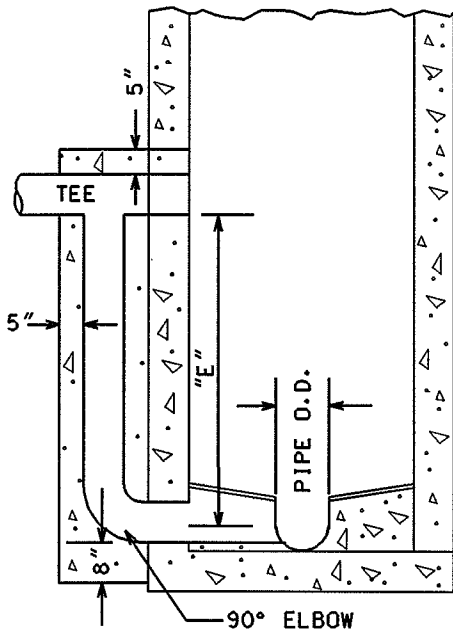
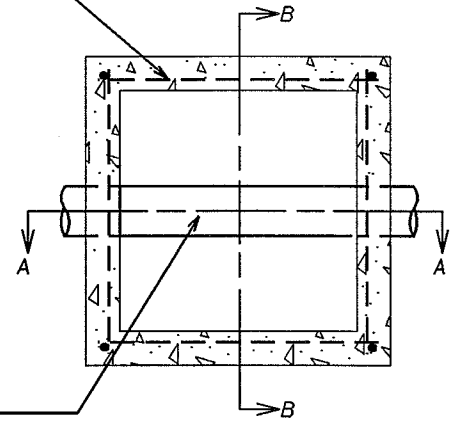
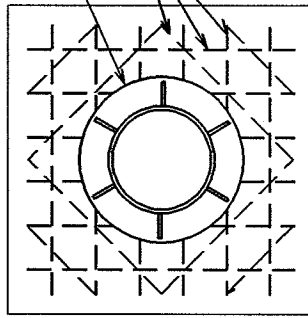
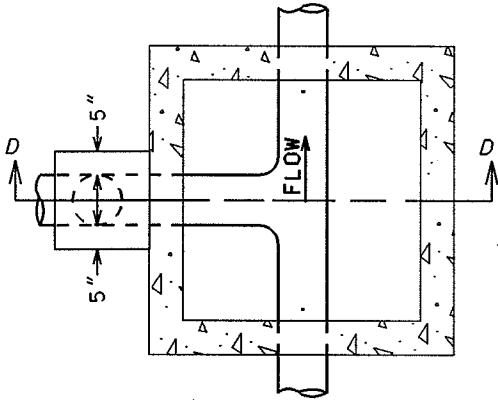


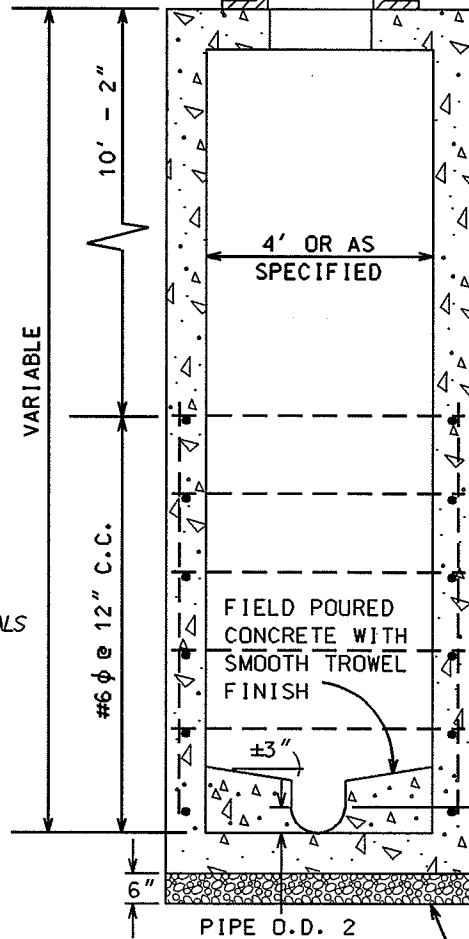
MADISON STANDARD
S.A.S. FRAME & COVER

#4 ϕ RODS
6" BOTH WAYS

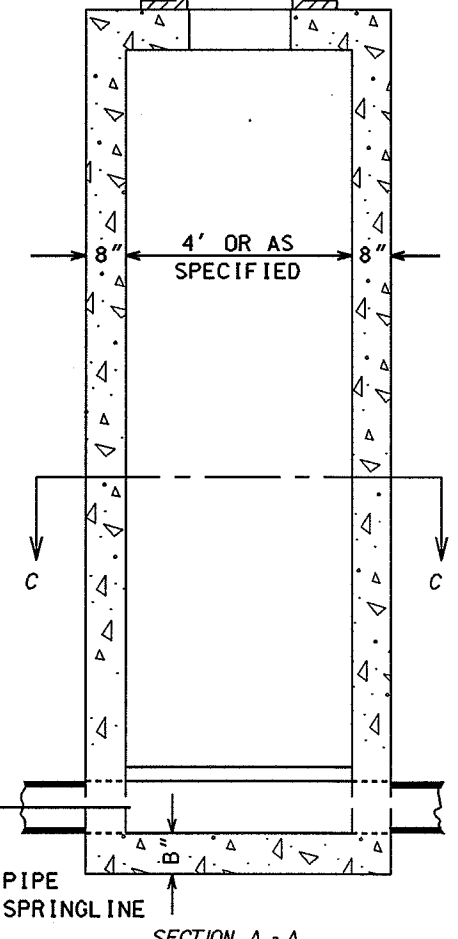
#6 ϕ RODS - SPACED 2 1/2"
FROM INSIDE WALL
OF STRUCTURE.



SECTION D - D
DROP INLET CONSTRUCTION FOR
SANITARY SEWER MAINS AND LATERALS



SECTION B - B



SECTION A - A

MECHANICALLY
COMPACTED
CRUSHED STONE

NOTES:

DROP INLET TO BE BUILT AT ALL S.A.S. WHEN DISTANCE "E" IS GREATER THAN 24". "E" SHOULD BE MEASURED FROM INVERT OF INCOMING PIPE TO THE SPRING-LINE OF THE OUTGOING SEWER.

ON 4'X4' & 5'X5' S.A.S., CENTER CASTING ON S.A.S.; ON 6'X6' S.A.S., CENTER OF CASTING TO BE 2' FROM OUTSIDE WALL OF S.A.S..

THICKNESS OF FLOOR (DIMENSION "B") TO BE 8" UP TO 10' DEPTHS & 12" FOR GREATER DEPTHS.

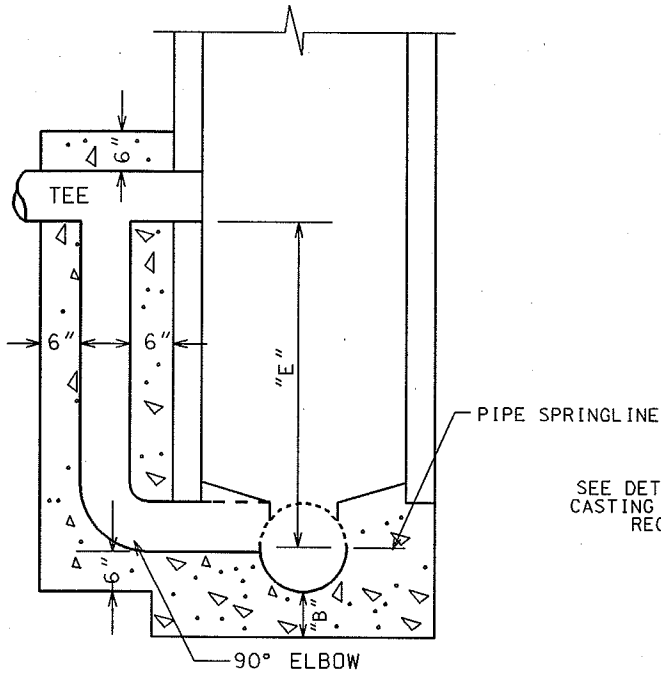
REFER TO STANDARD PLATE 5.7.16 "MADISON STANDARD FRAMES WITH NON-ROCKING COVER" FOR CASTING DESIGNATION.

2004

CITY OF MADISON
ENGINEERING DIVISION

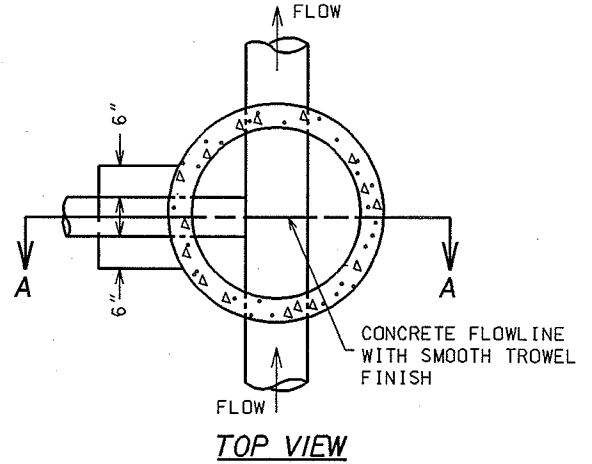
SANITARY SEWER
CAST-IN-PLACE SAS

STANDARD DETAIL DRAWING 5.7.1



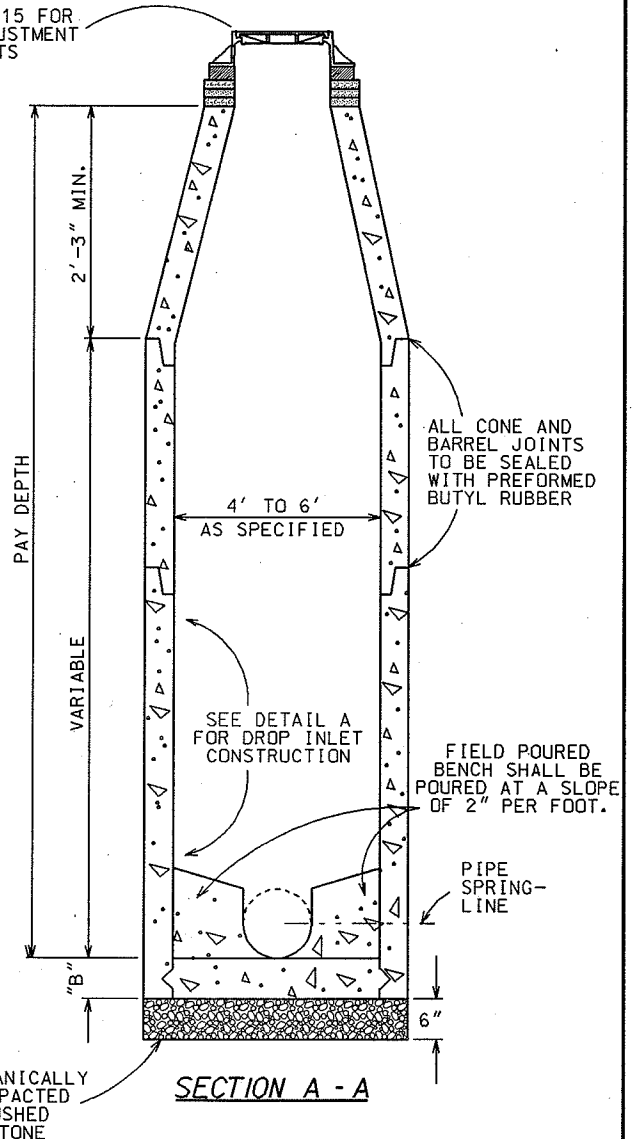
DETAIL A

SHOWING DROP INLET CONSTRUCTION FOR SANITARY SEWER MAINS & LATERALS



TOP VIEW

SEE DETAIL 5.7.15 FOR CASTING AND ADJUSTMENT REQUIREMENTS



SECTION A - A

NOTES:

- 1) PRECAST S.A.S. SECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478.
- 2) THICKNESS OF BASE, "B":
6" MIN. FOR 4' DIAMETER SAS
8" MIN. FOR 5' AND 6' DIAMETER SAS
- 3) FOR CASTING DESIGNATION REFER TO STANDARD DETAIL DRAWING 5.7.16
- 4) CENTERED (CONCENTRIC) CONE SHALL BE INSTALLED UNLESS OTHERWISE DIRECTED.
- 5) DROP INLET SHALL BE BUILT FOR ALL SEWER MAINS AND LATERALS WHEN "E" IS GREATER THAN 24". "E" SHOULD BE MEASURED FROM INVERT OF INCOMING PIPE TO THE SPRINGLINE OF THE OUTGOING SEWER. INSIDE DROP PER STANDARD DETAIL DRAWING 5.7.30 MAY BE INSTALLED FOR 4" AND 6" SERVICE CONNECTIONS WHERE OUTSIDE DROP INLET CONSTRUCTION IS INFEASIBLE. ENGINEER SHALL APPROVE INSIDE DROP INLET PRIOR TO INSTALLATION.
- 6) FLEXIBLE PIPE TO SAS CONNECTOR REQUIRED PER STANDARD DETAIL DRAWING 5.7.31
- 7) ALL BENCHES TO BE FIELD POURED CONCRETE WITH SMOOTH TROWEL FINISH. PRECAST BENCHES ONLY PERMITTED WITH PRIOR APPROVAL OF ENGINEER IN WRITING.
- 8) ALL JOINTS BETWEEN RINGS SHALL BE SEALED WITH $\frac{3}{8}$ " OF AIR-ENTRAINED TYPE M OR S MORTAR. THE OUTSIDE SURFACE OF THE ADJUSTING RINGS SHALL BE SEALED WITH A $\frac{1}{2}$ " THICK AIR-ENTRAINED MORTAR TYPE M OR S SEAL. THE METHOD USED FOR SEALING THE OUTSIDE SURFACE SHALL BE COMPATIBLE WITH THAT USED TO SEAL JOINTS BETWEEN THE RINGS.

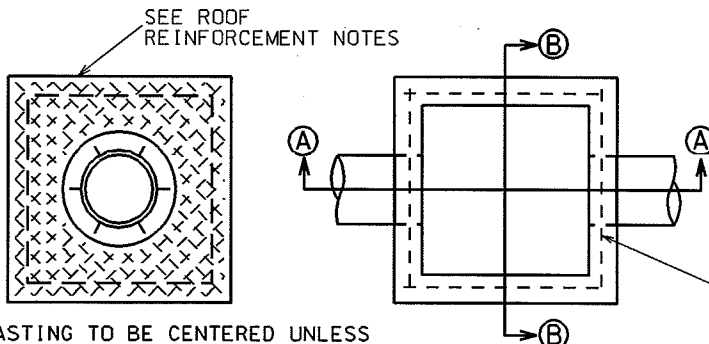
2004

CITY OF MADISON ENGINEERING DIVISION
SANITARY SEWER PRECAST SAS
STANDARD DETAIL DRAWING 5.7.2

SEWER ACCESS STRUCTURES

ROOF REINFORCEMENT NOTES:

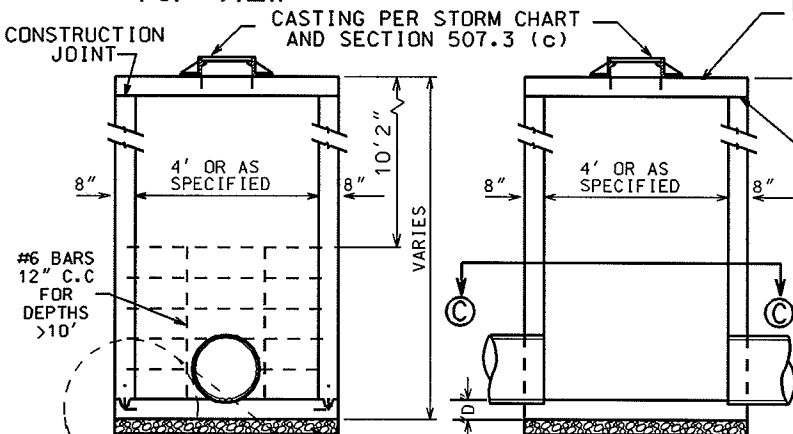
- 1) EPOXY COATED REBARS SHALL BE USED IN ALL CASES
- 2) #4 BARS PLACED ON 6" CENTERS FOR 3'X3', 3'X4', 4'X4', 4'X5', 5'X5' STRUCTURES
- 3) #6 BARS PLACED ON CENTERS FOR 6'X5', 6'X6' AND LARGER STRUCTURES
- 4) 3" CLEAR SHALL BE MAINTAINED IN ALL CASES



NOTE: CASTING TO BE CENTERED UNLESS NOTED IN STORM STRUCTURE TABLE

TOP VIEW

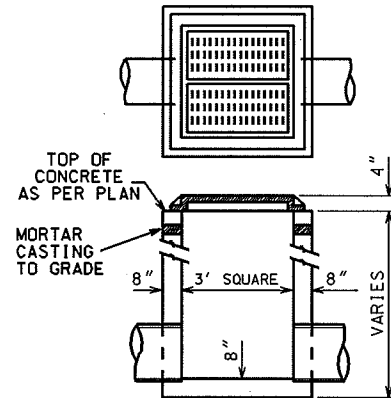
SECTION C-C



SECTION B-B

NOTE: THICKNESS OF FLOOR (DIMENSION "D") TO BE 8" UP TO 10' DEPTHS AND 10" FOR GREATER DEPTHS

3'X3' CATCH BASIN



PRECAST REINFORCED CONCRETE STRUCTURES MAY BE USED IF APPROVED ACCORDING TO ARTICLES 106.3 AND 507.3 (b) OF THE STANDARD SPECIFICATIONS

NEENAH FOUNDRY CASTINGS AS LISTED OR EQUAL. ALL CASTING WITH FLANGE AT BASE.

- LIGHT DUTY
- R-1879-A10G FOR OPEN GRATE
 - R-1879-A10L FOR SOLID LID
- HEAVY DUTY
- R-1878-A10G FOR OPEN GRATE
 - R-1878-A10L FOR SOLID LID

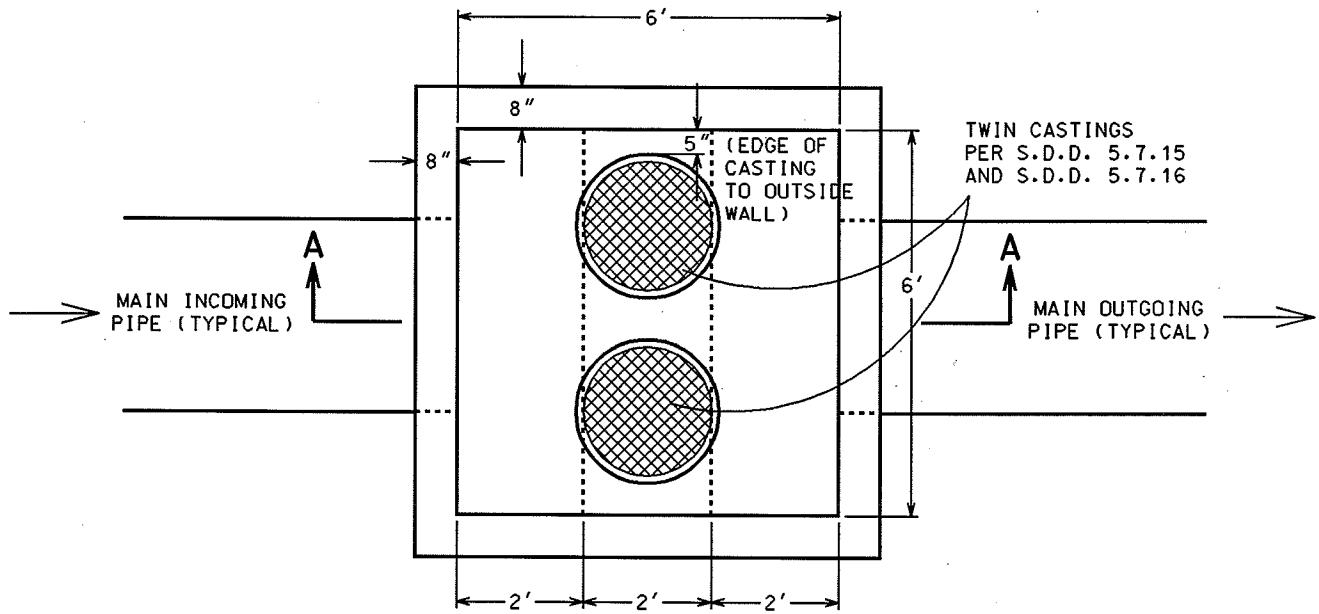
6" MECHANICALLY COMPACTED CRUSHED STONE

2004

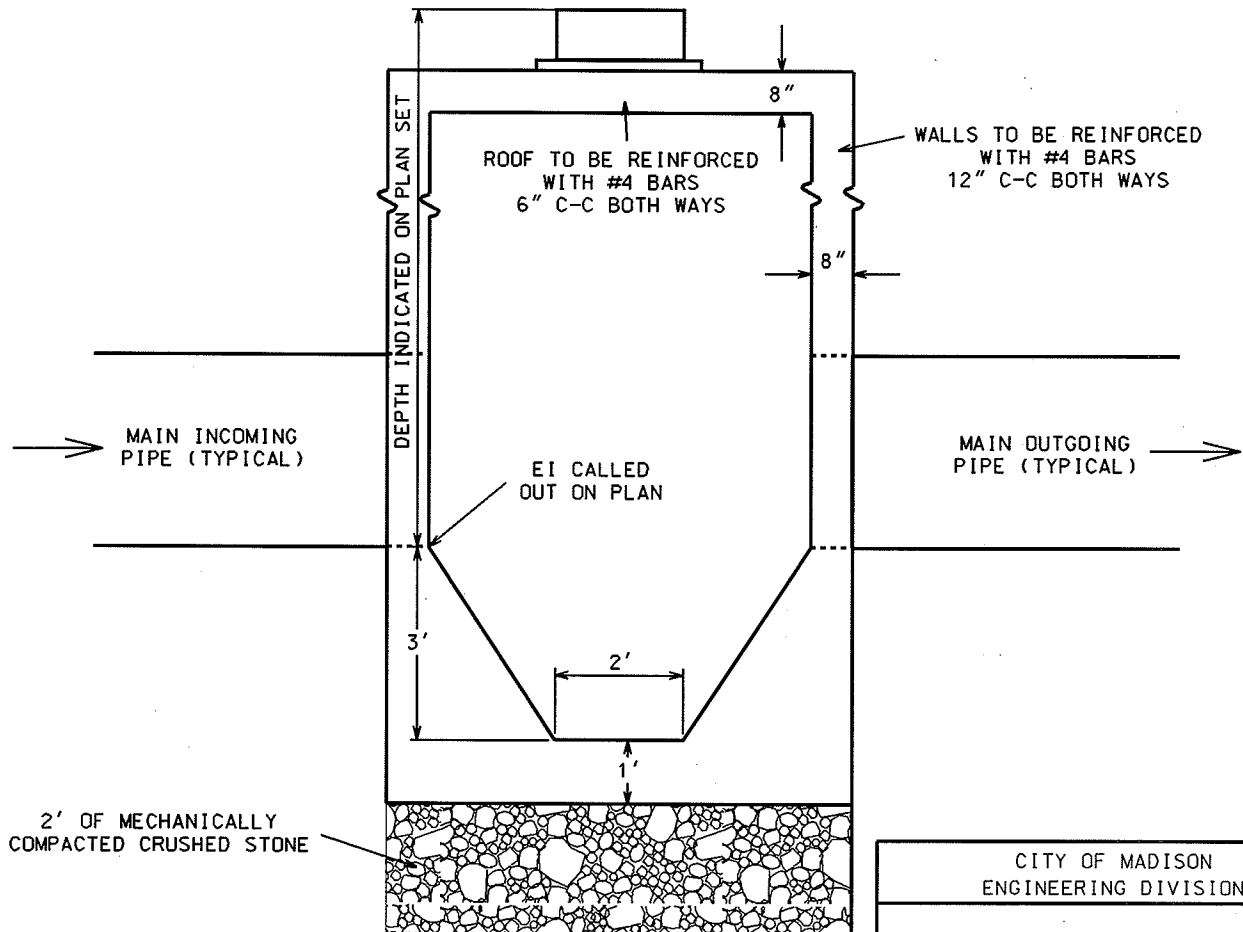
CITY OF MADISON
ENGINEERING DIVISION

STORM SEWER SAS
AND CATCH BASINS

STANDARD DETAIL DRAWING 5.7.3



PLAN VIEW



SECTION A-A

2004

CITY OF MADISON
ENGINEERING DIVISION

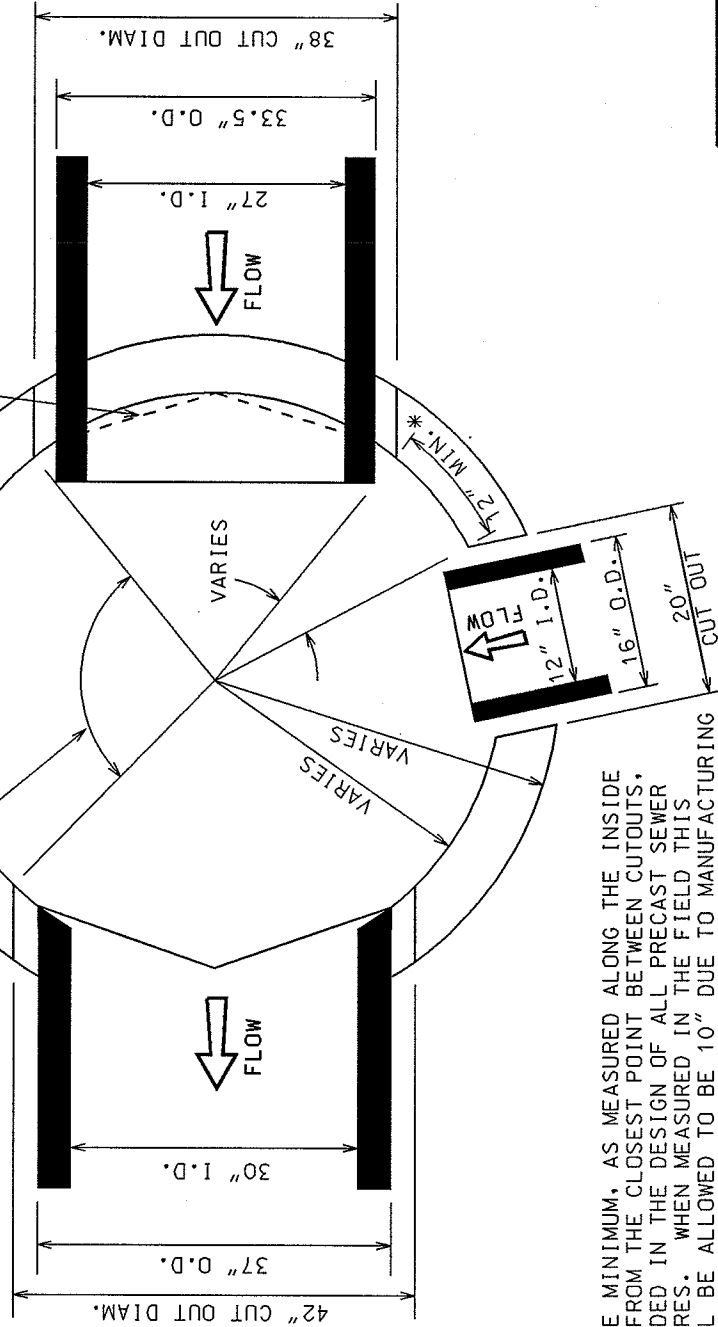
**STORM SEWER
6' X 6' CATCH BASIN**

STANDARD DETAIL DRAWING 5.7.4

NOTE: ALL STORM SEWER ACCESS STRUCTURES (S.A.S.) SHALL BE CONSTRUCTED IN COMPLIANCE WITH ASTM C478

NOTE: FOR STRAIGHT THROUGH PIPE ALIGNMENTS IN STORM SEWER ACCESS STRUCTURES THE MINIMUM DEGREE ALLOWED BETWEEN CUTOUTS SHALL BE 60°

PIPE SHALL BE CUT TO APPROXIMATELY MATCH THE INSIDE OF THE S.A.S. PIPES SHALL BE CUT FROM THE INTERSECTION OF THE PIPE O.D. WITH THE STRUCTURE WALL TO THE CENTER OF THE PIPE AS SHOWN.



* 12" OF CONCRETE MINIMUM, AS MEASURED ALONG THE INSIDE WALL RADIALLY FROM THE CLOSEST POINT BETWEEN CUTOUTS, SHALL BE PROVIDED IN THE DESIGN OF ALL PRECAST SEWER ACCESS STRUCTURES. WHEN MEASURED IN THE FIELD THIS DIMENSION SHALL BE ALLOWED TO BE 10" DUE TO MANUFACTURING TOLERANCES. STRUCTURES WITH LESS THAN 10" SHALL ONLY BE ALLOWED WITH THE CONSTRUCTION ENGINEER'S APPROVAL.

** NOTE: PIPES SHOWN IN VARIOUS CONSTRUCTION STAGES FOR ILLUSTRATIVE PURPOSES.

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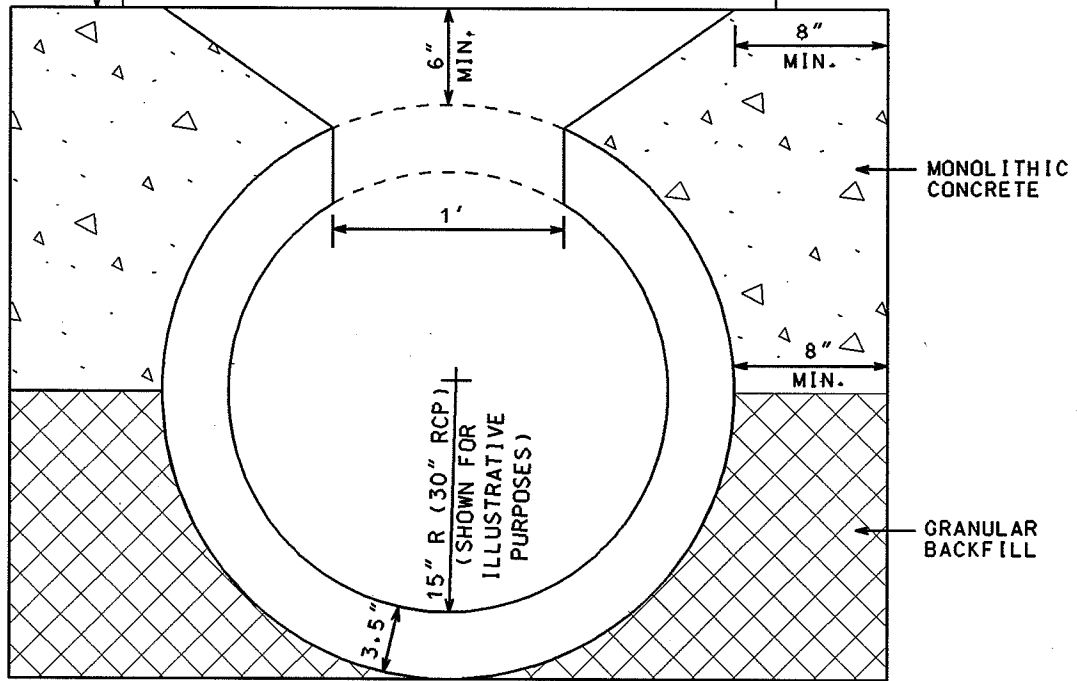
STORM SEWER
PRECAST SAS
{ TOP VIEW }

STANDARD DETAIL DRAWING 5.7.6

3" MIN. - 8" MAX. OF ADJUSTING RINGS SHALL BE ALLOWED UNLESS NOTED IN PLAN SET

R-3067 (TYPICAL)

SEALING OF RINGS SHALL BE PER STANDARD DETAIL DRAWING 5.7.7



TO BE USED ON PIPES OR BOXES WHERE THE O.D. OF THE THROUGH PIPE IS LESS THAN OR EQUAL TO 4'-4".

2004

CITY OF MADISON
ENGINEERING DIVISION

MADISON STANDARD
SADDLED INLET
TYPE I

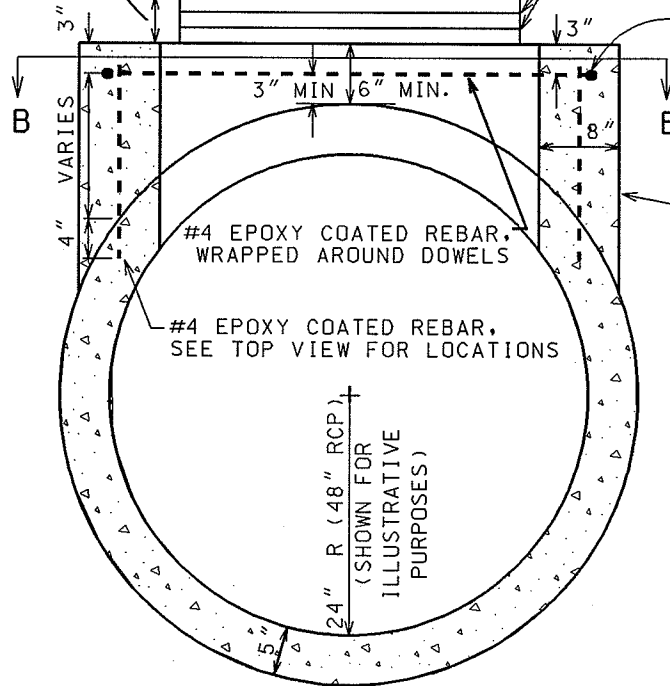
STANDARD DETAIL DRAWING 5.7.8

3" MIN. - 8" MAX. OF ADJUSTING RINGS SHALL BE ALLOWED UNLESS NOTED IN PLAN SET

R-3067 (TYPICAL)

SEALING OF RINGS SHALL BE PER STANDARD DETAIL DRAWING 5.7.7

ADDITIONAL LONGITUDINAL REBAR ON 8" CENTER AS INLET DEPTH INCREASES

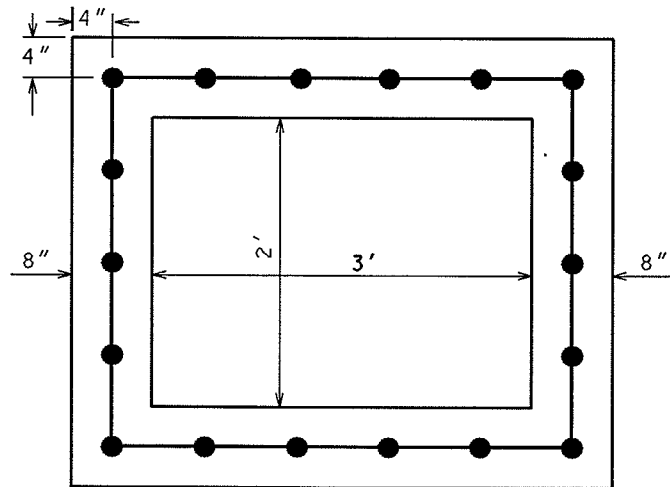


8" THICK MONOLITHIC CONCRETE WITH DOWELS AND REINFORCEMENT AS NOTED.

#4 EPOXY COATED REBAR, WRAPPED AROUND DOWELS

#4 EPOXY COATED REBAR, SEE TOP VIEW FOR LOCATIONS

24" R (48" RCP)
(SHOWN FOR ILLUSTRATIVE PURPOSES)



SECTION B - B

2004

CITY OF MADISON
ENGINEERING DIVISION

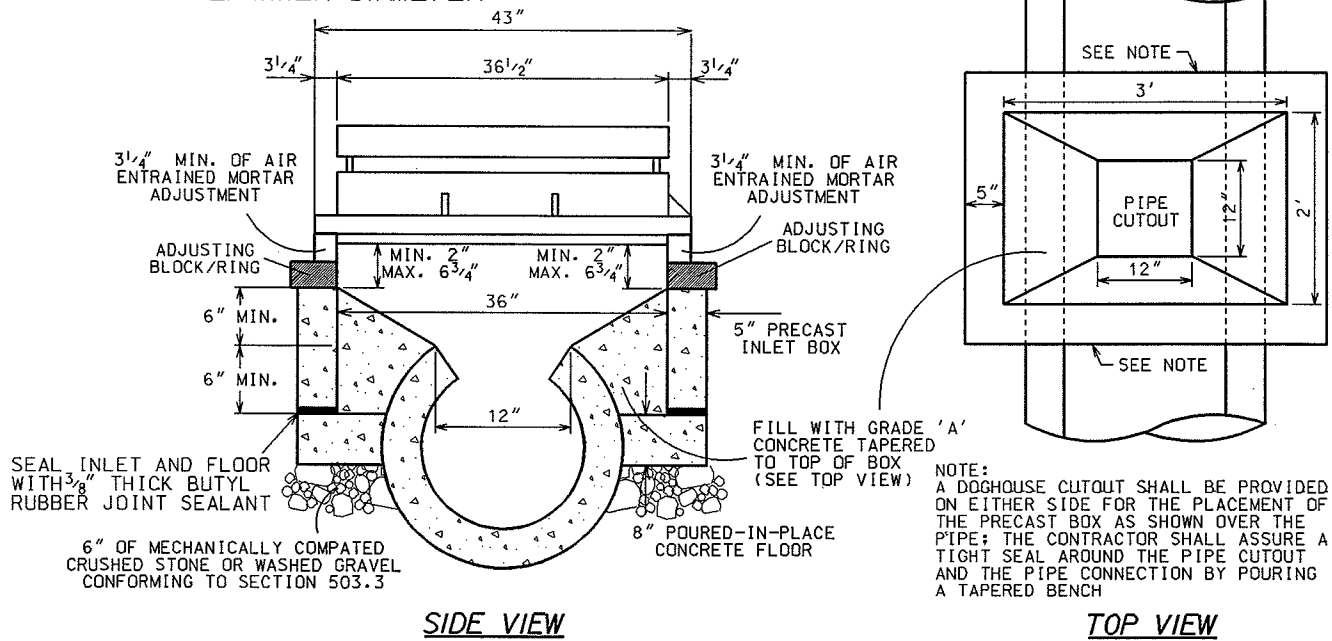
MADISON STANDARD
SADDLED INLET
TYPE II

STANDARD DETAIL DRAWING 5.7.9

TO BE USED ON PIPES OR BOXES WHERE THE O.D. OF THE PIPE OR BOX IS GREATER THAN 4'-4".

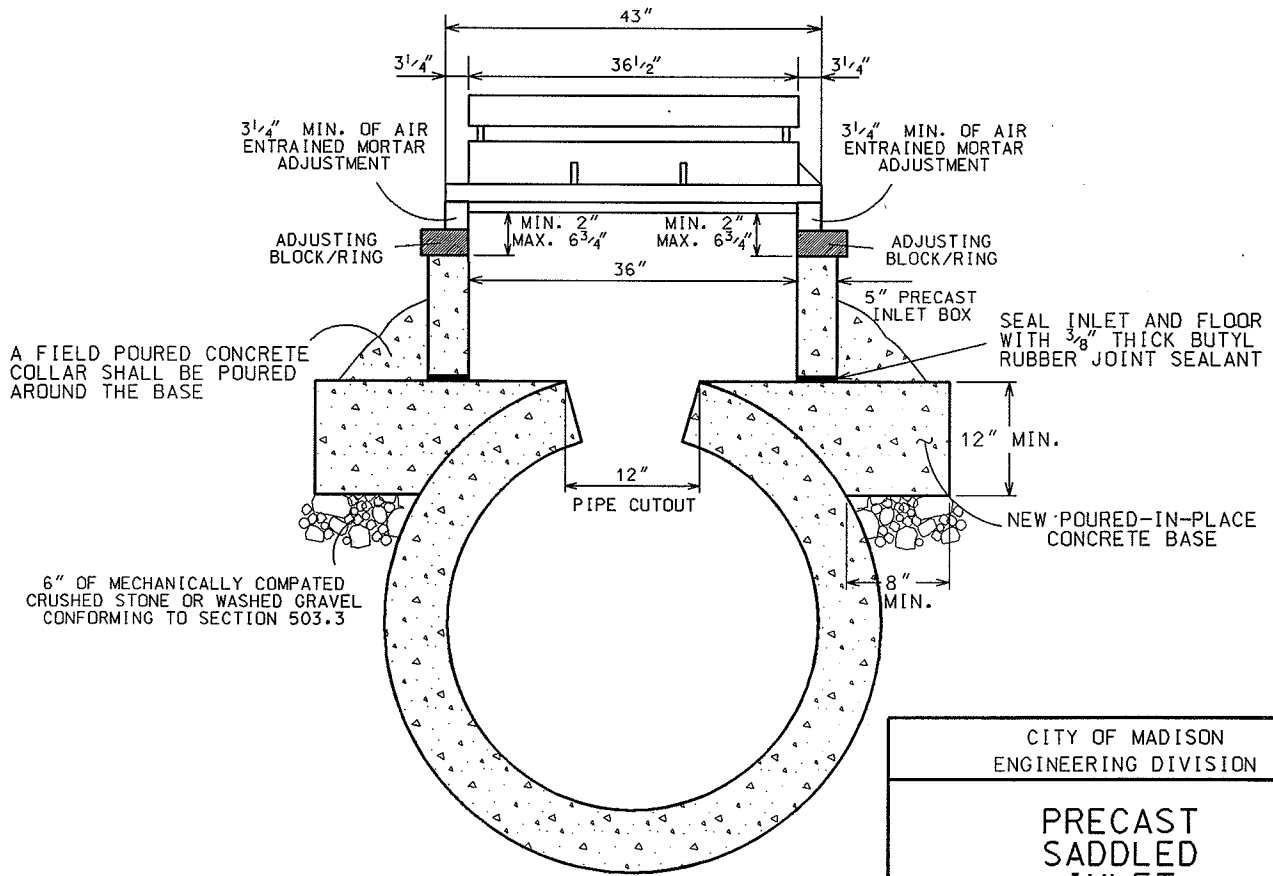
TYPE A

FOR PIPES WITH DIAMETER LESS THAN OR EQUAL TO 27" INNER DIAMETER



TYPE B

FOR PIPES WITH DIAMETER GREATER THAN 27" INNER DIAMETER



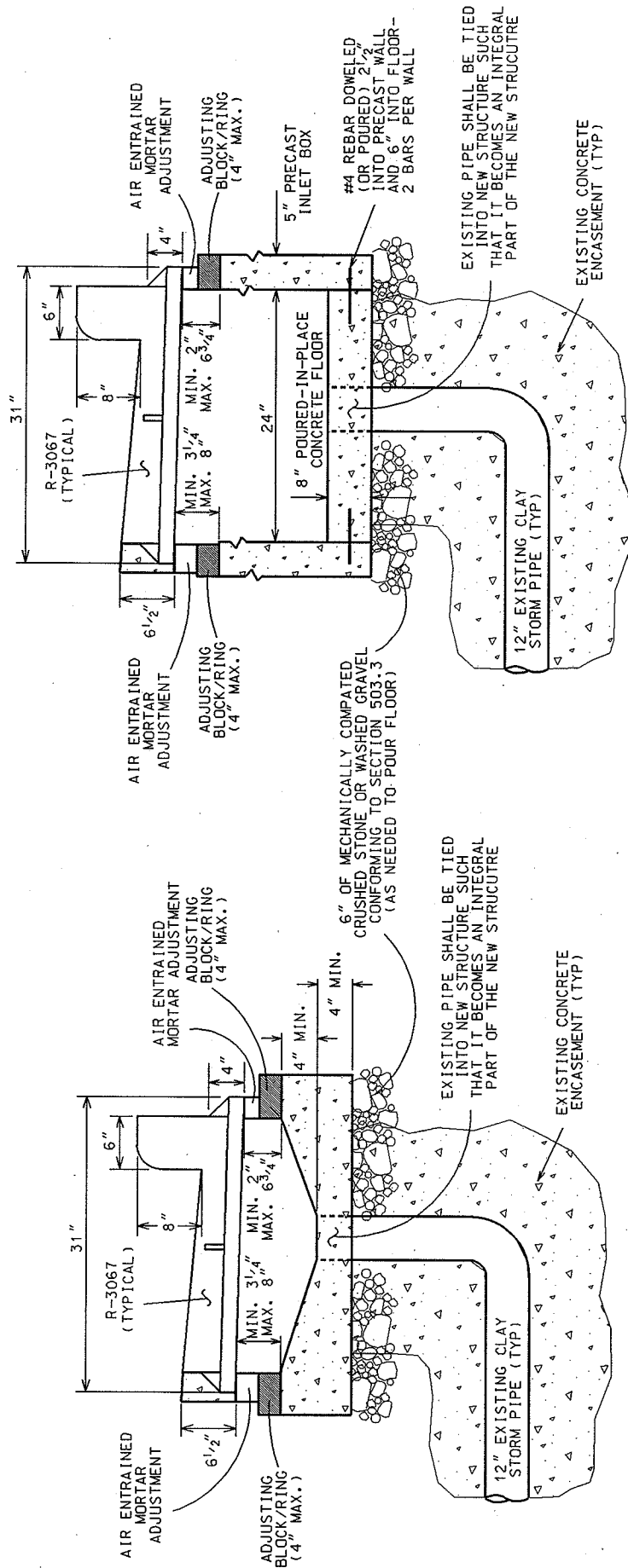
2004

CITY OF MADISON
ENGINEERING DIVISION

**PRECAST
SADDLED
INLET**

DRAWING NOT TO SCALE

STANDARD DETAIL DRAWING 5.7.10



FIELD POUR OPTION

PRECAST OPTION

DESIGN OPTIONS:

- (1) FIELD POUR - PER THE DESIGN IN THE DETAIL DRAWING, THE MINIMUM DEPTH FOR THE FIELD POUR OPTION SHALL BE 19" (4" WALL + 2" MORTAR ADJUSTMENT + 13" CASTING) WITH AN ADDITIONAL MINIMUM 4" OF EXCAVATION REQUIRED FOR THE FLOOR.
- (2) PRECAST - PER THE DESIGN IN THE DETAIL DRAWING, THE MINIMUM DEPTH FOR THE PRECAST OPTION SHALL BE 19" (12" INLET WALL - 8" FLOOR + 2" MORTAR ADJUSTMENT + 13" CASTING) WITH AN ADDITIONAL MINIMUM OF 8" OF EXCAVATION REQUIRED FOR THE FLOOR.
- (3) FIELD STACKED - THE DESIGN CONSISTS OF AN 8" FIELD Poured Concrete Floor, Stacked Adjustment Rings, Air Entrained Mortar Adjustment, and H Casting. THE MINIMUM DEPTH FOR THE STACKED OPTION SHALL BE 17" (2" ADJUSTMENT RING, 2" MORTAR ADJUSTMENT, 13" CASTING). THE MAXIMUM DEPTH SHALL BE 19" (4" ADJUSTMENT RINGS, 2" MORTAR ADJUSTMENT, 13" CASTING)

GENERAL NOTES:

- (1) REMOVE EXISTING INLET AND CLAY PIPE TO A STABLE LOCATION
- (2) REMOVE MATERIAL SURROUNDING PIPE TO A DEPTH OF FOURTEEN (14) INCHES BEYOND THE STABLE LOCATION REFERRED TO ABOVE
- (3) INSTALL NEW INLET CASTING ADJUSTMENTS.
- (4) IF TO FIND A STABLE PIPE LOCATION, THE EXISTING PIPE IS REMOVED BEYOND THE ELBOW, THE RECONSTRUCT TUB INLET SPECIFICATION IS NO LONGER APPLICABLE. THE RELEVANT ITEMS BECOME REMOVE INLET AND REPLACE WITH TYPE 'H' INLET.

DRAWINGS NOT TO SCALE

CITY OF MADISON
ENGINEERING DIVISION

**RECONSTRUCT
TUB INLET**

STANDARD DETAIL DRAWING 5.7.11

ROAD

EDGE OF GUTTER

FACE OF CURB

SECTION 2

2' OUTSIDE RADIUS - TAPER CURB FROM 6" TO 4.5" @ STRUCTURE

SECTION 1

SECTION 1

4.25"

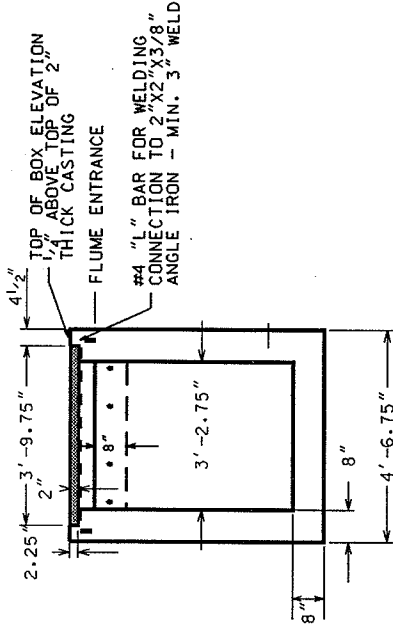
4'-6.75"

5'-7"

2 EACH (GRATE ONLY) MEEENAH COMPONENT NUMBER 38080005

STRUCTURE

PLAN VIEW



SECTION 1

TOP OF CURB @ ENTRANCE TO FLUME

2" x 2" x 3/8" ANGLE IRON RUNS FROM EDGE TO EDGE SUPPORTING FRONT OF CASTING. ANGLE IRON IS WELDED TO A #4 "L" BAR AT EACH END OF THE STRUCTURE

E.G.
#4 DOWEL @ 12" ON CENTER 3" CLEAR. MIN.

4 1/2"

4'-10"

4'-3"

8"

6"

5'-7"

8"

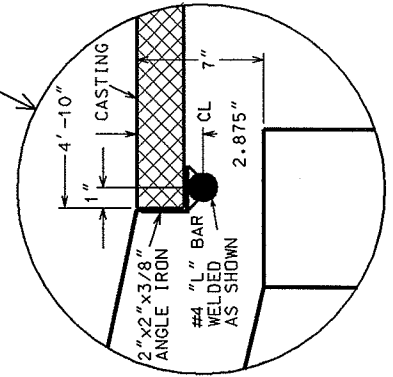
4 1/2"

SIDEWALK

TOP OF CASTING IS TYPICALLY 0.2' BELOW TOP OF CURB AT SITE LOCATION

MECHANICALLY COMPACTED CRUSHED STONE

SECTION 2

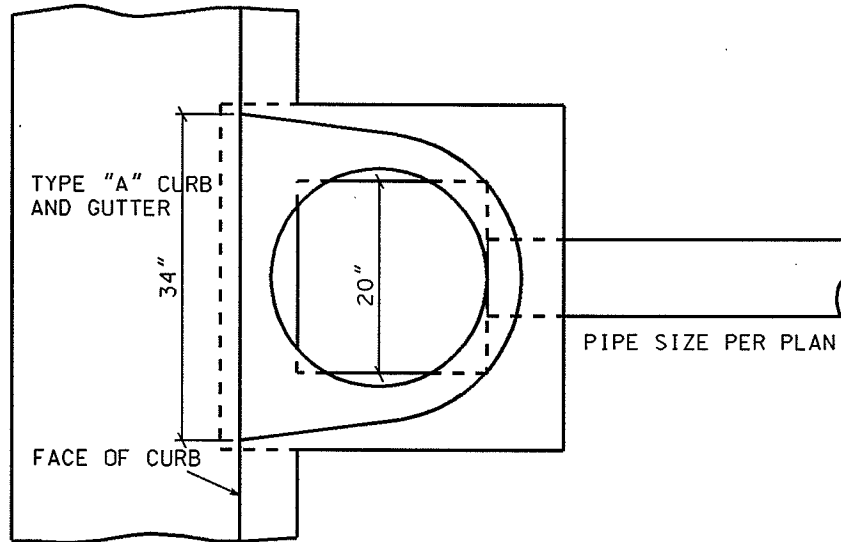


2004

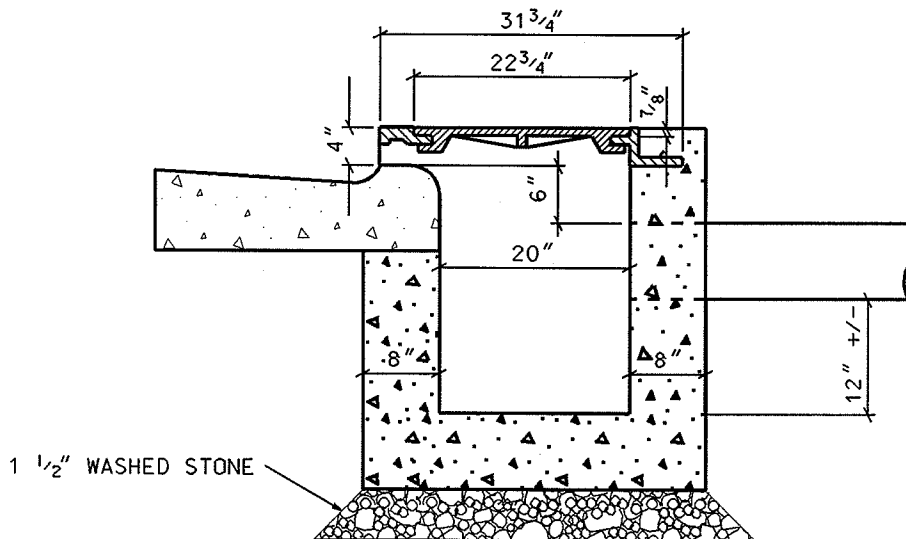
CITY OF MADISON
ENGINEERING DIVISION

TERRACE INLET

STANDARD DETAIL DRAWING 5.7.12



TOP VIEW



SIDE VIEW

NOTES:

- 1) TYPICAL LOCATION FOR INCOMING PIPE SHOWN. ALTERNATE INCOMING LOCATIONS FROM EITHER SIDE
- 2) CURB OUTLET STRUCTURE FRAME AND LID ARE NEENAH CASTING R-3331
- 3) MAY SUBSTITUTE PRECAST, ROUND CONCRETE STRUCTURE FOR THE SPECIFIED BOX STRUCTURE, WITH A FIELD POURED CONCRETE FLOOR.

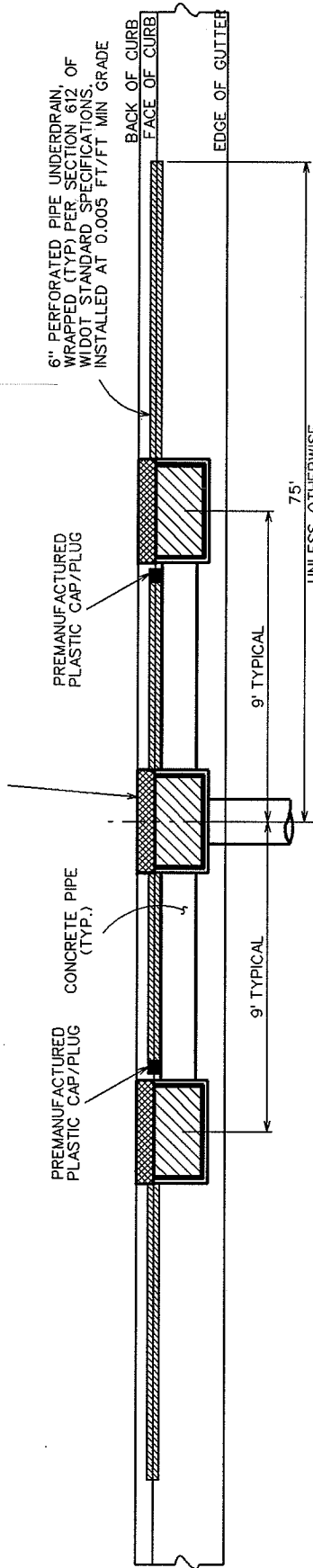
2004

CITY OF MADISON
ENGINEERING DIVISION

CURB OUTLET
STRUCTURE

STANDARD DETAIL DRAWING 5.7.13

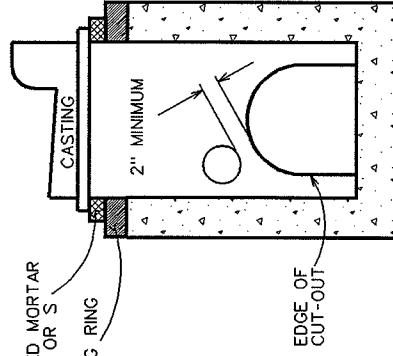
NOTE:
ATTACHMENT TO REAR OF INLET IS
SATISFACTORY IF PIPE SIZE RESTRICTS
SPACE FOR UNDERDRAIN CORE.



NOTE:
WHERE MULTIPLE INLETS ARE USED AT LOW POINTS, PERFORATED
PIPE UNDERDRAIN SHALL BE INSTALLED 75 FEET TO EITHER DIRECTION
FROM THE LOW POINT AT A MINIMUM POSITIVE GRADE OF 0.005 FT/FT.
THE SECTION OF UNDERDRAIN BETWEEN THE CENTER AND OUTER INLETS
SHALL BE PLACED TIGHT TO THE OUTER INLET, CAPPED WITH A
PREMANUFACTURED PLASTIC CAP OR PLUG, AND LAID AS SPECIFIED ABOVE
TO THE CENTER INLET.

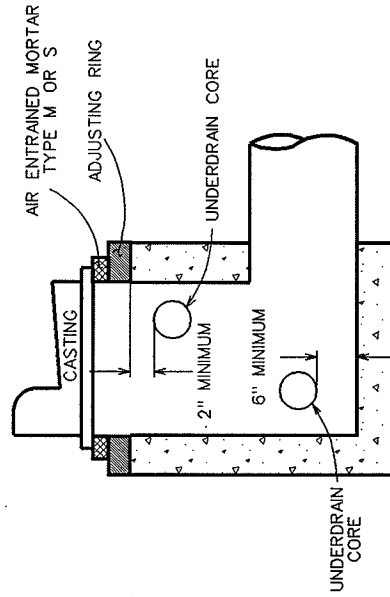
UNLESS OTHERWISE
SPECIFIED BY THE ENGINEER

TOP VIEW
TYPICAL TRIPLE INLET
CONFIGURATION WITH UNDERDRAIN



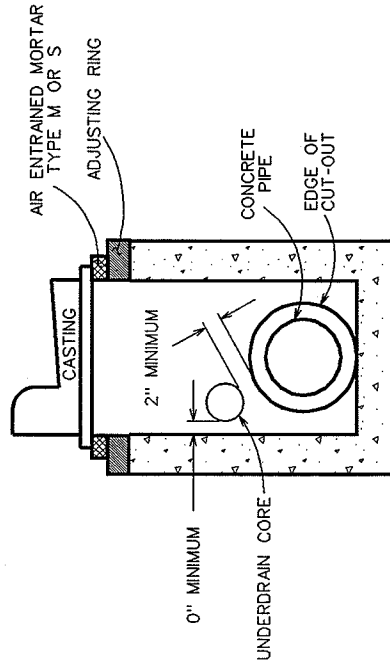
NOTE:
WHERE 'DOG HOUSES' ARE USED CORE
HOLES SHALL NOT BE INSTALLED IN THE
'DOG HOUSE' AND SHALL BE INSTALLED
2" OUTSIDE THE 'DOG HOUSE'.

CROSS-SECTION VIEW
TYPICAL 'DOG HOUSE'
INLET CONFIGURATION



NOTE:
(1) BOTTOM OF CORE PLACED A MINIMUM
OF 6" ABOVE THE FLOOR OF THE INLET.
(2) TOP OF CORE HOLES WILL BE A MINIMUM
OF 2" BELOW THE TOP OF THE INLET
STRUCTURES (BOTTOM OF RINGS)
(3) DRAIN TILES SHALL NOT BE ALLOWED IN
THE RING OF THE STRUCTURE OF INLETS
OR SEWER ACCESS STRUCTURES

CROSS-SECTION VIEW
TYPICAL INLET CONFIGURATION
WITH UNDERDRAIN CORED
INTO WALL WITH NO PIPE



NOTE:
CORE HOLES SHALL PROVIDE FOR A
MINIMUM OF 2" OF CONCRETE BETWEEN
THE CUTOFF FOR A CONCRETE PIPE AND
THE EDGE OF THE CORE HOLE.
(2) CORE HOLES MAY HAVE 0" CLEARANCE
FROM THE INSIDE WALLS OF A STRUCTURE.

CROSS-SECTION VIEW
TYPICAL INLET IN SUMP
CONDITION WITH
UNDERDRAIN CORED
INTO WALL WITH PIPE

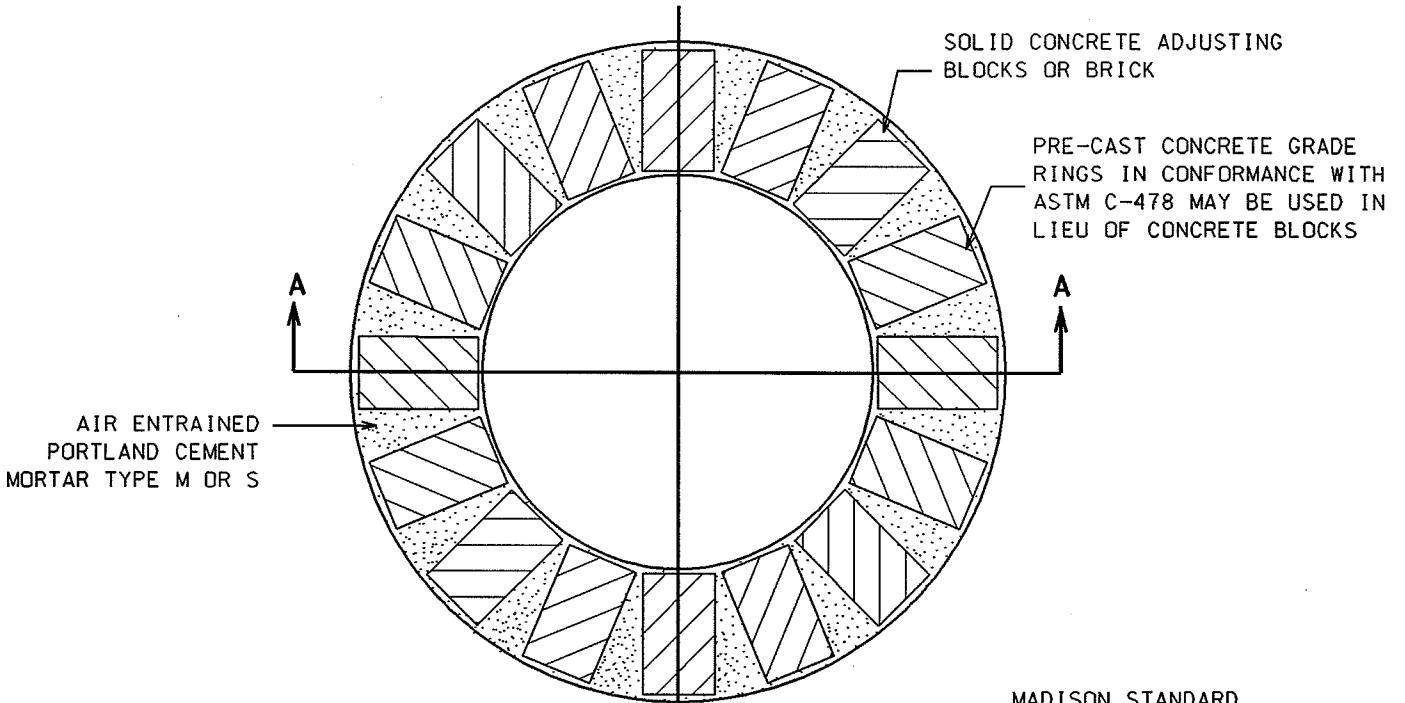
2004

CITY OF MADISON
ENGINEERING DIVISION

UNDERDRAIN

DRAWING NOT TO SCALE

STANDARD DETAIL DRAWING 5.7.14



SOLID CONCRETE ADJUSTING
BLOCKS OR BRICK

PRE-CAST CONCRETE GRADE
RINGS IN CONFORMANCE WITH
ASTM C-478 MAY BE USED IN
LIEU OF CONCRETE BLOCKS

AIR ENTRAINED
PORTLAND CEMENT
MORTAR TYPE M OR S

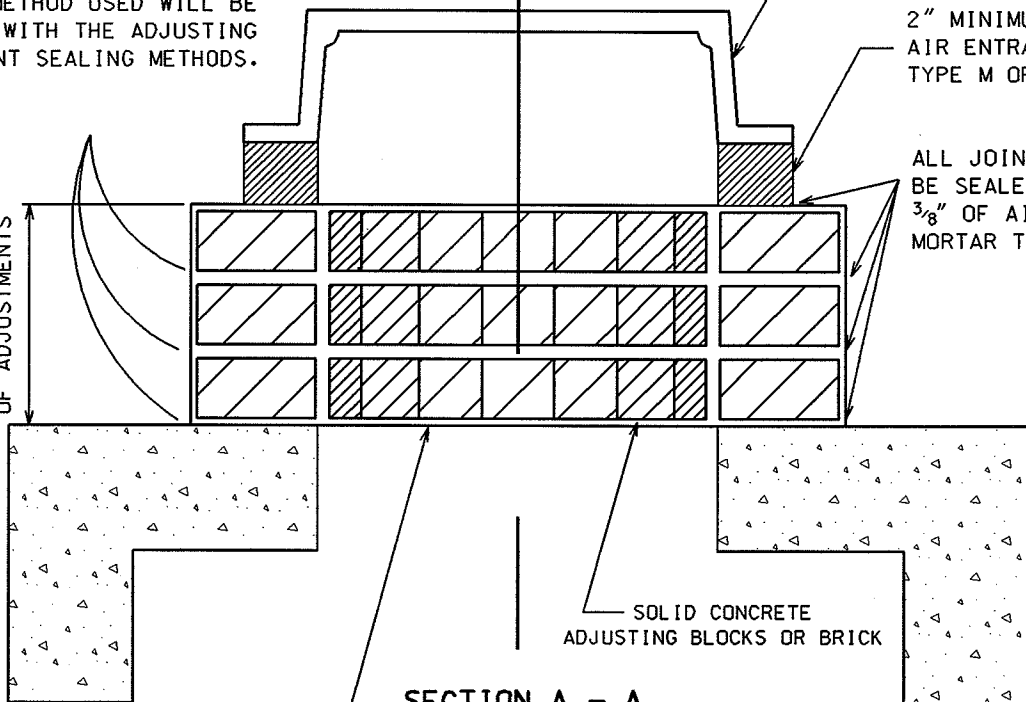
THE OUTSIDE OF ADJUSTING
RINGS SHALL BE SEALED WITH
A 1/2" THICK, AIR ENTRAINED
MORTAR TYPE M OR S SEAL.
THE METHOD USED WILL BE
COMPATIBLE WITH THE ADJUSTING
RING JOINT SEALING METHODS.

MADISON STANDARD
MACHINED CAST IRON
ACCESS STRUCTURE COVER

2" MINIMUM BED OF
AIR ENTRAINED MORTAR
TYPE M OR S

ALL JOINTS SHALL
BE SEALED WITH
3/8" OF AIR ENTRAINED
MORTAR TYPE M OR S.

MIN. 3" / MAX. 9"
OF ADJUSTMENTS



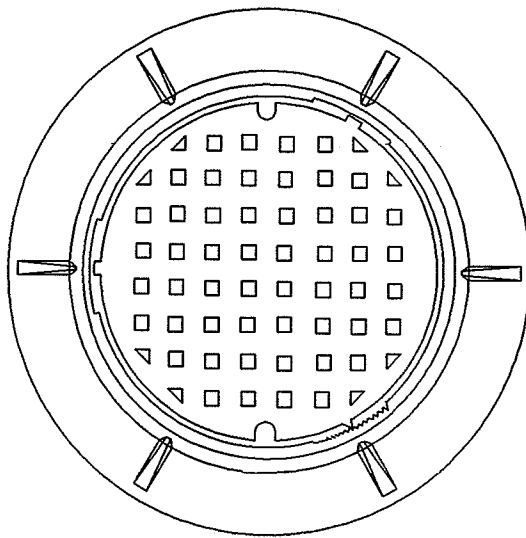
SOLID CONCRETE
ADJUSTING BLOCKS OR BRICK

SECTION A - A

PRE-CAST CONCRETE GRADE
RINGS IN CONFORMANCE WITH
ASTM C-478 MAY BE USED IN
LIEU OF CONCRETE BLOCKS

2004

CITY OF MADISON ENGINEERING DIVISION
SAS CHIMNEY AND CASTING
STANDARD DETAIL DRAWING 5.7.15



NOTES:

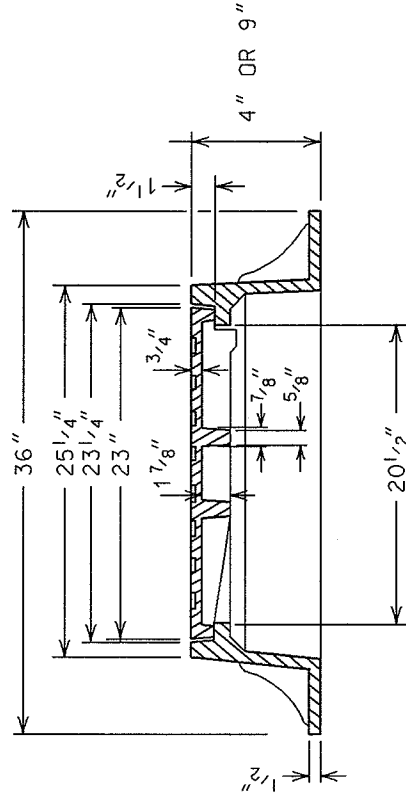
1. FRAME AND COVER SHALL BE MACHINED AND FITTED SO THAT ROCKING AND CHATTERING WILL BE ELIMINATED.
2. ALL LIDS SHALL BE SELF-SEALING EXCEPT FOR STORM SEWER.

APPROXIMATE TOTAL WEIGHTS:

R-1550, 9" FRAME AND LID = 238 LBS.
 R-1689, 4" FRAME AND LID = 272 LBS.
 R-1920, 83/4" FRAME AND LID = 300 LBS.

THE FOLLOWING NEEHAH FOUNDRY CASTINGS (OR EQUAL CASTINGS) SHALL BE ACCEPTABLE:

1. A) R-1550, 9" NON-ROCKING ACCESS STRUCTURE FRAME.
 B) R-1550 TYPE 'B' NON-ROCKING ACCESS STRUCTURE LIDS ONLY WITH CONCEALED PICK HOLES.
2. A) R-1689, 4" NON-ROCKING ACCESS STRUCTURE FRAME (WHEN REQUESTED BY THE CITY CONSTRUCTION ENGINEER).
 B) R-1689 TYPE 'B' NON-ROCKING ACCESS STRUCTURE LIDS ONLY WITH CONCEALED PICK HOLES.
3. R-1920, 83/4" ACCESS STRUCTURE FRAME WITH LOCKING LID, TYPE 'F' LOCKS, AND CONCEALED PICK HOLES. TO BE USED IN GREENWAYS AND EASEMENTS.

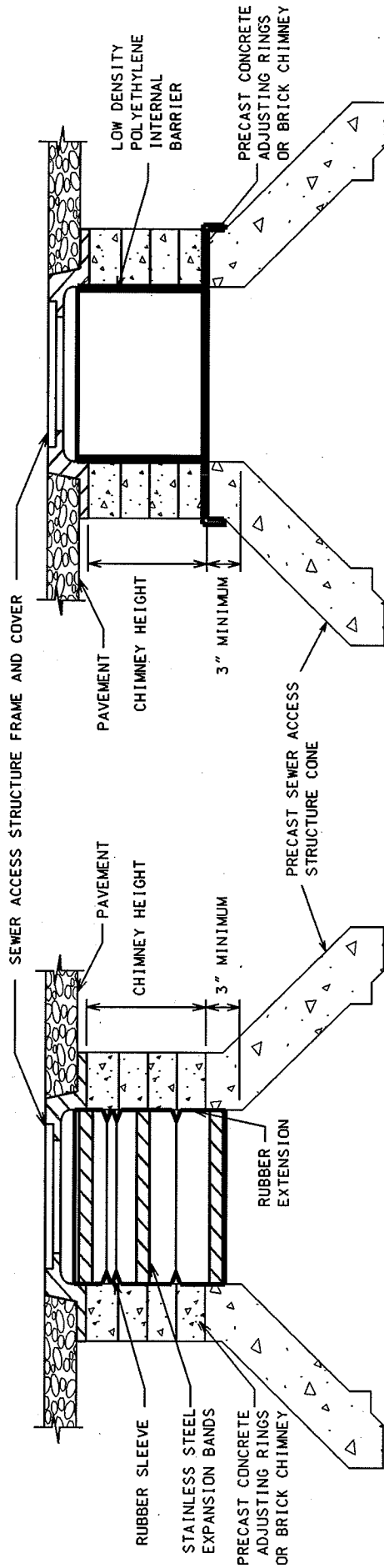


2004

CITY OF MADISON
 ENGINEERING DIVISION

SAS FRAME & COVER

STANDARD DETAIL DRAWING 5.7.16



FLEXIBLE INTERNAL RUBBER SLEEVE

LOW DENSITY POLYETHYLENE INTERNAL BARRIER

AN INTERNAL CHIMNEY SEAL WHERE NEEDED, SHALL BE INSTALLED TO COVER THE ENTIRE CHIMNEY AREA IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. FRAME SEALS SHALL CONSIST OF ONE OF THE FOLLOWING TYPES OF INTERNAL SEALS:

1) FLEXIBLE INTERNAL RUBBER SLEEVE

A FLEXIBLE INTERNAL RUBBER SLEEVE, INTERLOCKING EXTENSIONS AND STAINLESS STEEL EXPANSION BANDS AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS OR AN APPROVED EQUAL CONFORMING TO THE FOLLOWING REQUIREMENTS.

THE SEAL SHALL REMAIN FLEXIBLE THROUGHOUT A 25 YEAR DESIGN LIFE, ALLOWING REPEATED VERTICAL MOVEMENT OF THE FRAME OF NOT LESS THAN 2 INCHES AND/OR REPEATED HORIZONTAL MOVEMENTS OF NOT LESS THAN 1/2 INCH. THE SLEEVE PORTION OF THE SEAL SHALL BE EITHER DOUBLE OR TRIPLE PLEATED WITH A MINIMUM UNEXPANDED VERTICAL HEIGHT OF EITHER 8 INCHES OR 10 INCHES, RESPECTIVELY. THE SLEEVE AND EXTENSION SHALL HAVE A MINIMUM THICKNESS OF 3/16 INCHES AND SHALL BE MADE FROM A HIGH QUALITY RUBBER COMPOUND CONFORMING TO THE APPLICABLE REQUIREMENTS OF ASTM C-923, WITH A MINIMUM 1500 PSI TENSILE STRENGTH, A MAXIMUM 18% COMPRESSION SET AND A HARDNESS (DUROMETER) OF 48 +/- . THE BANDS SHALL BE FABRICATED FROM 16 GAUGE STAINLESS STEEL CONFORMING TO ASTM A-240, TYPE 304 AND SHALL HAVE A MINIMUM ADJUSTMENT RANGE OF 2 DIAMETER INCHES AND A POSITIVE LOCKING MECHANISM. ANY SCREWS, BOLTS OR NUTS USED FOR THIS MECHANISM SHALL BE STAINLESS STEEL CONFORMING TO ASTM F-593 AND 594, TYPE 304.

2) LOW DENSITY POLYETHYLENE INTERNAL BARRIER

A LOW DENSITY POLYETHYLENE INTERNAL BARRIER SHALL MAINTAIN THEIR ADHESION ALLOWING REPEATED HORIZONTAL MOVEMENT OF NOT LESS THAN 1 INCH. THE BARRIER SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCH AND CONFORM TO THE REQUIREMENTS OF THE FOLLOWING STANDARDS:

ASTM D 790/1505, D 1238, D 638, D 790, D 648 AND D 1693.

INTERNAL CHIMNEY SEALS SHALL BE USED ON ALL SANITARY SEWER ACCESS STRUCTURES AT THE FOLLOWING LOCATIONS:

- 1) WITHIN 100' OF A STREET LOW POINT
- 2) ALL GREENWAYS
- 3) WHERE SPECIFIED BY THE ENGINEER

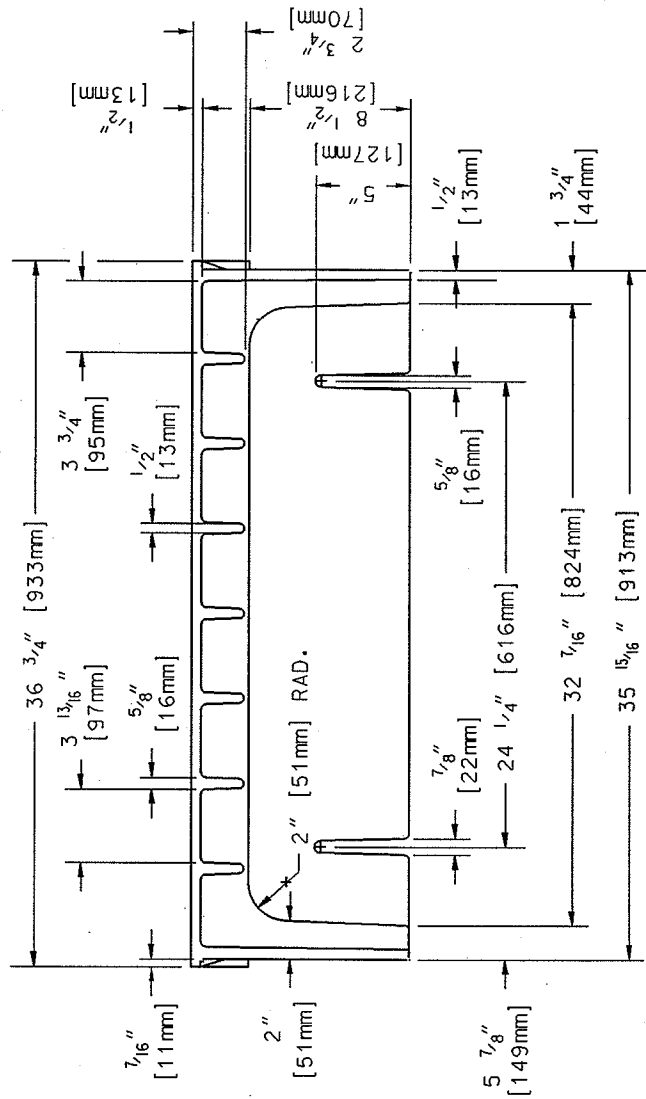
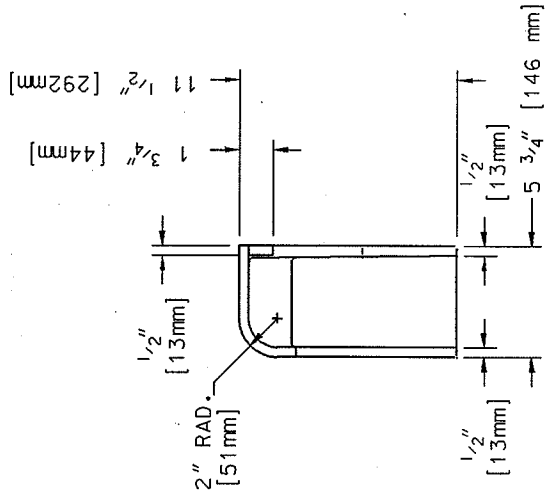
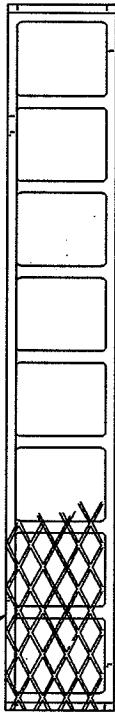
2004

CITY OF MADISON
ENGINEERING DIVISION

SAS INTERNAL
CHIMNEY SEAL

STANDARD DETAIL DRAWING 5.7.17

TYPE "C"
CHECKERED
TOP DESIGN



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9" FOR BOTH COVER TYPES.

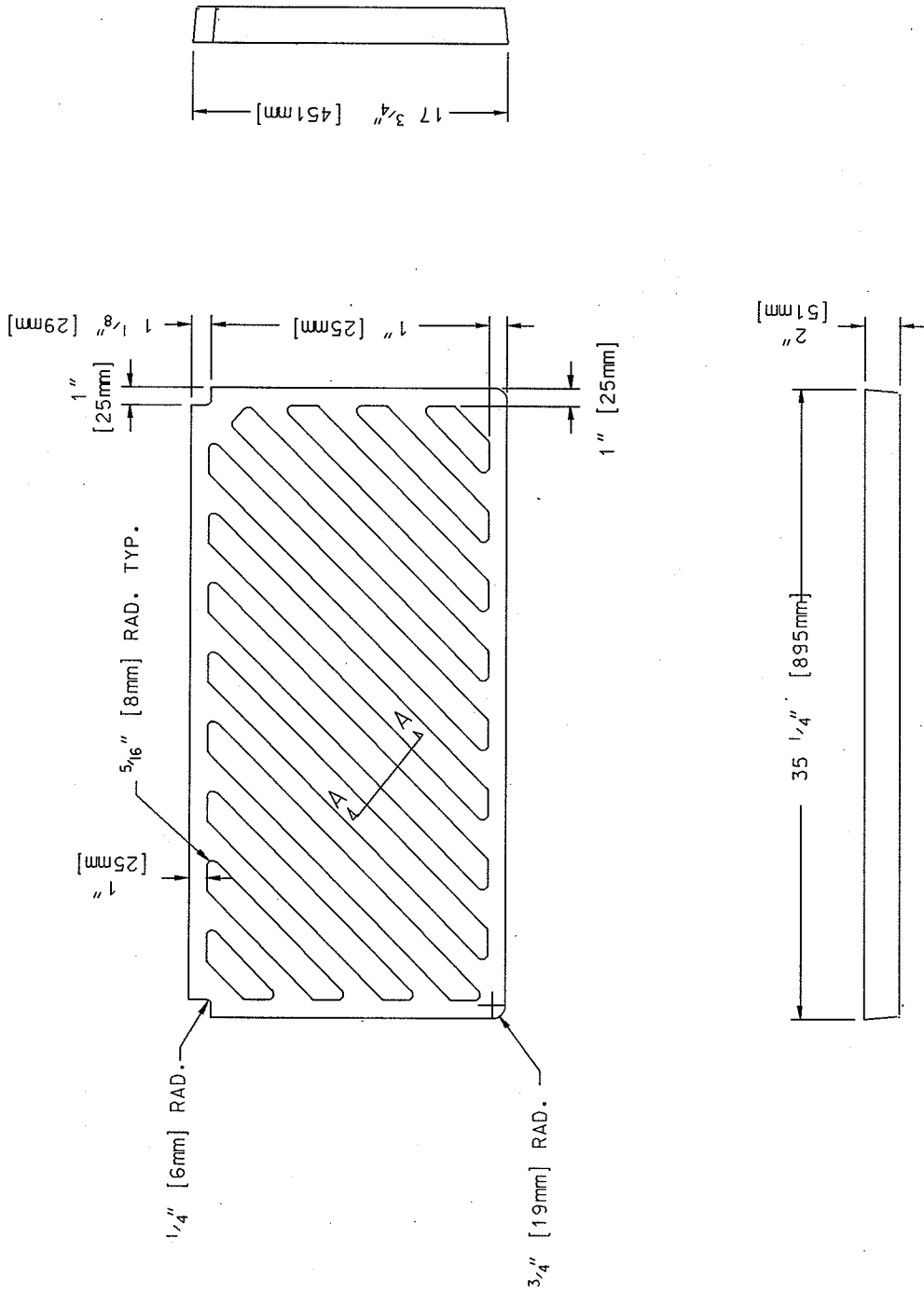
2004

CITY OF MADISON
ENGINEERING DIVISION

R-3067
CURB BOX

STANDARD DETAIL DRAWING 5.7.19

NOTE: ALL DIMENSIONS ARE SHOWN IN ENGLISH AND [METRIC].
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 116#



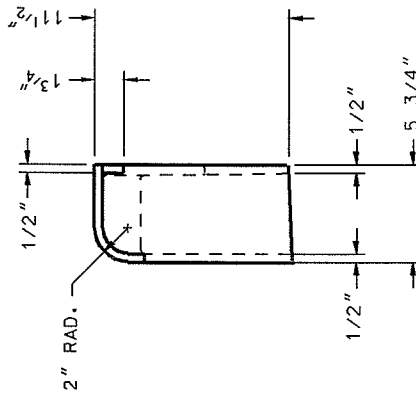
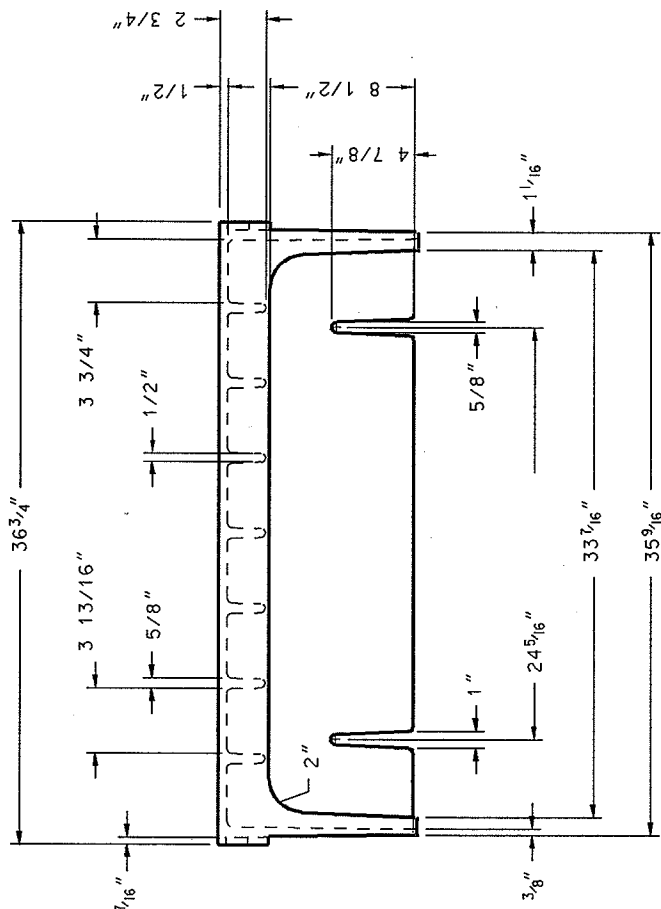
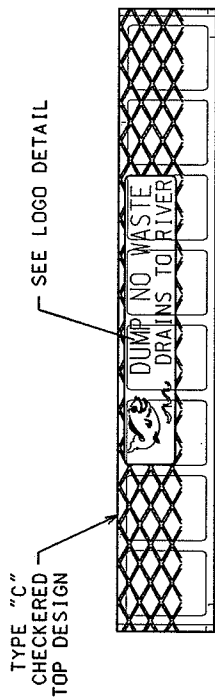
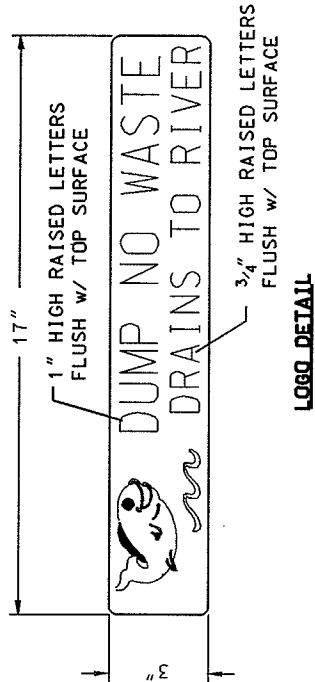
2004

CITY OF MADISON
ENGINEERING DIVISION

R-3067
TYPE R GRATE

STANDARD DETAIL DRAWING 5.7.20

FREE OPEN AREA: 282 SQUARE INCHES
 NOTE: ALL DIMENSIONS ARE SHOWN IN ENGLISH AND [METRIC].
 MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
 FINISH: NO PAINT
 WEIGHT: 172#



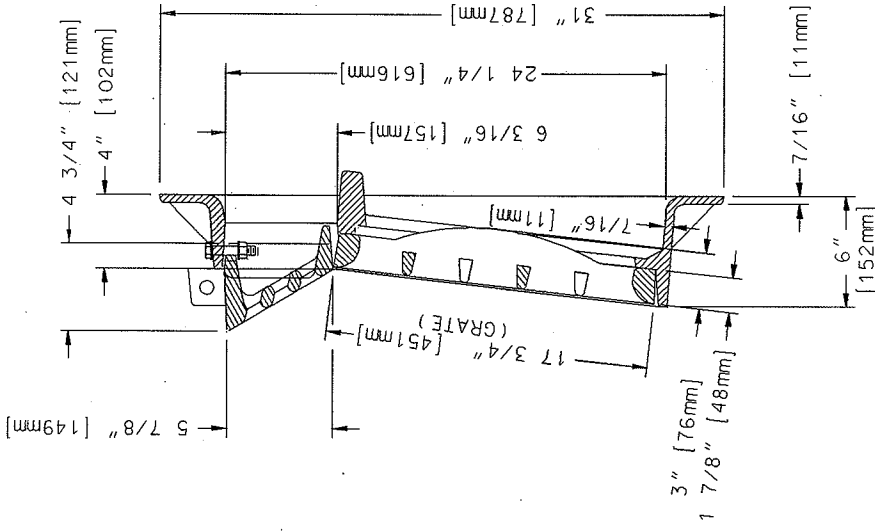
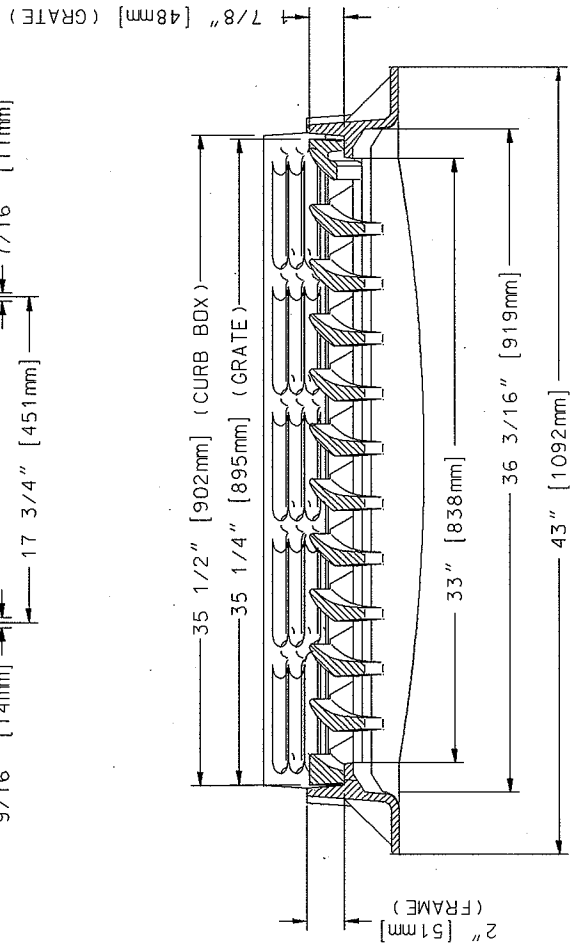
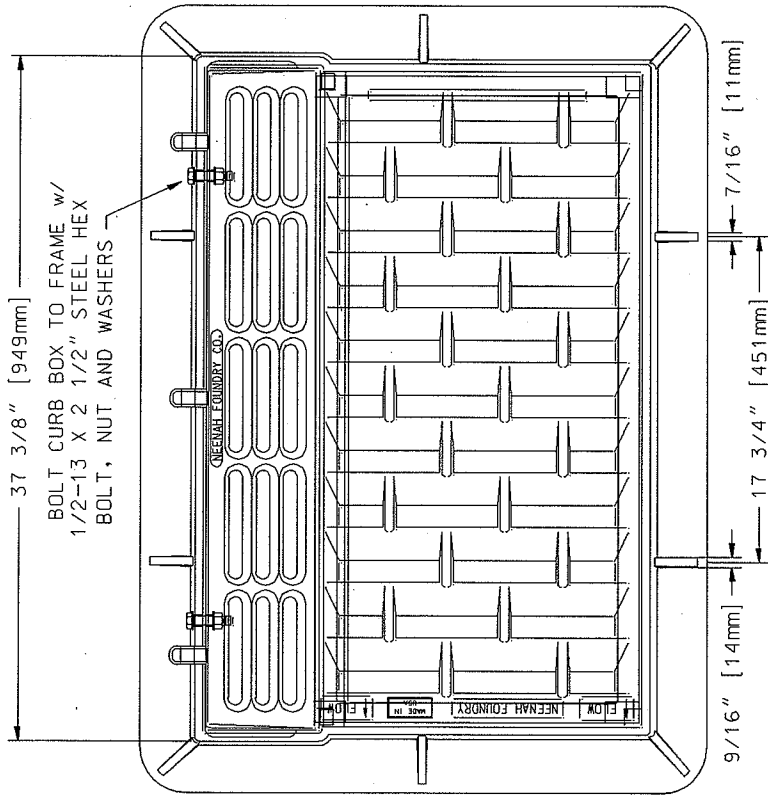
2004

CITY OF MADISON
ENGINEERING DIVISION

R-3067 ER CURB BOX

NEENAH FOUNDRY PRODUCT NUMBER 3067T003
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: 126#

STANDARD DETAIL DRAWING 5.7.23



SHOWN WITH TYPE L GRATE (STAGGERED VANE).
 SPECIFIED AS R-3067-L-CDS. OMIT "L" FOR TYPE R GRATE.

NOTE: ALL DIMENSIONS SHOWN ARE IN ENGLISH AND [METRIC].
 COMPONENT NO'S: FRAME 3067-2000; GRATE 3067-3000; CURB BOX 3067-7001
 MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
 FINISH: NO PAINT
 WEIGHT: FRAME 184#; GRATE 131#; CURB BOX 68#

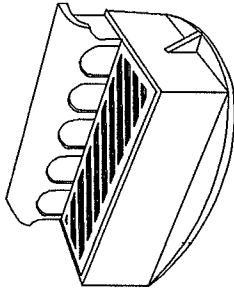
2004

CITY OF MADISON
 ENGINEERING DIVISION

R-3067 CDS
 CURB BOX

STANDARD DETAIL DRAWING 5.7.24

1" DIAGONAL BARS WITH 1 1/4" OPENINGS



NOTE: CURB BOX HEIGHT ADJUSTABLE 4 1/2" TO 9" FOR BOTH COVER TYPES.

DIAGONAL GRATE
FOR TYPE "S" INLET
(R-3281-B)

MEASURES 28 3/4" x 11 5/8" x 1 3/4"
APPROXIMATE TOTAL WEIGHT = 485 LBS.
DIAGONAL BAR GRATE IS REVERSIBLE
FOR RIGHT OR LEFT HAND FLOW
(RIGHT FLOW IS SHOWN)

NEENAH FOUNDRY CASTINGS

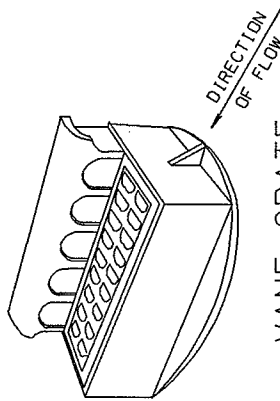
1. CURB INLET FRAME R-3281-B WITH DIAGONAL REVERSIBLE GRATE SHALL BE USED FOR TYPE "S" INLETS AT ALL LOW POINTS AND WHERE LONGITUDINAL ROAD SLOPE IS LESS THAN 1%.
2. CURB INLET FRAME R-3281-A (L OR R) SHALL BE USED FOR TYPE "S" INLETS AT ALL LOCATIONS HAVING A LONGITUDINAL ROAD SLOPE EQUAL TO OR GREATER THAN 1%.

2004

CITY OF MADISON
ENGINEERING DIVISION

R-3281

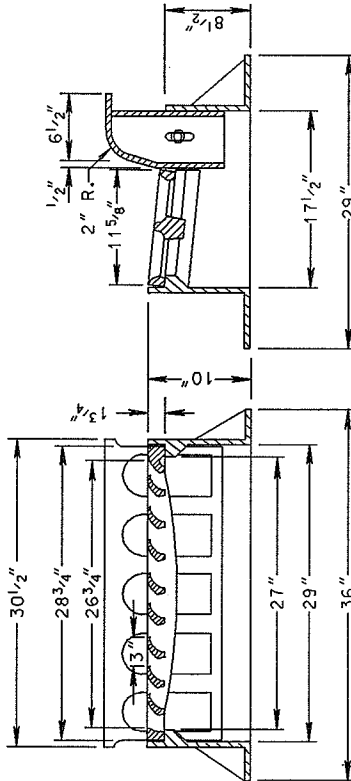
STANDARD DETAIL DRAWING 5.7.25



VANE GRATE
FOR TYPE "S" INLET
(R-3281-AL OR -AR)

MEASURES 28 3/4" x 11 5/8" x 1 3/4"
APPROXIMATE TOTAL WEIGHT = 480 LBS.

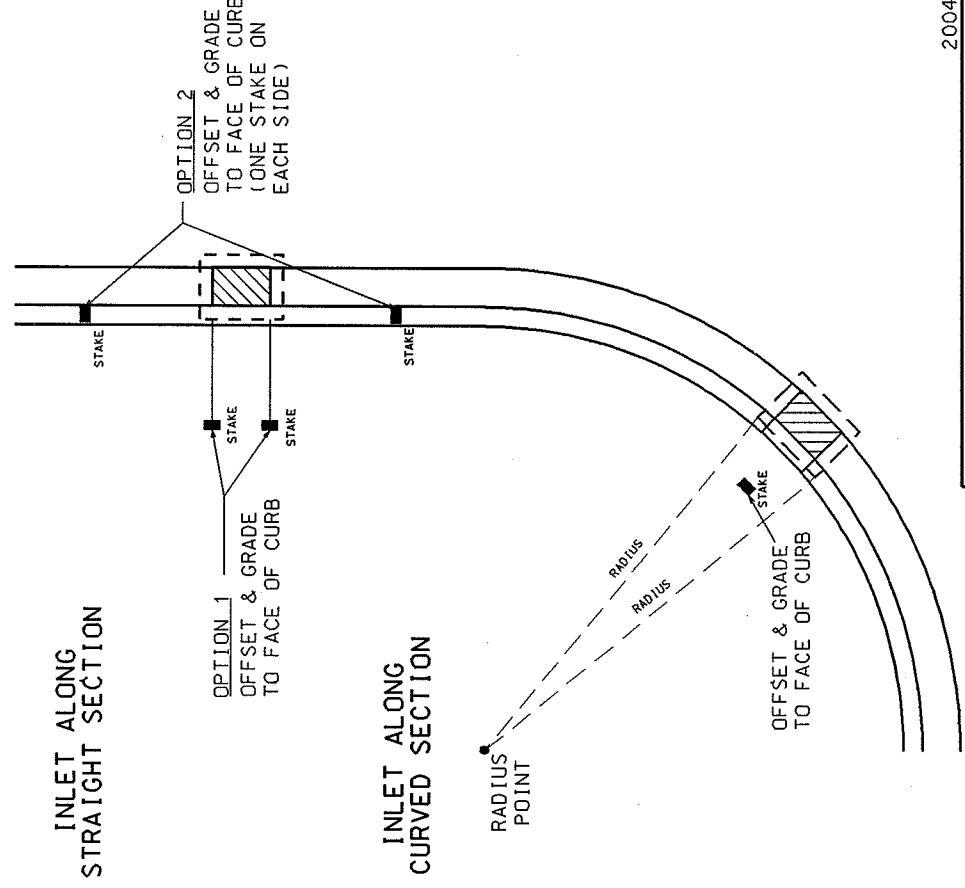
NOTE: GRATE IS NOT REVERSIBLE. R-3281-AL (LEFT) GRATE IS SHOWN IN DETAILS. R-3281-AR (RIGHT) GRATE IS SIMILAR.



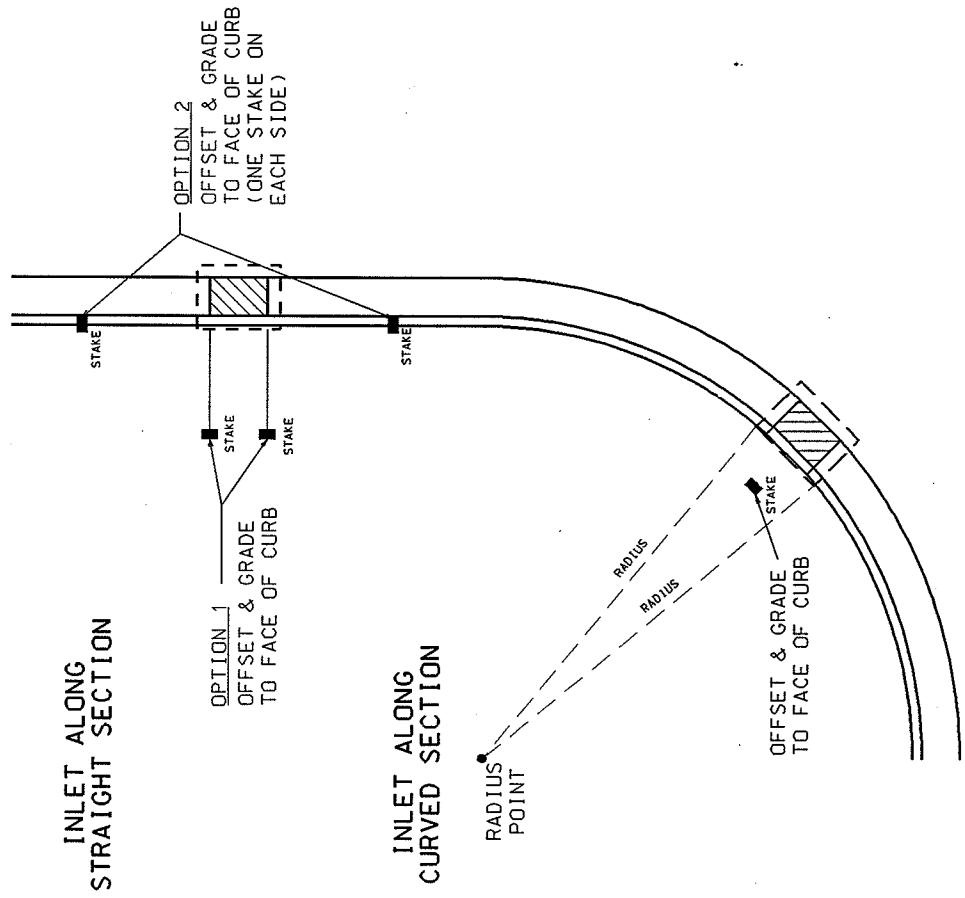
GENERAL NOTES:

1. DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
2. DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.
3. ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BALL BEARING SURFACES TO PREVENT ROCKING AND RATTLING.
4. THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT (PLUS OR MINUS) OF THE APPROXIMATE WEIGHT.
5. THE INSIDE DIMENSIONS OF THE STANDARD "H" INLET SHALL BE ALTERED TO 2' - 4" X 1' - 6" WHEN A TYPE "S" INLET IS SPECIFIED PER STANDARD DETAIL DRAWING 5.7.7
6. INLETS SHALL BE DERESSED IN THE CURB FLOW LINE. SEE MADISON STANDARD DETAIL DRAWING 5.5.7

TYPE 'B' CURB

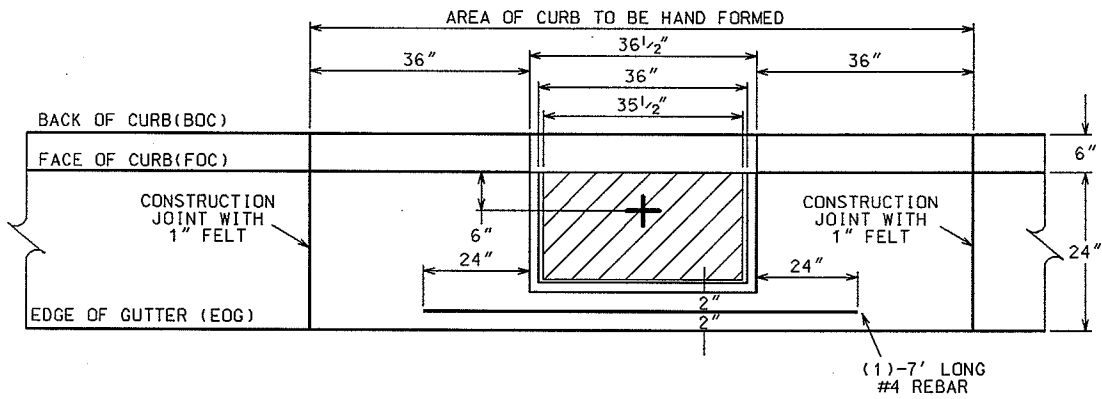


TYPE 'A' CURB

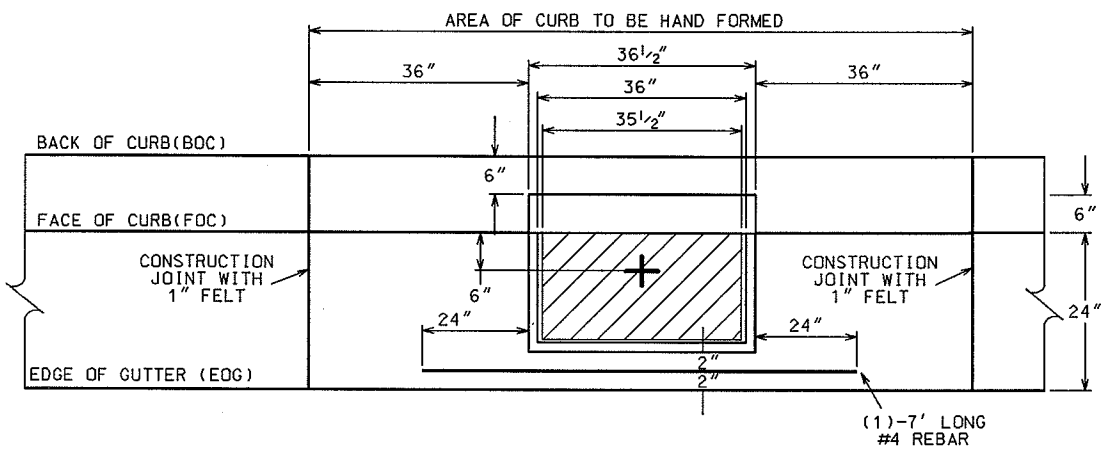


2004

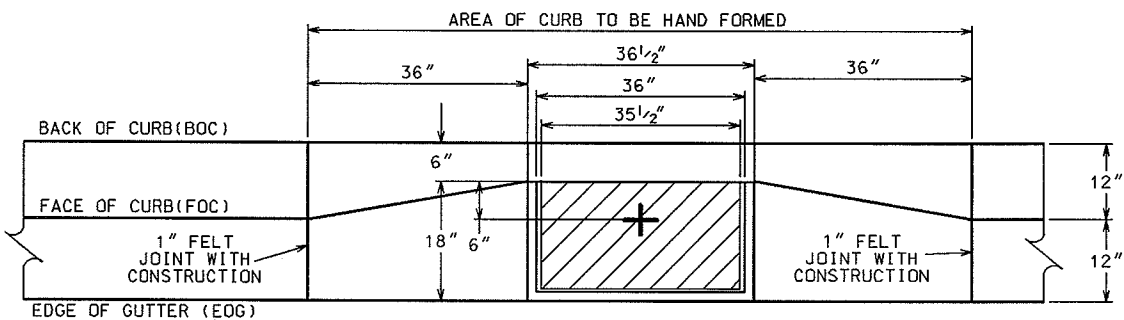
CITY OF MADISON ENGINEERING DIVISION
CONSTRUCTION STORM STAKING LAYOUT
STANDARD DETAIL DRAWING 5.7.26



TYPE "A" CURB AND GUTTER
PLAN VIEW



TYPE "B" CURB AND GUTTER
PLAN VIEW



TYPE "H" CURB AND GUTTER
PLAN VIEW

+ = CENTER OF STRUCTURE
(STATION AND OFFSET
AS INDICATED ON THE
STORM SCHEDULE)

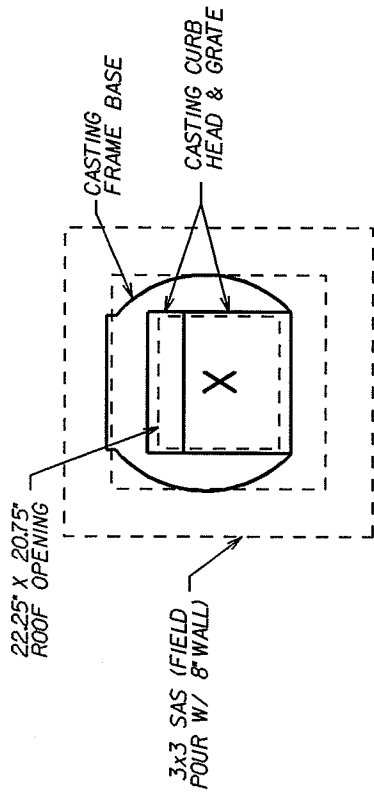
2004

CITY OF MADISON
ENGINEERING DIVISION

**H INLET LOCATIONS
IN DIFFERENT
CURB TYPES**

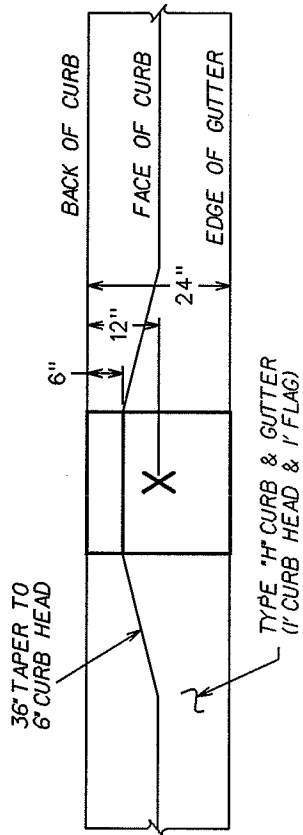
DRAWING NOT TO SCALE

STANDARD DETAIL DRAWING 5.7.27



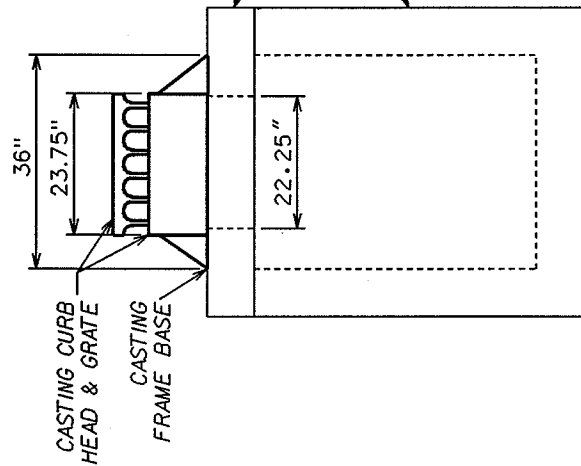
X = CENTER OF STRUCTURE

TOP VIEW
STRUCTURE WITH CASTING

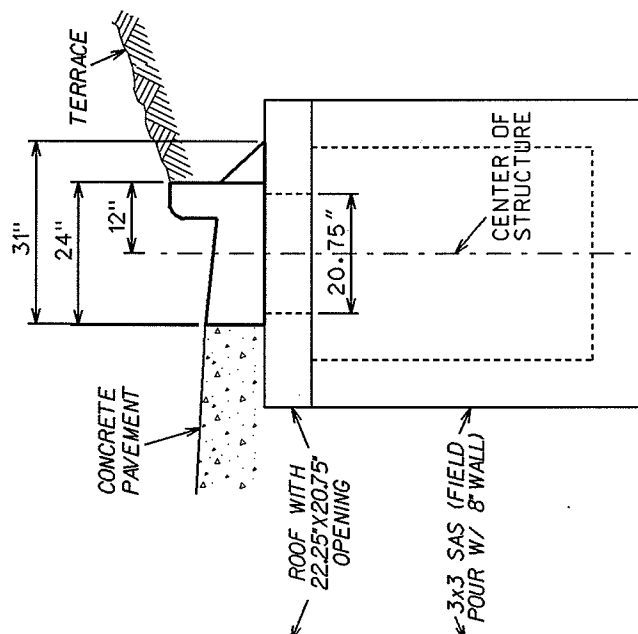


X = CENTER OF STRUCTURE

TOP VIEW
CASTING WITH CURB & GUTTER



FRONT VIEW



SIDE VIEW

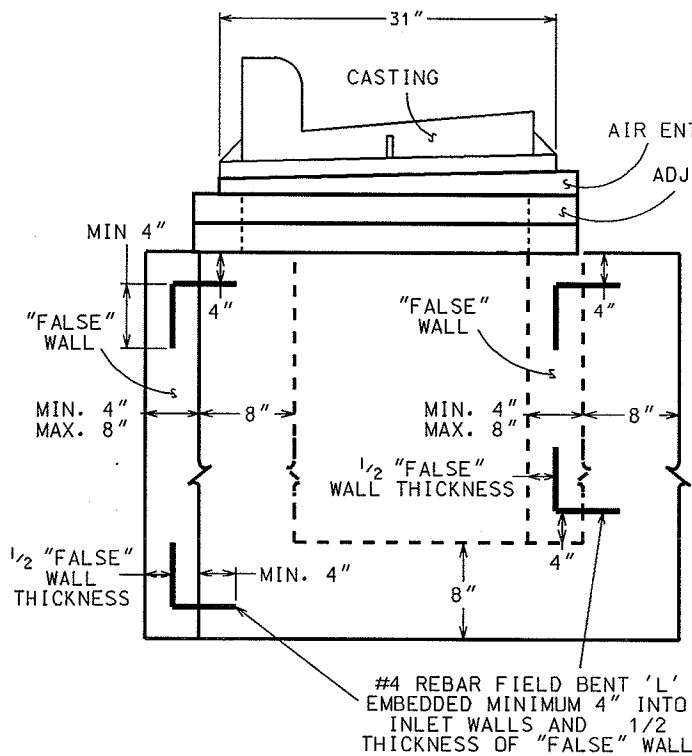
- NOTES:**
- (1) TYPE "H" CURB & GUTTER TYPICALLY USED IN MEDIAN DESIGN & CONSTRUCTION.
 - (2) NEENAH CASTING NUMBERS: INLETS AT LOW POINTS [R-3278-A] INLETS ON GRADE [R-3278-AL]
 - (3) CONSTRUCT SEWER ACCESS STRUCTURE (SAS) PER STANDARD DETAIL DRAWING 5.4.11
 - (4) CONSTRUCT CURB TAPER PER STANDARD DETAIL DRAWING 5.7.27

2004

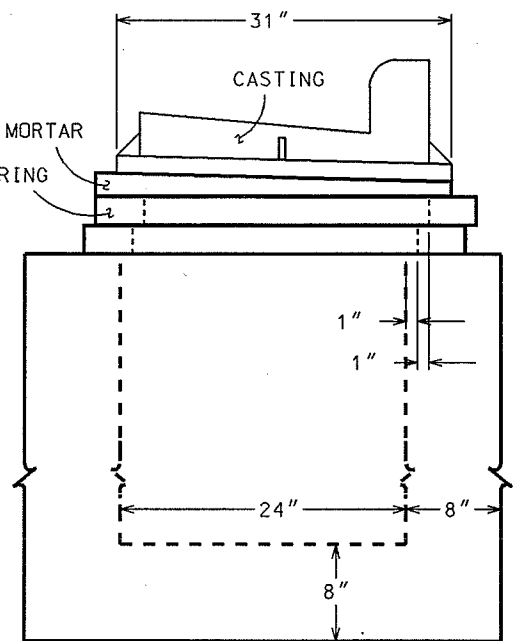
CITY OF MADISON
ENGINEERING DIVISION

**INLETS IN
TYPE "H" CURB & GUTTER
WITH CONCRETE PAVEMENT**

STANDARD DETAIL DRAWING 5.7.28



OFFSET USING FALSE WALL
INLET SIDE VIEW

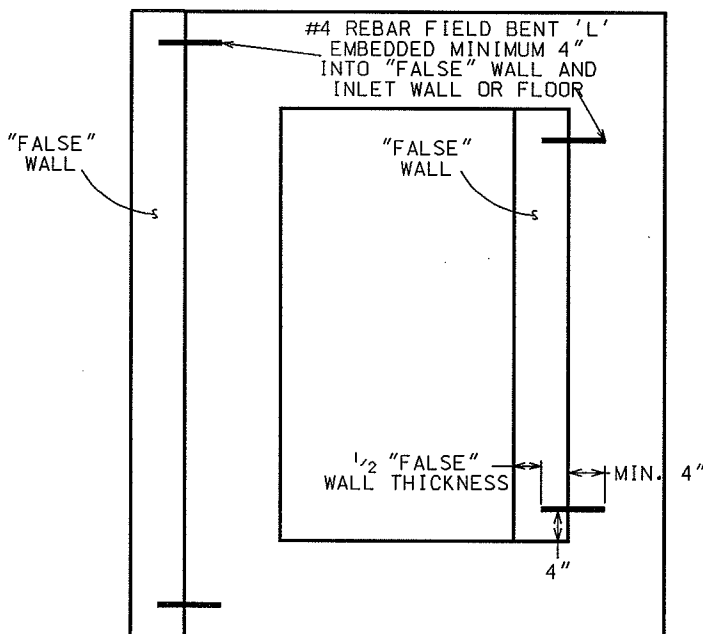


OFFSET USING ADJUSTING RINGS
INLET SIDE VIEW

NOTE:

TO INSURE THE INLET CASTING IS ALIGNED CORRECTLY WITH THE CURB AND GUTTER, AN OFFSET OF THE INLET CASTING MAY BE REQUIRED. THE ACCEPTABLE INLET CASTING OFFSETS ARE SHOWN AND THE GUIDELINES ARE AS FOLLOWS:

- (1) IF THE ADJUSTMENT REQUIRED IS LESS THAN TWO (2) INCHES, THIS CAN BE OBTAINED BY TWO ONE (1) INCH SHIFTS OF THE ADJUSTING RINGS A MAXIMUM OF ONE (1) INCH EACH AND/OR A ONE (1) INCH SHIFT OF THE CASTING.
- (2) IF THE ADJUSTMENT REQUIRED IS GREATER THAN TWO (2) INCHES AND LESS THAN FOUR (4) INCHES, THE INLET CASTING OFFSET SHALL BE OBTAINED BY THE CONSTRUCTION OF ONE FOUR (4) INCH THICK "FALSE" WALL ADJACENT TO THE INLET WALL THAT PROVIDES FULL SUPPORT OF THE CASTING. THE PLACEMENT AND ANCHORING SHALL BE CONSTRUCTED IN THE MANNER SHOWN.
- (3) IF THE ADJUSTMENT REQUIRED IS GREATER THAN FOUR (4) INCHES AND LESS THAN EIGHT (8) INCHES, THE INLET CASTING OFFSET SHALL BE OBTAINED BY THE CONSTRUCTION OF TWO FALSE WALLS WITH EQUAL WALL THICKNESSES VARYING FROM FOUR (4) TO EIGHT (8) INCHES DEPENDING ON THE OFFSET REQUIRED. THE PLACEMENT AND ANCHORING SHALL BE CONSTRUCTED IN THE MANNER SHOWN.
- (4) IF THE ADJUSTMENT REQUIRED IS GREATER THAN EIGHT (8) INCHES, THE INLET SHALL BE REPOSITIONED OR RECONSTRUCTED TO REDUCE THE OFFSET.



OFFSET USING FALSE WALL
INLET TOP VIEW

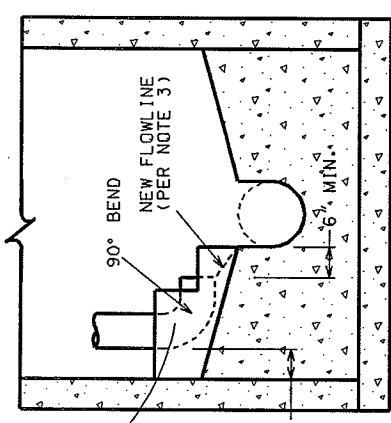
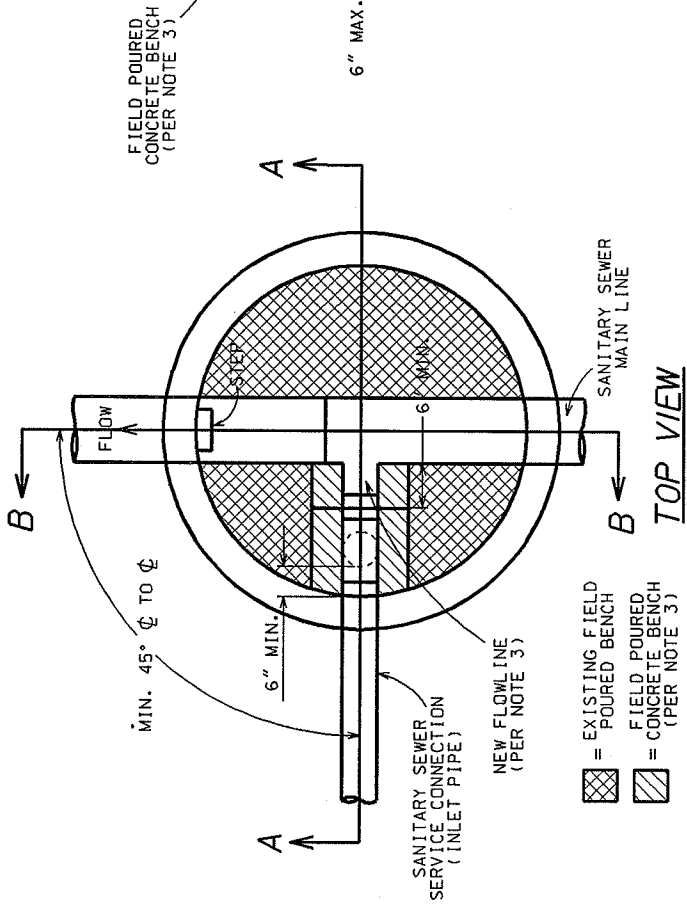
THESE SPECIFICATIONS ARE APPLICABLE FOR BOTH POURED-IN-PLACE AND PRECAST INLETS. THE DETAIL SHOWS A POURED-IN-PLACE INLET. A PRECAST INLET WOULD ONLY DIFFER WITH A WALL THICKNESS OF 5".

2004

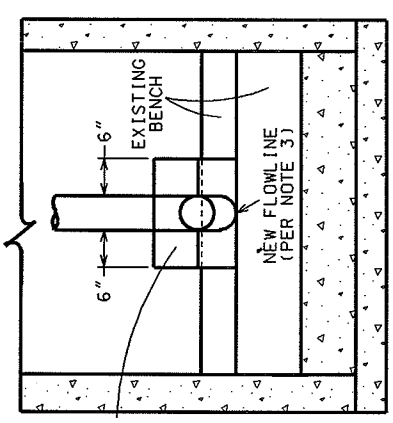
CITY OF MADISON
ENGINEERING DIVISION

INLET CASTING
OFFSET CRITERIA
FOR H INLETS

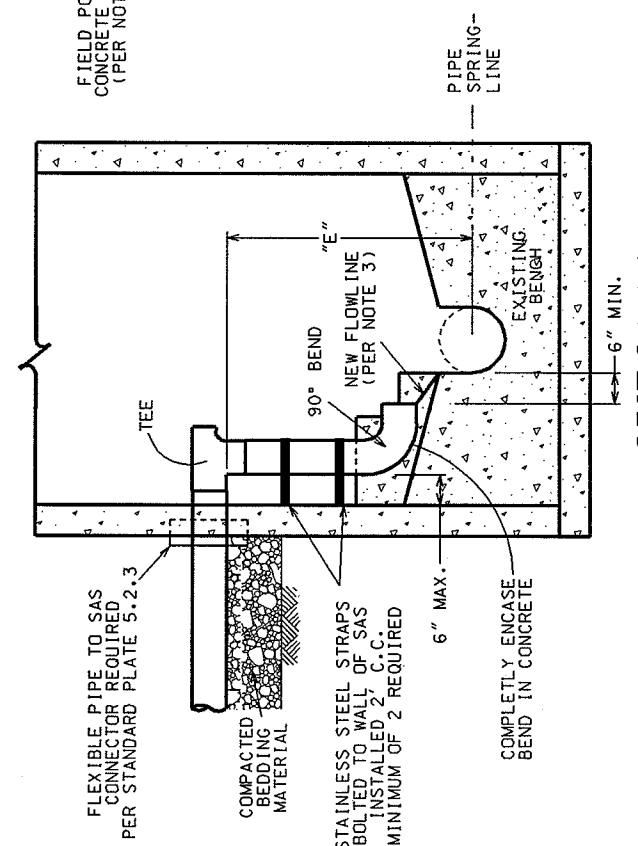
STANDARD DETAIL DRAWING 5.7.29



SIDE VIEW
FIELD POURED
CONCRETE BENCH



SECTION B-B



SECTION A-A

NOTES:

- 1) INSIDE DROP INLETS SHALL BE USED ONLY WHERE SITE CONDITIONS MAKE AN OUTSIDE DROP CONNECTION INFEASIBLE TO CONSTRUCT. THIS DETERMINATION SHALL BE MADE BY THE ENGINEER IN THE FIELD. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR INSTALLATION OF THE INSIDE DROP INLET FROM THE ENGINEER PRIOR TO CONSTRUCTION.
- 2) DROP INLET SHALL BE BUILT WHEN "E" IS GREATER THEN 24" AND THE INLET PIPE DIAMETER IS 6" OR LESS. INLET PIPES GREATER THAN 6" SHALL HAVE AN OUTSIDE DROP CONNECTION PER STANDARD DETAIL DRAWING 5.7.2 "E" SHALL BE MEASURED FROM THE INVERT OF THE INCOMING PIPE TO THE SPRINGLINE OF THE OUTGOING SEWER.
- 3) ENCASE INLET PIPE IN CONCRETE FROM THE EXISTING BENCH TO FIRST JOINT ABOVE THE 90° BEND. FORM NEW SMOOTH FLOWLINE FROM PIPE END TO MAIN CHANNEL. ROUGH BRUSH FINISH ALL OTHER SURFACES OF THE NEW CONCRETE ENCASUREMENT.

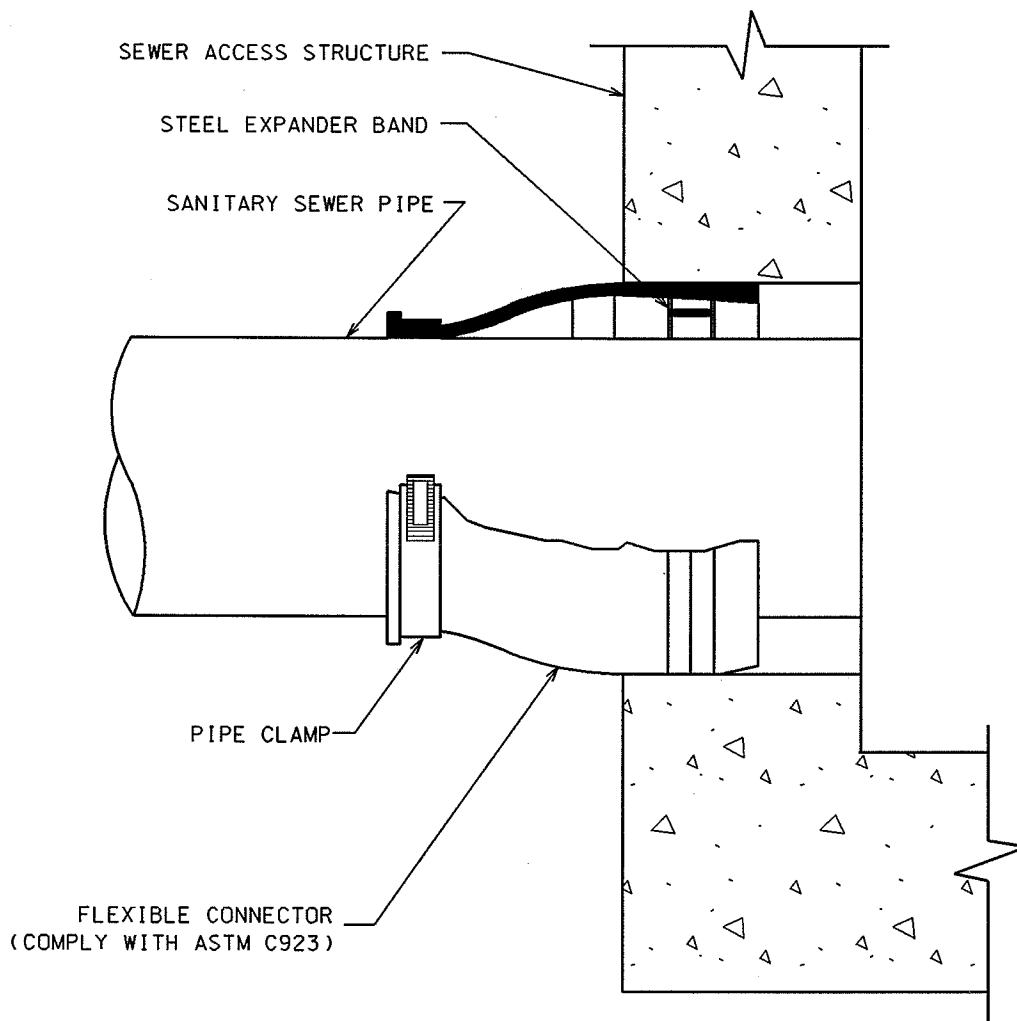
2004

CITY OF MADISON
ENGINEERING DIVISION

**INSIDE DROP FOR
SANITARY LATERAL**

DRAWING NOT TO SCALE

STANDARD DETAIL DRAWING 5.7.30

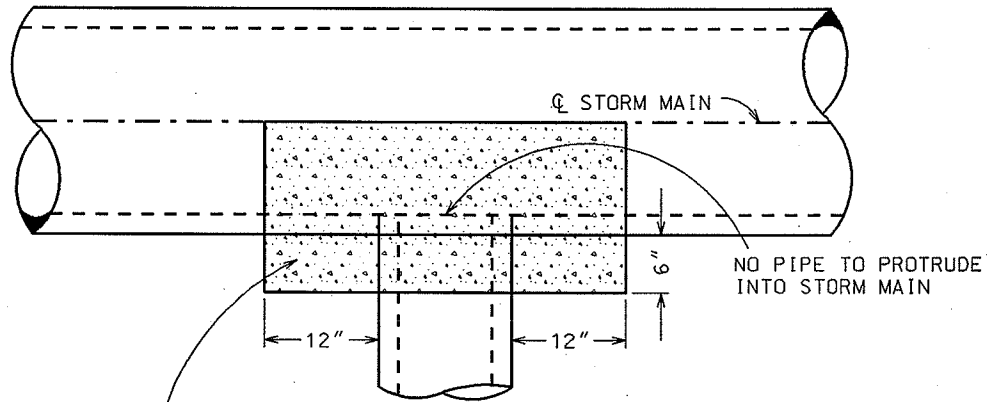


NOTES:

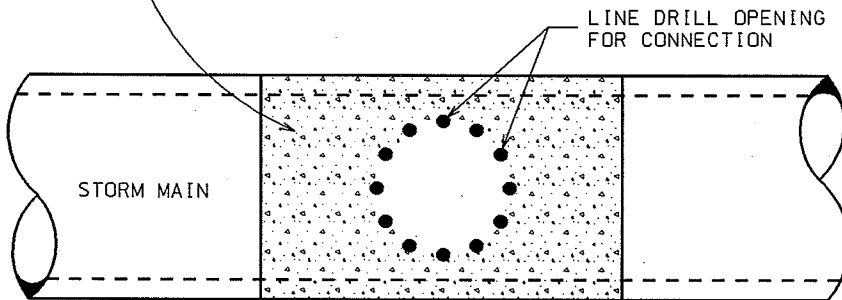
1. S.A.S. CONNECTIONS FOR SANITARY SEWER MAINS SHALL BE MADE USING FLEXIBLE, WATERTIGHT CONNECTIONS SUCH AS KOR-N-SEAL I OR APPROVED EQUAL, UNLESS DIRECTED OTHERWISE BY ENGINEER.
2. ALL STAINLESS STEEL ELEMENTS OF CONNECTOR SHALL BE TOTALLY NON-MAGNETIC SERIES 304 STAINLESS, EXCLUDING THE WORM SCREW FOR TIGHTENING THE STEEL BAND AROUND THE PIPE WHICH SHALL BE SERIES 305 STAINLESS. THE WORM SCREW FOR TIGHTENING THE STEEL BAND SHALL BE TORQUED BY A BREAK-AWAY TORQUE WRENCH AVAILABLE FOR THE PRECAST S.A.S SUPPLIER AND SET FOR 60 - 70 INCH/LBS.
3. THE CONNECTOR SHALL BE INSTALLED IN THE S.A.S. WALL BY ACTIVATING THE EXPANDING MECHANISM IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE CONNECTOR MANUFACTURER.
4. THE CONNECTOR SHALL BE OF A SIZE SPECIFICALLY DESIGNED FOR THE PIPE MATERIAL AND SIZE BEING UTILIZED ON THE PROJECT.
5. ALL COSTS SHALL BE CONSIDERED INCIDENTAL TO THE S.A.S. AND/OR PIPE. THE ENGINEER RESERVES THE RIGHT TO REQUIRE A "CONCRETE ENCASEMENT" CONNECTION AT NO ADDITIONAL EXPENSE IN THE EVENT OF DESIGN CHANGE.
6. FLEXIBLE, WATERTIGHT CONNECTIONS SHALL ALSO BE USED AS REQUIRED FOR STORM SEWER CONNECTIONS.

2004

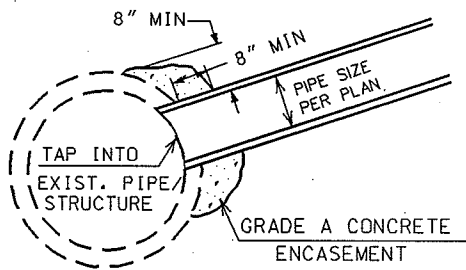
CITY OF MADISON ENGINEERING DIVISION
FLEXIBLE PIPE TO S.A.S. CONNECTOR
STANDARD DETAIL DRAWING 5.7.31



TOP VIEW



SIDE VIEW



ALTERNATE CONCRETE ENCASEMENT

DRAWING NOT TO SCALE

2004

CITY OF MADISON
ENGINEERING DIVISION

STORM SEWER
TAP DETAIL

STANDARD DETAIL DRAWING 5.7.32