

**PRECAST CONCRETE MANHOLE**

M.S.D. STANDARD MANHOLE FRAME AND COVER.

BASE SECTION

ELEVATION

BASE PLAN

NOTES:

- 1) THE MINIMUM INSIDE DIAMETER FOR THE BASE AND RISER SECTIONS SHALL BE 42 INCHES FOR 8 INCH DIAMETER SANITARY SEWERS AND ALL STORM SEWERS. THE MINIMUM INSIDE DIAMETER FOR SANITARY SEWERS LARGER THAN 8 INCH DIAMETER IS 48 INCHES. MANHOLE SHALL MEET ASTM C-478 REQUIREMENTS.
- 2) FLOWLINE ELEVATION OF INCOMING PIPES SHALL BE 1 INCH HIGHER THAN THAT OF OUTGOING PIPE.
- 3) PIPE SIZES LARGER THAN 24 INCH DIAMETER MAY REQUIRE MANHOLE DIAMETERS OF 60 INCH, 72 INCH OR 84 INCH AS DETERMINED BY OUTSIDE DIAMETERS AND ORIENTATIONS OF CONNECTING PIPES.
- 4) ECCENTRIC CONES SHALL BE USED ON DIAMETERS 60 INCH AND LARGER. STEPS SHALL EXTEND DOWN VERTICAL WALL OF CONE.
- 5) PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL. ALL MANHOLES ON PIPE DIAMETERS LARGER THAN 24 INCH AND ALSO FOR THOSE STRUCTURES WITH A DROP PIPE CONNECTION.

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**PRECAST MANHOLE ON EXIST. PIPE W/CONTINUOUS FLOW ONLY**

PLAN

ELEVATION

GRADE RING SECTION

NOTES:

- 1) IF BRICK IS USED, NO PLASTER INSIDE OF MANHOLE.
- 2) IF MANHOLE IS BURIED MORE THAN 18 INCHES, A RISER SECTION WILL HAVE TO BE ADDED.
- 3) DIMENSION "A" SIDING GRADE RING HEIGHT OPTIONS: (3 INCHES MINIMUM TO 11 INCHES MAXIMUM).
- 4) DIMENSION "B" SIDING RISER SECTION HEIGHT OPTIONS: (12 INCH, 24 INCH, 36 INCH AND 48 INCH)

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**PRECAST CONCRETE ADAPTER RING FOR USE ON PRECAST MANHOLE TEE**

ELEVATION

PLAN

GRADE RING SECTION

NOTES:

- 1) TO BE USED WHERE NO CHANGE IN LINE OR GRADE IS REQUIRED AT MANHOLE.
- 2) THE MINIMUM INSIDE DIAMETER FOR RISER SECTIONS SHALL BE 42 INCHES FOR 8 INCH DIAMETER SANITARY SEWERS AND ALL STORM SEWERS. THE MINIMUM INSIDE DIAMETER FOR SANITARY SEWERS LARGER THAN 8 INCH DIAMETER IS 48 INCHES.

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**TYPICAL PRECAST MANHOLE TEE FOR REINFORCED CONCRETE PIPE SEWERS 48 INCH AND LARGER IN DIAMETER**

ELEVATION

PLAN

NOTES:

- 1) TO BE USED WHERE NO CHANGE IN LINE OR GRADE IS REQUIRED AT MANHOLE.
- 2) THE MINIMUM INSIDE DIAMETER FOR RISER SECTIONS SHALL BE 42 INCHES FOR 8 INCH DIAMETER SANITARY SEWERS AND ALL STORM SEWERS. THE MINIMUM INSIDE DIAMETER FOR SANITARY SEWERS LARGER THAN 8 INCH DIAMETER IS 48 INCHES.

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**VERTICAL SECTION ON @ DETAIL "A" AS SHOWN**

UNTRAPPED STREET INLET BRICK CONSTRUCTION

NOTES:

- 1) INLETS ON THIS SHEET ARE TO BE USED IN LOCATIONS WHERE STANDARD OPEN THROAT INLETS CAN NOT BE USED IN PAVED TRAFFIC WAY AND IN LIMITED EASEMENTS.
- 2) STANDARD DEPTH = 4.0 FEET.
- 3) ADJUSTMENTS SHALL BE MADE WITH PRECAST ADJUSTMENT RINGS AND APPROVED BITUMINOUS SEALANT.

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**AREA INLET MANHOLE (12" THRU 24")**

NOTES:

- 1) 1/2" MIN. 1 TO 3 CEMENT TO SAND MORTAR MIX PLASTER (ALL BRICK STRUCTURES).
- 2) SHAFT STEPS.
- 3) INVERT SHELF.
- 4) CONCRETE ENCASEMENT REQUIRED WHERE COVER IS LESS THAN 3'-0".

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**MULTIPLE STREET INLET BRICK CONSTRUCTION**

PLAN

SECTION E-E

SECTION F-F

NOTES:

- 1) MAXIMUM DIAMETER OF CONSTRUCTION SHALL BE 24 INCHES.
- 2) UNTRAPPED INLETS OR CONNECTED INLETS.

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**DOUBLE UNTRAPPED STREET INLET BRICK CONSTRUCTION**

PLAN

SECTION A-A

SECTION B-B

NOTES:

- 1) INLETS ON THIS SHEET ARE TO BE USED IN LOCATIONS WHERE STANDARD OPEN THROAT INLETS CAN NOT BE USED IN PAVED TRAFFIC WAY AND IN LIMITED EASEMENTS.
- 2) STANDARD DEPTH = 4.0 FEET.
- 3) ADJUSTMENTS SHALL BE MADE WITH PRECAST ADJUSTMENT RINGS AND APPROVED BITUMINOUS SEALANT.

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**AREA INLET OPEN 4 SIDES BRICK CONSTRUCTION**

PLAN

SECTION A-A

NOTES:

- 1) INLETS ON THIS SHEET ARE TO BE USED IN LOCATIONS WHERE STANDARD OPEN THROAT INLETS CAN NOT BE USED IN PAVED TRAFFIC WAY AND IN LIMITED EASEMENTS.
- 2) STANDARD DEPTH = 4.0 FEET.
- 3) ADJUSTMENTS SHALL BE MADE WITH PRECAST ADJUSTMENT RINGS AND APPROVED BITUMINOUS SEALANT.

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**DOUBLE AREA INLET OPEN 4 SIDES BRICK CONSTRUCTION**

PLAN

SECTION A-A

SECTION B-B

NOTES:

- 1) INLETS ON THIS SHEET ARE TO BE USED IN LOCATIONS WHERE STANDARD OPEN THROAT INLETS CAN NOT BE USED IN PAVED TRAFFIC WAY AND IN LIMITED EASEMENTS.
- 2) STANDARD DEPTH = 4.0 FEET.
- 3) ADJUSTMENTS SHALL BE MADE WITH PRECAST ADJUSTMENT RINGS AND APPROVED BITUMINOUS SEALANT.

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**GRATE SEAT FOR 2 GRATE WITH SIDE INTAKE**

PLAN

SECTION A-A

SECTION B-B

NOTES:

- 1) INLETS ON THIS SHEET ARE TO BE USED IN LOCATIONS WHERE STANDARD OPEN THROAT INLETS CAN NOT BE USED IN PAVED TRAFFIC WAY AND IN LIMITED EASEMENTS.
- 2) STANDARD DEPTH = 4.0 FEET.
- 3) ADJUSTMENTS SHALL BE MADE WITH PRECAST ADJUSTMENT RINGS AND APPROVED BITUMINOUS SEALANT.

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**PRECAST CONCRETE STORMWATER STRUCTURES**

MINIMUM DISTANCE FLOWLINE TO TOP OF STONE OR GRATE

PIPE I.D. NOMINAL INCHES	AREA INLET CIRCULAR BASE DIA.	(2) GRATE INLET CIRCULAR BASE DIA.	SQUARE CIRCULAR BASE DIA.	SINGLE STREET INLET RECTANGULAR BASE DIA.
12"	45"	48"	48"	48"
15"	48"	51"	51"	51"
18"	51"	54"	54"	54"
21"	54"	57"	57"	57"
24"	57"	60"	60"	60"
27"	60"	63"	63"	63"
30"	63"	66"	66"	66"
33"	66"	69"	69"	69"

NOTES:

- 1) 48" DIAMETER BASE REQUIRES 3" HIGH TRANSITION SECTION TO 42" DIAMETER, SIMILAR TO "MANHOLE RING" SHEET 28.
- 2) 60" DIAMETER BASE REQUIRES 3" HIGH CONCENTRIC REDUCER TRANSITION TO 42" DIAMETER, SIMILAR TO "ADAPTER RING" SHEET 35.
- 3) STANDARD DEPTH = 5'-4" PIPE DIAMETER.

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**AREA INLET PRECAST CONCRETE**

CAST IRON COVER

INLET STONE (SEE SHEET 45)

STANDARD (2) GRATE INLET SEAT

4 WAY CONCRETE UNIT (SEE SHEET 41)

ADAPTER RING

INLET BASE & INLET MANHOLE BASE

NOTES:

- 1) SET STANDARD INLET STONE IN 3/4" MORTAR BED AND DOWEL WITH 5/8" DIA. 1'-0" LONG PINS AND GROUT.
- 2) RAISE TO FINAL GRADE WITH COURSES OF BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.
- 3) THIS UNIT IS TO BE USED WITH 42 INCH I.D. POURED-IN-PLACE CONCRETE OR BRICK BASE.
- 4) 5000 P.S.I. CONCRETE IS REQUIRED.

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**2 GRATE INLETS PRECAST CONCRETE**

CAST IRON COVER

INLET STONE (SEE SHEET 45)

STANDARD (2) GRATE INLET SEAT

ADAPTER RING

INLET BASE & INLET MANHOLE BASE

NOTES:

- 1) SET STANDARD INLET STONE IN 3/4" MORTAR BED AND DOWEL WITH 5/8" DIA. 1'-0" LONG PINS AND GROUT.
- 2) RAISE TO FINAL GRADE WITH COURSES OF BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.
- 3) THIS UNIT IS TO BE USED WITH 42 INCH I.D. POURED-IN-PLACE CONCRETE OR BRICK BASE.
- 4) 5000 P.S.I. CONCRETE IS REQUIRED.

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**SINGLE STREET INLETS PRECAST CONCRETE**

CAST IRON COVER

INLET STONE (SEE SHEET 45)

SINGLE CURB INLET (SEE SHEET 40)

ADAPTER RING

INLET BASE & INLET MANHOLE BASE

NOTES:

- 1) SET STANDARD INLET STONE IN 3/4" MORTAR BED AND DOWEL WITH 5/8" DIA. 1'-0" LONG PINS AND GROUT.
- 2) RAISE TO FINAL GRADE WITH COURSES OF BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.
- 3) THIS UNIT IS TO BE USED WITH 42 INCH I.D. POURED-IN-PLACE CONCRETE OR BRICK BASE.
- 4) 5000 P.S.I. CONCRETE IS REQUIRED.

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Standard Details of Sewer Construction  
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**DOUBLE UNTRAPPED STREET INLET PRECAST CONCRETE**

PLAN

SECTION A-A

NOTES:

- 1) SET STANDARD INLET STONE IN 3/4" MORTAR BED AND DOWEL WITH 5/8" DIA. 1'-0" LONG PINS AND GROUT.
- 2) RAISE TO FINAL GRADE WITH COURSES OF BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.
- 3) THIS UNIT IS TO BE USED WITH 42 INCH I.D. POURED-IN-PLACE CONCRETE OR BRICK BASE.
- 4) 5000 P.S.I. CONCRETE IS REQUIRED.

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**PRECAST CONCRETE UNIT FOR SINGLE STREET INLET**

PLAN

SECTION A-A

NOTES:

- 1) SET STANDARD INLET STONE IN 3/4" MORTAR BED AND DOWEL WITH 5/8" DIA. 1'-0" LONG PINS AND GROUT.
- 2) RAISE TO FINAL GRADE WITH COURSES OF BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.
- 3) THIS UNIT IS TO BE USED WITH 42 INCH I.D. POURED-IN-PLACE CONCRETE OR BRICK BASE.
- 4) 5000 P.S.I. CONCRETE IS REQUIRED.

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**PRECAST CONCRETE UNIT FOR 4 WAY AREA INLET**

PLAN

SECTION A-A

NOTES:

- 1) SET STANDARD INLET STONE IN 3/4" MORTAR BED AND DOWEL WITH 5/8" DIA. 1'-0" LONG PINS AND GROUT.
- 2) RAISE TO FINAL GRADE WITH COURSES OF BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.
- 3) THIS UNIT IS TO BE USED WITH 42 INCH I.D. POURED-IN-PLACE CONCRETE OR BRICK BASE.
- 4) 5000 P.S.I. CONCRETE IS REQUIRED.

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**CONSTRUCTION DETAILS**