

STEEL VENT PIPE WHEN SPECIFIED - HEIGHT TO BE SPECIFIED BY ENGINEER - SEE NOTE 9

VENT PIPE OPENING

FLAT-TOP MANHOLE SECTION
SEE NOTE 7

24° OR 30° CAM-LOCK WATERTIGHT FRAME AND COVER - FRAME CAST INTO FLAT-TOP SECTION
SEE NOTE 8

150# SLIP-ON TYPE WELDING FLANGES (TYP)
SEE NOTE 9

VENT PIPE STUB-OUT
SEE NOTE 9

3/4" CHAMFER ALL AROUND

GROUT ALL OUTSIDE JOINTS ABOVE GRADE WITH NON-SHRINK GROUT

SEE NOTE 5

FINISHED GRADE

12" TYP

MAX 24"

12" TYP

NEW RISER SECTIONS - HEIGHT VARIES
SEE NOTE 5

MIN 8" WIDE BUTYL RUBBER SEAL ON ALL BELOW-GRADE JOINTS

CONCRETE COLLAR ALL AROUND JOINT - SEE NOTE 6

REMOVE EXIST MH
SEE NOTES 3 AND 4

EXISTING MANHOLE STEPS WHERE APPLICABLE

FILL INSIDE JOINT WITH NON-SHRINK GROUT
SEE NOTE 6

INSTALL 2 PIECES BUTYL RUBBER UNDER RISER SECTION WHERE POSSIBLE - SEE NOTE 6

EXISTING MANHOLE WALL
SEE NOTE 2

EXISTING BENCHING

MANHOLE DIAMETER VARIES - CONTRACTOR TO DETERMINE IN FIELD
SEE NOTE 3

CHARLOTTE-MECKLENBURG UTILITIES
CHARLOTTE, NORTH CAROLINA

REHABILITATION OF MANHOLE WALLS
AND TOP SECTION
(PAGE 1 OF 2)

No.	Date	By	Revision

NTS		
Scale	Approved By	

DETAIL NO.
C

NOTES:

1. WORK SPECIFIED IN THIS DETAIL SHALL BE PAID UNDER BID ITEM 6. ALL WORK AND MATERIALS TO BE IN ACCORDANCE WITH CMUD'S STANDARD SPECIFICATIONS AND DETAILS.
2. THIS DETAIL DEPICTS AN EXISTING BRICK MANHOLE WITH A TYPICAL CHIMNEY SECTION. SOME MANHOLES MAY BE PRECAST CONCRETE WITH CONE SECTIONS.
3. CONTRACTOR TO MEASURE THE INSIDE DIAMETER OF EXISTING MANHOLE TO SELECT APPROPRIATE DIAMETER OF NEW RISERS.
4. CONTRACTOR TO REMOVE EXISTING WALLS TO SOLID STRUCTURE (TO AT LEAST BELOW THE CONE OR CHIMNEY SECTION) OR TO THE SPECIFIED LOCATION. THE LIMITS OF REMOVAL SHALL BE APPROVED BY THE ENGINEER IN THE FIELD. CONTRACTOR TO ALSO REMOVE EXISTING FRAMES AND COVERS, VENT PIPES AND ALL APPURTENANCES, STEPS, ETC. CONTRACTOR TO DISPOSE OF ALL MATERIALS OFF-SITE.
NO DEBRIS SHALL BE DROPPED INTO THE SEWER. IF DEBRIS ENTERS THE SEWER, THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE SEWER AT NO ADDITIONAL COST TO THE OWNER.
5. CONTRACTOR TO INSTALL NEW RISER SECTIONS AS NECESSARY TO EXTEND THE MANHOLE TO THE SPECIFIED/APPROVED ELEVATION. ENGINEER SHALL APPROVE FINAL ELEVATIONS IN THE FIELD. BOTTOM RISER TO BE PROVIDED WITH A FLAT JOINT UNLESS OTHERWISE APPROVED.
6. CONTRACTOR TO SEAL NEW RISER SECTION/EXISTING WALL JOINT TO PROVIDE A LEAK-TIGHT JOINT. THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO PROVIDE A LEAK-TIGHT SEAL. WHERE POSSIBLE, BUTYL RUBBER SEALANT SHALL BE PROVIDED UNDER THE NEW RISER SECTION. IN ALL CASES, A CONCRETE COLLAR SHALL BE POURED AROUND THE JOINT. COLLAR TO BE MINIMUM 6 INCHES WIDE AND 12 INCHES HIGH CENTERED ON JOINT ALL AROUND.
ON THE INSIDE OF THE JOINT, CONTRACTOR TO SEAL JOINT WITH NON-SHRINK GROUT. GROUT TO COMPLETELY FILL JOINT AND SHALL EXTEND AT LEAST 6 INCHES EACH SIDE OF JOINT ALL AROUND. GROUT TO BE TAPERED TO THE EXISTING WALL SECTION BELOW THE JOINT. GROUT TO BE RESISTANT TO HYDROGEN-SULFIDE.
7. NEW FLAT-TOP SECTIONS TO BE INSTALLED ON TOP OF NEW RISER SECTIONS UNLESS SPECIFIED OTHERWISE. FRAMES TO BE CAST INTO FLAT-TOP - SEE NOTE 8. IN SOME INSTANCES, THE ENGINEER MAY SPECIFY THAT A STANDARD CONE SECTION BE INSTALLED INSTEAD OF A FLAT-TOP.
8. FOR FLAT-TOPS, ALL FRAMES SHALL BE CAST INTO THE FLAT-TOP SECTION UNLESS OTHERWISE SPECIFIED. FOR CONE SECTIONS, FRAMES SHALL BE BOLTED TO THE CONE. ALL COVERS SHALL BE CAM-LOCK WATERTIGHT COVERS UNLESS OTHERWISE SPECIFIED/APPROVED.
24-INCH-DIAMETER FRAMES/COVERS SHALL BE PROVIDED ON MANHOLES FOR SEWERS 24" AND SMALLER. 30-INCH-DIAMETER FRAMES/COVERS SHALL BE PROVIDED ON MANHOLES FOR SEWERS LARGER THAN 24". THE 24" AND 30" CAM-LOCK FRAMES/COVERS SHALL BE AS MANUFACTURED BY EAST JORDAN IRON WORKS, US FOUNDRY, OR APPROVED EQUAL.
9. WHERE SPECIFIED, FLAT TOP SECTIONS SHALL BE FURNISHED WITH THE VENT PIPE CAST INTO THE TOP SECTION. SEE CMU STANDARD SPECIFICATIONS AND DETAILS.
IF A VENT PIPE IS SPECIFIED, FURNISH VENT PIPE TO THE SPECIFIED HEIGHT (HEIGHT TO VENT OPENING) PER CMU STANDARD SPECIFICATIONS AND DETAILS.

No.	Date	By	Revision

CHARLOTTE-MECKLENBURG UTILITIES CHARLOTTE, NORTH CAROLINA			
REHABILITATION OF MANHOLE WALLS AND TOP SECTION (PAGE 2 OF 2)			
NTS			DETAIL NO.
Scale	Approved By		C