

STANDARD DETAILS (SDS) SANITARY SEWER

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1. 24 HOUR NOTICE IS REQUIRED PRIOR TO STARTING CONSTRUCTION.
2. FALL THROUGH MANHOLES SHALL BE APPROVED BY THE GRADE OF THE SEWER IN STRAIGHT-THROUGH MANHOLES OR ANGLE MANHOLES UNDER 45° WHERE THE GRADE IS 1.00% OR MORE FOR STRAIGHT-THROUGH OR ANGLE MANHOLES OVER 45° WHERE GRADE OF SEWER IS LESS THAN 1.00% OR FOR JUNCTION MANHOLES A MINIMUM FALL OF 0.10 FOOT SHALL BE PROVIDED THROUGH MANHOLES.
3. BOTTOM SECTION OF MANHOLE BARRELS SHALL HAVE SLOTS FOR PIPES PERFORMED AT THE TIME OF CASTING. CUTTING OF SLOTS IN BARRELS WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY WMU'S ENGINEER. LIFTING HOLES FOR BARREL SECTIONS SHALL BE PERFORMED AND CAST IN PLACE.
4. INVERTS FOR MANHOLES SHALL BE FORMED OF MASS CONCRETE OR BE PRECAST WITH A SMOOTH FINISH. (BRUSH FINISH IS NOT ACCEPTABLE)
5. ALL FLOORS OF MANHOLES MUST HAVE A BRUSH FINISH.
6. CONNECTIONS TO EXISTING WMU MANHOLES WILL BE MADE ONLY AFTER SEWER LINES ARE SUBSTANTIALLY COMPLETE AND READY FOR ACCEPTANCE BY WMU. AUTHORIZATION FOR FINAL CONNECTION MUST BE RECEIVED FROM WMU BEFORE CONNECTION IS MADE. 24 HOUR NOTICE IS REQUIRED PRIOR TO FINAL CONNECTION.
7. WHENEVER POSSIBLE THE ECCENTRIC CONE SHALL BE PLACED PERPENDICULAR TO THE LINE OF THE SEWER TO MINIMIZE FUTURE MEASUREMENT ERRORS ALONG THE SEWER.
8. CONCENTRIC CONE MAHOLES MAY BE USED IN LIEU OF ECCENTRIC CONE MANHOLES WHEN REQUESTED BY THE CONTRACTOR AND UPON APPROVAL BY WMU'S ENGINEER OF SHOP DRAWINGS SHOWING THE CONSTRUCTION TO BE USED.
9. ALL SEWER SHALL BE MARKED BY USING DETECTABLE MYLAR SEWER LINE TAPE APPROVED BY WMU. (A MIN. OF 18" BELOW FINAL GRADE.)
10. MANHOLES SHALL BE LOCATED AT ALL BENDS AND AT EVERY 300'. (MAX. LENGTH)
11. ALL VISABLE LEAKS IN MANHOLES OBSERVED DURING CONSTRUCTION OR INSPECTION SHALL BE CORRECTED EVEN THOUGH INFILTRATION REQUIREMENTS HAVE ALREADY BEEN MET.
12. UNLESS OTHERWISE INDICATED OR SPECIFIED, UNREINFORCED CONCRETE FOR GRADES ENCASEMENT SHALL BE CLASS 'C' (2000 PSI) MANHOLE INVERTS AND REINFORCED BASE AND TOP SLABS SHALL BE CLASS 'B' (3000 PSI) CONCRETE.
13. SHALLOW MANHOLES SHALL BE CONSTRUCTED WITH 400 PRECAST CONCRETE RINGS WITH TOP SLAB AND MANHOLE & COVER AS SHOWN IN SDS - 08.
14. MANHOLE CASTINGS SHALL CONSIST OF CAST IRON FRAMES, 22 "Ø COVERS, WEIGHING NO LESS THAN 460 POUNDS PER FRAME AND LID. IN SPECIAL CONDITIONS A 510 POUND FRAME AND LID WILL BE USED. MANHOLE CASTINGS SHALL BE 310 LBS., JR HOE MF-310 OR APPROVED EQUAL.
15. A MINIMUM SEPARATION OF 18" IS REQUIRED AT ANY LOCATION WHERE A WATER LINE CROSSES A SANITARY SEWER LINE. IF THIS SEPARATION CAN NOT FEASIBLY BE OBTAINED, THE WATER LINE MUST BE INSTALLED IN SUCH A MANNER THAT NO JOINT IS WITHIN 5' OF THE SANITARY SEWER LINE AND A SEPARATION OF 6" MUST BE MAINTAINED.
16. WATER/SEWER LINE TRENCHES IN EXISTING DRIVEWAYS OR STREETS SHALL BE BACKFILLED WITH #9 CRUSHED STONE TO THE TOP OF THE TRENCH.
17. SEWER LINE TRENCHES OUTSIDE EXISTING DRIVEWAYS OR STREETS SHALL BE BACKFILLED WITH A MIXTURE OF CLEAN EARTH FREE OF ROCK NO LARGER THAN 1" SQ. AND DEBRIS, FROM THAT POINT TO THE TOP OF THE TRENCH.
18. MANHOLE STEPS SHALL BE POLYPROPYLENE PLASTIC WITH $\frac{3}{8}$ " STEEL REINFORCING ROD GRADE 60. STEPS SHALL CONFORM TO ASTM 2 146-68 GRADE 16906 AND ASTM A-615.
19. NO BRICK PERMITTED IN MANHOLES. (WALLS OR ADJUSTMENT COLLARS)
20. RUBBER WATER STOPS SHALL BE REQUIRED FOR ALL PIPES ENTERING MANHOLES AND MUST BE GROUTED IN PLACE IN THE MANHOLE WALL. (INDIANA SEALS OR APPROVED EQUAL)
21. PROVIDE NO. 4 REBAR, PAINTED YELLOW, TO PROTECT END OF PIPE ALONG WITH DETECTABLE MYLAR SEWER TAPE FOR LATERAL PROTECTION.
22. PRECAST MANHOLES SECTIONS SHALL BE SEALED WITH CONSEAL OR KENT SEAL #2 ADHESIVE O-RING GASKETS OR APPROVED EQUAL. (TO INCLUDE GRADE RINGS AND FRAME CASTINGS)
23. STEEL ENCASEMENT PIPE SHALL PLACED AT THE LOCATION SHOWN ON THE PLANS IN ACCORDANCE WITH THE NOTED SIZE, LENGTH, AND TYPE OF MATERIAL. THE ENCASEMENT PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF $\frac{1}{2}$ " FOR NEW CASING PIPE OR $\frac{3}{8}$ " FOR SALVAGED CASING PIPE. FOR EXISTING PIPE INSTALLATION, APPLICATIONS, SPLIT STEEL CASING PIPE SHALL CONFORM TO THE ABOVE SPECIFICATIONS EXCEPT THAT IT SHALL BE IN TWO (2) SEMICIRCULAR SECTIONS JOINED BY A CONTINUOUS WELD FROM ONE END TO THE OTHER WITHOUT ANY TRACEABLE Voids. THE ENCASEMENT PIPE MUST BE BITUMINOUS COATED INSIDE AND OUT, AND SEALED ON BOTH ENDS WITH A RUBBER FERROCO END SEAL.



General Notes (Sewer)

Scale:

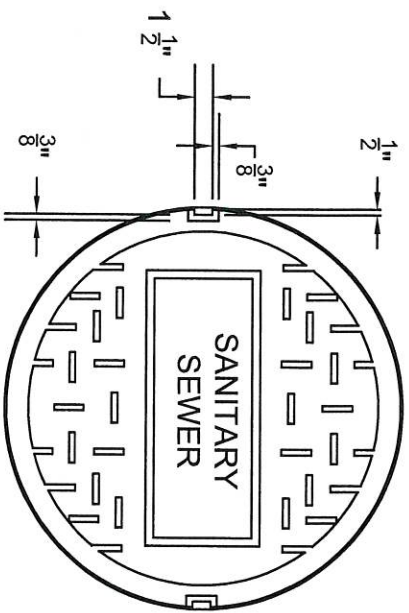
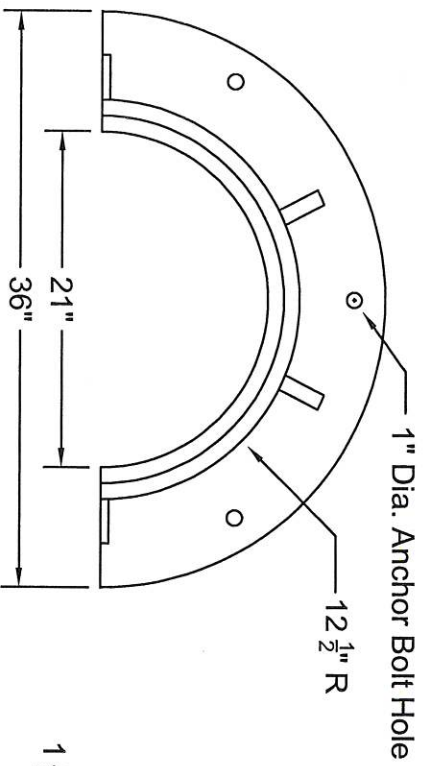
1" = 30'

Date:

Jan. 04

Dwg. No.:

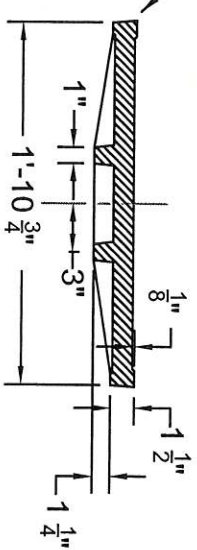
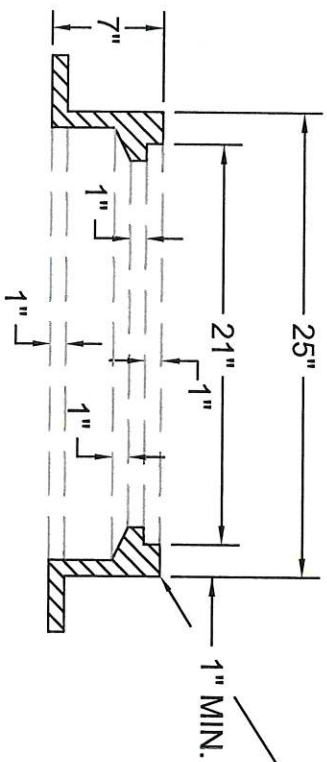
SDS - 01



FRAME

Machined Seating
Edges

COVER



Manhole Frame and Cover
Min. Wt. 460 Lbs.

Scale:

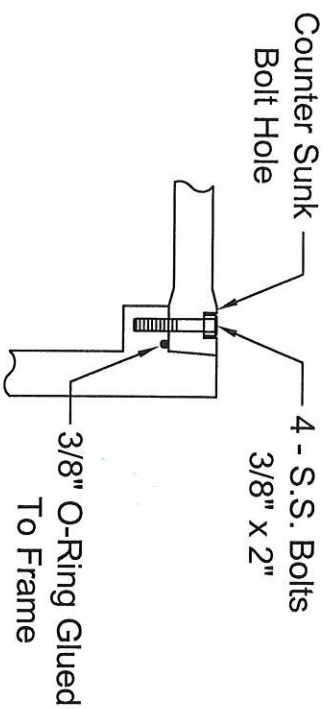
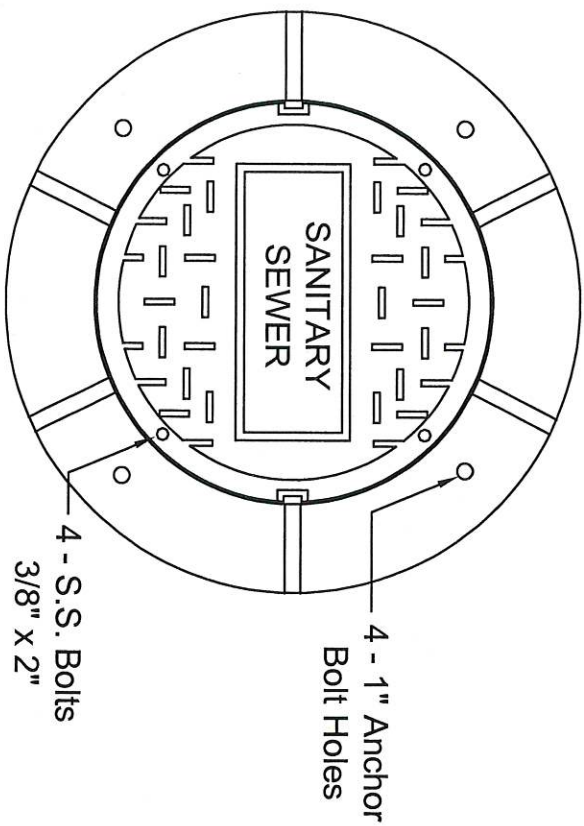
1" = 12"

Date:

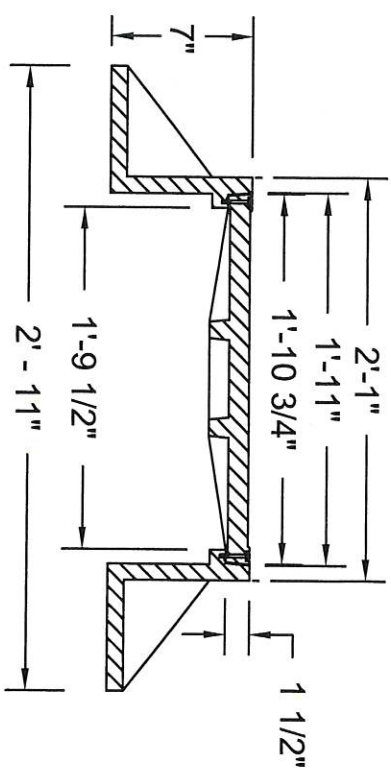
Jan. 2004

Dwg. No.:

SDS - 02



TYPICAL WATERTIGHT
DETAIL



Bolt Down MH Frame & Cover

Scale:

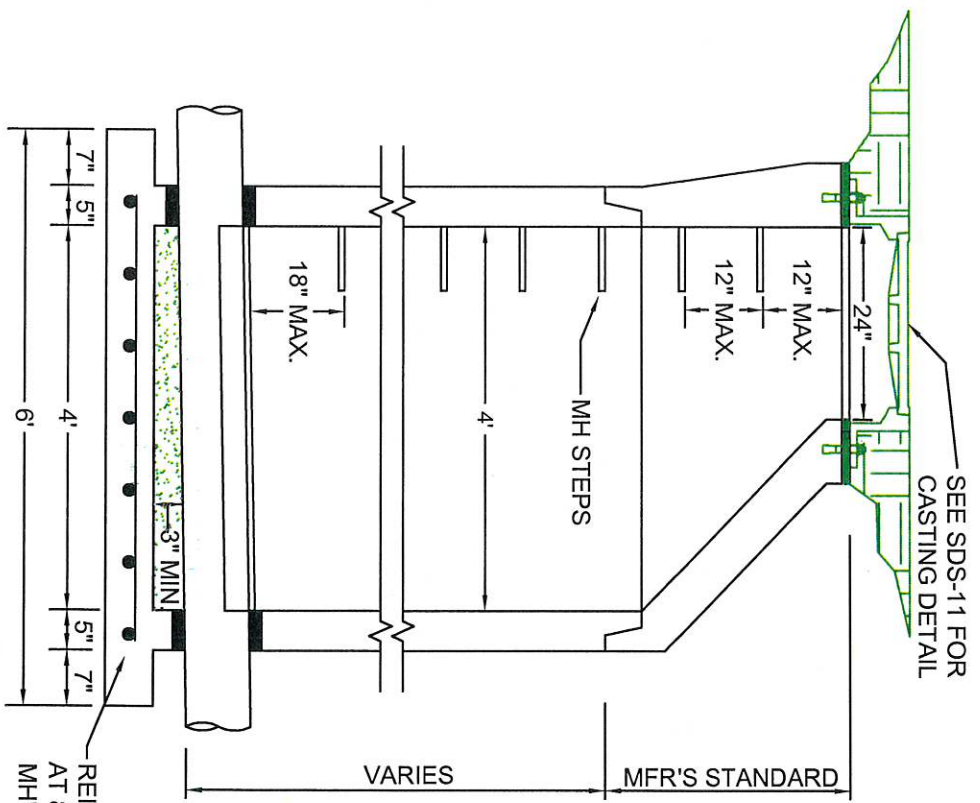
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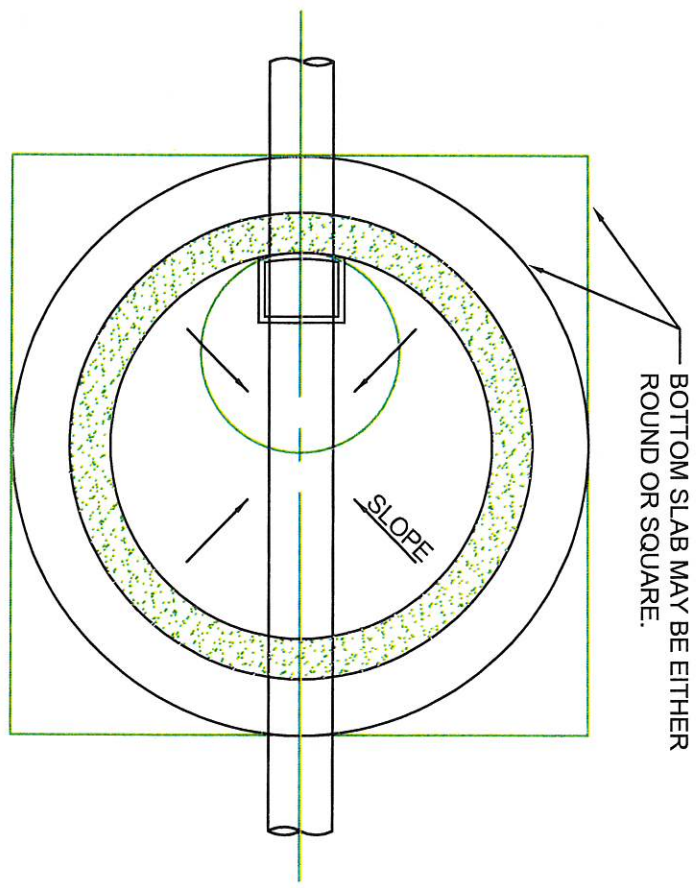
Jan. 2004

Dwg. No.:

SDS - 03



REINFORCE WITH #4 BARS
AT 8" O.C. BOTH WAYS FOR
MH'S GREATER THAN 12'.



NOTE: PRECAST CONCRETE RINGS FOR MANHOLES 12' OR LESS IN DEPTH SHALL CONFORM TO ASTM STD. SPEC. C-76, TABLE II, WALL B, WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI TABLE III PRECAST CONCRETE RINGS SHALL BE USED FOR MANHOLES OVER 12' DEEP.



Standard Precast Manhole

Scale:

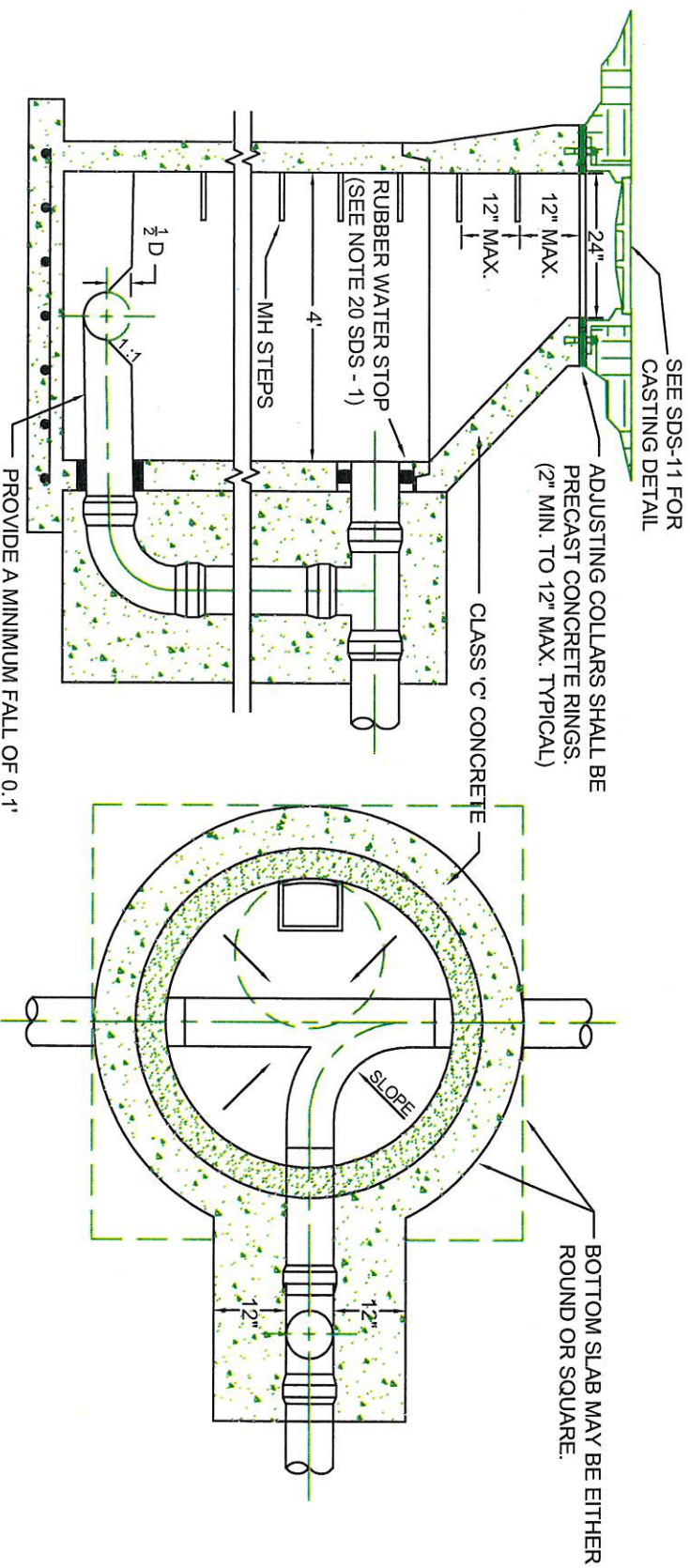
1" = 24"

Date:


Jan. 2004

Dwg. No.:

SDS - 04



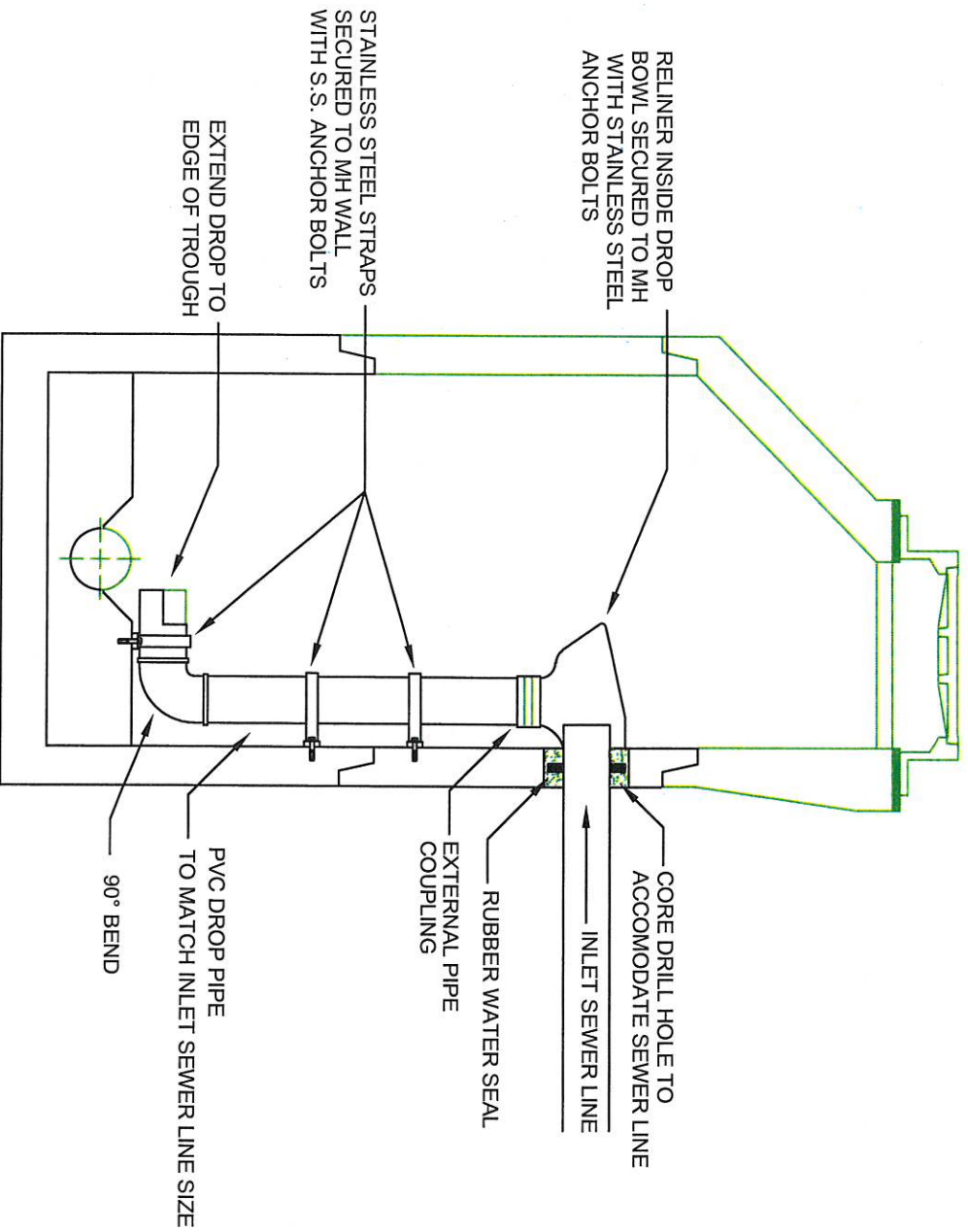
NOTE: PRECAST CONCRETE RINGS FOR MANHOLES 12' OR LESS IN DEPTH SHALL CONFORM TO ASTM STD. SPEC. C-76, TABLE II, WALL B, WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI TABLE III PRECAST CONCRETE RINGS SHALL BE USED FOR MANHOLES OVER 12' DEEP.



**Winchester
Municipal
Utilities**

Standard Precast Outside Drop MH

Scale:	Date:	Dwg. No.:
1" = 36"	Jan. 2004	SDS - 05



Standard Precast Inside Drop MH

Scale:

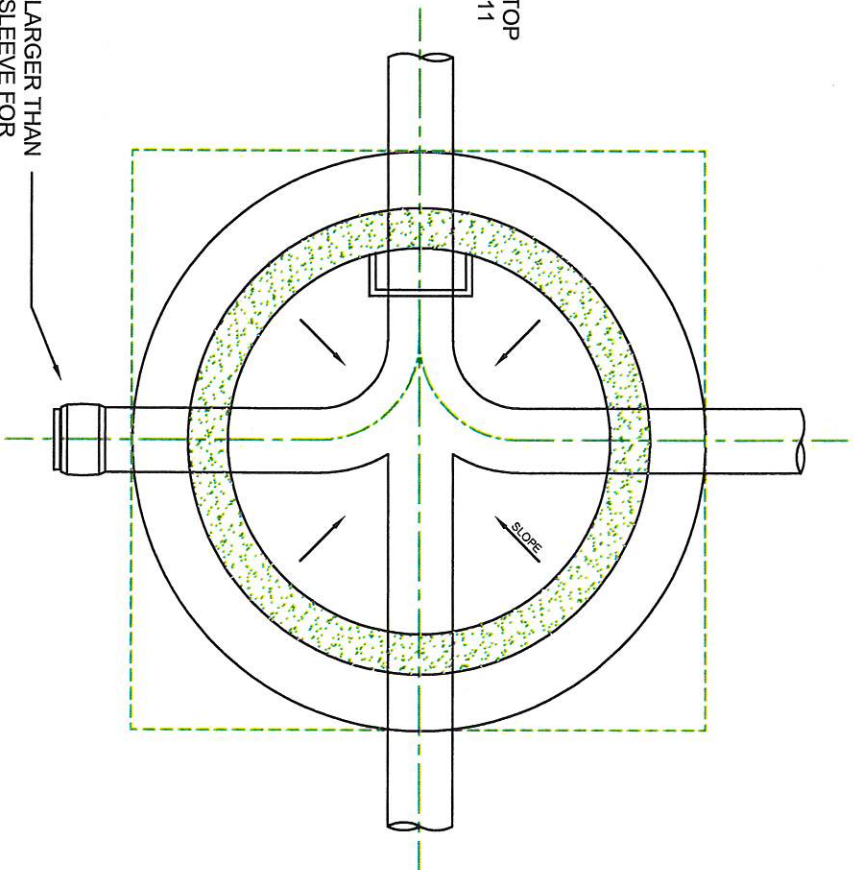
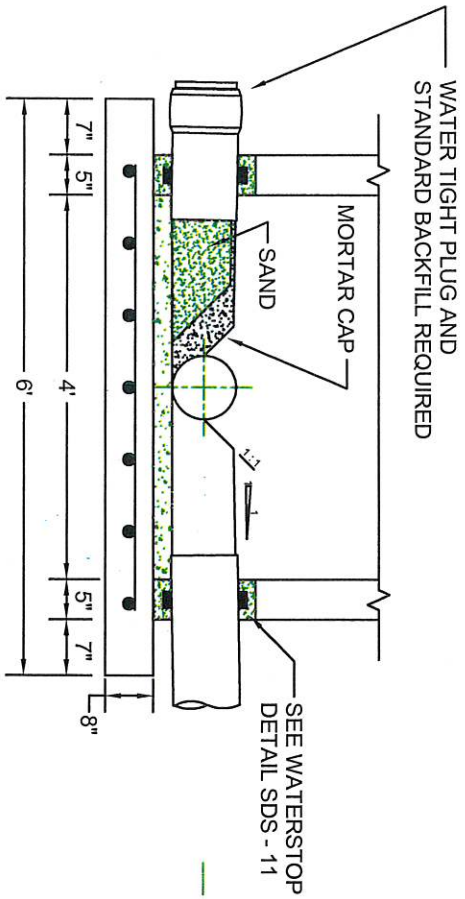
1" = 24"

Date:

Apr. 2021

Dwg. No.:

SDS -06



10" MIN. OR ONE SIZE LARGER THAN ANTICIPATED SEWER SLEEVE FOR FUTURE SEWER. 12" MAX. LENGTH. STUBS ARE REQUIRED WHERE CONNECTIONS TO MANHOLES MAY OCCUR IN THE FUTURE.



Standard Junction Manhole

Scale:

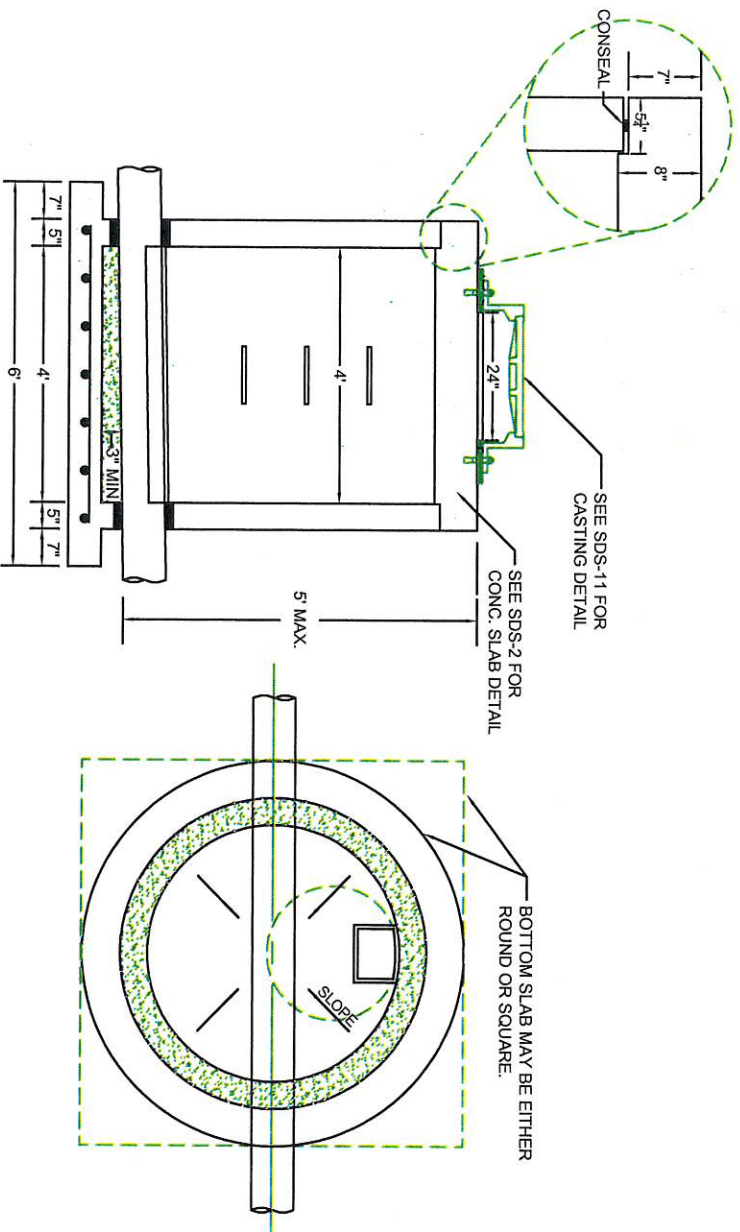
1" = 24"

Date:

Jan. 2004

Dwg. No.:

SDS - 07



NOTE: PRECAST CONCRETE RINGS FOR MANHOLES 12' OR LESS IN DEPTH SHALL CONFORM TO ASTM STD. SPEC. C-76, TABLE II, WALL B, WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI TABLE III PRECAST CONCRETE RINGS SHALL BE USED FOR MANHOLES OVER 12' DEEP.



Standard Shallow Precast Manhole

Scale:

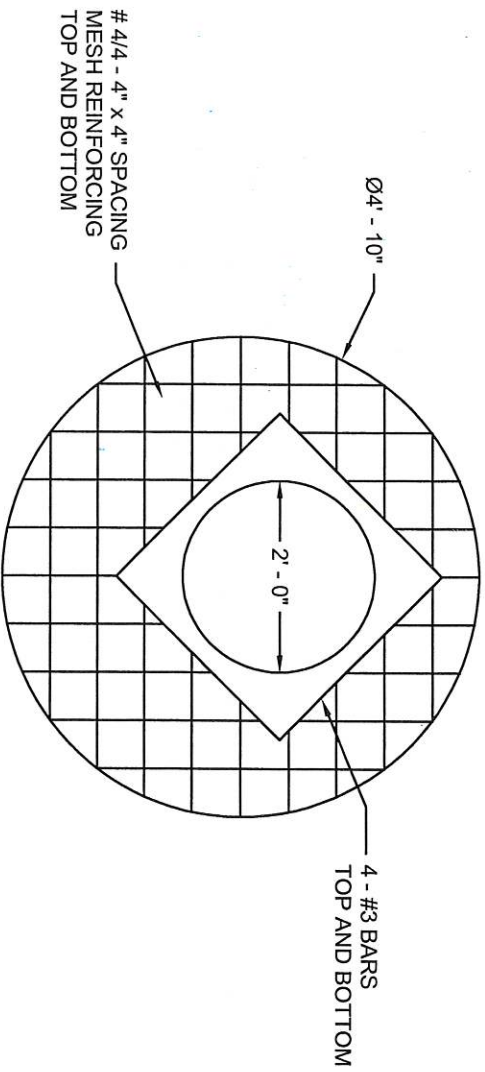
1" = 36"

Date:

Jan. 2004

Dwg. No.:

SDS - 08



Concrete Top Slab for Shallow MH

Scale:

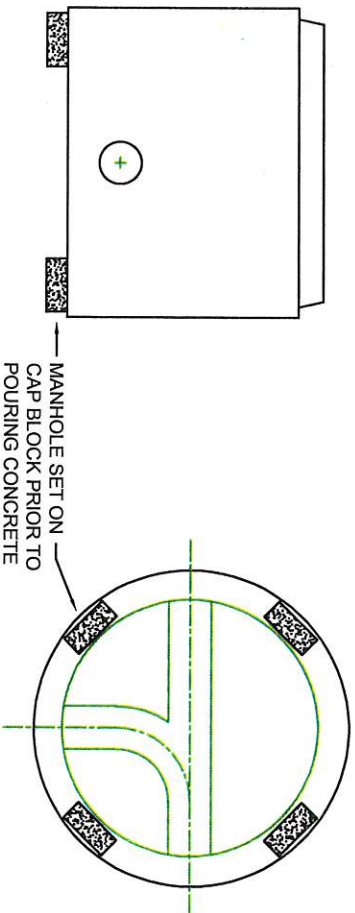
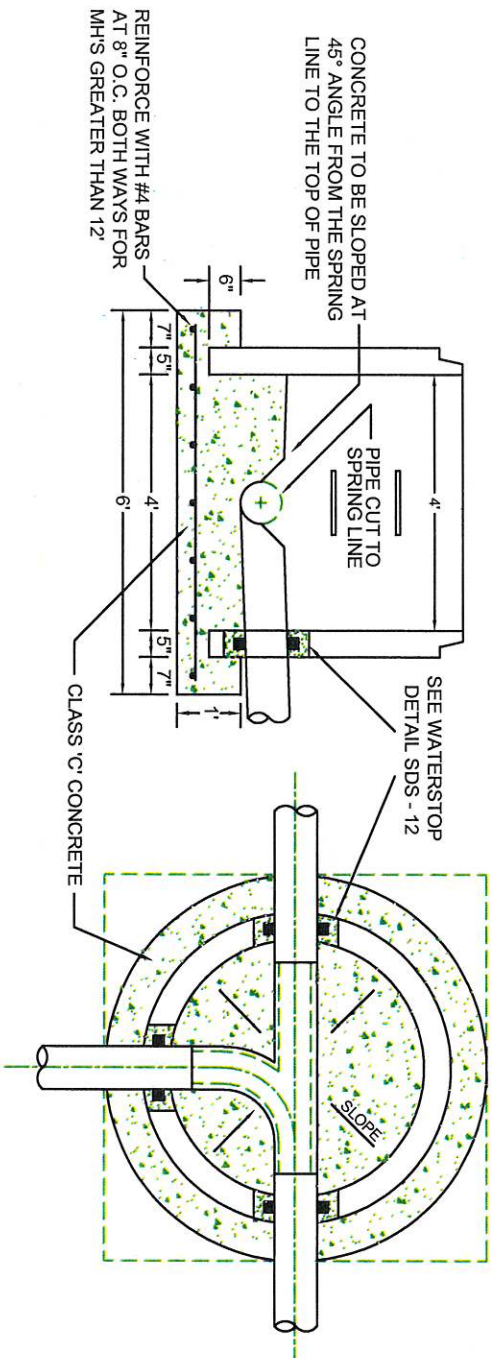
1" = 24"

Date:

Jan. 2004

Dwg. No.:

SDS - 09



Standard Set Over Manhole

Scale:

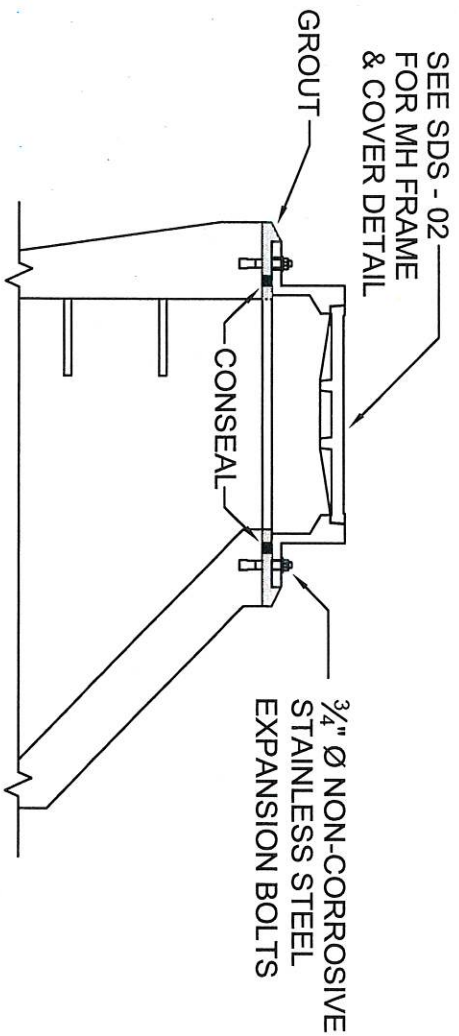
1" = 36"

Date:

Jan. 2004

Dwg. No.:

SDS - 10



NOTES: 1.) TIGHTEN BOLTS PRIOR TO MORTAR SETTING UP.
 2.) CASTING TO BE SET IN FULL MORTAR BED.

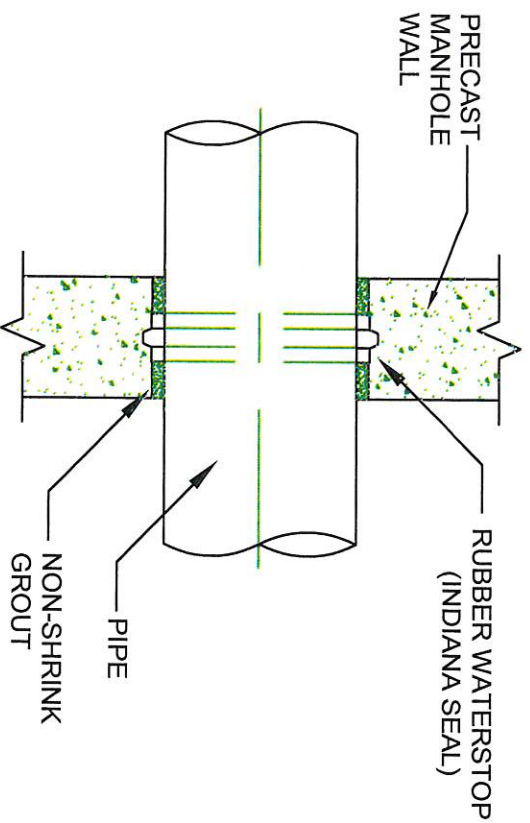


Expansion Bolt & Grout Detail

Scale: 1" = 24"

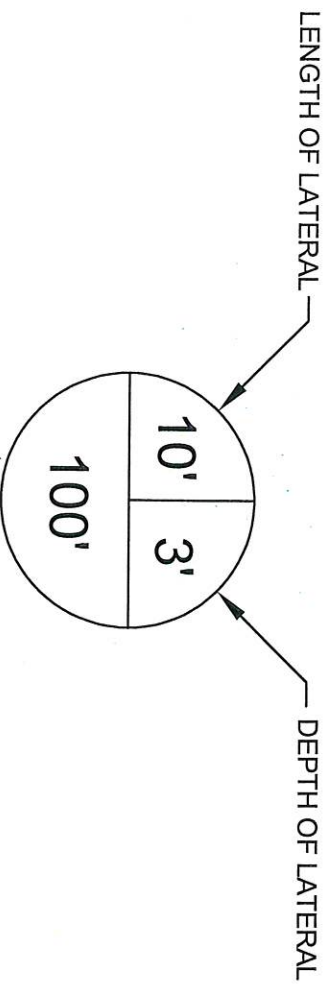
Date: Jan. 2004

Dwg. No.: SDS - 11



LATERAL INDICATOR DETAIL REQUIRED ON RECORD DRAWING

WATER STOP DETAIL SEE SDS - 01 NOTE 20



Water Stop and Lateral Indicator

Scale:

1" = 6"

Date:

Jan. 2004

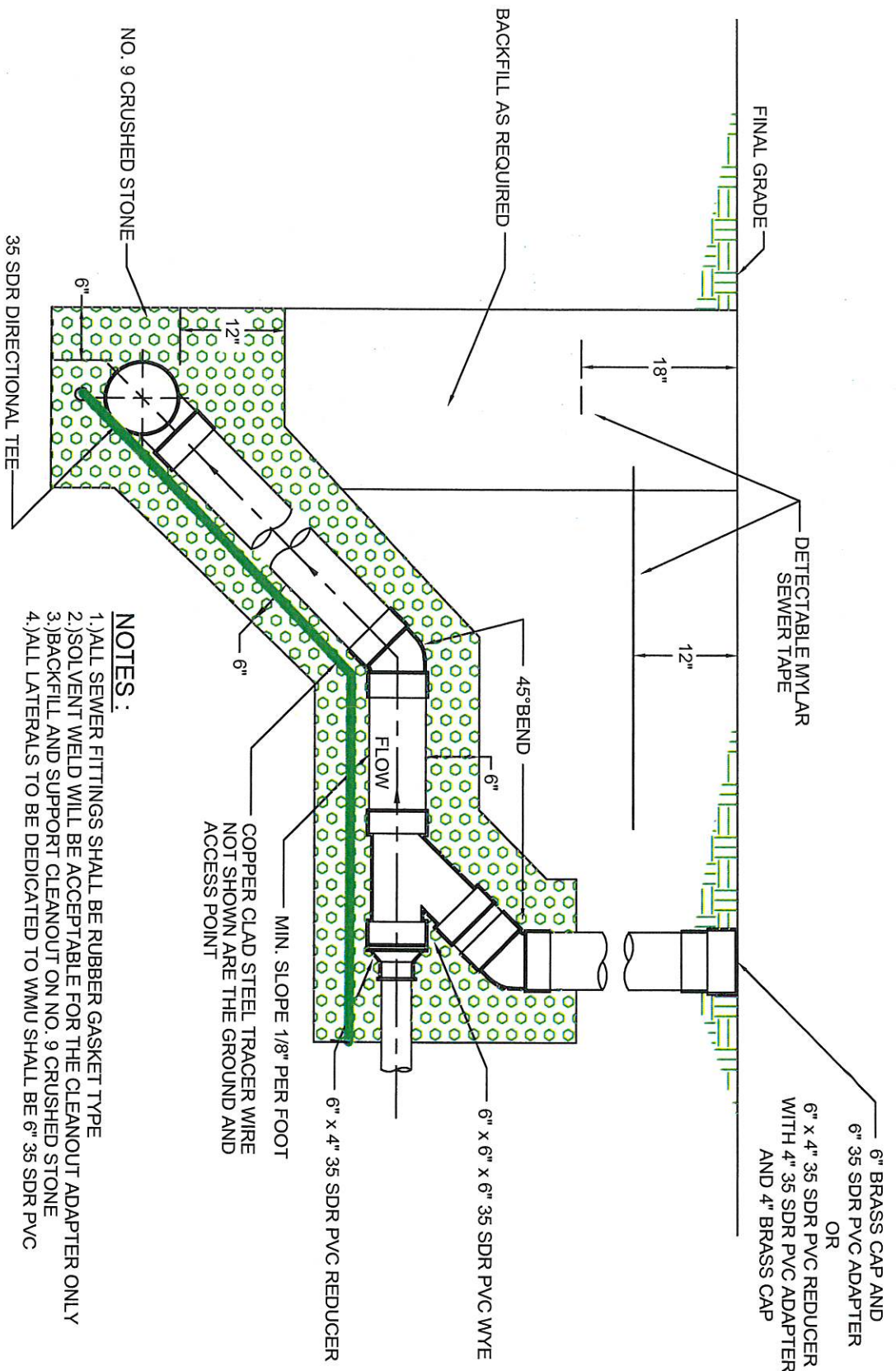
Dwg. No.:

SDS - 12



Winchester
Municipal
Utilities

SDS - 13



NOTES:

- 1.) ALL SEWER FITTINGS SHALL BE RUBBER GASKET TYPE
- 2.) SOLVENT WELD WILL BE ACCEPTABLE FOR THE CLEANOUT ADAPTER ONLY
- 3.) BACKFILL AND SUPPORT CLEANOUT ON NO. 9 CRUSHED STONE
- 4.) ALL LATERALS TO BE DEDICATED TO WMU SHALL BE 6" 35 SDR PVC



Typical Deep Cleanout Detail

Scale:

1" = 18"

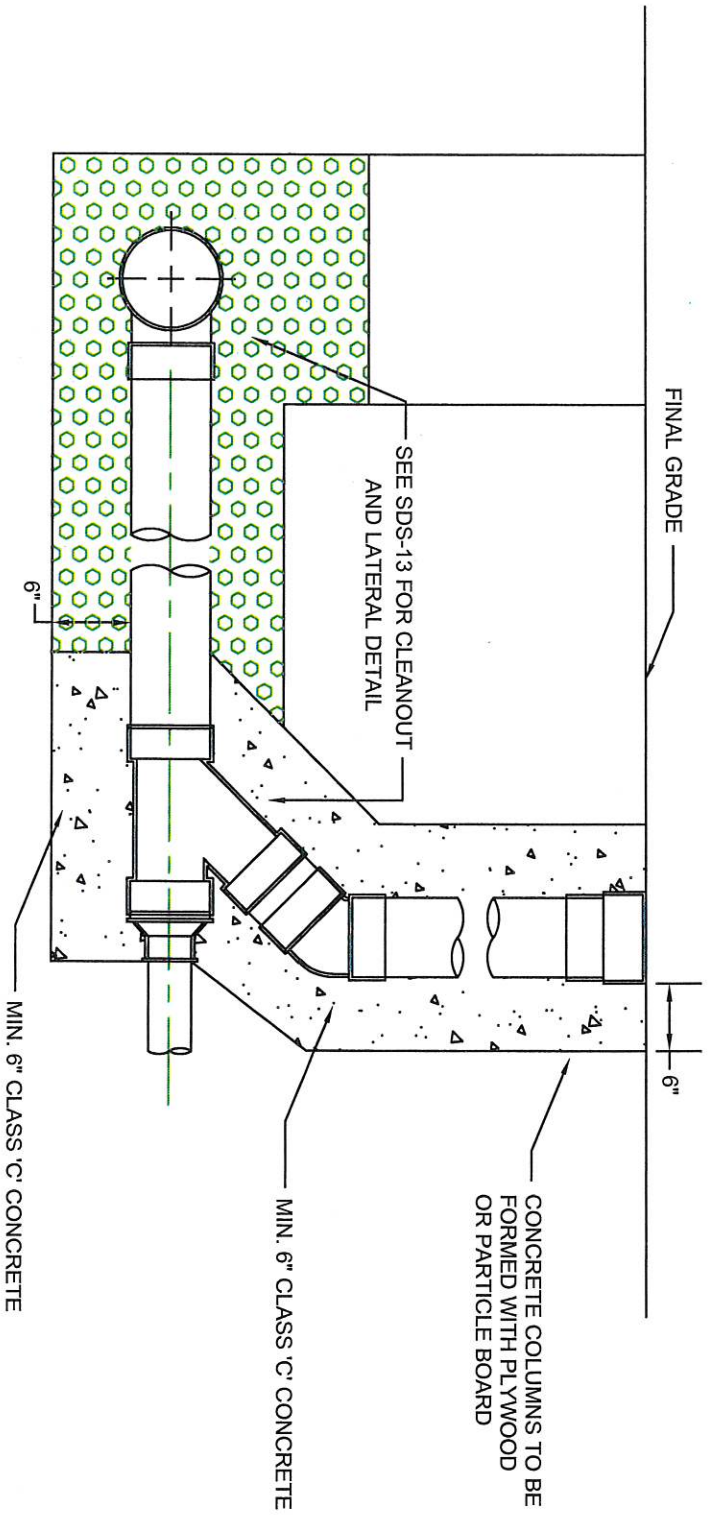
Date:

Jan. 2021

Dwg. No.:

SDS - 14

CONCRETE COLUMN DETAIL FOR CLEANOUTS IN TRAFFIC AREA



Typical Concrete Cleanout Column

Scale:

1" = 18"

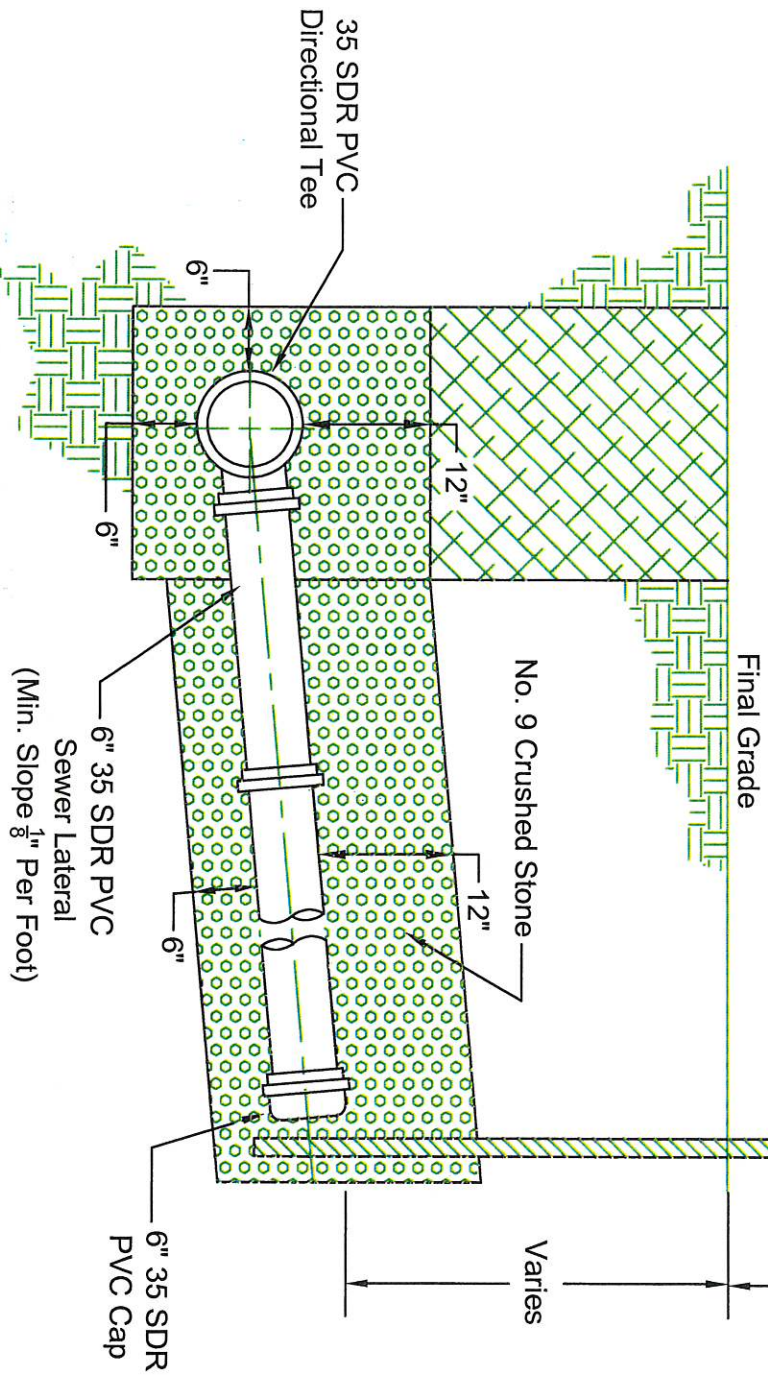
Date:

Jan. 2004

Dwg. No.:

SDS - 15

See SDS - 23 for Tracer Wire Requirements



Typical Sewer Lateral

Scale:

$$1'' = 18''$$

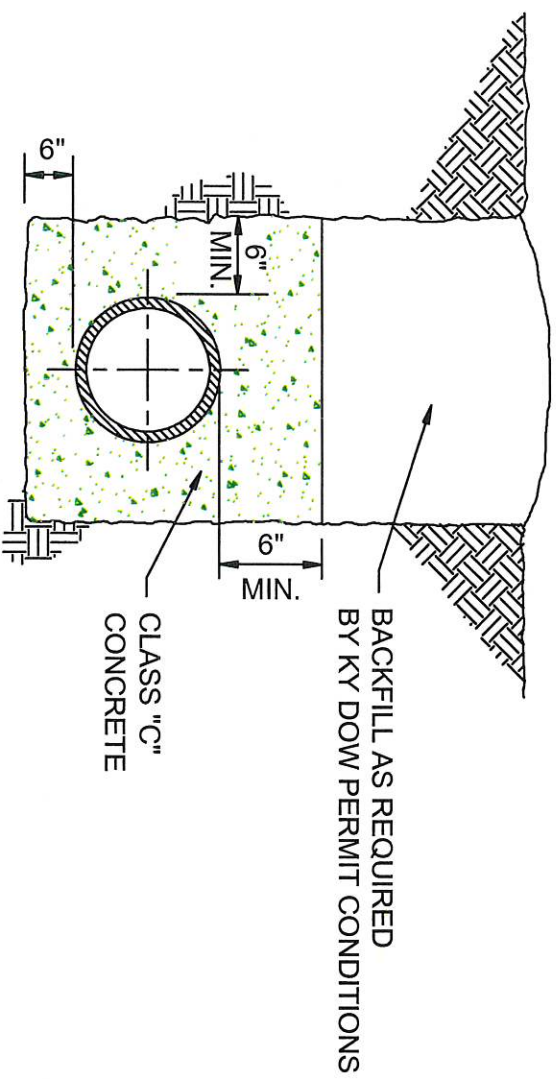
Date:

Apr. 2021

Dwg. No.:

SDS - 16

NOTE: SEWER LINE TO BE WRAPPED IN HEAVY PLASTIC (4 MILS MIN.) PRIOR TO POURING CONCRETE.



TYPICAL CONCRETE ENCASEMENT

FOR SANITARY SEWER CREEK CROSSING



Concrete Encasement

Scale:

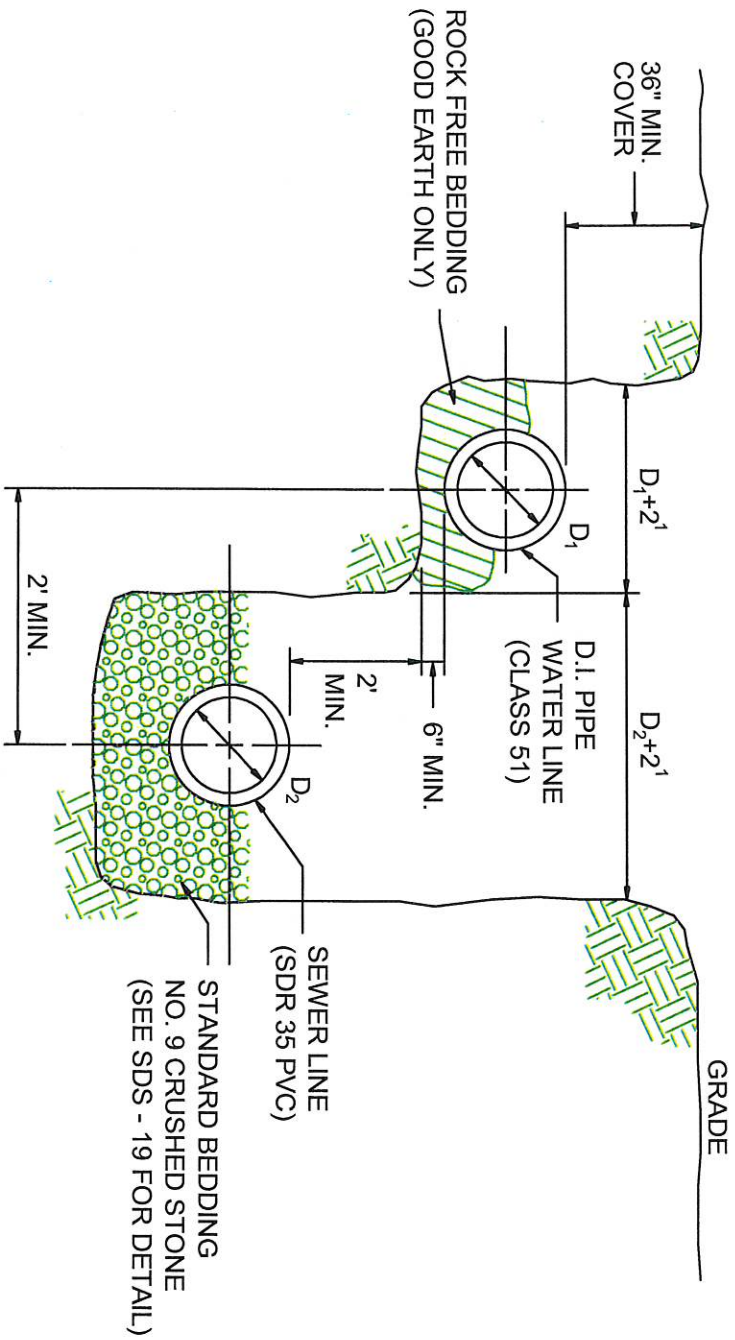
1" = 24"

Date:

Jan. 2004

Dwg. No.:

SDS - 17



NOTE:

WATER LINES AND SEWER LINES LAID ON SAME ELEVATION MUST BE SEPERATED A MINIMUM DISTANCE OF 10'.



Typical Section Through Trench

Scale:

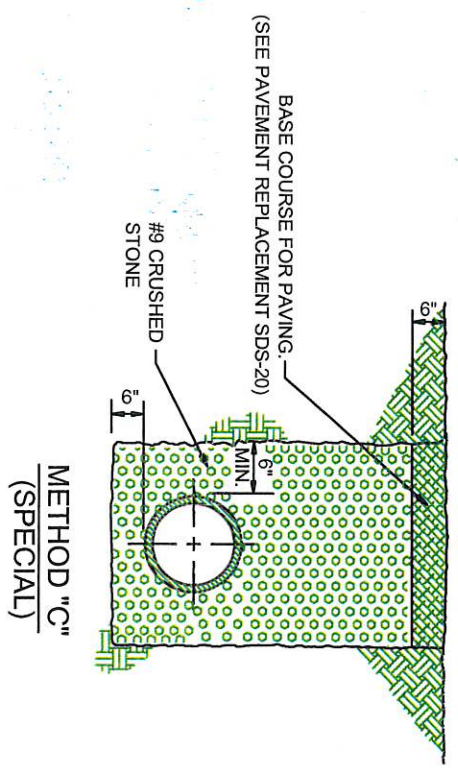
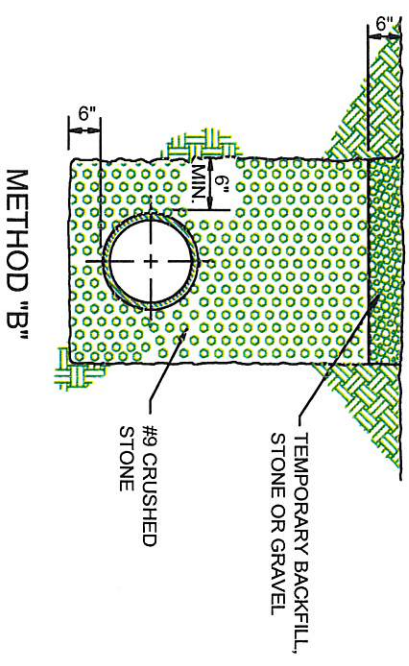
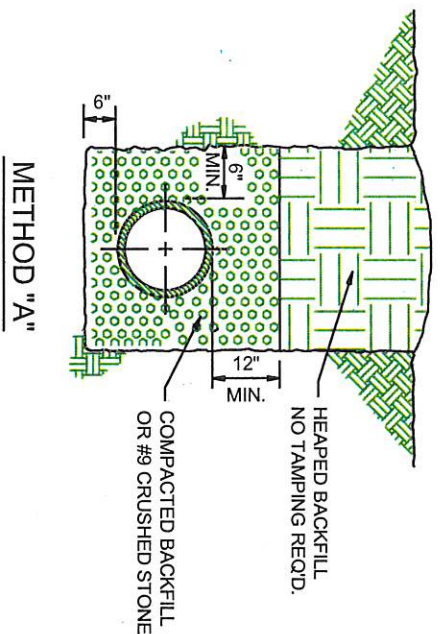
1" = 18"

Date:

Jan. 2004

Dwg. No.:

SDS - 18

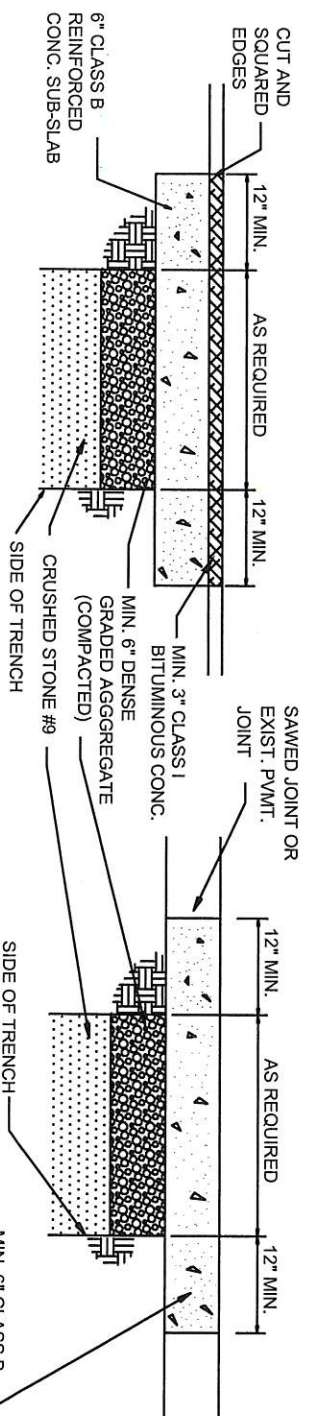


Backfill Detail (Sanitary Sewer)

Scale: 1" = 36"

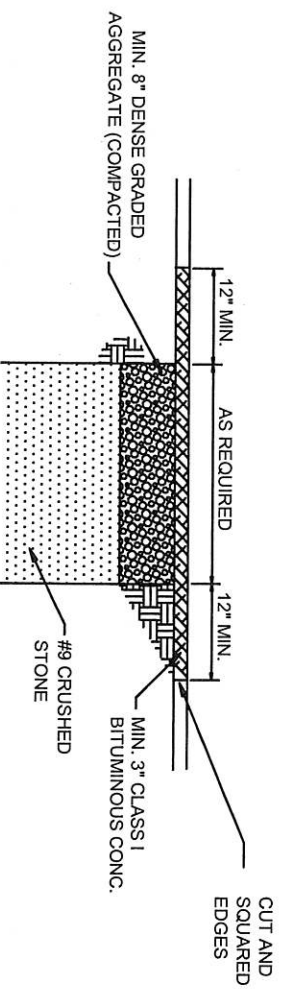
Date: Jan. 2004

Dwg. No.: SDS - 19



HEAVY DUTY BITUMINOUS

CONCRETE



LIGHT DUTY BITUMINOUS

NOTE:

Pavement Restoration Requirements of State, County, and City Roadways and Streets will be as dictated by the conditions outlined within the issuing agency's permits.



Pavement Replacement

Scale:

1" = 24"

Date:

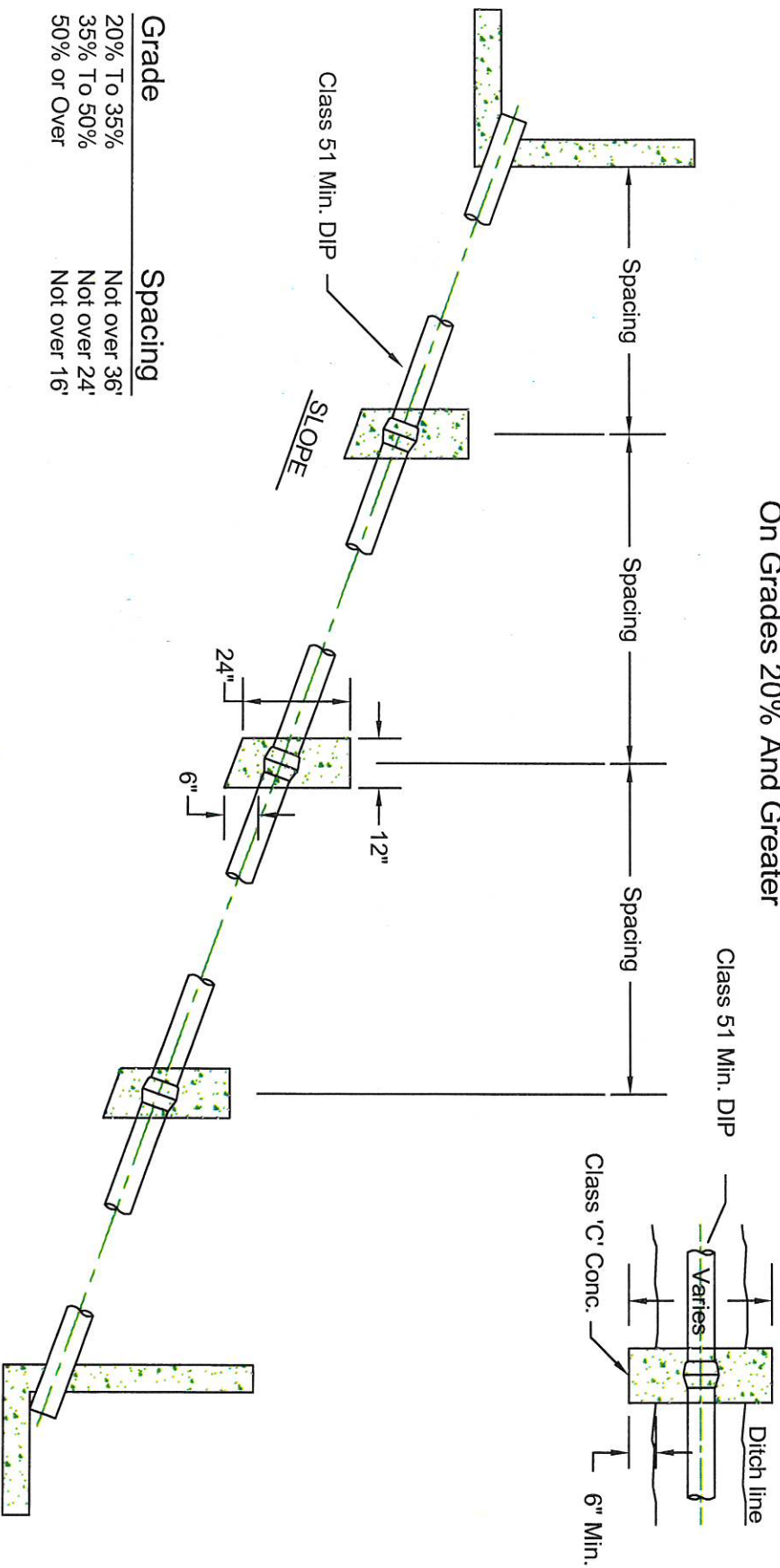
Sep. 2020

Dwg. No.:

SDS - 20

Typical Anchor Detail For Sewers On Grades 20% And Greater

Anchor extends into side of ditch



Grade	Spacing
20% To 35%	Not over 36'
35% To 50%	Not over 24'
50% or Over	Not over 16'

The first anchor shall be placed on the first joint upstream from lower manhole.

The location of the first anchor and the maximum spacing required shall determine the number of anchors used between manholes.



Sewer Anchor Detail

Scale:

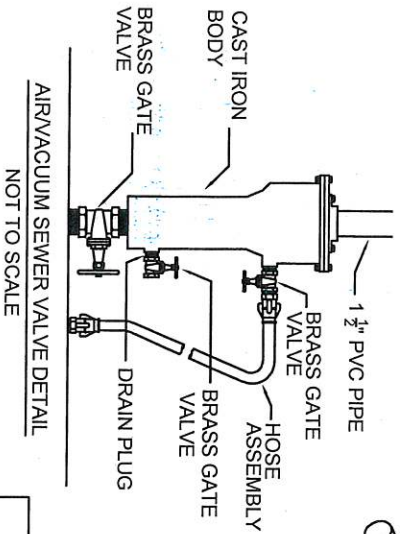
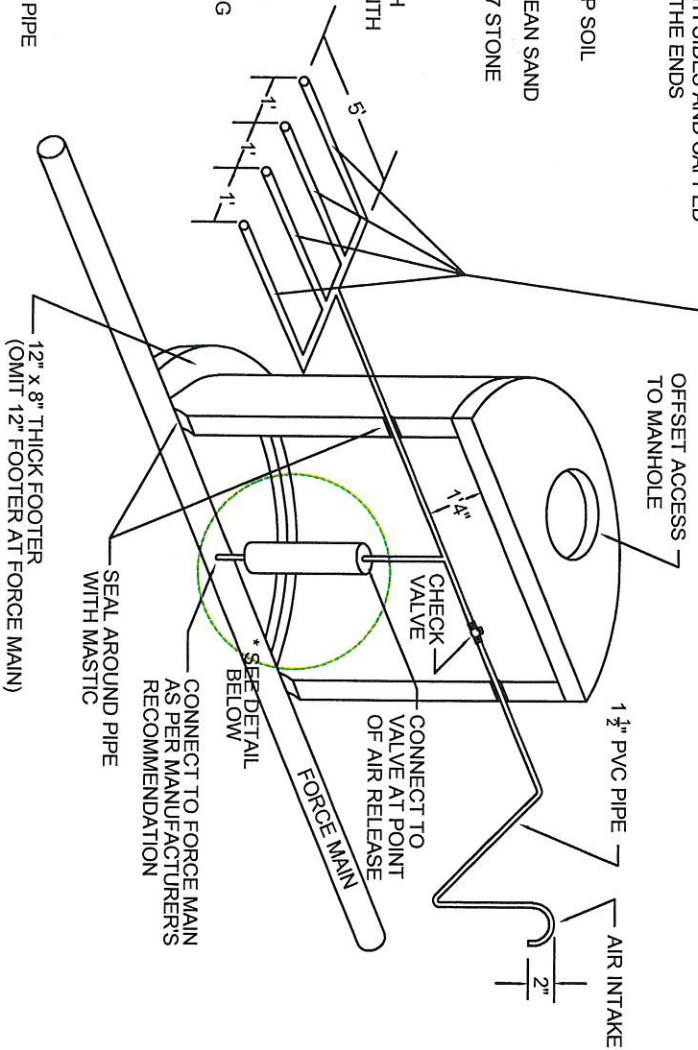
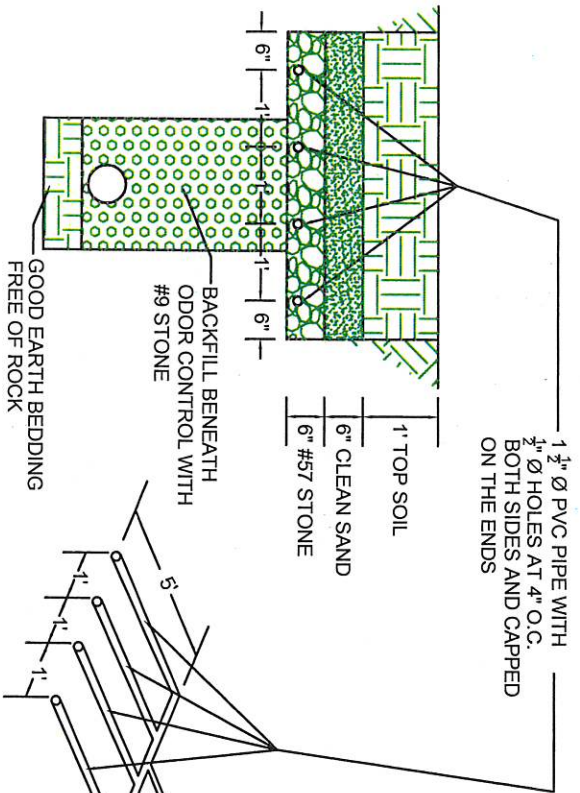
1" = 42"

Date:

Jan. 2004

Dwg. No.:

SDS - 21



Combination Sewage Air and
Vacuum Valve with Odor Control

Scale:

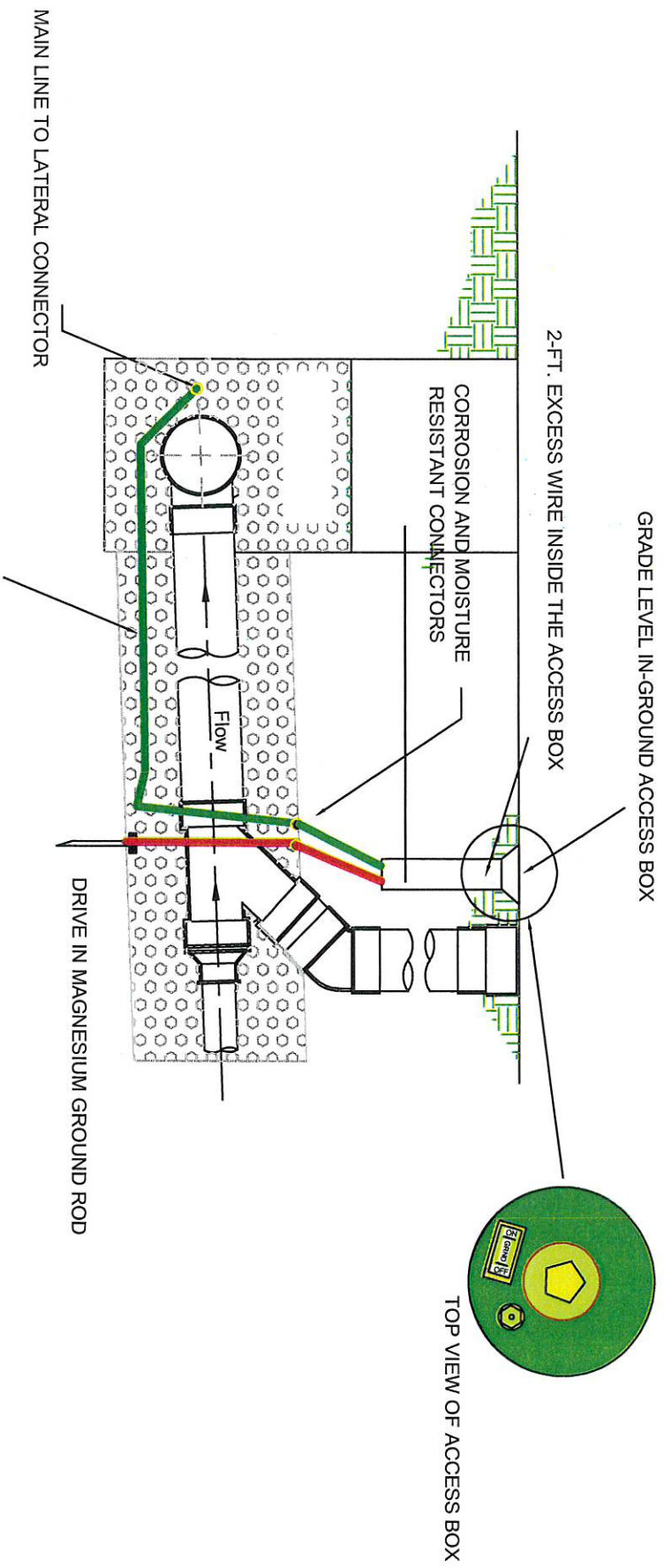
1" = 30"

Date:

Jan. 2004

Dwg. No.:

SDS - 22



Typical Cleanout detail
with Tracer Wire

Scale:

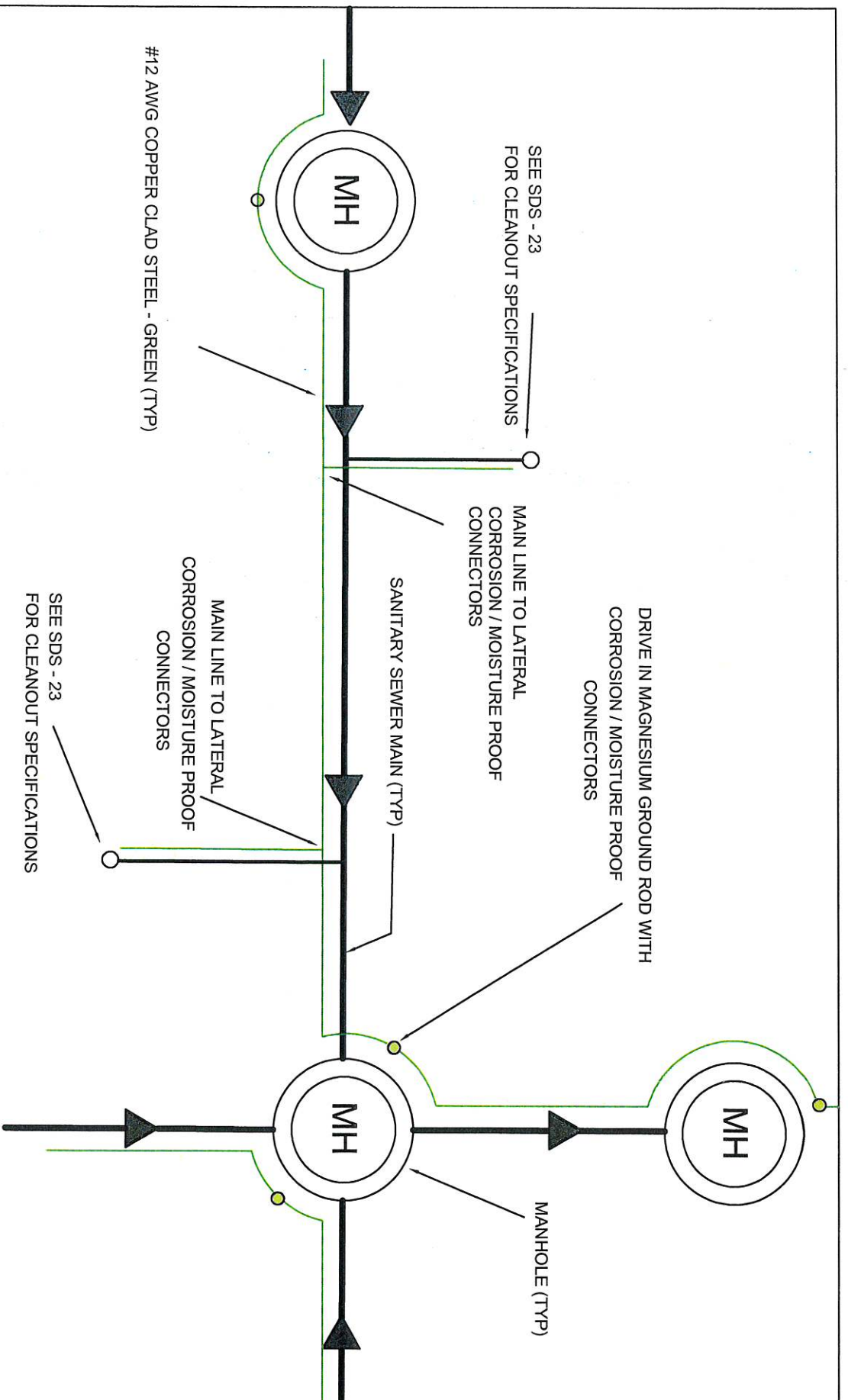
1" = 18"

Date:

Jul. 2020

Dwg. No.:

SDS - 23



**Typical Tracer Wire Detail
Sanitary Sewer**

Scale:

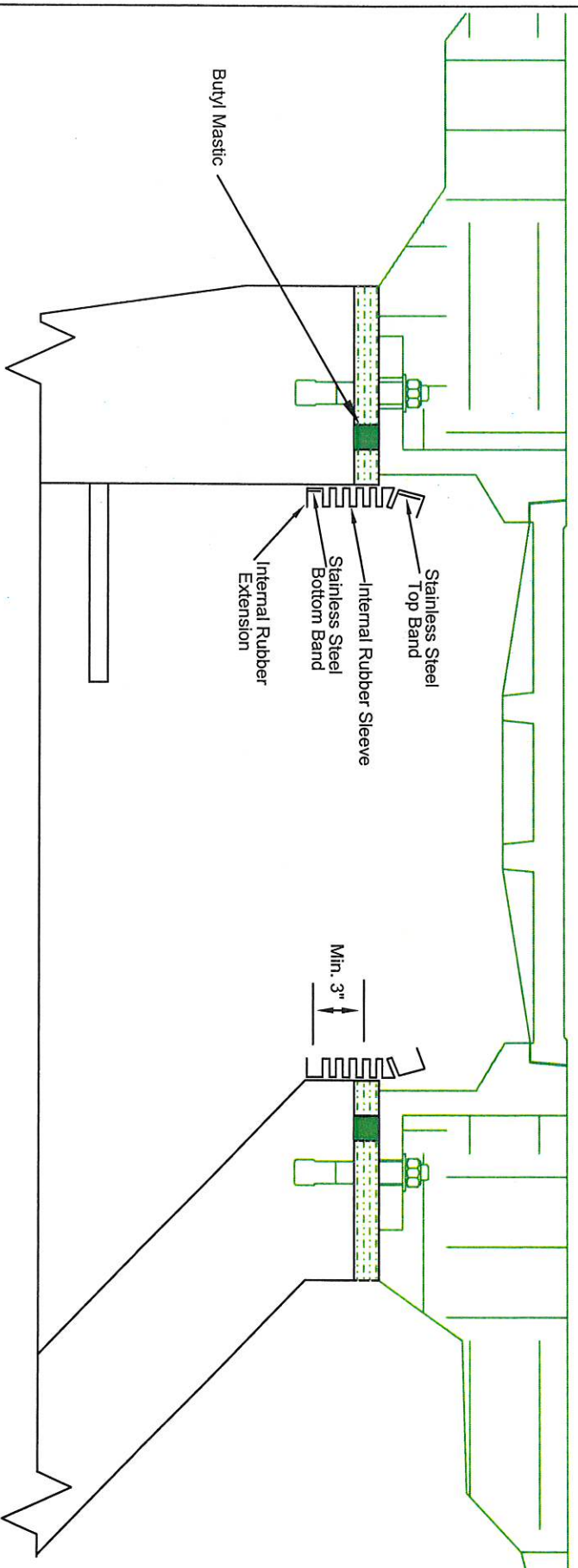
1" = 18"

Date:

Apr. 2021

Dwg. No.:

SDS - 24



Butyl Mastic

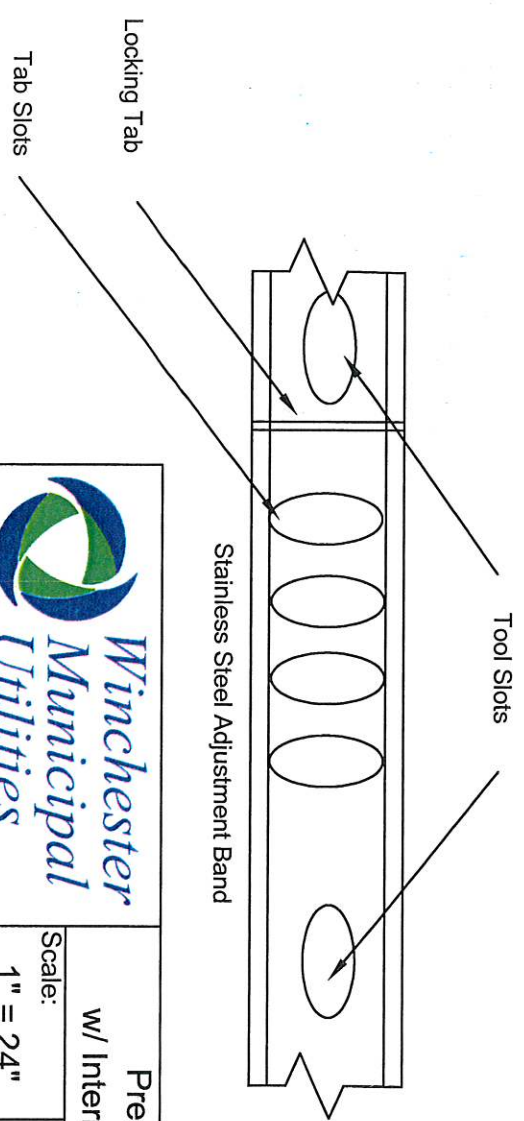
Stainless Steel
Top Band

Internal Rubber Sleeve

Stainless Steel
Bottom Band

Internal Rubber
Extension

Min. 3"



Tool Slots

Stainless Steel Adjustment Band

Locking Tab

Tab Slots



Precast Manhole
w/ Internal Chimney Seal

Scale:

1" = 24"

Date:

Apr. 2021

Dwg. No.:

SDS - 25