**STANDARD STORM SEWER INLETS WITH CAST STEEL HOODS**

**SECTION A-A**

- **2'-8"**
- **3'-2"**
- **3'-9 1/2"**
- **5'-4"**

**PLAN**

- **DETAIL SHOWING COMBINATION OF CURB INLETS**

**ELEVATION**

- **DETAIL OF CONNECTING ANGLE IRON & CAST IRON CURB**

**DETAIL**

- **CAST IRON INLET NUMBER**

**PLACEMENT OF CONCRETE**

- **HOLD FRAME, DIMENSIONS GIVEN FOR CONCRETE**

**GENERAL NOTES**

- CASTING SHALL CONFORM TO THE A.S.T.M. SPECIFICATIONS FOR GRAY IRON CASTINGS, SERIAL DESIGNATION "A-400".
- NO CORDING OR MARRING OF ANY KIND OTHER THAN THOSE SHOWN ON THE PLANS WILL BE PERMITTED ON THESE CASTINGS.
- ALL BOLT REQUIREMENTS FOR THESE STRUCTURES SHALL BE MACHINE BOLTS.

**QUANTITIES FOR CURB INLETS**

- **CURB INLET**

**NOTE:**

- **HORIZONTAL BARS ARE APPROXIMATELY 1/2" CENTERS**

**BARS "A"**

- **2 - 2"**

**REINFORCING STEEL (MIN.)**

- **2" (AVAILABLE IN 3' LENGTHS) PER 3' CURB INLET**

**CAST IRON INLET HOOD**

- **#2 CAST IRON STORM SEWER CURB INLET HOOD**

**REINFORCING STEEL (MIN.)**

- **3' - 9 1/2"**

**INLET & SLAB**

- **#2 CAST IRON STORM SEWER CURB INLET HOOD**

**REINFORCING STEEL (MIN.)**

- **3' - 9 1/2"**

**SECTION A-A**

- **#2 CAST IRON STORM SEWER CURB INLET**

**PLACEMENT OF CONCRETE**

- **HOLD FRAME, DIMENSIONS GIVEN FOR CONCRETE**

**GENERAL NOTES**

- CASTING SHALL CONFORM TO THE A.S.T.M. SPECIFICATIONS FOR GRAY IRON CASTINGS, SERIAL DESIGNATION "A-400".
- NO CORDING OR MARRING OF ANY KIND OTHER THAN THOSE SHOWN ON THE PLANS WILL BE PERMITTED ON THESE CASTINGS.
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**QUANTITIES FOR CURB INLETS**

- **CURB INLET**

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**CAST IRON INLET HOOD**

- **#2 CAST IRON STORM SEWER CURB INLET HOOD**

**REINFORCING STEEL (MIN.)**

- **3' - 9 1/2"**

**INLET & SLAB**

- **#2 CAST IRON STORM SEWER CURB INLET HOOD**

**REINFORCING STEEL (MIN.)**

- **3' - 9 1/2"**

**SECTION B-B**

- **#2 CAST IRON STORM SEWER INLET FRAME WITH CURB INLET**

**REINFORCING STEEL (MIN.)**

- **2" (AVAILABLE IN 3' LENGTHS) PER 3' CURB INLET**

**BARS "C"**

- **2 - 2"**

**REINFORCING STEEL (MIN.)**

- **2" (AVAILABLE IN 3' LENGTHS) PER 3' CURB INLET**

**INLET & SLAB**

- **#2 CAST IRON STORM SEWER CURB INLET HOOD**

**REINFORCING STEEL (MIN.)**

- **3' - 9 1/2"**

**SECTION A-A**

- **#2 CAST IRON STORM SEWER CURB INLET HOOD**

**REINFORCING STEEL (MIN.)**

- **3' - 9 1/2"**

**INLET & SLAB**

- **#2 CAST IRON STORM SEWER CURB INLET HOOD**

**REINFORCING STEEL (MIN.)**

- **3' - 9 1/2"**
STORM SEWER INLET
DESIGN # 5 - SINGLE GRATING

EXISTING PAVING OR SEE NOTE 1 A

PLAN

SECTION A-A

MINIMUM 2' - 6" DEEP

SECTION B-B

GENERAL NOTES:

1. THIS TYPE INLET IS STANDARD FOR UNPAVED STREETS AND UNDEVELOPED AREAS.

2. TOP SLAB MAY BE CAST IN PLACE MORTAR OR PRE-CAST AND SET IN MORTAR.

3. CONCRETE SHALL BE 3,000 LBS. PER SQUARE INCH.

4. BASIS OF PAYMENT SHALL BE LUMP SUM OR AS DESIGNED IN THE PROPOSAL.

5. REINFORCING STEEL IN TOP TO BE #4 BARS 4' - 0" LONG, IN BOTTOM TO BE 3' - 8" LONG, AT 6" ON CENTERS EACH WAY.

6. OPENINGS MAY BE OMITTED ON 1, 2, OR 3 SIDES.

7. OKLAHOMA CITY STANDARD TYPE B FRAME STANDARD COVER SHALL BE INSTALLED IN TOP SLAB.

8. ALL DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS AND MAY VARY ACCORDING TO THE PLANS.

9. INLET WEIR ELEVATION TO BE CONSTRUCTED TO THE ELEVATION SHOWN IN THE PLANS OR BE A MINIMUM OF 1.0' BELOW EXISTING GROUND LINE.

STANDARD INLET DETAILS
DESIGN # 5 (SINGLE GRATING) AND BOX TYPE INLET

ERIC J. WENGER, P.E.
CITY ENGINEER

DATE: 01-31-13

APPROVED BY:

DRAWN:

DATE: 01-31-13
STORM SEWER INLET
DESIGN #6 & DESIGN #7

GENERAL NOTES:

1. A. WHEN INLET IS BUILT IN NEW PAVEMENT, THE PAVEMENT SHALL BE MONOLITHIC WITH NEW PAVEMENT AND CONFORM TO PLANS AND SPECIFICATIONS THEREOF.
B. WHEN INLET IS BUILT IN EXISTING PAVEMENT THE TYPES OF INLET PAVEMENT SHALL CONFORM TO THAT OF THE ADJACENT SLAB UNLESS OTHERWISE PROVIDED IN SPECIAL PROVISIONS.
2. CAST IRON STEPS SHALL BE PLACED IN ALL INLETS 3' OR MORE IN DEPTH IN CONFORMITY WITH STANDARD SPECIFICATIONS.
3. THE GRATING TO BE USED IN THIS STRUCTURE WILL BE SHOWN ON THE PLANS OR DESIGNATED IN SPECIAL PROVISIONS.
4. THIS STRUCTURE WILL BE DESIGNATED ON PLANS AS INLET NUMBER 6.
5. BASIS OF PAYMENT FOR INLETS WILL BE FOR A LUMP SUM INCLUDING REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT.

5. L = (3.18 N) - 0.66 IN WHICH N = THE NUMBER OF DOUBLE GRATINGS.

STORM SEWER INLET
DESIGN #6 (DOUBLE GRATINGS)

SECTION A-A

STORM SEWER INLET
DESIGN #7 (MULTIPLE GRATINGS)

SECTION B-B
CASTING WEIGHTS

THE MINIMUM WEIGHT OF CASTINGS SUPPLIED WILL NOT BE LESS
THAN 1532 LBS. WEIGHT SHOWN BELOW.

AMOUNTS OF INDIVIDUAL CASTING SHALL NOT BE LESS THAN 1532 LBS.

WEIGHTS SHOWN BELOW.

NOTE

CASTINGS SHALL CONFORM TO THE A.S.T.M. SPECIFICATIONS FOR GRAY

STORM SEWER INLET GRATING

DETAIL OF TYPE "A" GRATING

SECTION A-A

STORM SEWER INLET GRATING

DETAIL OF TYPE "B" GRATING

SECTION A-A

STORM SEWER INLET FRAME

TYPE "D" & TYPE "A"

SECTION B-B

DETAIL OF TYPE "A" GRATING

SECTION A-A

DETAILS OF I-BEAM SUPPORT

FOR INLET #7 ONLY

NOTE

CASTINGS SHALL CONFORM TO THE A.S.T.M. SPECIFICATIONS FOR STEEL

BICYCLE SAFE GRATE

1. ALL CONSTRUCTION METHODS & MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CURRENT SPECIFICATIONS.
2. SHARP EDGES RESULTING FROM FABRICATION SHALL BE DULLED BY ANY ACCEPTABLE METHOD FOR SAFETY IN HANDLING.
3. GRATES SHALL BE INSTALLED IN FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
5. FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY, HARDSPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS.
6. CASTINGS SHALL BE SMOOTH & WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING.
7. ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN; COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
8. ALL LETTERING SHALL BE RECESSED 1/16". REFERENCE NF-29927M NF-21808, & ORIGINAL REFERENCE 2669.
General Notes
1. Quantities for sand backfill and crushed rock will be paid for as "Neat Cut" Dimensions.
2. Excess sand backfill and crushed rock quantities above scheduled quantities shall be considered waste and the cost shall be borne by the contractor.
3. Native backfill over the sand backfill shall be compacted to applicable specifications whether under paving sections, developed areas or unimproved areas.

Construction Notes
1. Width of trench shall conform to minimum widths noted for diameter of pipe.
2. Filter fabric shall be placed between crushed rock and sand backfill to prevent migration of sand into bedding.
3. Wrapped joints shall be a minimum of one foot (1') either side of the joint.
4. Wrapped joints shall be double wrapped from top of pipe to the spring line or two foot minimum.
5. Wrapped joints shall be double wrapped from top of pipe to the spring line or two foot minimum.
6. Wrapped joints shall be wrapped the entire circumference of the pipe and double wrapped as noted.

Pipe Diameter and Minimum Trench Width:

| Diameter (in) | 6 | 7 | 8 | 9 | 10 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 |
|---------------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Width (ft)    | 6 | 5.50 | 5.13 | 4.92 | 4.63 | 4.58 | 4.35 | 4.18 | 3.95 | 3.78 | 3.62 | 3.50 | 3.21 | 2.92 | 2.92 | 2.58 | 2.35 | 2.16 | 1.89 | 1.73 | 1.61 | 1.51 |

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ERI C. WENGER, P.E.
CITY ENGINEER
DATE: 02-01-13
APPROVED BY: VSC 02-01-13
DRAWN: VSC 02-01-13
GENERAL NOTES:
1. Castings to conform to the A.S.T.M. SPECIFICATIONS FOR GRAY IRON CASTINGS, SERIAL DESIGNATION A-482A.
2. When each cover is placed in any position in its associated frame, the side play in any direction shall not exceed 1/8".
3. Type "A" frames shall be used on paved streets and alleys.
4. Type "A" frames shall be used on unpaved streets and alleys.
5. No wording of markings of any kind other than those shown on this standard will be permitted on these castings.
6. The average weight of castings will not be less than 85% of weights shown.
7. Reversible frame and cover D-204 may be used in lieu of frame and cover shown on D-201.

CASTING WEIGHTS
- **A** frame only: 247 lbs.
- **B** ring only: 231 lbs.
- Cover only: 201 lbs.
- Total, type "A": 596 lbs.
- Total, type "B": 634 lbs.

CASTINGS TO CONFORM TO THE A.S.T.M. SPECIFICATIONS FOR GRAY IRON CASTINGS, SERIAL DESIGNATION A-482A.

GENERAL NOTES:
1. Castings to conform to the A.S.T.M. SPECIFICATIONS FOR GRAY IRON CASTINGS, SERIAL DESIGNATION A-482A.
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- **A** frame only: 247 lbs.
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- Total, type "A": 596 lbs.
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CLASS "A" CONCRETE Poured

NOT LESS THAN 24 HOURS
BEFORE BUILDING BRICK WALLS.

DETAIL OF STANDARD MASONRY MANHOLE

TYPICAL PERMANENT REPAIR SECTION FOR ASPHALT CONCRETE PAVING

TYPICAL PERMANENT REPAIR SECTION FOR P.C. CONCRETE PAVING

CASTING WEIGHTS

<table>
<thead>
<tr>
<th>PIPE SIZE I.D.</th>
<th>12&quot; OR LESS</th>
<th>15&quot; TO 21&quot;</th>
<th>24&quot; TO 30&quot;</th>
<th>33&quot; TO 54&quot;</th>
<th>60&quot; &amp; OVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRENCH WIDTH (W/O SHORING)</td>
<td>24&quot;</td>
<td>O.D. + 12&quot;</td>
<td>O.D. + 18&quot;</td>
<td>O.D. + 15&quot;</td>
<td>O.D. + 15&quot;</td>
</tr>
</tbody>
</table>
NOTE:
1. All construction and material shall be in accordance with the Oklahoma City Standards Specifications.
2. All concrete shall be Class "A" concrete 3500 P.S.I. and poured not less than 24 hours before building brick walls.
3. Optional concrete lid with standard manhole frame and cover may be used in lieu of brick cone for shallow boxes of paved areas if called for in the plans or approved by the Engineer. Concrete lid shall be 7" thick with #4 bars at 6" C/C each way. Eight additional #4 bars shall be placed at 45° under manhole frame.
4. Radius junction box will be used for pipe diameter 36" and above.
JUNCTION BOX 36" TO 72"

REINFORCED CONCRETE PIPE

GENERAL NOTES:
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH OKLAHOMA CITY STANDARD SPECIFICATIONS.
2. ALL EXPOSED CONCRETE SURFACES SHALL HAVE A CARBORUNDUM FINISH.
3. ALL EXPOSED CONCRETE SURFACES SHALL HAVE A 3/4" CHAMFER.
4. ALL REINFORCED STEEL SHALL BE 1/2" DIAMETER, EXCEPT AS NOTED. ALL HORIZONTAL BARS SHALL BE SPACED AS SHOWN. (18" MAXIMUM)
5. MAXIMUM DEPTHS OF BOXES FOR 48" TO 72" R.C.P. SHALL BE AS FOLLOWS:
   48" - 18'; 54" - 16'; 60" - 12'; 72" - 10'.
6. REINFORCED CONCRETE PIPE SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. M-170 (ASTM C-78) CLASS III UNLESS OTHERWISE DESIGNATED.
7. WALL THICKNESS (DIMENSION "T") OF PIPES SHOWN, ARE FROM "WALL B" COLUMN OF A.A.S.H.T.O. TABLES.
8. DIMENSION D2 IS THE DIAMETER OF THE LARGEST PIPE ENTERING THE JUNCTION BOX THROUGH THE SIDE.
9. DIMENSION "X" DEPENDS ON THE DEPTHS AS CALLED FOR IN THE PLANS.
STANDARD MANHOLE COVER

REVERSIBLE MANHOLE FRAME

MANUFACTURER’S PART NUMBER & HEAT NUMBER OR OTHER AGREED UPON IDENTITY.

GENERAL NOTES:
1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT SPECIFICATIONS.
2. SHARP EDGES RESULTING FROM FABRICATION SHALL BE DULLED BY ANY ACCEPTABLE METHOD FOR SAFETY IN HANDLING.
3. COVERS SHALL BE GRAY IRON CONFORMING TO THE REQUIREMENTS OF ASHTO M-105 CLASS 35B OR ASTM A-48-76 CLASS 35B OR ASTM A-48-76 CLASS 30B.
4. FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY HARDSPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING METHOD.
5. ALL CASTINGS SHALL BE MANUFACTURED TRUE TO PATTERN; COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
6. WHERE INDICATED, MACHINED SURFACES SHALL BE FURNISHED.
7. WEIGHTS ARE APPROXIMATE AND AVERAGE. DEVIATION FROM THE FOLLOWING WEIGHTS SHALL NOT EXCEED 5%, PLUS OR MINUS: FRAME 235 L.B. COVERS 195 L.B.
8. CASTING SHALL BE UNPAINTED.

BOSS SPACED @ 11 15"'

BOSSES TO BE 1" DIA @ BASE, 3/4" DIA @ TOP & 1/4" HIGH.

1 1/2" HIGH LETTERING RAISED 3/16"