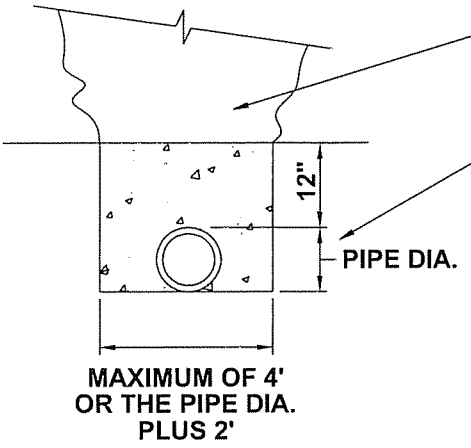
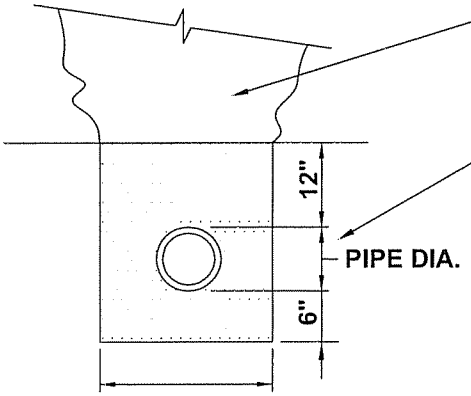


MECHANICALLY COMPACTED BACKFILL MATERIAL IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS

DUCTILE IRON AND REINFORCED CONCRETE CULVERT PIPE ON NON-ROCK TRENCH BOTTOMS BELL HOLES SHALL BE EXCAVATED TO ASSURE CONTINUOUS PIPE BARREL SUPPORT FOR FULL LENGTH OF PIPE SECTIONS. TRENCH SIDEWALLS SHALL BE PLUMB WITHIN PIPE ZONE.

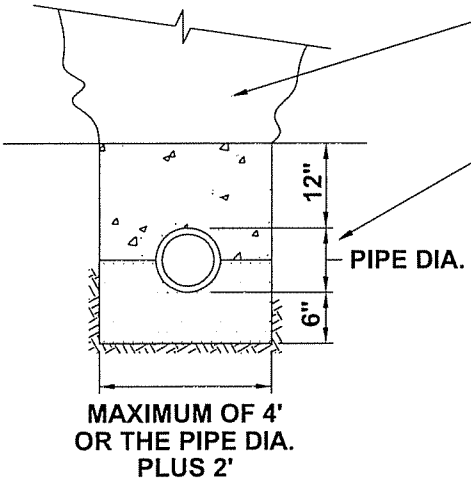
DETAIL 001-A



MECHANICALLY COMPACTED BACKFILL MATERIAL IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS

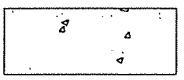
PVC PIPE AT ALL LOCATIONS. TRENCH SIDEWALLS SHALL BE PLUMB WITHIN PIPE ZONE

DETAIL 001-B

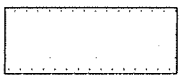


MECHANICALLY COMPACTED BACKFILL MATERIAL IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS

DUCTILE IRON PIPE AND REINFORCED CONCRETE CULVERT PIPE ON ROCK TRENCH BOTTOM AND DUCTILE IRON PIPE WITH RESTRAINED JOINTS. TRENCH SIDEWALLS SHALL BE PLUMB WITHIN PIPE ZONE



SELECTED EXCAVATED MATERIAL MECHANICALLY COMPACTED MAXIMUM SIZE ROCKS- 3"



PENNSYLVANIA No. 2B STONE OR AASHTO 57 OR 67 STONE

DETAIL 001-C

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
SEWER TRENCH PIPE ZONE DETAILS

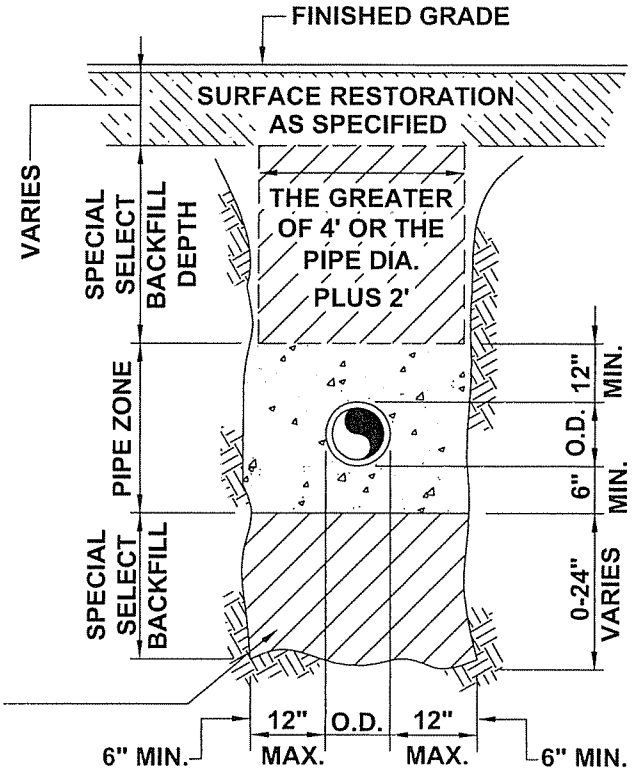
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-001

NOTE:

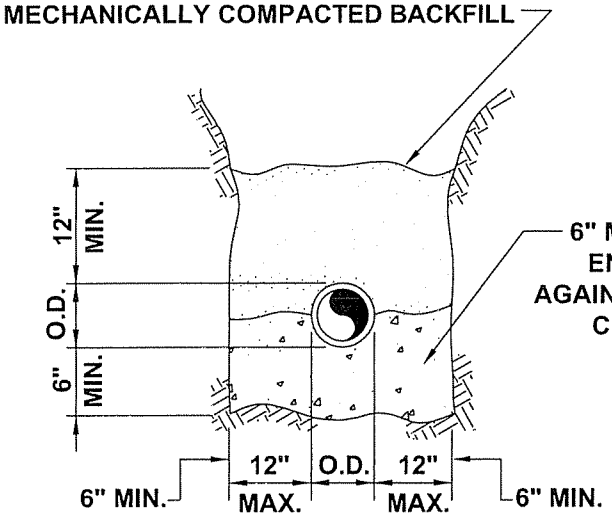
WHERE SPECIAL SELECT BACKFILL IS REQUIRED BETWEEN THE PIPE ZONE AND THE SURFACE MATERIAL, THE PIPE ZONE SHALL EXTEND 12" ABOVE THE PIPE REGARDLESS OF PIPE MATERIAL

AT LOCATIONS WHERE SEWER CONSTRUCTION IS WITHIN THE LIMITS OF HAMPTON TOWNSHIP ROADS AND STREETS RIGHTS OF WAY, SPECIAL BACKFILL SHALL BE IN ACCORDANCE WITH HAMPTON TOWNSHIP'S ROAD SPECIFICATIONS FOR "SEWER CONSTRUCTION ROAD CROSSING/SHOULDER CROSSING WORK"

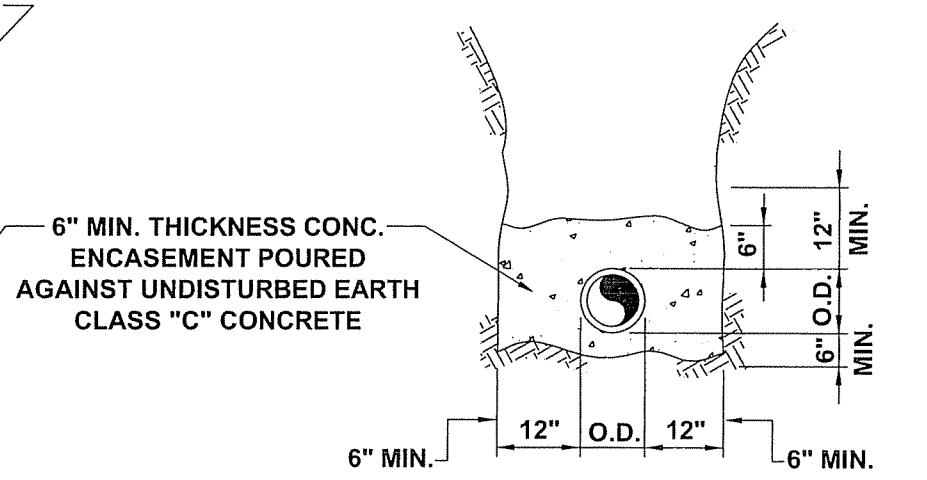
WHERE EXCAVATION EXPOSES THE BOTTOM OF PROPOSED TRENCHES WHERE VERY SOFT OR OTHER UNSTABLE PIPE FOUNDATION MATERIALS EXIST, THE CONTRACTOR WILL BE DIRECTED TO OVERCUT OR STABILIZE/OVERCUT



SPECIAL BACKFILL
DETAIL 002-A



TYPICAL CONCRETE CRADLE
DETAIL 002-B

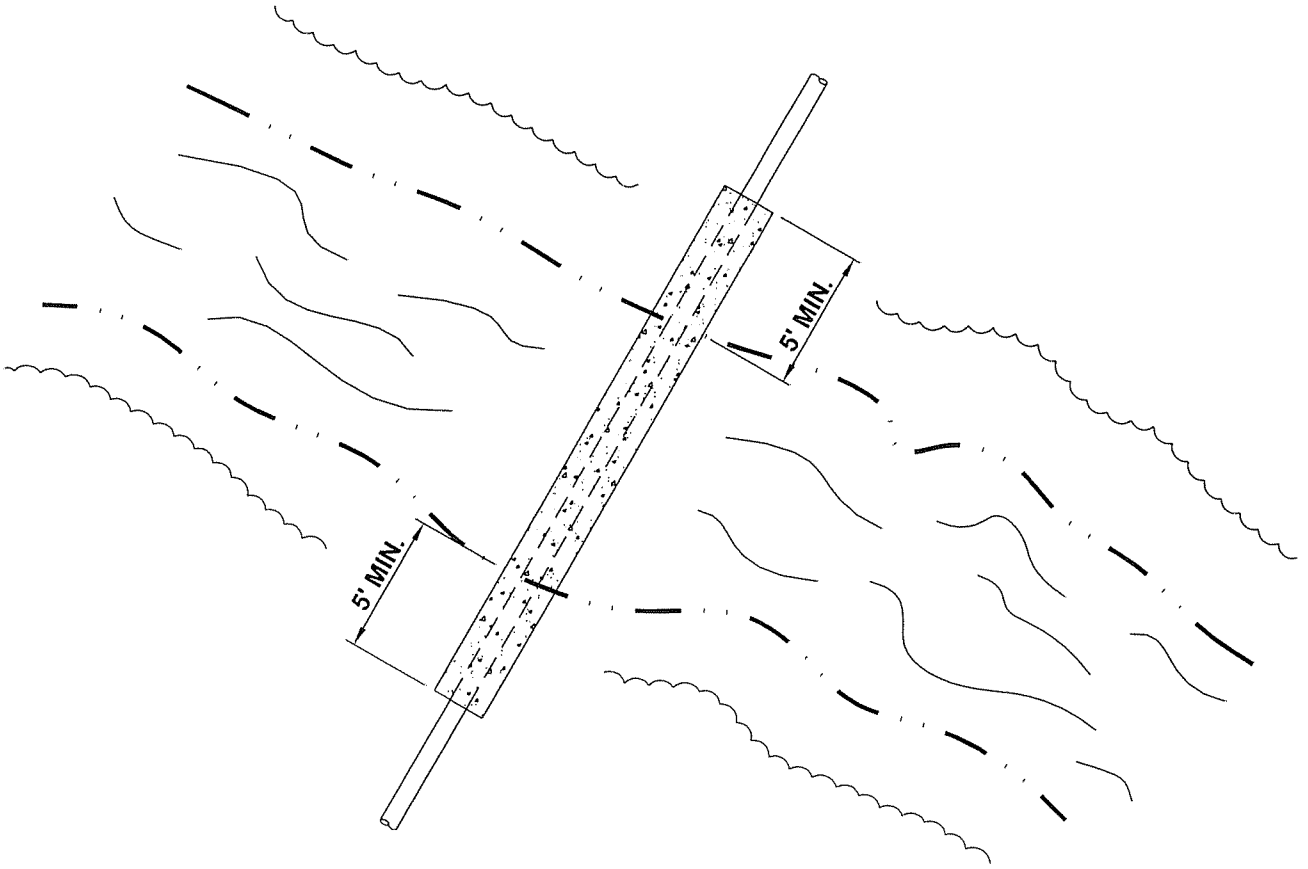


TYPICAL CONCRETE ENCASEMENT
DETAIL 002-C

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
TRENCH DETAILS

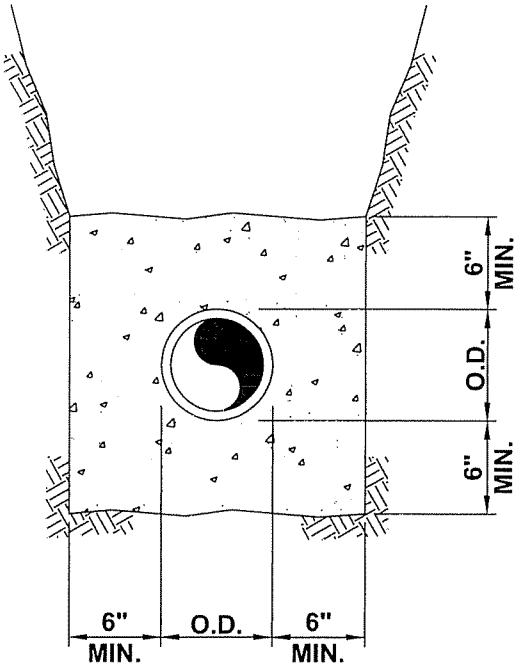
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-002



CLASS "C" CONCRETE

6" MINIMUM THICKNESS

POUR AGAINST UNDISTURBED EARTH OR FORM



TYPICAL CONCRETE ENCASEMENT

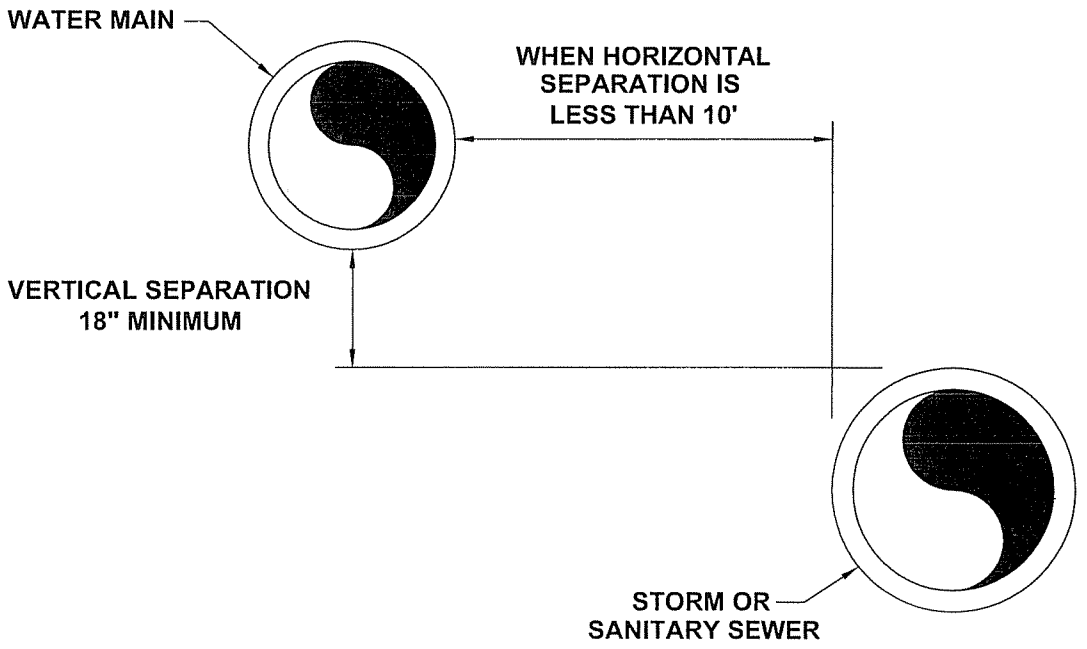
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

TYPICAL STREAM CROSSING AND CONCRETE ENCASEMENT DETAILS

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-003



NOTE:

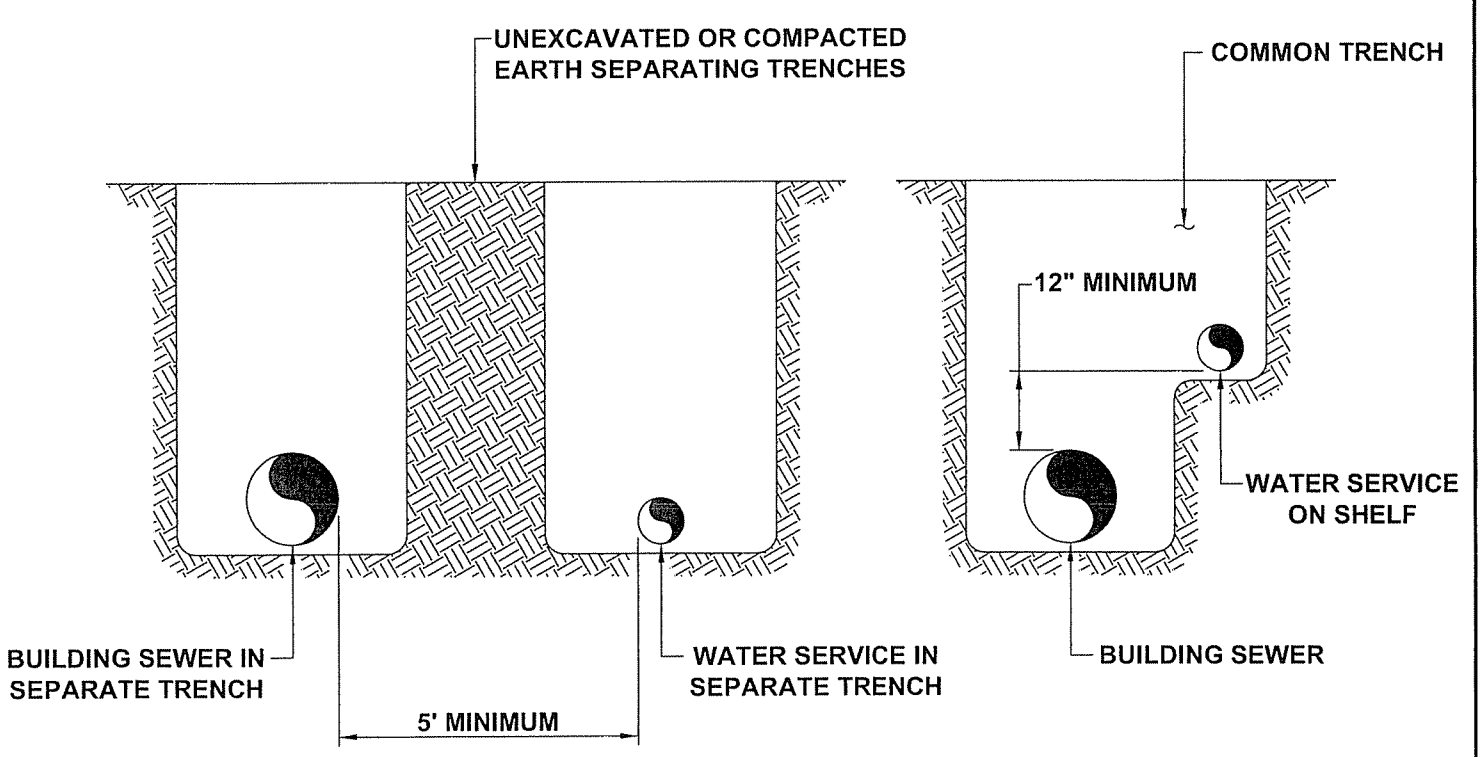
1. WHEN THE HORIZONTAL SEPARATION OF THE WATERMAIN AND SEWERLINE IS LESS THAN 10', THE VERTICAL SEPARATION BETWEEN THE TOP (CROWN) OF THE SEWERLINE AND THE BOTTOM (INVERT) OF THE WATERMAIN SHALL BE AT LEAST 18". SEWER LINE SHALL BE ENCASED IN CONCRETE WHERE SEWER/ WATER LINE CROSSINGS OCCUR AND WHERE CONDITIONS PREVENT AN 18" VERTICAL SEPARATION.

2. THERE SHALL BE AT LEAST A 10' HORIZONTAL SEPARATION BETWEEN WATERMAINS AND SANITARY SEWER FORCEMAINS. FORCEMAINS CROSSING WATERMAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE OUTSIDE OF THE FORCEMAIN AND THE OUTSIDE OF THE WATERMAIN.

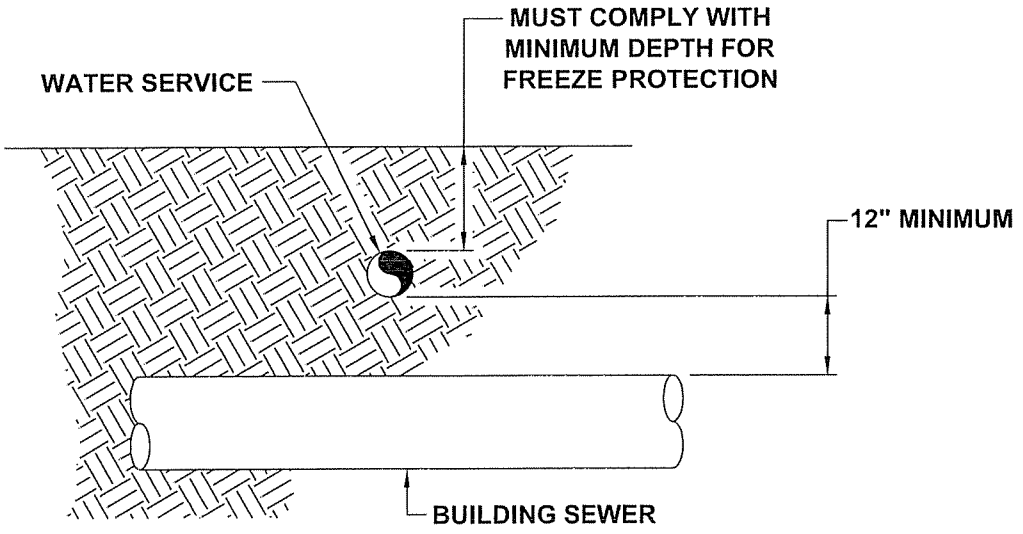
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
DESIRED DISTANCES BETWEEN WATER AND SEWER PIPES

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-004



SEPARATION OF WATER SERVICE AND BUILDING SEWER

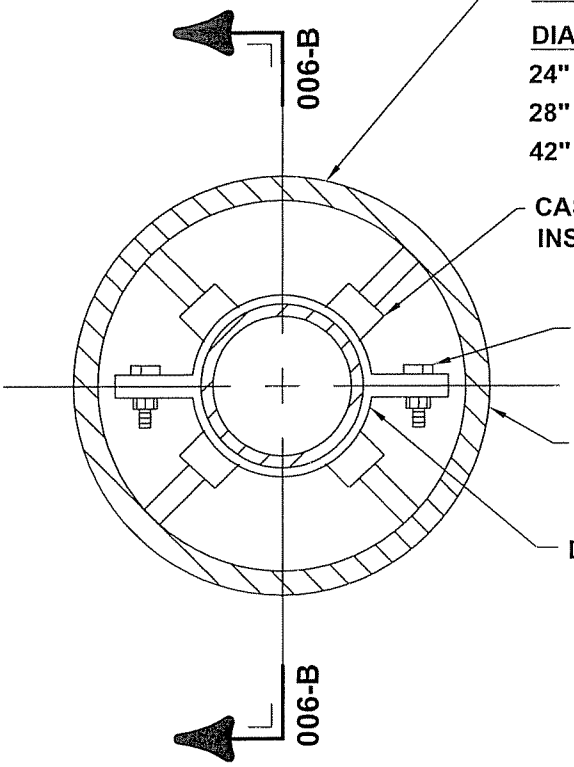


WATER SERVICE CROSSING OVER BUILDING SEWER

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
SEPARATION DISTANCE BETWEEN WATER AND SEWER PIPES

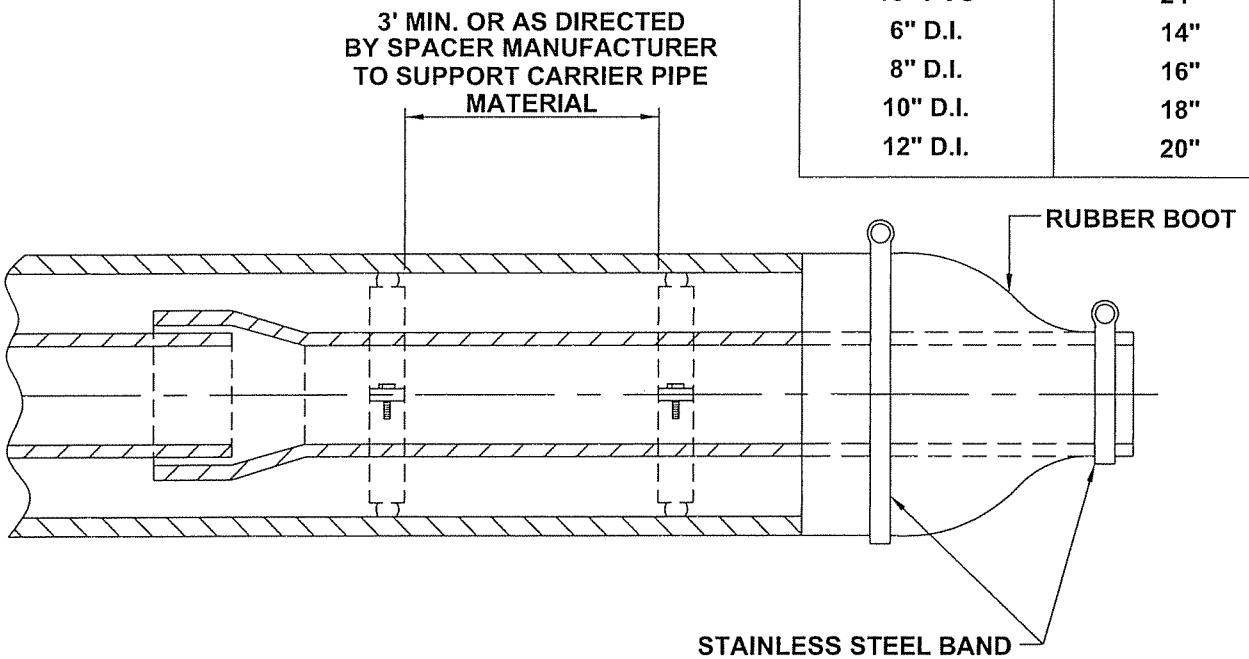
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-005



DIAMETER (IN.)	THICKNESS (IN.)
24" OR LESS	1/4"
28" AND 32"	3/8"
42" AND LARGER	1/2"

SECTIONAL PLAN 006-A

MINIMUM RECOMMENDED CASING SIZE	
CARRIER	CASING
6" PVC	12"
8" PVC	16"
10" PVC	18"
12" PVC	20"
15" PVC	24"
6" D.I.	14"
8" D.I.	16"
10" D.I.	18"
12" D.I.	20"

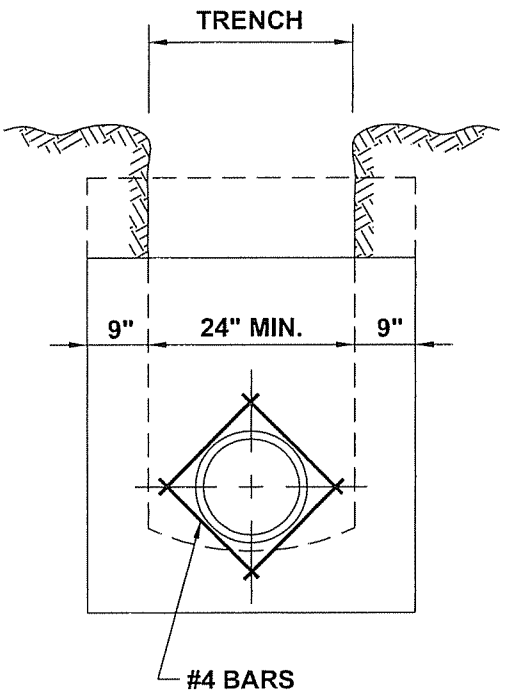


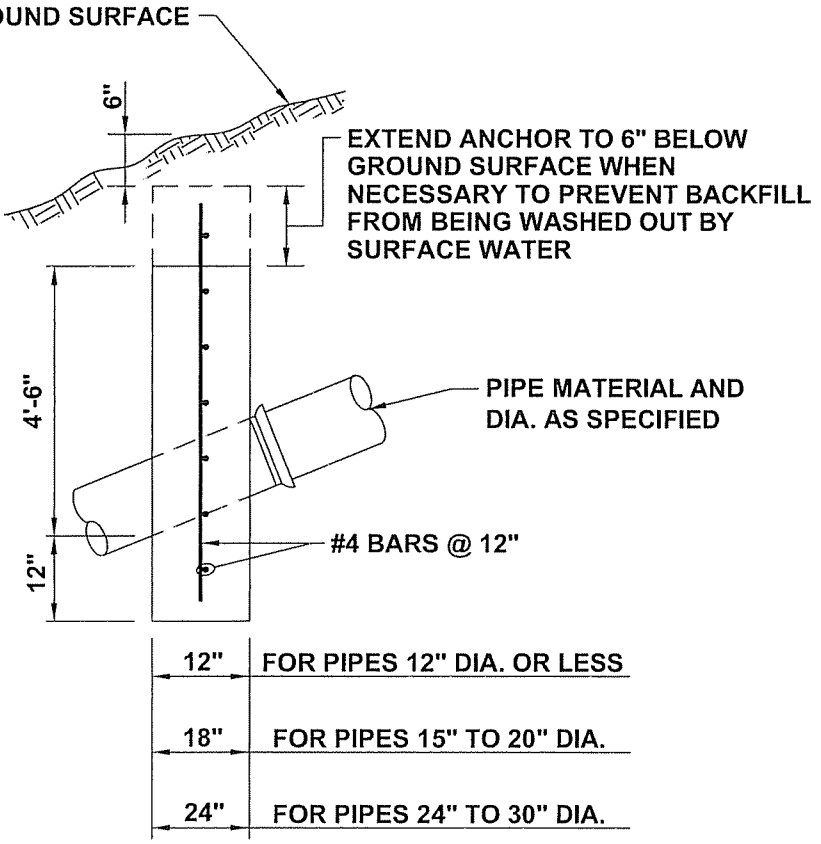
SECTION 006-B

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
STEEL CASING AND D.I. OR PVC CARRIER PIPES INSTALLED BY BORING

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-006





CONCRETE ANCHORS FOR PIPES ON STEEP GRADES

PROVIDE NO ANCHORS ON GRADES LESS THAN 20% UNLESS NOTED
PROVIDE ANCHORS MAXIMUM 36" C-C ON GRADES BETWEEN 20% AND 34%
PROVIDE ANCHORS MAXIMUM 24" C-C ON GRADES BETWEEN 34% AND 50%
PROVIDE ANCHORS MAXIMUM 16" C-C ON GRADES BETWEEN 50% AND 70%
WITH APPROVAL FROM TOWNSHIP

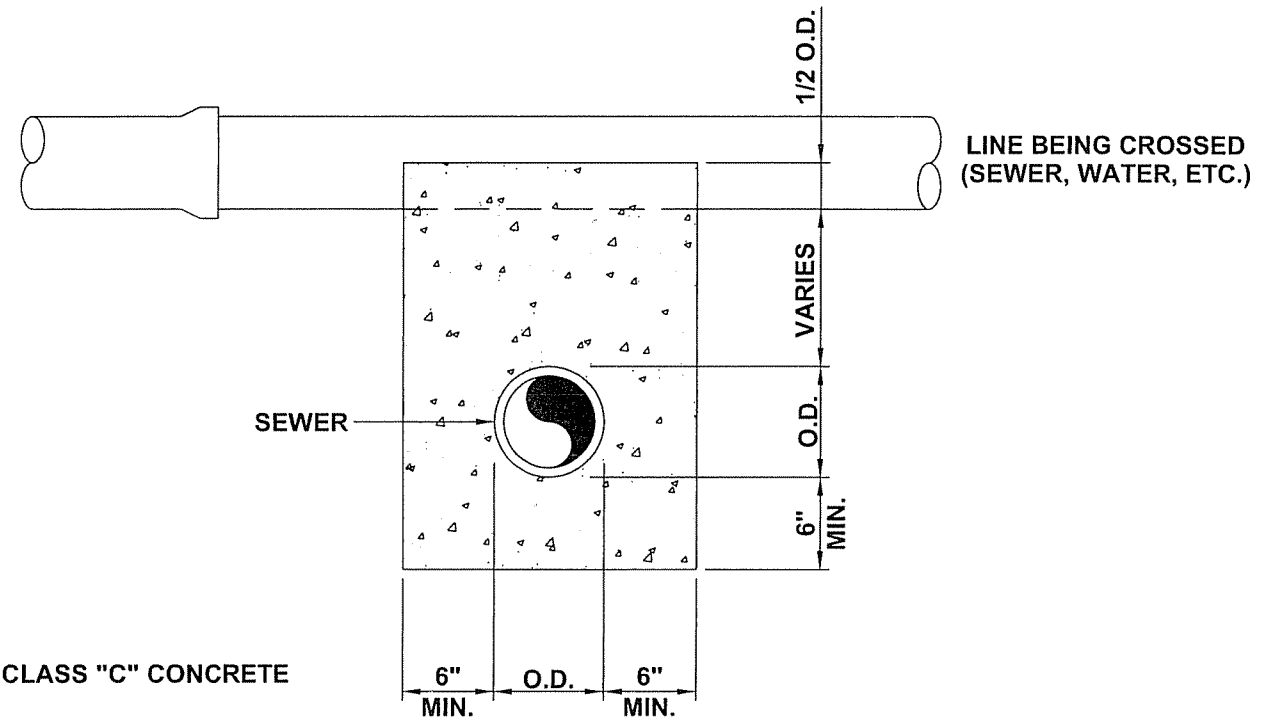
FOR CONDITIONS OTHER THAN SHOWN HEREON ANCHORS SHALL BE PROVIDED AS REQUIRED BY THE CONTRACT PLANS OR ORDERED IN THE FIELD BY THE OWNER'S REPRESENTATIVE.

ANCHOR SPACING SHALL POSITION EACH ANCHOR DOWNSTREAM OF A PIPE BELL

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
CONCRETE ANCHORS FOR PIPELINES

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-007



CLASS "C" CONCRETE

6" MINIMUM THICKNESS

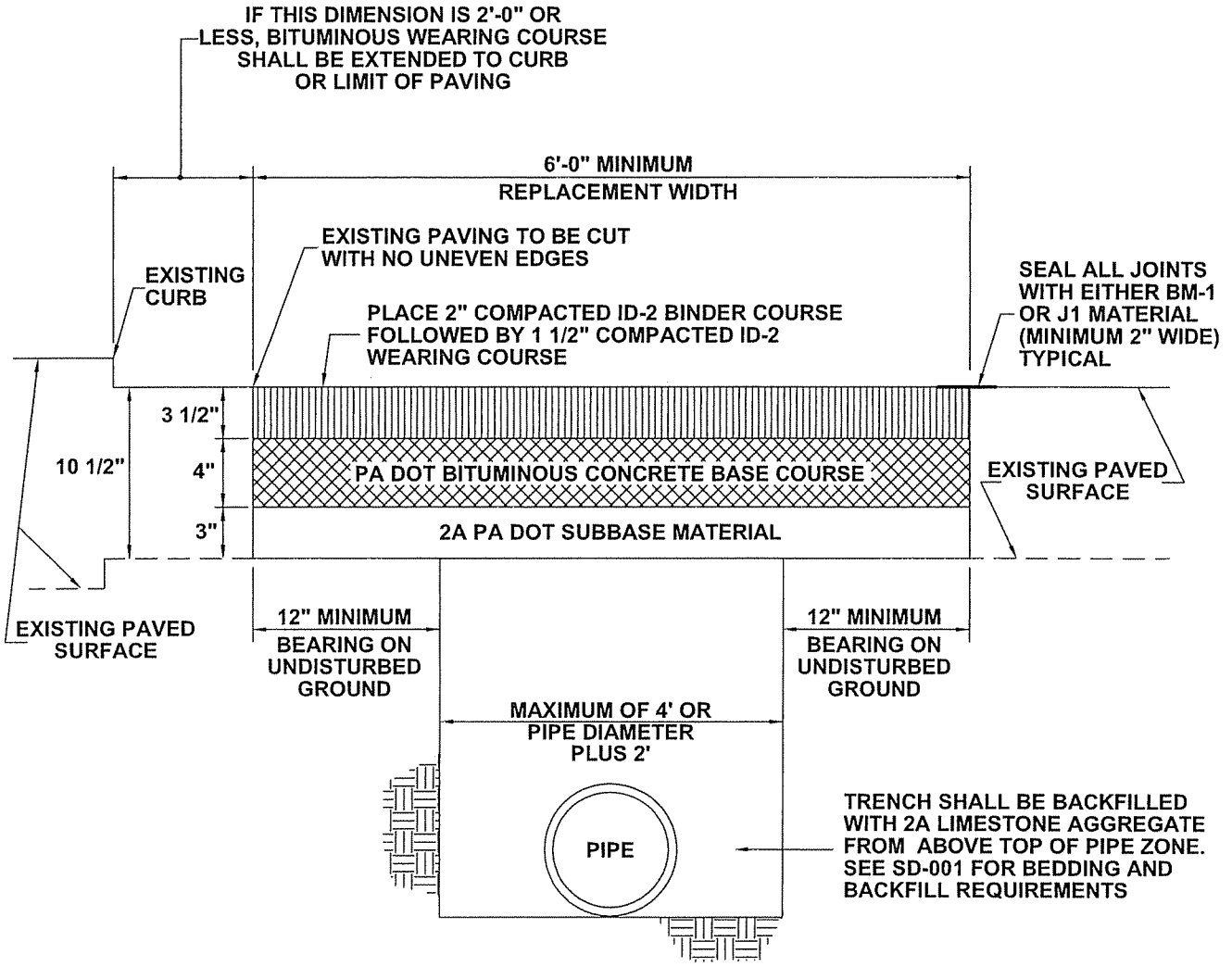
POUR AGAINST UNDISTURBED
EARTH OR FORM

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
CONCRETE SADDLE/ CRADLE DETAIL

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-008

REFERENCE PADOT PUBLICATION 408
SECTION 305- BITUMINOUS CONCRETE BASE COURSE
SECTION 420- BITUMINOUS WEARING COURSE ID-2
SECTION 421- BITUMINOUS BINDER COURSE ID-2
SECTION 305- BITUMINOUS WEARING COURSE FJ-1C



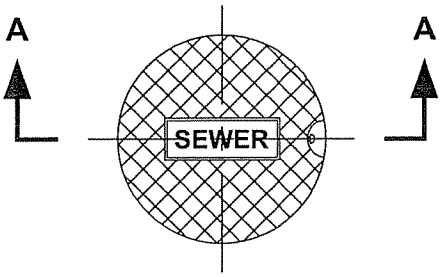
NOTE: DURING COLD WEATHER WHEN ID-2 MATERIAL IS NOT AVAILABLE FROM THE ASPHALT PLANTS THE TRENCH SHALL BE BACKFILLED WITH BEDDING MATERIAL TO AN ELEVATION WITHIN 2" OF THE ROAD SURFACE. THE TRENCH SHALL THEN BE SURFACED WITH A TEMPORARY PATCH OF COLD PATCH MATERIAL. AS SOON AS THE ASPHALT PLANTS OPEN IN THE SPRING, THE CONTRACTOR SHALL REMOVE THE COLD PATCH MATERIAL AND SAW-CUT THE REQUIRED BENCHES AND THE ID-2 MATERIAL SHALL THEN BE PLACED AND SEALED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE ON THE TEMPORARY PATCH AND SHALL KEEP A SMOOTH RIDING SURFACE ON THE STREET.

* FOR CONCRETE SURFACED ROADWAYS, THE REQUIREMENTS OF PADOT PUBLICATION 408 ARE REQUIRED.

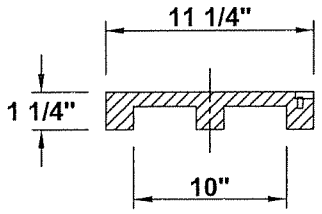
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
PAVEMENT REPLACEMENT AND BACKFILL REQUIREMENTS UNDER PAVED SURFACES

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-009

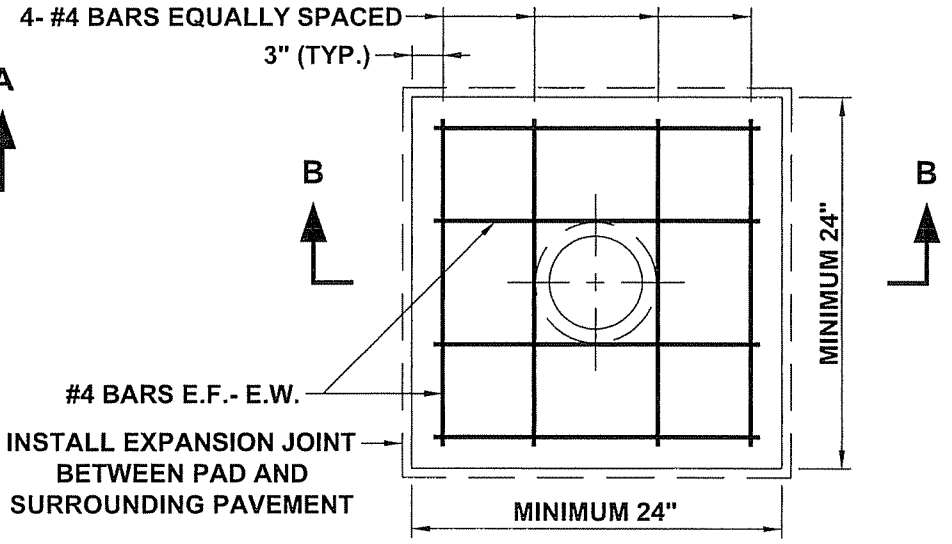


PLAN

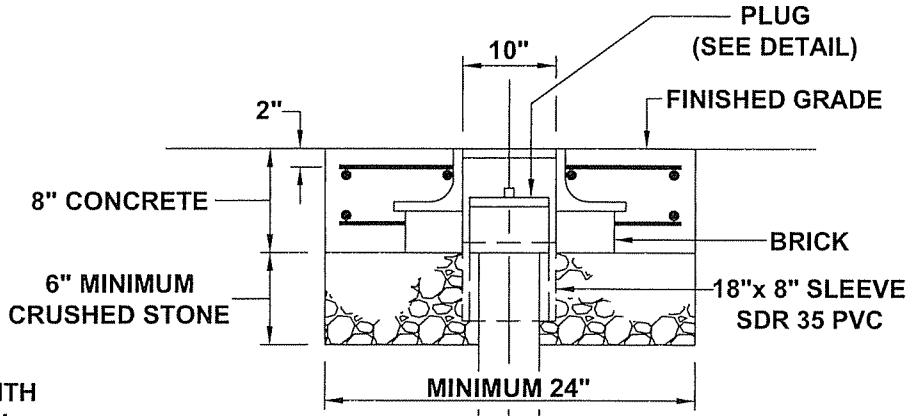


SECTION A-A

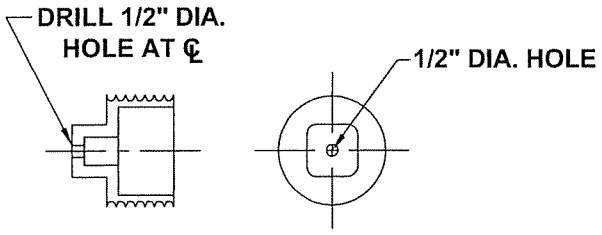
CLEANOUT COVER



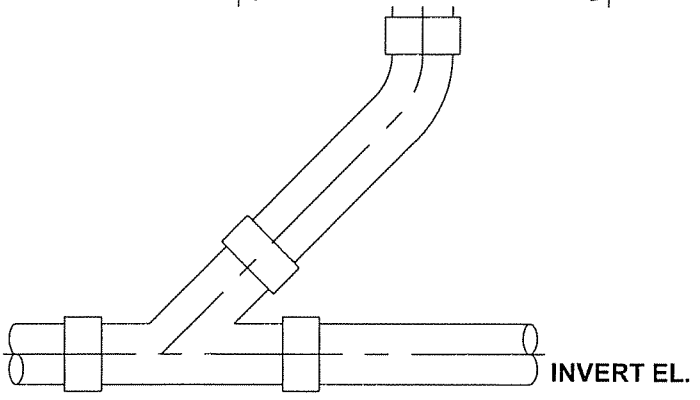
PLAN



NOTE:
CLEANOUT COVERS SHALL BE LOCKED WITH ONE 3/8" INCH HEX HEAD STAINLESS STEEL BOLT AND SHALL BE MODEL R-1976 AS MANUFACTURED BY NEENAH FOUNDRY.



PLUG DETAIL



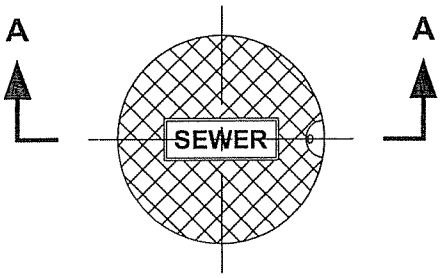
SECTION B-B

CONCRETE PAD & CASTING DETAIL

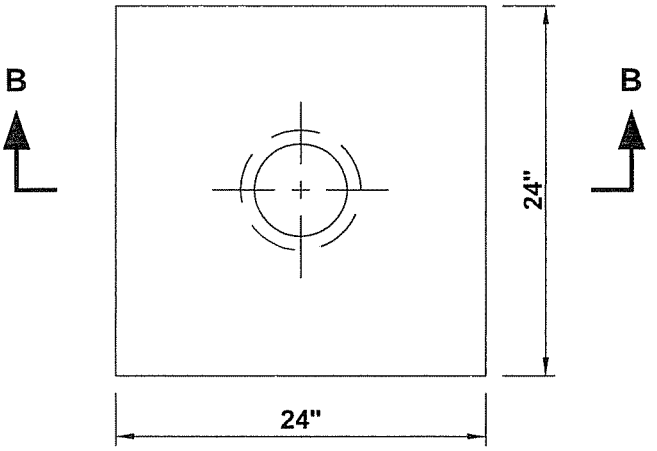
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
CLEANOUT
IMPERVIOUS/ PAVED AREAS

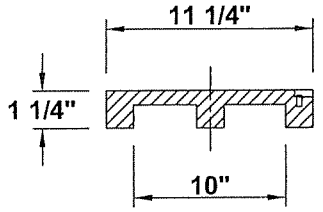
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-010



PLAN

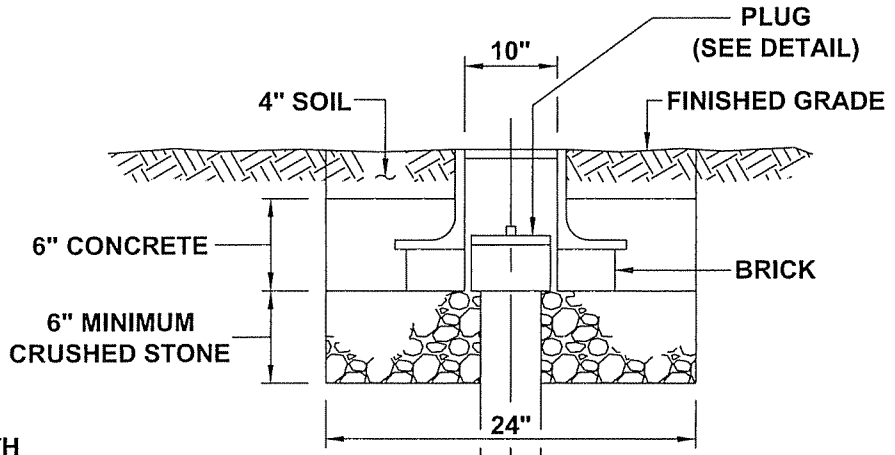


PLAN

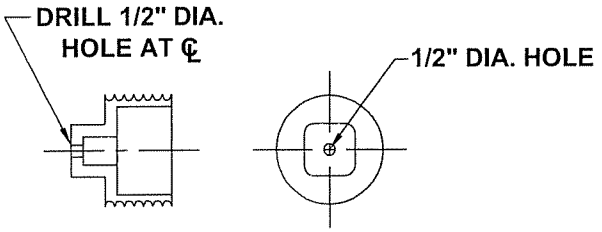


SECTION A-A

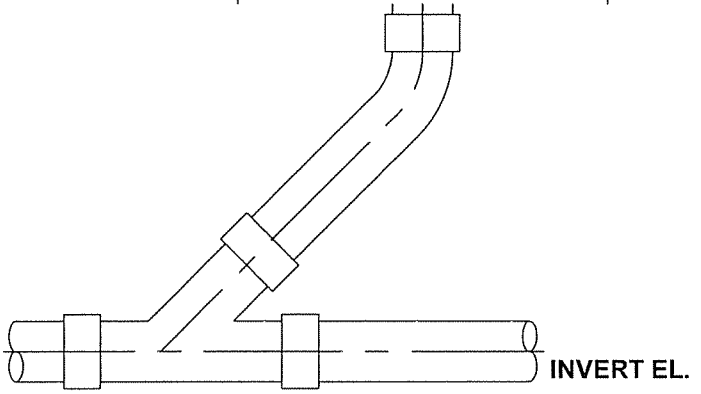
CLEANOUT COVER



NOTE:
CLEANOUT COVERS SHALL BE LOCKED WITH ONE 3/8" INCH HEX HEAD STAINLESS STEEL BOLT AND SHALL BE MODEL R-1976 AS MANUFACTURED BY NEENAH FOUNDRY.



PLUG DETAIL



SECTION B-B

CONCRETE PAD & CASTING DETAIL

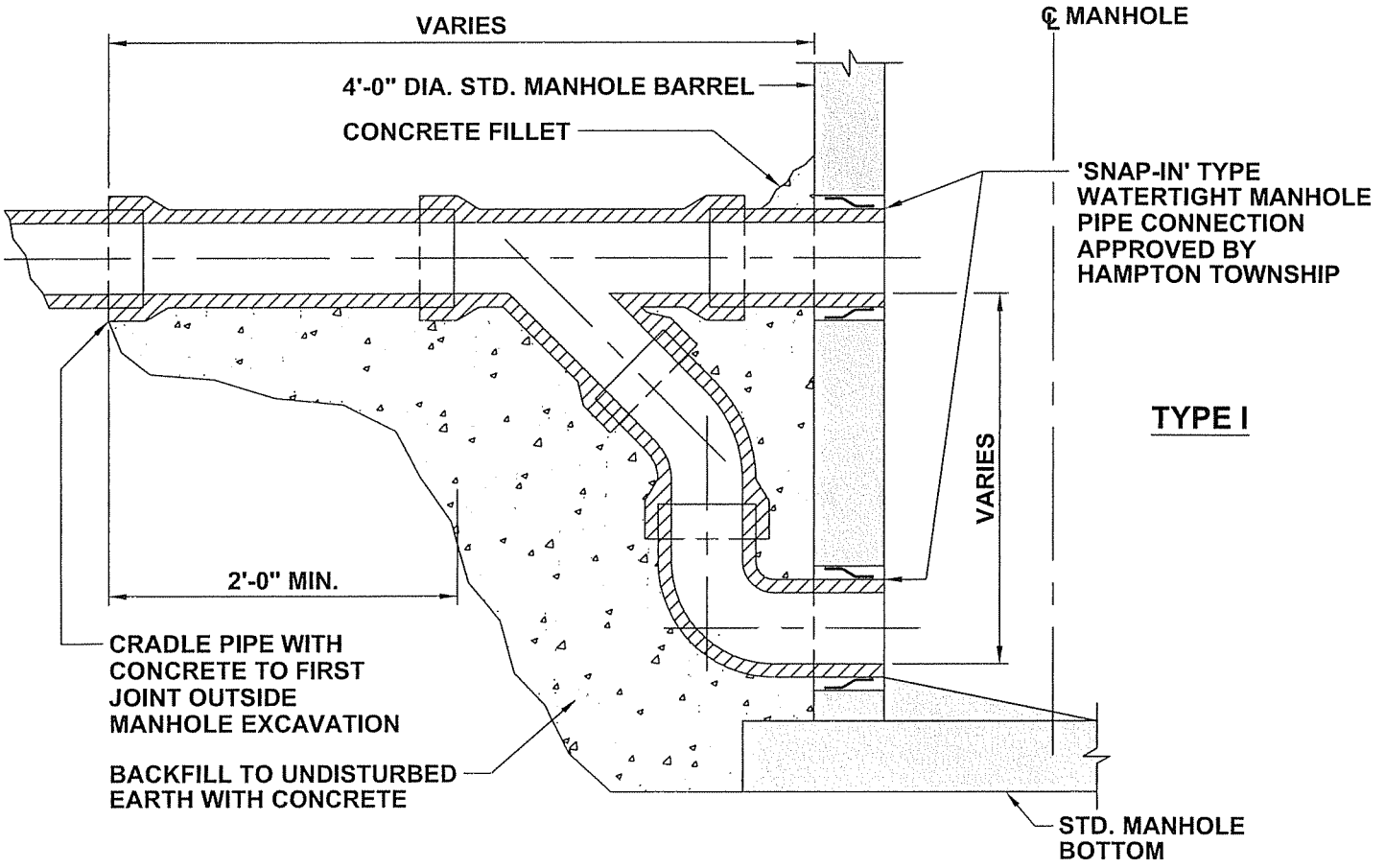
HAMPTON TOWNSHIP

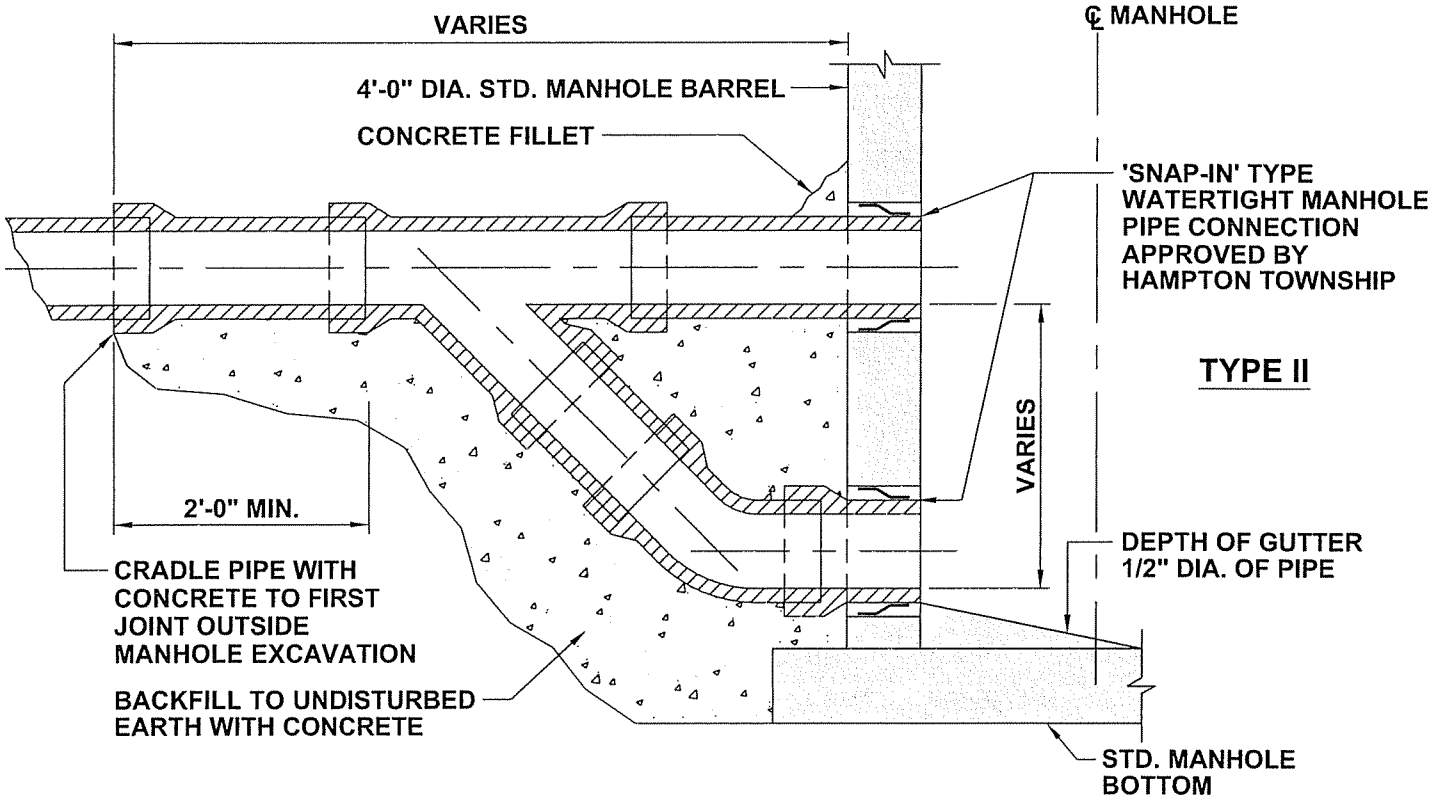
TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

CLEANOUT
UNIMPROVED AREAS/ LAWNS

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-011





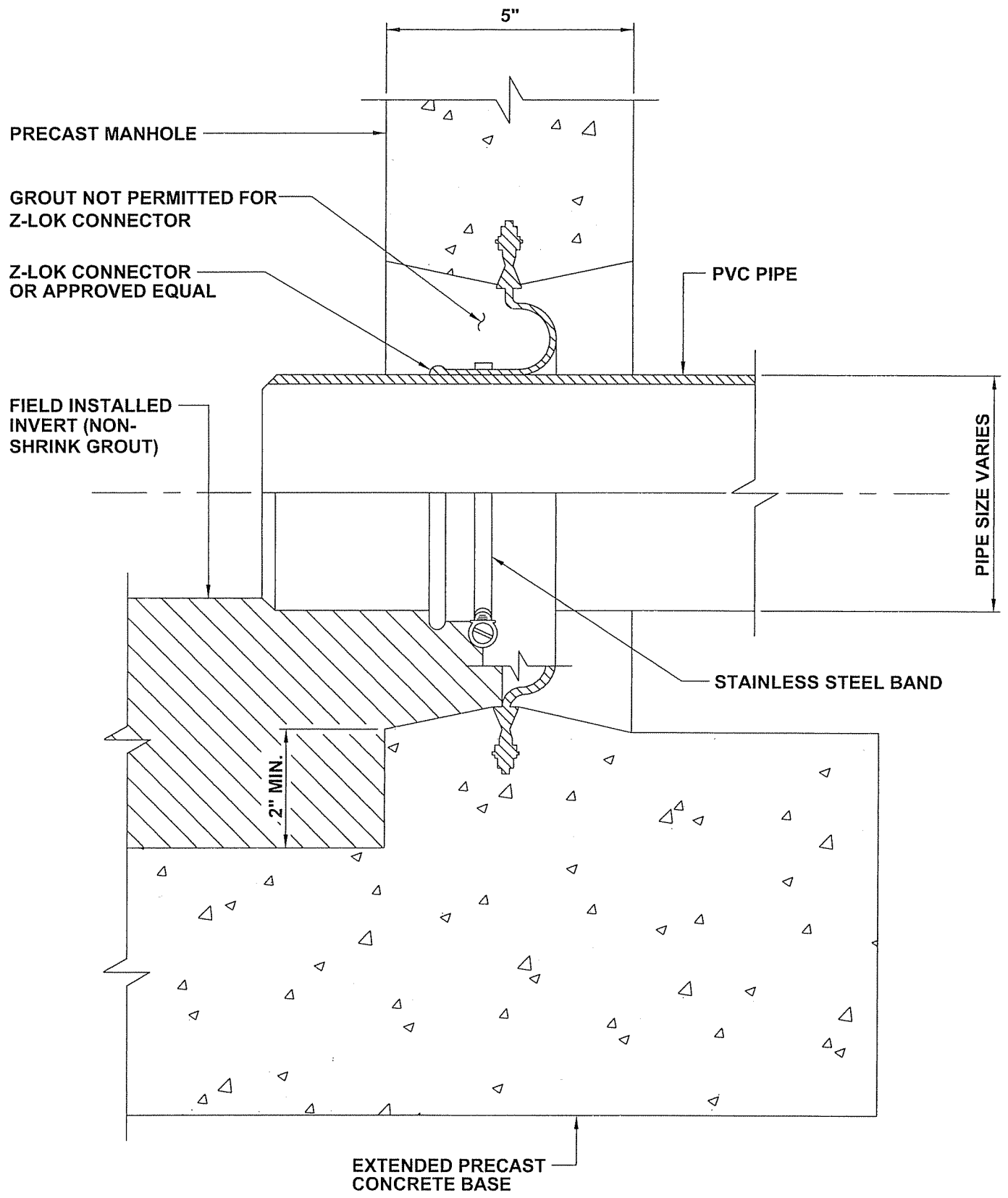
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

OUTSIDE MANHOLE DROP CONNECTION

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-012



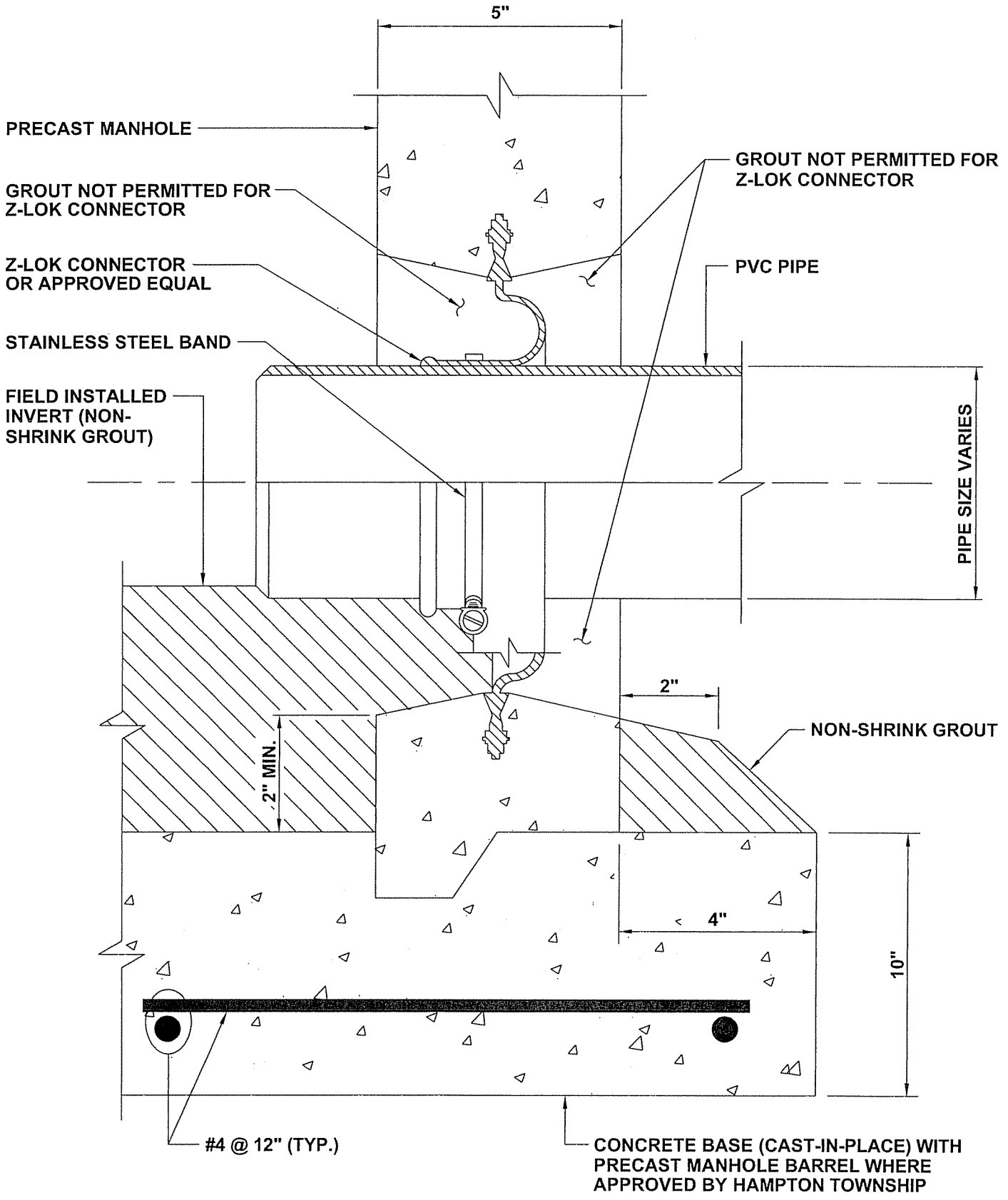
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

MANHOLE CONNECTION FOR PVC PIPE (PRECAST BASE)

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-013



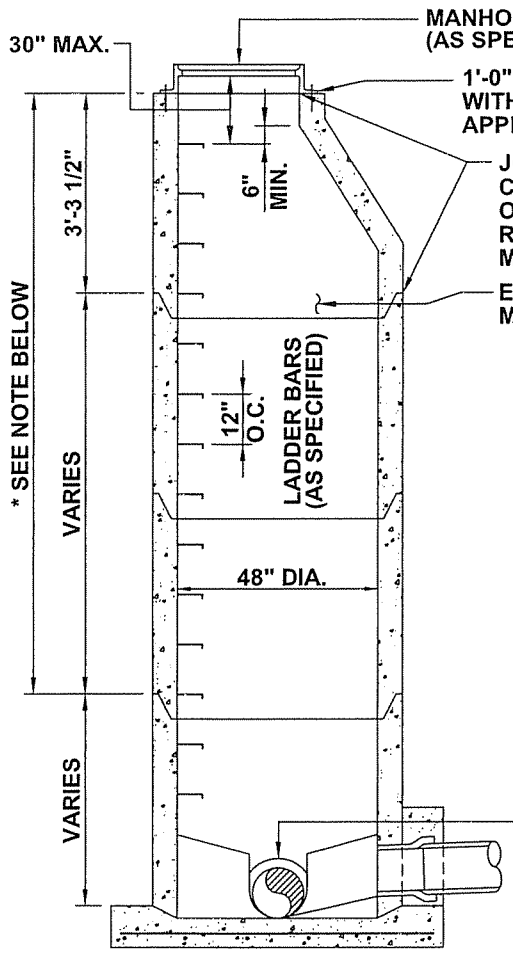
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

MANHOLE CONNECTION FOR PVC PIPE (CAST-IN-PLACE BASE)

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-014

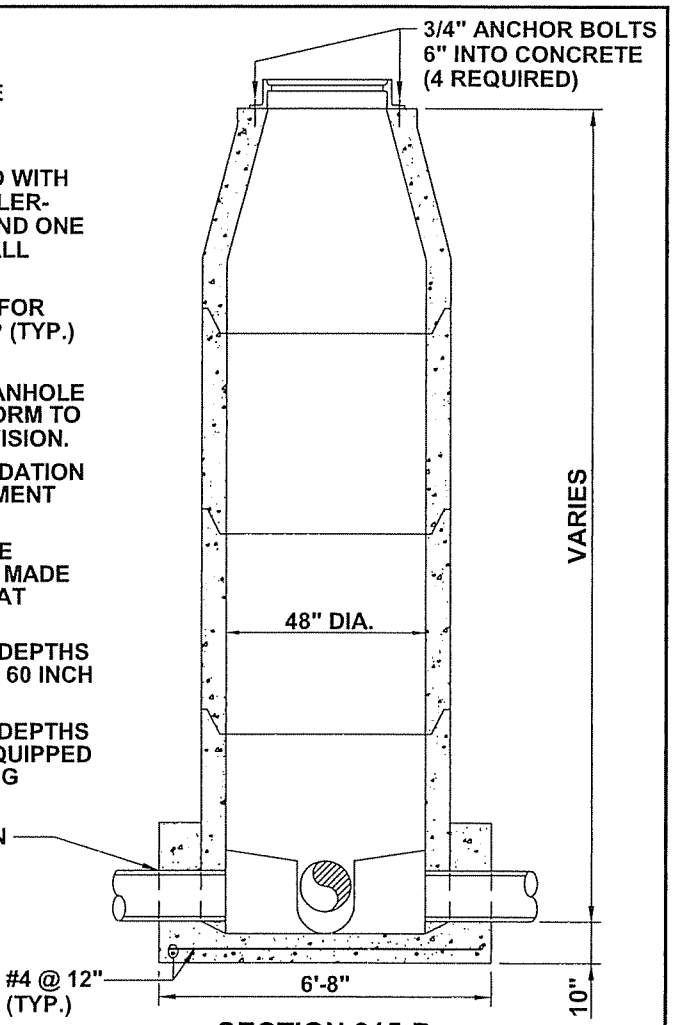


NOTES:

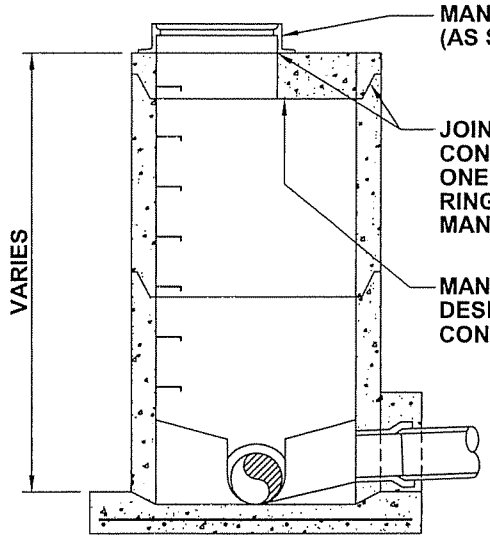
1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM-C478, LATEST REVISION.
2. WHERE MANHOLE FOUNDATION IS IN ROCK, REINFORCEMENT WILL NOT BE REQUIRED.
3. LIFTING HOLES SHALL BE PAINTED WITH MORTAR, MADE WATERTIGHT & LEFT NEAT & SMOOTH.
4. MANHOLES EXCEEDING DEPTHS OF 20 FEET SHALL HAVE 60 INCH DIAMETER BARREL.
5. MANHOLES EXCEEDING DEPTHS OF 25 FEET SHALL BE EQUIPPED WITH ALUMINUM GRATING EVERY EIGHT FEET.

*NOTE:
IF THIS DIMENSION IS LESS THAN 5'-0" USE A PRECAST CONCRETE SLAB ON TOP AS SHOWN BELOW

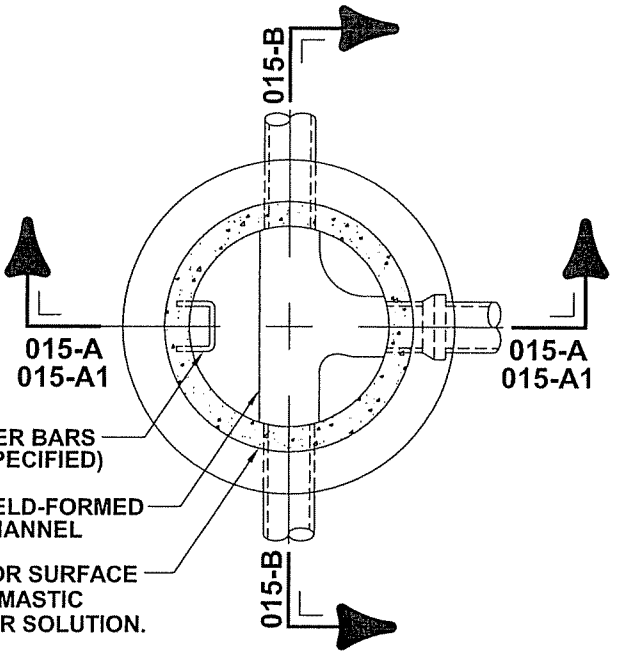
SECTION 015-A



SECTION 015-B



SECTION 015-A1

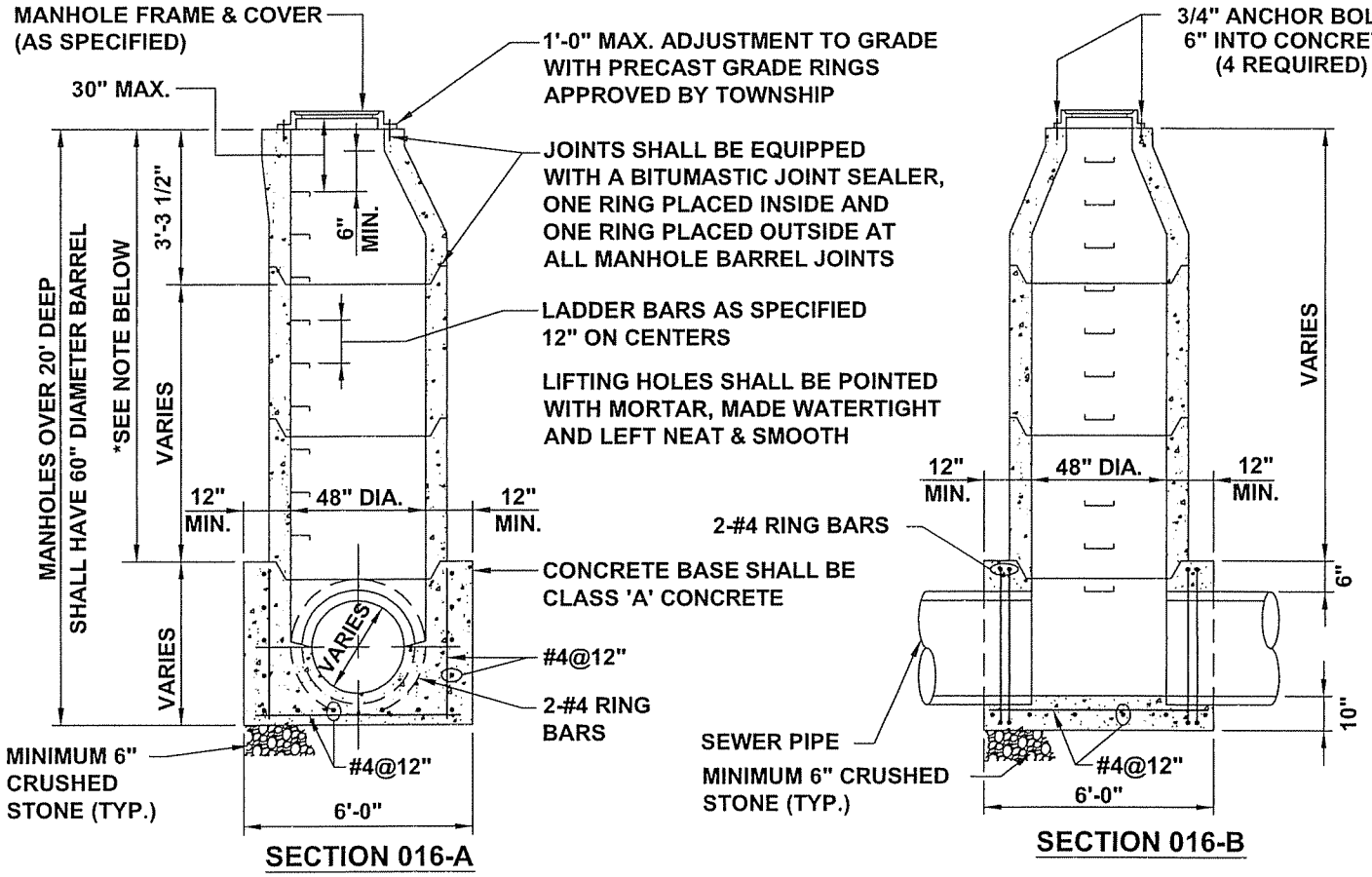


SECTIONAL PLAN 015-C

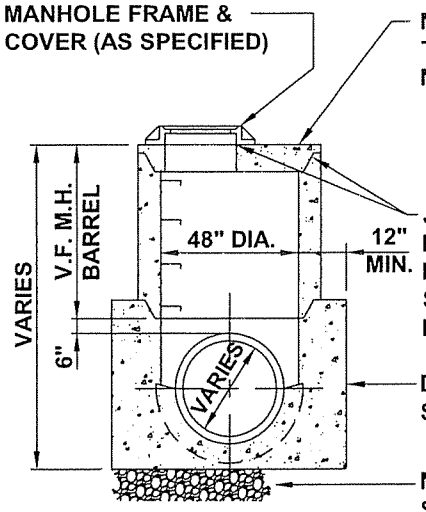
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
PRECAST CONCRETE MANHOLE FOR SEWERS 8" TO 18"

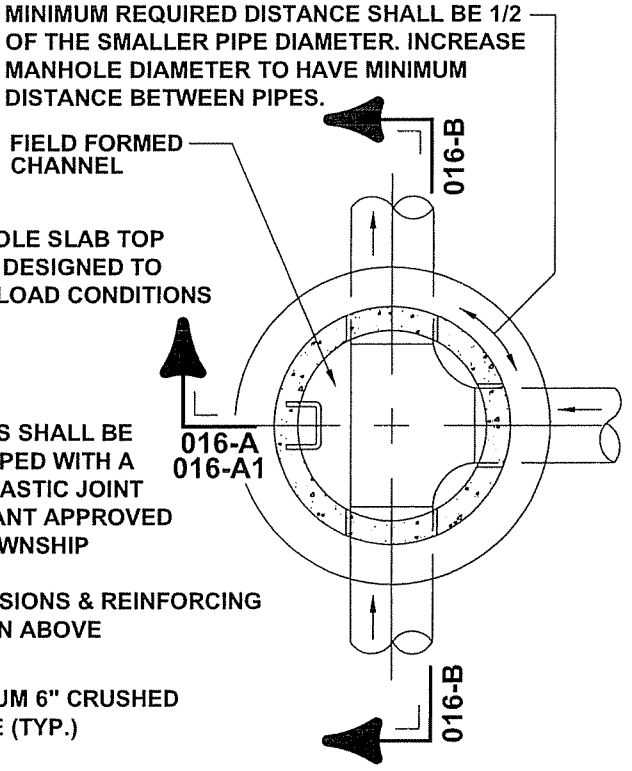
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-015



*NOTE:
IF THIS DIMENSION IS LESS THAN 3'-3" USE A PRE-CAST CONCRETE SLAB TOP SHOWN BELOW



SECTION 016-A1



SECTIONAL PLAN 016-C

NOTES:

1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C-478, LATEST REVISION.
2. WHERE MANHOLE FOUNDATION IS IN ROCK, REINFORCEMENT WILL NOT BE REQUIRED.
3. WATERPROOF EXTERIOR SURFACE WITH TWO COATS BITUMASTIC MATERIAL OR COAL TAR SOLUTION. 8 MILS PER COAT.
4. MANHOLES EXCEEDING DEPTHS OF 20 FEET SHALL BE 60 INCH DIAMETER BARREL.
5. DROP CONNECTIONS ARE NOT PERMITTED.
6. MANHOLES EXCEEDING DEPTHS OF 25 FEET SHALL BE EQUIPPED WITH ALUMINUM GRATING EVERY EIGHT FEET.

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

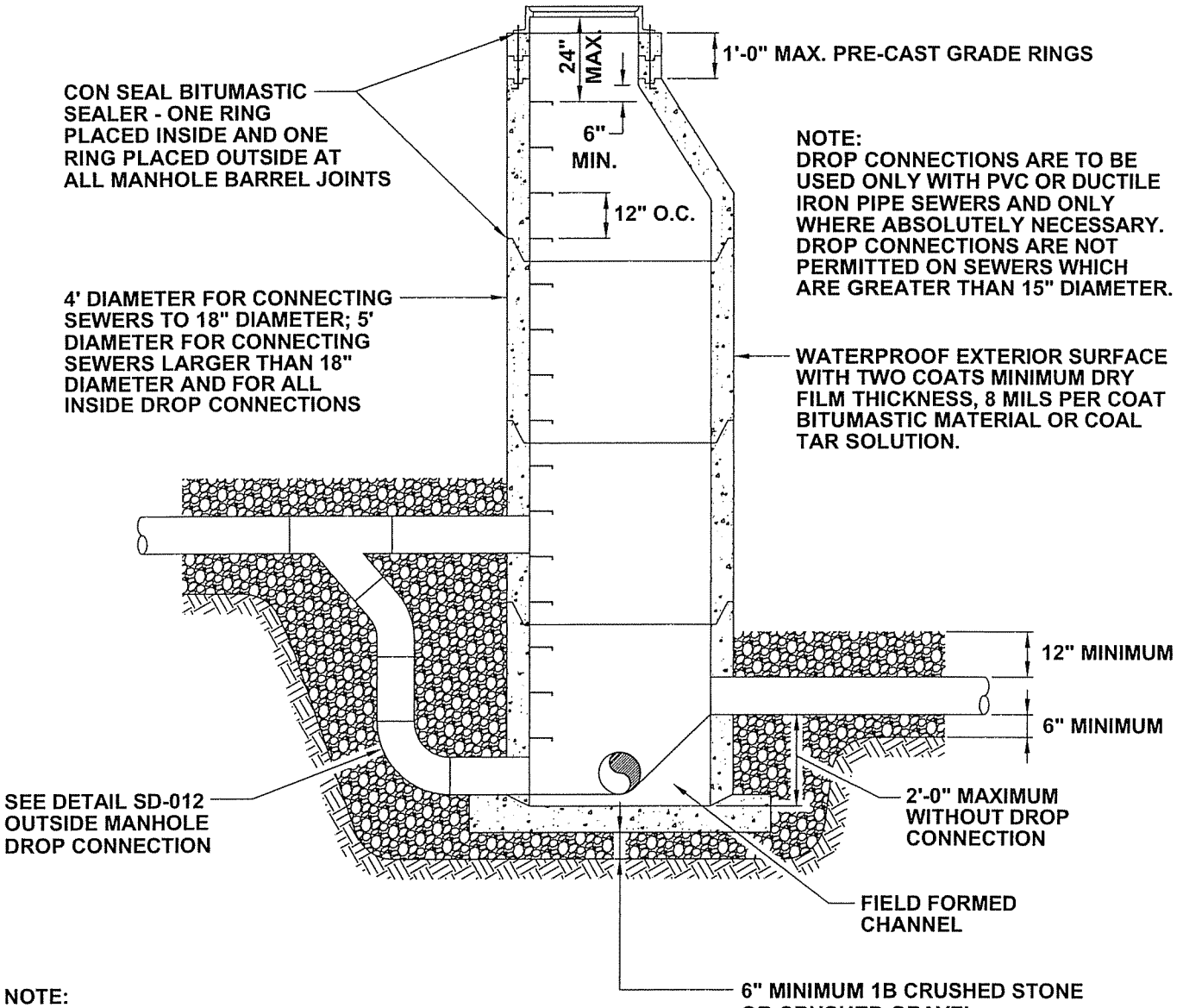
PRECAST CONCRETE MANHOLE FOR SEWERS 20" TO 33"

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-016

REFERENCE DETAILS

TOP OF MANHOLE	SD-015
MANHOLE FRAME & COVER	SD-019 OR SD-020
LADDER BARS	SD-021
PIPE CONNECTOR	SD-012

MANHOLE BARREL SHALL BE PRECAST CONCRETE MEETING ASTM C478, LATEST REVISION



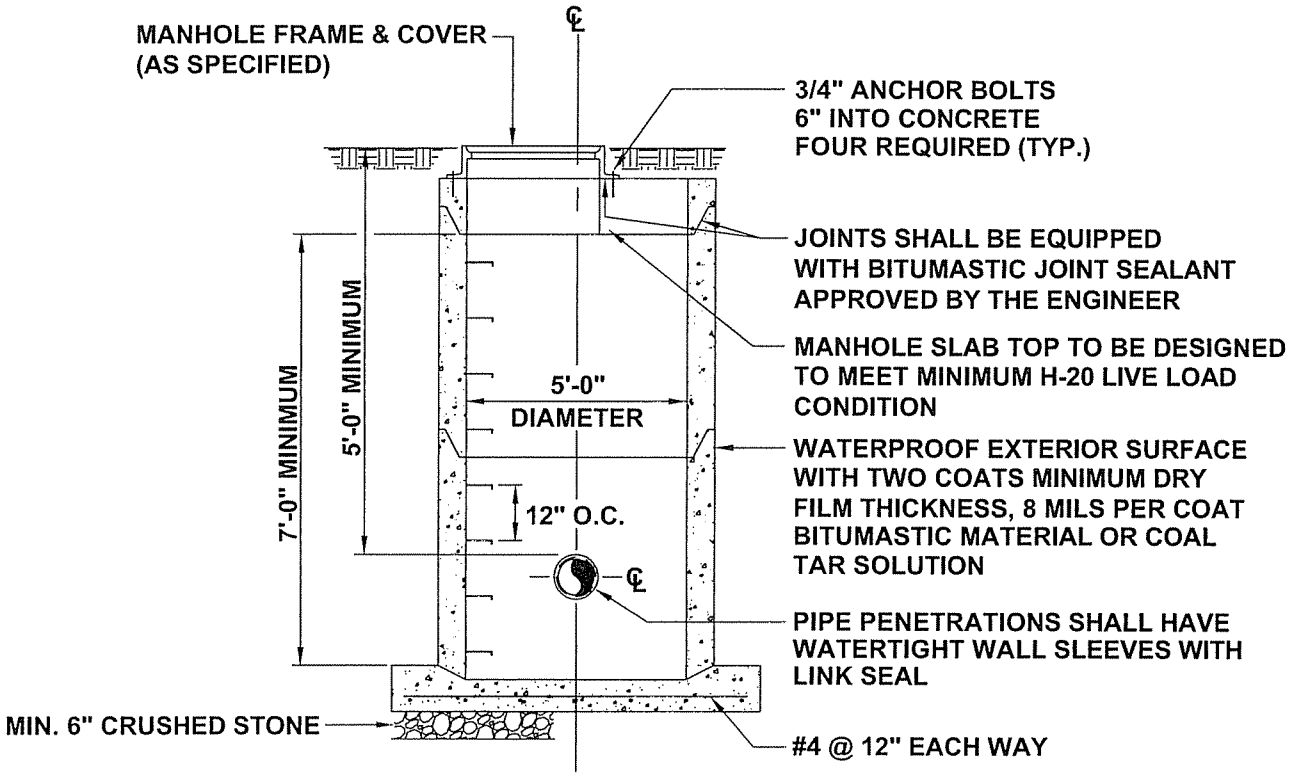
NOTE:
SUPPORT MANHOLE STRUCTURE AND ALL PIPING CONNECTIONS ON A MINIMUM OF 6" THICKNESS 1B BEDDING MATERIAL. ENCAPSULATE ALL PIPES WITHIN MANHOLE EXCAVATION IN THE SAME MATERIAL TO AN ELEVATION OF 12" ABOVE THE TOP OF PIPES. WHERE MANHOLE FOUNDATION IS IN ROCK, REINFORCEMENT WILL NOT BE REQUIRED. MANHOLE DROP CONNECTIONS SHALL BE CONCRETE ENCASED.

*NOTE:
IF MANHOLE IS LESS THAN 5'-0", USE A PRECAST CONCRETE SLAB ON TOP AS SHOWN ON SD-015, SECTION 015-A1

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
MANHOLE FOR SEWERS FOR DEPTHS GREATER THAN 5 FEET

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-017



SECTION

NOTES:

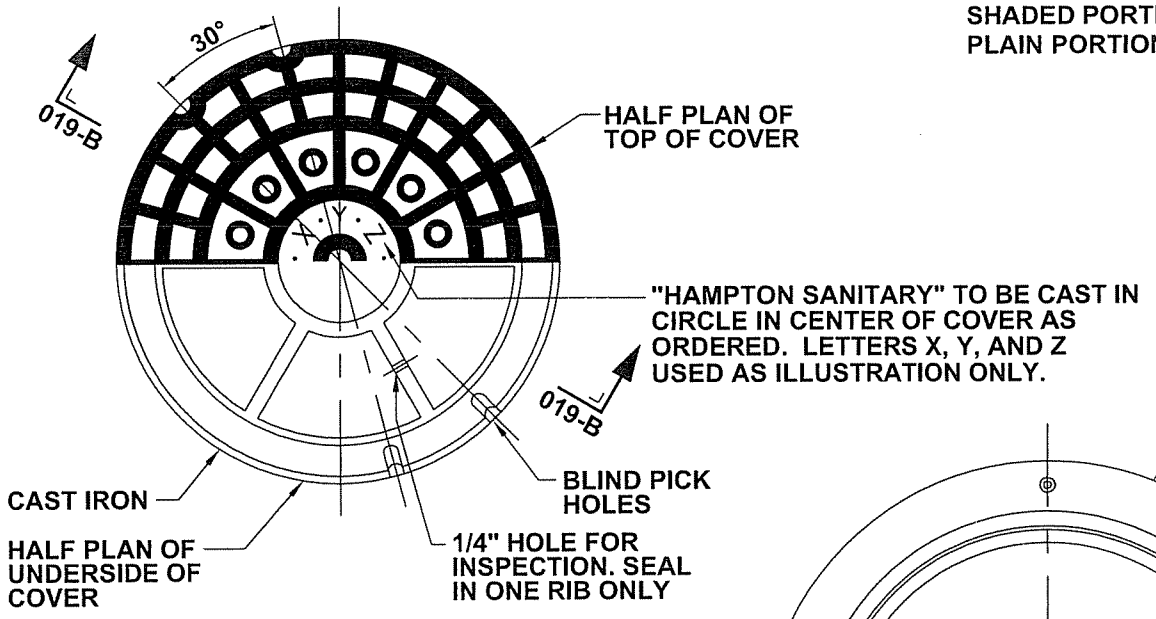
1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM-C478, LATEST REVISION.
2. WHERE MANHOLE FOUNDATION IS IN ROCK, REINFORCEMENT WILL NOT BE REQUIRED.
3. LIFTING HOLES SHALL BE PAINTED WITH MORTAR, MADE WATERTIGHT & LEFT NEAT & SMOOTH
4. SUPPORT MANHOLE STRUCTURE AND ALL PIPING CONNECTIONS ON A MINIMUM OF 6" THICKNESS 1B BEDDING MATERIAL. ENCAPSULATE ALL PIPES WITHIN MANHOLE EXCAVATION IN THE SAME MATERIAL TO AN ELEVATION OF 12" ABOVE THE TOPS OF PIPES.

HAMPTON TOWNSHIP

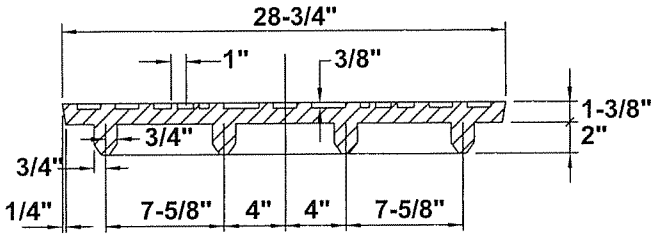
TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
AIR/ VACUUM VALVE
PRECAST CONCRETE MANHOLE VAULT

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-018

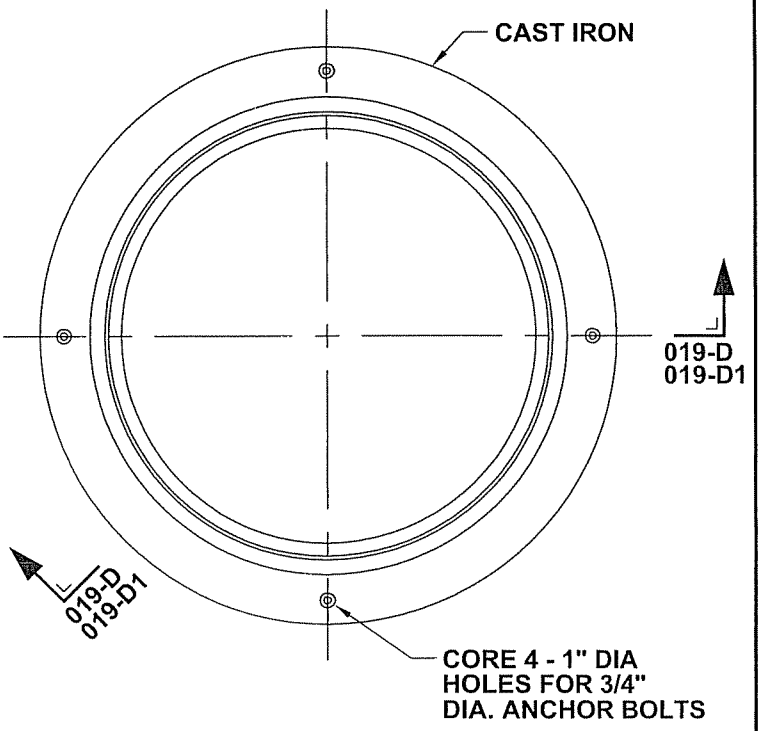
SHADED PORTION - HIGH
PLAIN PORTION - LOW



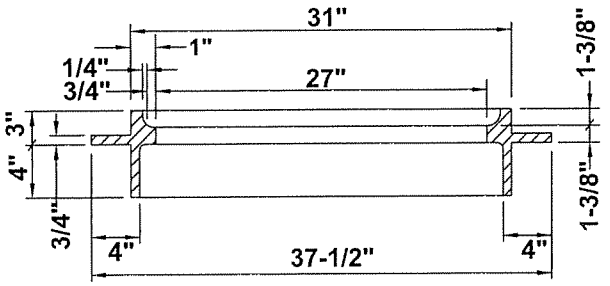
PLAN 019-A



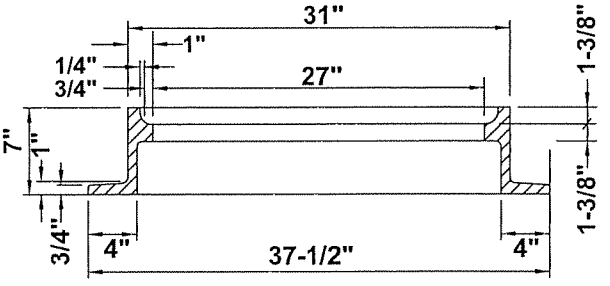
SECTION 019-B



PLAN 019-C



CAST IN PLACE - SECTION 019-D1

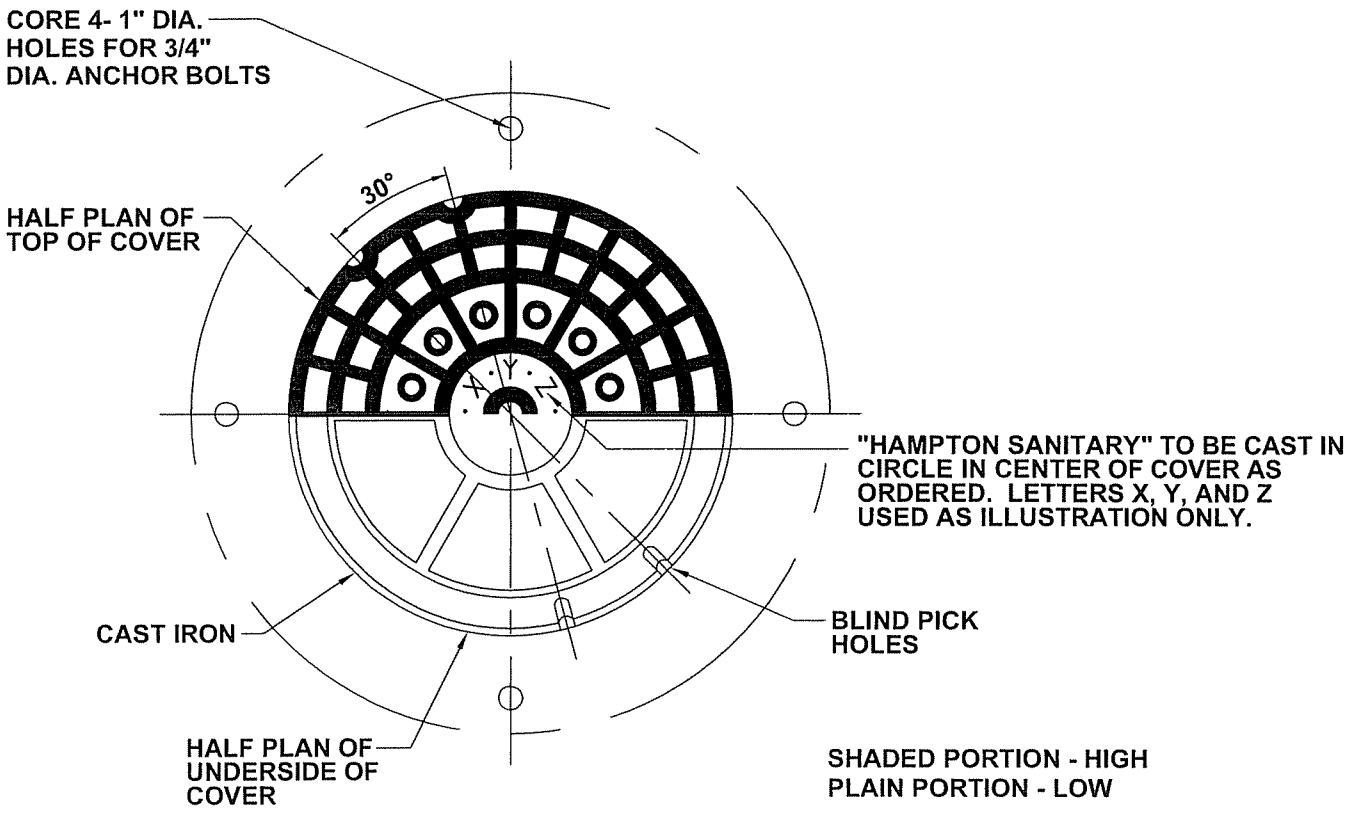


BOTTOM FLANGE - SECTION 019-D

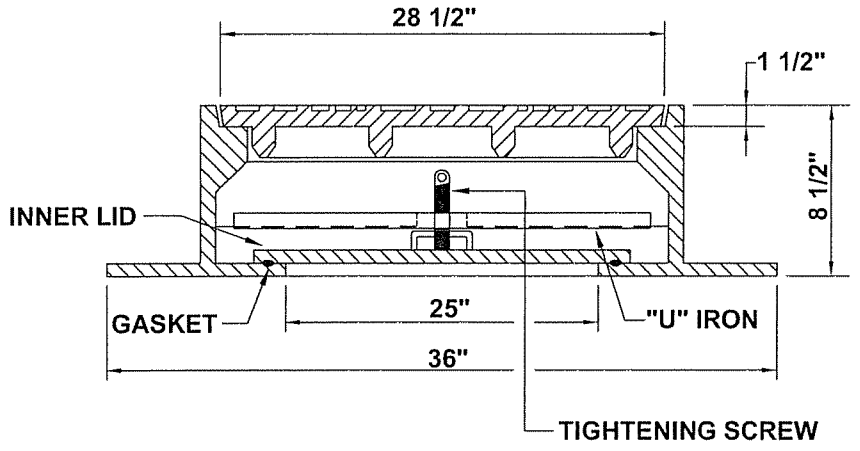
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
STANDARD CAST IRON MANHOLE FRAME AND COVER

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-019



PLAN 020-A

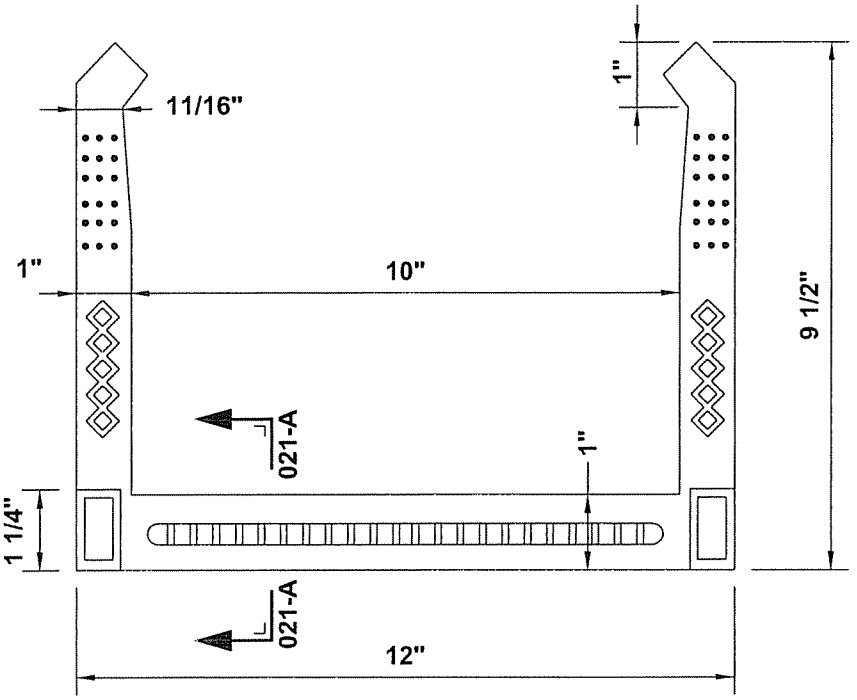


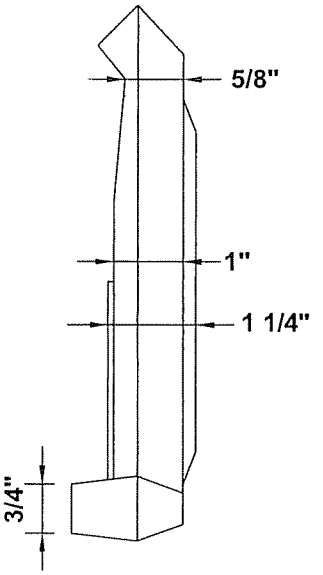
SECTION 020-B

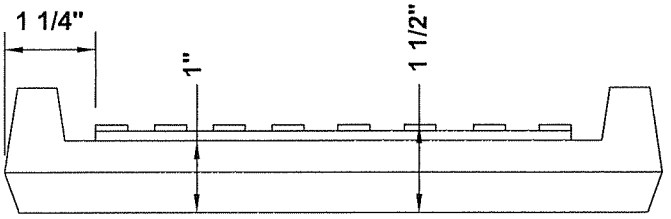
HAMPTON TOWNSHIP

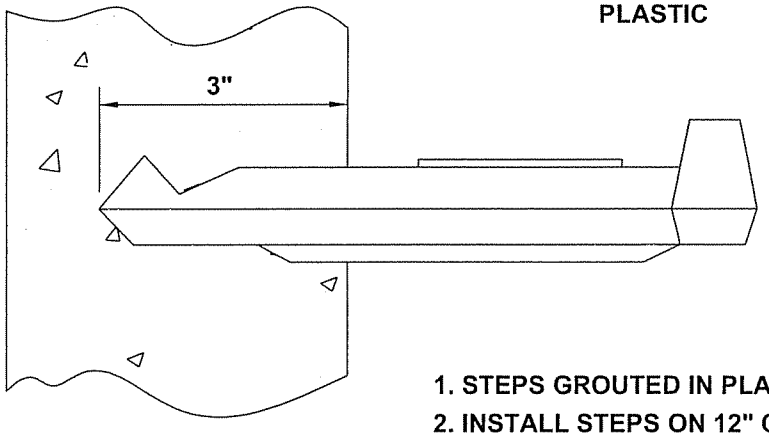
TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
WATERTIGHT MANHOLE (WT) FRAME AND COVER

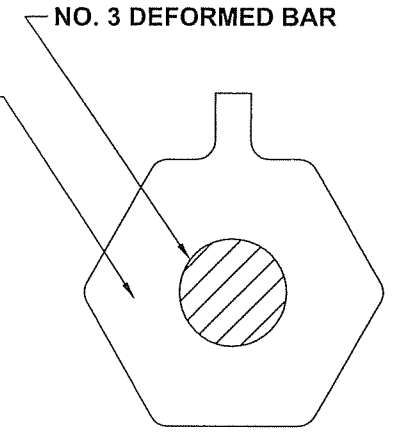
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-020











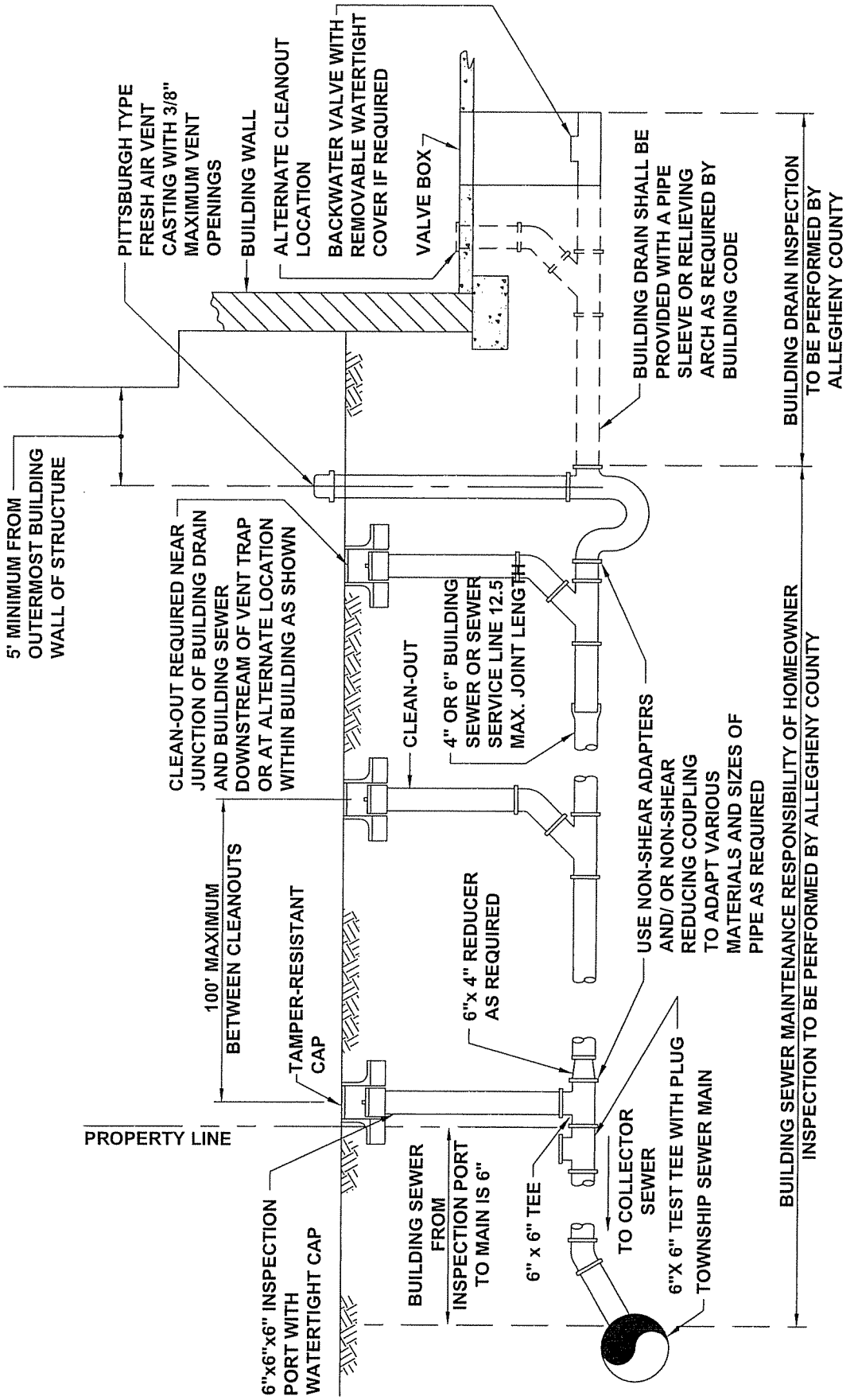
1. STEPS GROUTED IN PLACE
2. INSTALL STEPS ON 12" C:C

SECTION 021-A

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
POLYPROPYLENE PLASTIC MANHOLE STEP

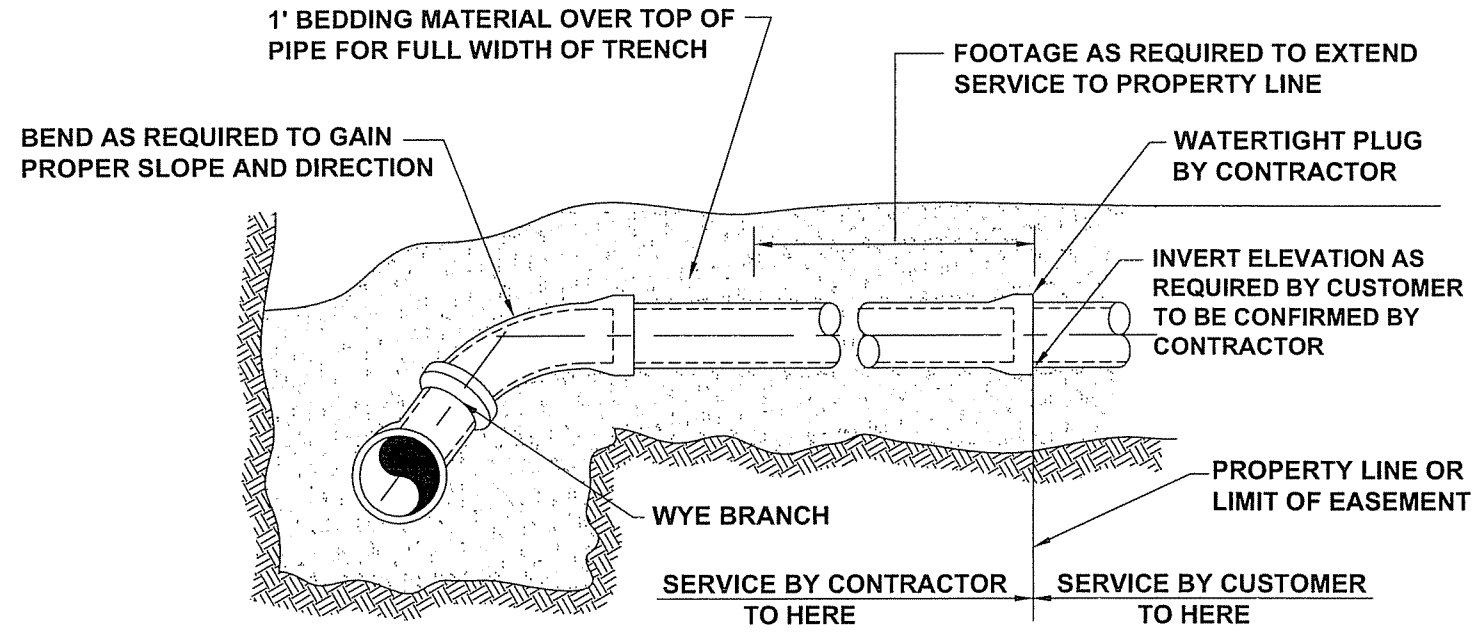
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-021



HAMPTON TOWNSHIP

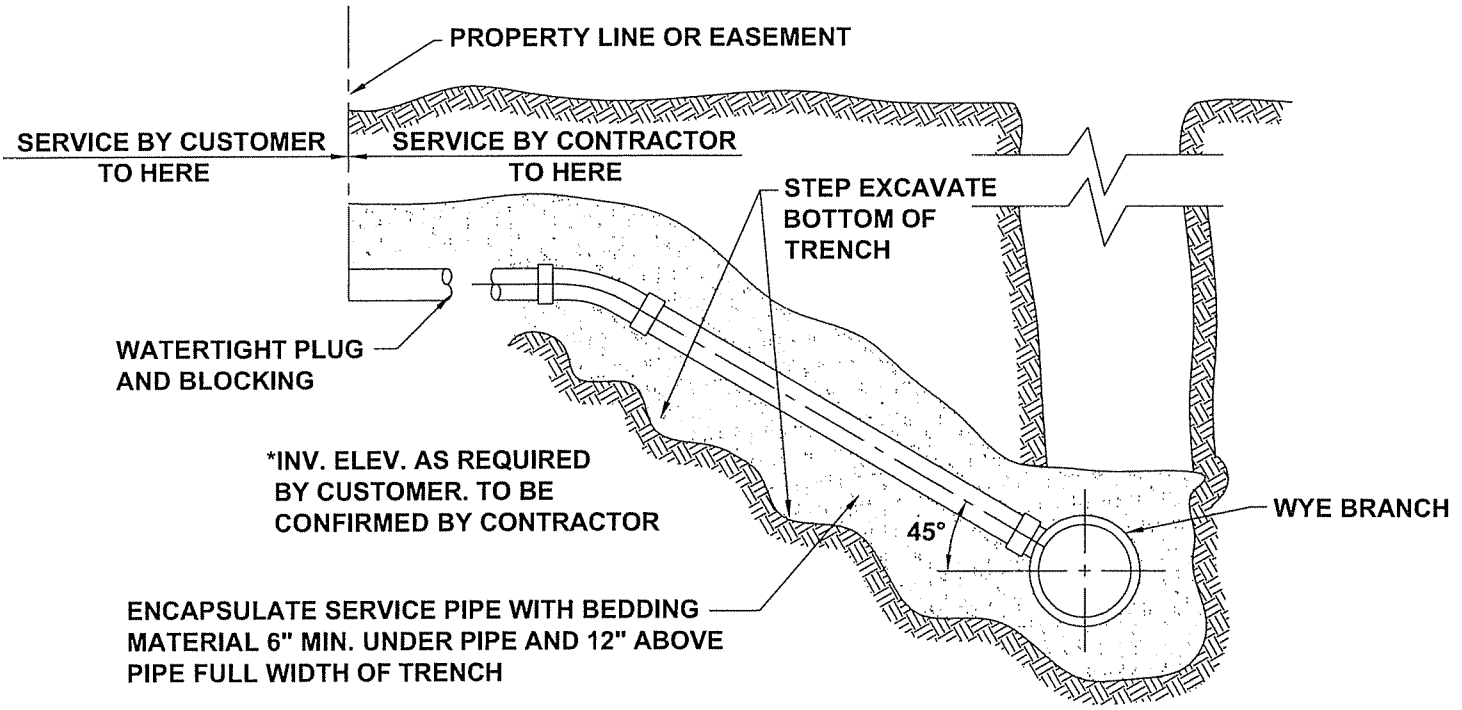
TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
BUILDING SEWER

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-022



NOTE:
WHERE MAIN SEWER IS IN PRIVATE PROPERTY, FOOTAGE OF LATERAL PIPE WILL EXTEND TO THE EDGE OF SEWER RIGHT-OF-WAY.

TYPE I



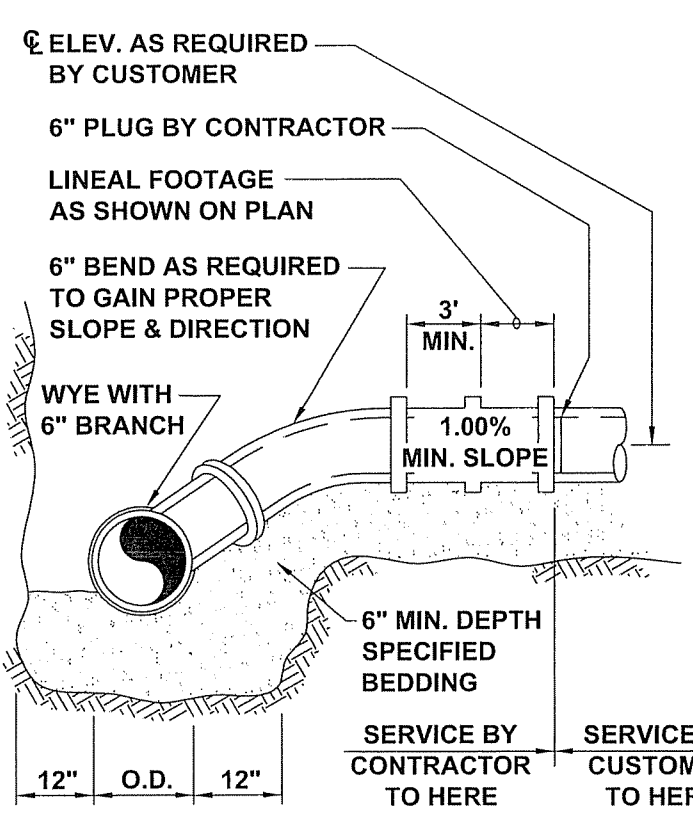
NOTE:
ALL SERVICE SEWERS SHALL BE 6" DIAMETER AND SHALL BE PVC PIPE. CHANGES IN ALIGNMENT AND CONNECTIONS TO MAIN SEWER SHALL BE ACCOMPLISHED WITH PREFABRICATED FITTINGS.

TYPE II

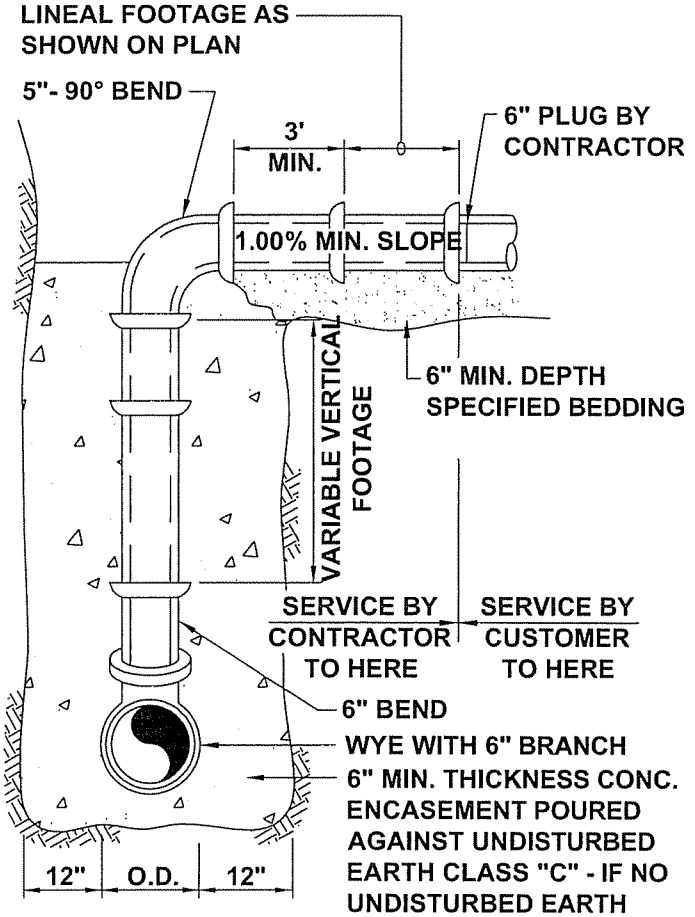
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
TYPICAL SERVICE LATERAL CONNECTIONS

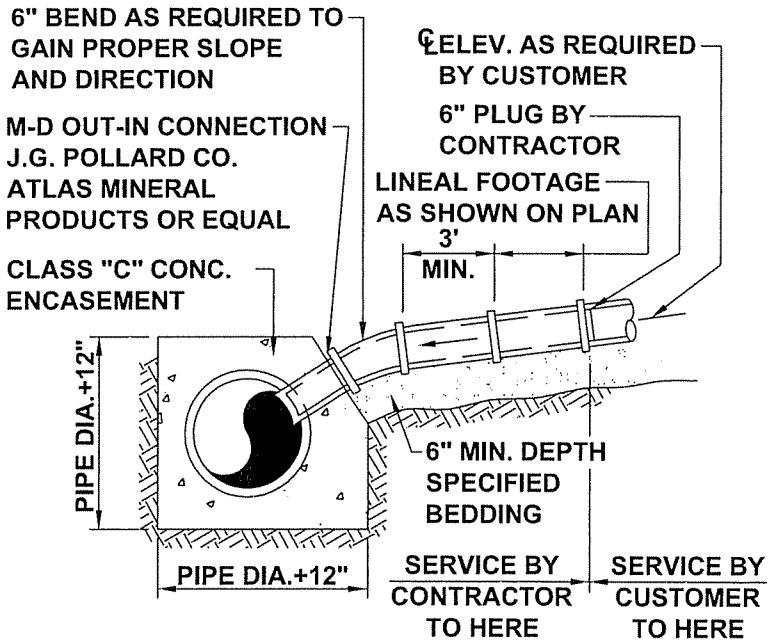
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-023



TYPE I



TYPE II

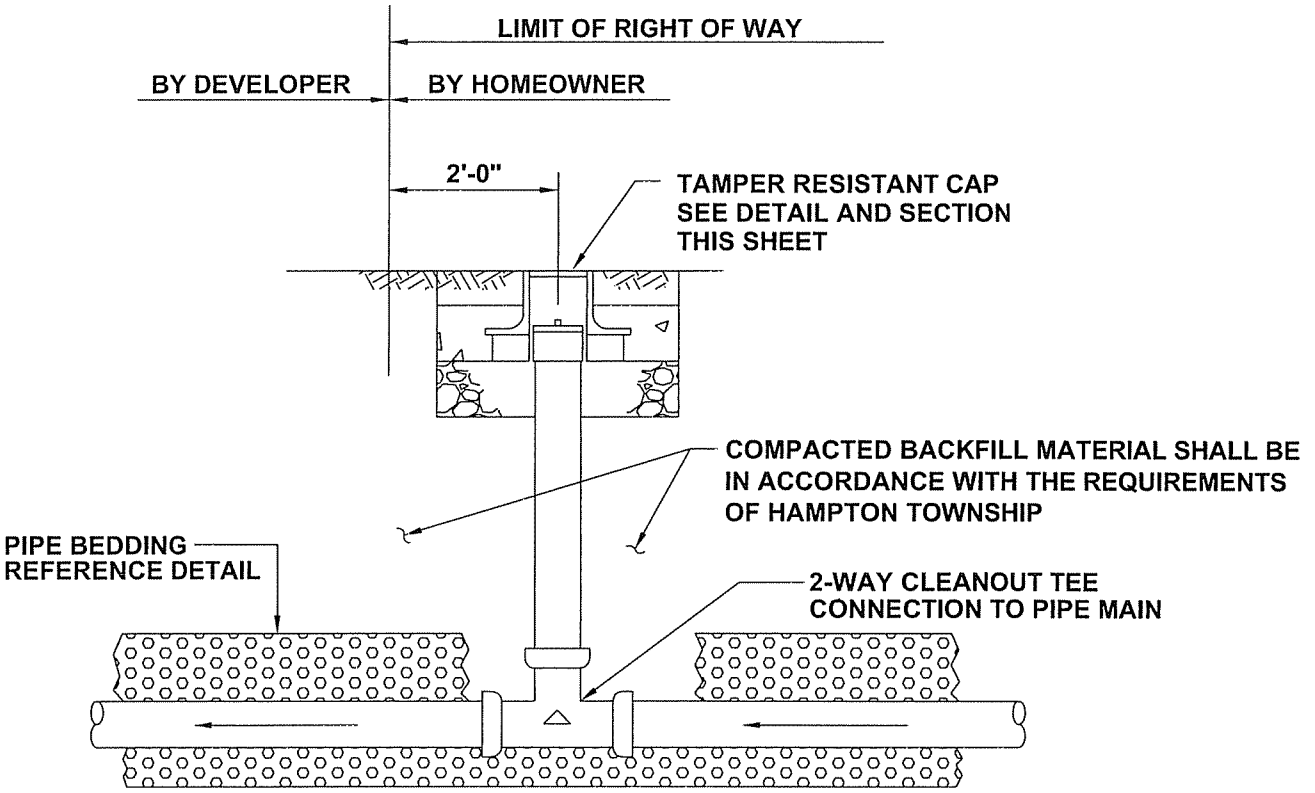


TYPE III

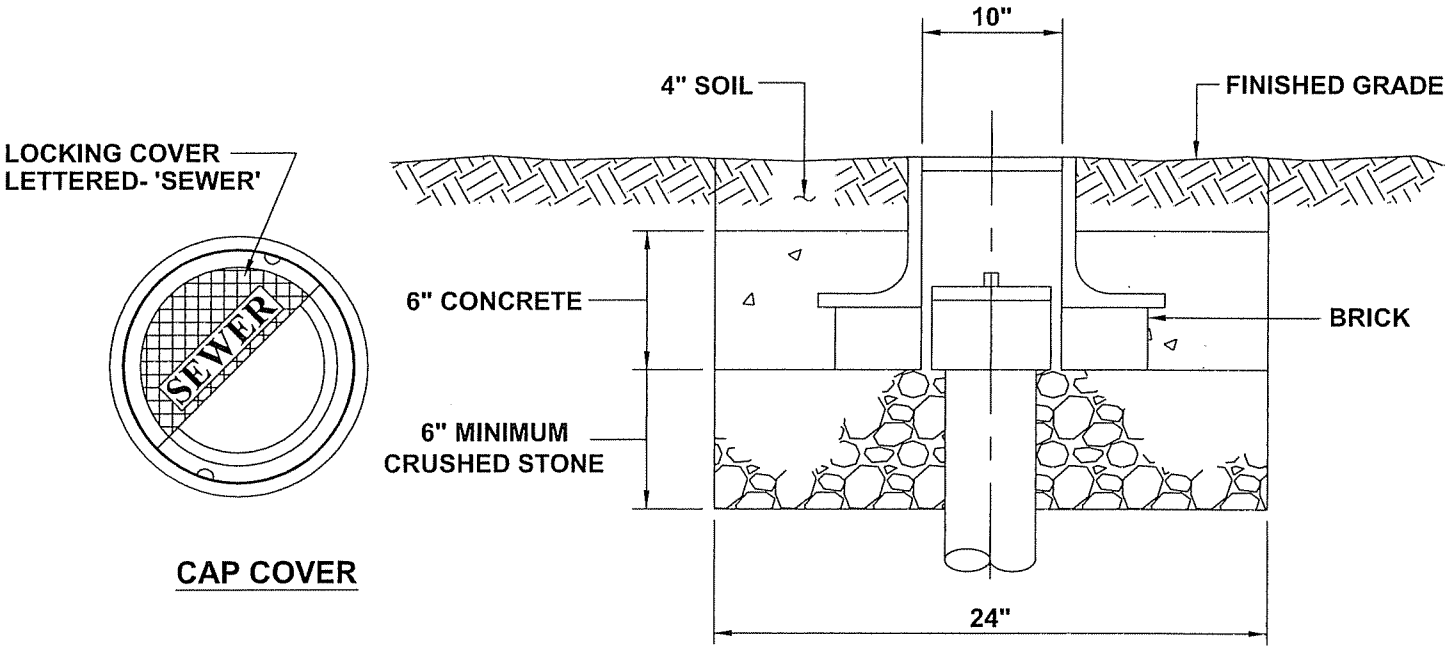
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
SERVICE CONNECTIONS

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-024



OBSERVATION PORT SECTION



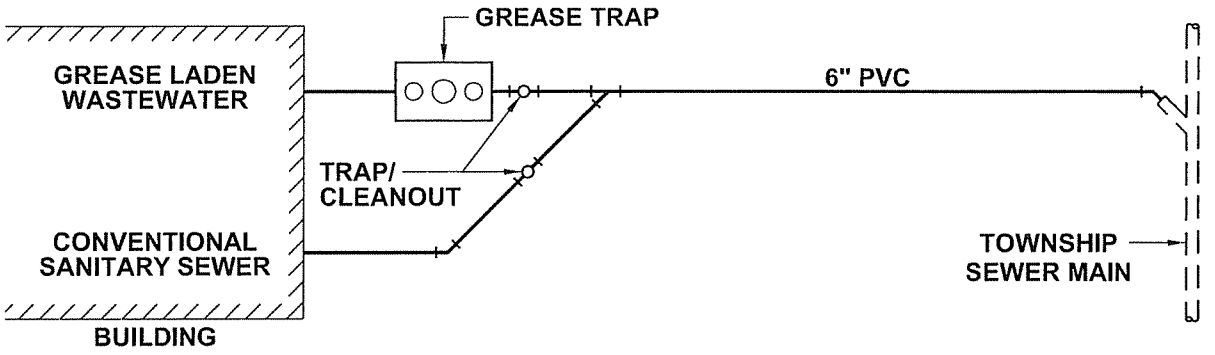
CAP COVER

CAP SECTION

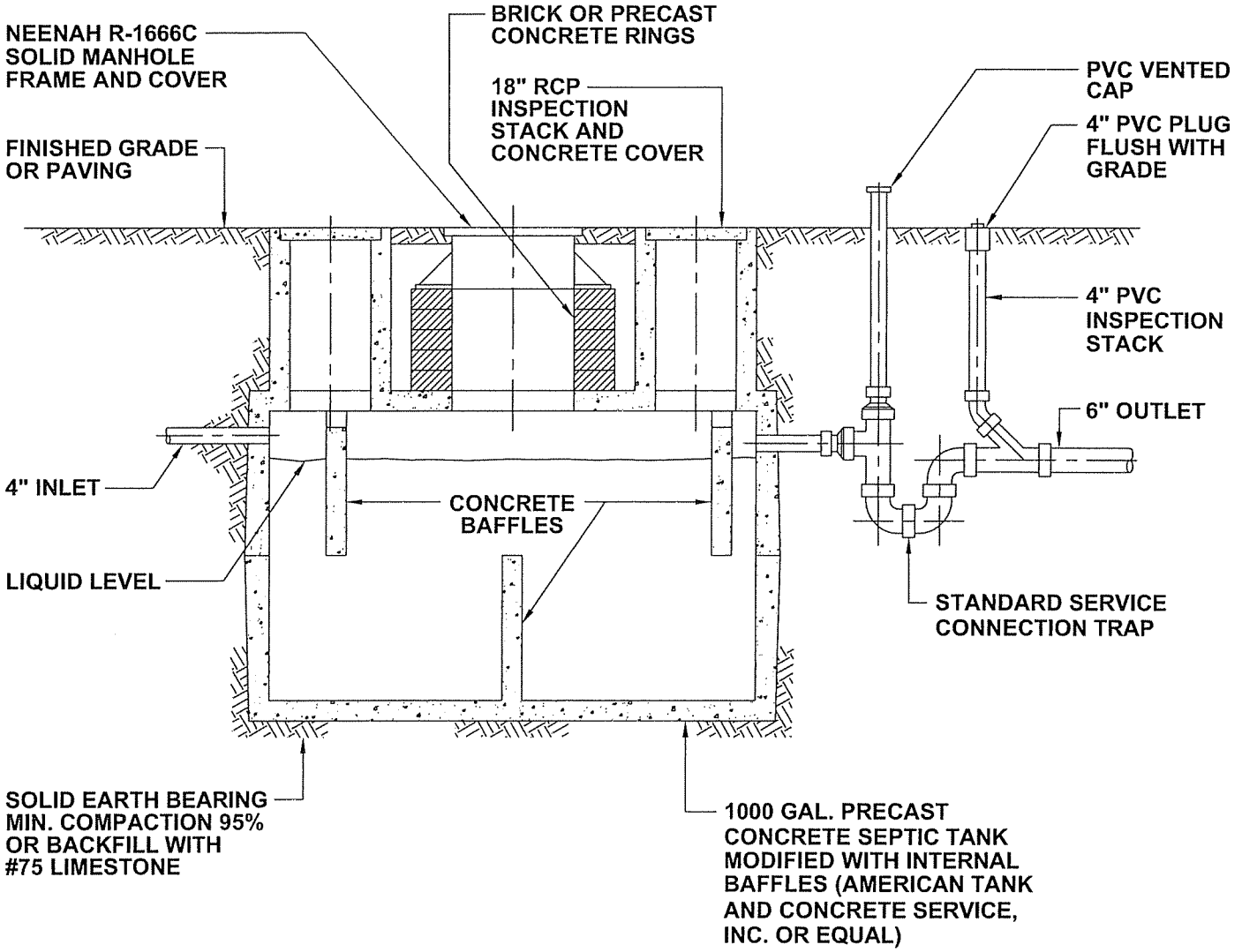
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
SERVICE LINE
OBSERVATION PORT

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-025



GENERAL SITE ARRANGEMENT

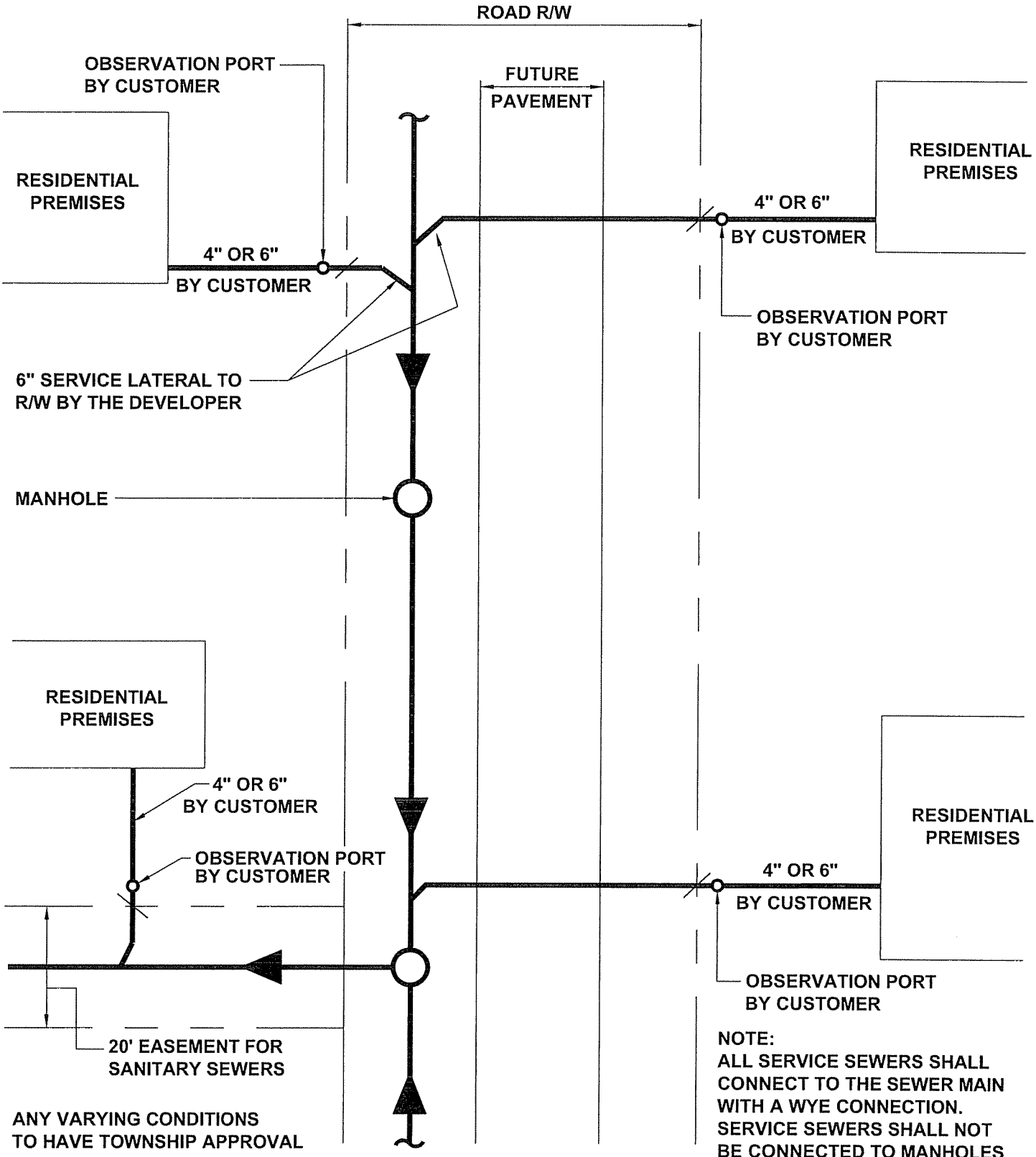


SECTION

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
TYPICAL GREASE TRAP INSTALLATION DETAIL

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-026



HAMPTON TOWNSHIP

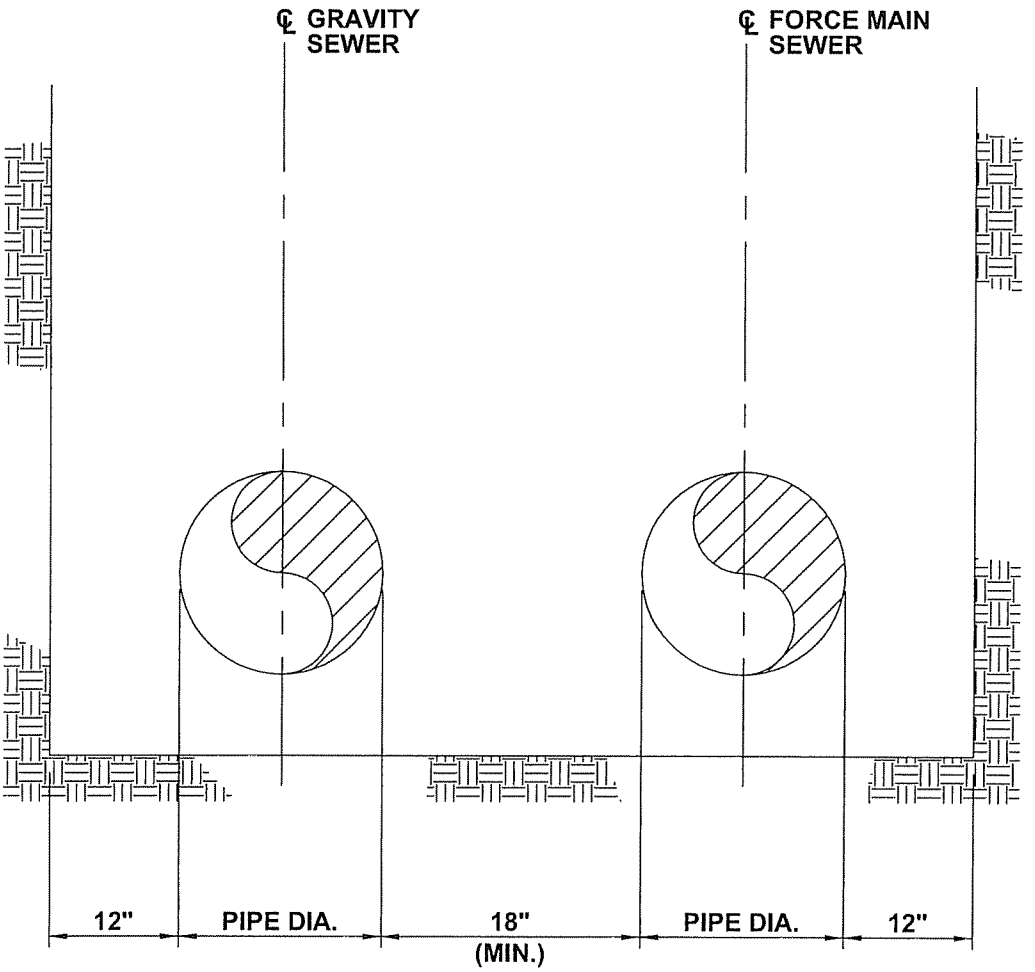
TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

RESIDENTIAL SERVICE LINE CONNECTIONS

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-027

REFERENCE TRENCH ZONE DETAILS SD-001 AND PIPE BEDDING SD-002

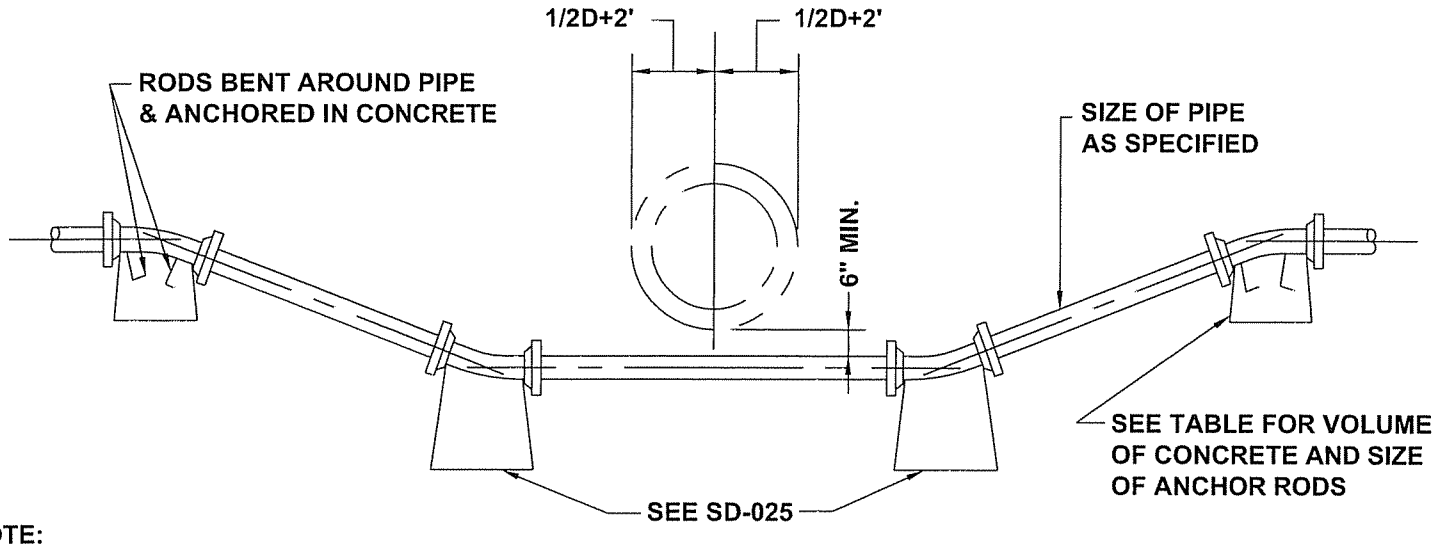


* NOTE: FORCE MAIN TO BE INSTALLED ON RISING GRADIENT

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
GRAVITY SEWER AND FORCE MAIN CONSTRUCTED PARALLEL IN COMMON TRENCH

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-028



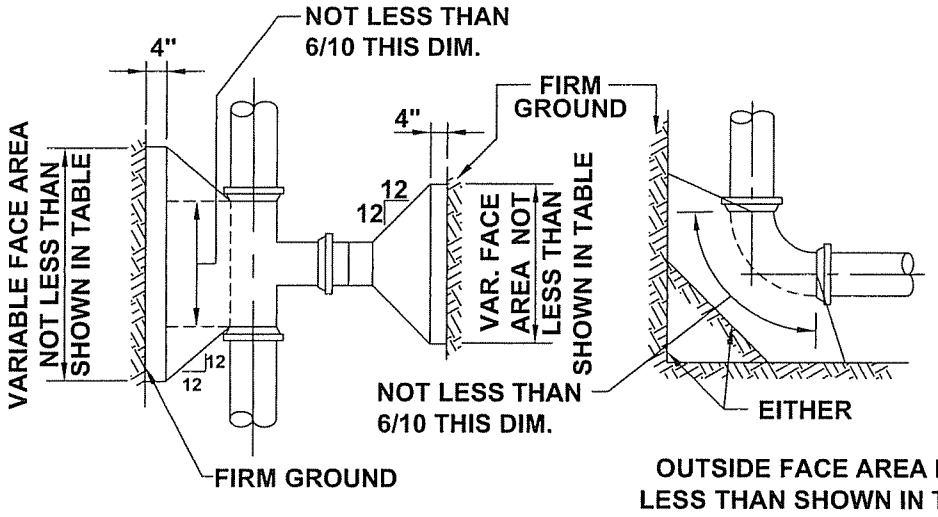
NOTE:
THE TABLE IS BASED ON 225 PSI TEST PRESSURE. ALL BLOCKS HAVING LENGTH OF 3'-0" OR MORE TO BE REINFORCED WITH #4 @ 6" PLACED 3" FROM TOP OF BLOCK.

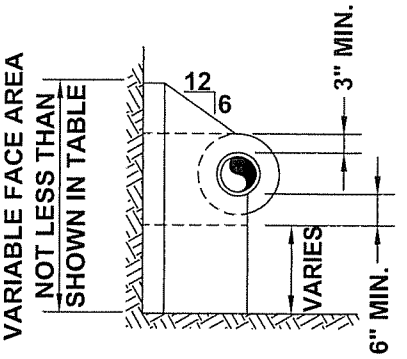
		VOLUME IN CUBIC FEET			SIZE AND NO. OF ANCHOR RODS		
PIPE SIZE	TOTAL FORCE (lbs)	45 DEGREE BENDS	22 1/2 DEGREE BENDS	11 1/4 DEGREE BENDS	45 DEGREE BENDS	22 1/2 DEGREE BENDS	11 1/4 DEGREE BENDS
4	4275	22.7	11.6	5.9	1-#4	1-#4	1-#4
6	8550	45.5	23.3	11.9	2-#4	1-#4	1-#4
8	14625	77.8	39.6	20.3	2-#4	2-#4	1-#4
10	21825	116.1	59.1	30.3	2-#4	2-#4	2-#4
12	30825	164.0	83.5	42.8	2-#5	2-#4	2-#4
14	41400	220.2	112.1	57.5	2-#6	2-#4	2-#4
16	53550	284.9	145.0	73.4	2-#7	2-#5	2-#4
18	67275	357.9	182.2	93.4	2-#7	2-#5	2-#4
20	82575	439.2	223.6	114.7	2-#8	2-#6	2-#4
24	117675	626.0	318.7	183.4	2-#9	2-#7	2-#5

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
CONCRETE ANCHORS AND METHOD OF LAYING FORCE MAINS UNDER OBSTRUCTIONS

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-029





BLOCKING FOR TEES AND PLUGS

BLOCKING FOR BENDS

APPLICABLE TO TEES, WYES, AND BENDS

NOTES:

1. ALL TEES, WYES, CROSSES, PLUGS AND BENDS OF 10° OR MORE SHALL BE BLOCKED AGAINST FIRM EARTH WITH CONCRETE.
2. EARTH PRESSURE FIGURED AT 4000 PSF. IF EARTH ENCOUNTERED WILL NOT WITHSTAND THIS PRESSURE, THE AREA OF THE BLOCK MUST BE INCREASED PROPORTIONATELY.

			AREA OF BLOCK IN SQUARE FEET				
PIPE SIZE (in)	AREA* (sq in)	TOTAL FORCE (lbs)	TEES & PLUGS	90 DEGREE BENDS	45 DEGREE BENDS	22 1/2 DEGREE BENDS	11 1/4 DEGREE BENDS
4	19	4275	1.1	1.5	1.0	1.0	1.0
6	38	8550	2.2	3.0	1.6	1.0	1.0
8	65	14625	3.7	5.2	2.8	1.4	1.0
10	97	21825	5.5	7.7	4.2	2.1	1.1
12	137	30825	7.7	10.9	5.9	3.0	1.5
14	184	41400	10.4	14.6	7.9	4.0	2.1
16	238	53550	13.4	18.9	10.3	5.2	2.7
18	299	67275	16.8	23.8	12.9	6.6	3.4
20	367	82575	20.7	29.2	15.8	8.1	4.1
24	523	117675	29.4	41.6	22.5	11.5	5.9
30	805	96600	24.2	34.2	18.5	9.4	4.8
36	1152	138240	34.6	48.9	26.5	13.5	6.9

* BASED ON PIPE O.D. AND ROUNDED TO NEXT HIGHEST EVEN INCH.

CALCULATIONS ARE BASED ON 225 PSI PRESSURE OR 150 PSI WORKING PRESSURE PLUS 50 % INCREASE FOR WATER HAMMER FOR SIZES 4" TO 24" INCLUSIVE. FOR SIZES 30" & 36" THE TABLE IS BASED ON 120 PSI PRESSURE OR 75 PSI WORKING PRESSURE PLUS 50 % WATER HAMMER.

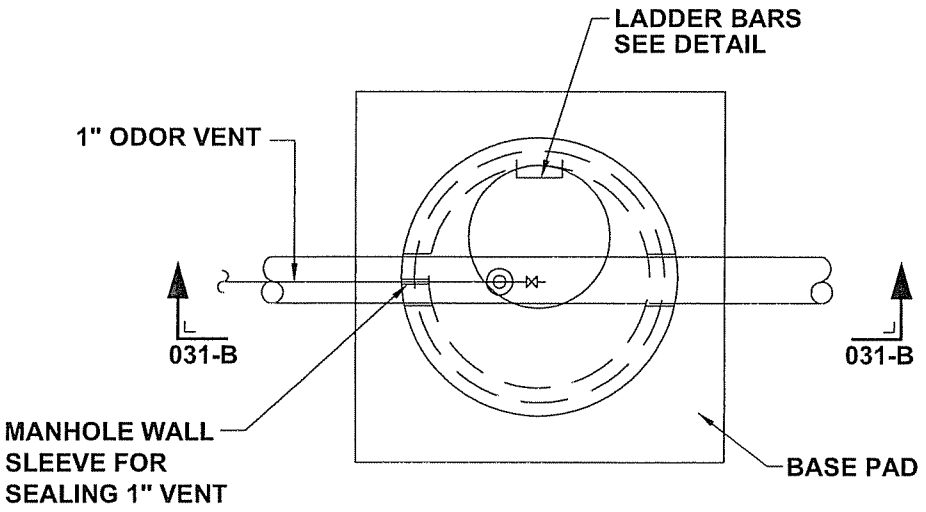
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

CONCRETE THRUST BLOCKING

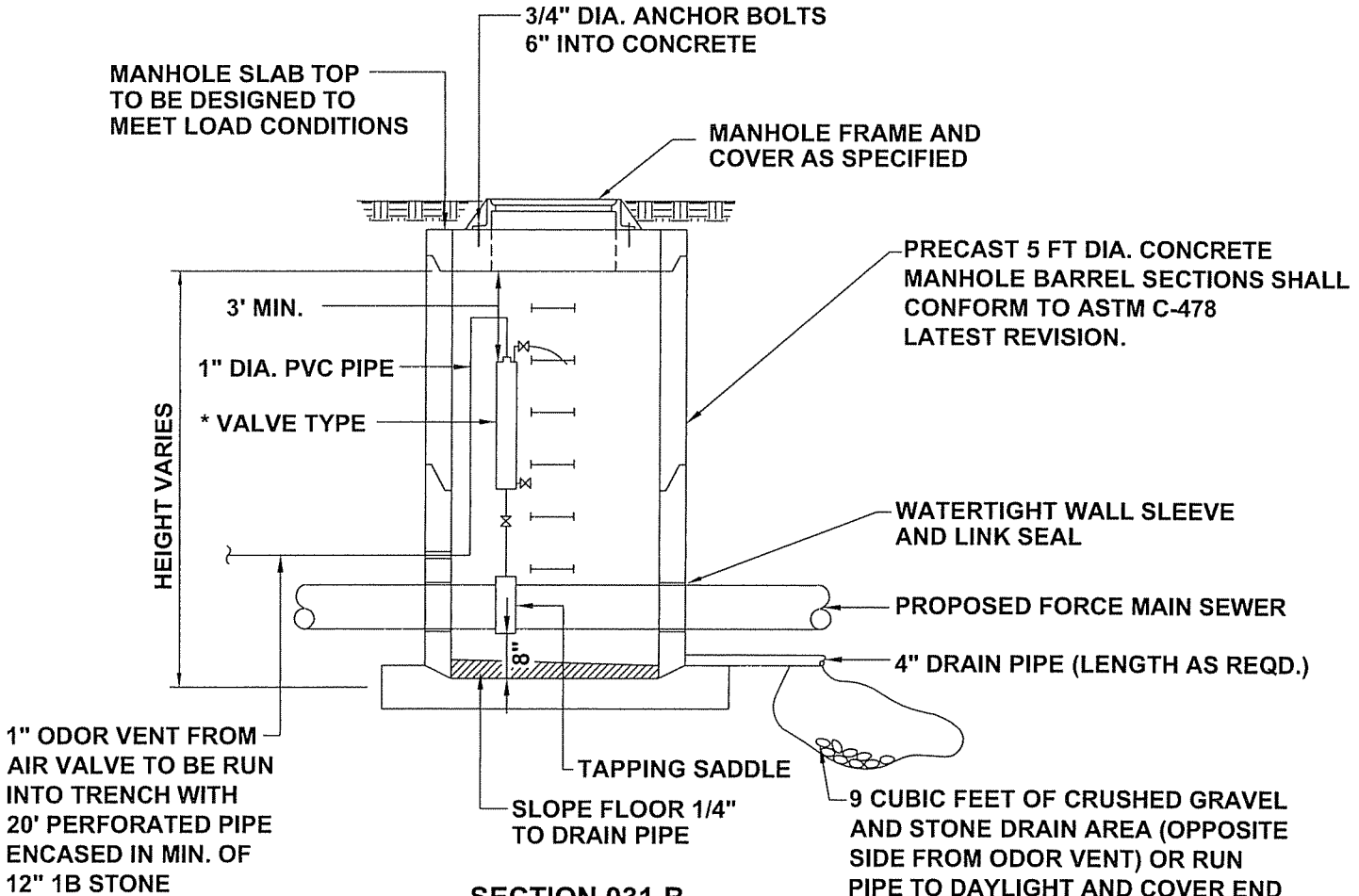
Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-030



* TYPE OF VALVE INSTALLED IN THE MANHOLE AS REQUIRED BY TOWNSHIP

1) AIR RELEASE VALVE
2) AIR VACUUM VALVE
3) COMBINATION AIR AND VACUUM VALVE AS SPECIFIED

PLAN 031-A



SECTION 031-B

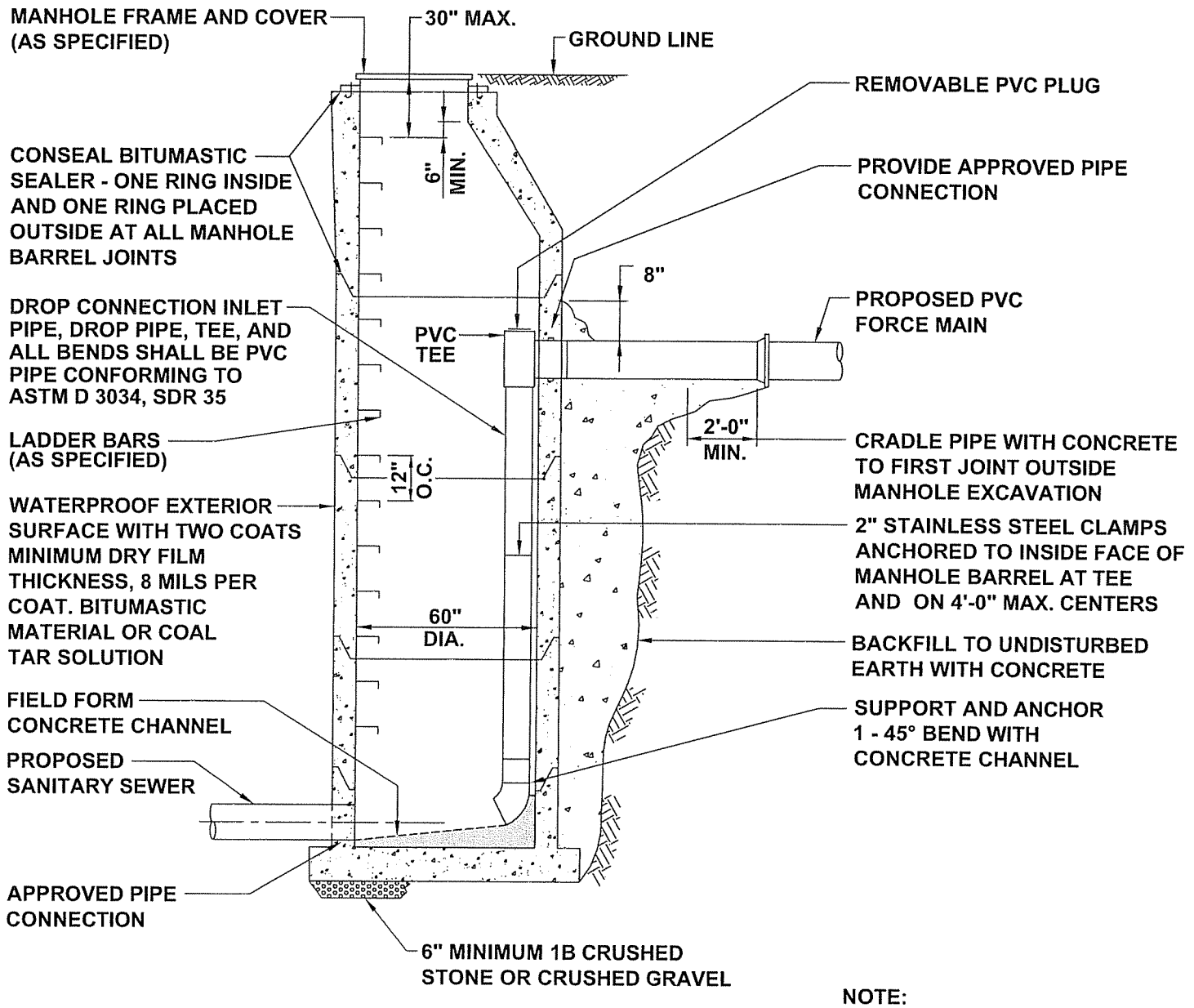
HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON

STANDARD SANITARY DETAILS

FORCE MAIN SEWER- SEWAGE AIR AND VACUUM RELEASE VALVE AND MANHOLE

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-031



NOTE:
THIS CONNECTION SHALL BE MADE ONLY BY APPROVAL FROM HAMPTON TOWNSHIP

HAMPTON TOWNSHIP

TOWNSHIP OF HAMPTON
STANDARD SANITARY DETAILS
CONNECTION OF FORCE MAIN TO GRAVITY MANHOLE

Date:	October 2005
Scale:	N.T.S.
Project Number:	50014
	SD-032