

**MINUTES**  
**INFRASTRUCTURE REVIEW ADVISORY BOARD**  
**OAK VIEW LIBRARY**  
**December 9, 2015 8:30 a.m.**

**Members and Alternates Present**

Mark Cotter, Chad Huwe, Jeff Schmitt, Jason Snyders, Phil Gundvaldson, Tim Galbraith, Mark Anderson, Joel McDowell, Craig Lauritzen

**Members and Alternates Absent**

Mike Cooper, Bill Kemmis, Chris Fischer, Scott Hofer

**Others Present**

Chuck Point, Michael McMahon, Kim Buell, Todd Anawski, Joel Ingle, Jeff DesLauriers, Myron Adam, Chad Stensland, Ryan Johnson, Ray Pierson, Frank Regas, Matt Carlson, Scott Vander Meulen, Kurt Peppel, Jarod Smart, Eric Willadsen

**Approval of Minutes of Last Meeting**

A motion was made by Schmitt and seconded by Galbraith to approve the November 18, 2015 meeting minutes. Roll Call: Yeses –Cotter, Schmitt, McDowell, Snyders, Gundvaldson, Galbraith, Anderson. Noes - none. Motion passed 7-0. Comment to change date on minutes from November 11 to November 18.

**Announcements:**

Huwe announced there is a calendar at the back table with the 2016 meeting dates. He then thanked everyone for being involved and engaged in 2015 and wished everyone a happy and safe holiday season.

**Business**

**a. Temporary Emergency Access Roads**

Dean Lanier, City of Sioux Falls, provided handouts (attached) of the proposed revisions to the 2015 International Fire Code regarding temporary emergency access roads. The proposed revisions are not new, but were clarified in a policy. The plan is to add this language to an ordinance. At the next meeting, Dean will provide axle loads and examples of acceptable signs for the access roads. Board action will be requested during a future meeting.

**b. Proposed Revisions to Sanitary Sewer Supplemental Specifications (Section 100), Engineering Design Standards (Chapter 9) and Standard Plates**

Ryan Johnson, City of Sioux Falls, presented the proposed changes. (Memorandum is attached).

**Supplemental Specifications**

2.5.4.1 Manhole Liners, General –See attached memorandum.

3.6.12. 4.1 Manholes, Manhole Liners, Installation, General –See attached memorandum.

3.17.4 Television Inspection – See attached memorandum.

**Engineering Design Standards**

9.4.5 Size of Sewer Pipe - See attached memorandum.

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9.4.6 – Depth of Sewer - See attached memorandum.

9.4.8.4 Physical Requirements, Minimum Grade – See attached memorandum.

9.4.8.8 Physical Requirements, Access to Manholes - See attached memorandum.

**Question:** No parking within 10 feet of a manhole seems rigid. Are there any exceptions?

**Response:** A variance can be requested.

9.4.9.2 Sewer Services, Regular Services - See attached memorandum.

**Standard Plates**

Plate 950.03 Sanitary Sewer Manhole - changed NEENAH R1772A to R1772 – R1772A is no longer manufactured.

Plate 950.05 Sanitary Sewer Manhole Bowl Type Drop Section – See attached memorandum.

950.06 Sanitary Sewer Manhole Drop Section for 12" Pipe and Larger – See attached memorandum.

Plate 950.11 Sanitary Sewer Lined Manhole Pipe Connection – Updated HDPE liner detail at wall penetrations. New detail includes updated configuration, packing/foam around boot, grout around pipe to support pipe, and sealant around exposed grout. PVC-T lock liners are not allowed.

**Question:** Has there been any more discussion about alternate liner materials?

**Response:** The City has some concerns and is not ready to allow alternate liner materials at this time.

**Question:** In regards to Plate 950.11; is the liner near the manhole boot placed at the plant or in the field **Response:** The liner near the manhole boot is installed at the plant.

**Question:** If lined manholes are used in a subdivision, is the additional cost reimbursed to the developer?

**Response:** Yes.

**Question:** How will the proposed changes on plate 950.11 be paid for on CIP projects?

**Response:** Per section 4.24 of the Sanitary Sewer Supplemental Specification, this additional work will be considered incidental to the installation of a lined manhole.

**Question:** Will placement of foam and grout be required on manholes with 8-inch pipes?

**Response:** Yes.

A motion was made by Cotter and seconded by Gundvaldson to approve the proposed revisions. Roll Call: Yeses –Cotter, Schmitt, McDowell, Snyders, Gundvaldson, Galbraith, Anderson. Noes - none. Motion passed 7-0.

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**Adjournment**

The next IRAB meeting is scheduled for January 6, 2016 at 8:30 a.m., at the Oak View Library. Motion by Gunvaldson to adjourn seconded by McDowell. Motion passes to approve. Roll Call: Yeses –Schmitt, McDowell, Hofer, Gundvaldson, Galbraith, Anderson, Huwe. Noes - none. Motion passed 7-0.

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Maureen Buller  
Secretary



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Chad Huwe



**Date:** December 9, 2015  
**To:** Infrastructure Review and Advisory Board  
**From:** Public Works – Engineering  
**Subject:** Proposed Specification Updates

The City proposes the following changes to the Supplemental Standard Specifications for Sanitary Sewer Construction Section 100:

#### **2.5.4 Manhole Liners**

##### 2.5.4.1 General

HDPE manhole liners shall be used on all sanitary sewer manholes with 10-inch diameter or greater pipes. PVC T-Lock liner will **only** be allowed ~~on some~~ **when adjusting existing structures lined with PVC T-Lock liner** and where it is determined by the Engineer to be acceptable. Specifications for the PVC T-Lock liner shall be supplied for each individual project. The manhole liner specifications shall apply to PVC T-Lock liner where applicable when specified.

#### **Section 3.6 MANHOLES**

##### **Section 3.6.12 Manhole Liners**

###### **3.6.12.1 General**

Field seaming involves bonding of adjacent panels using approved thermal methods such as extrusion welding. Testing and verification of the resulting welds will be required ~~within 30 days of installation~~ **prior to the acceptance of sanitary sewage in the lined manhole or as approved by the City Engineer.**

###### **3.17.4 TELEVISION INSPECTION**

The City will perform **an inspection** of the completed sewer line within the two-year warranty period through the use of a television camera. The expense of the initial television inspection will be borne entirely by the City. If defective workmanship of material or construction is noted, the deficiency shall be corrected by the Contractor at no expense to the City. The City will perform ~~one~~ **additional television reinspection** to ensure repairs were made properly and in accordance with the specifications. **The expense of additional television inspections beyond the initial inspection and one additional reinspection will be borne entirely by the Contractor.**

The City proposes the following changes to the Engineering Design Standards Chapter 9 Sanitary Sewers:

- 9.4.5 **Size of Sewer Pipe.** No gravity sanitary sewer to be maintained by the City shall be less than 8-inch diameter. ~~Minimum size of building sanitary sewer stubouts shall be 4 inch diameter. All sanitary sewer services other than single family residential units (example: commercial, industrial, office, multifamily, etc.) shall be a minimum of 6 inch diameter. No private lateral sewer shall be less than 6 inches in diameter; however, 8 inch diameter sewers are recommended.~~ 6-inch diameter pipe may be used as private laterals where there are relatively low flows, a small number of people to be served, future extensions are not anticipated, and the sewer is capable of handling the design flows. The justification for using the 6-inch pipe shall be provided by the design professional in writing. The possibility of cleaning problems shall be identified by the design professional and accepted by the development.
- 9.4.6 **Depth of Sewer.** Gravity sewers shall have a minimum depth of 7 feet to the invert where practical. ~~They shall be designed with a 2 percent grade (absolute minimum of 1 percent upon approval of the City Engineer)~~ They should be well below the frost line at all points and lower than any water lines placed in the same street. Insulation shall be ~~required~~ placed above the sanitary sewer where the dimension from the finished grade elevation to the top of the pipe is 5 feet or less (see the Standard Plates for pipe insulation details). ~~Risers on service stubouts shall be provided for sewers greater than 12 feet deep as measured at the main line sanitary sewer (see the Standard Plates for riser details).~~ Maximum depth of sewer shall not exceed the depth recommended by the pipe manufacturer.
- 9.4.8 **Physical Requirements. (continued)**
4. **Minimum Grade.** Sewers shall have minimum grade sufficient to maintain 2 fps at peak flow. For low flow lines where feasible, a minimum grade of 1 percent shall be used. ~~Minimum grade on building sanitary sewer stubouts shall be 1 percent.~~

8. **Access to Manholes.** Manholes outside the street right-of-way shall be subject to the acceptance of the City Engineer. Manholes located outside of the street rights-of-way must be located in areas which allow direct access by maintenance vehicles. [In parking areas there shall be no parking within 10 ft of a manhole rim.](#)

9.4.9 **Sewer Services.**

9.4.9.2 **Regular Services.**

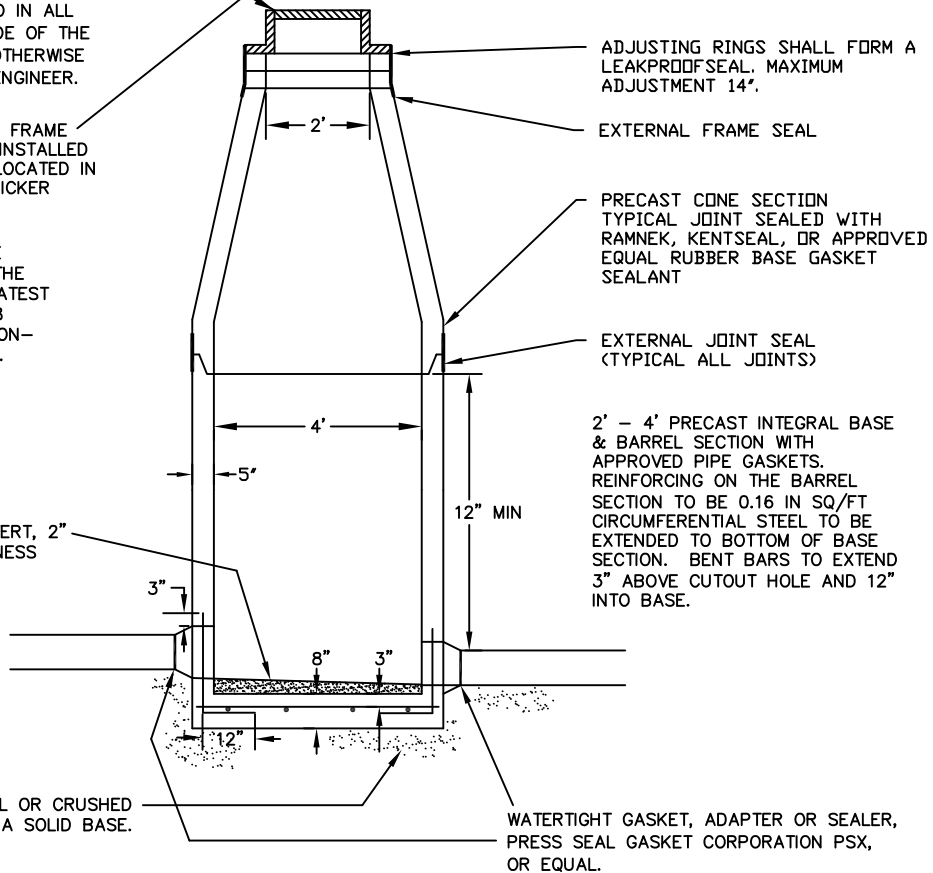
5. [Minimum size of building sanitary sewer stubouts shall be 4-inch diameter. All sanitary sewer services other than single-family residential units \(example: commercial, industrial, office, multifamily, etc.\) shall be a minimum of 6-inch diameter. No private lateral sewer shall be less than 6 inches in diameter; however, 8-inch diameter sewers are recommended.](#)
6. [Service lines shall be designed with a 2 percent grade. \(absolute minimum of 1 percent upon approval of the City Engineer\).](#)
7. [Risers on service stubouts shall be provided for sewers greater than 12 feet deep as measured at the main line sanitary sewer \(see the Standard Plates for riser details\).](#)

MANHOLE FRAME AND COVER TO BE NEENAH R1772 OR ENGINEER APPROVED EQUAL.

NEENAH R1712 (WITH BOLTDOWN COVER PLATE) OR ENGINEER APPROVED EQUAL WILL BE REQUIRED IN ALL EASEMENT AREAS OUTSIDE OF THE STREET R.O.W. UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

NEENAH R1713 MANHOLE FRAME AND COVERS SHALL BE INSTALLED WHERE MANHOLES ARE LOCATED IN CONCRETE PAVEMENT THICKER THAN 6 INCHES.

ALL MANHOLES SHALL BE CONSTRUCTED TO MEET THE REQUIREMENTS OF THE LATEST REVISIONS OF ASTM C478  
 \*PRECAST REINFORCED CONCRETE MANHOLE SECTION.



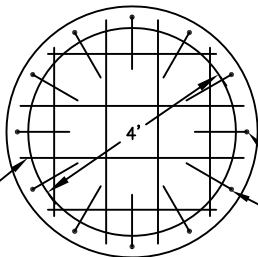
PREFORMED INVERT, 2" MINIMUM THICKNESS

NATIVE MATERIAL OR CRUSHED ROCK TO FORM A SOLID BASE.

WATERTIGHT GASKET, ADAPTER OR SEALER, PRESS SEAL GASKET CORPORATION PSX, OR EQUAL.

2' - 4' PRECAST INTEGRAL BASE & BARREL SECTION WITH APPROVED PIPE GASKETS. REINFORCING ON THE BARREL SECTION TO BE 0.16 IN SQ/FT CIRCUMFERENTIAL STEEL TO BE EXTENDED TO BOTTOM OF BASE SECTION. BENT BARS TO EXTEND 3" ABOVE CUTOUT HOLE AND 12" INTO BASE.

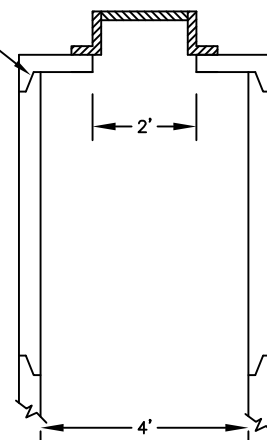
BASE BARREL SECTION



#4 BARS AT 12" C-C BOTH WAYS; 12-#3 BENT BARS, 30"-36" LONG, PLACED AS SHOWN. TO BE DOUBLED AROUND LARGE PIPE CUTOUTS. BENT BARS SHALL EXTEND 3" ABOVE THE CUTOUT HOLE AND 12" HORIZONTAL INTO BASE.

PRECAST FLAT TOP SECTION TYPICAL JOINT SEALED WITH RAMNEK, KENTSEAL, OR APPROVED EQUAL RUBBER BASE GASKET SEALANT (TONGUE AND GROOVE JOINT SHALL BE REQUIRED).

TYPICAL PRECAST & FLAT TOP SECTION (WHERE SPECIFIED)



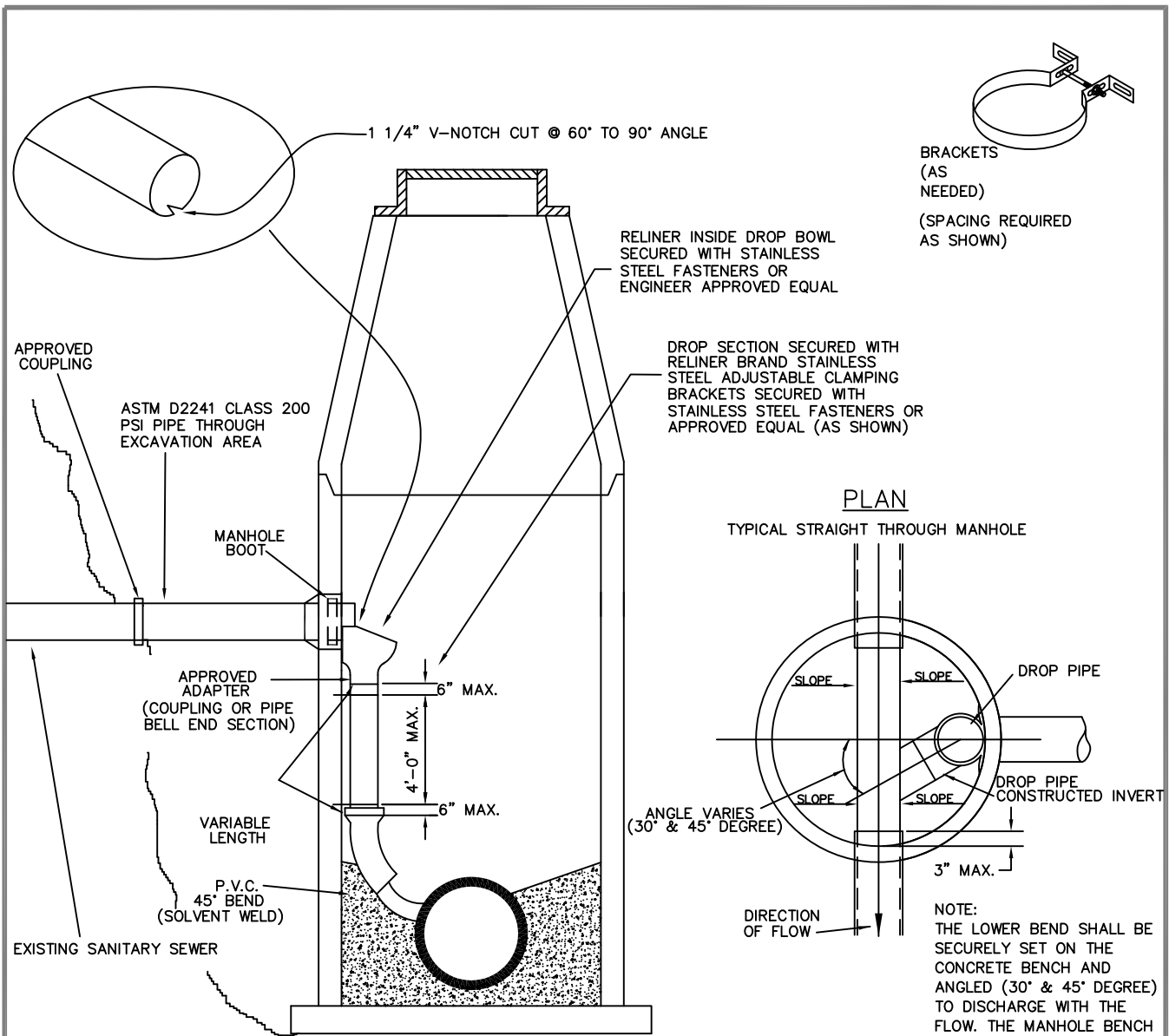
REVISED: DECEMBER 2013

SPECIFICATION REFERENCE NO. 950



CITY OF SIOUX FALLS  
 ENGINEERING DIVISION  
 SANITARY SEWER MANHOLE

PLATE NUMBER 950.03



**NOTE:**

THE P.V.C. DROP SECTION SHALL BE SECURED TO THE BARREL SECTION WITH APPROVED NON-CORROSIVE ADJUSTABLE CLAMPING BRACKET(S), AND THE LOWER BEND SHALL BE SECURED AND FORMED INTO THE BENCH OF THE FLOWLINE. THE DROP BOWL SHALL BE SECURED WITH STAINLESS STEEL FASTENERS OR ENGINEER APPROVED EQUAL AND CONNECTED TO THE DROP PIPE WITH APPROVED ADAPTERS. THE DROP BOWL SHALL ALLOW CLEARANCE FOR MAINTENANCE EQUIPMENT INTO THE EXISTING LINE. ASTM D2241 CLASS 200 PSI PIPE SHALL BE LAID THROUGH THE EXCAVATION AREA (TO PREVENT BREAKAGE DURING SETTLEMENT) AND CONNECTED TO THE EXISTING MANHOLE THROUGH A MANHOLE BOOT. THE COST OF THE ASTM D2241 CLASS 200 PSI PIPE SHALL BE ABSORBED IN THE UNIT PRICE BID FOR THE MANHOLE DROP SECTION.

THE MANHOLE BOOT SHALL BE SIMILAR TO THE MANHOLE BASE SECTION SPECIFICATION MINIMUM OF 8" BETWEEN THE OPENING FOR THE DROP SECTION AND THE NEAREST JOINT.

**THE DIAMETER OF THE DROP PIPE SHALL BE THE SAME DIAMETER AS THE INCOMING PIPE.**

REVISED: AUGUST 2012

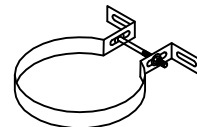
SPECIFICATION  
REFERENCE  
NO.  
950



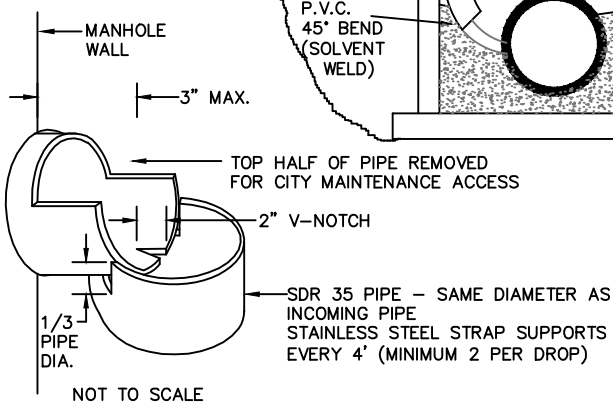
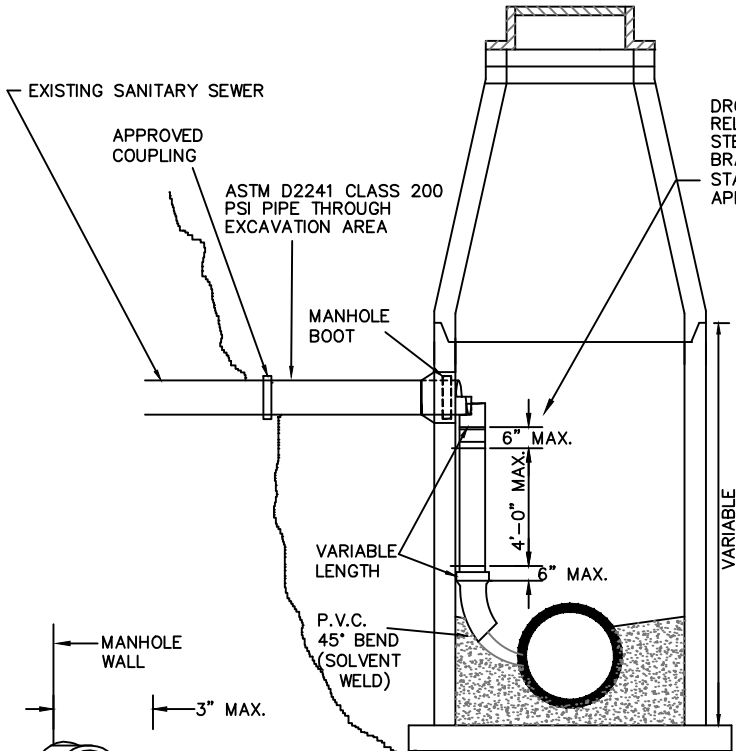
CITY OF SIOUX FALLS  
ENGINEERING DIVISION  
SANITARY SEWER MANHOLE  
BOWL TYPE DROP SECTION

PLATE  
NUMBER  
950.05



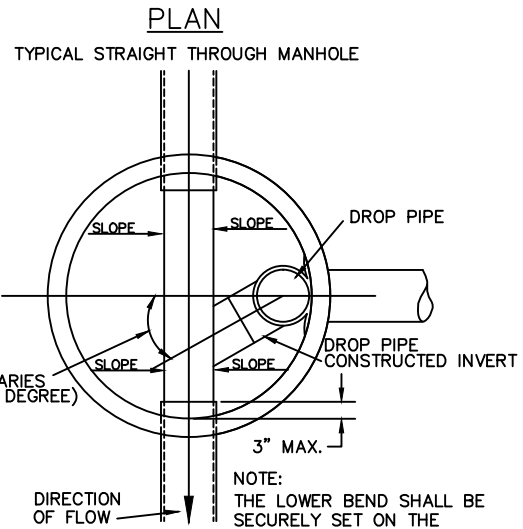


BRACKETS (AS NEEDED)  
BRACKETS (SPACING REQUIRED AS SHOWN)



NOT TO SCALE

DROP SECTION SECURED WITH RELINER BRAND STAINLESS STEEL ADJUSTABLE CLAMPING BRACKETS SECURED WITH STAINLESS STEEL FASTENERS OR APPROVED EQUAL (AS SHOWN)



ANGLE VARIES (30° & 45° DEGREE)

NOTE:  
THE LOWER BEND SHALL BE SECURELY SET ON THE CONCRETE BENCH AND ANGLED (30° & 45° DEGREE) TO DISCHARGE WITH THE FLOW. THE MANHOLE BENCH SHALL BE RECONSTRUCTED WITH AN INVERT FOR THE DROP PIPE TO DISCHARGE INTO. CONCRETE DEPOSITED ONTO THE BENCH TO FORM AN INVERT SHALL BE ACCEPTED.

**NOTE:**

THE P.V.C. DROP SECTION SHALL BE SECURED TO THE BARREL SECTION WITH APPROVED NON-CORROSIVE ADJUSTABLE CLAMPING BRACKET(S), AND THE LOWER BEND SHALL BE SECURED AND FORMED INTO THE BENCH OF THE FLOWLINE. ASTM D2241 CLASS 200 PSI PIPE SHALL BE LAID THROUGH THE EXCAVATION AREA (TO PREVENT BREAKAGE DURING SETTLEMENT) AND CONNECTED TO THE EXISTING SEWER WITH AN APPROVED COUPLING AT THE MANHOLE WITH A MANHOLE BOOT. THE COST OF THE ASTM D2241 CLASS 200 PSI PIPE SHALL BE ABSORBED IN THE UNIT PRICE BID FOR THE MANHOLE DROP SECTION.

THE MANHOLE BOOT SHALL BE SIMILAR TO THE MANHOLE BASE SECTION SPECIFICATION MINIMUM OF 8" BETWEEN THE OPENING FOR THE DROP SECTION AND THE NEAREST JOINT.

THE DROP SECTION SHALL BE USED ONLY WHERE MATERIAL SIZES ARE NOT AVAILABLE FROM THE MANUFACTURER FOR THE BOWL TYPE DROP SECTION.

HOLES DRILLED THROUGH THE LINER TO FASTEN BRACKETS SHALL BE SEALED WITH SIKADUR 31 HI-MOD GEL OR APPROVED EQUAL.

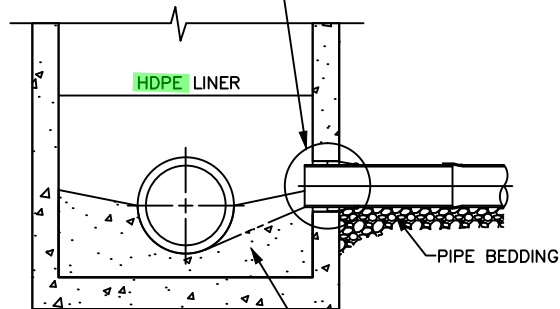
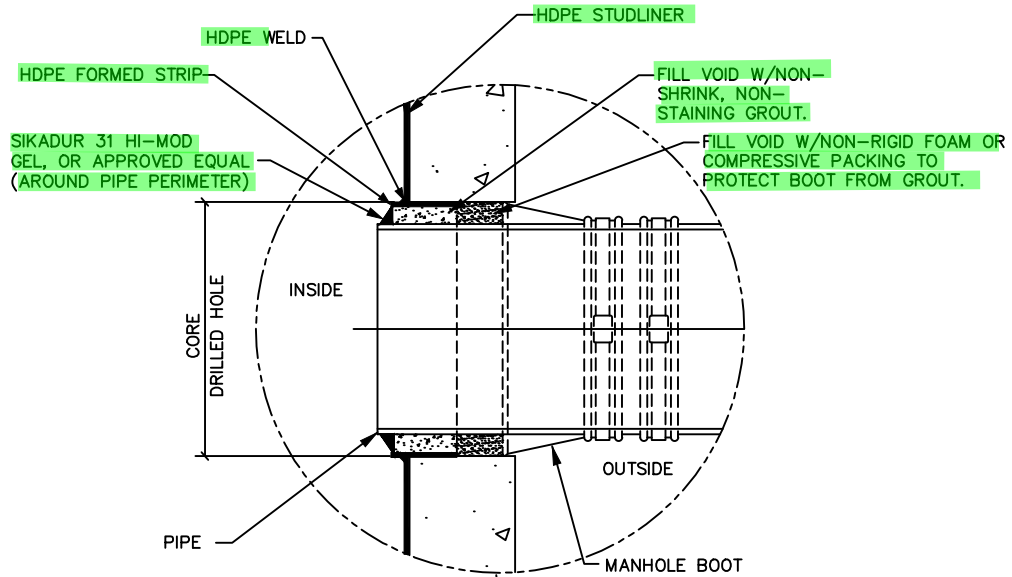
REVISED: AUGUST 2012

SPECIFICATION  
REFERENCE  
NO.  
950



CITY OF SIOUX FALLS  
ENGINEERING DIVISION  
SANITARY SEWER MANHOLE DROP  
SECTION FOR 12" PIPE AND LARGER

PLATE  
NUMBER  
950.06



CONTRACTOR SHALL REMOVE PART OF EXISTING CONCRETE INVERT AND CONSTRUCT NEW INVERT TO FACILITATE SMOOTH TRANSITION INTO EXISTING INVERTS.

REVISED: DECEMBER 2015

SPECIFICATION  
 REFERENCE  
 NO.  
 950



CITY OF SIOUX FALLS  
 ENGINEERING DIVISION  
 SANITARY SEWER LINED  
 MANHOLE PIPE CONNECTION

PLATE  
 NUMBER  
 950.II

## Draft proposal for 2015 International Fire Code

**D107.3 Temporary emergency access roads.** Temporary access roads *for emergency response use only* shall meet the following:

1. A minimum of 6 inches of gravel (or other approved material) compacted to 95 percent compaction, capable of all-weather travel.
2. Roads shall be a minimum of 20 feet unobstructed width.
3. Access/entrance to the road may be controlled via a secured chain or gate at points of entry *and* at connection to an interior intersecting roadway.
4. Fire lane signage, in accordance with *IFC Appendix 'D'*, shall be posted to prohibit vehicle blockage of access roadway entry/exit points.
5. Road maintenance, including grading/scraping to maintain a navigable surface and required snow removal, shall be performed as needed to ensure availability at all times. Maintenance shall be the sole responsibility of the developer.
6. Failure to maintain a functional driving surface will require the temporary access road to be paved in accordance with the requirements of the *City of Sioux Falls Engineering Design Standards*. *This is not a substitute for a second permanent approved fire apparatus access road as required by code.*