

LOCATE FRAME AND COVER
OVER EDGE OF AT LEAST
12" IN WIDTH

8" MIN. BETWEEN
KNOCKOUTS

MAXIMUM 27" FROM
TOP OF FIRST STEP
TO TOP OF CASTING

STANDARD FRAME AND COVER OR
WATERTIGHT FRAME AND COVER.
SEE STD. DRAWING NO. 110-SA/ST
OR NO. 120
SET FRAME IN NON-SHRINK
GROUT

GRADE RINGS (2", 4", OR 6")
MAXIMUM 12" SET IN
NON-SHRINK GROUT

STANDARD ECCENTRIC
36" CONE

MANHOLE STEPS SEE
STD DRAWING NO. 100

MANHOLE SECTION
(VARIABLE 1'-4')

60" MINIMUM

5" MINIMUM

48" MIN.

MINIMUM 12" LEDGE
(ONE REQUIRED)
1"/FT. SLOPE TYP.

2" MIN. FROM TOP OF
PIPE TO MANHOLE
SECTION

PIPE
O.D.

8" MINIMUM CONCRETE

SMOOTH FINISH CHANNEL TO
3/4 VERTICAL HEIGHT OF PIPE

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

72" MINIMUM

NOTES:

1. ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
2. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND SLUMP OF 2" TO 4".
3. ALL JOINTS SHALL BE SEALED WITH PRE FORMED GASKETS SUCH AS KENT-SEAL NO. 2, RAM-NECK, OR AN APPROVED EQUAL CONFORMING TO FEDERAL SPECIFICATION SS-S00210.
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 24" 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.

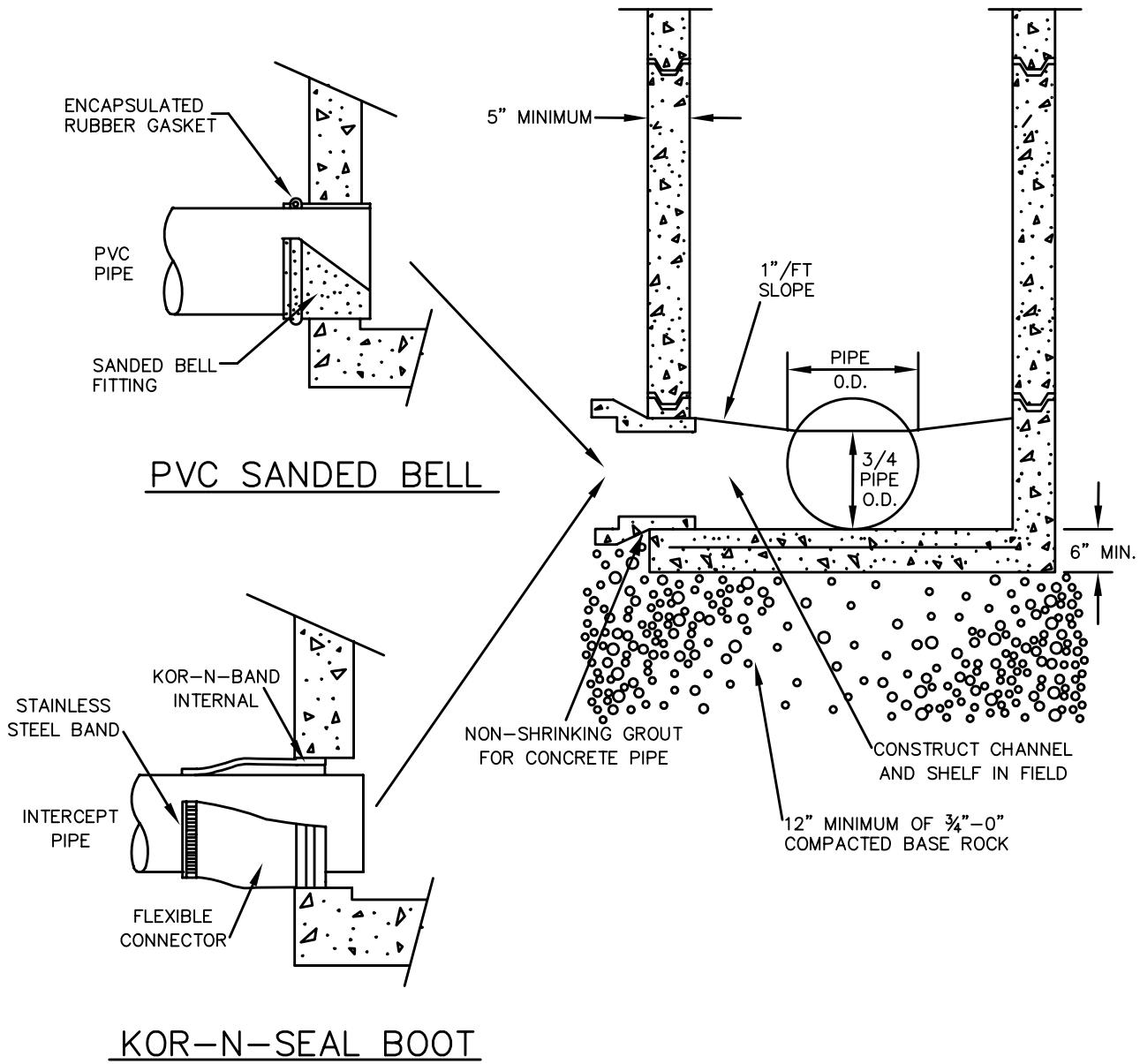
STANDARD MANHOLE

DRAWING NO. 010

REVISED 02-03



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



PRECAST CONCRETE MANHOLE BASE

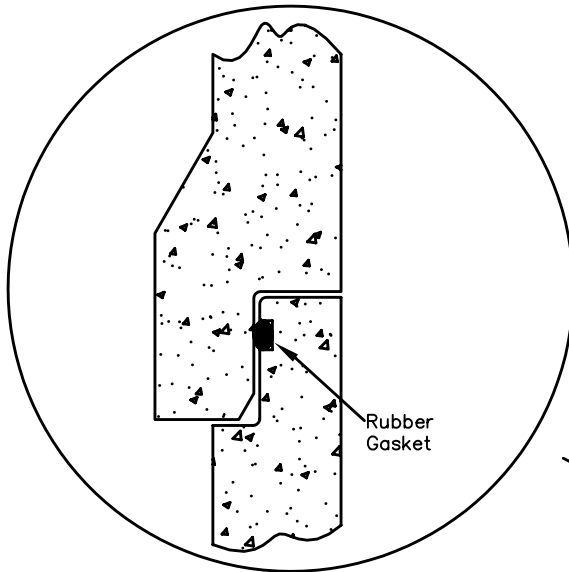
DRAWING NO. 020

REVISED 05-07



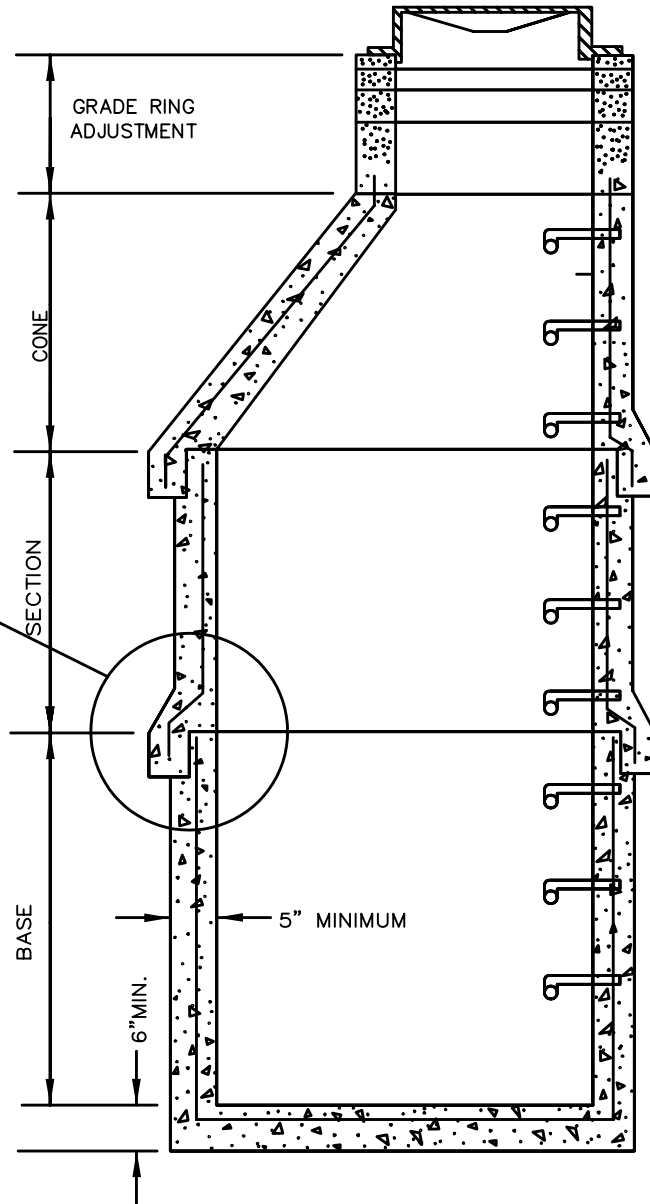
NOTES:

1. ALL MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD MANHOLE, DRAWING NO. 010.
2. ALL JOINTS AND RUBBER GASKETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.



Rubber Gasket

JOINT DETAIL WILL VARY BY MANUFACTURER



PRE CAST RUBBER GASKET MANHOLE

DRAWING NO. 030

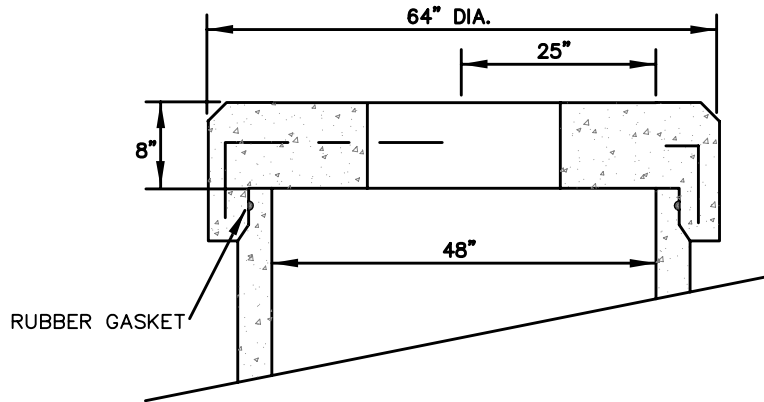
REVISED 12-06

**Clean Water Services**
Our commitment is clear.

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, DRAWING NO. 010.
3. CENTER OPENING FLAT TOP REQUIRED.

RUBBER GASKET FLAT TOP (OPTIONAL)

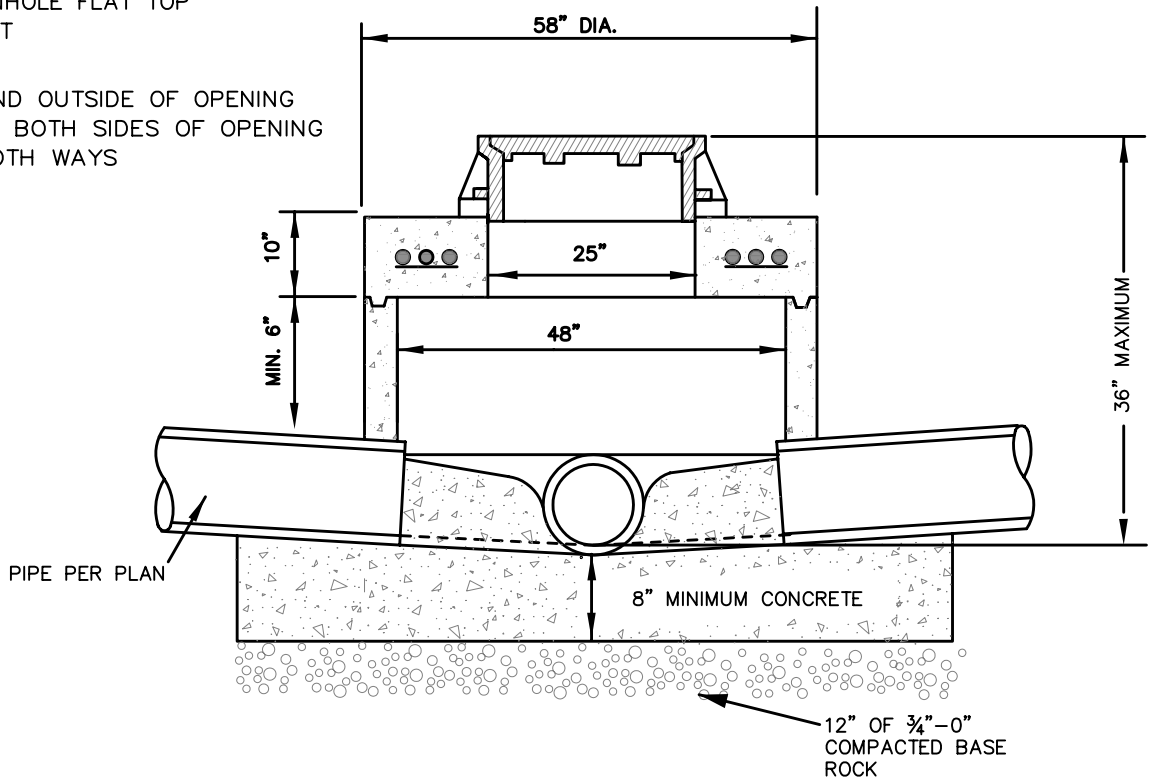


RUBBER GASKET FLAT TOP
REINFORCEMENT

OR

STANDARD MANHOLE FLAT TOP
REINFORCEMENT

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



SHALLOW FLAT TOP MANHOLE

DRAWING NO. 040

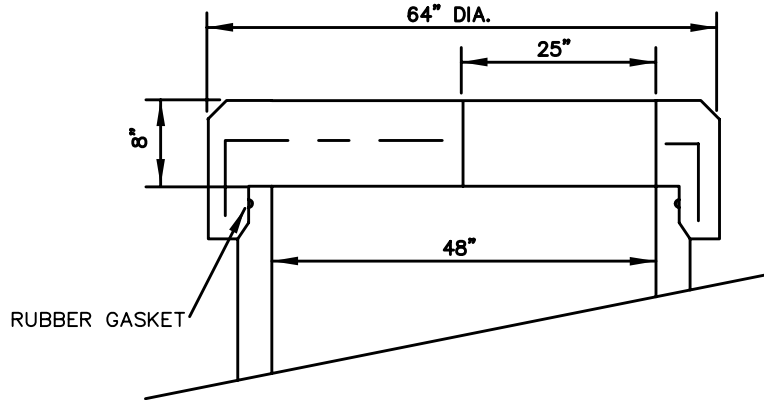
REVISED 02-03


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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, DRAWING NO. 010.
3. STEPS REQUIRED ON FLAT TOP MANHOLES DEEPER THAN 48".

RUBBER GASKET FLAT TOP (OPTIONAL)

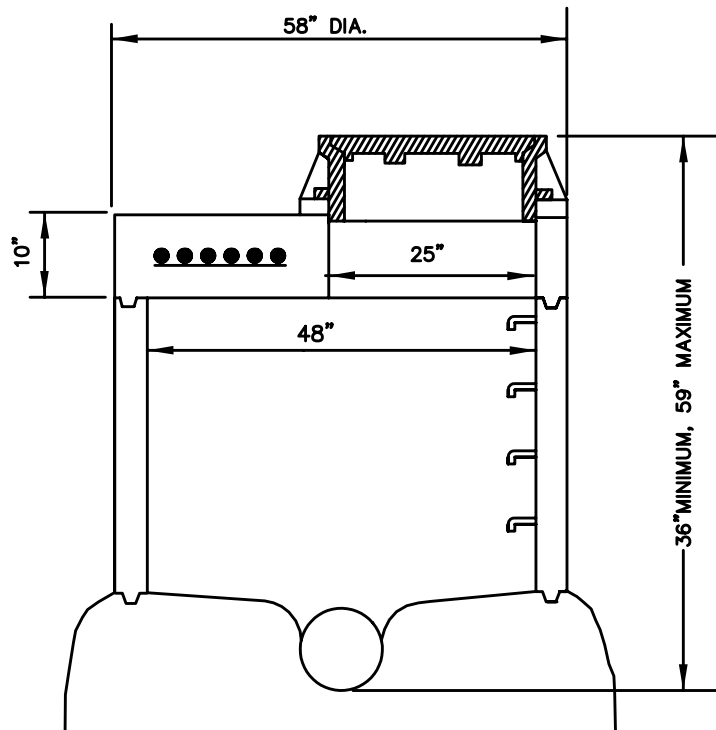


RUBBER GASKET FLAT TOP
REINFORCEMENT

OR

STANDARD MANHOLE FLAT TOP
REINFORCEMENT

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

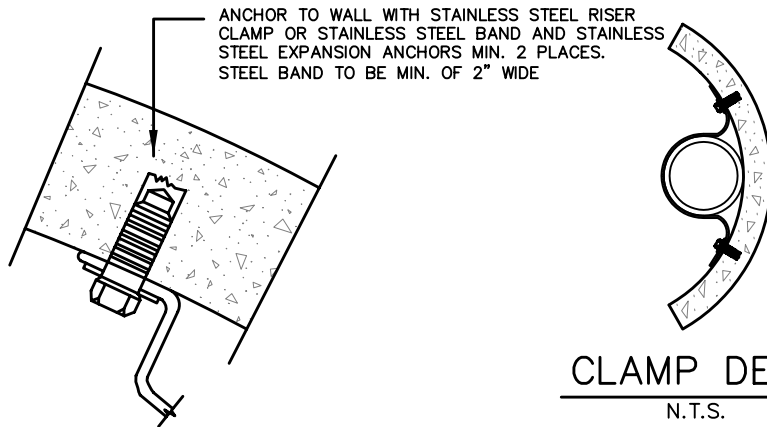


FLAT TOP MANHOLE

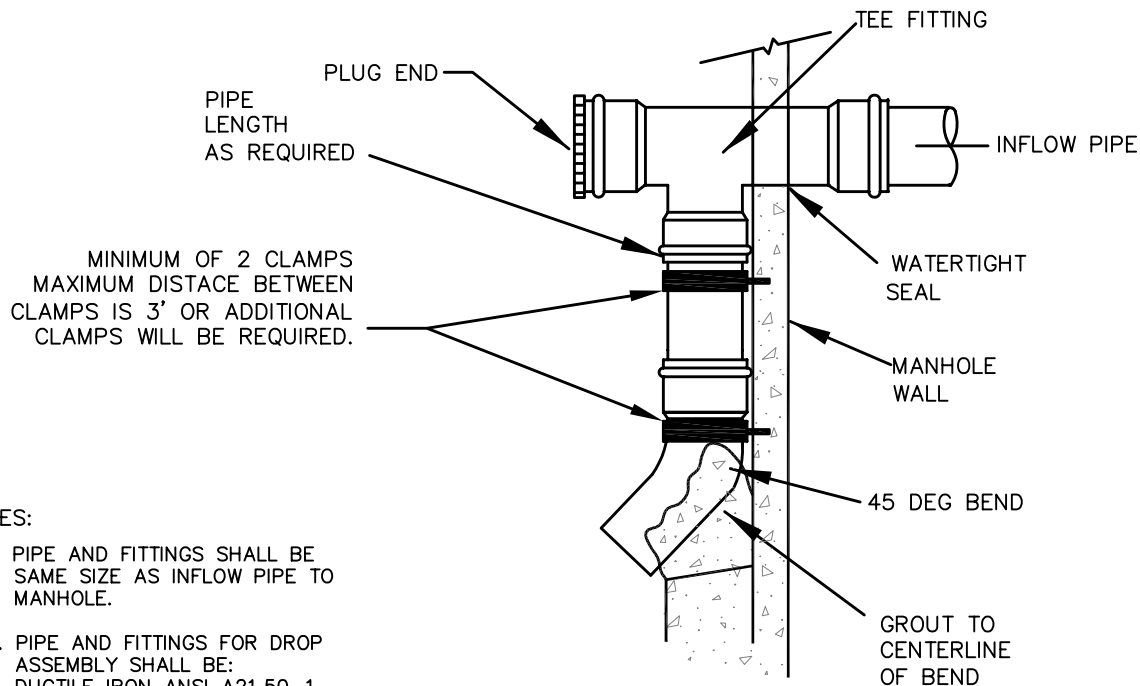
DRAWING NO. 050

REVISED 02-03


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**MECHANICAL INSIDE DROP
(OPTIONAL)**



NOTES:

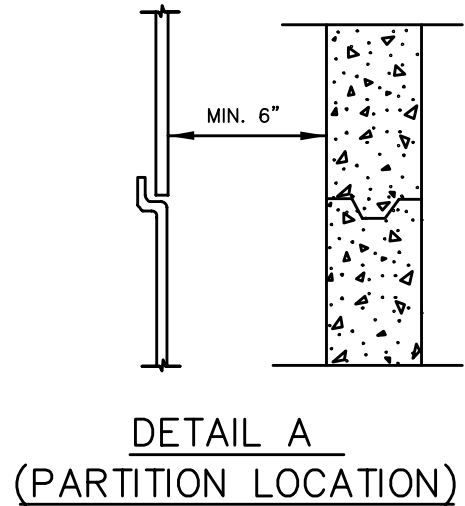
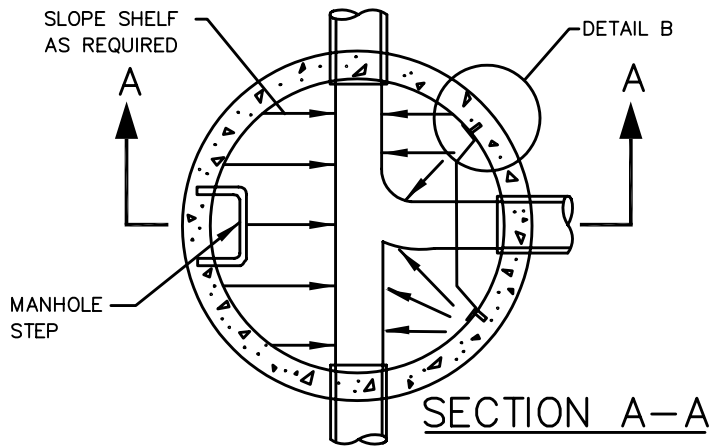
1. PIPE AND FITTINGS SHALL BE SAME SIZE AS INFLOW PIPE TO MANHOLE.
2. PIPE AND FITTINGS FOR DROP ASSEMBLY SHALL BE:
DUCTILE IRON ANSI A21.50-1,
AWWA C150-1, AWWA C-900
OR PVCSTM 3034 SDR 35.

**MECHANICAL INSIDE
DROP MANHOLE**

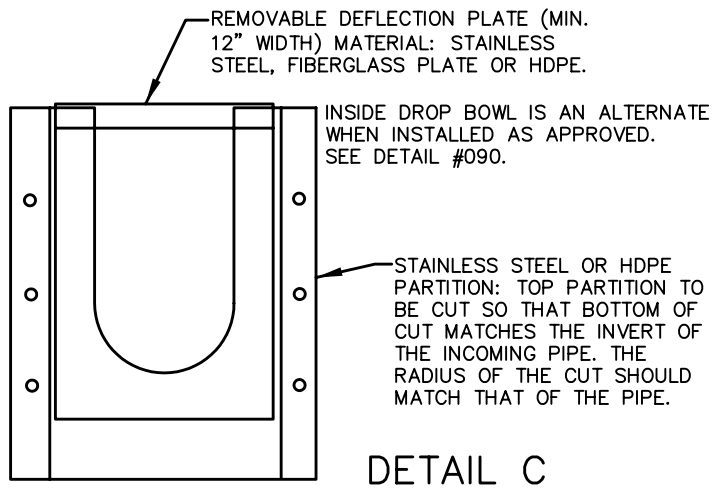
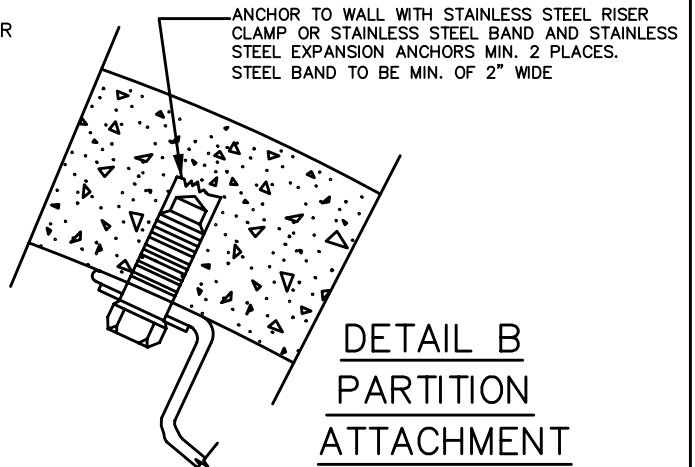
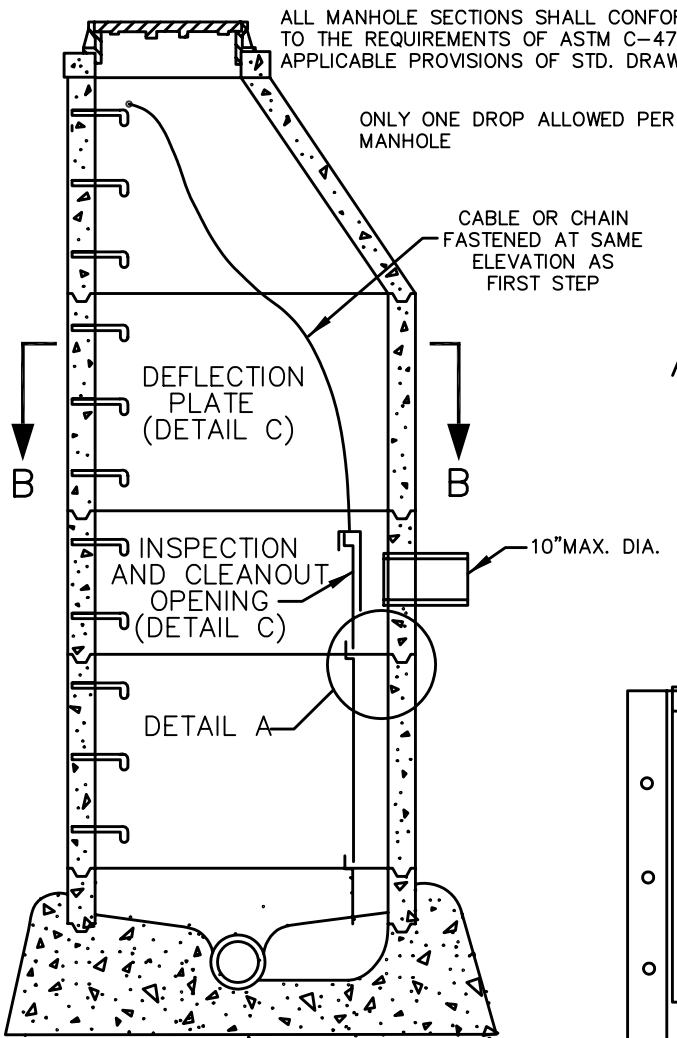
DRAWING NO. 060

REVISED 12-06





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



SECTION B-B

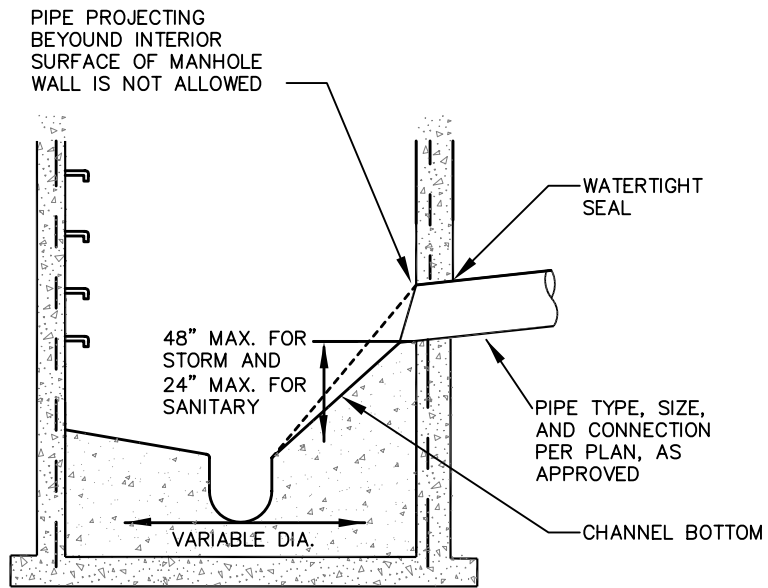
DETAIL C

PARTITIONED INSIDE DROP MANHOLE

DRAWING NO. 070

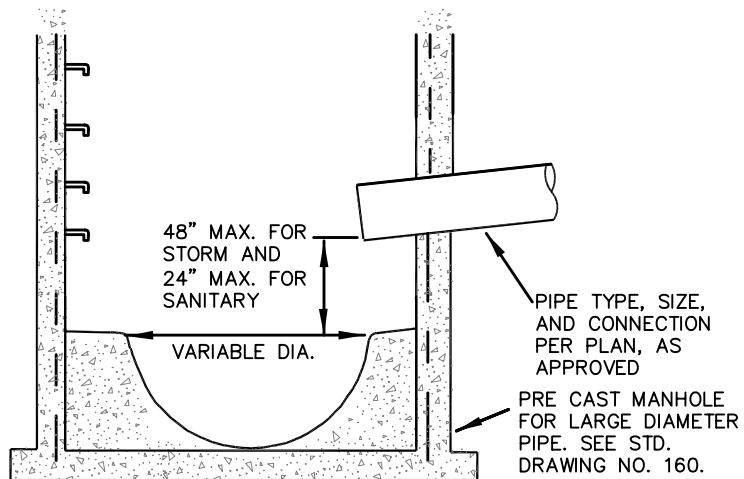
REVISED 12-06





**OPEN INSIDE DROP
WITH BEAVER SLIDE**

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



**OPEN INSIDE DROP FOR
LARGE DIAMETER PIPE**

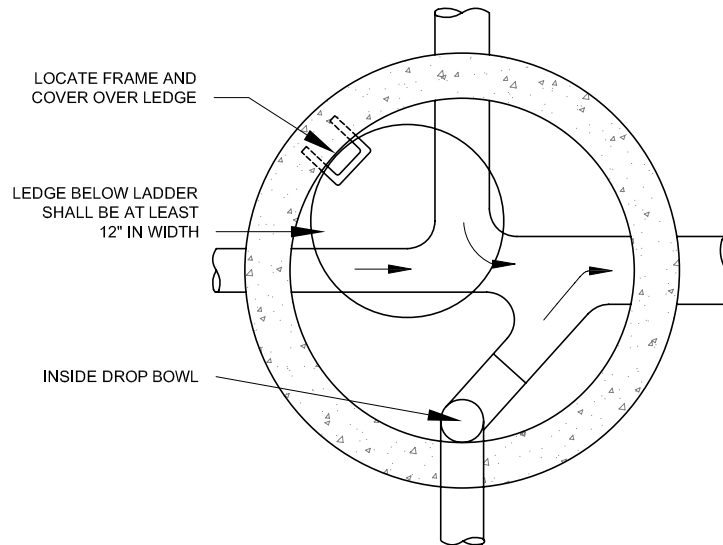
OPEN INSIDE DROP MANHOLE

DRAWING NO. 080

REVISED 11-06

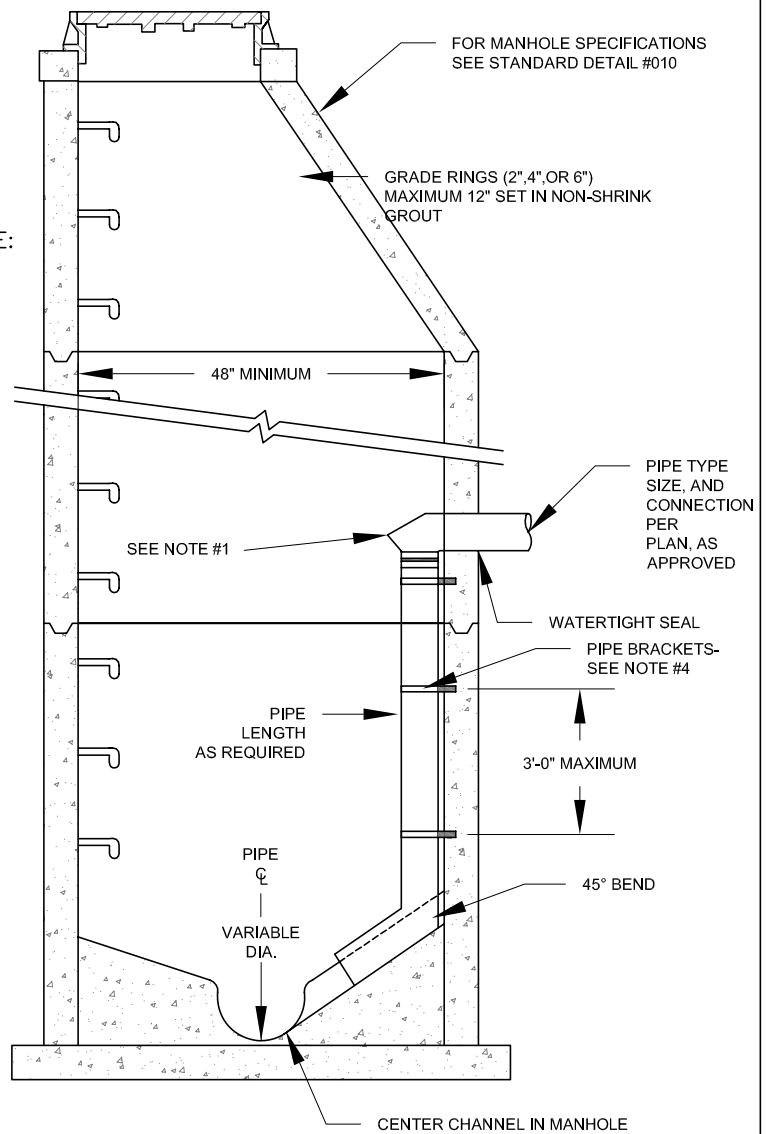
CleanWater Services

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NOTES:

1. DROP BOWL AS MANUFACTURED BY RELINER-DURAN INC. OR APPROVED EQUAL.
2. DROP BOWL TO BE SIZED PER MANUFACTURER'S RECOMENDATIONS (INFORMATION AVAILABLE @ RELINER.COM) OR AS REQUIRED BY DISTRICT OR CITY.
3. PIPE AND FITTING FOR DROP ASSEMBLY SHALL BE: DUCTILE IRON ANSI A21.50-1, AWWA C150-1, AWWA C-900 OR PVC ASTM 3034 SDR 35.
4. STAINLESS ADJUSTABLE PIPE BRACKETS AS MANUFACTURED BY RELINER-DURAN INC. OR APPROVED EQUAL. (INFORMATION AVAILABLE @ RELINER.COM).
5. NO MORE THAN ONE DROP BOWL PER MANHOLE WITHOUT WRITTEN APPROVAL BY DISTRICT OR CITY.
6. WRITTEN APPROVAL BY DISTRICT OR CITY IS REQUIRED FOR DROP BOWL INSTALATION ON PIPELINES WITH A SLOPE OF 5% OR GREATER.



INSIDE DROP MANHOLE W/BOWL

DRAWING NO. 090

REVISED 5-07