NOTES:
2. SEE STD DRAWING 020 FOR POURED IN PLACE CONCRETE MANHOLE BASE.
3. ALL JOINTS AND RUBBER GASKETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.
4. ALL PIPE CONNECTIONS TO MANHOLE SHALL BE WATERTIGHT.
5. PIPE CONNECTIONS OF 24" OR GREATER SHALL REQUIRE A MANHOLE AND CHANNEL DETAIL.
6. PIPE CONNECTIONS OF FOUR OR MORE MAINLINES SHALL REQUIRE A MANHOLE CONNECTION AND CHANNEL DETAIL.
7. PROVIDE A MINIMUM OF 8" OF INTACT (UNDISTURBED) MANHOLE WALL BETWEEN PIPE BREAKOUTS AS MEASURED ON THE INSIDE FACE OF THE MANHOLE.
8. BREAKOUT OF WALL FOR PIPE SHALL BE 2" MINIMUM AND 4" MAXIMUM CLEAR OF PIPE WALL.
9. THIS DETAIL LIMITED TO MAXIMUM INTERIOR DROP OF 12" FOR SANITARY CONNECTION AND 48" FOR STORM CONNECTION.
10. WATERTIGHT/TAMPER PROOF MANHOLE FRAME AND COVER SHALL BE USED IN ALL EASEMENT AND OFF STREET AREAS. SEE STD DRAWING 130.
11. ALL JOINTS AND RUBBER GASKETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.

STANDARD MANHOLE

DRAWING NO. 010

REVISED 12-16
NOTES:
1. ALL MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD MANHOLE, DRAWING NO. 010.

2. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 PSI AND A SLUMP OF 2" TO 4".

MANHOLE BASE

DRAWING NO. 020

REvised 11-16
NOTES:
ALL PRE-CAST MANHOLE SECTIONS SHALL
CONFORM TO THE REQUIREMENTS OF ASTM
C-478 AND APPLICABLE PROVISIONS OF
STANDARD DRAWING NO. 010.

ENCAPSULATED
RUBBER GASKET

PVC
PIPE

SANDED BELL
FITTING

NON-SHRINKING GROUT

PIPE I.D.

CONSTRUCT
CHANNEL AND MIN
12" SHELF IN FIELD
1"/FT SLOPE

5" MINIMUM

6" MIN.

STAINLESS
STEEL BAND

INTERCEPT
PIPE

FLEXIBLE
CONNECTOR

KOR-N-BAND
INTERNAL

SMOOTH FINISH CHANNEL TO
3/4 VERTICAL HEIGHT OF
PIPE

12" MINIMUM OF 3/4"-0"
COMPACTED BASE ROCK

PVC SANDED BELL

KOR-N-SEAL BOOT

MANHOLE CONNECTIONS

DRAWING NO. 030

REVISED 12-16
STANDARD MANHOLE FLAT TOP
W/ REINFORCEMENT
OR
RUBBER GASKET FLAT TOP
W/ REINFORCEMENT

STANDARD MANHOLE FRAME
AND COVER (TYPICAL)
SEE STD DRAWING #110

58" DIA.

10" TYP

25"

48"

6" MINIMUM OVERLAP

PIPE
I.D.

#8" MINIMUM CONCRETE

36" MAXIMUM

12" OF 3/4"-D" COMPACTED BASE ROCK

#6 BAR AROUND OUTSIDE OF OPENING
#6 DIAGONALS BOTH SIDES OF OPENING
#6 6" O.C. BOTH WAYS

RUBBER GASKET
FLAT TOP
(OPTIONAL)

NOTES:
1. ALL JOINTS AND RUBBER GASKETS SHALL
CONFORM TO THE REQUIREMENTS OF ASTM
C-433.

2. ALL MANHOLE SECTIONS SHALL CONFORM
TO THE REQUIREMENTS OF ASTM C-478
AND APPLICABLE PROVISIONS OF
STANDARD MANHOLE, SEE STD DRAWING
NO. 010.

3. CENTER OPENING FLATOP REQUIRED.

4. NO STEPS ALLOWED IN SHALLOW FLAT TOP
MANHOLE.

5. ALL POURED IN PLACE CONCRETE SHALL
HAVE A 28 DAY STRENGTH OF 3000
PSI AND A SLUMP OF 2" TO 4".

SHALLOW FLAT TOP
MANHOLE

DRAWING NO. 040

CleanWater Services

REVISED 12-16
STANDARD MANHOLE FLAT TOP
W/REINFORCEMENT
OR
RUBBER GASKET FLAT TOP
W/REINFORCEMENT

#6 BAR AROUND OUTSIDE OF OPENING
#6 DIAGONALS BOTH SIDES OF OPENING
#6 6” O.C. BOTH WAYS

NON-SHRINKING GROUT

CONSTRUCT CHANNEL AND MIN 12” SHELF IN FIELD 1”/FT SLOPE

PIPET I.D.

SMOOTH FINISH CHANNEL TO 3/4 VERTICAL HEIGHT OF PIPE

12” MINIMUM OF 3/4”-0” COMPACTED BASE ROCK

RUBBER GASKET
FLAT TOP
(OPTIONAL)

NOTES:
1. ALL JOINTS AND RUBBER GASKETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-433.

2. ALL MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD MANHOLE, SEE STD DRAWING NO. 010.

3. STEPS REQUIRED ON FLAT TOP MANHOLES DEEPER THAN 48” FROM FINISHED GRADE TO I.E. OUT.

FLAT TOP MANHOLE

DRAWING NO. 050  REVISED 12-16
SPECIFICATIONS:
1) CLAMP AND BRACKETS ARE TYPE 304 STAINLESS STEEL, 11 GAUGE (.1196").
2) 3/8" Ø PINCH BOLT AND NUTS IS TYPE 18-8 STAINLESS STEEL.
3) REINER CLAMP/BRACKET AND ANCHOR OR APPROVED EQUIVALENTS.

ANCHOR DETAIL
N.T.S.

CLAMP DETAIL
N.T.S.

MECHANICAL INSIDE DROP (OPTIONAL)

MINIMUM OF 2 CLAMPS, MAXIMUM DISTANCE BETWEEN CLAMPS IS 3' OR ADDITIONAL CLAMPS WILL BE REQUIRED.

NOTES:
1. PIPE AND FITTINGS SHALL BE SAME SIZE AS INFLOW PIPE TO MANHOLE.
2. PIPE AND FITTINGS FOR DROP ASSEMBLY SHALL BE: DUCTILE IRON ANSI A21.50-1, AWWA C150-1, AWWA C-900 OR PVC ASTM 3034 SDR 35.

MECHANICAL INSIDE DROP MANHOLE

DRAWING NO. 060
REVISED 02-17
OPEN INSIDE DROP WITH BEAVER SLIDE

OPEN INSIDE DROP FOR LARGE DIAMETER PIPE

PIPE PROJECTING BEYOND INTERIOR SURFACE OF MANHOLE WALL IS NOT ALLOWED

SMOOTH FINISH CHANNEL TO 3/4 VERTICAL HEIGHT OF PIPE

48" MAX. FOR STORM AND 12" MAX. FOR SANITARY

PIPE I.D.

OPEN INSIDE DROP MANHOLE

NON-SHRINKING GROUT WITH WATERTIGHT SEAL SEE STD DRAWING 030

PIPE TYPE, SIZE, AND CONNECTION PER PLAN, AS APPROVED

CONSTRUCT CHANNEL AND SLIDE SIMULTANEOUSLY

INSIDE DROP PIPE TO EXTEND A MINIMUM OF 1" BEYOND SHELF.

NON-SHRINKING GROUT WITH WATERTIGHT SEAL SEE STD DRAWING 030

PIPE TYPE, SIZE, AND CONNECTION PER PLAN, AS APPROVED

PRE CAST MANHOLE FOR LARGE DIAMETER PIPE SEE STD. DRAWING NO. 160.
SPECIFICATIONS:
1) CLAMP AND BRACKETS ARE TYPE 304 STAINLESS STEEL, 11 GAUGE (.1196”).
2) 3/8" # PINCH BOLT AND NUTS IS TYPE 18-8 STAINLESS STEEL.
3) RELINER CLAMP/BRACKET AND ANCHOR OR APPROVED EQUIVALENTS.

ANCHOR DETAIL
N.T.S.

NOTES:
1. DROP BOWL AS MANUFACTURED BY RELINER-DURAN INC. OR APPROVED EQUAL.
2. DROP BOWL TO BE SIZED PER MANUFACTURER’S RECOMMENDATIONS (INFORMATION AVAILABLE @ RELINER.COM) OR AS REQUIRED BY DISTRICT OR CITY.
3. PIPE AND FITTING FOR DROP ASSEMBLY SHALL BE: AWWA C150-1, AWWA C-900 OR PVC ASTM 3034 SDR 35.
4. NO MORE THAN ONE DROP BOWL PER MANHOLE WITHOUT WRITTEN APPROVAL BY DISTRICT OR CITY.
5. WRITTEN APPROVAL BY DISTRICT OR CITY IS REQUIRED FOR DROP BOWL INSTALLATION ON PIPELINES WITH A SLOPE OF 5% OR GREATER.

INSIDE DROP MANHOLE W/BOWL

CleanWater Services
DRAWING NO. 090 REVISED 12-16