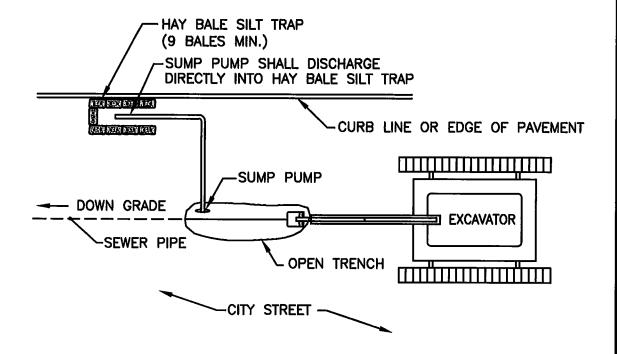
Appendix List of Details

Detail <u>Number</u>	<u>Description</u>
WSA-1	Hay Bale Silt Trap
WSA-2	Catchbasin Erosion Control
WSA-3	Sanitary Manhole
WSA-4	Flat Slab Manhole Top
WSA-5	Sanitary Manhole Cover
WSA-6	Manhole Invert Table
WSA-7	Manhole Step
WSA-8	Drop Manhole Detail
WSA-9	Drop Manhole on Existing Line
WSA-10	Permanent Trench Pavement
WSA-11	Temporary Bituminous Wedge at Structures
WSA-12	Bituminous Overlay
WSA-13	Cut & Match Pavement – Local Street
WSA-14	Cold Plane at Residential Driveway
WSA-15	Typical Trench
WSA-16	Typical Service Connection Plan (less than 10' depth)
WSA-17	Typical Service Connection Profile (less than 10' depth)
WSA-18	House Connection Marker
WSA-19	Chimney Plan and Profile for Service Connections (10' depth or greater)
WSA-20	Chimney Details for Service Connections (10' depth or greater)
WSA-21	Service Cleanout
WSA-22	Typical LPSS Service Connection
WSA-23	LPSS Manhole Drop Connection
WSA-24	Force Main Air Release Manhole
WSA-25	Force Main Cleanout Manhole
WSA-26	Grease Trap
WSA-27	Pipe Cradle
WSA-28	Thrust Block Details (Tees and End Caps)
WSA-29	Thrust Block Details (Horizontal and Vertical Bends)
WSA-30	Anchor Block Details
WSA-31	LPSS In-Line Cleanout
WSA-32	LPSS Main End
WSA-33	Typical Trench Dam

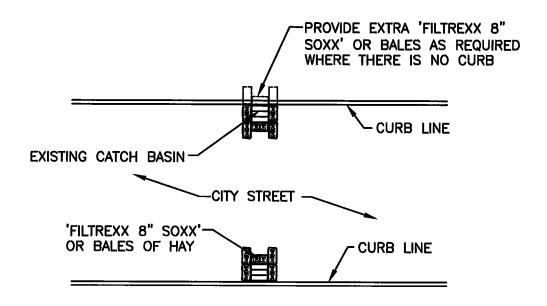


- 1. HAY BALE SILT TRAPS SHALL BE INSTALLED AND MAINTAINED AT THE DISCHARGE OF ALL SUMP PUMPS USED FOR DEWATERING OF TRENCHES.
- 2. SILT TRAPS SHALL BE MAINTAINED AND CLEANED AS OFTEN AS NECESSARY TO EFFECTIVELY CONTAIN SILT.
- 3. SILT REMOVED FROM SILT TRAP SHALL BE DISPOSED BY THE CONTRACTOR. RE-USE BY MIXING WITH MATERIAL EXCAVATED FROM TRENCH AND USED AS BACKFILL IS SUBJECT TO CONFORMANCE WITH MATERIAL SPECIFICATIONS.

Detail No. WSA - 1 Hay Bale Silt Trap Contract DD Date: May 2017 Scale: Not to Scale



WARWICK SEWER AUTHORITY



APPROVED ALTERNATIVES TO BALED HAY INCLUDE 'FILTREXX 8" SOXX" OR SILTSACK (OR EQUAL)

Detail No. WSA - 2 Catchbasin Erosion Control

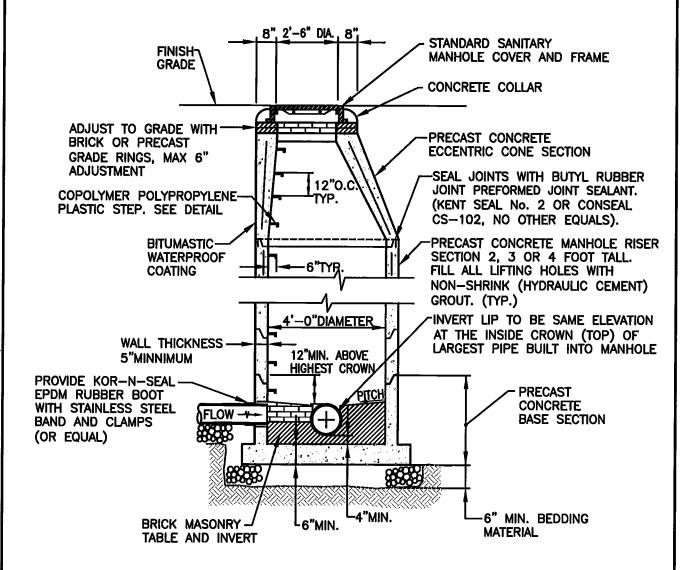
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY



- 1. ALL JOINTS SHALL BE TONGUE AND GROOVE WITH BUTYL RUBBER JOINT PREFORMED SEALANT.
- 2. ALL LIFTING HOLES OR INDENTS ARE TO BE SEALED WITH NON-SHRINKING (HYDRAULIC CEMENT) GROUT.

Detail No. WSA - 3 Sanitary Manhole

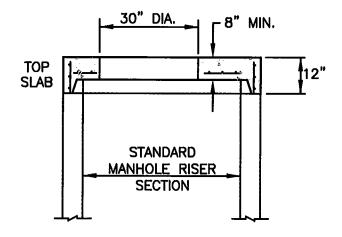
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY



SLAB SHALL BE DESIGNED FOR H-20 HIGHWAY LOADING AND SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM-C-478

Detail No. WSA - 4 Flat Slab Manhole Top

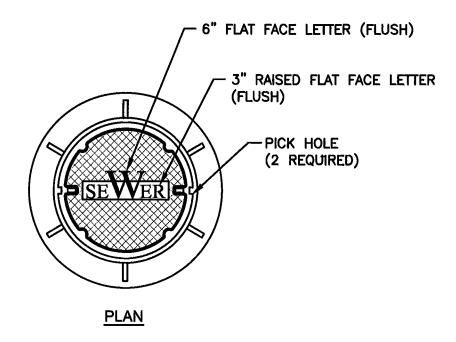
Contract DD

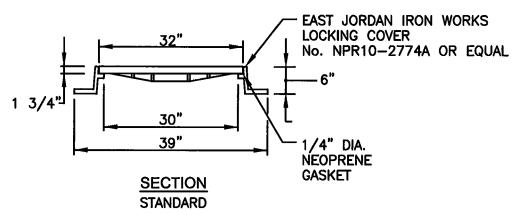
Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY





- 1. ALL MANHOLES SHALL RECEIVE STANDARD COVERS UNLESS OTHERWISE INDICATED ON THE PLANS.
- 2. COVERS TO HAVE NO VENT HOLES.
- 3. COVER MUST BE SUITABLE FOR H-20 HIGHWAY LOADING.

Detail No. WSA - 5 Sanitary Manhole Cover

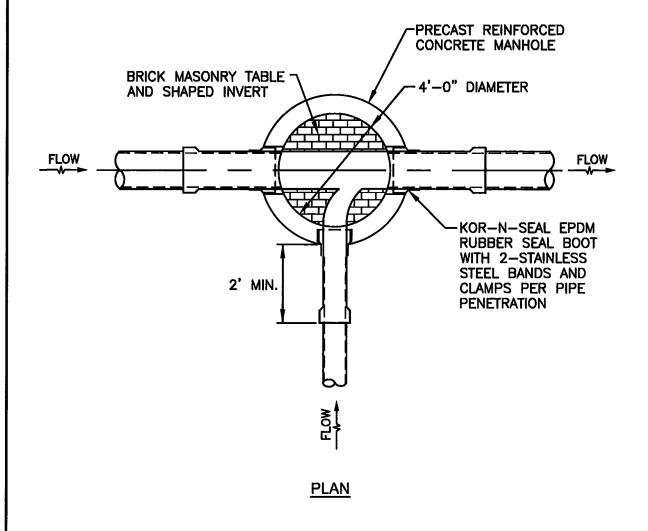
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY



- 1. MINIMUM INVERT DROP BETWEEN INLET AND OUTLET PIPE SHALL BE 0.1'.
- 2. MAXIMUM INVERT DROP BETWEEN INLET AND OUTLET SHALL BE 24".

Detail No. WSA - 6 Manhole Invert Table

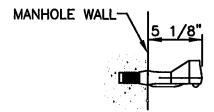
Contract DD

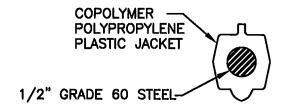
Date: May 2017

Scale: Not to Scale



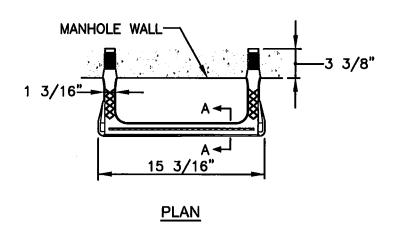
WARWICK SEWER AUTHORITY





SECTIONAL SIDE VIEW

SECTION A-A



Detail No. WSA -7 Manhole Step

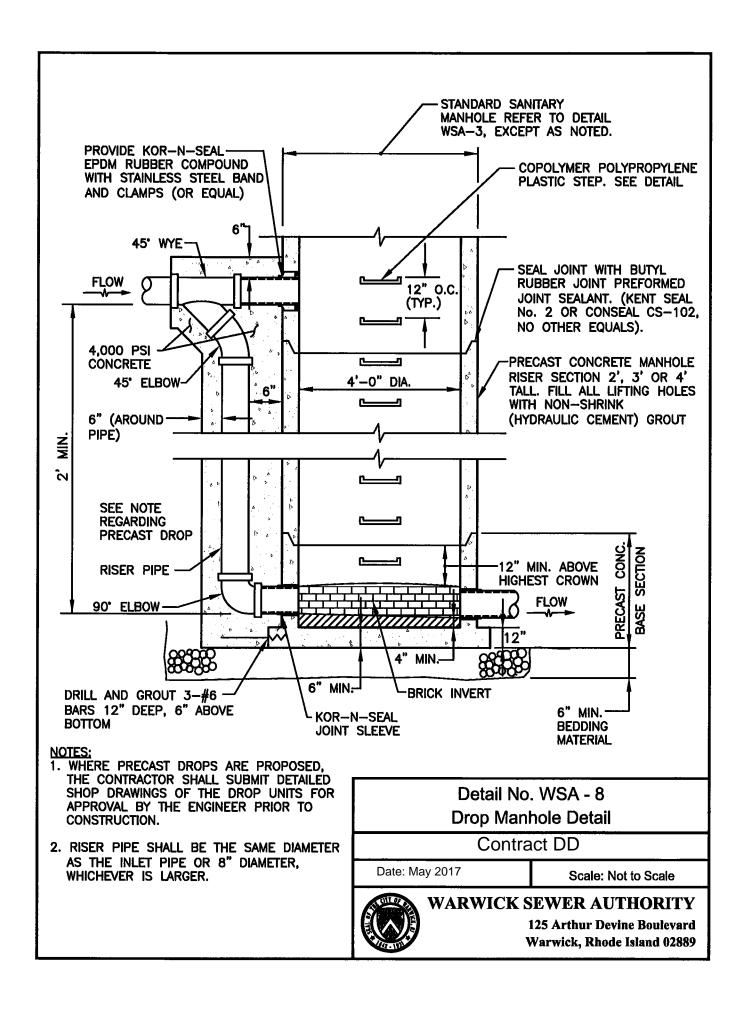
Contract DD

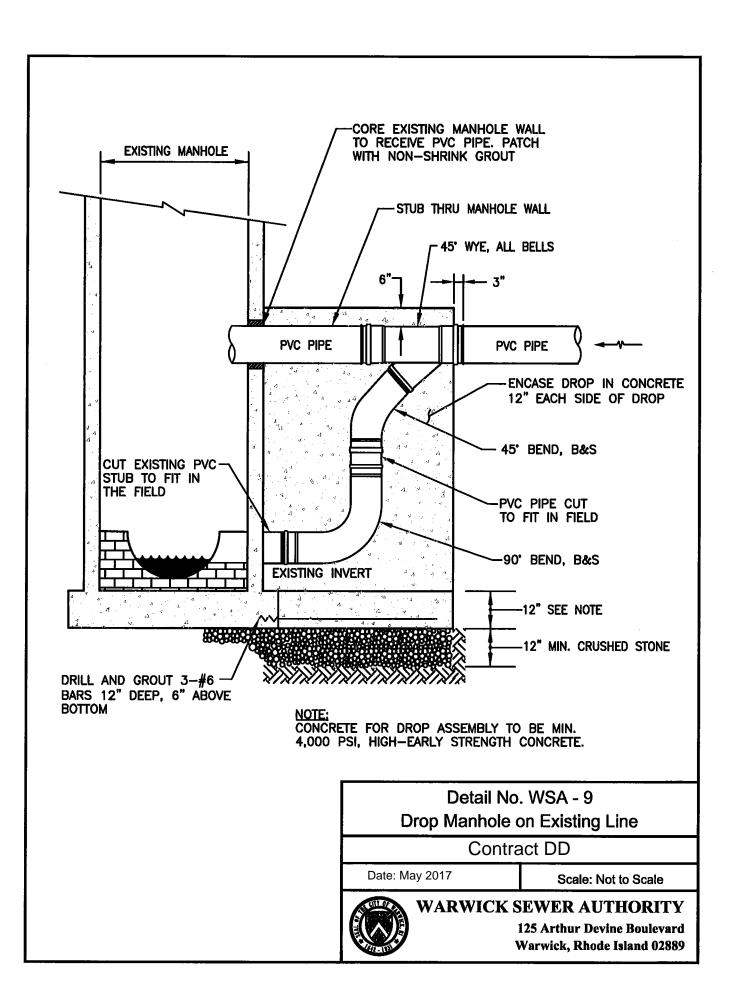
Date: May 2017

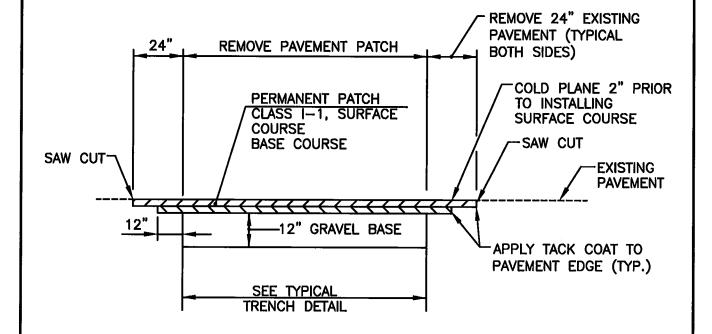
Scale: Not to Scale



WARWICK SEWER AUTHORITY







- 1. THIS DETAIL APPLIES TO ANY PORTION OF ROADWAY WHERE A PERMANENT 1 1/2" BITUMINOUS CONCRETE OVERLAY WILL NOT BE REQUIRED AND WHERE DIRECTED BY THE ENGINEER.
- 2. REFER TO PROJECT SPECIFIC PLANS FOR PROPOSED PAVEMENT DEPTHS.

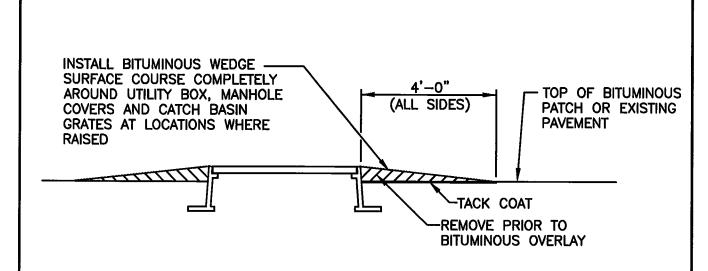
Detail No. WSA - 10
Permanent Trench Pavement
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY



Detail No. WSA - 11
Temporary Bituminous Wedge at Structures

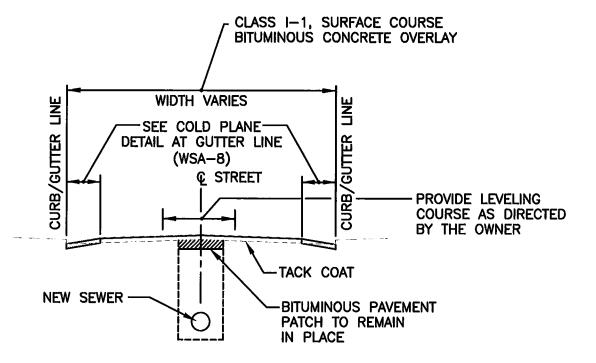
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY



- 1. PAVEMENT MARKINGS TO BE REPLACED IN-KIND, UNLESS OTHERWISE NOTED.
- 2. PAVEMENT DEPTH TO BE IDENTIFIED IN THE SPECIFICATIONS OR PLANS.

Detail No. WSA - 12 Bituminous Overlay

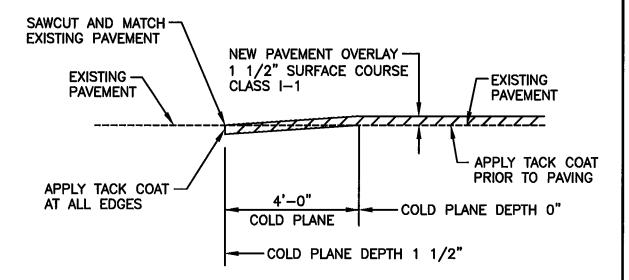
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY



NOTE: COLD PLANE DEPTH WILL INCREASE TO MATCH OVERLAY DEPTH IF MORE THAN 1 1/2" IS CALLED FOR ON PLANS OR SPECIFICATIONS.

Detail No. WSA - 13
Cut and Match Pavement - Local Street

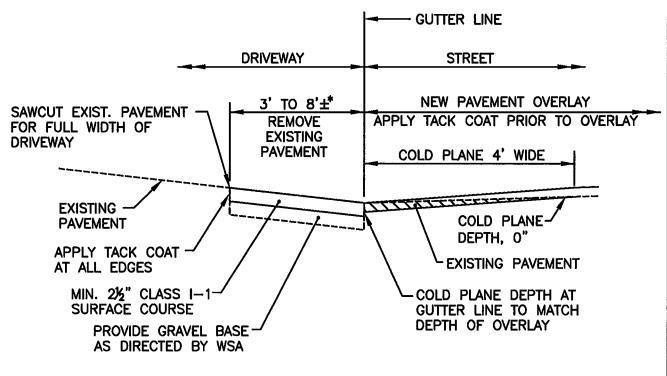
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY

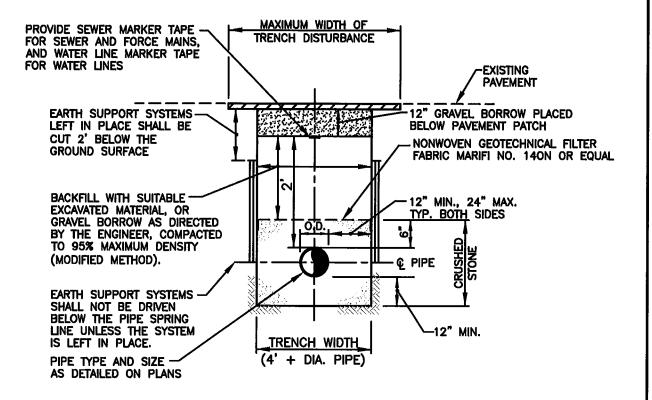


- * 1. THE CONTRACTOR MAY INCREASE OR DECREASE THIS DIMENSION AS FIELD CONDITIONS WARRANT, SUBJECT TO WSA APPROVAL.
 - 2. STREET OVERLAY AND DRIVEWAY SURFACE COURSE SHALL BE PLACED AT THE SAME TIME.
 - 3. THE DRIVEWAY PAVEMENT DEPTH SHALL BE NO LESS THAN THE EXISTING DEPTH AND A MINIMUM OF 2 1/2".

Detail No. WSA - 14 Cold Plane at Residential Driveway				
Contract DD				
rate: May 2017 Scale: Not to Scale				
_				



WARWICK SEWER AUTHORITY



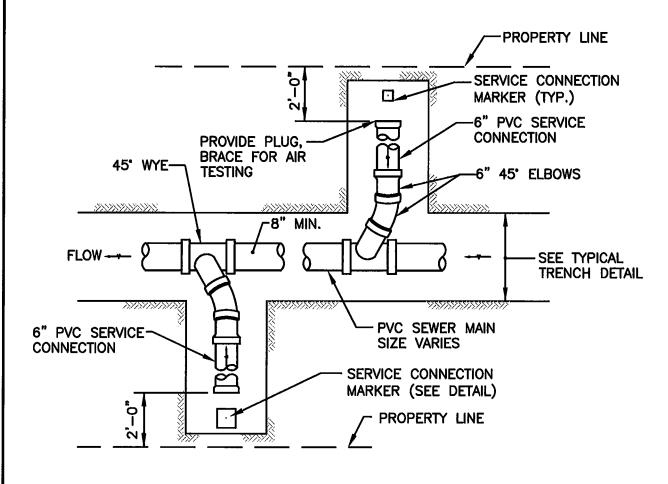
AS A MINIMUM, FILTER FABRIC SHALL BE PLACED ON THE TOP OF THE BEDDING. PLACEMENT OF FILTER FABRIC ON THE TOP, BOTTOM AND SIDES OF THE BEDDING WILL BE DETERMINED ON A SITE SPECIFIC BASIS BY THE ENGINEER.

Detail No. WSA -15
Typical Trench
Contract DD

Date: May 2017 Scale: Not to Scale



WARWICK SEWER AUTHORITY



PLAN

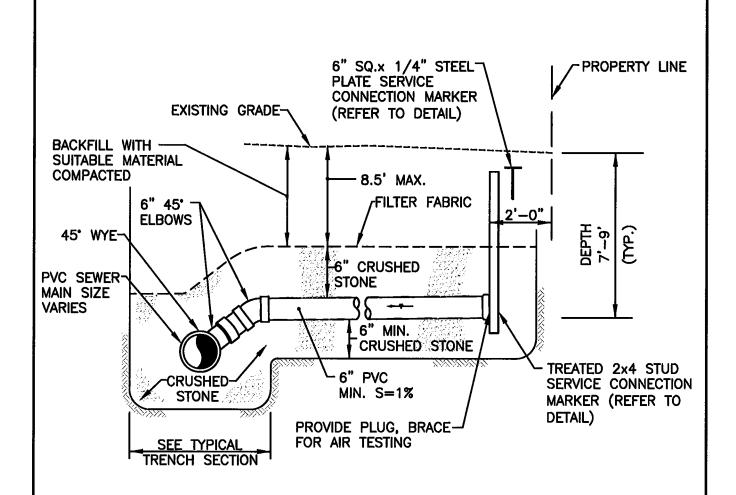
NOTES:

- 1. FOR 6" SERVICE, MIN. SLOPE = 1%
- 2. PIPE SADDLE REQUIRED FOR CONNECTION TO EXISTING SEWER MAIN.

Detail No. WSA - 16 Typical Service Connection Plan (Less Than 10' Depth) Contract DD Date: May 2017 Scale: Not to Scale



WARWICK SEWER AUTHORITY



PROFILE

NOTE:

AS A MINIMUM, FILTER FABRIC SHALL BE PLACED ON THE TOP OF THE BEDDING. PLACEMENT OF FILTER FABRIC ON THE TOP, BOTTOM AND SIDES OF THE BEDDING WILL BE DETERMINED ON A SITE SPECIFIC BASIS BY THE ENGINEER.

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Typical Service Connection Profile (Less Than 10' Depth)

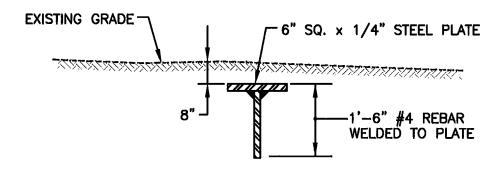
Contract DD

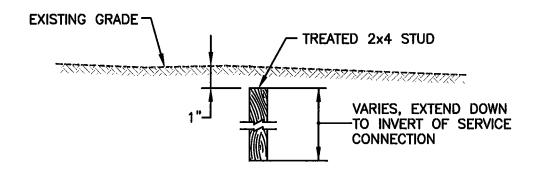
Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY





 $\begin{array}{c} \underline{\text{NOTE:}} \\ \underline{\text{BOTH}} \ \ \underline{\text{WOOD}} \ \ \underline{\text{STUD}} \ \ \underline{\text{AND}} \ \ \underline{\text{STEEL}} \ \ \underline{\text{PLATE}} \ \ \underline{\text{MARKERS}} \ \ \underline{\text{ARE}} \ \ \underline{\text{REQUIRED.}} \end{array}$

Detail No. WSA - 18 House Connection Marker

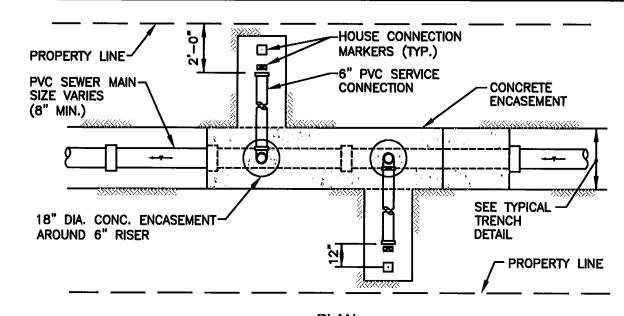
Contract DD

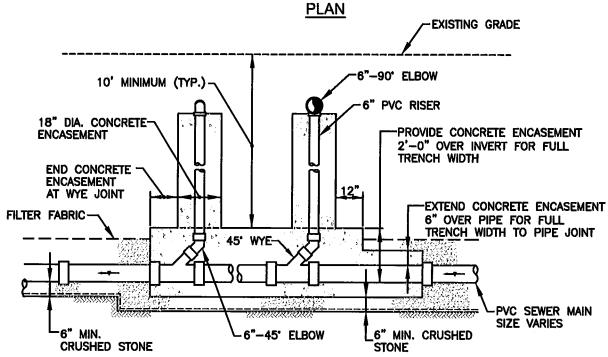
Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY





PROFILE

NOTE:

PRECAST DROPS MAY BE CONSIDERED AN ACCEPTABLE ALTERNATE TO CAST IN PLACE, HOWEVER THE CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS OF THE DROP UNITS FOR REVIEW AND APPROVAL BY THE ENGINEER AND OWNER PRIOR TO CONSTRUCTION.

Detail No. WSA - 19

Chimney Plan & Profile for Service Connections
(10' Depth or Greater)

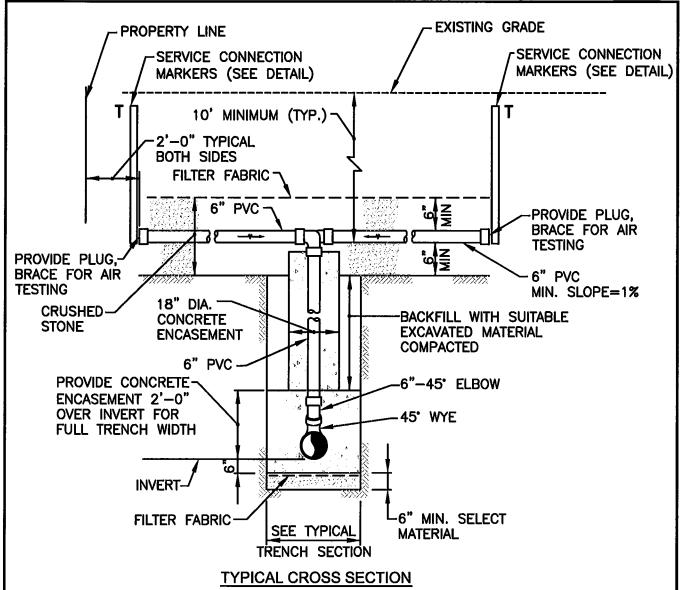
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY



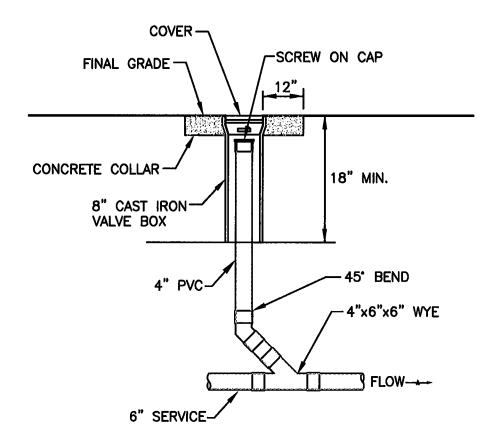
- 1. PRECAST DROPS MAY BE CONSIDERED AN ACCEPTABLE ALTERNATE TO CAST IN PLACE, HOWEVER THE CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS OF THE DROP UNITS FOR REVIEW AND APPROVAL BY THE ENGINEER AND OWNER PRIOR TO CONSTRUCTION.
- 2. AS A MINIMUM, FILTER FABRIC SHALL BE PLACED ON THE TOP OF THE BEDDING. PLACEMENT OF FILTER FABRIC ON THE TOP, BOTTOM AND SIDES OF THE BEDDING WILL BE DETERMINED ON A SITE SPECIFIC BASIS BY THE ENGINEER.

Detail No. WSA - 20
Chimney Details for Service Connections
(10' Depth or Greater)
Contract DD

Date: May 2017
Scale: Not to Scale



WARWICK SEWER AUTHORITY



NOTE: COVER SHALL BE CAST IRON, LOCKING LID MARKED SEWER AND DESIGNED FOR H-20 TRAFFIC LOADING.

> Detail No. WSA - 21 Service Cleanout

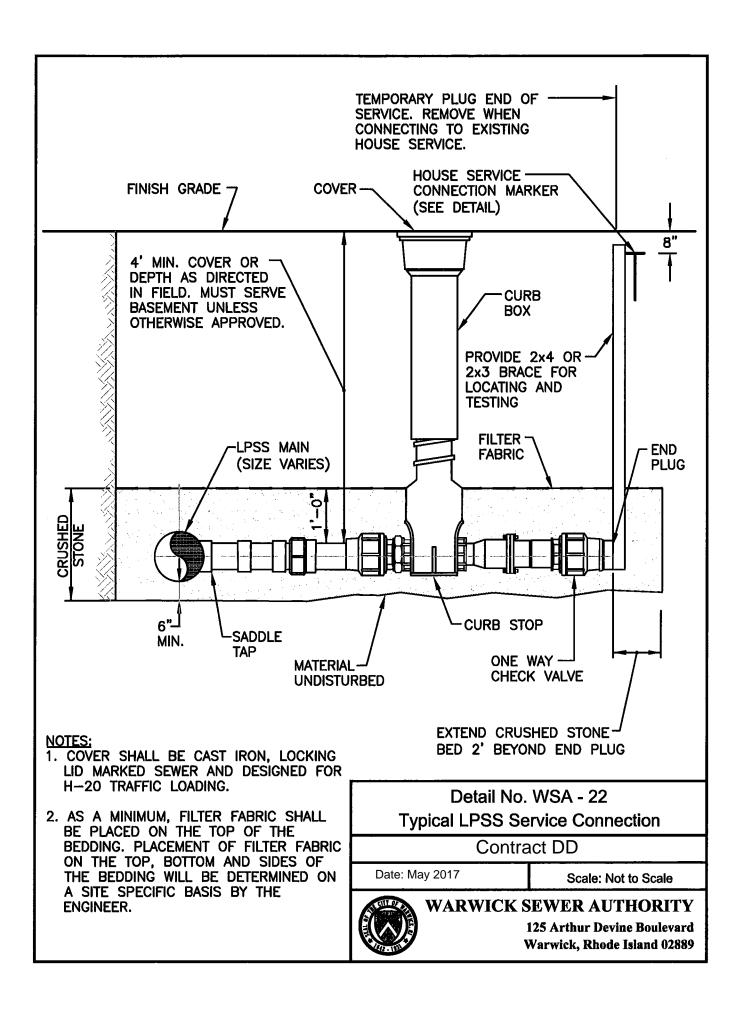
Contract DD

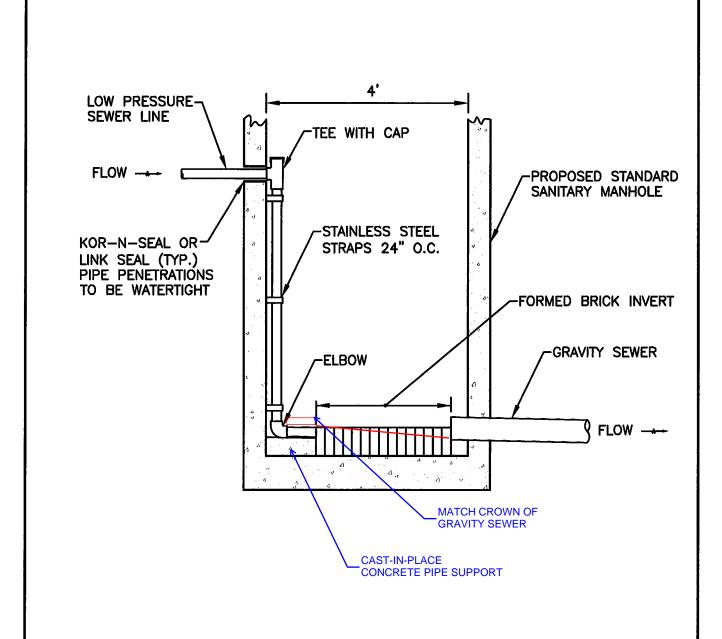
Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY





Detail No. WSA - 23 LPSS Manhole Drop Connection

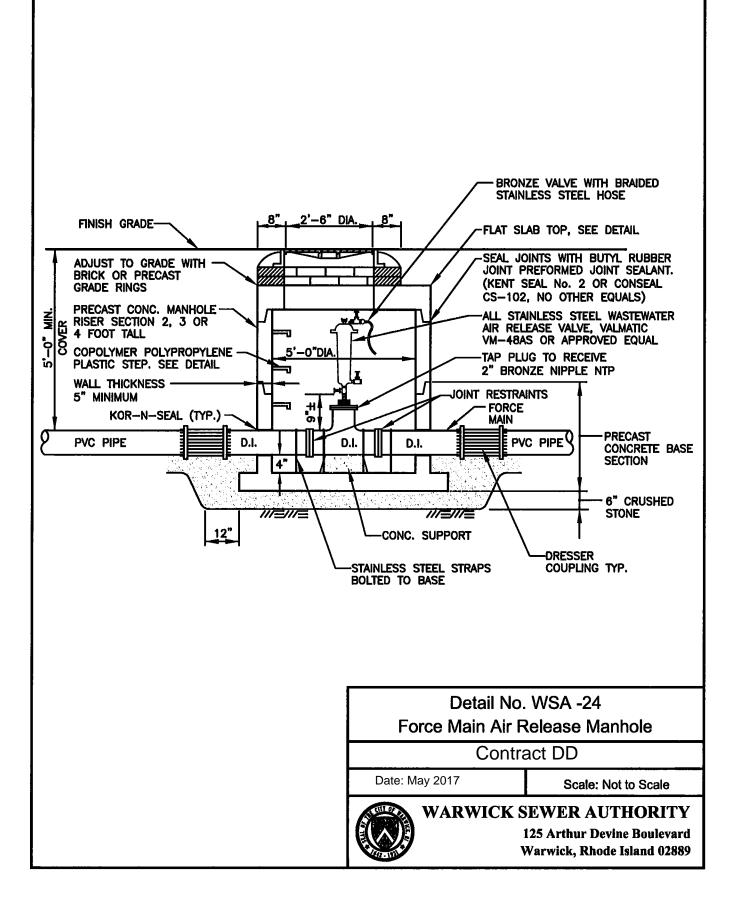
Contract DD

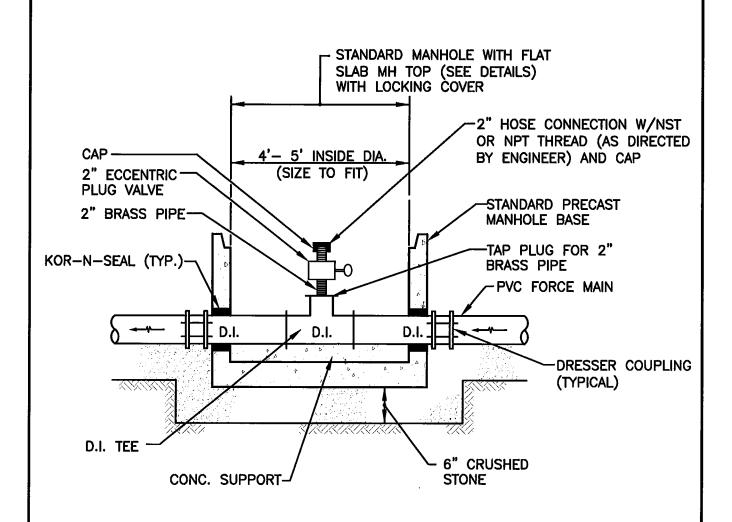
Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY





- 1. MANHOLE DIAMETER SUBJECT TO WSA APPROVAL.
- 2. INSTALL STAINLESS STEEL ANCHOR STRAPS.

Detail No. WSA - 25 Force Main Cleanout Manhole

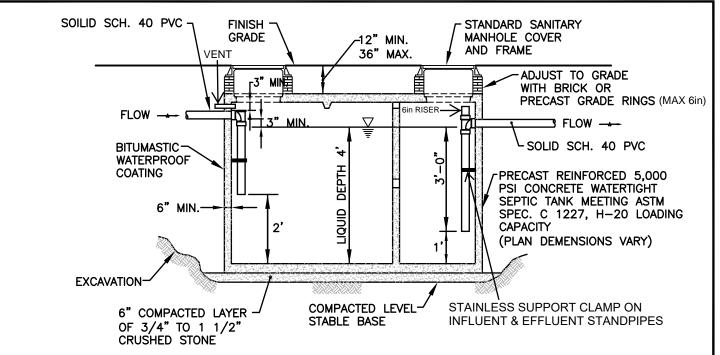
Contract DD

Date: May 2017

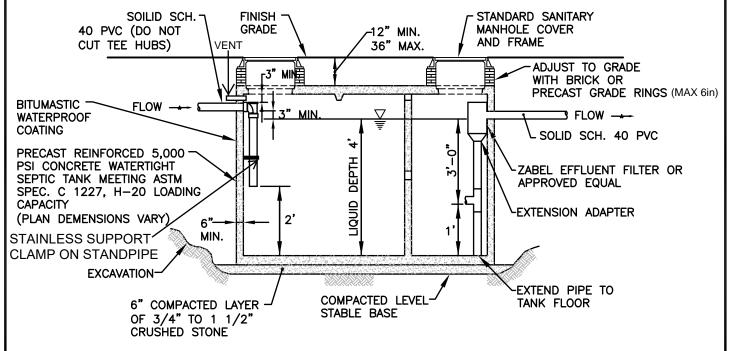
Scale: Not to Scale



WARWICK SEWER AUTHORITY



TYPICAL GREASE INTERCEPTOR



GREASE INTERCEPTOR WITH ZABEL FILTER

NOTE:

ZABEL EFFLUENT FILTER MODEL TO BE BASED UPON MAXIMUM DAILY FLOW RATE. MODEL A300 TO BE USED FOR FLOWS TO 6,000 GPD. Detail No. WSA - 26 (1 of 2) Grease Interceptor

Contract DD

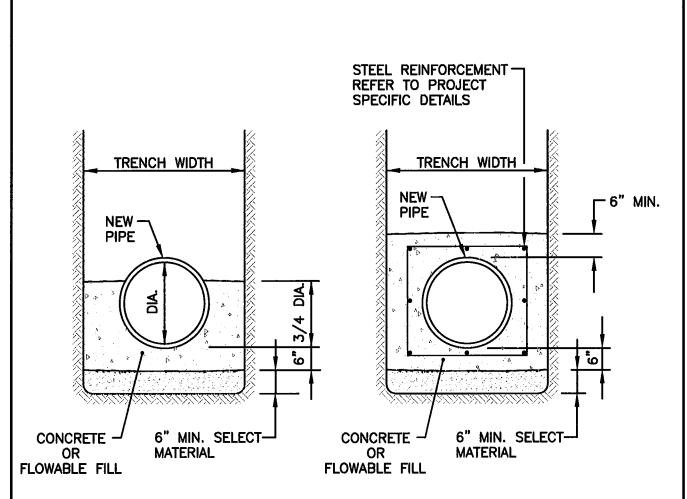
Date: DEC 2019

Scale: Not to Scale



WARWICK SEWER AUTHORITY

	Grease Interceptor Checklist					
Interd	ceptor with standard effluent tee:					
	Tank has H20 loading capacity					
	Bitumastic waterproof coating					
	Influent and effluent tees visible in cover opening					
	Influent and effluent tees have at least 1 stainless support strap					
	Effluent tee has 6in riser					
	Influent standpipe 24in off bottom of tank					
	Effluent standpipe 12in off bottom of tank					
	At least 2 manhole covers over tees. Larger tanks (2000+) may require 3 manhole covers					
	with third near center for proper cleaning.					
Interd	ceptor with Zabel filter additional items:					
	Zabel filter must be installed according to manufacturer's specifications.					
	Support pipe installed to floor under the filter with tee opening position 12in off the floor					
	(stainless strap not needed if space does not allow).					
	Support pipe under the tee must have at least four 1in holes near bottom for draining					
	during tank cleanings.					
	Handle extension must be installed on the filter if it cannot be safely reached.					
	Detail No. WSA - 26 (2 of 2)					
	Grease Interceptor Contract DD					
	Date: DEC 2019 Scale: Not to Scale					
	WARWICK SEWER AUTHORITY	,				



HALF CRADLE

FULL CRADLE and ENCASEMENT

NOTE:
THE USE OF CONCRETE VS. FLOWABLE FILL WILL BE
DETERMINED ON A SITE SPECIFIC BASIS BY THE ENGINEER

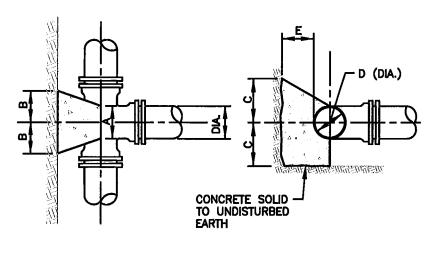
Detail No. WSA - 27
Pipe Cradle

Contract DD

Date: May 2017 Scale: Not to Scale



WARWICK SEWER AUTHORITY



PLAN

SECTION

TEES and END CAPS

	TEES								
		F	PIPE S	IZE-D	(DIA.)			
		6"	8"	12"	16"	20"			
	Α	8"	10"	1'-0"	1'-3"	1'-6"			
	В	8"	10"	1'-2"	1'-4"	1'-6"			
	С	10"	1'-0"	1'-3"	1'-6"	1'-8"			
	Ε	8"	10"	1'-2"	1'-6"	1'-10"			
			END	CAPS					
	Α	6"	8"	1'-0"	1'-4"	1'-8"			
	В	8"	10"	1'-2"	1'-6"	1'-10"			
	С	8"	10"	1'-2"	1'-6"	1'-10"			
	Ε	8"	10"	1'-2"	1'-6"	1'-10"			

NOTE:

THE DIMENSIONS PROVIDED REPRESENT THE MINIMUM REQUIREMENTS. THE ACTUAL THRUST BLOCK DIMENSIONS WILL BE BASED UPON THE SOIL BEARING CAPACITY AND SYSTEM PRESSURE ON A PROJECT SPECIFIC BASIS.

Detail No. WSA - 28 Thrust Block Details (Tees and End Caps)

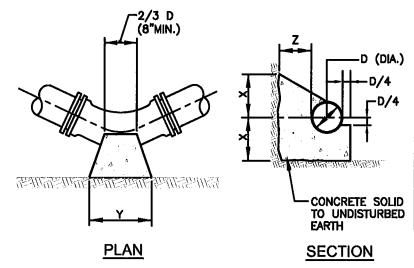
Contract DD

Date: May 2017

Scale: Not to Scale

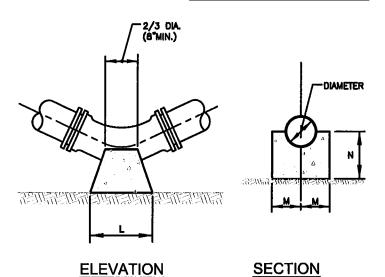


WARWICK SEWER AUTHORITY



HORIZONTAL BENDS							
DIDE SIZE_D (DIA)							
BE	ND	6"	8"	12"	16"	20"	
	Х	1'-0"	1'−0"	1'-0"	1'-3"	1'-6"	
1/ ₈	Y	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	
. 6	Z	8"	10"	1'-2"	1'-4"	1'-6"	
1.	X	1'-0"	1'-0"	1'-0"	1'-3"	1'-6"	
716	Υ	1'-0"	1'-4"	1'-6"	1'-9"	2'-6"	
	Ζ	8"	10"	1'-2"	1'-4"	1'-6"	
1/32	X	1'-0"	1'-0"	1'-0"	1'-2"	1'-4"	
	Υ	1'-0"	1'-0"	1'-2"	1'-4"	1'-6"	
	Z	8"	10"	1'-2"	1'-4"	1'-6"	

HORIZONTAL BENDS



VERTICAL BENDS							
BEND		PIPE SIZE-D (DIA.)					
	ND	6"	8"	12"	16"	20"	
	L	1'-3"	1'-8"	2'-6"	3'-6"	4'-8"	
1/8	М	7"	8"	11"	1'-4"	1'-6"	
_ `	Z	7"	8"	11"	1'-4"	1'-6"	
1.	L	9"	1'-0"	1'-9"	2'-6"	3'-0"	
1/16	М	. 7"	7"	10"	1'-0"	1'-2"	
'	Z	7"	7"	8"	10"	1'-0"	
1/32	J	6"	8"	1'-0"	1'-4"	1'-9"	
	Δ	7"	7"	10"	1'-0"	1'-2"	
	Ν	7"	7"	8"	10"	1'-0"	

VERTICAL BENDS

NOTE:

THE DIMENSIONS PROVIDED REPRESENT THE MINIMUM REQUIREMENTS. THE ACTUAL THRUST BLOCK DIMENSIONS WILL BE BASED UPON THE SOIL BEARING CAPACITY AND SYSTEM PRESSURE ON A PROJECT SPECIFIC BASIS.

Detail No. WSA - 29 Thrust Block Details (Horizontal and Vertical Bends)

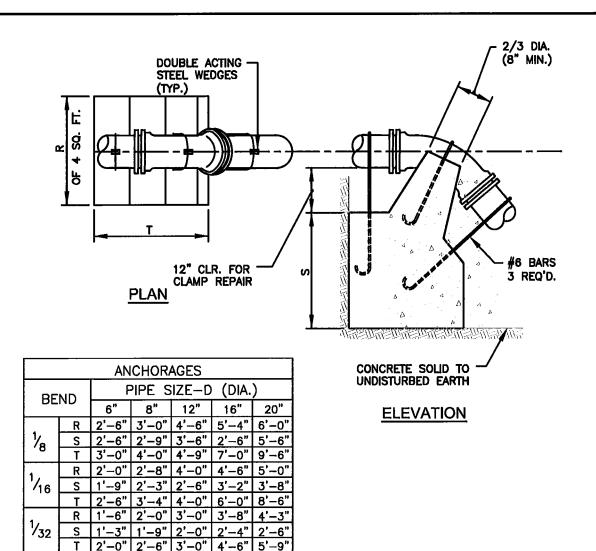
Contract DD

Date: May 2017

Scale: Not to Scale



WARWICK SEWER AUTHORITY

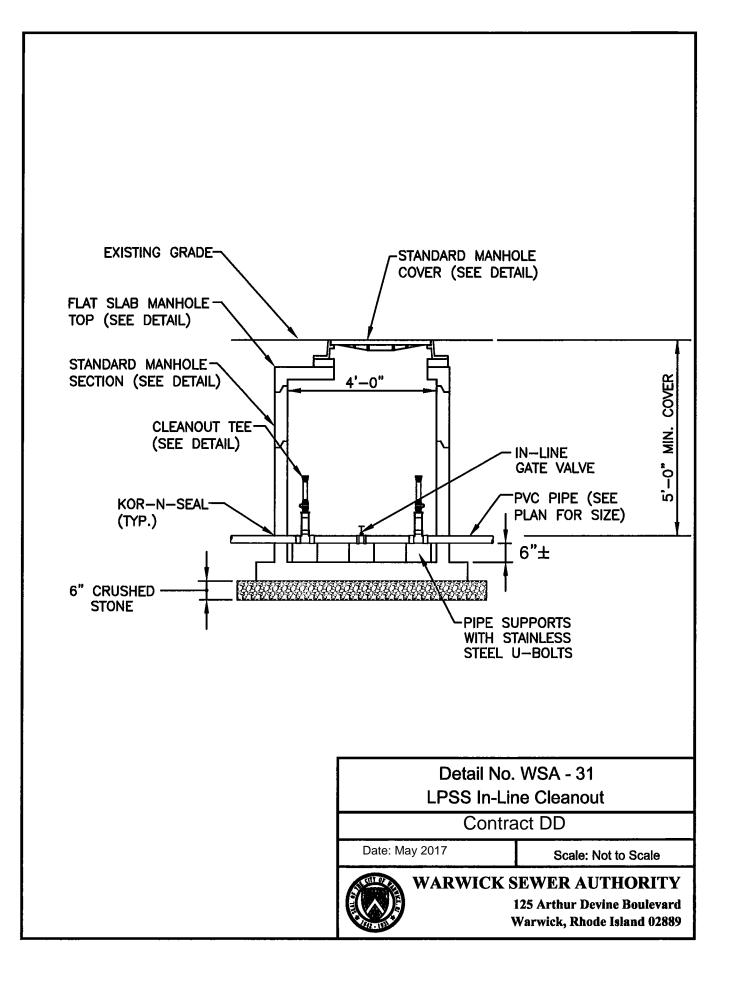


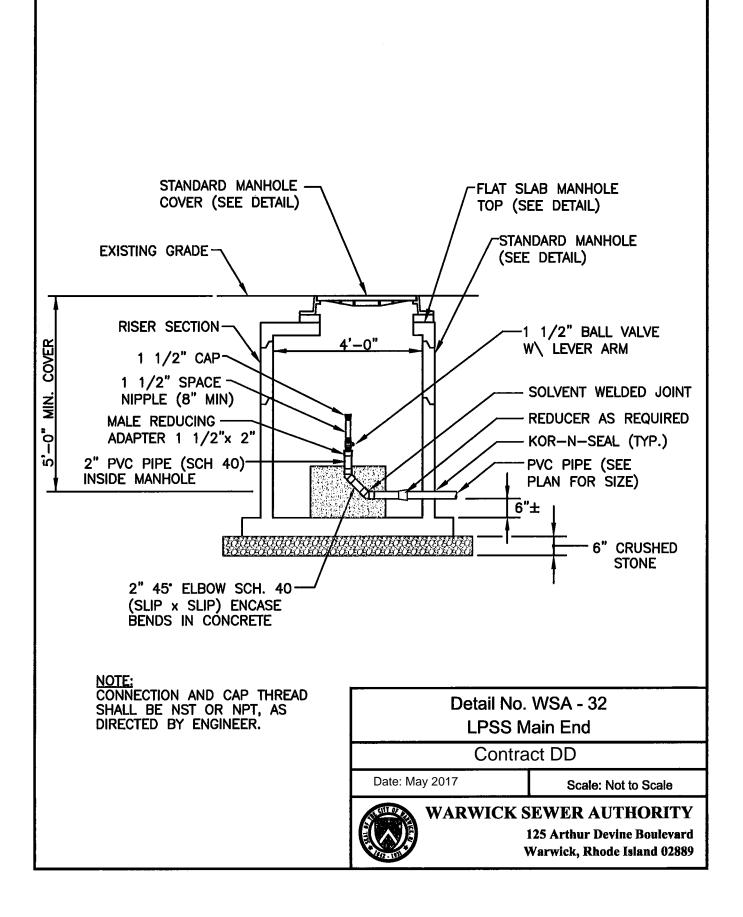
- 1. ALL CONCRETE SHALL BE 3000 PSI @ 28 DAYS.
- 2. CONCRETE THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.
- 3. ALL FORCE MAIN BENDS, TEES, MAIN TAPS, AND END CAPS SHALL REQUIRE A CONCRETE THRUST BLOCK.
- 4. THE DIMENSIONS PROVIDED REPRESENT THE MINIMUM REQUIREMENTS. THE ACTUAL ANCHOR BLOCK DIMENSIONS WILL BE BASED UPON THE SITE CONDITIONS AND SYSTEM PRESSURE ON A PROJECT SPECIFIC BASIS.

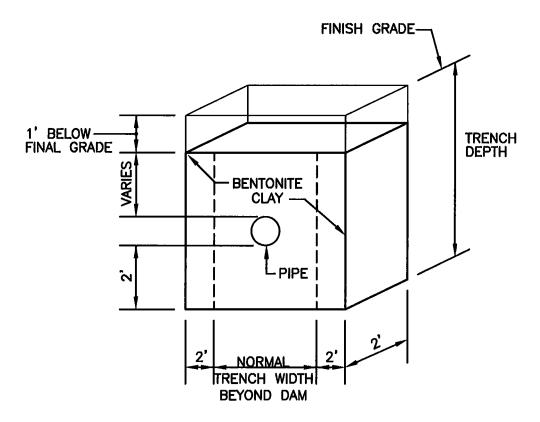
Detail No. WSA - 30 Anchor Block Details				
Contract DD				
Date: May 2017	Scale: Not to Scale			



WARWICK SEWER AUTHORITY







INSTALL AT CENTER OF EACH GRAVITY MANHOLE REACH.

NOTES:

- 1. HEIGHT OF CLAY DAM SHALL ONLY VARY UPON COMPLETION OF SOIL AND ENGINEERING ASSESSMENT.
- 2. NO FITTING SHALL BE LOCATED WITHIN 4' OF DAM.
- 3. LOCATION, HEIGHT AND WIDTH OF DAM SHALL BE DETERMINED BY ENGINEER ON A SITE SPECIFIC BASIS.

Detail No. WSA - 33
Typical Trench Dam
Contract DD

Date: May 2017 Scale: Not to Scale



WARWICK SEWER AUTHORITY