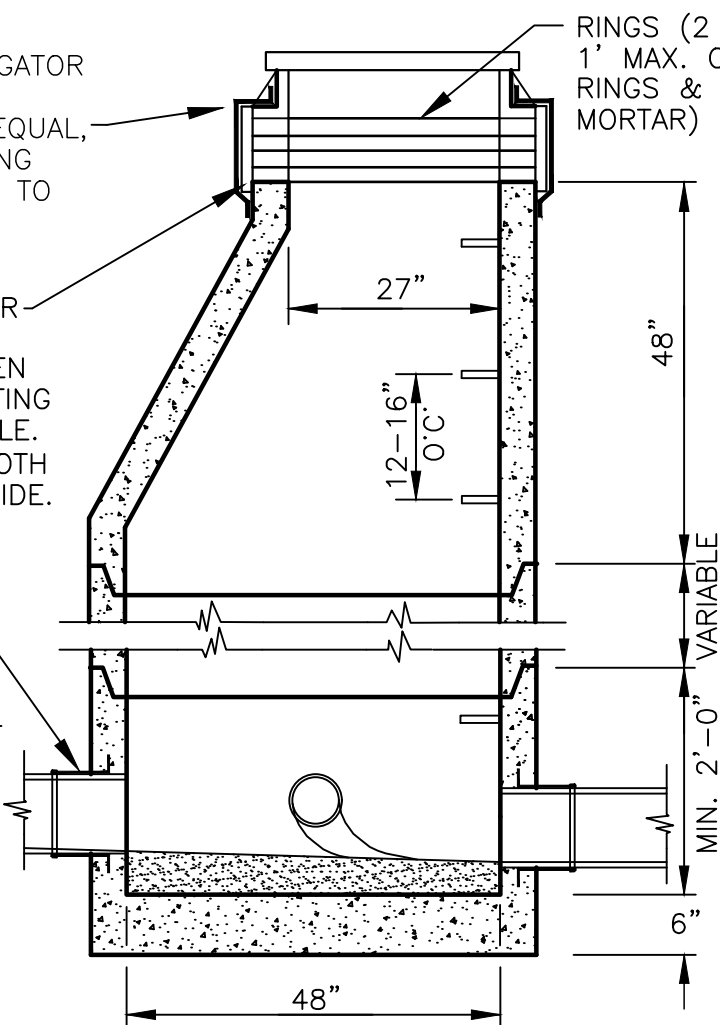


INFI-SHIELD
EXTERNAL
UNI-BAND, GATOR
WRAP, OR
APPROVED EQUAL,
FROM CASTING
OVER RINGS TO
STRUCTURE.

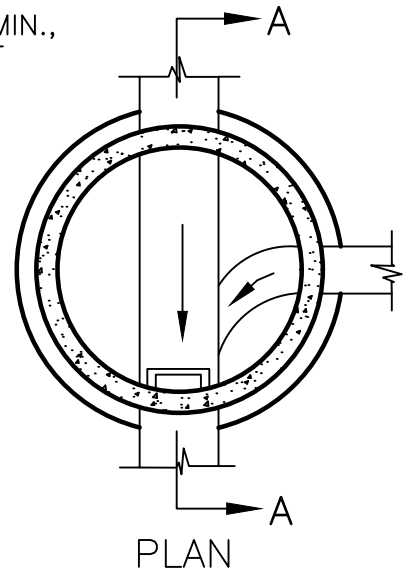
1/2" MORTAR
ON OUTSIDE
AND BETWEEN
RINGS, CASTING
AND MANHOLE.
FINISH SMOOTH
ON THE INSIDE.

MANHOLE
SLEEVE
SEE DETAIL

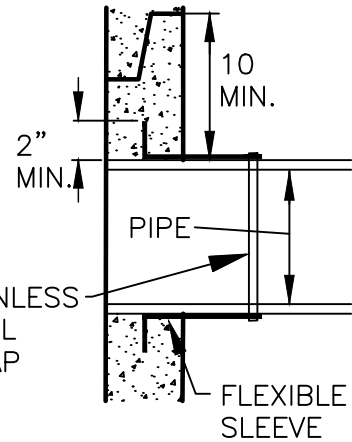
RINGS (2 MIN.,
1' MAX. OF
RINGS &
MORTAR)



SECTION A-A



PLAN



MANHOLE SLEEVE

NO WOOD SHALL BE USED FOR ADJUSTING CASTING; CEMENT MORTAR ONLY.

CAST IRON MANHOLE FRAME & COVER AS PER SPECIFICATIONS (1642 B).

MANHOLE STEPS SHALL BE CAST IRON, ALUMINUM, OR STEEL REINFORCED PLASTIC, PER ASTM C478, LOCATED OVER DOWNSTREAM PIPE.

PRECAST REINFORCED CONCRETE MANHOLE SECTIONS PER ASTM C478, FURNISHED WITH O-RING GASKETS & LUBRICANT EXCEPT AS OTHERWISE SPECIFIED.

LIFT HOLES NOT PERMITTED IN MANHOLE SECTIONS.

A 12" OR 16" BARREL SECTION SHALL BE INSTALLED UNDER THE CONE WHENEVER POSSIBLE.

PIPE CONNECTIONS TO MANHOLE SHALL BE MADE WATER TIGHT BY CAST INPLACE RUBBER SLEEVE & CEMENT MORTAR. INSIDE SURFACE SHALL BE FINISHED SMOOTH.

PLACE "RAM-NECK" OUTSIDE OF O-RING GASKET ON ALL MANHOLE JOINTS BELOW WATER TABLE.

ALL MORTAR SHALL CONFORM TO ASTM C270 AND MEET THE REQUIREMENTS OF MNDOT 2506.2B.

SANITARY SEWER MANHOLE, TYPE 301 (PIPES 27" OR LESS)

11/17/2020



STANDARD DRAWING
NO.

301D

INFI-SHIELD EXTERNAL UNI-BAND, GATOR WRAP, OR APPROVED EQUAL, FROM CASTING OVER RINGS TO STRUCTURE.

1/2" MORTAR ON OUTSIDE AND BETWEEN RINGS, CASTING AND MANHOLE. FINISH SMOOTH ON THE INSIDE.

MJDIP (CL.50) PIPE AND FITTINGS TO BE USED FOR DROP SECTION.

END OF DIP PIPE TO BEAR ON UNDISTURBED SOIL

18' MIN. DIP

CONSTRUCTION JOINT IF NECESSARY.

OUTSIDE DROP TO BE SECURED TO MANHOLE WITH 3" X 14 GA. GALV. STRAPS ANCHORED W/4 EA. 3/8" KWIK BOLTS @ 5' O.C.

SLOPE INVERT AS SHOWN

RINGS (2 MIN., 1.0' MAX. OF RINGS AND MORTAR)

12" OR 16"

VARIABLE

VARIES (SEE PLAN)

WATERTIGHT SEAL

2'-0" MIN.

D/2

6"

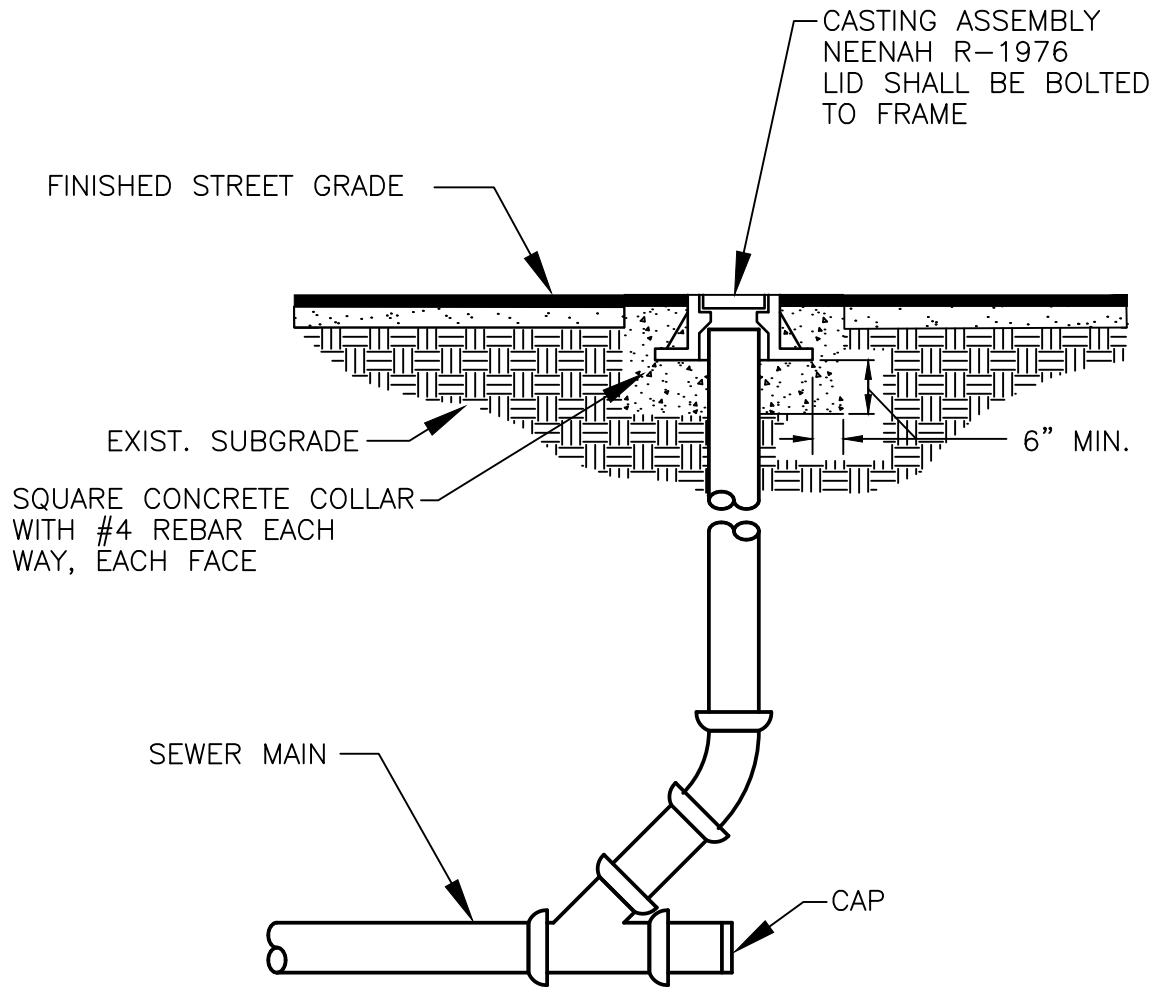
ALL MORTAR SHALL CONFORM TO ASTM C270 AND MEET THE REQUIREMENTS OF MNDOT 2506.2B.

OUTSIDE DROP SANITARY SEWER MANHOLE

11/17/2020



STANDARD DRAWING
NO.
306B



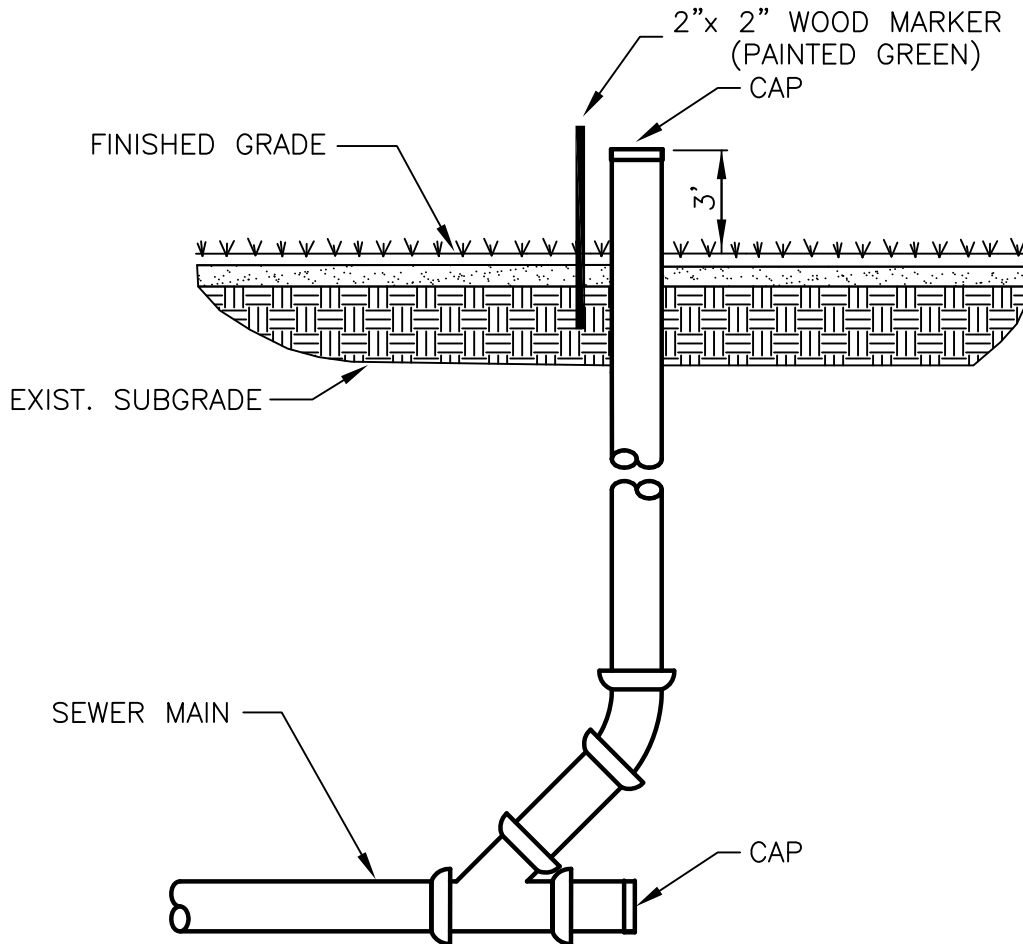
NOTE:
BENDS AND RISER TO BE 8"

MAINLINE SANITARY SEWER CLEANOUT (IN STREET)

3/24/15



STANDARD DRAWING
NO.
309A



NOTE:
BENDS AND RISER TO BE 8"

TEMPORARY CLEANOUT
MAINLINE SANITARY SEWER
(OUTSIDE OF STREET)

5/22/06

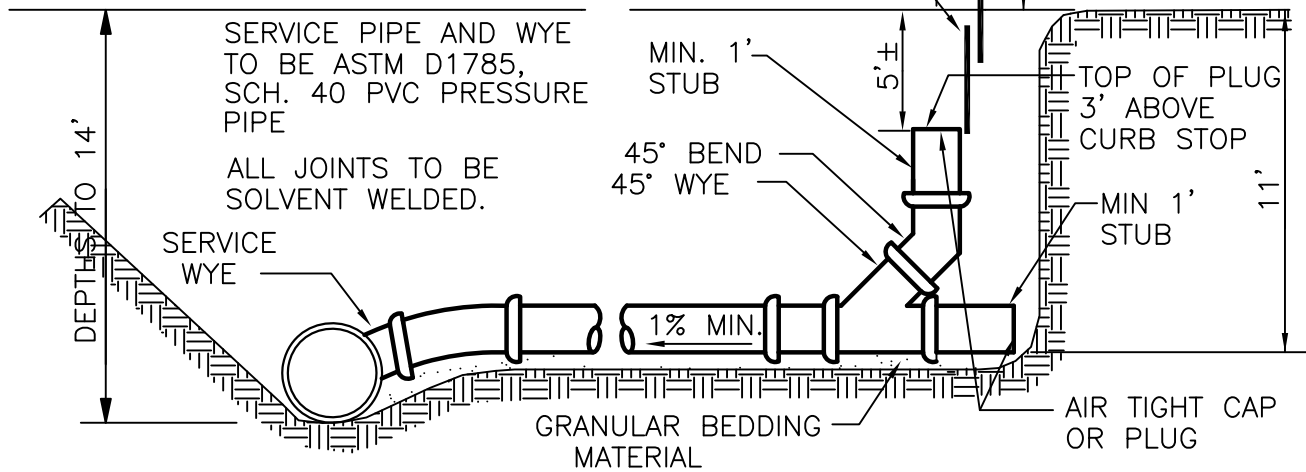


STANDARD DRAWING
NO.
310

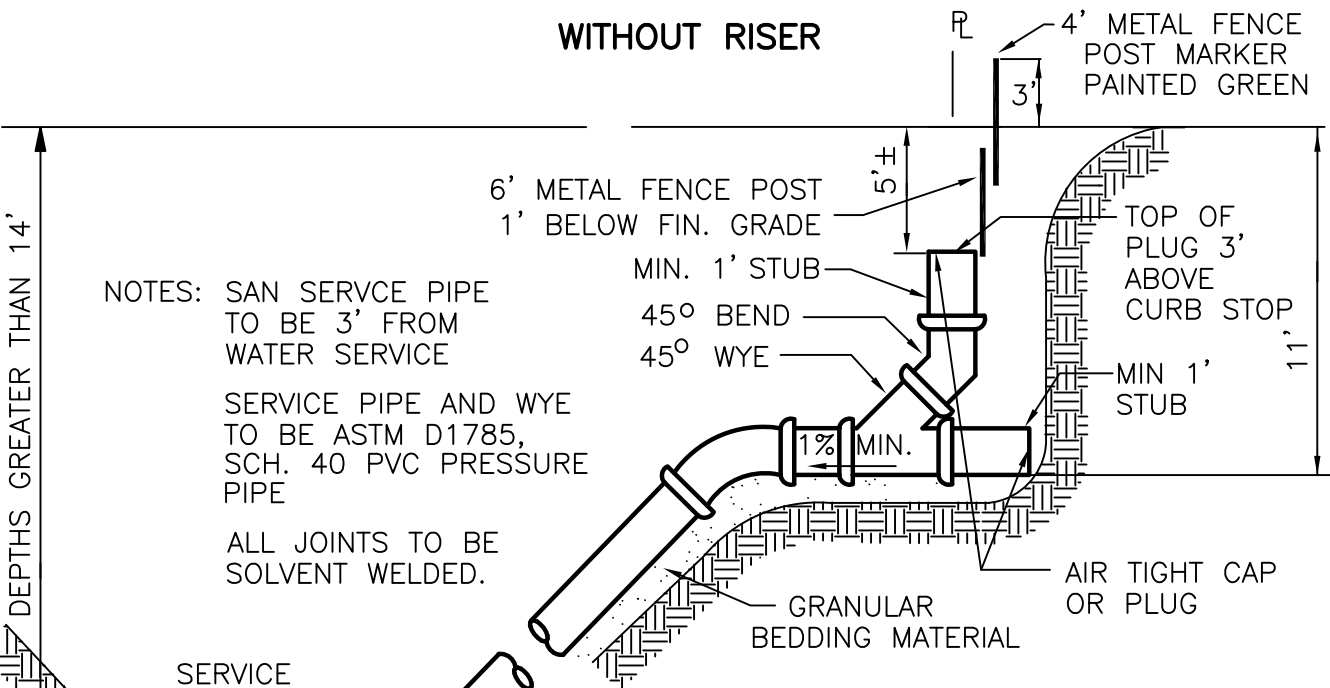
NOTES: SAN SERVICE PIPE TO BE 3' FROM WATER SERVICE

6' METAL FENCE POST 1' BELOW FIN. GRADE

4' METAL FENCE POST MARKER PAINTED GREEN



WITHOUT RISER



WITH RISER

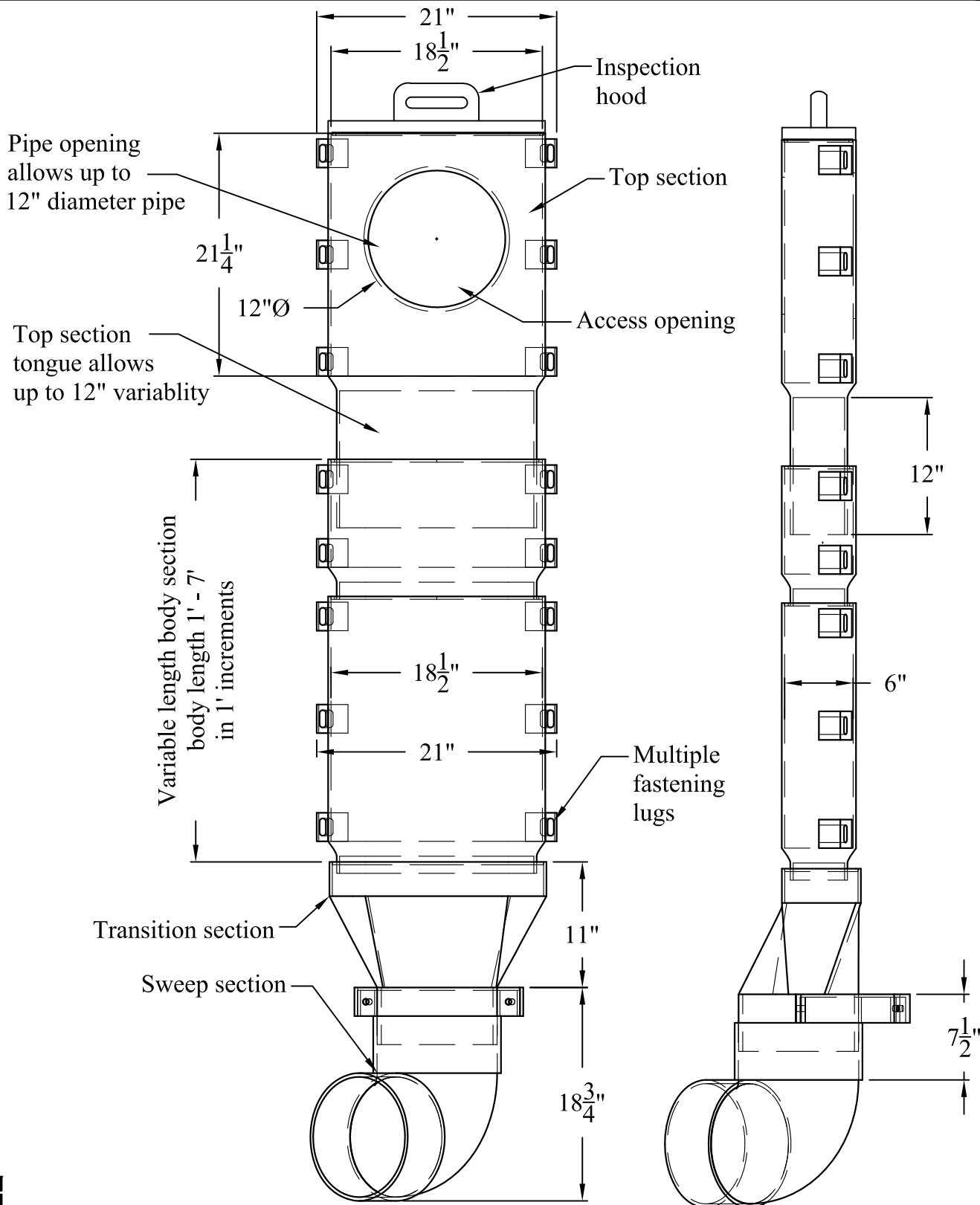
SANITARY SEWER SERVICE DETAIL (WITH CLEANOUT)

SERVICE WYE TO BE EMBEDDED IN CONCRETE (2 BAGS MINIMUM)

5/22/06



STANDARD DRAWING NO. 312B



IntraFlow - Inside Drop System

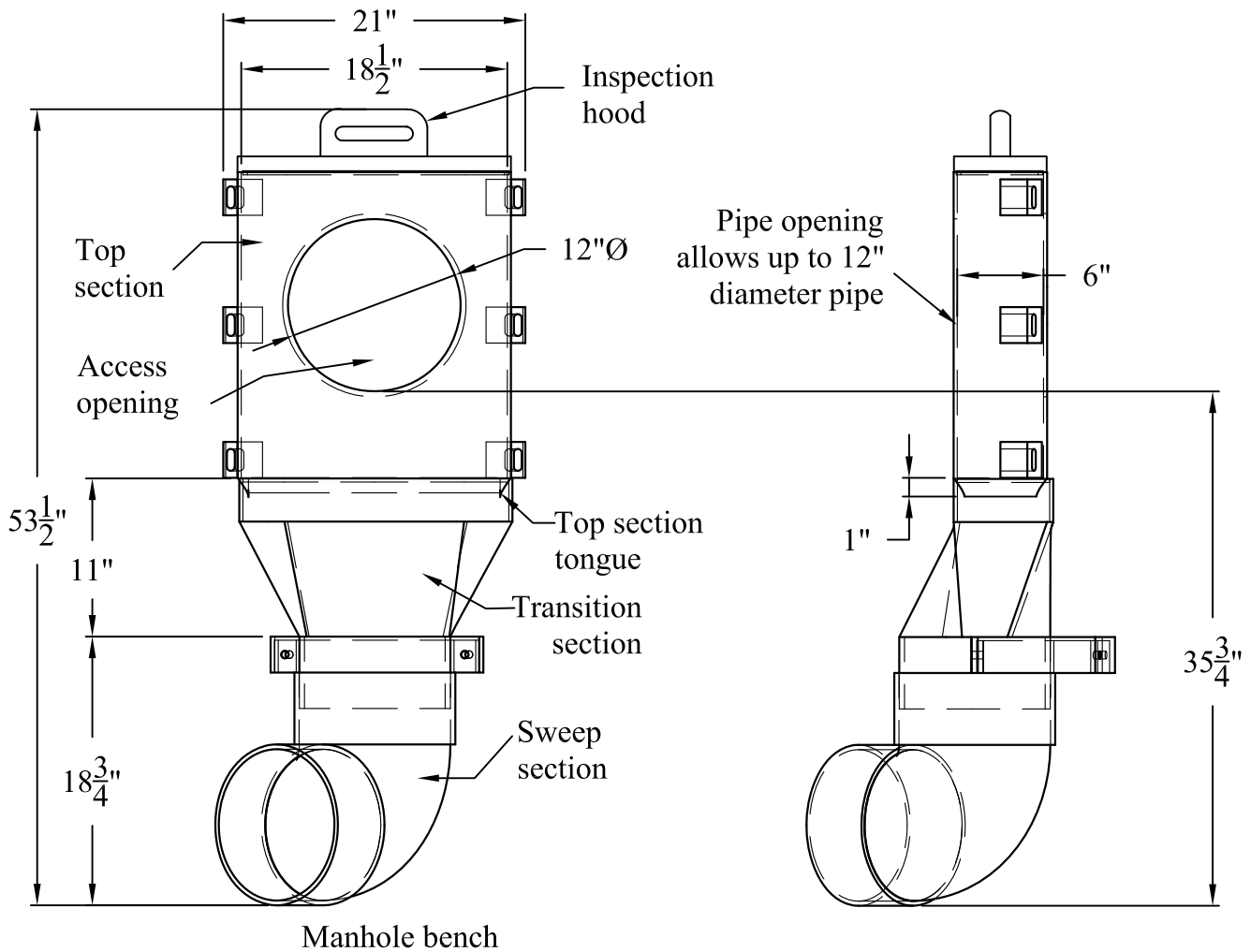
Standard Details

Plate #

IntraFl-1

Rev. Date:

1-20-16 SEG



Notes:

- Royal recommends the incoming drop pipe be centered in the top section access opening
- To achieve the shortest drop height of 35³/₄" , the incoming pipe must now rest on invert of 12" access opening
- Trim top section tongue to a minimum of 1" length



IntraFlow - Short Drop

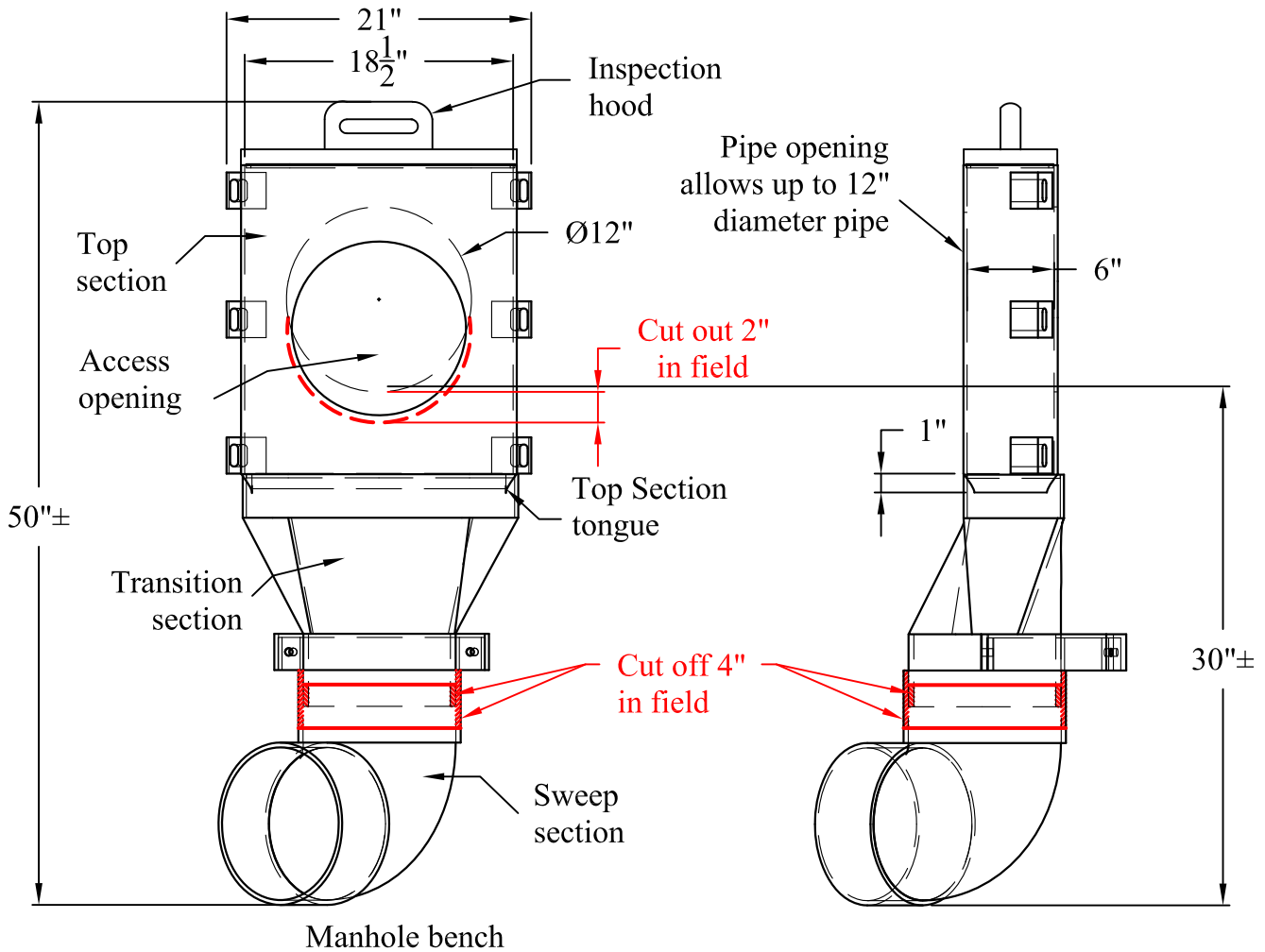
Standard Details

Plate #

IntraFl-1S

Rev. Date:

1-20-16 SEG



Notes:

- Royal recommends the incoming drop pipe be centered in the top section access opening
- To achieve the shortest drop height of 30", the incoming pipe must now rest on invert of the modified access opening
- Trim top section tongue to a minimum of 1" length
- **Field cut the top 4" of the sweep section and the bottom transition section**



IntraFlow - Short Drop Modified

Standard Details

Plate #
IntraF1-1SM

Rev. Date:
1-20-16 SEG