.

Dimensions in inches

Un-Bolted Catalog No.	Bolted Catalog No.	A	B	C	Type A	Type C	Type D	Type E	Type P	Type Q
R-4990-AX	R-4999-AX	8	1 1/2	6	x	x	x	x	x	
R-4990-BX	R-4999-BX	10	1 1/2	8	x	x	x	x	x	
R-4990-CX	R-4999-CX	12	1 1/2	10	x	x	x	x	x	x
R-4990-DX	R-4999-DX	14	1 1/2	12	x	x	x	x	x	x
R-4990-EX	R-4999-EX	17	1 1/2	15	x	x	x	x	x	
R-4990-FX	R-4999-FX	20	1 1/2	18	x	x	x	x	x	
R-4990-GX	R-4999-GX	23	1 1/2	21	x	x	x			
R-4990-HX	R-4999-HX	26	1 1/2	24	x	x	x	x		x
R-4990-JX	R-4999-JX	30	2	27	x	x	x			
R-4990-KX	R-4999-KX	33	2	30	x	x	x	x		
R-4990-LX	R-4999-LX	36	2	33	x	x	x			
R-4990-MX	R-4999-MX	39	2	36	x	x	x			
R-4990-NX	R-4999-NX	45	2	42	x	x	x			
R-4990-OX	R-4999-OX	51	2	48	x		x			

x - Indicates availability



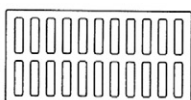
Illustrating Type C bolted trench. Bolted trench sections are furnished in 24" standard lengths. When bolted trench is furnished, they are shipped assembled – AT NO TIME should the units be disassembled during installation. When removing covers, do not mix or rotate 180 degrees as bolt holes may lose alignment and improper bearing may occur.

Read Carefully Before Ordering

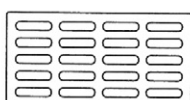
The various standard trench drains are available with a number of alternatives. It is important to examine all of the variables carefully and specify your requirements fully. Your order will be entered correctly and promptly if it includes the following information:

- Complete catalog number
- Frame end pieces, when required
- Type of Lid or Grate: A, C, D, E, P or Q
- Length of trench sections
- Angles and intersections *
- Load requirements

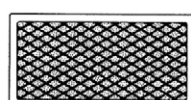
*Trenches with angles, intersections, size changes, or other special requirements require detail drawings prior to ordering. Contact your sales representative or product engineering for assistance.



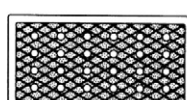
TYPE A
 GRATE OPENINGS



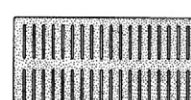
TYPE C
 GRATE OPENINGS



TYPE D
 SOLID LID



TYPE E
 VENTED LID



TYPE P
 GRATE OPENINGS



TYPE Q
 GRATE OPENINGS

■ Note: The suggested forming procedures shown in this catalog are general suggestions to qualified professionals and may not be appropriate for every installation.

Suggested Forming Procedures for R-4990 and R-4999 Series With Type X Frame

For those who are not experienced in the installation of Neenah drainage structures (R-4990 or R-4999 Series), the following procedures are one method of achieving desirable results.

Forming Procedures, Non-Bolted Units

Materials

Under normal situations, use 3/4 inch plywood for forming walls. 2x4's are suitable for studs, plates, bracing and spreaders. A typical installation is shown in Figure 1a. Details and suggestions are based on using the Neenah Foundry Type "X" frame.

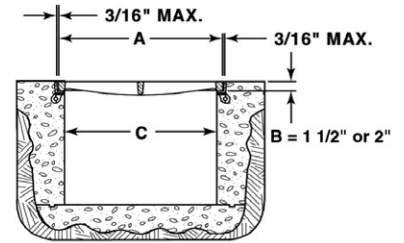


FIGURE 1a

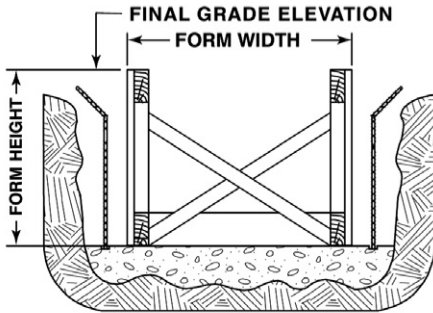


FIGURE 1b

Pour the trench bottom to the proper depth and slope and allow curing time. Construct the forms. For properly fitting covers, the forms must be PLUMB, STRAIGHT, LEVEL and SOLID. The width of the forms (see Figure 1b) establishes the trench wall. This dimension must correspond with the "C" dimension on Figure 1a. The top of the form (see Figure 1b) corresponds to the final grade elevation when installing non-bolted frame and grates/lids. Spreaders are installed, extending them beyond the edge of the form, to provide a stop for the wood seat forms (see Figure 2 and 3).

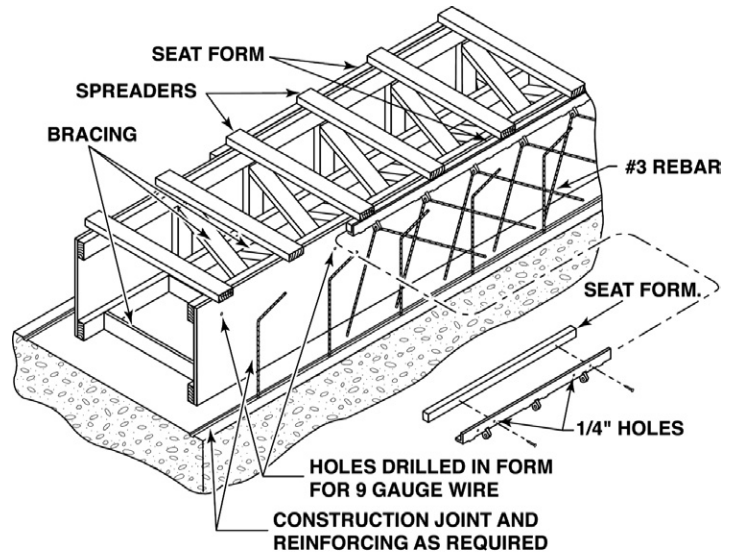


FIGURE 2

Cut the wood seat forms to the exact inside horizontal and vertical dimension of the iron frame seat (Note: all Neenah frames have a slight radius at the corner of the seat and vertical face of the iron frame sections so the wood seat form pieces should be beveled to accommodate this radius). The wood seat form is nailed flush to the top of the form walls, and the iron frame pieces are nailed to the wood seat forms through the holes provided in the side wall of the iron frame sections. In proper orientation, the anchor lugs on the iron frame pieces are positioned downward. Iron frame sections should be butted together snugly, leaving as little gap as possible. The iron frame seat form and plywood sides of the form are then secured with 9 gauge tie wire tied through a drilled hole in the plywood side wall (see Figure 3). Number 3 rebar can be installed through the anchor holes provided on the iron frames.

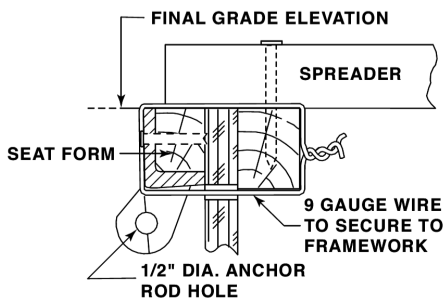


FIGURE 3

Check measurements. The grate/lid opening dimension must correspond to the "A" dimension plus 3/16" maximum per side (see Figure 1a and 3).

Pour concrete using the top edge of the iron frame pieces as a final elevation guide. Strip forms after concrete is properly cured. Install grates/lids. The completed installation should resemble Figure 1a.

■ Note: The suggested forming procedures shown in this catalog are general suggestions to qualified professionals and may not be appropriate for every installation.

Forming Procedures, Bolted Trench

Materials

Under normal situations, use 3/4 inch plywood for forming walls. 2x4's are suitable for studs, plates, bracing and spreaders. A typical installation is shown in Figure 1a. Details and suggestions are based on using the Neenah Foundry Type "X" frame.

Bolted frames and grates/lids are furnished assembled (see Figure 4a), and therefore require appropriate forming procedures. AT NO TIME SHOULD THE UNITS BE DISASSEMBLED DURING INSTALLATION! VERIFY THAT THE 3/16" PER SIDE MAXIMUM GAP BETWEEN FRAME AND LID HAS NOT CHANGED DURING TRANSPORT. WHEN SATISFIED THE GAP IS CORRECT, TORQUE BOLTS TO ASSURE THE PIECES REMAIN IN THAT ORIENTATION.

Pour the trench bottom to the proper depth and slope and allow curing time. Construct the forms per Figure 4a. For properly fitting covers, the forms must be PLUMB, STRAIGHT, LEVEL and SOLID. The width of the forms establishes the trench wall. This dimension must correspond with the "C" dimension on Figure 1a.

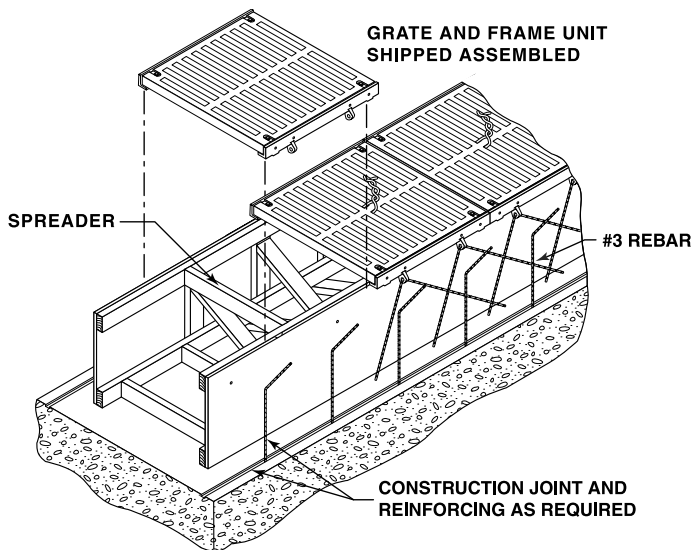


FIGURE 4a

Construct the forms (see Figure 4a). The grate/lid top surface establishes the final grade elevation when the assembled iron casting unit is set on the form (See Figure 4b). Accordingly, form side wall elevation is set at final grade elevation less the seat depth "B" dimension (Note: "B" dimensions vary per catalog number. Neenah recommends checking dimensions on the catalog line item of page 266. If unsure, contact product engineering or your Neenah representative.).

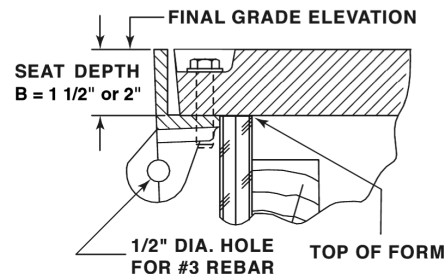


FIGURE 4b

Set frame and grate/lid assembled sections on the forms, taking care to keep the sections tight to one another to eliminate creep. When the sections are in the proper position, wire them to the bracing as show (see Figure 5). Number 3 rebar can be installed through the anchor holes provided on the iron frames.

Check measurements. The grate/lid opening dimension must correspond to the "A" dimension plus 3/16" maximum per side (see Figure 1a).

Pour concrete using the top edge of the iron frame pieces as a final elevation guide. When concrete is properly cured, unbolt and remove grates/lids, retaining their position and orientation. GRATES/LIDS MUST BE REINSTALLED IN THE EXACT WAY THEY CAME OUT TO ASSURE PROPER BOLTHOLE ALIGNMENT. DO NOT ALLOW DEBRIS TO FALL INTO THE FRAME BOLTHOLES AS IT MAY PROHIBIT PROPER TIGHTENING OF BOLTS. Strip forms and replace grates/lids in the same location and orientation as they came out. Reinstall bolts, tightening them to the specifiers desired torque. The completed installation should resemble Figure 1a.

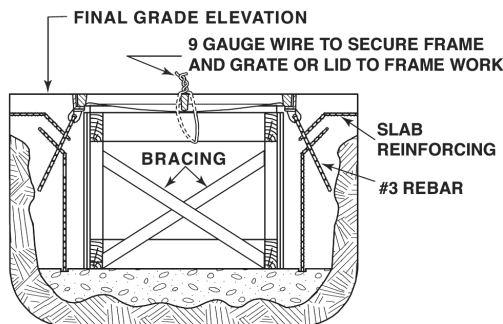


FIGURE 5

General Comments for Non-bolted and Bolted Applications

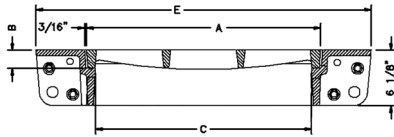
All frame sections are manufactured and furnished in standard lengths. It is the responsibility of the installer to cut frame pieces to the proper length and miter corners where applicable. In cases where trench direction must change, special drawings can be furnished by our Product Engineering Department. These prints will show special lengths and cuts of grates/lids and other essential information.

■ Note: The suggested forming procedures shown in this catalog are general suggestions to qualified professionals and may not be appropriate for every installation.

R-4993 & R-4994 Superior Durability Frame Series for Airports, Ports, Industrial Sites and Roads

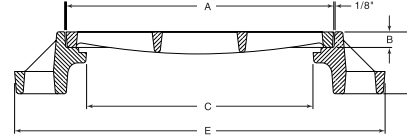
Superior Duty Frames

Designers have the option to utilize either of these new frames in locations where it is deemed that traditional angle frames could break loose from concrete due to extraordinary conditions. A few examples of such conditions are braking forces of ultra heavy vehicles; torsional forces due to turning aircraft and container port vehicles; heavy airfield and industrial applications; highway tunnels; certain highway applications. Neenah offers two frame choices each with its own unique benefits. **Items are furnished standard with grate BOLTED to frame.**



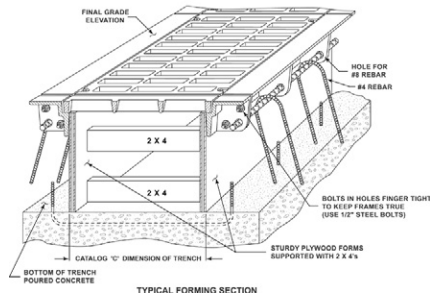
Illustrating R-4993 with Type T Frame

- 254 square inches of masonry contact surface per foot.
- 150 square inches of masonry bearing surface per foot.
- Frame top section provides transition platform onto and off grating surface.
- Provision for bolting successive frame sections together.
- Provides significant reinforcing bar opportunity.
- Bolt holes are drilled clear through cantilever seat and will not trap debris.

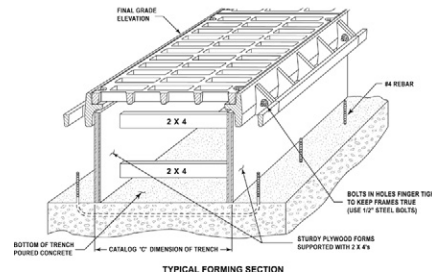


Illustrating R-4994 with Type S Frame

- 350 square inches of masonry contact surface per foot.
- 65 square inches of masonry bearing surface per foot.
- Unique frame shape allows the clear opening to be wider than typical.
- Bolt holes are drilled clear through cantilever seat and will not trap debris.
- Provision for bolting successive frame sections together.
- Provides significant reinforcing bar opportunity.
- Frame is integrated within the concrete slab.
- Available with LiftMate ball and socket connector. See R-4999-HALM on Page 199.



TYPICAL FORMING SECTION



TYPICAL FORMING SECTION

Note: Typical "L" shaped angle frame has about 120 inches of masonry contact surface per foot and about 54 inches of masonry bearing surface per foot.

Dimensions in inches

Type T Catalog No.	Type S Catalog No.	A	B	Type T C	Type T E	Type S C	Type S E	Type A	Type C	Type D	Type E	Type L	Type P	Type Q
Heavy Duty														
R-4993-AB	R-4994-AB	8	1 1/2	6	19 1/4	4	18	x	x	x	x		x	
R-4993-BB	R-4994-BB	10	1 1/2	8	21 1/4	6	20	x	x	x	x		x	
R-4993-CB	R-4994-CB	12	1 1/2	10	23 1/4	8	22	x	x	x	x		x	
R-4993-DB	R-4994-DB	14	1 1/2	12	25 1/4	10	24	x	x	x	x	x	x	x
R-4993-EB	R-4994-EB	17	1 1/2	15	28 1/4	13	27	x	x	x	x		x	
R-4993-FB	R-4994-FB	20	1 1/2	18	31 1/4	16	30	x	x	x	x		x	
R-4993-GB	R-4994-GB	23	1 1/2	21	34 1/4	19	33	x	x	x				
R-4993-HB	R-4994-HB	26	1 1/2	24	37 1/4	22	36	x	x	x	x			x
R-4993-JB	R-4994-JB	30	2	28	41 1/4	26	40	x	x	x				
R-4993-KB	R-4994-KB	33	2	31	44 1/4	29	43	x	x	x	x			
R-4993-LB	R-4994-LB	36	2	34	47 1/4	32	46	x	x	x				
R-4993-MB	R-4994-MB	39	2	37	50 1/4	35	49	x	x	x				
R-4993-NB	R-4994-NB	45	2	43	56 1/4	41	55	x	x	x				
R-4993-OB	R-4994-OB	51	2	49	62 1/4	47	61	x		x				
Airport, Port, Industrial Loads														
R-4993-AAB	R-4994-AAB	8	2	6	19 1/4	4	18	x						
R-4993-BAB	R-4994-BAB	10	2	8	21 1/4	6	20	x						
R-4993-CAB	R-4994-CAB	12	2	10	23 1/4	8	22	x						
R-4993-DAB	R-4994-DAB	14	2	12	25 1/4	10	24	x	x	x				
R-4993-EAB	R-4994-EAB	17	2	15	28 1/4	13	27	x		x				
R-4993-FAB	R-4994-FAB	20	2	18	31 1/4	16	30	x		x				
R-4993-HAB	R-4994-HAB	26	2	24	37 1/4	22	36	x		x				
R-4993-KAB	R-4994-KAB	34	2	32	45 1/4	30	44	x		x				
R-4993-OAB	R-4994-OAB	51	2	49	62 1/4	47	61	x		x				

x - Indicates availability

■ Note: The suggested forming procedures shown in this catalog are general suggestions to qualified professionals and may not be appropriate for every installation.

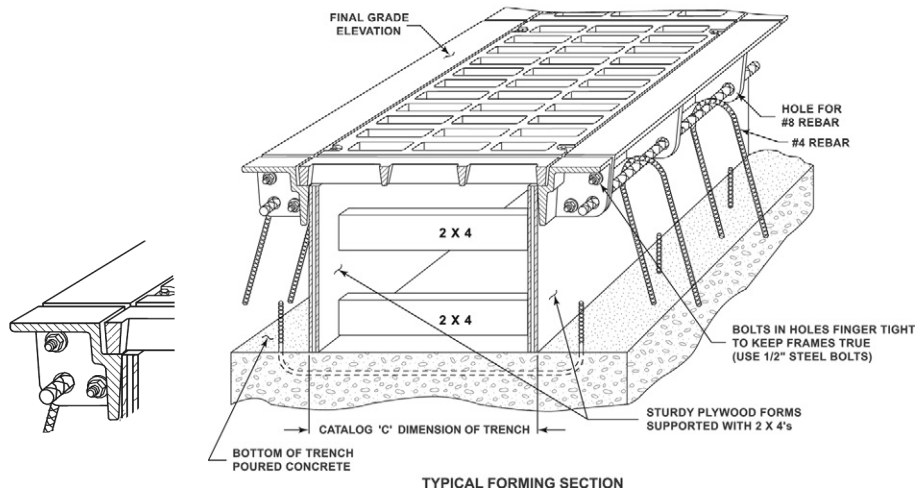
Forming Procedures R-4993 & R-4994 Bolted Trench Series

Bolted frames and grates/lids are furnished assembled, and therefore require different forming procedures than unbolted trenches. AT NO TIME SHOULD THE UNITS BE DISASSEMBLED DURING INSTALLATION! VERIFY THAT THE 3/16" PER SIDE MAXIMUM GAP BETWEEN FRAME AND LID HAS NOT CHANGED DURING TRANSPORT. WHEN SATISFIED THE GAP IS CORRECT, TORQUE BOLTS TO ASSURE THE PIECES REMAIN IN THAT ORIENTATION.

R-4993 Forming Procedures

Follow forming procedures for bolted trench on page 268. The following exceptions apply:

- Use Figure 6 as a guide.
- Frame pieces can be bolted together making sure that bolts are only finger tight.
- Reinforcing bar can be installed per Figure 6.



R-4994 Forming Procedures

Follow forming procedures for bolted trench on page 268. The following exceptions apply:

- Use Figure 7 as a guide.
- The frame seat for the R-4994 series cantilevers over the trench opening. This requires the distance between sidewalls to be set accordingly. In this case, bolted assemblies are set upon the sidewall forms with the contact area being the top of the form and the underside of the cantilever seat (see Figure 6a on previous page).
- The inside distance between concrete sidewalls correspond with the CS dimension shown on page 268 of the catalog.
- Frame pieces can be bolted together making sure that bolts are only finger tight.
- Reinforcing bar can be installed per Figure 7.

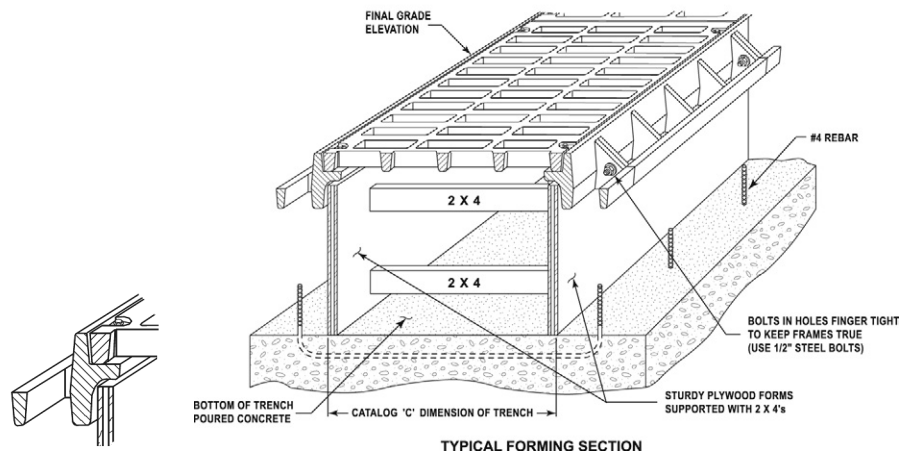


Figure 7

■ Note: The suggested forming procedures shown in this catalog are general suggestions to qualified professionals and may not be appropriate for every installation.

R-4995 – R-4996

Type M Trench Frame with Solid or Grated Cover

Heavy Duty

Cast Iron Trench Assemblies—Light or Heavy Duty—For Use in Sidewalks, Driveways, Garages, Loading Docks, etc.

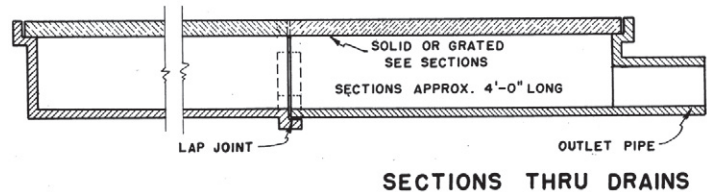
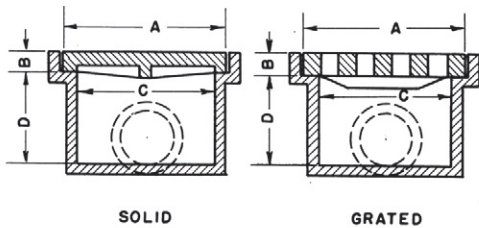
Read Carefully Before Ordering

Specify:

1. Complete catalog number.
2. Light or heavy duty.
3. Overall length of cover required.
4. Lid solid, flat grated, or diagonally barred convex grate.
5. Location of outlet, side, bottom or end (give dimensional location and pipe size).
6. Whether one end or both ends



Illustrating Type M frame with grated cover. Standard with 4-inch outside caulk outlet. Can be equipped for inside caulk if specified.

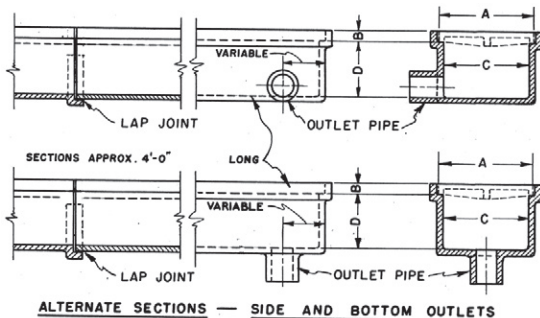


SECTIONS THRU DRAINS

Trench covers are used over areas requiring long drainage assemblies. Can be supplied in a variety of sizes and lengths to meet special needs. For trenches of irregular pattern, arrangements can be made to furnish cover to fit.

Standard 4-inch outlet at end of drain. Special size outlets are available on special order. Side and bottom outlets optional and furnished only when specified.

Sections: Thru Drains, Type M



ALTERNATE SECTIONS — SIDE AND BOTTOM OUTLETS

Dimensions in inches

Catalog No.	Description	A	B	C	D	Length
Standard Sizes—Light Duty						
R-4995-A1**	With grated cover	11½	¾	10	6¾	As ordered
R-4995-A2*	With grated cover	7	¾	5	4¾	As ordered
R-4995-B1	With solid cover	11½	¾	10	6¾	As ordered
R-4995-B2	With solid cover	7	¾	5	4¾	As ordered
Standard Sizes—Heavy Duty						
Catalog No.	Description	A	B	C	D	Length
R-4996-A1**	With grated cover	11½	1½	10	6	As ordered
R-4996-A2*	With grated cover	7	1¼	5	4¾	As ordered
R-4996-B1	With solid cover	11½	1½	10	6	As ordered
R-4996-B2	With solid cover	7	1¼	5	4¾	As ordered

Above Standard Frames made in 4 ft. sections, covers in 2 ft. lengths.

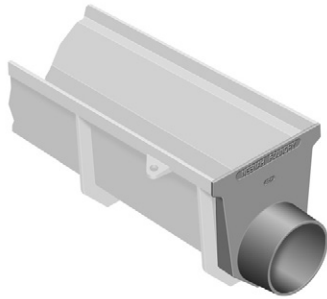
*Available with Type B grate only.

**Also available with Type P grate.

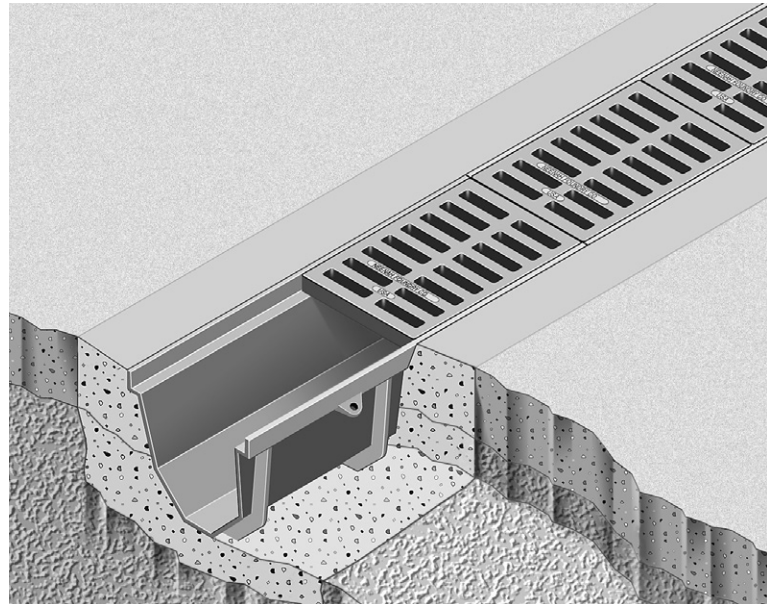
■ Note: The suggested forming procedures shown in this catalog are general suggestions to qualified professionals and may not be appropriate for every installation.

R-4996 Series Self-Forming Trench Pan

Heavy Duty



Illustrating R-4996-B frame with 6" outlet



Illustrating R-4996-C with Type A grate

All grates/covers and frames can be bolted if required.

Catalog No.	Standard Cover Dimensions				Frame Length	Outlet Location/Sizes			Available Grate/Cover
	A	B	C	D		Side	Bottom	End	
R-4996-A	8	1	6	9	30	4,6	4	4	Q **
R-4996-B	10	1	8	10 3/8	30	4,6,8	4,6	4,6	Q **
R-4996-C	12	1 1/2	10	10	36	4,6,8	4,6,8	4,6,8	A,C,D,L,Q
R-4996-CA *	12	1 1/2	10	10	36	4,6,8	4,6,8	4,6,8	A

* Aircraft Rated – Standard Bolted

** Can be incorporated into plans for ADA compliance

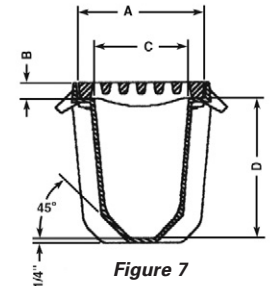


Figure 7

FORMING PROCEDURES – SELF-FORMING TRENCH PAN SERIES

Assumes existing slabs are at final elevation on either side of the excavation.

Materials

Under normal situations, use 2 x 4's and 18-inch lengths of 1/2 inch all-thread rod with 2 nuts and 1 washer per cross bar support (2 cross bar supports per frame section).

Excavate trench to appropriate depth per design engineers specification. That depth must be the total of the "A" dimension and the "D" dimension plus the depth of additional masonry material specified (see Figure 7 and Figure 8a).

Attach installation materials onto frame sections (2 cross bar supports per section).

Cut 2" x 4" lengths 8 inches to 10 inches longer than the "A" dimension shown in the table above. Drill a hole in the center of each 2" x 4" length. Insert all-thread rod through hole in the bottom of the trench pan and twist on a keeper nut being careful that the threads are not exposed past the bottom of the nut. Slide 2 x 4 section over all-thread rod and tighten snugly. Set trench pan sections into the excavation making sure the trench pans are set at proper elevation and that pan sections are mated tight together (see Figure 8b).

Pour 1st lift of concrete to sufficient depth to hold trench pan sections into position and allow to harden (see Figure 8c).

Remove assembly materials to be reused to set additional trench.

Pour second lift of concrete to final grade (See Figure 8d).

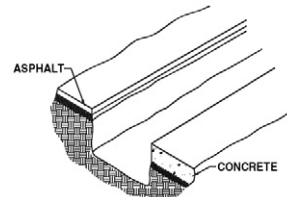


Figure 8a

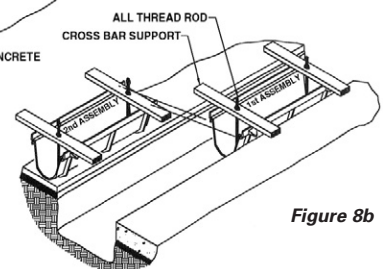


Figure 8b

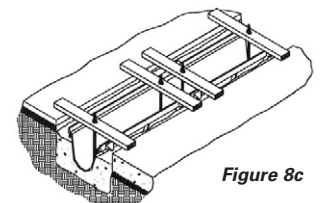


Figure 8c

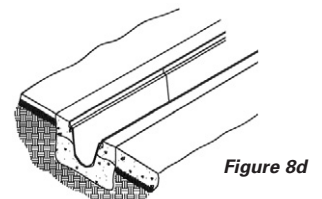


Figure 8d

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

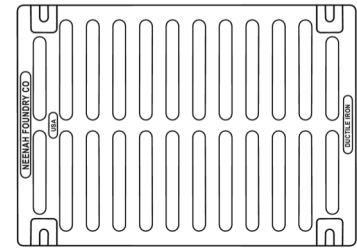
R-4990 Airport, Port & Heavy Industrial Series Bolted Trench for Extra Heavy Duty Applications

These trench drains are capable of supporting the heavy wheel loads of today's commercial environments. For larger trench widths or greater loading requirements, please contact our Product Engineering Department.

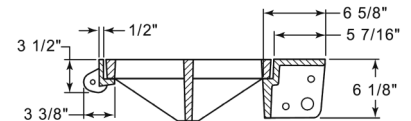
Grates are bolted to gray iron frames.

For alternate frame options, please see the R-4993 and R-4994 Series Trench found on pages 269.

Suitable for aircraft loading per AC150/5320-6D.



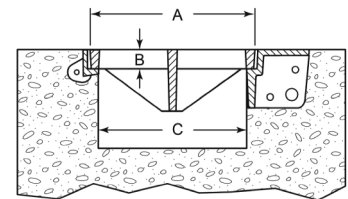
TYPE 'A'
 GRATE OPENINGS



STANDARD
 TYPE 'X'
 FRAME

ALTERNATE
 R-4993 TYPE T
 FRAME SHOWN

R-4994 TYPE S FRAME
 ALSO AVAILABLE



Catalog No.	A	B	C	Grate Matl.
R-4990-AA	8	2	6	Gray Iron
R-4990-BA	10	2	8	Gray Iron
R-4990-CA	12	2	10	Ductile Iron
R-4990-DA * **	14	2	12	Ductile Iron
R-4990-EA *	17	2	15	Ductile Iron
R-4990-FA *	20	2	18	Ductile Iron
R-4990-HA *	26	2	24	Ductile Iron
R-4990-KA2 *	34	2	31	Ductile Iron
R-4990-OA *	51	2	48	Ductile Iron

* Type D solid cover available.

** Type C grate available.

Ductile Iron furnished in Grade 80-55-06.

R-4999 Vaned Type L Series Bolted Transverse Drainage Structure

Heavy Duty

This trench grate series represents Neenah's best hydraulic performance.

Catalog No.	A	B	C
R-4999-L2 ***	12	1 1/2	10
R-4999-L3 *	14	1 1/2	12
R-4999-L6 **	23 7/8	2	21 7/8
R-4999-L7 *	26 5/8	2	24 5/8
R-4999-L9 ***	29 3/4	2 1/2	26 3/4

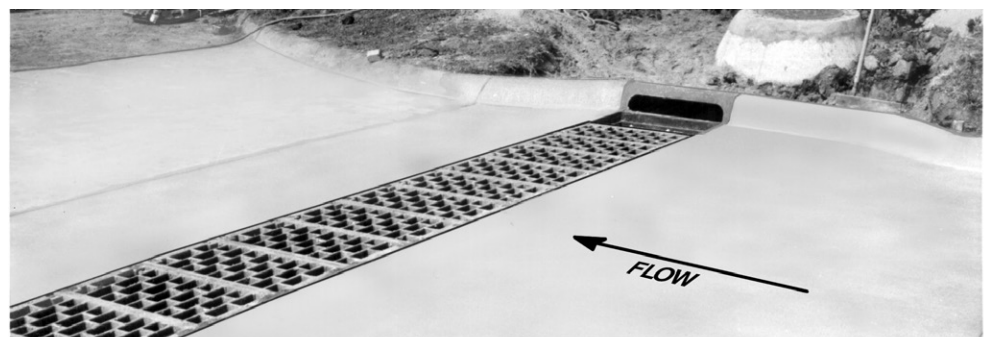
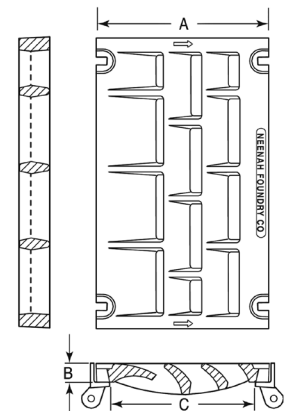
* Furnished in 24" sections

** Furnished in 12" or 24" sections

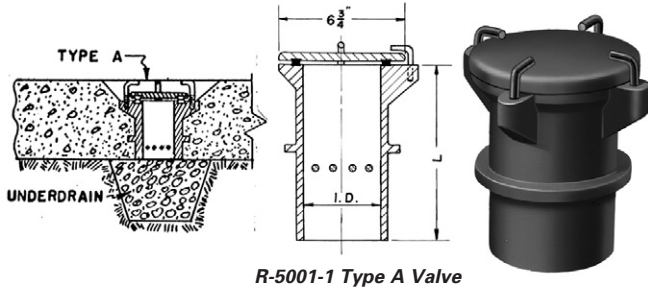
*** Furnished in 18" or 36" sections

Type 'L' vane shaped grates have the ability to remove significant amounts of sheet flow from streets, parking lots and industrial lots.

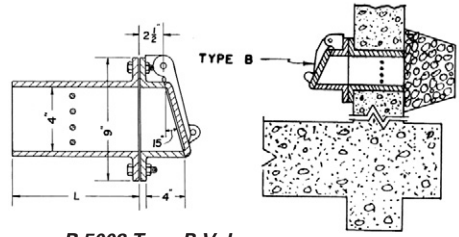
For detailed hydraulic information, visit our website at www.neenahfoundry.com and select "Hydraulic Calculator" or contact Neenah Product Engineering.



**R-5000 to R-5002 Series
Pressure Relief Valve**



R-5001-1 Type A Valve



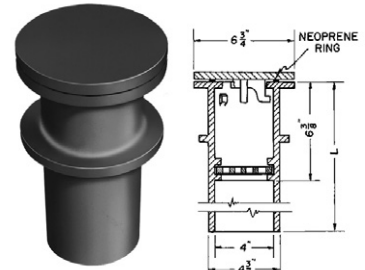
R-5002 Type B Valve



Pressure relief valves are suitable for sub-grade concrete tanks of all kinds. Outside water pressure forces the relief valve open and allows water to enter the tank. This tends to control buoyancy of the tank and prevents floating.

All valves furnished standard with neoprene seat mountings unless otherwise specified. Alternate bronze seat mounting available on special order. Specify length when ordering.

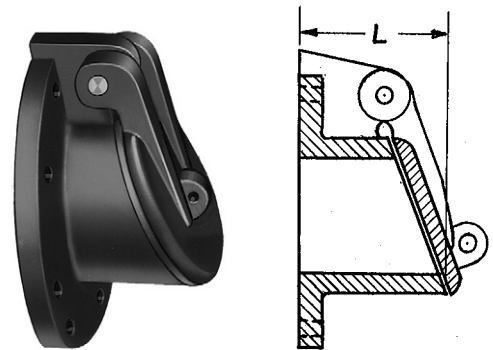
Dimensions in inches					
Catalog No.	Type	I.D.	Flange Dia.	Lid Dia.	Length
R-5000	C	4	6	6 3/4	10 to 25
R-5001	A	4	6	6 3/4	12
R-5001-1	A	6	8 1/4	8 1/2	12 to 26
R-5002	B	4	9	5	12 to 24



R-5000 Type C self-contained lock, neoprene seating and removable grate.

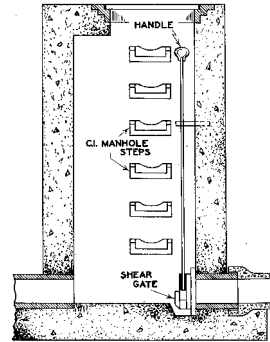
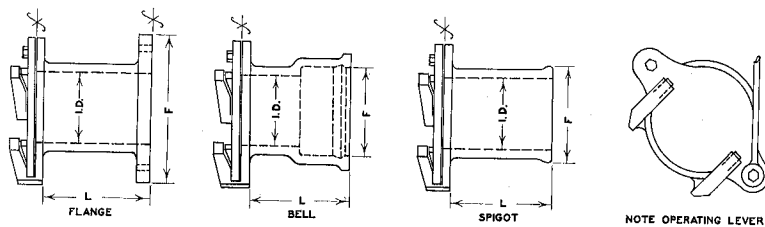
**R-5004 Series
Flanged Flap Valve**

Flap valves are used in areas where water accumulates, such as manholes or concrete boxes. Then the manhole begins to fill, the flap valve can be opened to flush the area of water. The flap valve door has a tab with a hole located in the center to allow a handle to be attached so it can be opened from the surface. Furnished standard with neoprene seat mounts. Bronze seat mounting is available on special order. All hinge pins are brass. Flanges are faced and drilled to 125 pound standard.



Dimensions in inches		
Catalog No.	Inside Dia.	Laying Length
R-5004-A1	4	4
R-5004-A2	6	4
R-5004-A3	8	7 1/2
R-5004-A4	10	5 1/2
R-5004-A5	12	8

R-5005 Series Shear Gates



Shear gates are used as control applications for many installations, such as sewage disposal systems, where positive flow regulation is required. Contact surfaces between body and cover are machine finished. The gate hinge pins are stainless steel. Bronze seat mountings are also available on special order at extra cost.

NOTE: for use in Low Head applications only.

Flanges machine faced, diameters and bolt circles 125 pound standard.

Operating levers are optional and are available at any length.

Dimensions in inches

Catalog No.	I.D.	L	F	Type
R-5005-A3	3	10	4 1/4	Spigot
R-5005-B1	4	4	9	Flanged
R-5005-B2	4	4	5 3/4	Bell
R-5005-B3	4	10	5 1/4	Spigot
R-5005-C1	6	4	11	Flanged
R-5005-C2	6	16	7 7/8	Bell
R-5005-C3	6	10	6 1/2	Spigot
R-5005-D1	8	5	13 1/2	Flanged
R-5005-D2	8	16	10	Bell
R-5005-D3	8	12	9 1/2	Spigot
R-5005-E1	10	6	16	Flanged
R-5005-E2	10	6	12	Bell
R-5005-E3	10	12	11 5/8	Spigot
R-5005-F1	12	6	19	Flanged
R-5005-F2	12	8 3/4	14 1/8	Bell
R-5005-F3	12	15	13 3/4	Spigot

**R-5040 Series
Flap and Flush Valve Frame, Lid**

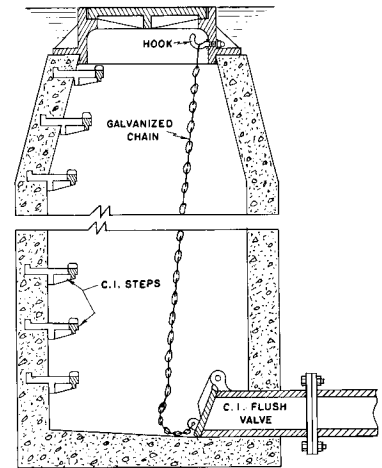
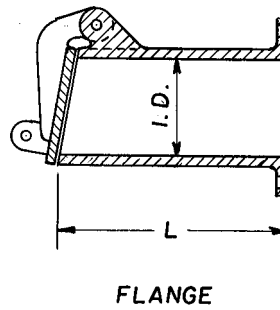
Shown are some standard types of flap and flush valves. Flanged ends are faced and drilled to 125 pound standard.

Flush valves are used in areas where debris accumulates, such as manholes, concrete boxes or dead-end lines. When the manhole begins to fill, the valve can be opened to flush the area of water. The flush valve door has a tab with a hole located in the center to allow a handle to be attached, so it can be opened from the surface.

Valved furnished with solid brass hinge pins; neoprene or bronze available on special order at extra cost. Chain furnished only when specified.

Dimensions in inches		
Catalog No.	I.D.	L
R-5040-F1	4	4
R-5040-F3	6	4 1/2
R-5040-F4	8	7 1/2
R-5040-F5	10	5 1/2
R-5040-F6	12	8
R-5040-F8 *	15	14

* Flange bolt circle for standard 16" class 125# pipe.



Manhole is filled with water and the valve then opened, flushing sewer. Chain furnished only when specified.

R-5050 Series Automatic Drainage Gate

Automatic drainage gates are used in areas with a requirement to prevent back flow, such as storm and sanitary sewer systems.

STANDARD GATES: Furnished with vertical closure for maximum ease of operation.

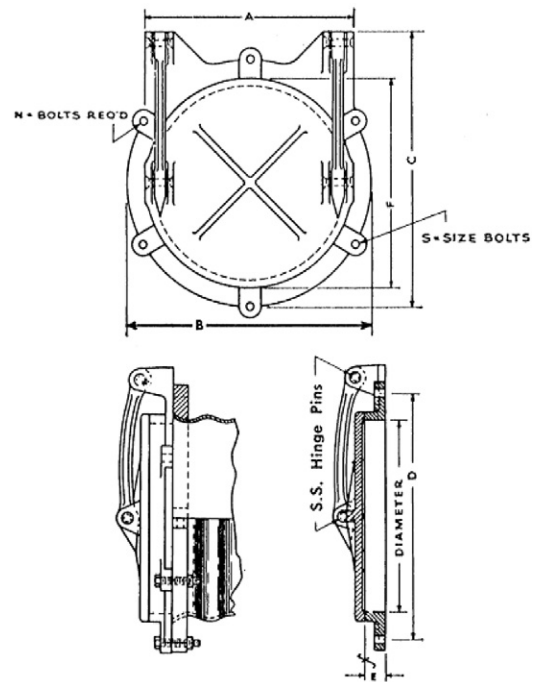
GENERAL INFORMATION: Gates are made of cast iron. All moving parts operate on stainless steel hinge pins. The cover is hung with cast iron arms (Ductile Iron arms on larger sizes) located at the outer edges near the center of gravity to ensure sensitive operation. For improved seating, order with neoprene seat at extra cost.

Aluminum covers can be furnished for special requirements, if specified. Also available on special order and at extra cost are neoprene or solid bronze seat mounts and bronze bushed hinges.

For applications with extreme head pressure contact Neenah's Product Engineering Department.

Maximum head loss occurs when pipe is flowing full. Consider the head loss to be one-half the pipe diameter.

These flap gates are self-draining when no up-stream flow exists and no head is on the downstream side.



Dimensions in inches

Catalog No. Type SF	Catalog No. Type CF	Catalog No. Type FF	Diameter	A	B	C	D	E	F	N	S
R-5050-SF6	R-5050-CF6	R-5050-FF6	6	7	11	13	11	3/4	7	four	5/8
R-5050-SF8	R-5050-CF8	R-5050-FF8	8	9 1/4	11	13	11	1 1/8	9 1/4	four	5/8
R-5050-SF10	R-5050-CF10	R-5050-FF10	10	11 1/4	13 1/2	15 1/5	13 1/2	1 1/8	11 1/4	four	5/8
R-5050-SF12	R-5050-CF12	R-5050-FF12	12	13 1/4	15 7/8	18	15 3/4	1 1/8	13 1/4	four	5/8
R-5050-SF15	R-5050-CF15		15	16 1/4	19	21	18 3/4	1 1/8	16 1/4	four	5/8
R-5050-SF18	R-5050-CF18	R-5050-FF18	18	19 1/4	22 1/8	24 1/4	22 1/8	1 1/4	19 1/4	four	3/4
R-5050-SF20	R-5050-CF20	R-5050-FF20	20	22 1/4	25 1/8	27 1/4	25 1/8	1 1/4	22 1/4	four	3/4
R-5050-SF21	R-5050-CF21		21	22 1/4	25 1/8	27 1/4	25 1/8	1 1/4	22 1/4	four	3/4
R-5050-SF24	R-5050-CF24	R-5050-FF24	24	25 1/4	28 1/4	30 1/4	28 1/4	1 1/4	25 1/4	six	3/4
R-5050-SF27			27	28 1/4	31 1/4	33 1/4	31 1/4	1 1/4	28 1/4	six	7/8
R-5050-SF30	R-5050-CF30		30	31 1/4	34 1/4	36 1/2	34 1/4	1 1/4	31 1/4	six	7/8
R-5050-SF36	R-5050-CF36		36	37 1/2	41 1/2	43 1/2	41 1/2	1 3/8	37 1/2	six	7/8
R-5050-SF42	R-5050-CF42		42	43 1/2	47 1/2	49 1/2	47 1/2	1 3/8	43 1/2	six	7/8
R-5050-SF48	R-5050-CF48		48	49 1/2	54	56 1/2	54	1 1/2	49 1/2	six	1



Type SF attached to concrete wall.



*Type CF attached to corrugated metal pipe.
(not for use with helical CMP)*



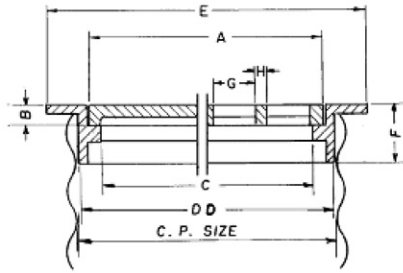
Type FF attached to flanged iron pipe.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-5900 to R-5901 Series Slab Frame, Grate or Lid

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-5901-A	G	0.2	2.7
R-5901-B	G	0.3	3.5
R-5901-C	G	0.5	4.3
R-5901-D	G	0.7	4.8
R-5901-E	G	1.1	5.8
R-5901-F	G	1.6	6.6
R-5901-G	G	2.0	7.4
R-5901-H	G	2.5	8.9
R-5901-J	G	3.7	10.5
R-5901-K	G	4.8	12.1



Sized to fit snugly into opening of corrugated pipe or similar piping.

Additional anchorage to metal pipe may be accomplished by drilling holes in the sleeve or barrel portion of the frame and bolting the frame in place. Frames can be furnished drilled for this purpose on special order.

For Bolted units, see **R-6461-2 Series**. For flange-down units, see **R-1792 Series**.

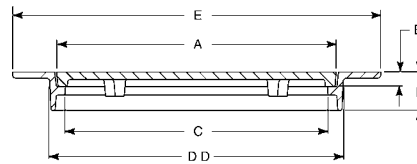
Dimensions in inches

Catalog No. Solid Lid	Catalog No. Open Grate	Pipe Size	A	B	C	DD	E	F	G	H
R-5900-A	R-5901-A	12	10 1/4	1 1/2	8 1/2	11 1/2	14 1/2	4	1	7/8
R-5900-B	R-5901-B	15	13 1/4	1 1/2	11 1/2	14 1/2	17 1/2	4	1	1
R-5900-C	R-5901-C	18	16 1/4	1 1/2	14 1/2	17 1/2	20 1/2	4	1	7/8
R-5900-D	R-5901-D	20	18 1/4	1 1/2	16 1/2	19 1/2	22 1/2	4	1 1/8	1
R-5900-E	R-5901-E	24	22 1/4	1 1/2	20 1/2	23 1/2	26 1/2	4	1 1/8	1
R-5900-F	R-5901-F	27	25 1/4	1 1/2	23 1/2	26 1/2	29 1/2	4	1 1/8	3/4
R-5900-G	R-5901-G	30	28 1/4	1 1/2	26 3/8	29 1/2	32 1/2	4	1	7/8
R-5900-H *	R-5901-H	36	34 1/4	1 1/2	32 1/2	35 1/2	38 1/2	4	1	1
R-5900-J	R-5901-J	42	40	1 1/2	38 1/2	41 1/2	44 1/2	4	1	1
R-5900-K	R-5901-K	48	46 1/8	1 1/2	44 1/2	47 1/2	50 1/2	4	1 1/16	1

* Available with removable center lid, see R-1586.

R-5915 Series Traffic PullBox Frame, Lid

Heavy Duty

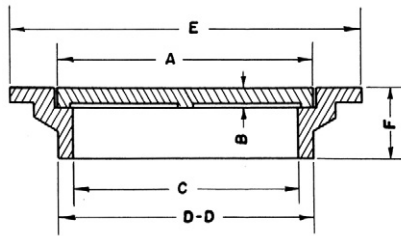
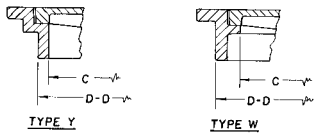


Dimensions in inches

Catalog No.	A	B	C	DD	E	F
R-5915-B	13 1/4	1 1/2	11 1/2	14 1/2	20	4
R-5915-C	16	1 1/2	14 1/4	17 1/4	23	4
R-5915-E	22	1 1/2	20 1/2	23 3/8	30	4
R-5915-G	28 1/4	1 1/2	26 3/8	29 5/8	37	4

**R-6001 to R-6080 Series
Manhole Frame, Solid Lid**

Light Duty



Illustrating R-6020

The manhole covers shown here, for off-the-street traffic, are specifically for use on cisterns, coal holes, wells, pumps or for inspection openings.

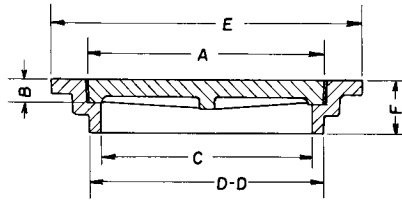
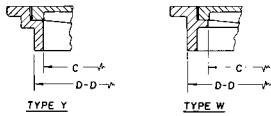
Lids are furnished standard with open type pickholes. However, they can be supplied with various types of lift handles. Fastening devices are available on special order.

Dimensions in inches

Catalog No.	A	B	C	DD	E	F	Frame Type
R-6001	6	1	5	6	10	3 1/2	Y
R-6003	9	1	8	9	12	2 1/2	Y
R-6005	12	1	11	12	14 3/4	2 1/2	Y
R-6006	13	3/4	11 3/4	14	17	2 1/2	W
R-6007	14	3/4	12	15	20	2 1/2	W
R-6008	16	3/4	15	16	20 1/4	2 1/2	Y
R-6010	18	1/2	16 1/2	20	22 1/2	4	W
R-6011	18	1/2	17	18	22 1/4	2 1/2	Y
R-6012	20 1/2	5/8	18	22 1/2	24	2 1/2	W
R-6020	21 1/2	1	20	24 1/2	27 3/8	4	W
R-6034	23 1/2	1/2	22	23 1/2	26 1/2	3	Y
R-6040	24	3/4	22	23 1/4	30	3 1/2	Y
R-6044	25	1	22	23 1/4	28	6	Y
R-6044-1	23 3/4	3/4	22 1/2	25	29 1/2	4	W
R-6044-A	25 1/2	1/2	24	25 1/4	30 1/2	4	Y
R-6070	26 5/8	3/4	25	26 1/4	31	4	Y
R-6077	31 3/4	3/4	30	31 1/2	36 1/2	6	Y
R-6077-A	31 3/4	3/4	30	31 1/2	36 1/2	3 1/2	Y
R-6080	33 1/2	3/4	32	33	37	4	Y

R-6013 to R-6099 Series Manhole Frame, Solid Lid

Heavy Duty



Illustrating R-6030

Lids are available with lift handles or fastening devices if specified.

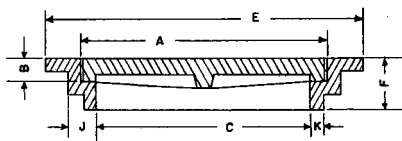
Dimensions in inches

Catalog No.	A	B	C	DD	E	F	Frame Type
R-6013	6 1/2	1 1/4	5 1/2	6 3/4	10	2 1/2	Y
R-6014 *	9	1	8	9	12	2 1/2	Y
R-6016 *	14	1 1/4	12	13	18	3	Y
R-6017	17	1 1/4	15	16	21	4	Y
R-6017-A	18	1 1/4	16	17	22	4 1/2	Y
R-6018	21	2 1/2	18	20	27 1/2	5	Y
R-6019 *	22 3/4	1 3/4	20	23	25	4 1/2	Y
R-6021	23	1 1/4	20	22	29 3/4	4	Y
R-6030	23	1 3/4	21	22 3/4	30	4	Y
R-6033	23	1 3/4	21	22 3/4	30	4	Y
R-6035	23	1 3/4	21	22 3/4	30	8	Y
R-6041	24	1 5/8	22	25 1/4	30	4	W
R-6041-A	24	1 5/8	22	25 1/4	30	6	W
R-6041-B	24	1 5/8	22	25 1/4	30	8	W
R-6050	27	1 1/4	23 1/2	25 1/2	33 1/2	4	Y
R-6060	26	1 5/8	24	27	36	5	W
R-6065	25 3/8	1 3/4	23 7/8	26	30	6	Y
R-6065-A	25 3/8	1 3/4	23 7/8	26 1/8	30 1/4	8	Y
R-6066	27	2 1/2	24	26	33 1/2	5	Y
R-6067 *	27	2 1/2	24	26	33 1/2	5	Y
R-6074	28 1/2	1 1/4	26 1/2	27 1/2	35	3 1/2	Y
R-6075	29	1 3/4	27	29	35	6	Y
R-6078	32 3/8	2	30	32 1/2	39 1/2	6	Y
R-6095 *	38	1 1/2	36	38	49	4 1/2	Y
R-6099	50 1/2	1	48	49 1/2	54	6	Y

* Furnished with Platen lid.

R-6052 Series Manhole Frame, Solid Lid, U.S. Government Standard

Heavy Duty



Illustrating R-6052-G

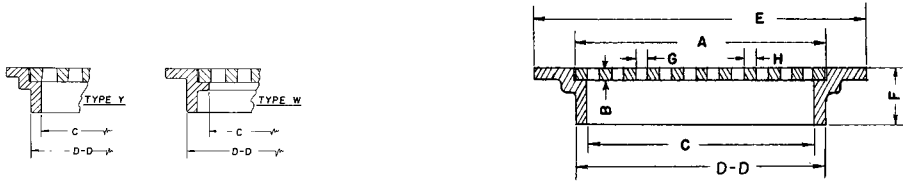
For Frame/Grate alternatives, see the R-2565 Series.

Dimensions in inches

Catalog No.	A	B	C	E	F	J	K
R-6052-A	21	2 1/2	18	27 1/2	5	2 7/8	1
R-6052-C	23	1 1/4	20	29 3/4	4	2 1/2	1
R-6052-D	27	1 1/4	23 1/2	33 1/2	4	2 1/4	3/4
R-6052-G	27	2 1/2	24	33 1/2	5	2 7/8	1
R-6052-H	29	1 3/4	27	35	6	2 7/8	1
R-6052-J	32 3/8	2	30	39 1/2	6	2 7/8	1

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

**R-6110 to R-6137 Series
 Catch Basin Frame, Grate**



Illustrating R-6115

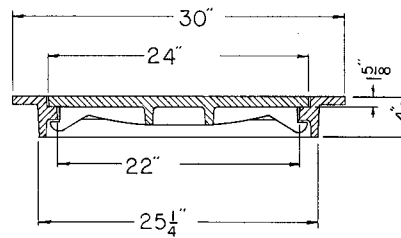
Dimensions in inches

Catalog No.	A	B	C	DD	E	F	G	H	Frame Type
Heavy Duty									
R-6110	21	2 1/2	18	20	27 1/2	5	1 3/8	1	Y
R-6111	23	1 1/4	20	22	29 3/4	4	1 3/8	1	Y
R-6112	23	1 3/4	21	22 3/4	30	4	1 1/2	1	Y
R-6113	24	1 5/8	22	25 1/4	30	4	3/4	1	W
R-6114	27	1 1/4	23 1/2	25 1/2	33 1/2	4	1 1/2	1	Y
R-6115	27	2 1/2	24	26	33 1/2	5	1 1/2	1	Y
R-6116	29	1 3/4	27	29	35	6	1	1	Y
R-6117	32 3/8	2	30	32 1/2	39 1/2	6	1 1/2	1	Y
R-6118	38	1 1/2	36	38	49	4 1/2	1	1	Y
Light Duty									
R-6130	20 1/2	5/8	18	22 1/2	24	2 1/2	1	1	W
R-6131	21 1/2	1	20	23 1/2	27	4	1/2	3/4	W
R-6132	24	3/4	22	23 1/4	30	3 1/2	1/2	1/2	Y
R-6133	25	1	22	23 1/4	28	6	1/2	1	Y
R-6134	26 5/8	3/4	25	26 1/4	31	4	7/8	3/4	Y
R-6136	31 3/4	3/4	30	31 1/2	36 1/2	6	1 1/4	1	Y
R-6137	33 1/2	3/4	32	33	37	4	1 1/4	1	Y

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-6110	G	0.9	5.5
R-6111	G	1.2	6.0
R-6112	G	1.3	6.0
R-6113	G	0.9	6.3
R-6114	G	1.8	7.0
R-6115	G	1.6	7.1
R-6116	G	1.9	7.6
R-6117	G	2.4	8.5
R-6118	G	2.6	9.9
R-6130	G	0.8	5.4
R-6131	G	1.0	5.6
R-6132	G	1.3	6.3
R-6133	G	1.3	6.5
R-6134	G	1.5	6.9
R-6136	G	2.5	8.3
R-6137	G	2.7	8.8

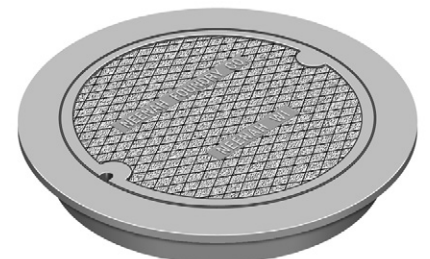
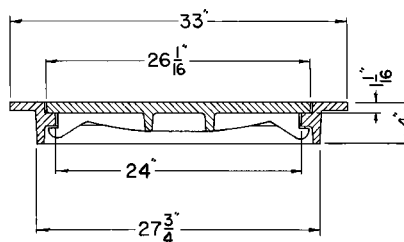
**R-6140
 Manhole Frame, Lid with Type F Lock**

Heavy Duty



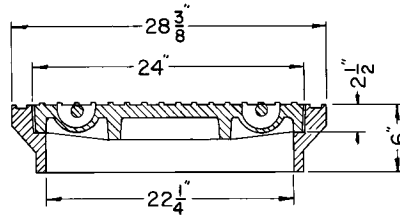
**R-6141
 Manhole Frame, Lid with Type F Lock**

Heavy Duty



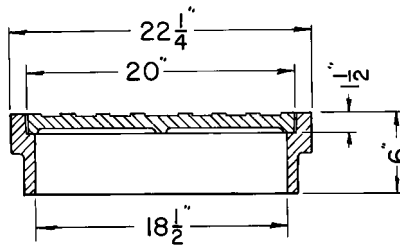
R-6142
Manhole Frame, Lid

Heavy Duty



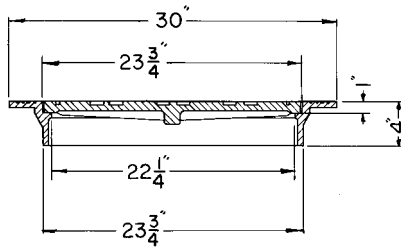
R-6143
Manhole Frame, Lid

Heavy Duty



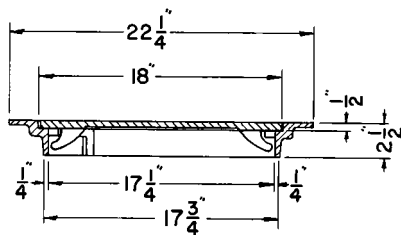
R-6144
Manhole Frame, Lid

Light Duty



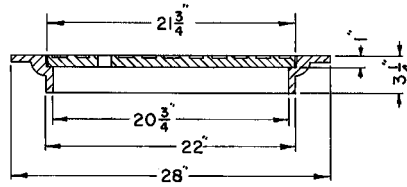
R-6145
Manhole Frame, Lid with Type F Lock

Light Duty



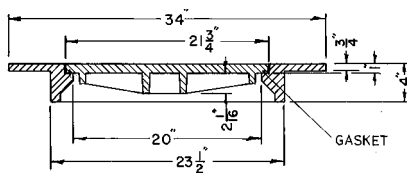
R-6146
Manhole Frame, Lid

Heavy Duty



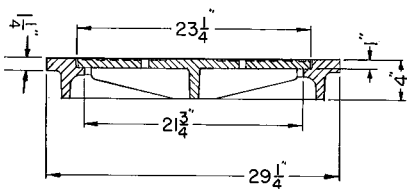
R-6147
Manhole Frame, Self-Sealing Lid

Heavy Duty



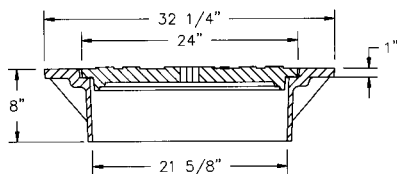
R-6148
Manhole Frame, Vented Lid

Heavy Duty



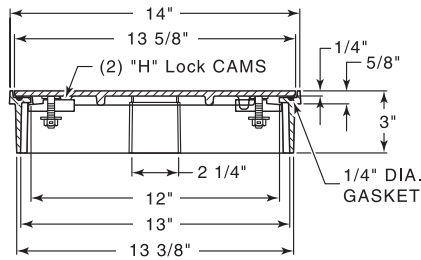
R-6149
Manhole Frame, Lid

Heavy Duty



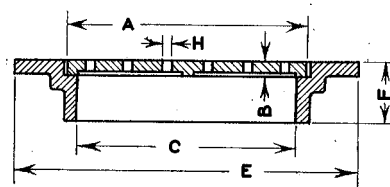
R-6151
Manhole Frame, Lid

Light Duty



R-6310 Series
Manhole Frame, Vented Lid

Light Duty



Illustrating R-6310-G1

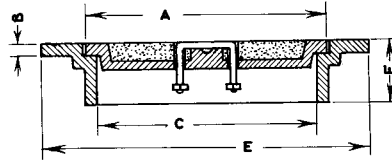
Suitable for garages, bottling plants, laundries, service stations and industrial building applications of all kinds.

Catalog No.	Dimensions in inches						# of Vents
	A	B	C	E	F	H	
R-6310-A	9	1	8	12	2 1/2	1/2	6
R-6310-B	13	3/4	11 3/4	17	2 1/2	3/4	6
R-6310-C	16	3/4	15	20 1/4	2 1/2	1	12
R-6310-D	18	1/2	16 1/2	22 1/2	4	3/4	8
R-6310-E	20 1/2	5/8	18	24	2 1/2	1/2	24
R-6310-F	24	3/4	22	30	3 1/2	3/4	18
R-6310-G1	26 5/8	3/4	25	31	4	5/8	20
R-6310-H	31 3/4	3/4	30	36 1/2	6	1	24
R-6310-H1	31 3/4	3/4	30	36 1/2	3 1/2	1	24

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-6320 Series Manhole Frame, Lid for Concrete, Asphalt or Terrazzo Fill

Light Duty

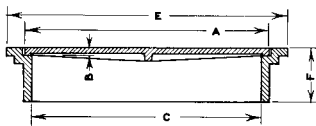


Furnished standard with steel lift handle. Also available with top surface of frame and lid machine finished. Bronze lift handle available.

Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-6320-A	9	1	8	12	2 1/2
R-6320-B	13	3/4	11 3/4	17	2 1/2
R-6320-D	18	1/2	16 1/2	22 1/2	4
R-6320-E	20 1/2	5/8	18	24	2 1/2
R-6320-F	21 1/2	1	20	27	4
R-6320-G	24	3/4	22	30	3 1/2
R-6320-H	26 5/8	3/4	25	31	4

R-6350 to R-6352 Series Manhole Frame, Solid/Vented/Grated Cover

Light Duty



Illustrating R-6352-E

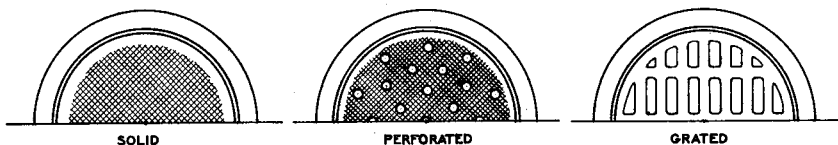


Illustrating R-6350-G

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-6352-A	G	0.4	3.4
R-6352-B	G	0.8	4.2
R-6352-D	G	0.7	4.9
R-6352-E	G	0.8	5.5
R-6352-G	G	1.3	6.5

These covers are used extensively by plumbers and contractors for inside use.
 Note that covers are adaptable for use with clay tile catch basin or sub-construction, frames to fit inside of and flush with top of bell.

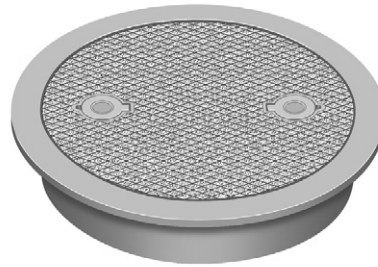
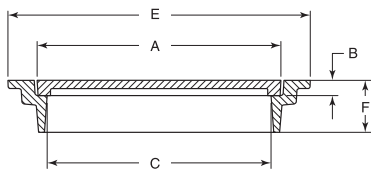
Catalog No. Solid	Catalog No. Vented	Catalog No. Grated	Dimensions in inches					Pipe Size
			A	B	C	E	F	
R-6350-A		R-6352-A	13	1/2	12	15	2 1/2	12
R-6350-B	R-6351-B	R-6352-B	16	3/4	15	20 1/4	2 1/2	15
R-6350-C			18	1/4	17	21	3	18
R-6350-D	R-6351-D	R-6352-D	19	1/2	18	21	3	18
R-6350-E	R-6351-E	R-6352-E	21	1/2	20	23	3	20
R-6350-G	R-6351-G	R-6352-G	25	1/2	24	27	3	24



■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-6400 Series Manhole Frame, Solid or Grated Cover

Heavy Duty



Illustrating R-6400-DS



Illustrating R-6400-BO

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-6400-AO	G	0.3	3.1
R-6400-BO	G	0.8	5.0
R-6400-CO	G	1.8	7.0
R-6400-DO	G	1.2	7.6



B Lid



C Lid

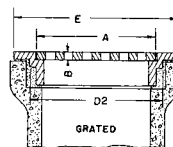
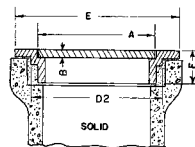
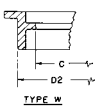
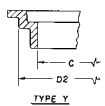
Suitable for heavy traffic. May be used for handholes, equipment covers, etc. on bridge or highway construction.

Dimensions in inches

Catalog No. Solid Lid	Lid Type	Catalog No. Open Grate	Grate Type	A	B	C	E	F	G	H
R-6400-AS	C	R-6400-AO	G	11 3/4	1	10	17 1/4	4	1 1/2	1
R-6400-BS	B	R-6400-BO	G	19 3/4	1	18	25 1/4	4	1	3/4
R-6400-CS	C	R-6400-CO	G	27	1 1/4	23 1/2	33 1/2	4	1 1/2	1
R-6400-DS	C	R-6400-DO	G	29	1 3/4	27	35	6	1	1

R-6450 Series Round Frame, Solid or Grated Cover

Light Duty



For bell end of vitrified clay pipe.

CAUTION: Pipe bell sizes from different manufacturers frequently vary. Check the casting dimensions with the table below to be sure the casting will fit the pipe you are using.

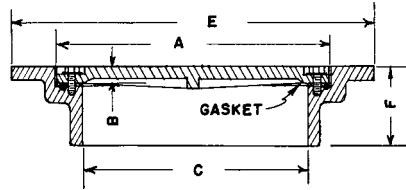
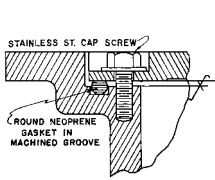
Dimensions in inches

Catalog No. Solid Lid	Catalog No. Open Grate	Pipe Size	A	B	C	D2	E	F	Frame Type
R-6450-AL	R-6450-AG	8	9	1	8	10 1/8	12	2 1/2	Y
R-6450-BL	R-6450-BG	10	12	1	11	13	14 3/4	2 1/2	Y
R-6450-CL	R-6450-CG	12	13	3/4	11 3/4	14 1/2	17	2 1/2	W
R-6450-DL	R-6450-DG	15	16	3/4	15	18	20 1/4	2 1/2	Y
R-6450-EL	R-6450-EG	18	20 1/2	5/8	18	22 1/2	24	2 1/2	W
R-6450-FL	R-6450-FG	20	21 1/2	1	20	24 1/2	27	4	W
R-6450-GL	R-6450-GG	21	24	3/4	22	25 1/2	30	3 1/2	Y
R-6450-HL	R-6450-HG	24	26 5/8	3/4	25	28 1/2	31	4	Y
R-6450-JL	R-6450-JG	27	31 3/4	3/4	30	35 1/4	36 1/2	6	Y
R-6450-KL	R-6450-KG	30	33 1/2	3/4	32	34 1/2	37	4	Y

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-6450-AG	G	0.2	2.4
R-6450-BG	G	0.2	3.1
R-6450-CG	G	0.4	3.4
R-6450-DG	G	0.5	4.2
R-6450-EG	G	0.7	5.4
R-6450-FG	G	0.1	5.6
R-6450-GG	G	1.3	6.3
R-6450-HG	G	1.3	6.9
R-6450-JG	G	1.9	8.3
R-6450-KG	G	2.7	8.8

R-6460 Series
Pressure-Type Round Manhole Frame, Bolted Lid
Water-, Gas-, and Steamtight

Heavy Duty



Suitable for low pressure application up to 20 p.s.i.

NOTE: Bolting pads reduce effective clear opening (dimension C) by 2" to 3". If "C" dimension is critical, select larger size.

Units are shipped assembled with gasket glued to frame.

Catalog No.	Dimensions in inches					No. of Bolts
	A	B	C	E	F	
R-6460-A	21	1 1/2	18	27 1/2	5	four
R-6460-B	23	1 3/4	21	30	4	four
R-6460-C	27	1 1/4	23 1/2	33 1/2	4	four
R-6460-D	29	1 3/4	27	35	6	six
R-6460-G1	38	1 1/2	36	49	4 1/2	six

R-6461 to R-6462 Series
Pressure-Type Round Manhole Frame, Bolted Lid
Water-, Gas-, and Steamtight

Heavy Duty

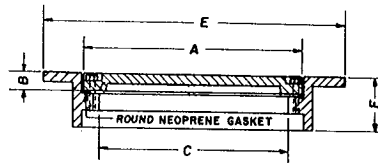
Suitable for low pressure application up to 20 p.s.i.

Frames in this series are reversible and can be installed with the flange at top for slab construction or with flange at base for use with built-up manhole.

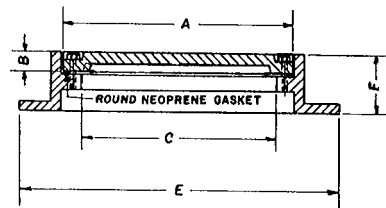
Slab construction type manhole covers are sized to fit in the opening of corrugated metal pipe from 12" to 48" in diameter.

Furnished standard with concealed, watertight pickhole. Lids sealed with gasket and fastened with stainless steel bolts.

Units are shipped assembled with gasket glued to lid.



Illustrating R-6461-EH Slab Type

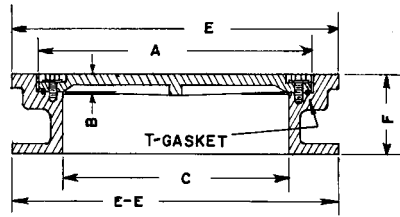
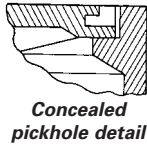


Illustrating R-6462-EH Built-up Type

Catalog No. Slab Type	Catalog No. Built-Up Type	Dimensions in inches					No. of Bolts
		A	B	C	E	F	
R-6461-AH	R-6462-AH	10 1/4	1 1/2	6 1/2	14 1/2	4	four
R-6461-BH	R-6462-BH	13 1/4	1 1/2	9 1/2	17 1/2	4	four
R-6461-CH	R-6462-CH	16 1/4	1 1/2	12 1/2	20 1/2	4	four
R-6461-DH	R-6462-DH	18 1/4	1 1/2	14 1/2	22 1/2	4	four
R-6461-EH	R-6462-EH	22 1/4	1 1/2	18 1/2	26 1/2	4	four
R-6461-FH	R-6462-FH	25 1/4	1 1/2	21 1/2	29 1/2	4	four
R-6461-GH	R-6462-GH	28 1/4	1 1/2	24 1/2	32 1/2	4	six
R-6461-HH	R-6462-HH	34 1/4	1 1/2	32 1/2	38 1/2	4	six
R-6461-JH	R-6462-JH	40	1 1/2	36 1/2	44 1/2	4	six
R-6461-KH	R-6462-KH	46 1/8	1 1/2	42 1/2	50 1/2	4	six

R-6464 Series
Pressure-Type Round Manhole Frame, Bolted Lid
Water-, Gas-, and Steamtight

Heavy Duty

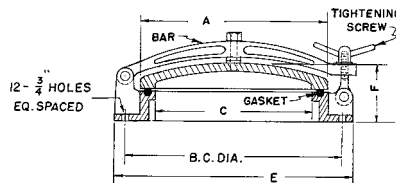


Suitable for low pressure application up to 20 p.s.i.
 Seal type frames have flange at base as well as top. Furnished with T-gasket and stainless steel cap screws.
 Units are shipped assembled with gasket glued to lid.
 NOTE: Bolting pads reduce effective clear opening (dimension C) by 2" to 3". If "C" dimension is critical, select larger size.

Catalog No.	Dimensions in inches						No. of Bolts
	A	B	C	E	EE	F	
R-6464-D	25 1/4	1	22	26 1/2	25	6	four
R-6464-F	26	1	24	27 3/4	27	8	four
R-6464-G	29	1 3/4	27	31	31	6	six

R-6470 Series
Low Pressure Water-Resistant Frame, Solid Lid, Lock Bar and Gasket

Light Duty

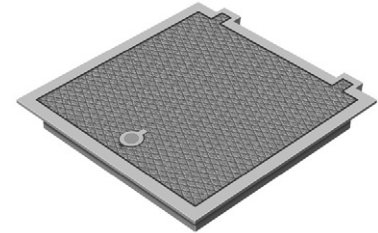
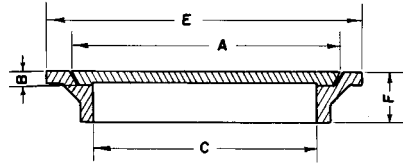


Units are shipped assembled with gasket glued to frame.

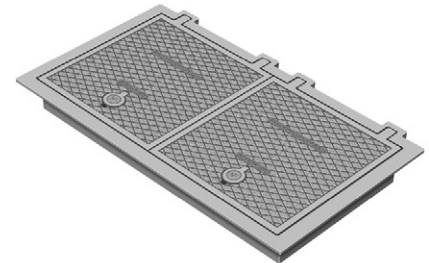
Catalog No.	Dimensions in inches				Bolt Circle Diameter
	A	C	E	F	
R-6470-A	21	18	25	5	23 1/2
R-6470-B	27	24	31	6	29 1/2

R-6660 to R-6661 Series Manhole Frame, Lid

Light Duty



Illustrating R-6660-NH



Illustrating R-6661-LH

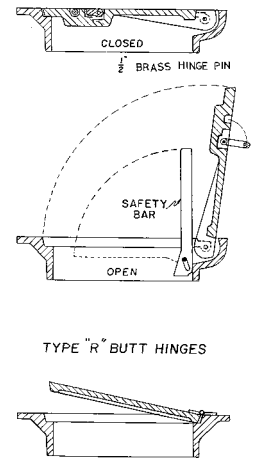
Frames and lids in this series can be furnished standard without hinges or with Type T hinges as indicated below. Also, castings can be furnished with Type R butt hinges in stainless steel (When butt hinges are required, specify the non-hinged unit with the hinge of your choice). If fastening device is necessary, see page 16 for various types available on all units of this series.

These castings are also available using a gasketed and bolted lid. See **R-6665-0-1 Series**. Specify number of lids required where option is shown. Hold-open safety bars are furnished standard on most T-hinged units.

The specific location and number of hinges, handles and pickholes on these units may vary depending on the size and shape of the lids, and may not be exactly as illustrated. If the location and number of hinges, handles or pickholes is critical on your particular project, please specify requirements.

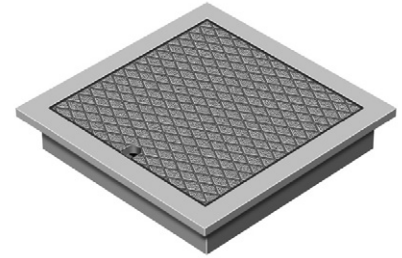
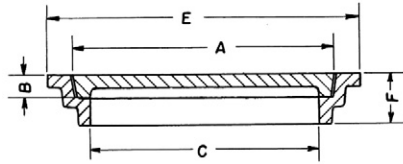
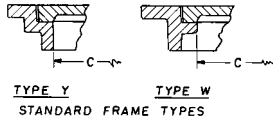
		Dimensions in inches					No. of Lids
Catalog No. Not Hinged	Catalog No. T-Hinged	A	B	C	E	F	
Square							
R-6660-AP	-	12 x 12	3/4	10 x 10	18 1/2 x 18 1/2	4	1
R-6660-CP	-	13 x 13	5/8	12 x 12	15 x 15	3	1
R-6660-DP	R-6660-DH	15 x 15	3/4	13 5/16 x 13 5/16	19 x 19	4	1
R-6660-FP	R-6660-FH	18 1/2 x 18 1/2	3/4	17 x 17	23 x 23	3	1
R-6660-GP	R-6660-GH	19 3/4 x 19 3/4	3/4	18 1/2 x 18 1/2	24 x 24	4	1
R-6660-HP	R-6660-HH	21 1/2 x 21 1/2	3/4	19 1/2 x 19 1/2	24 1/2 x 24 1/2	4	1
R-6660-JP	R-6660-JH	23 1/2 x 23 1/2	3/4	21 7/8 x 21 7/8	28 1/2 x 28 1/2	4	1
R-6660-KP	R-6660-KH	25 1/2 x 25 1/2	3/4	24 x 24	30 x 30	4	1
R-6660-MP	R-6660-MH	30 x 30	3/4	28 x 28	34 x 34	4	1
R-6660-NP	R-6660-NH	32 x 32	3/4	30 x 30	36 x 36	4	1
R-6660-PP	R-6660-PH	38 x 38	3/4	36 x 36	46 x 46	4	1
R-6660-RP	R-6660-RH	44 x 44	1	42 x 42	49 x 49	4	2
R-6660-TP *	R-6660-TH *	56 3/8 x 56 3/8	1 1/2	54 x 54	64 x 64	4 1/2	2
Rectangular							
R-6661-A1P	R-6661-A1H	14 x 19	3/4	12 x 17	18 1/4 x 23 3/8	4	1
R-6661-BP	-	14 x 26	3/4	12 x 24	18 x 30	4	1
R-6661-CP	R-6661-CH	18 x 32	3/4	16 x 30	20 x 34	4	1
R-6661-DP	R-6661-DH	19 5/8 x 49 5/8	3/4	18 x 48	22 x 52	4	2
R-6661-EP	R-6661-EH	21 1/2 x 24 1/2	3/4	20 x 23	26 x 29	6	1
R-6661-F3P *	-	24 1/2 x 55 1/2	3/4	22 x 54	30 x 62	4	2
R-6661-FP	R-6661-FH	22 x 32	3/4	20 x 30	26 x 36	5 1/4	1
R-6661-HP	R-6661-HH	26 x 32	3/4	24 x 30	30 x 36	4	1
R-6661-JP	R-6661-JH	26 x 38	3/4	24 x 36	30 x 42	4	1 or 2
R-6661-KP	R-6661-KH	26 x 44	3/4	24 x 42	30 x 48	4	1
R-6661-LP	R-6661-LH	25 1/2 x 49 1/2	3/4	24 x 48	30 x 54	4	2
R-6661-NP	R-6661-NH	25 1/2 x 61 1/2	3/4	24 x 60	31 x 67	6	2
R-6661-PP	R-6661-PH	28 3/4 x 31 3/4	3/4	27 x 30	34 x 37	4	1
R-6661-TP	R-6661-TH	31 5/8 x 37 5/8	3/4	30 x 36	37 x 43	4	1
R-6661-UP	R-6661-UH	32 x 43 3/4	3/4	30 x 42	37 x 47 1/2	4	1 or 2
R-6661-V1P	R-6661-V1H	31 5/8 x 73	3/4	30 x 72	36 x 78	4	2
R-6661-VP	R-6661-VH	32 x 50	3/4	30 x 48	36 x 54	4	1 or 2
R-6661-YP *	R-6661-YH *	44 x 110	3/4	42 x 108	52 x 118	4	3

* Frame in sections, bolted at corners.



R-6662 to R-6663 Series Manhole Frame, Lid

Heavy Duty



Illustrating R-6662-CP

Frames and lids in this series can be furnished standard without hinges or with Type T hinges as indicated below. Also, castings can be furnished with Type R butt hinges in stainless steel (When butt hinges are required, specify the non-hinged unit with the hinge of your choice). If fastening device is necessary, see page 16 for various types available on all units of this series.

These castings are also available using a gasketed and bolted lid. See **R-6665-2-3 Series**. For similar castings with grates, see **R-6672-3 Series**.

For complete information on our Spring Assist hatch products, please refer to the R-3498 Series.

Hold-open safety bars are furnished standard on most T-hinged units.

The specific location and number of hinges, handles and pickholes on these units may vary depending on the size and shape of the lids and may not be exactly as illustrated. If the location and number of hinges, handles or pickholes is critical on your particular project, please specify requirements.



Illustrating R-6663-JS

Catalog No. Not Hinged	Catalog No. T-Hinged	Catalog No. Spring Assist	Dimensions in inches					No. of Lids	Frame Type
			A	B	C	E	F		
Square									
R-6662-AP	-		12 1/4 x 12 1/4	1	11 1/2 x 11 1/2	15 x 15	6	1	Y
R-6662-BP **	-		13 3/4 x 13 3/4	1 1/2	12 x 12	18 x 18	4	1	W
R-6662-CP **	R-6662-CH		18 x 18	1 1/2	16 x 16	22 x 22	4	1	W
R-6662-EP **	R-6662-EH		20 x 20	1 1/2	18 x 18	24 x 24	4	1	W
R-6662-GP **	R-6662-GH		21 1/2 x 21 1/2	1 1/2	20 x 20	26 x 26	4	1	W
R-6662-HP **	R-6662-HH		23 1/2 x 23 1/2	1 1/2	22 x 22	28 x 28	4	1	W
R-6662-JP	-		25 1/4 x 25 1/4	1 3/4	23 x 23	31 1/2 x 31 1/2	4	1	Y
R-6662-KP **	R-6662-KH	R-6662-KS	25 3/4 x 25 3/4	1 1/2	24 x 24	30 x 30	4	1	W
R-6662-LP	-		27 x 27	2	25 x 25	33 1/2 x 33 1/2	4	1	Y
R-6662-MP **	R-6662-MH		27 1/2 x 27 1/2	1 1/2	26 x 26	32 x 32	4	1	W
R-6662-NP **	R-6662-NH		29 1/2 x 29 1/2	1 1/2	28 x 28	34 x 34	4	1	W
R-6662-PP	R-6662-PH	R-6662-PS	31 1/2 x 31 1/2	1 1/2	30 x 30	36 x 36	4	1	W
R-6662-RP	R-6662-RH	R-6662-RS	37 x 37	1 1/2	36 x 36	42 x 42	4	2	W
R-6662-TP +	R-6662-TH	R-6662-TS	50 x 50	1 1/2	48 x 48	56 x 56	4	2	Y
Rectangular									
R-6663-AP **	R-6663-AH		14 x 20	1 1/2	12 x 18	18 x 24	4	1	W
R-6663-BP **	R-6663-BH		13 1/2 x 25 1/2	1 1/2	12 x 24	18 x 30	4	1	W
R-6663-CP	R-6663-CH		19 1/2 x 25 1/2	1 1/2	18 x 24	24 x 30	4	1	W
R-6663-DP **	R-6663-DH		19 1/2 x 31 1/2	1 1/2	18 x 30	24 x 36	4	1	W
R-6663-E1P	R-6663-E1H		20 x 44	1 1/2	18 x 42	24 x 48	4	1	Y
R-6663-EP **	R-6663-EH		19 3/4 x 37 3/4	1 1/2	18 x 36	24 x 42	4	1	W
R-6663-FP	-		22 x 32	1 1/4	20 x 30	26 x 36	4	1	Y
R-6663-HP	R-6663-HH		26 x 32	1 1/2	24 x 30	30 x 36	4	1	Y
R-6663-JP	R-6663-JH ++	R-6663-JS	25 1/2 x 37 1/2	1 1/2	24 x 36	30 x 42	4	1	W
R-6663-KP **	R-6663-KH		25 3/4 x 49 3/4	1 1/2	24 x 48	30 x 54	4	2	W
R-6663-MP **	R-6663-MH		31 3/4 x 37 3/4	1 1/2	30 x 36	36 x 42	4	2	W
R-6663-NP **	R-6663-NH		31 1/2 x 49 1/2	1 1/2	30 x 48	36 x 54	4	2	W
R-6663-O1P *	R-6663-O1H *		38 x 50	1 1/2	36 x 48	44 1/2 x 56 1/2	4	2	Y
R-6663-OP	R-6663-OH		35 3/4 x 59 7/8	1 3/8	34 x 58	40 x 64	6	2	Y
R-6663-PP *	R-6663-PH *		44 x 62	1 3/8	42 x 60	50 1/2 x 68 1/2	4	2	W

* Frame in sections bolted at corners.

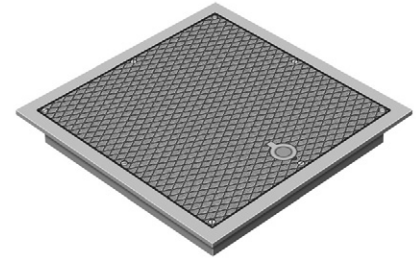
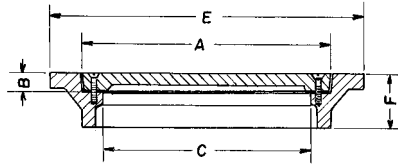
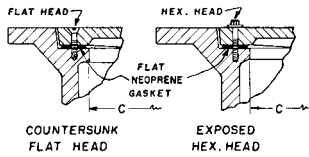
** Furnished with pickhole instead of G-handle.

+ Available with centered 24" diameter removable center access lid.

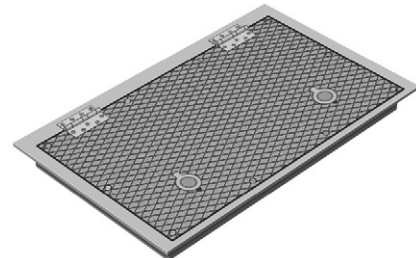
++ Available with two-piece lid.

R-6665-0 to R-6665-1 Series
Manhole Frame, Bolted/Gasketed Lid

Light Duty



Illustrating R-6665-0NP



Illustrating R-6665-1KH

Square and rectangular sizes in this series furnished standard with countersunk stainless steel flat head cap screws, flat neoprene gasket, Type G lift handle and, when so indicated, Type R stainless steel butt hinge.

All units available in cast aluminum or bronze for spark proof application.

Units are shipped assembled with gasket glued to frame.

The specific location and number of hinges, handles and pickholes on these units may vary depending on the size and shape of the lids, and may not be exactly as illustrated. If the location and number of hinges, handles or pickholes is critical on your particular project, please specify requirements.

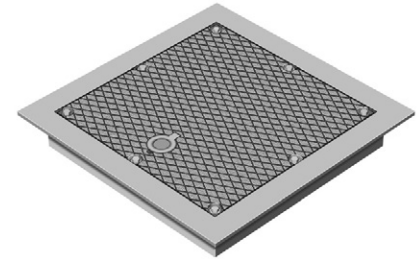
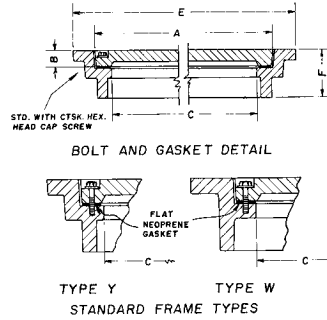
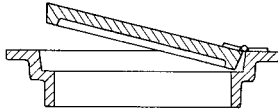
Catalog No. Not Hinged	Catalog No. Steel Butt Hinge	Dimensions in inches					No. of Bolts
		A	B	C	E	F	
Square							
R-6665-0AP	R-6665-0AH	12 x 12	3/4	10 x 10	18 1/2 x 18 1/2	4	4
R-6665-0CP	R-6665-0CH	13 x 13	5/8	12 x 12	15 x 15	3	4
R-6665-0DP	R-6665-0DH	15 x 15	3/4	13 x 13	19 x 19	4	4
R-6665-0FP	R-6665-0FH	18 1/2 x 18 1/2	3/4	17 x 17	23 x 23	3	4
R-6665-0GP	R-6665-0GH	19 3/4 x 19 3/4	3/4	17 1/2 x 17 1/2	24 x 24	4	8
R-6665-0HP	R-6665-0HH	21 1/2 x 21 1/2	3/4	18 1/2 x 18 1/2	24 1/2 x 24 1/2	4	8
R-6665-0JP	R-6665-0JH	23 1/2 x 23 1/2	3/4	20 7/8 x 20 7/8	28 1/2 x 28 1/2	4	8
R-6665-0KP	R-6665-0KH	25 1/2 x 25 1/2	3/4	23 x 23	30 x 30	4	8
R-6665-0MP	R-6665-0MH	30 x 30	3/4	27 x 27	34 x 34	4	8
R-6665-0NP	R-6665-0NH	32 x 32	3/4	29 x 29	36 x 36	4	8
Rectangular							
R-6665-1A1P	R-6665-1A1H	14 x 19	3/4	11 x 16	18 1/4 x 23 3/8	4	4
R-6665-1BP	R-6665-1BH	14 x 26	3/4	11 x 23	18 x 30	4	6
R-6665-1CP	R-6665-1CH	18 x 32	3/4	15 x 29	20 x 34	4	6
R-6665-1DP	R-6665-1DH	19 5/8 x 49 5/8	3/4	17 x 47	22 x 52	4	12
R-6665-1EP	R-6665-1EH	21 1/2 x 24 1/2	3/4	19 x 22	26 x 29	6	8
R-6665-1F3P *	R-6665-1F3H *	24 1/2 x 55 1/2	3/4	19 x 29	30 x 62	4	12
R-6665-1FP	R-6665-1FH	22 x 32	3/4	22 x 54	26 x 36	5 1/4	10
R-6665-1HP	R-6665-1HH	26 x 32	3/4	23 x 29	30 x 36	4	8
R-6665-1JP	R-6665-1JH	26 x 38	3/4	23 x 35	30 x 42	4	10
R-6665-1KP	R-6665-1KH	26 x 44	3/4	22 x 40	30 x 48	4	10
R-6665-1LP	R-6665-1LH	25 1/2 x 49 1/2	3/4	23 x 47	30 x 54	4	12
R-6665-1NP	R-6665-1NH	25 1/2 x 61 1/2	3/4	23 x 59	31 x 67	6	12
R-6665-1PP	R-6665-1PH	29 x 32	3/4	26 x 29	34 x 37	4	8
R-6665-1TP	R-6665-1TH	31 5/8 x 37 5/8	3/4	29 x 35	37 x 43	4	12
R-6665-1UP	R-6665-1UH	32 x 43 3/4	3/4	29 x 41	37 x 47 1/2	4	12
R-6665-1VP	R-6665-1V1H	31 5/8 x 73	3/4	29 x 71	36 x 78	4	18
R-6665-1V1P	R-6665-1V1H	32 x 50	3/4	29 x 47	36 x 54	4	14

* Frame in sections bolted at corners.

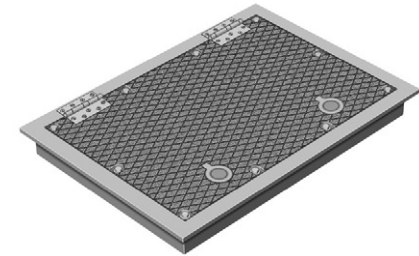
**R-6665-2 to R-6665-3 Series
Manhole Frame, Bolted/Gasketed Lid**

Heavy Duty

TYPE "R" BUTT HINGES



Illustrating R-6665-2LP



Illustrating R-6665-3JH

Square and rectangular sizes in this series furnished standard with countersunk stainless steel flat head cap screws, flat neoprene gasket, Type G lift handle and, when so indicated, Type R stainless steel butt hinge.

NOTE: Some heavier lids may have bottom ribs that extend below the base of the frame. If this would cause a problem in your installation, advise when ordering. Units are shipped assembled with gasket glued to frame.

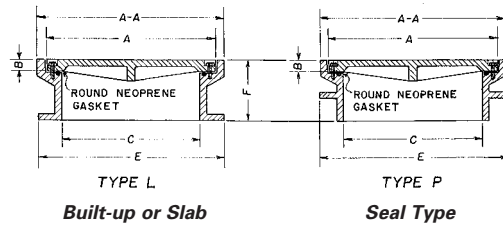
The specific location and number of hinges, handles and pickholes on these units may vary depending on the size and shape of the lids, and may not be exactly as illustrated. If the location and number of hinges, handles or pickholes is critical on your particular project, please specify requirements.

Catalog No. Not Hinged	Catalog No. Steel Butt Hinge	Dimensions in inches					No. of Bolts	Frame Type
		A	B	C	E	F		
Square								
R-6665-2AP	R-6665-2AH	12 1/4 x 12 1/4	1	11 1/2 x 11 1/2	15 x 15	6	4	Y
R-6665-2BP	R-6665-2BH	13 3/4 x 13 3/4	1 1/2	12 x 12	18 x 18	4	4	W
R-6665-2CP	R-6665-2CH	18 x 18	1 1/2	16 x 16	22 x 22	4	4	W
R-6665-2EP	R-6665-2EH	20 x 20	1 1/2	18 x 18	24 x 24	4	4	W
R-6665-2GP	R-6665-2GH	21 1/2 x 21 1/2	1 1/2	20 x 20	26 x 26	4	4	W
R-6665-2HP	R-6665-2HH	23 1/2 x 23 1/2	1 1/2	21 x 21	28 x 28	4	8	W
R-6665-2JP	R-6665-2JH	25 1/4 x 25 1/4	1 3/4	22 x 22	31 1/2 x 31 1/2	4	8	Y
R-6665-2KP	R-6665-2KH	25 3/4 x 25 3/4	1 1/2	23 x 23	30 x 30	4	8	W
R-6665-2LP	R-6665-2LH	27 x 27	2	24 x 24	33 1/2 x 33 1/2	4	8	Y
R-6665-2MP	R-6665-2MH	27 1/2 x 27 1/2	1 1/2	25 x 25	32 x 32	4	8	W
R-6665-2NP	R-6665-2NH	29 1/2 x 29 1/2	1 1/2	27 x 27	34 x 34	4	8	W
R-6665-2OP	R-6665-2OH	30 x 30	1 3/4	27 x 27	34 x 34	4	8	Y
R-6665-2PP	R-6665-2PH	31 1/2 x 31 1/2	1 1/2	29 x 29	37 x 37	4	8	Y
R-6665-2RP	R-6665-2RH	37 1/8 x 37 1/8	1 1/2	34x34	42x42	4	12	W
R-6665-2TP	R-6665-2TH	50 x 50	1 1/2	47 x 47	56 x 56	4	16	Y
Rectangular								
R-6665-3AP	R-6665-3AH	14 x 20	1 1/2	11 x 17	18 x 24	4	6	W
R-6665-3BP	R-6665-3BH	13 1/2 x 25 1/2	1 1/2	11 x 23	18 x 30	4	6	W
R-6665-3CP	R-6665-3CH	19 1/2 x 25 1/2	1 1/2	17 x 23	24 x 30	4	8	W
R-6665-3DP	R-6665-3DH	19 1/2 x 31 1/2	1 1/2	17 x 29	24 x 36	4	8	W
R-6665-3E1P	R-6665-3E1H	20 x 44	1 1/2	17 x 41	24 x 48	4	10	Y
R-6665-3EP	R-6665-3EH	19 3/4 x 37 3/4	1 1/2	17 x 35	24 x 42	4	10	W
R-6665-3FP	R-6665-3FH	22 x 32	1 1/4	19 x 29	26 x 36	4	8	Y
R-6665-3HP	R-6665-3HH	26 x 32	1 1/2	23 x 29	30 x 36	4	8	Y
R-6665-3JP	R-6665-3JH	25 1/2 x 37 1/2	1 1/2	23 x 35	30 x 42	4	10	W
R-6665-3KP	R-6665-3KH	25 3/4 x 49 3/4	1 1/2	23 x 47	30 x 54	4	12	W
R-6665-3NP	R-6665-3NH	31 1/2 x 49 1/2	1 1/2	29 x 47	36 x 54	4	16	W
R-6665-3O1P	R-6665-3O1H	38 x 50	1 1/2	35 x 47	44 1/2 x 56 1/2	4	14	W
R-6665-3OP *	R-6665-3OH *	36 x 60	1 3/8	33 x 57	40 x 64	6	16	Y

* Frame in sections bolted at corners.

R-6668 to R-6669 Series
Pressure-Type Manhole Frame, Solid Lid

Heavy Duty



Illustrating Type L

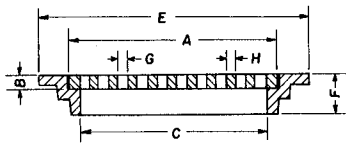
Suitable for low pressure application up to 20 p.s.i.
 Manhole covers of this series are for use on built-up manholes or slab construction in either regular or seal type design.
 Suitable for use on pressure manholes or as water-resistant electrical junction boxes on bridges, etc. Lids are bolted to frames with countersunk stainless steel hex head cap screws and sealed with neoprene gaskets. Concealed pickholes are included for complete water-tight application.
 Units are shipped assembled with gasket glued to frame.

Catalog No. Type L	Catalog No. Type P	Dimensions in inches						No. of Bolts
		A	AA	B	C	E	F	
Square								
R-6668-L1	R-6668-P1	15 3/4 x 15 3/4	17 1/2 x 17 1/2	1 1/2	12 x 12	18 x 18	8	4
R-6668-L3		21 3/4 x 21 3/4	23 1/2 x 23 1/2	1 1/2	18 x 18	24 x 24	8	4
R-6668-L6	R-6668-P6	27 5/8 x 27 5/8	29 1/2 x 29 1/2	1 1/2	24 x 24	30 x 30	8	8
Rectangular								
R-6669-L1		15 3/4 x 21 3/4	17 1/2 x 23 1/2	1 1/2	12 x 18	18 x 24	8	6
R-6669-L10	R-6669-P10	33 3/4 x 51 3/4	35 1/2 x 53 1/2	1 1/2	30 x 48	36 x 54	8	16
R-6669-L3	R-6669-P3	21 3/4 x 27 3/4	23 1/2 x 29 1/2	1 1/2	18 x 24	24 x 30	8	8

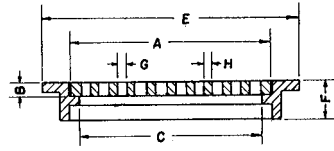
■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-6672 to R-6673 Series Frame, Grate

Heavy Duty



Frame Style Y



Frame Style W



For similar castings with lids, see R-6662-3 Series.

Catalog No.	Dimensions in inches						Frame	
	A	B	C	E	F	G	H	Type
Square								
R-6672-1	11 7/8 x 11 7/8	1 1/8	10 3/4 x 10 3/4	16 x 16	3 1/2	1 1/2 x 1 1/2	5/8	Y
R-6672-A	12 1/4 x 12 1/4	1	11 1/2 x 11 1/2	15 x 15	6	1 1/8 x 10	1	Y
R-6672-B **	13 3/4 x 13 3/4	1 1/2	12 x 12	18 x 18	4	1 x 5 1/2	1	W
R-6672-C	18 x 18	1 1/2	16 x 16	24 x 24	4 1/2	1 x 4 1/4	1	Y
R-6672-D	21 1/2 x 21 1/2	1 1/2	20 x 20	26 x 26	4	1 3/8 x 3 5/8	1	W
R-6672-E	23 1/2 x 23 1/2	1 1/2	22 x 22	28 x 28	4	1 1/2 x 6 3/8	1	W
R-6672-F **	25 3/4 x 25 3/4	1 1/2	24 x 24	30 x 30	4	2 1/4 x 8	1	W
R-6672-G	27 x 27	2	25 x 25	33 1/2 x 33 1/2	4	1 1/2 x 5	1	Y
R-6672-H	27 1/2 x 27 1/2	1 1/2	26 x 26	32 x 32	4	1 x 5	1	W
R-6672-J	30 x 30	1 3/4	28 x 28	34 x 34	4	1 1/2 x 6	1 1/4	Y
R-6672-K **	31 3/4 x 31 3/4	1 1/2	30 x 30	37 x 37	4	1 x 6 3/8	1 1/8	W
R-6672-M *	37 x 37	1 1/2	36 x 36	42 x 42	4	1 3/4 x 3 1/2	1 1/2	W
R-6672-Q **	56 1/2 x 56 1/2	1 1/2	54 x 54	64 x 64	4 1/2	1 1/8 x 12 3/4	1 1/4	Y
Rectangular								
R-6673-A	14 x 20	1 1/2	12 x 18	18 x 24	4	3/4 x 5 1/2	1	W
R-6673-B	13 1/2 x 25 1/2	1 1/2	12 x 24	18 x 30	4	1 x 4 1/2	1	W
R-6673-C	19 1/2 x 25 1/2	1 1/2	18 x 24	24 x 30	4	1 x 6 7/8	1	W
R-6673-D	19 3/4 x 31 3/4	1 1/2	18 x 30	24 x 36	4	2 x 5	1	W
R-6673-E	19 3/4 x 37 3/4	1 1/2	18 x 36	30 x 42	4	2 x 5	1	W
R-6673-J	25 1/2 x 31 1/2	1 1/2	24 x 30	30 x 36	4	1 3/8 x 5	1	W
R-6673-K	25 3/4 x 37 3/4	1 1/2	24 x 36	30 x 42	4	1 3/8 x 5	1	W
R-6673-L *	25 3/4 x 49 3/4	1 1/2	24 x 48	30 x 54	4	1 5/16 x 6 13/16	1	W
R-6673-N *	31 3/4 x 37 3/4	1 1/2	30 x 36	36 x 42	4	1 3/8 x 4 5/8	1	W
R-6673-O *	31 1/2 x 49 1/2	1 1/2	30 x 48	36 x 54	4	1 1/2 x 4 3/4	1	W
R-6673-Q1 *	38 x 50	1 1/2	36 x 48	44 1/2 x 56 1/2	4	1 1/6 x 7 5/8	1	W

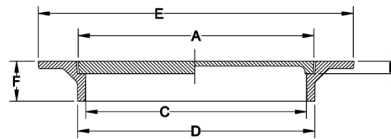
* Grate in two pieces.

** Also available with Type Q grate.

+ Frame in sections bolted at corners.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-6672-1	H	0.4	3.9
R-6672-A	A or C	0.8	4.1
R-6672-B	A or C	0.5	4.6
R-6672-B	A or Q	0.2	4.6
R-6672-C	A or C	0.8	6.0
R-6672-D	A or C	1.1	7.3
R-6672-E	A or C	1.8	7.9
R-6672-F	A or C	2.7	8.6
R-6672-F	A or Q	1.0	8.6
R-6672-G	A or C	2.2	9.0
R-6672-H	A or C	2.1	9.2
R-6672-J	A or C	2.4	10.0
R-6672-K	A or C	2.5	10.6
R-6672-K	A or Q	2.1	10.6
R-6672-M	A or C	3.0	12.3
R-6672-Q	A or C	9.3	18.8
R-6673-A	A	0.6	5.7
R-6673-B	A	0.9	6.5
R-6673-C	A	1.2	7.5
R-6673-D	A	2.1	8.6
R-6673-E	A	2.5	9.6
R-6673-J	A	2.6	9.5
R-6673-K	A	2.9	10.6
R-6673-L	A	3.7	12.6
R-6673-N	A	3.3	11.6
R-6673-O	A	4.9	13.5
R-6673-Q1	A	5.0	14.7

R-6679 Series Electrical Handhole Frame, Lid

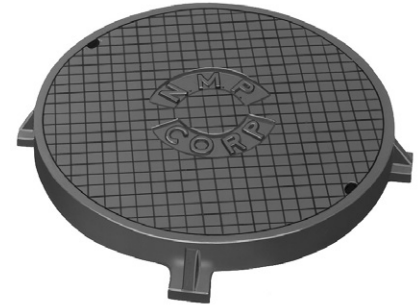
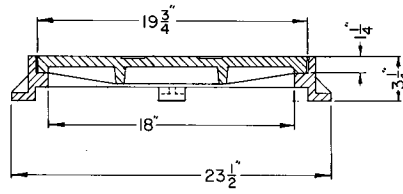


Illustrating R-6679-B1

Catalog No.	Dimensions in inches						Duty
	A	B	C	D	E	F	
R-6679-A1	23 1/2	1 1/4	22	23 1/2	31 1/2	4	Light
R-6679-B1	23 1/2	1 1/4	22	23 1/2	31 1/2	4	Heavy

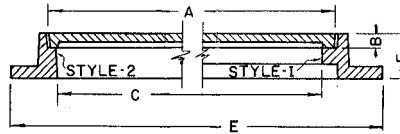
R-6680-A
Manhole Frame, Solid Lid

Heavy Duty



R-6681 to R-6685 Series
Square Pull Box Frame, Lid

Light Duty



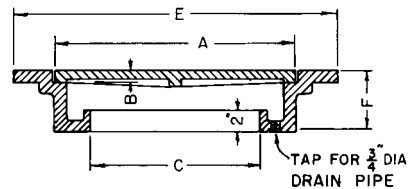
Illustrating R-6683-1

Light weight design for pull boxes, junction or splice boxes, in areas not subject to traffic. Ideal for street lighting or traffic marker installations.

Catalog No.	Dimensions in inches					Frame Style
	A	B	C	E	F	
Square						
R-6681-2	17 5/8 x 17 5/8	1/2	16 7/8 x 16 7/8	22 1/8 x 22 1/8	3	1
R-6683-1	18 x 18	1	17 3/8 x 17 3/8	22 x 22	3	1
R-6683-2	23 3/4 x 23 3/4	15/16	21 7/8 x 21 7/8	30 x 30	3	1
Rectangular						
R-6684-2	10 3/4 x 18 3/4	1/2	10 x 18	16 x 24	3	1
R-6685-1	17 7/8 x 24	1/2	17 x 22 1/2	24 1/2 x 30	3	2
R-6685-5	24 x 36	1	23 x 34 3/4	29 x 41	3 1/8	2

R-6685 Series
Manhole Frame, Solid Lid with Inner Trough

Light Duty



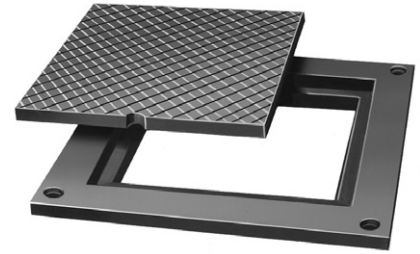
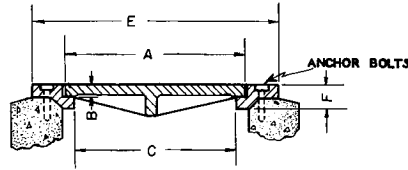
Illustrating R-6685-D with lid removed

Inner trough catches surface seepage which is drained off through line from tapped hole. Standard tap size is 3/4".

Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-6685-C	23 1/2 x 23 1/2	3/4	18 x 18	28 1/2 x 28 1/2	4
R-6685-D	30 x 30	3/4	24 x 24	34 x 34	4

R-6686 Series
Electrical Pull Box Frame, Solid Lid

Heavy Duty

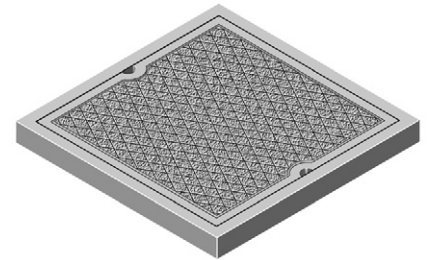
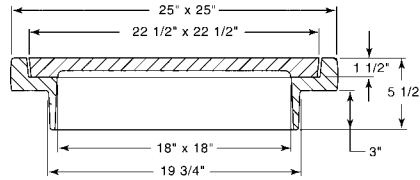


For security cover can be bolted to frame.

Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-6686	17 3/4 x 17 3/4	1	15 3/4 x 15 3/4	24 x 24	2
R-6686-A	12 x 18	1	10 x 16	16 x 22	2

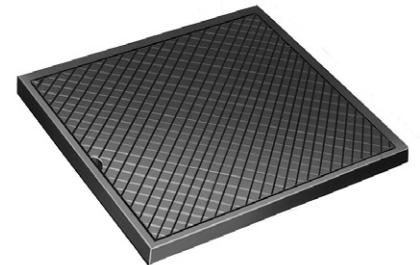
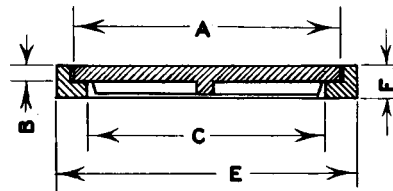
R-6686-D
Conduit Junction Well Frame, Solid Lid

Heavy Duty



R-6687 Series
Conduit Box Frame, Solid Lid

Light Duty

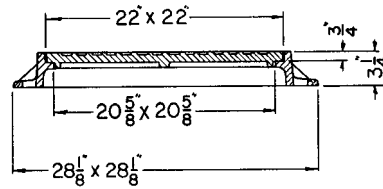


Lids can be furnished bolted at the corners.

Catalog No.	Dimensions in inches				
	A	B	C	E	F
R-6687-A	10 x 10	1	8 x 8	11 1/4 x 11 1/4	1 1/2
R-6687-A1	12 x 18	1/2	10 x 16	13 1/2 x 19 1/2	1 1/4
R-6687-B	13 7/8 x 15 7/8	1/2	12 x 14	15 x 17	1
R-6687-C	14 x 28	1	12 x 26	15 1/4 x 19 1/4	1 1/2
R-6687-D	15 7/8 x 15 7/8	1 1/8	14 1/2 x 14 1/2	17 1/8 x 17 1/8	1 3/4
R-6687-E	20 3/8 x 20 3/8	1	18 3/4 x 18 3/4	21 1/4 x 21 1/4	1 1/2
R-6687-F	23 x 29	1 1/2	20 x 26	24 x 30	2 1/8

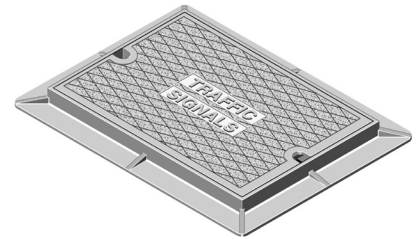
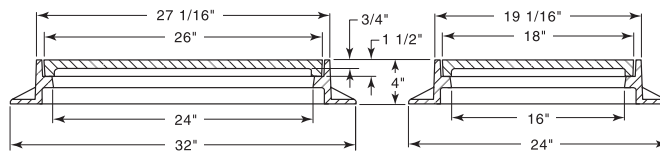
R-6688-2
Handhole Frame, Lid

Light Duty



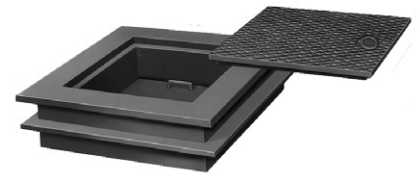
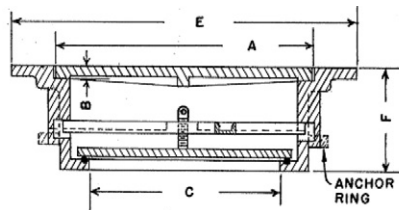
R-6689
Electrical Pull Box Frame, Solid Lid

Heavy Duty



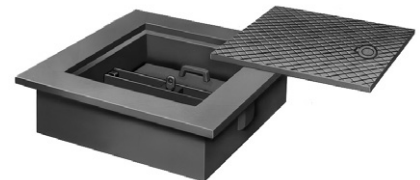
R-6690 Series
Square Manhole Frame, Top Lid, Inner Lid

Light Duty



Type A assembly with optional anchor ring.

For use as frost- or water-resistant assembly on pits, tanks or reservoirs where hydrostatic head is not involved. Inner lid provides protection against surface water inflow. Either Type A or Type B furnished with anchor ring only when specified.



Type B assembly with lock bar.

Dimensions in inches

Catalog No.	Catalog No.	A	B	C	E	F
Type A	Type B					
R-6690-BA	R-6690-BB	24 x 24	3/4	19 x 19	28 1/2 x 28 1/2	7
R-6690-FA	R-6690-FB	32 x 32	3/4	27 x 27	37 x 37	8

R-7500 Series Cast Iron Stop Plank Grooves

Sewage Disposal Castings

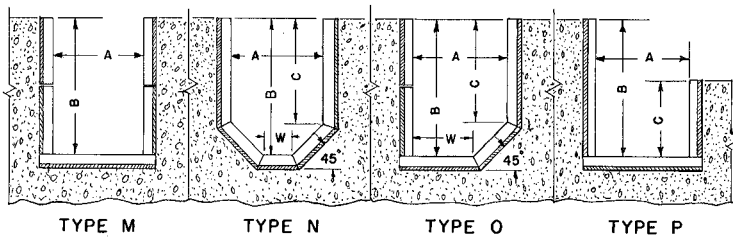
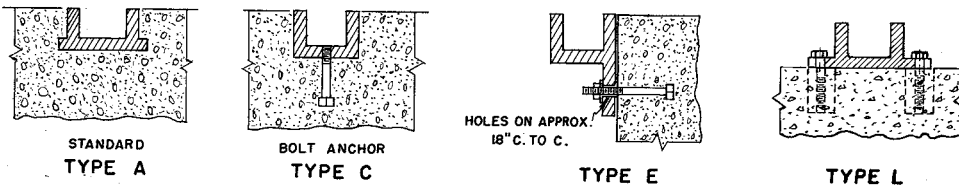
Groove supplied in standard three-foot maximum lengths, with slot dimensions as shown in table. Fractional sections may be obtained to give any overall length required.

Specify when ordering – send details as required:

- Catalog number
- Groove Type
- "Y" and "Z" dimensions
- "A", "B" and "C" dimensions

Catalog No.	Y	Z
R-7500-22	2	2
R-7500-33	3	3
R-7500-44	4	4
R-7500-66	6	6
R-7500-86 *	8	6

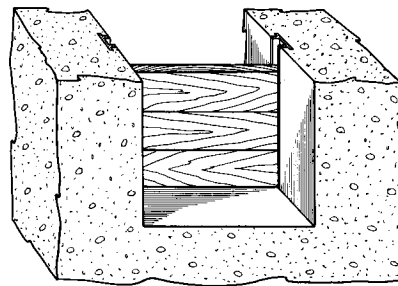
* Not available in Type E.



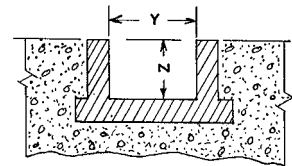
TYPICAL VARIATIONS IN STOP LOG CHANNEL CONST.



Type A or C, Type E, Type L



Typical Channel



SECTION

NOTE: Most "Y" and "Z" dimensions can be furnished interchangeably and are not limited to dimensions opposite each other.

R-7501 Series Grooves and Stop Plates

Grooves furnished in cast iron, aluminum, and as indicated, extruded aluminum and fibre reinforced polyester. Plates are available in plain steel, galvanized steel, fabricated aluminum or fibre reinforced polyester.

Specify when ordering:

- Catalog Number
- Type and material of groove required
- Material of plate required
- Plate requirements – fabricated or slot type handles
- Number of assemblies required, or groove only
- Dimensions and drawings as required

Dimensions in inches

Catalog No.	A *	B *	Y (CHANNEL WIDTH)	T (PLATE WIDTH)
Square Type V				
R-7501-AV **			1/4	1/8
R-7501-BV			3/8	1/4
R-7501-CV			1/2	3/8
R-7501-DV			5/8	1/2
R-7501-EV			3/4	5/8
R-7501-FV			7/8	3/4

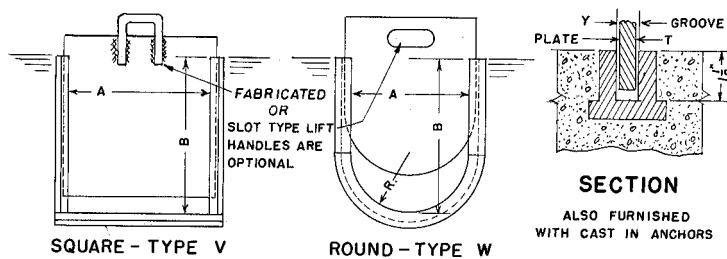
* Any size requested

** Extruded aluminum only

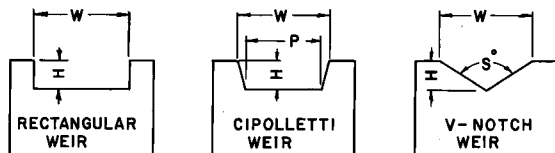
Dimensions in inches

Catalog No.	A *	B *	Y (CHANNEL WIDTH)	T (PLATE WIDTH)
Round Type W - Aluminum Only *				
R-7501-CW	24	12	1/2	3/8
R-7501-DW	30	15	1/2	3/8
R-7501-EW	36	18	5/8	1/2
R-7501-FW	48	24	5/8	1/2

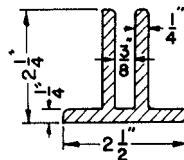
* Specify dimension "B"



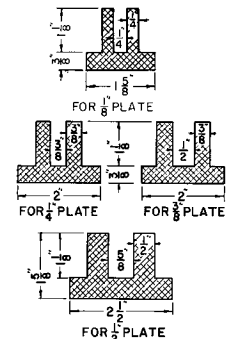
SHEAR GATE & STOP PLATES WITH C. I. GROOVES



Rectangular, cipolletti, or V-notch weirs are also available in plain steel, galvanized steel, aluminum or fibre reinforced polyester. Send complete dimensional information.



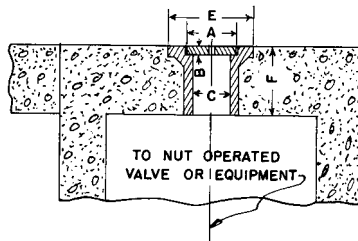
Fibre Reinforced Polyester Groove



Aluminum Extruded Grooves

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-7506 Series Floor Box Frames and Lids



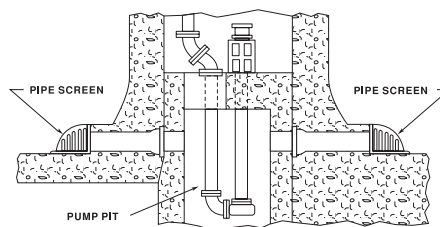
Floor boxes placed in slab provide access to extension stems which operate gate valves, plug valves, or sluice gates at a lower level.

Furnished with removable lid that can be drilled and tapped for pipe extension (specify if required). Made in various lengths to fit slab thickness (specify F dimension).

Dimensions in inches					
Catalog No.	A	B	C	E	F *
R-7506-A	5 1/2	3/8	4	7	18 max
R-7506-B	6	1/2	5	8	24 max
R-7506-C	7 1/2	1/2	6	9	20 max
R-7506-D	9 1/2	1/2	8	12	17 max
R-7506-E	11 1/2	1/2	10	13	16 max
R-7506-F	13 1/2	1/2	12	15	24 max

* Manufactured to dimension required. Specify slab thickness when ordering.

R-7512 Series Cast Iron Pipe Screen



Typical Use in Subway Construction

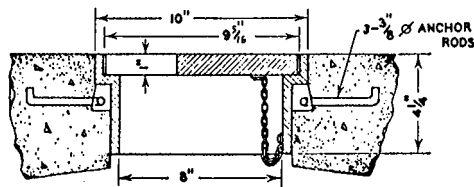


For maximum free drainage area with openings sized to prevent clogging.
 Six 3/4" holes for anchor bolts.

Catalog No.	Height	Dimensions in inches			for Pipe Size
		Length	Openings	Width	
R-7512-A1	13	18	1	16	10 inch
R-7512-B1	13	18	1	18	12 inch

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

R-7514
Valve Handhole Frame and Lid

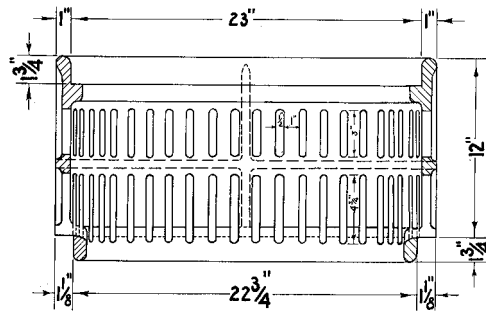


Anchor rods not furnished



Used as access covers to valves for steam-, air-, or waterlines in railway terminals, subway or industrial installations. Lids furnished standard without lettering. Also available are lids marked "S", "A", "E" or "W". Standard units have lid chained to frame to prevent loss. Note large slot in cover to aid in easy removal.

R-7516
Round Ballast Screen

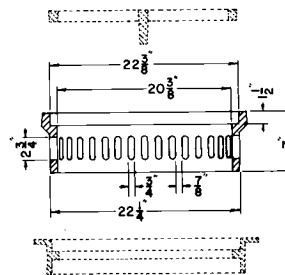


Used where positive drainage must be assured



Designed to fit R-2504 standard catch basin frame with grate fitting top recess of ballast screen. Also compatible with R-1713 frames and lids. Can be double or triple stacked as needed.

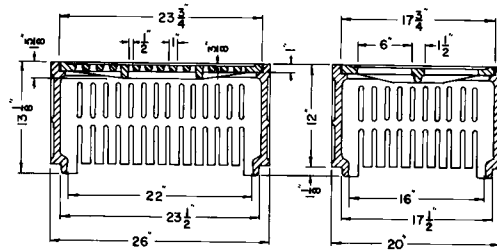
R-7516-C
Round Ballast Screen



Designed to fit in lid opening of R-5901-E slab type frame. Frame is designed to fit 24" corrugated metal pipe. When specified, top cover grate and frame can also be furnished. Can be double or triple stacked as needed.

■ Note: When specifying/ordering grates, refer to "Choosing the Proper Inlet Grate" on pages 117-118.
 For a complete listing of FREE OPEN AREAS and WEIR PERIMETERS of all NEENAH grates, refer to pages 306-311.

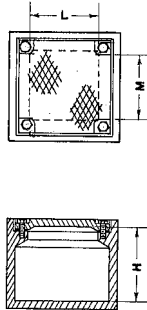
R-7516-D
Rectangular Ballast Screen



Can be double or triple stacked as needed.

R-7517 Series
Electrical Junction Boxes

Light Duty



Solid box types for bridge and street lighting. Suitable for underground electrical work. Standard boxes furnished with neoprene gaskets and stainless steel cap screws. Cored or tapped holes for conduit not furnished as standard, available if specified at additional cost – send details showing sizes and locations. Units are shipped assembled.

Catalog No.	Dimensions in inches		
	H	L	M
R-7517-B	8	8	8
R-7517-DA	4 1/2	10	6
R-7517-DB	10	12	12
R-7517-DC	10	12	18
R-7517-DE	17 1/8	14 3/4	14 3/4

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FREE OPEN AREAS OF NEENAH GRATES

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R-1792-AG	G	0.2	2.7	R-2031	E	1.1	6.0	R-2298	F	1.2	6.7	R-2453	K	0.8	6.2
R-1792-BG	G	0.3	3.5	R-2040	D	0.9	6.0	R-2299	B	1.2	6.7	R-2461-A	A	1.1	5.8
R-1792-CG	G	0.5	4.3	R-2040	C	1.1	6.0	R-2299	F	1.2	6.7	R-2461-A	B	1.2	5.8
R-1792-DG	G	0.7	4.8	R-2040	E	1.1	6.0	R-2300	G	1.2	6.8	R-2461-A	C	1.1	5.8
R-1792-EG	G	1.0	5.8	R-2040	F	0.7	6.0	R-2300	C	1.6	6.8	R-2464	D	1.0	6.0
R-1792-FG	G	1.7	6.6	R-2050	D	0.9	6.0	R-2370	B	1.2	6.8	R-2466-A	B	1.2	5.8
R-1792-GG	G	2.0	7.4	R-2050	C	1.1	6.0	R-2370	F	1.3	6.8	R-2466-A	E	1.1	5.8
R-1792-HG	G	2.7	9.0	R-2050	E	1.1	6.0	R-2370	A	1.1	6.8	R-2467	C	1.1	5.9
R-1792-JG	G	3.7	10.5	R-2050	F	0.7	6.0	R-2370	G	1.2	6.8	R-2467	D	0.9	5.9
R-1792-KG	G	4.8	12.1	R-2060	A	1.1	6.0	R-2371	G	1.2	6.7	R-2471	D	0.9	5.9
R-1878-A1G	A or C	0.5	4.6	R-2060	B	1.2	6.0	R-2390	G	1.4	6.7	R-2471-B	D	0.9	5.9
R-1878-A2G	A or C	0.8	6.0	R-2060	C	1.1	6.0	R-2390	C	1.5	6.7	R-2474	A	1.1	5.7
R-1878-A3G	A or C	1.0	6.7	R-2060	E	1.1	6.0	R-2392	C	1.4	6.7	R-2474	G	1.2	5.7
R-1878-A4G	A or C	1.1	7.3	R-2070	D	0.9	6.0	R-2392	G	1.4	6.7	R-2475	A	1.1	5.8
R-1878-A5G	A or C	1.8	7.8	R-2070	B	1.2	6.0	R-2394	G	1.2	6.8	R-2481	A	1.1	5.7
R-1878-A6G	A or C	2.7	8.6	R-2070	E	1.1	6.0	R-2395-1	G	1.6	6.6	R-2494	G	0.8	5.1
R-1878-A7G	A or C	2.1	9.2	R-2077	B	1.2	6.0	R-2398	G	1.4	6.7	R-2496	G	0.6	4.7
R-1878-A8G	A or C	2.3	9.8	R-2077	C	1.1	6.0	R-2401	G	1.4	6.8	R-2498	G	0.4	4.1
R-1878-A9G	A or C	2.5	10.6	R-2077	D	1.0	6.0	R-2401	C	1.6	6.8	R-2498-A	G	0.4	4.1
R-1878-A10G	A or C	3.0	12.3	R-2077	E	1.1	6.0	R-2401-A	G	1.2	6.5	R-2498-B	G	0.4	4.1
R-1878-B1G	A	0.6	5.7	R-2077	F	0.6	6.0	R-2401-B	E	0.9	6.2	R-2499	G	0.2	3.1
R-1878-B2G	A	0.9	6.5	R-2080	D	1.0	5.9	R-2402	G	0.7	6.5	R-2500	H	0.9	6.2
R-1878-B3G	A	1.2	7.5	R-2080	C	1.2	5.9	R-2402	C	1.1	6.5	R-2501	A	1.1	6.8
R-1878-B4G	A	2.1	8.5	R-2090	A	1.1	5.0	R-2404	G	1.1	6.7	R-2501	C	1.2	6.8
R-1878-B5G	A	2.5	9.6	R-2090	B	1.2	5.8	R-2405	A	1.0	6.5	R-2501	F	1.4	6.8
R-1878-B6G	C	2.6	9.5	R-2090	C	1.2	5.8	R-2405	C	1.6	6.5	R-2501	G	1.1	6.8
R-1878-B7G	A	2.6	10.5	R-2090	D	1.0	5.8	R-2410	K	0.9	6.1	R-2502	C	1.2	6.0
R-1878-B8G	A	3.7	12.6	R-2090	E	1.1	5.8	R-2411-A	G	0.7	6.6	R-2502	D	0.9	6.0
R-1878-B9G	C	3.3	11.6	R-2090	G	1.0	5.8	R-2412-A	G	1.0	6.2	R-2502	E	1.5	6.0
R-1878-B10G	C	4.9	13.5	R-2100	A	1.1	5.8	R-2412-A1	E	1.0	6.3	R-2502	G	1.3	6.0
R-1878-B11G	A	5.0	14.7	R-2100	C	1.1	5.8	R-2412-A2	G	0.7	6.5	R-2504	G	1.3	6.0
R-1879-A1G	A or C	0.4	4.6	R-2100	E	1.1	5.8	R-2412-A3	C	1.1	6.3	R-2504	D	0.9	6.0
R-1879-A2G	A or C	0.8	6.0	R-2100	F	0.6	5.8	R-2412-A3	E	1.0	6.3	R-2504	C	1.2	6.0
R-1879-A3G	A or C	1.2	6.7	R-2110	A	1.1	5.8	R-2412-A4	C	1.0	6.5	R-2510	C	1.3	5.8
R-1879-A4G	A or C	1.4	7.3	R-2110	E	1.1	5.8	R-2412-A5	K	0.8	6.3	R-2510-1	G	0.4	4.1
R-1879-A5G	A or C	1.9	7.8	R-2112	A	1.1	5.8	R-2412-A6	G	1.1	6.3	R-2510-2	G	1.6	7.2
R-1879-A6G	A or C	2.0	8.6	R-2112	B	1.2	5.8	R-2414	D	1.0	6.1	R-2510-A	Beehive	1.1	5.8
R-1879-A7G	A or C	1.7	9.2	R-2112	C	1.1	5.8	R-2418	G	1.0	6.2	R-2525-A	E	0.2	3.1
R-1879-A8G	A or C	2.2	9.8	R-2112	E	1.1	5.8	R-2418-A	K	1.0	6.3	R-2525-C	G	0.4	4.1
R-1879-A9G	A or C	2.8	10.6	R-2112	F	0.6	5.8	R-2420-A	A	1.0	6.4	R-2525-D	G	0.4	4.1
R-1879-A10G	A or C	3.7	12.3	R-2112	G	0.6	5.8	R-2420-B	G	1.1	5.9	R-2525-E	E	0.6	4.7
R-1879-B1G	A	0.6	5.7	R-2120	A	1.1	5.8	R-2421-A	A	1.0	6.1	R-2525-F	G	0.8	5.4
R-1879-B2G	C	0.9	6.5	R-2120	C	1.1	5.8	R-2422-A	K	1.0	6.2	R-2525-G	G	0.8	5.1
R-1879-B3G	C	1.0	7.5	R-2120	F	0.6	5.8	R-2422-C	G	1.0	6.2	R-2533	A	1.1	5.8
R-1879-B4G	A	1.4	8.5	R-2120	G	1.1	5.8	R-2423	G	1.0	6.2	R-2533	C	1.0	5.8
R-1879-B5G	A	1.9	9.6	R-2250	G	3.0	9.9	R-2424-A	G	0.9	5.9	R-2533	B	1.2	5.8
R-1879-B6G	A	2.4	9.5	R-2251	G	2.9	9.4	R-2427	D	0.9	6.0	R-2534	C	0.9	6.0
R-1879-B7G	A	3.0	10.6	R-2255	C	1.4	8.4	R-2427-A	G	1.0	6.2	R-2535	C	1.1	5.8
R-1879-B8G	A	3.2	12.6	R-2255	G	1.9	8.4	R-2428	D	1.0	6.0	R-2535-A	C	1.1	5.8
R-1879-B9G	A	3.2	11.6	R-2270	G	1.9	8.4	R-2428	C	1.1	6.0	R-2540	D	1.1	5.9
R-1879-B10G	C	4.2	13.5	R-2275	G	1.9	8.4	R-2428	F	0.6	6.0	R-2540-A	D	1.1	5.9
R-2014	C	1.1	6.0	R-2290	K	1.2	7.6	R-2429	D	1.0	5.9	R-2545	K	0.4	4.7
R-2014	E	1.3	6.0	R-2290-A	K	1.2	7.6	R-2429	E	1.3	5.9	R-2546	K	0.4	3.5
R-2015	D	0.9	6.0	R-2290-B	K	1.0	7.5	R-2429	G	1.2	5.9	R-2548	V	0.8	6.7
R-2015	C	1.1	6.0	R-2293	G	1.6	7.2	R-2435	G	0.9	5.8	R-2549	D	0.9	6.0
R-2015	G	1.2	6.0	R-2296	B	1.2	6.7	R-2437	D	1.0	5.9	R-2552	K	0.8	6.2
R-2030	D	1.1	6.0	R-2296	F	1.2	6.7	R-2437	E	1.3	5.9	R-2553	G	1.1	6.3
R-2030	C	1.1	6.0	R-2297	B	1.2	6.7	R-2437-B	G	0.9	5.8	R-2554	G	1.1	6.3
R-2031	D	1.1	6.0	R-2297	F	1.2	6.7	R-2438	D	1.0	5.9	R-2555	G	1.1	6.3
				R-2298	B	1.2	6.7	R-2438	E	1.3	5.9	R-2556	G	1.5	6.7

• NOTE: On catalog #'s R-4990-AA thru R-4999-L9, SQ.FT. OPEN and WEIR PERIMETER are per lineal foot.
 Type K indicates "Special" grate style and is not among standard types illustrated.
 ** Roll-type or mountable curb

FREE OPEN AREAS OF NEENAH GRATES (Continued)

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-2556	F	1.4	6.7	R-2580-A	G	1.9	8.4	R-3070	L	0.8	4.5	R-3228-J	D	2.2	6.0
R-2556-A	F	1.4	6.7	R-2580-C	G	3.0	9.9	R-3070	R	0.9	4.5	R-3228-K	C	1.9	6.0
R-2556-A	G	1.5	6.7	R-2586-A	E	0.4	3.8	R-3070	V	1.3	4.5	R-3229-A	C	1.5	8.0
R-2557	G	2.0	8.4	R-2586-B	G	0.5	4.2	R-3075	R	0.9	4.5	R-3229-A	D	1.6	8.0
R-2557-A	G	2.0	8.4	R-2586-C	E	0.6	4.7	R-3075-L	L	0.8	4.5	R-3229-A	R	1.6	8.0
R-2557-A4	G	2.0	8.4	R-2586-D	G	0.8	5.2	R-3075-V	V	1.3	4.5	R-3229-L	L	1.5	6.0
R-2558	G	2.0	8.4	R-2586-E	G	0.8	5.1	R-3076	L	1.4	7.9	R-3233	A	2.8	6.4
R-2559	F	1.4	6.7	R-2586-F	G	0.8	5.4	R-3076	V	1.5	7.9	R-3233-D	A	2.8	6.4
R-2559	G	1.4	6.7	R-2586-G	G	1.0	5.8	R-3077	L	2.8	12.9	R-3234-B1	A	1.1	5.3
R-2560-A	Beehive	0.3	3.1	R-2586-H	E	1.3	6.0	R-3077	V	3.0	12.9	R-3234-B1	R	1.4	5.3
R-2560-B	Beehive	0.2	4.1	R-2586-K	G	1.3	6.3	R-3077-L	L	1.4	7.9	R-3235	A	0.9	4.5
R-2560-C	Beehive	0.7	4.7	R-2586-M	G	1.8	7.0	R-3077-L	V	1.5	7.9	R-3235	C	0.7	4.5
R-2560-C1	Beehive	0.7	5.8	R-2586-N	G	1.7	7.9	R-3077-R	L	1.4	7.9	R-3235	L	0.8	4.5
R-2560-C2	Beehive	0.7	5.8	R-2586-O	G	1.9	8.4	R-3077-R	V	1.5	7.9	R-3235	R	0.9	4.5
R-2560-D	Beehive	1.0	5.1	R-2588-A	G	1.1	5.8	R-3078	L	1.4	5.0	R-3236	C	1.2	4.9
R-2560-D1	Beehive	1.2	5.8	R-2588-B	G	1.0	6.5	R-3078	V	1.5	5.0	R-3236-1	C	1.2	4.9
R-2560-D2	Beehive	1.2	5.8	R-2588-C	G	1.9	7.6	R-3079	L	1.4	5.5	R-3236-A	C	1.2	4.9
R-2560-D3	Beehive	1.2	5.8	R-2595-A	D	1.2	6.0	R-3079	V	1.5	5.5	R-3237	C	1.3	4.9
R-2560-D5	Beehive	1.0	5.1	R-2650	G	1.1	6.7	R-3157-1	A	1.1	5.2	R-3237-1	C	1.3	4.9
R-2560-D6	Beehive	1.0	5.1	R-2668	C	0.9	6.2	R-3157-2	L	1.6	5.2	R-3237-A	C	1.3	4.9
R-2560-D7	Beehive	1.3	5.3	R-2680	G	1.1	6.2	R-3157-A	K	2.1	6.0	R-3237-B	C	1.3	4.9
R-2560-D8	Beehive	1.3	5.3	R-2682	A	1.5	7.3	R-3157-A	L	1.2	6.0	R-3238	C	1.3	7.4
R-2560-E	Beehive	1.2	6.0	R-2750	Q	1.8	8.3	R-3157-AL	L	2.3	6.0	R-3246	C	1.6	5.8
R-2560-EA	Beehive	1.2	6.7					R-3159-A	S	1.3	4.9	R-3246	L	2.1	5.8
R-2560-EB	Beehive	1.8	6.7	R-3010	S	1.0	4.6	R-3161	S	1.3	4.7	R-3246	V	2.4	5.8
R-2560-E1	Beehive	1.4	6.7	R-3010	A	1.0	4.6	R-3165	A	1.4	4.5	R-3246-A	C	2.2	7.0
R-2560-E2	Beehive	2.0	6.7	R-3010	L	0.9	4.6	R-3165	V	1.2	4.5	R-3246-A	R	2.7	7.0
R-2560-E5	Beehive	1.2	6.7	R-3010	R	1.1	4.6	R-3169	B	0.7	3.5	R-3246-AL	L	3.1	7.0
R-2560-E6	Beehive	1.8	6.7	R-3010-L	L	0.9	4.6	R-3169	P	0.2	3.5	R-3246-AL	R	2.7	7.0
R-2560-E7	Beehive	1.2	6.7	R-3015	L	0.9	4.6	R-3169	S	0.5	3.5	R-3246-AM	R	1.9	5.8
R-2560-E8	Beehive	1.8	6.7	R-3015	R	1.1	4.6	R-3170	B	0.7	3.5	R-3246-AM	L	3.1	7.0
R-2560-E9	Beehive	1.2	6.7	R-3015	S	1.0	4.6	R-3188	C	0.5	8.6	R-3246-CC	C	1.8	5.8
R-2560-E10	Beehive	1.8	6.7	R-3015	L	0.9	4.6	R-3191	K	3.2	6.2	R-3246-CC	R	1.9	5.8
R-2560-G	Beehive	1.5	8.4	R-3015	A	1.0	4.6	R-3192	K	4.4	7.8	R-3246-CL	L	1.6	5.8
R-2561	Beehive	2.0	6.7	R-3030	A	1.0	4.6	R-3193	K	5.6	8.6	R-3246-CL	C	2.1	5.8
R-2561-A	Beehive	1.2	6.7	R-3030	R	1.1	4.6	R-3203-A	H	1.0	6.6	R-3246-E	C	1.6	5.8
R-2563	Beehive	1.2	5.8	R-3030	L	0.9	4.6	R-3203-B	H	1.0	6.6	R-3247-2D	R	3.8	8.4
R-2564	Beehive	1.0	5.8	R-3030	S	1.0	4.6	R-3203-C	H	1.0	6.6	R-3247-2L	L	4.6	8.4
R-2565-A	G	0.8	5.5	R-3031-B	S	0.8	4.8	R-3205	K	0.9	6.5	R-3247-2Q	Q	1.8	8.4
R-2565-C	G	1.2	6.0	R-3032-B	S	0.8	4.8	R-3205	P	0.3	6.5	R-3249-F	S	1.1	4.7
R-2565-E	G	1.8	7.1	R-3034-B	S	1.1	4.8	R-3210-A	A	1.5	8.0	R-3250-A	K	1.5	5.5
R-2565-F	G	1.8	7.1	R-3035-A	S	1.1	4.8	R-3210-A	C	1.5	8.0	R-3250-1	K	1.5	5.5
R-2565-G	G	1.6	7.1	R-3036-B	S	1.1	7.4	R-3210-A	R	1.6	8.0	R-3250-B	R	1.4	5.8
R-2565-H	G	1.9	7.6	R-3038-A	S	1.5	4.8	R-3210-ALM	C	1.5	8.0	R-3250-C	R	1.4	5.8
R-2565-J	G	2.4	8.5	R-3039-A	S	1.5	5.0	R-3210-L	L	1.5	8.0	R-3250-BL	L	1.0	5.8
R-2569	Q	0.6	5.3	R-3065	R	0.9	4.5	R-3210-LLM	L	1.4	8.0	R-3250-BSP	D	1.4	7.6
R-2570	G	0.8	5.4	R-3065	A	0.9	4.5	R-3210-Q	Q	0.8	8.0	R-3250-BSP	L	1.0	7.6
R-2571-A	F	0.9	5.8	R-3065	C	0.7	4.5	R-3220	C	1.5	8.0				
R-2571-B	F	1.1	5.8	R-3065-L	L	0.8	4.5	R-3220	R	1.6	8.0	R-3250-CL	L	1.0	5.8
R-2571-C	F	0.9	5.8	R-3065-V	V	1.3	4.5	R-3220-L	L	1.5	6.0	R-3250-BV	V	1.3	7.1
R-2571-D	F	0.7	6.0	R-3066	R	1.4	5.3	R-3222-C	C	1.4	5.6	R-3250-CV	V	1.3	5.8
R-2571-E	F	1.2	6.8	R-3067	C	1.6	5.8	R-3222-LA	L	1.0	5.6	R-3250-DV	V	1.3	5.8
R-2572	F	1.3	6.7	R-3067	L	2.1	5.8	R-3222-1A	L	1.0	7.6	R-3250-DVSP	V	1.3	5.8
R-2573-Series	F	1.3	6.7	R-3067	R	2.0	5.8	R-3222-1ALM	V	1.5	8.0	R-3250-EV	V	1.3	7.6
R-2573-Series	C	1.6	6.7	R-3067-C	C	2.1	8.8	R-3227	D	2.3	8.5	R-3250-EVSP	V	1.3	7.6
R-2577-Series	B	1.0	6.7	R-3067-C	L	2.1	8.8	R-3227-C	C	1.9	8.5	R-3251	C	1.0	6.3
R-2577-Series	C	1.6	6.7	R-3067-L	L	2.1	5.8	R-3227-D	R	2.3	8.5	R-3252-A	V	1.3	5.8
R-2578	C	1.0	6.0	R-3067-V	V	2.4	5.8	R-3228-BD	R	2.3	6.0	R-3260-A	A	3.2	8.0
R-2579	B	1.3	5.8	R-3067-VB	V	2.7	5.8	R-3228-G	D	2.2	6.0	R-3260-A	L	3.0	8.0
R-2580-A1	C	1.1	8.4	R-3070	A	0.9	4.5	R-3228-H	C	1.9	6.0	R-3261-A	C	1.1	5.5

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 ** Roll-type or mountable curb

FREE OPEN AREAS OF NEENAH GRATES (Continued)

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3266	V	1.8	7.3	R-3339	C	1.6	7.8	R-3423	B	1.6	9.9	R-3492-BG	G	2.6	9.9
R-3270	A	0.9	4.4	R-3339-1	C	1.4	7.8	R-3425-A	K	2.1	9.4	R-3492-CG	G	2.6	9.9
R-3273-A	C	1.2	4.7	R-3339-A	A or C	1.8	8.5	R-3425-A	L	2.3	9.4	R-3493-C	G	0.6	6.2
R-3273-A	S	1.0	4.7	R-3340-B	C	1.3	6.8	R-3425-B	K	2.1	9.4	R-3498-K2GS	A or C	1.5	8.6
R-3274	C	1.2	4.9	R-3340-D	C	1.2	7.5	R-3425-B	L	2.3	9.4	R-3498-P2GS	A or C	2.1	10.5
R-3274	S	1.3	4.9	R-3341	K	0.3	3.2	R-3429-A	A or C	1.0	6.0	R-3498-R2GS	A or C	3.0	12.8
R-3274-A	C	1.4	4.9	R-3342	K	0.5	4.4	R-3430	A or C	0.9	6.6	R-3498-R3GS	A	6.0	19.0
R-3274-A	S	1.3	4.9	R-3344	K	1.1	6.2	R-3433	A or C	1.5	8.0	R-3501-D2A	C**	1.0	3.4
R-3274-B	C	1.4	4.9	R-3345	K	1.1	6.8	R-3433	L	1.6	7.9	R-3501-E2	C**	1.4	4.2
R-3274-B	S	1.3	4.9	R-3346	C	1.4	8.9	R-3437	A or C	3.3	12.0	R-3501-HL	D**	3.3	5.8
R-3275	A	1.0	4.6	R-3347	K	1.3	7.4	R-3438-A	A or C	7.0	16.6	R-3501-H4	C**	2.8	6.8
R-3277-A	C	1.2	4.6	R-3347-A	K	2.3	10.4	R-3448-B	A	1.1	6.8	R-3501-L1A	C**	1.2	4.4
R-3277-A	R	1.2	4.6	R-3348	A	1.9	8.0	R-3448-C	C	0.9	6.8	R-3501-L2	V**	1.3	3.7
R-3277-A	L	0.7	4.6	R-3349-A	K	1.8	7.7	R-3448-D	S	1.2	6.8	R-3501-M	A**	2.3	5.6
R-3278-A	C	1.2	4.6	R-3350	K	2.2	9.3	R-3449	A	0.9	6.8	R-3501-N	A**	1.6	4.3
R-3278-A	R	1.2	4.6	R-3351	C	2.7	9.3	R-3451	C	1.5	7.3	R-3501-P	C**	1.5	4.3
R-3278-AL	L	0.7	4.6	R-3356-A	C	1.5	7.6	R-3451-B	C	1.7	7.8	R-3501-PR	L**	1.6	4.7
R-3278-AL	R	1.2	4.6	R-3357-A	C	2.0	8.7	R-3454	A	4.1	13.2	R-3501-R	C**	2.6	5.5
R-3280-A	C	1.8	5.5	R-3359	K	1.1	7.3	R-3454-B	D	2.5	9.9	R-3501-TB	L**	3.1	5.7
R-3280-B	C	1.2	4.5	R-3360-A	C	1.6	7.8	R-3454-BL	L	3.1	7.0	R-3501-TL	L**	1.4	4.6
R-3281-A	C	1.0	4.3	R-3360-A	D	1.7	7.8	R-3454-C	C	2.9	13.2	R-3501-TR	L**	1.4	4.6
R-3281-AL	L	0.5	4.3	R-3361	C	3.2	12.7	R-3455-A	A	2.6	9.8	R-3501-U	L**	2.4	5.0
R-3286-BV	V	0.7	4.4	R-3361	K	3.4	12.7	R-3455-C	A	2.6	10.0	R-3501-U1	L**	2.4	5.0
R-3287-5	V	3.2	11.3	R-3362	C	2.3	10.3	R-3457-C2	A	6.0	14.0	R-3502-A	A**	1.4	4.1
R-3287-10V	V	2.1	5.5	R-3362-1	C	2.3	7.0	R-3460-A	A	0.8	6.0	R-3502-B	A**	1.4	4.2
R-3287-15	V	3.2	7.5	R-3362-1	L	2.9	7.0	R-3460-A	C	1.1	6.0	R-3502-D2	C**	1.9	4.2
R-3287-SB10	S	1.5	5.5	R-3362-L	L	2.9	10.3	R-3460-D	C	0.8	6.0	R-3503-A	B**	1.3	4.1
R-3288-E2	R	2.6	7.6	R-3363-1	C	4.6	10.3	R-3460-D	A	0.8	6.0	R-3503-B	C**	2.0	4.1
R-3288-E2	V	2.8	7.6	R-3363-1	L	5.8	10.3	R-3461	C	1.5	8.0	R-3504-F	C**	2.8	5.1
R-3288-HV2	V	2.8	7.6	R-3381	A	1.0	6.8	R-3462-B	R	1.8	7.6	R-3506-A2	C**	1.4	2.9
R-3289-HV	V	1.4	5.2	R-3382	C	2.3	10.4	R-3463-B	R	3.5	12.6	R-3506-B	C**	1.2	2.9
R-3289-C	R	1.3	5.2	R-3393-A	C	2.0	8.7	R-3465	A	0.8	6.0	R-3507-C	D**	1.6	3.7
R-3290	C	1.6	5.8	R-3396	C	3.2	11.4	R-3465	C	1.1	6.0	R-3507-D	D**	1.6	3.7
R-3290	V	2.4	5.8	R-3397	A	1.1	7.2	R-3466-A	A	0.8	6.0	R-3508-A2	C**	1.7	3.8
R-3290	R	1.9	5.8	R-3401	D	1.9	7.6	R-3466-A	C	0.8	6.0	R-3508-B	C**	1.8	3.8
R-3290	L	2.1	5.8	R-3401-B	B	3.8	11.2	R-3469	A	2.7	9.2	R-3508-B1	D**	1.9	3.8
R-3290-A	C	2.6	9.9	R-3401-C	B	5.7	14.7	R-3469-E2	A	2.7	9.2	R-3508-B2	K**	1.4	7.5
R-3290-A	A	2.6	9.9	R-3402	H	0.4	4.0	R-3469-E2	C	2.3	9.2	R-3508-C	C**	1.4	3.8
R-3290-B	D	3.5	9.9	R-3402-E	A or C	2.1	8.0	R-3470	L	2.2	8.4	R-3509	K**	0.9	2.8
R-3290-C	C	3.7	11.0	R-3403	A	1.1	6.5	R-3470-2	L	4.4	12.4	R-3510	C**	2.9	4.1
R-3290-C	D	3.7	11.0	R-3403-A1	A	1.5	8.3	R-3471	C	0.6	5.8	R-3511	C**	2.0	2.9
R-3290-VB	V	2.7	5.8	R-3403-F	A	3.2	10.6	R-3472	A or C	1.3	7.3	R-3513	A**	1.4	4.7
R-3291	C	1.7	9.0	R-3404	H	1.4	7.2	R-3473	C	0.9	6.3	R-3514-F	C**	2.6	5.5
R-3292	C	1.6	5.8	R-3405	H	1.5	7.9	R-3475	A	2.7	9.8	R-3514-F2	C**	5.1	7.7
R-3295	C	2.1	5.8	R-3405-A	H	1.3	8.0	R-3475-3	A	4.1	13.7	R-3516	C**	4.0	6.2
R-3295	L	2.1	5.8	R-3405-A	L	1.5	8.0	R-3475-A	A	2.7	9.8	R-3516-1	C**	2.0	4.3
R-3295	V	2.4	5.8	R-3405-B	H	1.3	8.0	R-3475-E	A	2.4	9.8	R-3517	C**	1.8	3.7
R-3295-2	C	4.2	8.8	R-3405-B	L	1.5	8.0	R-3475-F	C	4.8	13.8	R-3525-L	L**	1.1	4.7
R-3295-2	L	4.2	8.8	R-3406	C	1.8	9.8	R-3475-G	C	7.2	17.8	R-3526-L	L**	1.9	5.7
R-3295-2	R	3.8	8.8	R-3406-A	C	1.8	9.8	R-3475-H	C	9.6	21.8	R-3527-M	V	3.4	11.3
R-3295-2	V	4.8	8.8	R-3406-2	C	3.7	15.9	R-3477-A	C	3.3	12.3	R-3528-V	V	1.7	5.6
R-3295-3	C	6.3	11.8	R-3406-A2	C	3.7	15.9	R-3480	C	3.3	12.7	R-3529-V	V	3.4	11.3
R-3295-3	L	6.3	11.8	R-3408-L	L	1.2	7.3	R-3480-A	A	1.6	8.5	R-3531-A	H	6.0	13.0
R-3295-3	R	5.7	11.8	R-3408-AL	L	2.4	9.7	R-3481	C	3.3	12.0	R-3531-B	H	6.0	13.0
R-3295-3	V	7.2	11.8	R-3408-BL	L	2.4	12.5	R-3491-AG	G	0.9	5.5	R-3531-C	H	3.0	9.1
R-3297-1	C	2.3	7.5	R-3409	C	1.5	7.6	R-3491-GG	G	1.6	7.1	R-3531-D	H	3.0	9.1
R-3297-1	L	2.4	7.5	R-3413	C	1.5	9.0	R-3491-HG	G	1.9	7.6	R-3531-E	C	4.7	12.7
R-3337-A	C	1.1	6.0	R-3415	A	4.1	13.5	R-3491-JG	G	2.4	8.5	R-3540	L	3.2	10.6
R-3338-F	A	1.4	6.5	R-3416	A	1.4	9.8	R-3492-1	G	1.6	7.1	R-3540-2	L	6.4	16.3
R-3338-G	A	2.8	9.5	R-3420	A	1.2	10.0	R-3492-A1	G	2.4	8.5				

• NOTE: On catalog #'s R-4990-AA thru R-4999-L9, SQ.FT. OPEN and WEIR PERIMETER are per lineal foot. Type K indicates "Special" grate style and is not among standard types illustrated.
 ** Roll-type or mountable curb

FREE OPEN AREAS OF NEENAH GRATES (Continued)

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3541	L	1.6	7.3	R-3921-B1	B	0.7	4.5	R-4015-A	P	0.1	3.6	R-4352	Beehive	1.3	5.8
R-3541-2	L	3.2	11.3	R-3921-L1	L	0.3	4.1	R-4015-A1	B	0.2	3.6	R-4353	Beehive	1.8	6.7
R-3550-2	C	5.8	15.2	R-3921-V1	V	0.5	4.1	R-4015-B	C	0.4	3.6	R-4360-A	Beehive	0.6	4.3
R-3555	B	0.5	5.3	R-3922	V	1.1	6.0	R-4015-C	B	0.3	3.6	R-4360-B	Beehive	0.8	4.7
R-3560	A or C	1.5	8.4	R-3922-A	V	0.8	5.0	R-4015-D	B	0.2	3.6	R-4360-C	Beehive	1.4	4.5
R-3561	A or C	2.3	10.4	R-3923	V	1.6	5.6	R-4015-D	P	0.1	3.6	R-4360-D	Beehive	0.7	6.3
R-3562	L	1.5	8.7	R-3924	A	2.3	8.4	R-4016-B	C	0.5	4.8	R-4370-1	C	0.1	1.7
R-3563-HB	K	1.3	7.3	R-3927	B	2.3	8.5	R-4016-H1	A	0.6	5.3	R-4370-2	G	0.2	2.5
R-3563-L	L	1.4	7.3	R-3927-A	B	2.3	8.5	R-4016-K	B or D	1.0	6.3	R-4370-3	E	0.4	3.9
R-3570	A	2.4	7.4	R-3928	B	0.5	1.9	R-4018	B	0.2	3.8	R-4370-4	G	0.6	3.9
R-3570-A	A	2.4	7.4	R-3930	B or D	0.3	3.0	R-4030-4	H	0.1	1.5	R-4370-5	G	0.8	4.7
R-3571	A	2.4	7.4	R-3935	A or C	0.6	5.3	R-4030-6	H	0.1	2.1	R-4370-6	G	0.8	5.1
R-3571-A	A	2.4	7.4	R-3935	V	1.5	5.3	R-4030-8	H	0.2	2.7	R-4370-7	G	0.8	5.2
R-3572-A	R	4.4	12.3	R-3936-A	C	1.0	6.5	R-4030-10	H	0.3	3.3	R-4370-8	E	1.0	5.5
R-3572-2D	R	3.8	12.3	R-3940	A	1.0	6.1	R-4030-12	H	0.4	3.9	R-4370-9	C	1.3	5.8
R-3572-2L	L	4.6	12.3	R-3942	V	0.8	5.1	R-4030-15	H	0.8	4.8	R-4370-10	A	1.1	5.8
R-3572-2Q	Q	1.8	12.3	R-3943	V	1.2	6.9	R-4030-18	B	1.1	5.8	R-4370-12	F	0.9	5.8
R-3573-2D	R	3.8	12.3	R-3945	L	2.4	13.0	R-4030-21	B	1.3	6.7	R-4370-13	G	1.3	5.8
R-3573-2L	L	4.6	12.3	R-3945-A	L	2.4	13.0	R-4030-24	B	2.1	7.6	R-4370-15	D	1.0	5.9
R-3573-2Q	Q	1.8	12.3	R-3945-2	L	2.4	13.0	R-4030-27	G	2.8	8.6	R-4370-17	D	1.0	6.0
R-3574-2D	R	3.8	12.3	R-3945-8	L	2.4	13.0	R-4030-30	G	3.4	9.4	R-4370-18	E	1.3	6.0
R-3574-2L	L	4.6	12.3	R-3946	L	2.9	13.5	R-4040-6	E	0.1	2.1	R-4370-21	D	0.9	6.0
R-3574-2Q	Q	1.8	12.3	R-3946-A	L	9.2	15.0	R-4040-8	E	0.2	2.7	R-4370-22	D	1.1	6.0
R-3575	B	2.6	9.5	R-3948-A	C	1.1	5.1	R-4040-10	E	0.3	3.3	R-4370-23	H	0.9	6.3
R-3576	R	2.4	9.3	R-3948-V	V	1.5	5.1	R-4040-12	E	0.5	3.9	R-4370-25	G	1.9	7.6
R-3577	D	1.8	9.2	R-3949-A	L	2.5	8.9	R-4040-15	E	0.7	4.8	R-4370-26	G	2.8	8.6
R-3578	L	2.3	10.9	R-3949-B	L	2.5	8.9	R-4040-18	E	0.9	5.8	R-4370-27A	G	2.4	9.9
R-3580	L	1.4	7.9	R-3951	L	1.6	9.0	R-4040-21	G	1.4	6.7	R-4380-AA1	E	2.8 sq. in.	1.0
R-3580-1	L	2.8	12.9	R-3952	B or D	1.1	6.3	R-4040-24	G	1.6	7.6	R-4380-A	E	3.7 sq. in.	1.1
R-3581	V	2.2	9.3	R-3954	B	1.8	8.1	R-4040-27	G	2.3	8.6	R-4380-A1	E	6.0 sq. in.	1.2
R-3588	D	1.8	7.9	R-3955	C	2.6	8.9	R-4040-30	G	2.9	9.4	R-4380-B1	E	4.8 sq. in.	1.3
R-3588-A	H	1.2	7.9	R-3956	Q	1.2	6.9	R-4215-A	Beehive	2.0	9.0	R-4380-1	E	5.4 sq. in.	1.4
R-3588-LL	L	1.6	7.9	R-3961	D	0.7	5.2	R-4215-C	Beehive	3.3	11.3	R-4380-3	E	6.0 sq. in.	1.6
R-3588-LL4	L	1.6	7.9	R-3976	B	0.2	3.3	R-4216-B	Beehive	2.2	4.1	R-4380-4	E	0.1	2.1
R-3588-LR	L	1.6	7.9	R-3977	B	0.1	2.6	R-4217	Beehive	4.9	7.1	R-4380-4A1	E	0.1	2.2
R-3588-LR4	L	1.6	7.9	R-3978	D	1.0	4.0	R-4340-A	Beehive	1.5	6.2	R-4380-4A	E	0.2	2.6
R-3589	D	1.8	7.9					R-4340-B	Beehive	1.1	6.0	R-4380-6	G	0.2	2.8
R-3589-A	H	1.2	7.9	R-4001-B	C	0.3	2.5	R-4340-C	Beehive	1.2	6.0	R-4380-7	G	0.3	3.1
R-3589-LL	L	1.5	7.9	R-4001-B	P	0.1	2.5	R-4340-F	Beehive	1.6	6.5	R-4380-8	E	0.3	3.3
R-3589-LL4	L	1.5	7.9	R-4003-A	A	0.9	6.1	R-4340-F1	Beehive	0.7	4.5	R-4380-9	E	0.4	3.7
R-3589-LR	L	1.5	7.9	R-4003-B	A	0.9	6.1	R-4340-G	Beehive	0.6	5.0	R-4380-10	E	0.5	3.9
R-3589-LR4	L	1.5	7.9	R-4003-C	A	0.9	6.1	R-4340-H	Beehive	0.5	4.5	R-4380-11	E	0.5	3.9
R-3591	A	1.5	8.0	R-4004-A	C	1.3	6.8	R-4341-A	Beehive	2.5	6.0	R-4380-12	E	0.6	4.0
R-3593	C	2.5	12.3	R-4004-B	B	1.5	7.4	R-4342	Beehive	2.0	6.0	R-4380-13	G	0.7	4.2
R-3599-A	L	0.2 per ft.	2 per ft.	R-4004-C	B	1.5	7.4	R-4343	Beehive	2.4	8.4	R-4380-13A	E	0.9	4.7
R-3599-B	L	0.2 per ft.	2 per ft.	R-4004-G1	B or D	1.9	7.3	R-4344	Beehive	0.2	2.9	R-4380-14	E	0.7	4.7
R-3801	C	34.6	42.5	R-4005-A2	B	0.4	4.3	R-4345	Beehive	2.0	8.6	R-4380-15	E	0.6	4.7
R-3805	C	11.6	21.8	R-4006	D	0.3	3.1	R-4346	Beehive	2.0	8.6	R-4380-16	E	0.8	5.0
R-3806	C	17.5	29.8	R-4007	B	0.4	4.3	R-4347	Beehive	2.0	8.6	R-4380-17	E	0.8	5.0
R-3807	D	6.0	13.4	R-4007-A6	B	0.4	4.3	R-4349-C	Beehive	2.4	6.9	R-4380-18	G	0.7	5.2
R-3808-1	C	5.2	12.3	R-4014-B1	A	2.8	9.7	R-4349-D	Beehive	5.4	10.2	R-4380-21	G	1.3	6.3
R-3808-2	C	10.3	19.9	R-4014-B1	C	1.3	9.7	R-4350-1	Beehive	0.3	2.7	R-4380-22	G	1.5	7.0
R-3900-B	L	1.9	7.7	R-4014-C1	A	2.3	8.4	R-4350-A	Beehive	0.3	3.1	R-4380-23	G	1.1	7.3
R-3900-C	L	3.8	11.8	R-4014-C2	A	2.4	8.4	R-4350-B	Beehive	0.4	3.9	R-4380-24	G	1.7	7.9
R-3900-D	L	5.7	16.0	R-4014-T	B	1.2	7.3	R-4350-C	Beehive	0.6	4.8	R-4380-25	G	2.5	8.4
R-3910-V	V	0.3	3.1	R-4014-TL	L	0.5	7.3	R-4350-D	Beehive	1.0	5.8	R-4380-26	G	2.7	8.8
R-3918	V	1.9	7.8	R-4014-T2	B	0.7	4.5	R-4350-E	Beehive	1.7	7.6	R-4385-B	E	0.1	2.1
R-3919	Q	0.9	6.9	R-4014-T2L	L	0.3	4.1	R-4351-B	Beehive	0.5	3.9	R-4385-C	E	0.3	2.7
R-3919	R	1.4	6.9	R-4014-T2V	V	0.3	4.1	R-4351-C	Beehive	1.2	5.2	R-4385-E	E	0.5	3.9
R-3920-V	V	0.9	4.2	R-4015-A	B	0.2	3.6	R-4351-D	Beehive	1.6	5.8	R-4385-F	E	0.5	4.8

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 ** Roll-type or mountable curb

FREE OPEN AREAS OF NEENAH GRATES (Continued)

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4385-G	E	1.0	5.8	R-4585	A	1.9	9.1	R-4825-A	A	2.1	9.0	R-4977-1	B	1.5	4.0
R-4385-H	G	1.6	7.6	R-4586	A	1.5	8.6	R-4825-B	C	2.0	9.0	R-4977-2	A	2.0	5.0
R-4385-J	G	2.5	8.6	R-4600	A	0.9	6.5	R-4826	A	1.3	8.0	R-4977-2	B	2.0	5.0
R-4385-K	G	2.7	9.4	R-4603-A	A	0.8	6.7	R-4828	A	1.9	9.5	R-4977-3	A	3.7	10.0
R-4389-O	B	0.2	3.0	R-4604	C	1.3	6.7	R-4829	C	2.2	9.5	R-4977-3	B	3.7	10.0
R-4390	B	0.3	5.0	R-4604-C	A	0.7	6.7	R-4832	C	1.5	8.0	R-4977-4	A	5.3	12.0
R-4400-A	A	0.1	2.7	R-4604-D	A	1.5	6.7	R-4832-B	C	1.8	8.7	R-4977-4	B	5.3	12.0
R-4401	A	0.1	2.7	R-4608	A	0.8	6.0	R-4833	A	2.3	8.7	R-4977-5	A	8.0	15.0
R-4403	A	0.3	3.7	R-4610	A	1.0	6.4	R-4837	A	2.2	9.8	R-4977-5	B	8.0	15.0
R-4404-C	B	0.5	5.3	R-4620	A	0.8	6.0	R-4839	A	2.1	9.9				
R-4406	B	0.5	5.3	R-4630	C	0.9	6.2	R-4840	C	2.8	10.0	R-4990-AA	A	0.2 •	2.0
R-4406-C	A	0.4	5.5	R-4632	C	1.1	6.3	R-4843	A	2.6	10.0	R-4990-AX	A	0.2 •	2.0
R-4406-P	P	0.1	5.5	R-4640	A	1.3	6.4	R-4850	C	2.7	9.0		C	0.3 •	2.0
R-4406-1	A	0.5	5.3	R-4641	A	1.1	6.8	R-4852	C	2.0	9.0		P	0.1 •	2.0
R-4406-2	C	0.6	5.3	R-4641-A	A	1.2	6.8	R-4852-A	Q	1.8	9.0	R-4990-BA	A	0.3 •	2.0
R-4407-2A	B	0.6	5.6	R-4641-C	C	1.1	6.8	R-4853	A	2.5	10.5	R-4990-BX	A	0.3 •	2.0
R-4408	B	0.3	3.4	R-4641-F	A	1.8	8.5	R-4853-A	A	3.1	11.5		C	0.3 •	2.0
R-4409	A	0.4	4.6	R-4649	A	1.1	6.9	R-4853-B1	C	3.3	12.5		P	0.1 •	2.0
R-4409-A	C	0.7	5.7	R-4652	A	1.5	7.9	R-4855	A	2.0	9.3	R-4990-CA	A	0.4 •	2.0
R-4409-C	B	0.5	5.7	R-4660	C	1.1	6.0	R-4856	C	3.1	9.7	R-4990-CX	A	0.4 •	2.0
R-4409-E	A	0.5	5.7	R-4662	A	1.3	6.6	R-4857	A	3.1	12.3		C	0.4 •	2.0
R-4409-G	B	0.8	5.7	R-4670-A	A	1.1	7.0	R-4859-C	A	2.4	9.1		P	0.1 •	2.0
R-4421	C	1.0	8.3	R-4671	A	1.1	7.0	R-4859-C	C	2.3	9.1		Q	0.1 •	2.0
R-4423-A	A	1.2	9.7	R-4672	C	1.1	7.0	R-4859-Q	Q	0.9	9.1	R-4990-DA	A	0.4 •	2.0
R-4424	H	0.6	5.6	R-4689	C	1.4	7.5	R-4859-S	S	2.0	9.1		C	0.4 •	2.0
R-4430-1	P	0.2	5.8	R-4692-A	D	2.0	8.7	R-4871	B	2.7	9.2	R-4990-DX	A	0.4 •	2.0
R-4430-A	A	0.6	6.0	R-4698	A	1.7	9.0	R-4880	C	2.5	9.3		C	0.5 •	2.0
R-4430-B	C	0.7	5.9	R-4710	C	1.5	9.0	R-4880-C	C	2.2	10.0		P	0.2 •	2.0
R-4435-1	C	0.8	4.3	R-4711	C	1.1	9.5	R-4882	A	4.0	11.3		Q	0.2 •	2.0
R-4441-1	Q	0.2	4.0	R-4718	A	2.7	9.3	R-4882-A	A	2.8	11.3	R-4990-EA	A	0.5 •	2.0
R-4443	A	0.4	4.3	R-4720	C	0.9	6.7	R-4884-A	C	3.3	6.0	R-4990-EX	A	0.6 •	2.0
R-4449	A	0.8	6.0	R-4721-A	A	1.2	7.0	R-4890	C	3.4	10.8		C	0.5 •	2.0
R-4450	A	0.8	6.0	R-4725	H	1.6	7.0	R-4891	A	3.5	13.0		P	0.2 •	2.0
R-4450-A	A	0.6	6.0	R-4730	A	2.0	8.6	R-4893	C	6.0	18.0	R-4990-FA	A	0.6 •	2.0
R-4451	C	0.7	6.0	R-4731	A	2.5	9.8	R-4893-B	C	1.9	11.0	R-4990-FX	A	0.7 •	2.0
R-4454	C	0.9	6.3	R-4732	A	2.0	9.8	R-4894	C	3.3	11.5		C	0.8 •	2.0
R-4460	A	0.8	7.0	R-4735	A	1.2	7.3	R-4895-2	A	6.6	17.0		P	0.5 •	2.0
R-4462	B	0.9	7.8	R-4736	C	1.1	7.3	R-4937-A	B	0.2	2.7	R-4990-GX	A	0.8 •	2.0
R-4470	A	1.5	10.0	R-4738	A	1.1	7.3	R-4937-B	G	0.1	2.2		C	0.7 •	2.0
R-4511	A	0.5	4.7	R-4739	C	1.3	7.3	R-4937-C1	H	0.2	4.0	R-4990-HA	A	0.9 •	2.0
R-4523	A	0.9	6.3	R-4740	C	2.1	8.0	R-4937-C2	H	0.2	4.0	R-4990-HX	A	0.9 •	2.0
R-4525	A	0.8	6.3	R-4750	C	2.4	8.3	R-4937-C3	H	0.2	4.0		C	0.9 •	2.0
R-4530	A	0.8	6.1	R-4750-1	A	2.8	11.3	R-4938	A	0.8	6.9	R-4990-JX	A	1.0 •	2.0
R-4531	A	0.8	6.4	R-4751	C	1.9	7.9	R-4938-B	A	0.2	3.2		C	1.1 •	2.0
R-4540	C	1.0	6.8	R-4752	C	2.3	9.4	R-4941-A	B	0.4	4.7	R-4990-KA2	A	0.5 •	2.0
R-4541	A	1.0	7.1	R-4755-B	A	2.8	10.5	R-4941-B	B	0.4	4.7	R-4990-KX	A	1.2 •	2.0
R-4544	A	1.8	8.7	R-4755-C	C	2.9	10.5	R-4942-A	A	0.7	6.5		C	0.9 •	2.0
R-4545	A	1.8	10.4	R-4759	C	1.5	7.5	R-4943	K	0.3	5.4	R-4990-LX	A	1.2 •	2.0
R-4548	H	1.0	5.9	R-4760	C	1.7	7.3	R-4943-A	K	0.3	5.4		C	1.2 •	2.0
R-4550	H	0.8	5.0	R-4762	C	2.4	8.7	R-4943-B	K	0.3	5.4	R-4990-MX	A	1.4 •	2.0
R-4552	A	0.6	5.3	R-4765	A	1.4	7.7	R-4976-1	A	0.9	3.1		C	1.2 •	2.0
R-4557	A	0.8	5.3	R-4780	C	3.1	9.8	R-4976-1	B	0.9	3.1	R-4990-NX	A	1.4 •	2.0
R-4558	C	1.1	5.9	R-4781	C	3.0	11.7	R-4976-2	A	1.5	4.2		C	1.6 •	2.0
R-4570-1	A	0.9	6.3	R-4795	A	3.2	11.3	R-4976-2	B	1.5	4.2	R-4990-OA	A	1.3 •	2.0
R-4570-2	A	0.9	6.5	R-4798	C	2.4	9.9	R-4976-3	A	2.5	5.2	R-4990-OX	A	1.6 •	2.0
R-4573	A	1.1	7.5	R-4808-A	Q	0.8	8.0	R-4976-3	B	2.5	5.2		C	NA •	2.0
R-4575-A	A	1.7	8.5	R-4810	C	1.5	8.0	R-4976-4	A	3.7	6.3	4993-AB	A	0.2	2.0
R-4579	A	0.8	6.4	R-4820	C	1.5	8.0	R-4976-4	B	3.7	6.3		C	0.3	2.0
R-4583	A	0.9	6.3	R-4821-A	C	1.7	8.3	R-4976-5	B	5.2	8.1		P	0.1	2.0
R-4584	A	1.3	4.3	R-4825	C	1.8	9.0	R-4977-1	A	1.5	4.0				

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 ** Roll-type or mountable curb

FREE OPEN AREAS OF NEENAH GRATES (Continued)

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET	CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
4993-AAB	A	0.2	2.0	4994-FB	A	0.7	2.0	R-6352-E	G	0.8	5.5
4993-BB	A	0.3	2.0		C	0.8	2.0	R-6352-G	G	1.3	6.5
	C	0.3	2.0		P	0.5	2.0	R-6400-AO	G	0.3	3.1
	P	0.1	2.0	4994-GB	A	0.8	2.0	R-6400-BO	G	0.8	5.0
4993-BAB	A	0.3	2.0		C	0.7	2.0	R-6400-CO	G	1.8	7.0
4993-CB	A	0.4	2.0	4994-HB	A	0.9	2.0	R-6400-DO	G	1.2	7.6
	C	0.4	2.0		C	0.9	2.0	R-6450-AG	G	0.2	2.4
	P	0.1	2.0	4994-JB	A	1.0	2.0	R-6450-BG	G	0.2	3.1
	Q	0.1	2.0		C	1.1	2.0	R-6450-CG	G	0.4	3.4
4993-CAB	A	0.4	2.0	4994-KB	A	1.2	2.0	R-6450-DG	G	0.5	4.2
4993-DB	A	0.4	2.0		C	0.9	2.0	R-6450-EG	G	0.7	5.4
	C	0.5	2.0	4994-LB	A	1.2	2.0	R-6450-FG	G	0.1	5.6
	P	0.2	2.0		C	1.2	2.0	R-6450-GG	G	1.3	6.3
	Q	0.2	2.0	4994-MB	A	1.4	2.0	R-6450-HG	G	1.3	6.9
4993-DAB	A	0.4	2.0		C	1.2	2.0	R-6450-JG	G	1.9	8.3
	C	0.4	2.0	4994-NB	A	1.4	2.0	R-6450-KG	G	2.7	8.8
4993-EB	A	0.6	2.0		C	1.6	2.0	R-6672-1	H	0.4	3.9
	C	0.5	2.0	4994-OB	A	1.6	2.0	R-6672-A	A or C	0.8	4.1
	P	0.2	2.0		C	NA	2.0	R-6672-B	A or C	0.5	4.6
4993-EAB	A	0.5	2.0	R-4995-A1	B	0.2 •	2.0	R-6672-B	Q	0.2	4.6
4993-FB	A	0.7	2.0		C	0.3 •	2.0	R-6672-C	A or C	0.8	6.0
	C	0.8	2.0	R-4995-A2	B	0.2 •	2.0	R-6672-F	Q	1.0	8.6
	P	0.5	2.0	R-4996-A1	Diagonal	0.3 •	2.0	R-6672-G	A or C	2.2	9.0
4993-FAB	A	0.6	2.0		Convex			R-6672-H	A or C	2.1	9.2
4993-GB	A	0.8	2.0		C	0.3 •	2.0	R-6672-J	A or C	2.4	10.0
	C	0.7	2.0	R-4996-A2	B	0.2 •	2.0	R-6672-K	A or C	2.5	10.6
4993-HB	A	0.9	2.0	R-4996-A3	C	0.3 •	2.0	R-6672-K	Q	2.1	10.6
	C	0.9	2.0	R-4999 Series	Same as R-4990 Series			R-6672-M	A or C	3.0	12.3
4993-HAB	A	0.9	2.0	R-4999-L3	L	0.3 •	2.0	R-6672-Q	A or C	9.3	18.8
4993-JB	A	1.0	2.0	R-4999-L6	L	0.8 •	2.0	R-6673-A	A	0.6	5.7
	C	1.1	2.0	R-4999-L9	L	0.9 •	2.0	R-6673-B	A	0.9	6.5
4993-KB	A	1.2	2.0	R-5901-A	G	0.2	2.7	R-6673-C	A	1.2	7.5
	C	0.9	2.0	R-5901-B	G	0.3	3.5	R-6673-D	A	2.1	8.6
4993-KAB	A	0.5	2.0	R-5901-C	G	0.5	4.3	R-6673-E	A	2.5	9.6
4993-LB	A	1.2	2.0	R-5901-D	G	0.7	4.8	R-6673-J	A	2.6	9.5
	C	1.2	2.0	R-5901-E	G	1.1	5.8	R-6673-K	A	2.9	10.6
4993-MB	A	1.4	2.0	R-5901-F	G	1.6	6.6	R-6673-L	A	3.7	12.6
	C	1.2	2.0	R-5901-G	G	2.0	7.4	R-6673-N	A	3.3	11.6
4993-NB	A	1.4	2.0	R-5901-H	G	4.2	8.9	R-6673-O	A	4.9	13.5
	C	1.6	2.0	R-5901-I	G	3.7	10.5	R-6673-Q1	A	5.0	14.7
4993-OB	A	1.6	2.0	R-5901-J	G	3.7	10.5				
	C	NA	2.0	R-5901-K	G	4.8	12.1				
4993-OAB	A	1.3	2.0	R-6110	G	0.9	5.5				
4994-AB	A	0.2	2.0	R-6111	G	1.2	6.0				
	C	0.3	2.0	R-6112	G	1.3	6.0				
	P	0.1	2.0	R-6113	G	0.9	6.3				
4994-BB	A	0.3	2.0	R-6114	G	1.8	7.0				
	C	0.3	2.0	R-6115	G	1.6	7.1				
	P	0.1	2.0	R-6116	G	1.9	7.6				
4994-CB	A	0.4	2.0	R-6117	G	2.4	8.5				
	C	0.4	2.0	R-6118	G	2.6	9.9				
	P	0.1	2.0	R-6130	G	0.8	5.4				
	Q	0.1	2.0	R-6131	G	1.0	5.6				
4994-DB	A	0.4	2.0	R-6132	G	1.3	6.3				
	C	0.5	2.0	R-6133	G	1.3	6.5				
	P	0.2	2.0	R-6134	G	1.5	6.9				
	Q	0.2	2.0	R-6136	G	2.5	8.3				
4994-EB	A	0.6	2.0	R-6137	G	2.7	8.8				
	C	0.5	2.0	R-6352-A	G	0.4	3.4				
	P	0.2	2.0	R-6352-B	G	0.8	4.2				
				R-6352-D	G	0.7	4.9				

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