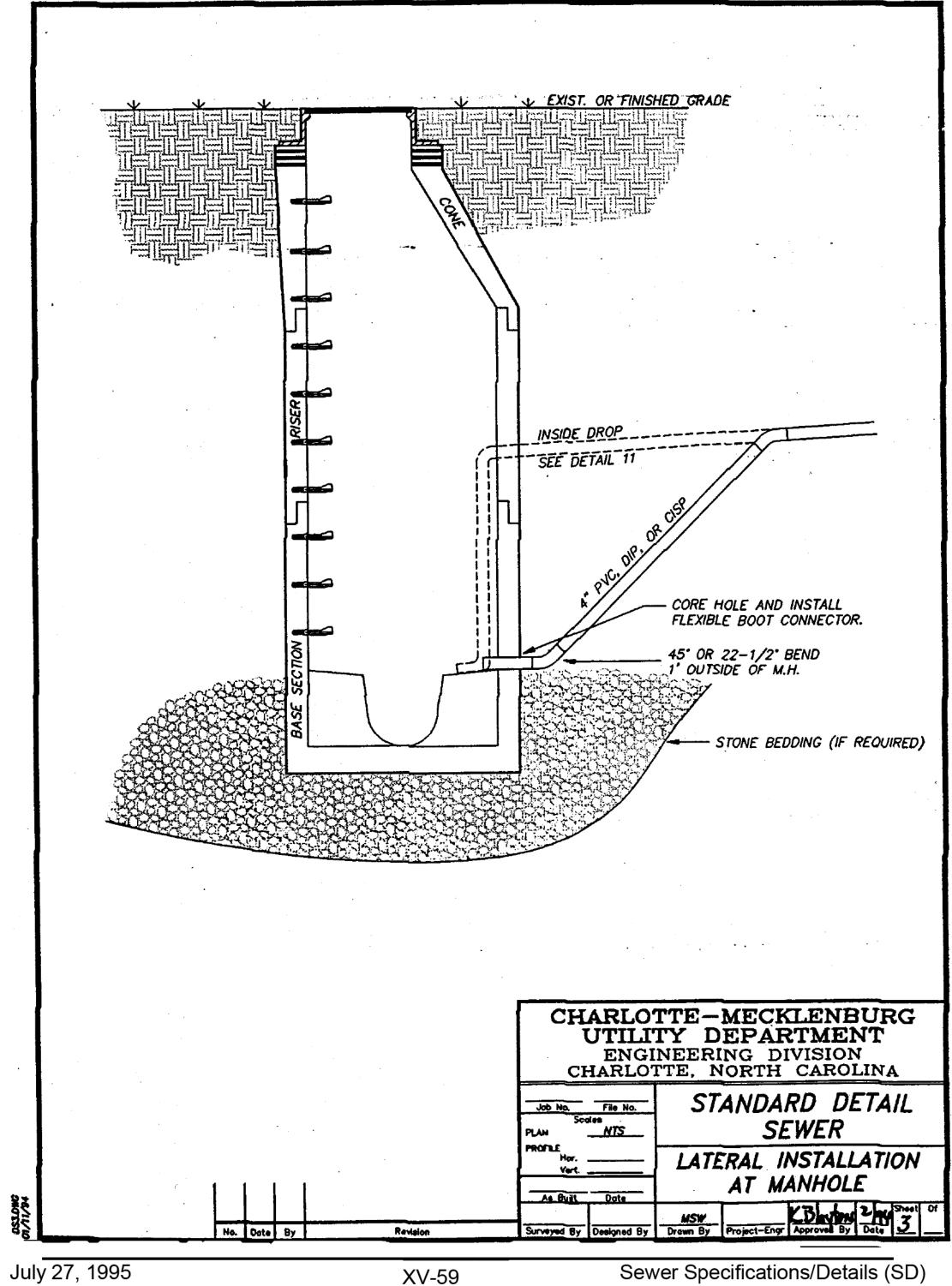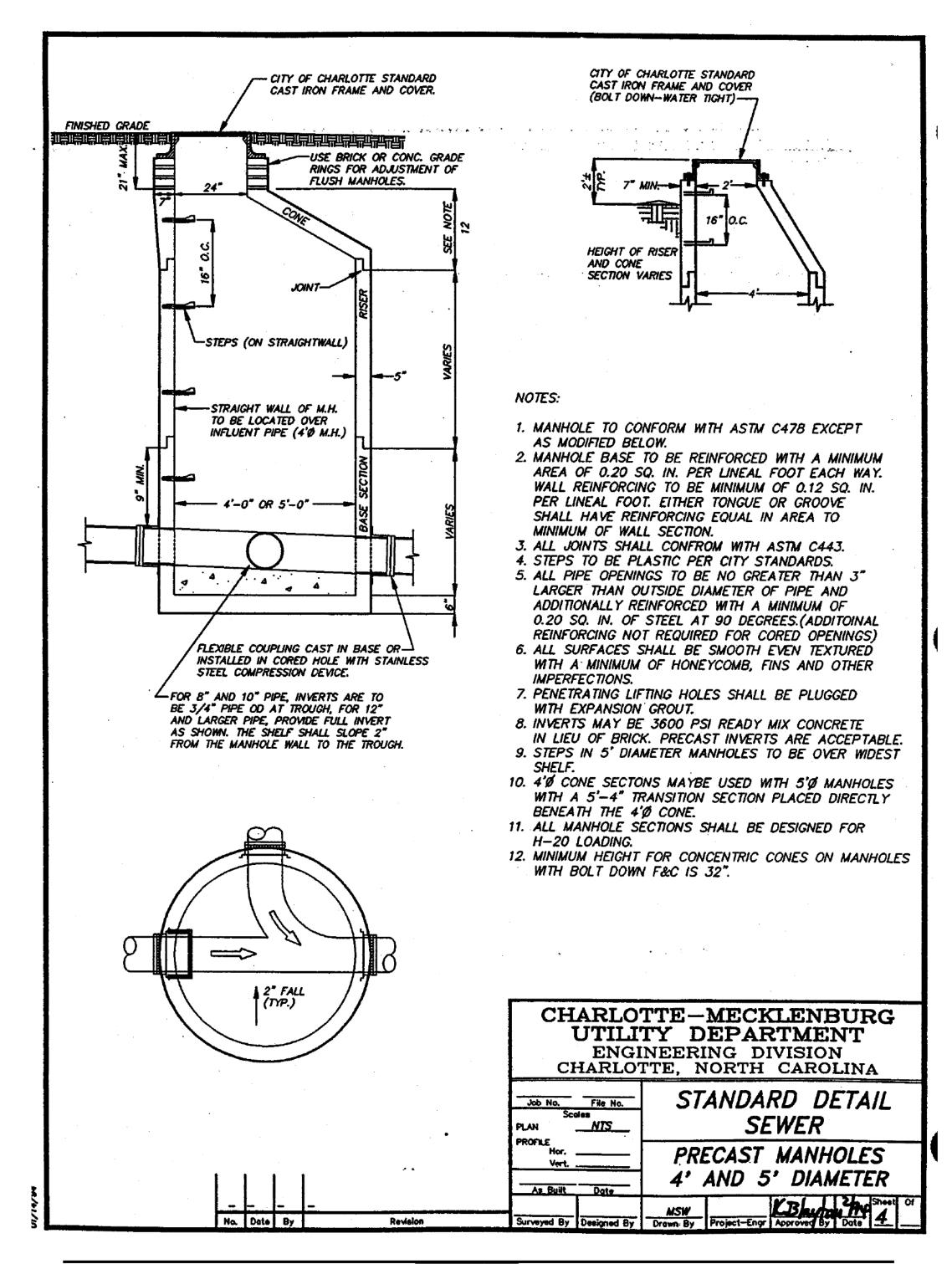# CLTWater STANDARD DETAILS

Left drawing labels:

EXIST. OR FINISHED GRADE

CONE

RISER

BASE SECTION

INSIDE DROP
SEE DETAIL 11

4" PVC, DIP, OR DISP

CORE HOLE AND INSTALL FLEXIBLE BOOT CONNECTOR.

45° OR 22-1/2' BEND 1' OUTSIDE OF M.H.

STONE BEDDING (IF REQUIRED)

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CHARLOTTE, NORTH CAROLINA

Job No.	File No.		
	Scales		
PLAN	NTS		
PROFILE	Hor.		
	Vert.		
As Built	Date		

STANDARD DETAIL
SEWER

LATERAL INSTALLATION AT MANHOLE

| Surveyed By | Designed By | Drawn By MSW | Project-Engr | Approved By | Date | Sheet 3 Of |

2/6/2015
W:\Transportation\TRIL036.00 (U-5008)\Utilities\permit\280_029_U5008.dgn
wires

REV: 2/1/2012

Right drawing labels:

CITY OF CHARLOTTE STANDARD CAST IRON FRAME AND COVER.

CITY OF CHARLOTTE STANDARD CAST IRON FRAME AND COVER (BOLT DOWN—WATER TIGHT)

FINISHED GRADE

USE BRICK OR CONC. GRADE RINGS FOR ADJUSTMENT OF FLUSH MANHOLES.

21" MAX.

24"

CONE

16" O.C.

JOINT

STEPS (ON STRAIGHTWALL)

STRAIGHT WALL OF M.H. TO BE LOCATED OVER INFLUENT PIPE (4'Ø M.H.)

9" MIN.

4'-0" OR 5'-0"

SEE NOTE 12

RISER

VARIES

BASE SECTION

VARIES

5"

6"

FLEXIBLE COUPLING CAST IN BASE OR INSTALLED IN CORED HOLE WITH STAINLESS STEEL COMPRESSION DEVICE.

FOR 8" AND 10" PIPE, INVERTS ARE TO BE 3/4" PIPE OD AT TROUGH, FOR 12" AND LARGER PIPE, PROVIDE FULL INVERT AS SHOWN. THE SHELF SHALL SLOPE 2" FROM THE MANHOLE WALL TO THE TROUGH.

2" FALL (TYP.)

2½" TYP.

7" MIN.

2"

16" O.C.

HEIGHT OF RISER AND CONE SECTION VARIES

NOTES:

1. MANHOLE TO CONFORM WITH ASTM C478 EXCEPT AS MODIFIED BELOW.
2. MANHOLE BASE TO BE REINFORCED WITH A MINIMUM AREA OF 0.20 SQ. IN. PER LINEAL FOOT EACH WAY. WALL REINFORCING TO BE MINIMUM OF 0.12 SQ. IN. PER LINEAL FOOT. EITHER TONGUE OR GROOVE SHALL HAVE REINFORCING EQUAL IN AREA TO MINIMUM OF WALL SECTION.
3. ALL JOINTS SHALL CONFROM WITH ASTM C443.
4. STEPS TO BE PLASTIC PER CITY STANDARDS.
5. ALL PIPE OPENINGS TO BE NO GREATER THAN 3" LARGER THAN OUTSIDE DIAMETER OF PIPE AND ADDITIONALLY REINFORCED WITH A MINIMUM OF 0.20 SQ. IN. OF STEEL AT 90 DEGREES. (ADDITOINAL REINFORCING NOT REQUIRED FOR CORED OPENINGS)
6. ALL SURFACES SHALL BE SMOOTH EVEN TEXTURED WITH A MINIMUM OF HONEYCOMB, FINS AND OTHER IMPERFECTIONS.
7. PENETRATING LIFTING HOLES SHALL BE PLUGGED WITH EXPANSION GROUT.
8. INVERTS MAY BE 3600 PSI READY MIX CONCRETE IN LIEU OF BRICK. PRECAST INVERTS ARE ACCEPTABLE.
9. STEPS IN 5' DIAMETER MANHOLES TO BE OVER WIDEST SHELF.
10. 4'Ø CONE SECTONS MAYBE USED WITH 5'Ø MANHOLES WITH A 5'-4" TRANSITION SECTION PLACED DIRECTLY BENEATH THE 4'Ø CONE.
11. ALL MANHOLE SECTIONS SHALL BE DESIGNED FOR H-20 LOADING.
12. MINIMUM HEIGHT FOR CONCENTRIC CONES ON MANHOLES WITH BOLT DOWN F&C IS 32".

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STANDARD DETAIL
SEWER

PRECAST MANHOLES
4' AND 5' DIAMETER

| Surveyed By | Designed By | Drawn By MSW | Project-Engr | Approved By | Date | Sheet 4 Of |