

## STANDARD DETAILS

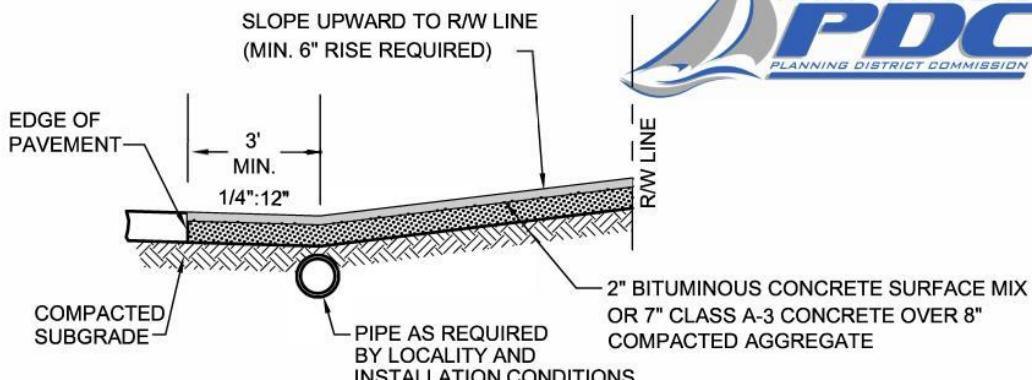
Modifications To the HRPDC Regional Construction Standard Details

Detail	Name	Notes and Modifications
DS-04	Curb Inlet/Catch Basin	<p><b>Add:</b> Note #4 – Plaster interior face of concrete wall with <math>\frac{1}{2}</math>" 1:2 cement mortar mix.</p> <p>Note #5 – All concrete shall be air-entrained and 3500 PSI (minimum) design strength.</p>
EW-01	Pipe Bedding Details	<p><b>Sheet 2 Add:</b> Note 10. Crushed Concrete is acceptable when approved by the City.</p> <p><b>Sheet 2 Delete and Replace Note 2 with:</b> Bedding shall be Compacted Granulated material #57 stone choked with sand or 21A.</p> <p><b>Sheet 1 Delete:</b> Type II Bedding.</p>
EW-02	Payment Limits Trench excavation and Backfill	<b>Sheet 2 Delete Sheet 2</b>
EW-03	Trench Width Detail for Payment of Contingent Items	<b>Sheet 1:</b> Delete Type II Bedding.
EW-04	Typical Trench Detail for HDPE (Type S) Storm Drain Pipe	<p><b>Sheet 2 Add Note 7:</b> HDPE storm pipe shall not be used in the City's Right-of-Way, unless approved by the City.</p>
SS-01	Standard Precast Concrete Manhole w/Extended Monolithic Base	<p><b>Revise:</b> Detail note "Support Pipe and Manhole on 6" Min. of #57 Stone with Woven geotextile fabric. (Greater Depths may be required in poor soils.)"</p> <p><b>Revise:</b> Note #1 "Precast Concrete Manhole to be in Compliance with ASTM C-478, 4000 psi."</p> <p><b>Add Note #6:</b> Conshield additive is required in all concrete.</p> <p><b>Add Note #7:</b> Manhole steps are not required.</p>
SS-02	Precast Concrete Shallow Manhole	<p><b>Revise:</b> Detail note "Support Pipe and Manhole on 6" Min. of #57 Stone with Woven geotextile fabric. (Greater Depths may be required in poor soils.)"</p> <p><b>Revise:</b> Note #2 "Precast Concrete Manhole to be in Compliance with ASTM C-478, 4000 psi."</p> <p><b>Add Note #3:</b> Conshield additive is required in all concrete.</p>
SS-03	Sanitary Sewer Straddle Manhole	<p><b>Revise:</b> Detail note "Support Pipe and Manhole on 6" Min. of #57 Stone with Woven geotextile fabric. (Greater depths may be required in poor soils.)"</p> <p><b>Revise:</b> Note #1 "Precast Concrete Manhole to be in Compliance with ASTM C-478, 4000 psi"</p> <p><b>Add Note #4:</b> Conshield additive is required in all concrete.</p> <p><b>Add Note #5:</b> Manhole steps are not required.</p>
SS-09	Sanitary Sewer Manhole Casting (24")	<b>Add:</b> Detail note #5: Provide Parson's vented stainless steel manhole inserts.
SS-11	Sanitary Service Lateral Clean Out Frame and Cover	<b>Add Note:</b> 5. Frame and cover shall be painted fluorescent green.
SS-14	Sanitary Sewer Service Connection	<b>Add Note:</b> 5. Cap shall be PVC and inverted.
SS-16	Deep Sanitary Sewer Service Connection	<b>Revise:</b> Detail note "Compacted #57 Stone."
SS-17	Force Main Saxophone	<b>Revise:</b> Detail note 3 "Coat Manhole with epoxy per locality requirements "
SS-19	Manhole Insert	<b>Add:</b> Detail note #6: Provide Parson's vented stainless steel manhole inserts. Inserts shall fit under the existing dust cover. The outside diameter of the insert shall be 23.5-inches.

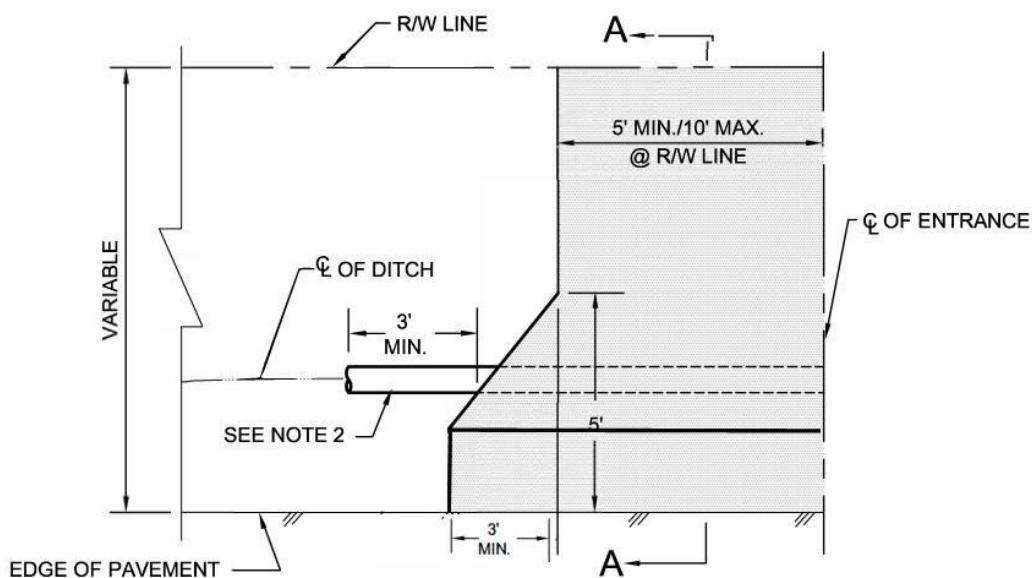
CI-08	Residential Entrance w/out Curb and Gutter	<b>Remove and Replace with:</b> Modified CI_08
RC-01	Pavement Patching For Flexible Pavement	<b>Delete Notes and Replace with:</b> NOTES: 1.) Minimum pavement sections will be as shown in the attached TABLE 1 – Pavement Design below. 2.) Total utility patch asphalt depth shall be the total asphalt depth shown in TABLE 1 or the total existing pavement depth whichever is greater. Surface asphalt (SM-9.5) of depth shown in TABLE 1.0 shall be provided. 3.) See special provision sections 317.II Execution.2.1 General F thru J and 317.III Measurement for Payment. F. for required extents of restoration. 4.) Backfill to be placed and compacted according to specifications section 303. Backfill shall be select material Type I with a minimum CBR of 20 as specified in the VDOT Road & Bridge Specifications. 5.) Backfill material per specifications section 200.

**Table 1 – Pavement Design**

Roadway Classification	Surface Mix (SM-9.5)	Base Mix (BM-25)	Total Asphalt Depth	Aggregate Base VDOT Type 1, 21A
Major Arterial	2"	10"	12"	8"
Minor Arterial or Collector Street	1.5'	4"	5.5"	8"
Residential or Private Street	1.5"	2.5"	4"	8"



SECTION A-A



PLAN

(SYMMETRICAL ABOUT C of ENTRANCE)

NOTES:

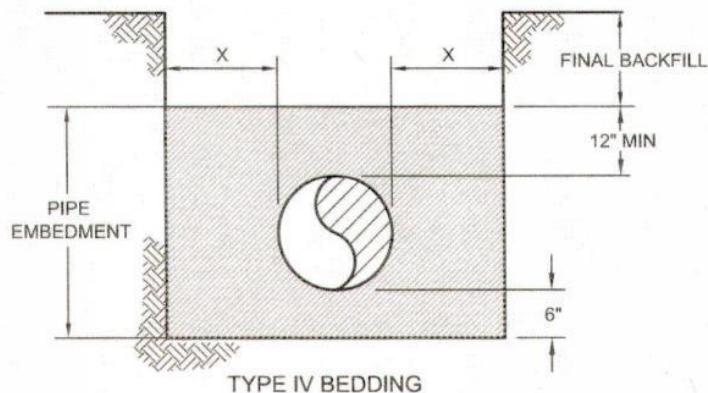
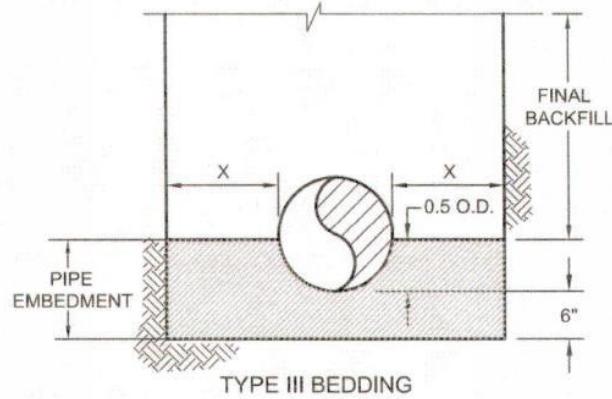
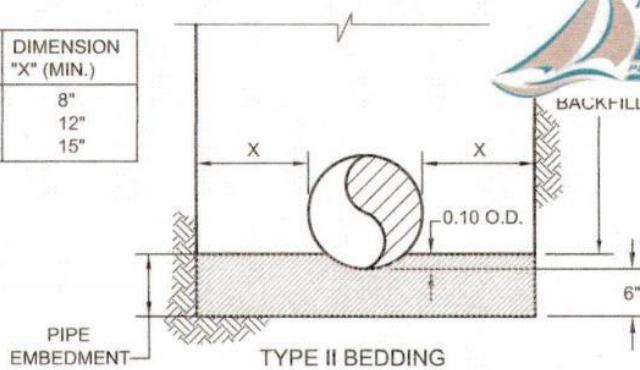
1. PIPE LOCATION MAY VARY WITHIN THE RIGHT-OF-WAY AS NECESSARY. THE PIPE SHALL BE INSTALLED TO PROVIDE AND/OR MAINTAIN POSITIVE DRAINAGE.
2. PIPE SHALL EXTEND THREE FEET (MINIMUM) BEYOND FARDEST OUTSIDE EDGE OF ENTRANCE AT CROSSING. PROVIDE COVER OVER PIPE AS SPECIFIED BY ENGINEER.
3. WATER METERS AND SEWER CLEANOUTS SHALL NOT BE LOCATED IN DRIVEWAY (ENTRANCE) OR APRON UNLESS AUTHORIZED BY OWNER.

**RESIDENTIAL ENTRANCE  
W/OUT CURB & GUTTER**

NOT TO SCALE

REFERENCE 200,502	CATEGORY CONCRETE ITEMS	DATE 6/16	SHEET No. 1 OF 1	DETAIL No. CI_08
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PIPE SIZE	DIMENSION "X" (MIN.)
0"-24"	8"
27"-36"	12"
42"-72"	15"



## PIPE BEDDING DETAILS

NOT TO SCALE

REFERENCE  
200,303

CATEGORY  
EARTHWORK

DATE  
6/16

SHEET No.  
1 OF 2

DETAIL No.  
EW\_01

\* MODIFIED PER THE STANDARD DETAIL MODIFICATIONS IN THE SPECIAL PROVISIONS.  
PIPE BEDDING DETAILS FOR USE ON GRAVITY SANITARY SEWER AND RELATED COMPONENTS ONLY.  
SEE TYPICAL FORCE MAIN TRENCH DETAIL ON SHEET XX FOR TRENCH DETAIL FOR HRSD FORCE MAIN.



NOTES:

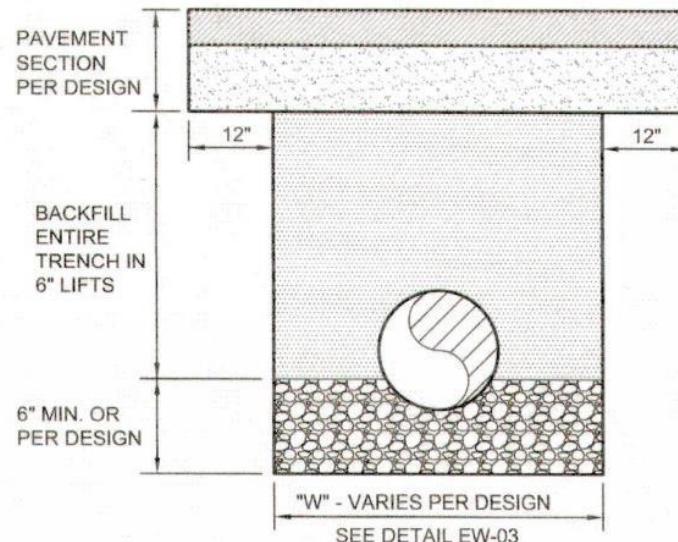
- \*1. THESE BEDDING DETAILS ARE NOT INTENDED FOR THERMOPLASTIC STORM DRAINAGE PIPE
- 2. BEDDING SHALL BE COMPACTED GRANULATED MATERIAL ( GRAVEL- MAX SIZE 3/4 ") #57 STONE CHOCKE WITH SAND OR 21A.
- 3. TRENCH BOTTOM TO BE FREE OF WATER BEFORE PLACING BEDDING.
- 4. SHAPE RECESSES FOR BELL OF PIPE BY HAND.
- 5. BACKFILL ABOVE BEDDING WITH SPECIFIED BACKFILL MATERIAL. SEE SPECIFICATIONS SECTION 303.
- 6. REFER TO CONTRACT DOCUMENTS FOR TYPE OF BEDDING.
- 7. MINIMUM TRENCH WIDTH SHALL CONFORM TO PIPE MANUFACTURER'S RECOMMENDATIONS IF MORE STRINGENT.
- 8. TRENCH BOX OR OTHER SHORING METHODS SHALL NOT DISTURB PIPE EMBEDMENT AND BEDDING MATERIAL AFTER COMPACTION.
- \*9. BEDDING SHALL BE INCLUDED IN THE PRICE OF THE PIPE UNLESS OTHERWISE INDICATED.
- 10. CRUSHED CONCRETE IS ACCEPTABLE WHEN APPROVED BY THE CITY.

REFERENCE 200,303	CATEGORY EARTHWORK	DATE 6/16	SHEET No. 2 OF 2	DETAIL No. EW_01
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TABLE 1 PAVEMENT DESIGN				
ROADSIDE CLASSIFICATION	AGGREGATE BASE VDOT TYPE 1, 21A	SURFACE MIX (SM-9.5)	BASE MIX (BM-25)	TOTAL ASPHALT DEPTH
MAJOR ARTERIAL	8"	2"	10"	12"
MINOR ARTERIAL OR COLLECTOR STREET	8"	1.5"	4"	5.5"
MINOR ARTERIAL OR COLLECTOR STREET	8"	1.5"	2.5"	4"



NOTES:

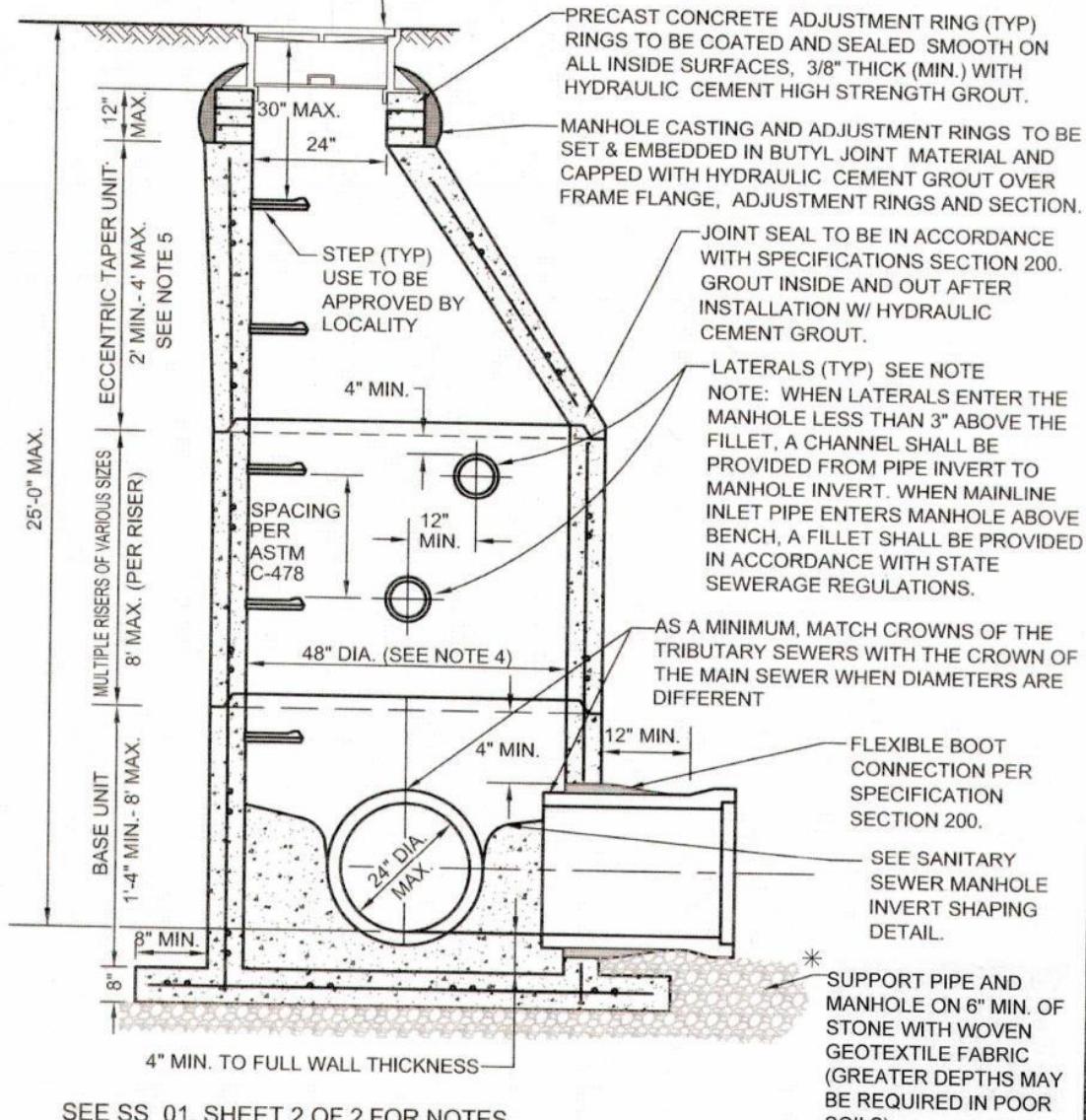
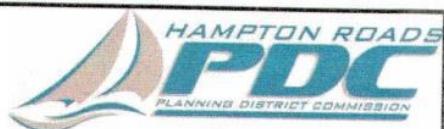
- \* 1. MINIMUM PAVEMENT SECTIONS WILL BE AS SHOWN IN THE ATTACHED TABLE 1- PAVEMENT DESIGN ABOVE.
- 2. TOTAL UTILITY PATCH ASPHALT DEPTH SHALL BE THE TOTAL ASPHALT DEPTH SHOWN IN TABLE 1 OR THE TOTAL EXISTING PAVEMENT DEPTH WHICHEVER IS GREATER. SURFACE ASPHALT (SM-9.5) OF DEPTH SHOWN IN TABLE 1 SHALL BE PROVIDED.
- 3. SEE SPECIAL PROVISIONS 317.II EXECUTION 2.1 GENERAL F. THRU J AND 317.II MEASUREMENT FOR PAVEMENT , F. FOR REQUIRED EXTENTS OF RESTORATION.
- 4. BACKFILL TO BE PLACED AND COMPAKTED ACCORDING TO SPECIFICATIONS SECTION 303. BACKFILL SHALL BE SELECT MATERIAL TYPE I WITH A MINIMUM CBR OF 20 AS SPECIFIED IN THE VDOT ROADS & BRIDGE SPECIFICATIONS.
- 5. BACKFILL MATERIAL PER SPECIFICATIONS SECTION 200.

**FOR FLEXIBLE PAVEMENT**

NOT TO SCALE

REFERENCE 200,303,309,310,313,315	CATEGORY ROADWAY CONSTRUCTION	DATE 6/16	DETAIL No. 1 OF 1	DETAIL No. RC_01
*	MODIFIED PER THE STANDARD DETAIL MODIFICATIONS IN THE SPECIAL PROVISIONS			

SEE SANITARY SEWER MANHOLE  
CASTING AND COVER (24") DETAILS



## STANDARD PRECAST CONCRETE MANHOLE W/ EXTENDED MONOLITHIC BASE

NOT TO SCALE

REFERENCE 200.802	CATEGORY SANITARY SYSTEMS	DATE 6/16	SHEET No. 1 OF 2	DETAIL No. SS_01
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\* MODIFIED PER THE STANDARD DETAIL MODIFICATIONS IN THE SPECIAL PROVISIONS



NOTES:

- \* 1. PRECAST CONCRETE MANHOLE TO BE IN COMPLIANCE WITH ASTM C-478 4000 PSI.
- 2. WALL THICKNESS TO BE 5" MINIMUM FOR 48" INSIDE DIAMETER MANHOLES AND 6" MINIMUM FOR 60" INSIDE DIAMETER MANHOLES.
- 3. INSIDE DIAMETER OF MANHOLE MUST INCREASE TO 60" WHEN MANHOLE DEPTH IS GREATER THAN 12 FEET. 60" DIAMETER TO BE CONTINUOUS UP TO CONE SECTION.
- 4. MAXIMUM OF FOUR LATERALS PER MANHOLE.
- 5. IF LATERALS ARE TO ENTER INTO THE ECCENTRIC TAPER UNIT, THEY MUST ENTER ON THE NON-TAPERED SIDE.
- \* 6. CONSHIELD ADDITIVE IS REQUIRED IN ALL CONCRETE.
- \* 7. NO STEPS IN PRECAST SANITARY MANHOLE.

**STANDARD PRECAST CONCRETE  
MANHOLE W/ EXTENDED MONOLITHIC BASE**

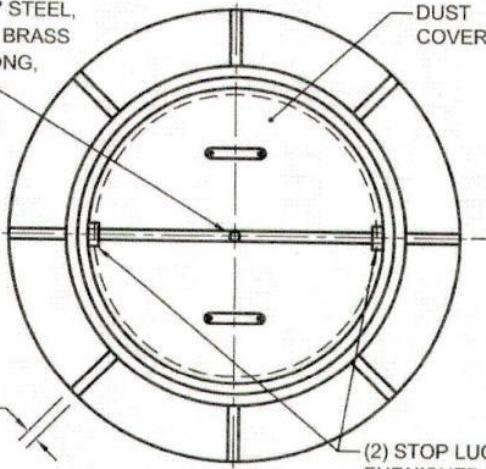
NOT TO SCALE

REFERENCE 200,802	CATEGORY SANITARY SYSTEMS	DATE 6/16	SHEET No. 2 OF 2	DETAIL No. SS_01
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\* MODIFIED PER THE STANDARD DETAIL MODIFICATIONS IN THE SPECIAL PROVISIONS

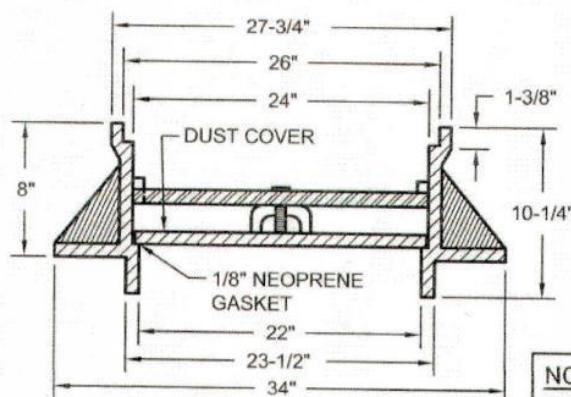
LOCK BAR 1" X 1" STEEL,  
23-1/2" LONG W/ BRASS  
BOLT 5/8" X 4" LONG,  
FULL THREAD

A



PLAN: CASTING

NOTE: USE SANITARY SEWER MANHOLE  
COVER (24") FOR THIS APPLICATION

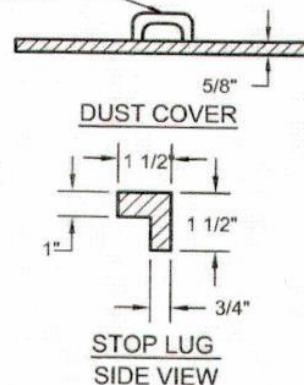


SECTION A-A

NOTES:

1. MANHOLE CASTING TO BE SUPPLIED BY CAPITAL FOUNDRY OF VIRGINIA, INC. OR APPROVED EQUAL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO LATEST EDITION OF ASTM A-48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY.
3. ALL CASTING DIMENSIONS SHALL HAVE A TOLERANCE OF  $1/8" \pm$ .
4. ALL CASTINGS SHALL BE CLEANED BY SHOT BLASTING AND HAND CHIPPING UTILIZING STANDARD INDUSTRY PRACTICES PRIOR TO SHOP APPLICATION OF ASPHALTIC COATING, BY DIPPING.
5. CONTRACTOR TO FURNISH PARSON'S VENTED STAINLESS STEEL MANHOLE INSERTS.

**NOTE:**  
FOR NON-WATERTIGHT APPLICATIONS  
DELETE THE LOCK BAR AND NEOPRENE  
GASKET



STOP LUG  
SIDE VIEW

**SANITARY SEWER  
MANHOLE CASTINGS (24")**

NTS

REFERENCE  
200,802

CATEGORY  
SANITARY SYSTEMS

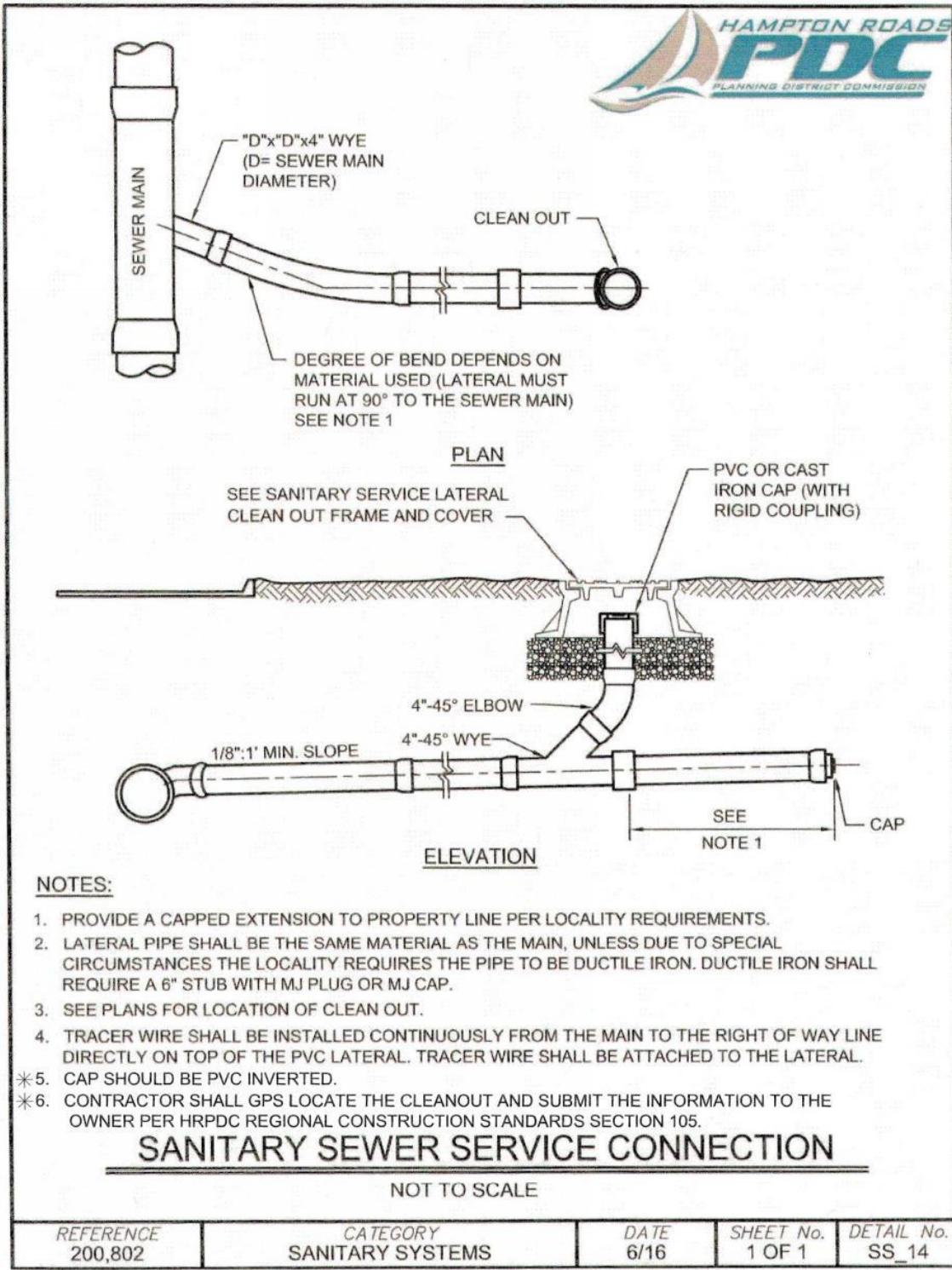
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6/16

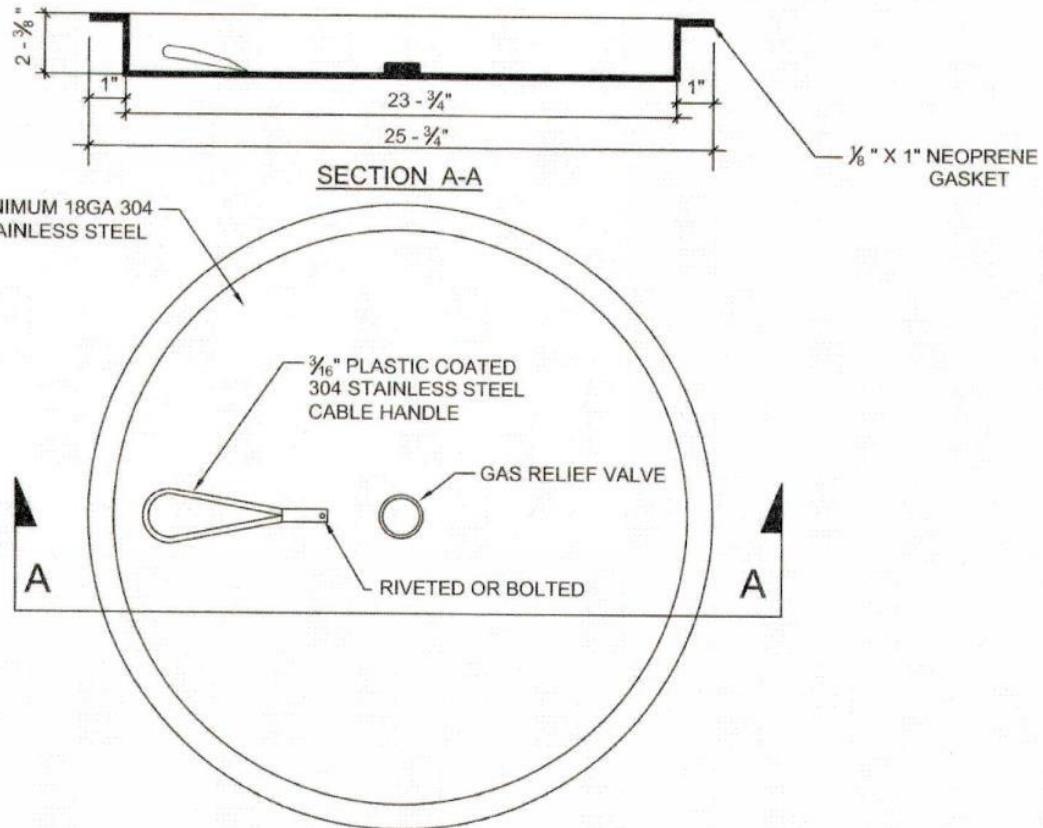
SHEET No.  
1 OF 1

DETAIL No.  
SS\_09

\* MODIFIED PER THE STANDARD DETAIL MODIFICATIONS IN THE SPECIAL PROVISIONS







**NOTES:**

1. ACTUAL DIMENSIONS MUST BE COMPATIBLE WITH MANHOLE CASTING DIMENSIONS.
2. DUST COVER NOT REQUIRED WHEN USING MANHOLE INSERT.
3. GAS RELIEF VALVE SHALL BE CAPABLE OF RELEASING GAS AT A PRESSURE OF 0.5 TO 1.5 PSI AND HAVE A WATER LEAK DOWN RATE NO GREATER THAN 5 GALLONS / 24 HOURS.
4. LOAD TEST STRENGTH MUST EXCEED 3,000 POUNDS.
5. HANDLE MUST BE CAPABLE OF WITHSTANDING A MINIMUM 500 POUND PULL FORCE.
- \*6. CONTRACTOR TO FURNISH PARSON'S VENTED STAINLESS STEEL MANHOLE INSERTS.

**MANHOLE INSERT**

NOT TO SCALE

REFERENCE 200	CATEGORY SANITARY SYSTEMS	DATE 6/16	SHEET No. 1 OF 1	DETAIL No. SS_19
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\* MODIFIED PER THE STANDARD DETAIL MODIFICATIONS IN THE SPECIAL PROVISIONS