NOTES:

1. THIS DETAIL SHOWS THE TYPICAL FINAL WATER METER CONFIGURATION AFTER INSTALLATION OF A PROPOSED WATER METER, RECONNECTION OF AN EXISTING WATER METER, OR RELOCATION OF A WATER METER.
NOTES:

1. THIS DETAIL SHOWS THE TYPICAL FINAL FIRE HYDRANT CONFIGURATION AFTER INSTALLATION OF A PROPOSED FIRE HYDRANT, RECONNECTION OF AN EXISTING FIRE HYDRANT, OR RELOCATION OF A FIRE HYDRANT.

2. KEEP DRAIN PORTS FREE FROM OBSTRUCTION.

3. RESTRAIN ALL PIPE JOINTS AND FITTINGS. ACCEPTABLE TYPES OF RESTRAINT INCLUDE RESTRAINING GLANDS, RESTRAINED, PUSH-ON JOINTS; AND 3/4" BITUMINOUS COATED, ALL-THREAD RESTRAINING RODS. THRUST BLOCKS ARE NOT AN ACCEPTABLE TYPE OF RESTRAINT.

4. FOR RELOCATED OR RECONNECTED FIRE HYDRANTS, VERIFY THE VALVE IS RESTRAINED TO THE MAIN. PROVIDE APPROPRIATE RESTRAINT.

5. HYDRANT LOCATION APPLIES TO PROPOSED AND RELOCATED FIRE HYDRANTS.

6. LOCATE FIRE HYDRANT WITH 3' HORIZONTAL CLEARANCE FROM ABOVE GROUND OBJECTS.

7. PROVIDE A MINIMUM OF 3' COVER OVER ALL SECTIONS OF HORIZONTAL PIPE. USE FITTINGS AS NECESSARY.

8. TAPPING SLEEVES MAY BE USED ON EXISTING MAINS IN LIEU OF DI TEES.

9. LOCATE FIRE HYDRANT OUTSIDE OF THE VEHICLE RECOVERY AREA, ADJACENT TO THE R/W LINE, OR IN A PROTECTED AREA.
Sewer Clean Out

**Tee Wye Connection**

Optional

- **Flow**
  - TEE OR WYE
  - 1.25"
  - Threaded Plug

**Unpaved Area Cap**

May be used in unpaved area

- **Threaded Slotted Plug**
  - Section AA

**Tapping Saddle**

Optional

- **Inlet**
  - Single Wide Stainless Steel Strap
  - Tapping Saddle With Strap and Alignment Flange

- **Riser**
  - Stainless Steel Strap

- **Permanent Assy.**
  - See Cleanout Cap Assy.

**Paved Area Cap**

May be used in unpaved area

**Notes:**

1. This detail shows the typical final configuration of a proposed sewer clean out, a relocated sewer clean out, or a reconnected sewer clean out.

2. Use 45 degree vertical bend at inlet if grade allows.

**Inlet with 45 Degree Bend**

Optional

- **Inlet**
  - INLET WITH 45 DEGREE BEND
  - EXTEND SS TO R/W

- **Precautions:**
  - Cap for Air Testing
  - Min. Slope 1/4" per foot
  - Min. Slope 1/4" per foot

- **Material:**
  - EPDM Rubber Coupling with 2 Stainless Steel Hose Clamps
  - Same material as riser shall be the same material as the lateral

- **Cap shall be set at final grade**

- **Extend SS to R/W**

- **Combination Wye Bend**

- **Diagram Details:**
  - TEES or WYS
  - Threaded connections
  - Optional tapping saddles
  - Optional unpaved area caps
  - Optional paved area caps

- **Dimensions:**
  - 5' minimum
  - 1'-6" maximum

- **Location:**
  - Raleigh, N.C.
  - Division of Highways
  - Department of Transportation
  - State of North Carolina
NOTES:

1. THIS DETAIL SHOWS THE CONFIGURATION OF AN OUTSIDE DROP WITH A PRECAST CONCRETE MANHOLE.

2. INSERT THREE #6 DOWELS INTO THE BASE OF THE PRECAST MANHOLE BEFORE POURING CAST IN PLACE TONGUE. FACTORY DRILL OR CAST THE DOWEL HOLES IN THE BASE. EPOXY THE DOWELS INTO PLACE. EMBED DOWELS A MINIMUM OF 6" INTO THE MANHOLE BASE AND THE TONGUE. CENTER DOWELS VERTICALLY AND HORIZONTALLY. PLACE DOWELS 12" ON CENTER.

3. BLOCK WALL TO SPRING LINE OF HORIZONTAL PIPE.

4. USE FOR DROP INLET PIPES UP TO 12".

5. USE PC 350 DUCTILE IRON PIPE and FITTINGS FOR THE DROP ASSEMBLY. THE DROP ASSEMBLY SHALL BE THE SAME PIPE DIAMETER AS THE INLET PIPE.
1. This standard detail describes the use of horseshoe type and cored manholes with a cast-in-place bottom.

2. Use horseshoe type manhole only with the permission of the engineer.

3. For horseshoe type manholes, wrap the pipe with butyl rubber gasket, and seal with nonshrink grout.

GENERAL NOTES:

SECTION Y-Y
CORED PIPE TYPE

SECTION X-X
HORSESHOE TYPE

(SEE SHEET 2 FOR FOOTING REINFORCEMENT)
REINFORCED CONCRETE FOOTING
FOR 5’ PRECAST MANHOLE OR
4’ PRECAST MANHOLE

FOOTING DIMENSIONS:
- 6'-0" USE (T1), 7'-0" USE (T2) & 8'-0" USE (T3)

BAR SIZE       LENGTH       NO.       WT. lbs.
T1             #5           5'-6"     18          103
CLASS "A" CONC. YD³ 9" THICK 1.00

BILL OF MATERIAL FOR 6'-0" FOOTING

BAR SIZE       LENGTH       NO.       WT. lbs.
T2             #5           6'-6"     20          136
CLASS "A" CONC. YD³ 9" THICK 1.36
CLASS "A" CONC. YD³ 12" THICK 1.82

BILL OF MATERIAL FOR 7'-0" FOOTING

BAR SIZE       LENGTH       NO.       WT. lbs.
T3             #5           7'-6"     24          188
CLASS "A" CONC. YD³ 12" THICK 2.37

BILL OF MATERIAL FOR 8'-0" FOOTING

PLACE REINFORCING STEEL SO THAT
STEEL IS PLACED A MIN. OF 2" AND A
MAX. OF 4" FROM THE TOP OF THE SLAB.

T1, T2 OR T3 BAR

7" HOOK
(PER CRSI)

7" HOOK
(PER CRSI)