

# **SANITARY SEWER STANDARD DETAILS**

**SANITARY SEWER STANDARD DETAILS  
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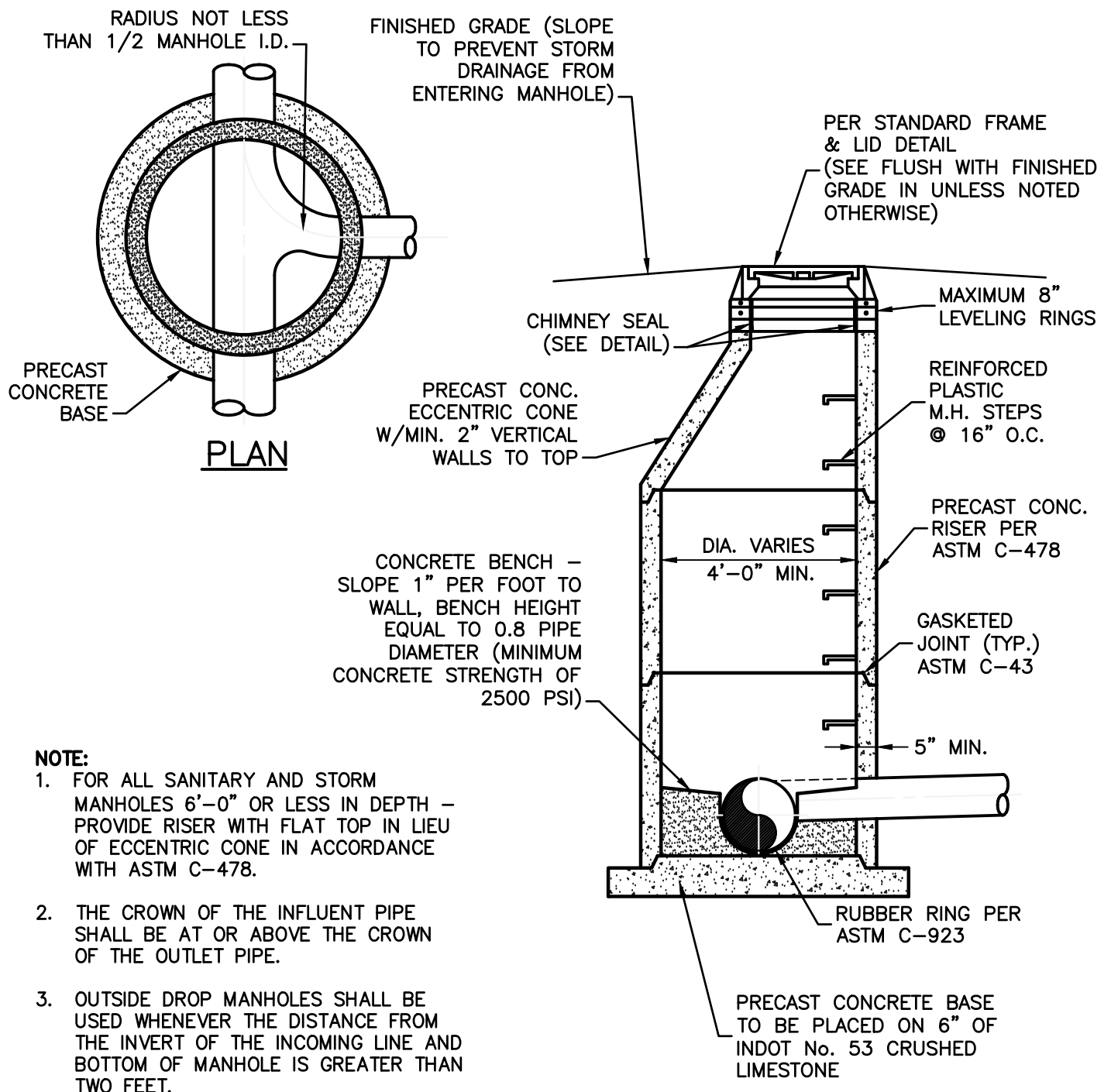
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**NOTE:**

1. FOR ALL SANITARY AND STORM MANHOLES 6'-0" OR LESS IN DEPTH - PROVIDE RISER WITH FLAT TOP IN LIEU OF ECCENTRIC CONE IN ACCORDANCE WITH ASTM C-478.
2. THE CROWN OF THE INFLUENT PIPE SHALL BE AT OR ABOVE THE CROWN OF THE OUTLET PIPE.
3. OUTSIDE DROP MANHOLES SHALL BE USED WHENEVER THE DISTANCE FROM THE INVERT OF THE INCOMING LINE AND BOTTOM OF MANHOLE IS GREATER THAN TWO FEET.

STANDARD MANHOLE DETAIL

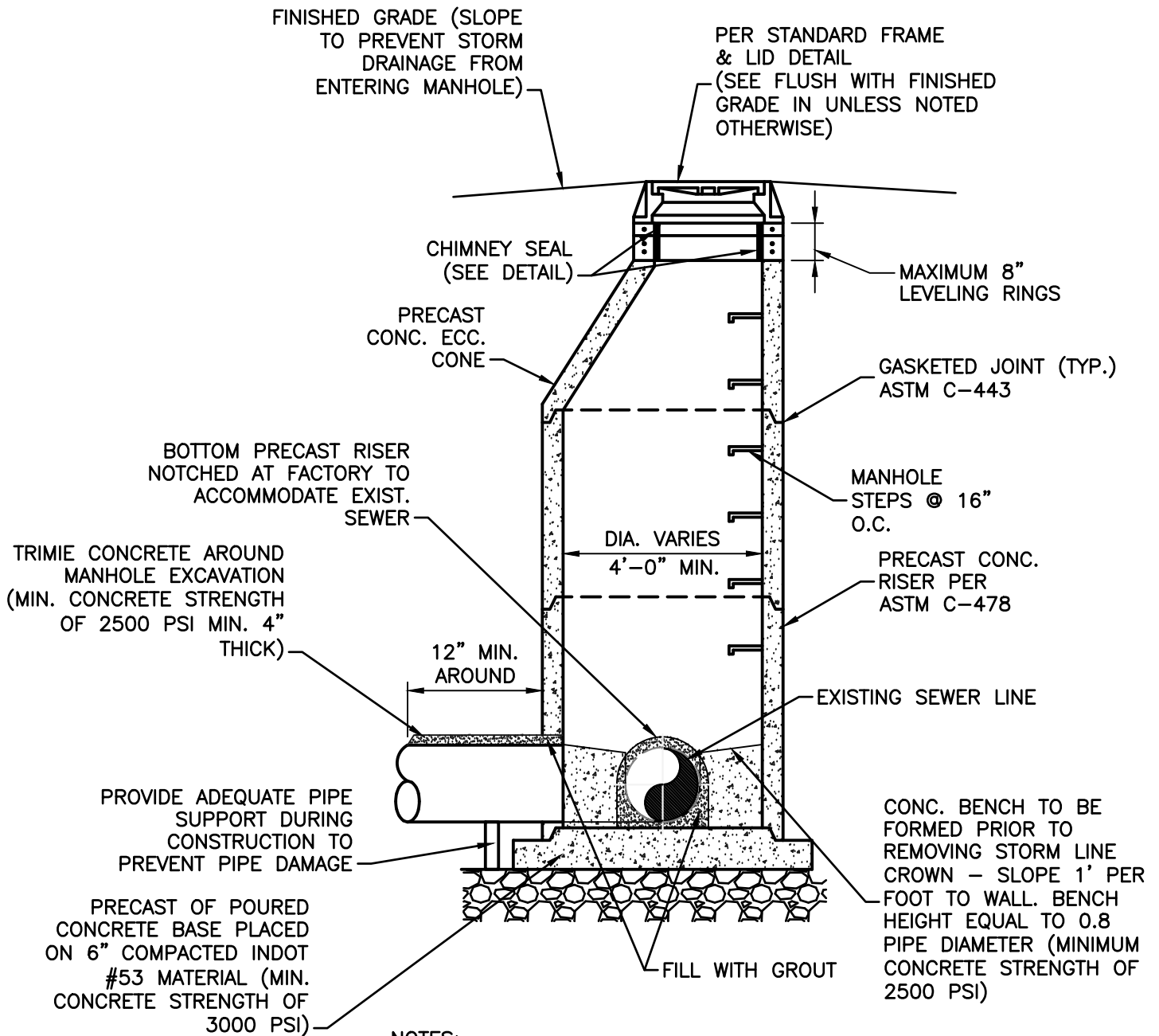
CITY of MONTICELLO, INDIANA  
STANDARD DETAILS  
SANITARY SEWER

FIGURE

S-1

REVISION DATE

DATE: AUGUST 2019



**NOTES:**

1. FOR ALL MANHOLES 6'-0" OR LESS IN DEPTH - PROVIDE RISER WITH FLAT TOP IN LIEU OF ECCENTRIC CONE IN ACCORDANCE WITH ASTM C-478
2. DROP MANHOLES SHALL BE USED WHENEVER THE DISTANCE FROM THE INFLUENT PIPE INVERT TO THE MANHOLE INVERT EXCEEDS 2'-0"

**PRECAST MANHOLE ADDED OVER EXISTING SEWER**

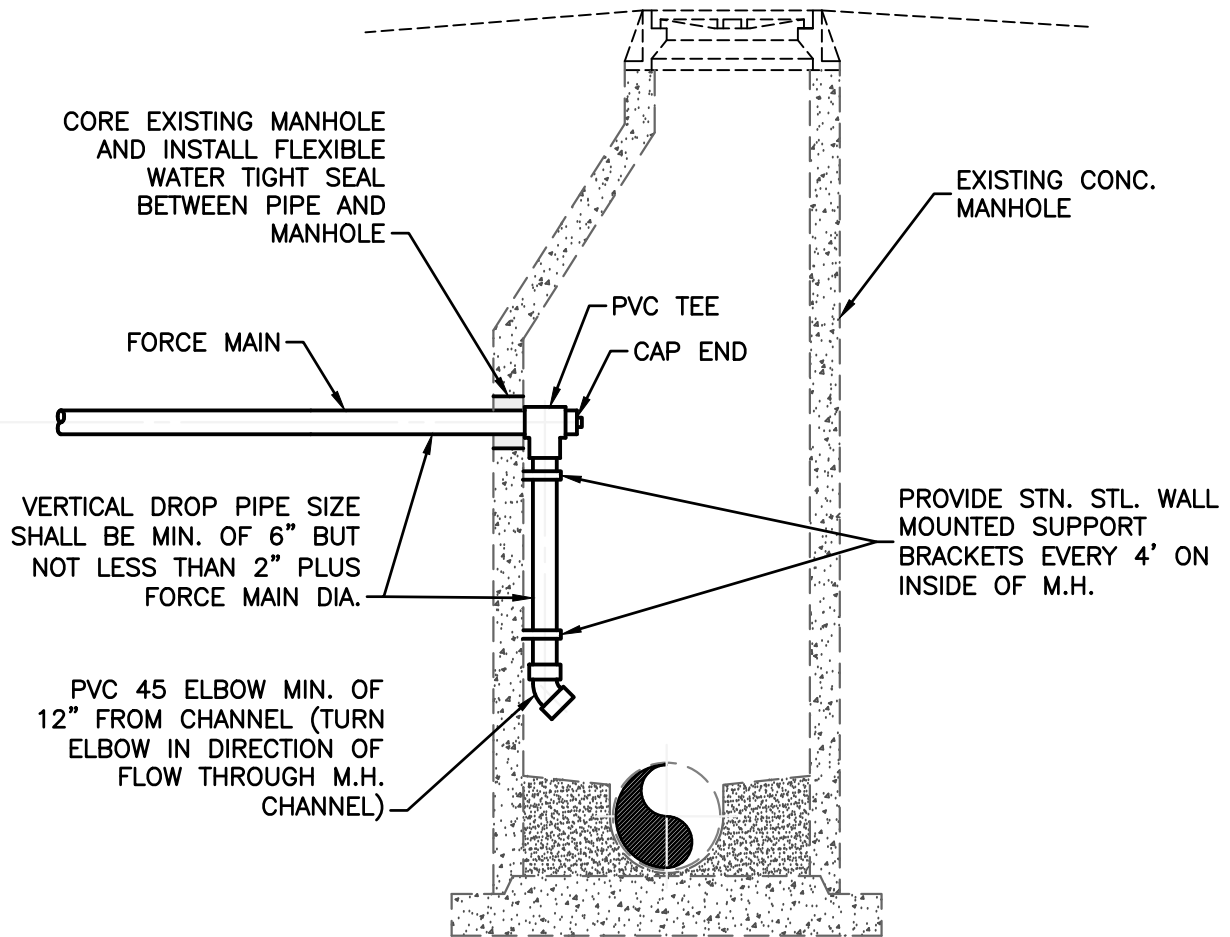
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STANDARD DETAILS  
SANITARY SEWER**

DATE: AUGUST 2019

FIGURE

S-2



NOTE: MANHOLES WHICH HAVE FORCE MAIN DISCHARGE LINES SHALL HAVE AN INTERNAL EPOXY COATING

FORCE MAIN DROP INTO EXISTING MANHOLE

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 STANDARD DETAILS  
 SANITARY SEWER

FIGURE

S-3

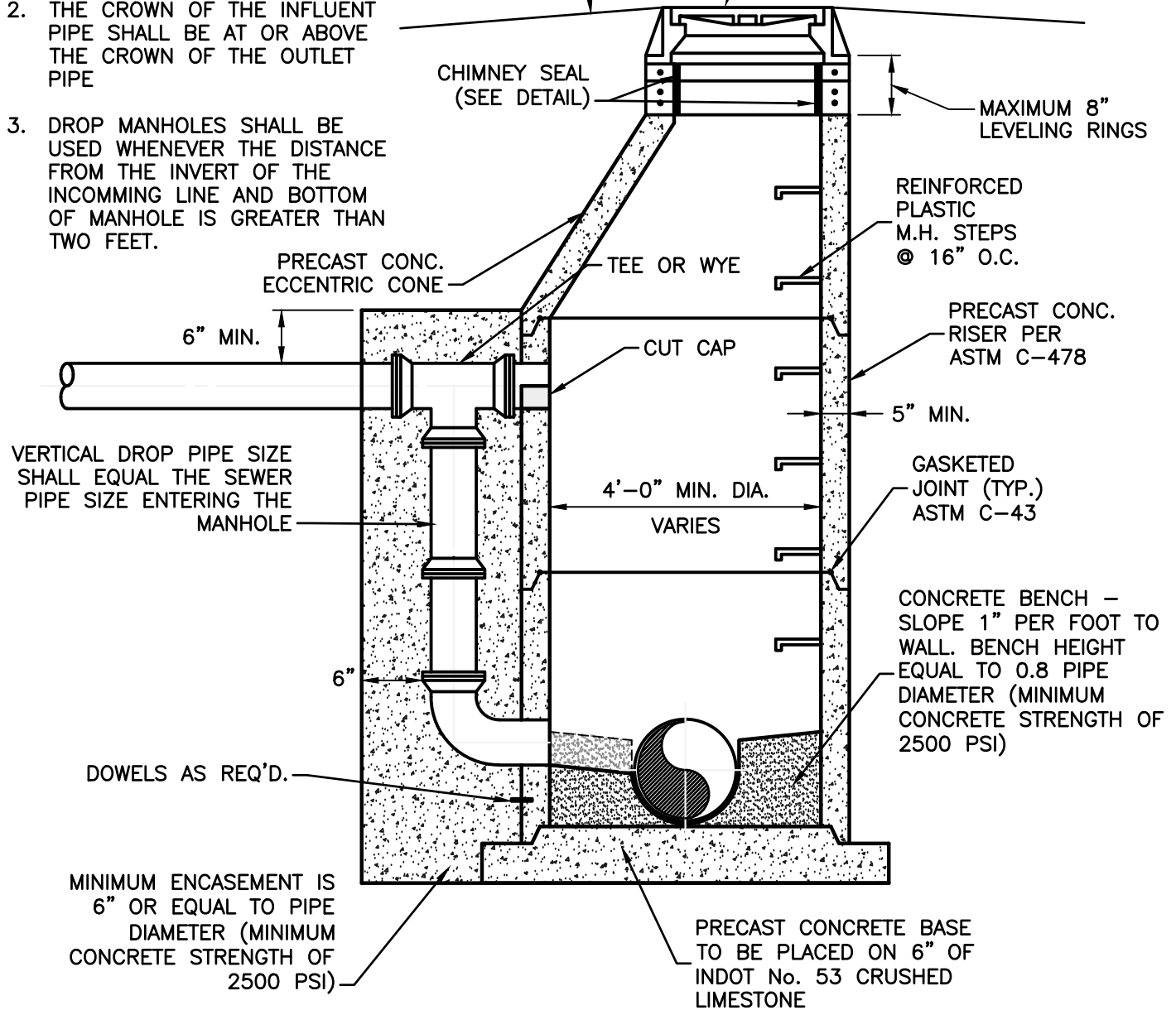
DATE: AUGUST 2019

FINISHED GRADE (SLOPE TO PREVENT STORM DRAINAGE FROM ENTERING MANHOLE)

NOTE:

1. FOR ALL MANHOLES 6'-0" OR LESS IN DEPTH - PROVIDE RISER WITH FLAT TOP IN LIEU OF ECCENTRIC CONE IN ACCORDANCE WITH ASTM C-478
2. THE CROWN OF THE INFLUENT PIPE SHALL BE AT OR ABOVE THE CROWN OF THE OUTLET PIPE
3. DROP MANHOLES SHALL BE USED WHENEVER THE DISTANCE FROM THE INVERT OF THE INCOMING LINE AND BOTTOM OF MANHOLE IS GREATER THAN TWO FEET.

PER STANDARD FRAME & LID DETAIL (SEE FLUSH WITH FINISHED GRADE IN UNLESS NOTED OTHERWISE)



PRECAST DROP MANHOLE DETAIL

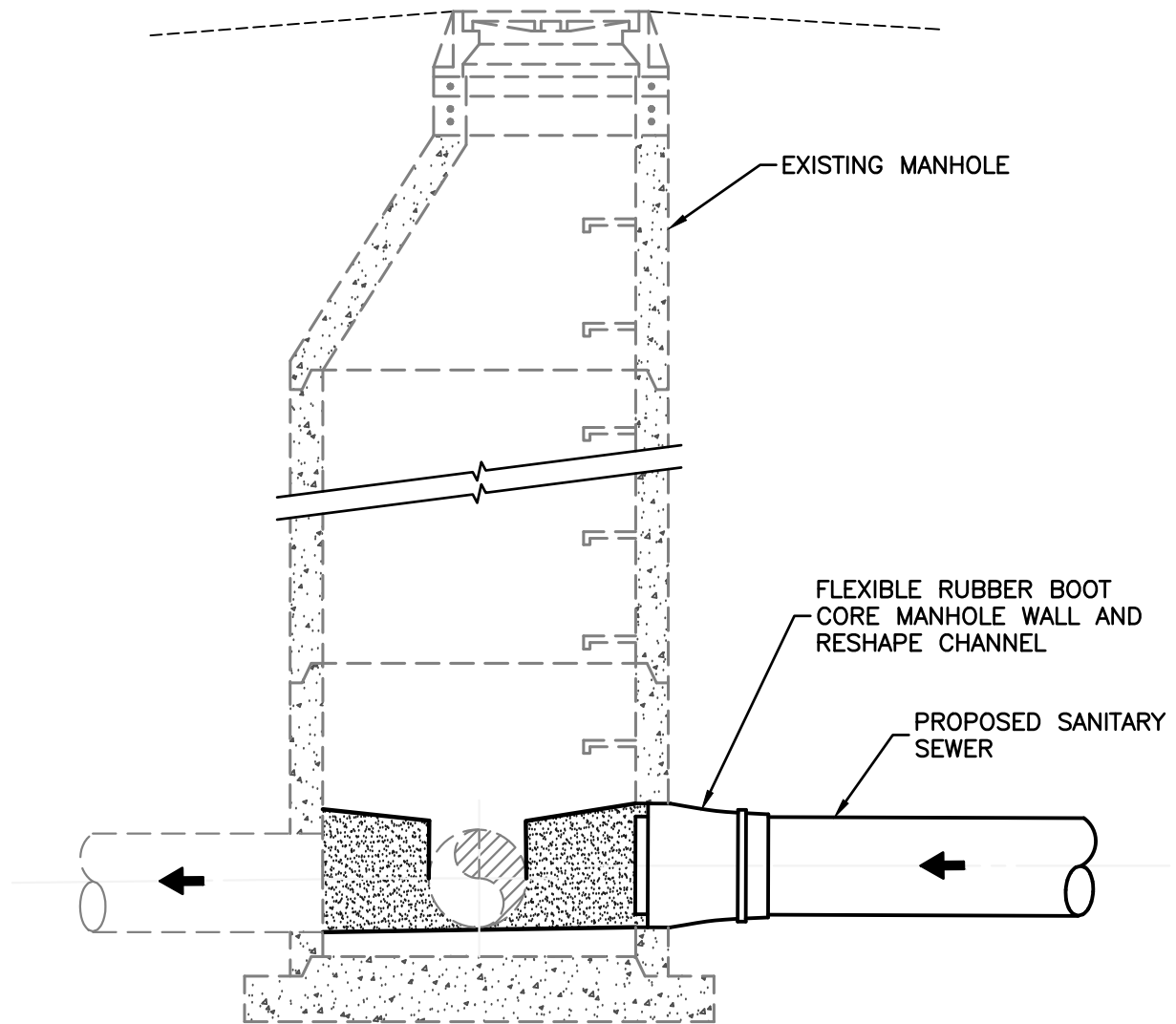
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FIGURE

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TYPICAL EXISTING MANHOLE ENTRY DETAIL

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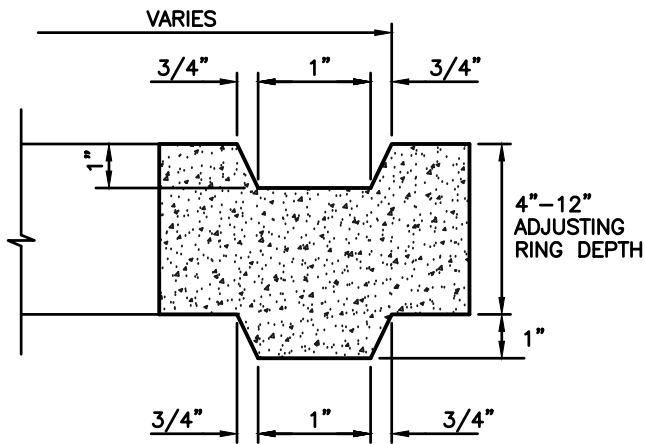
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STANDARD DETAILS  
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FIGURE

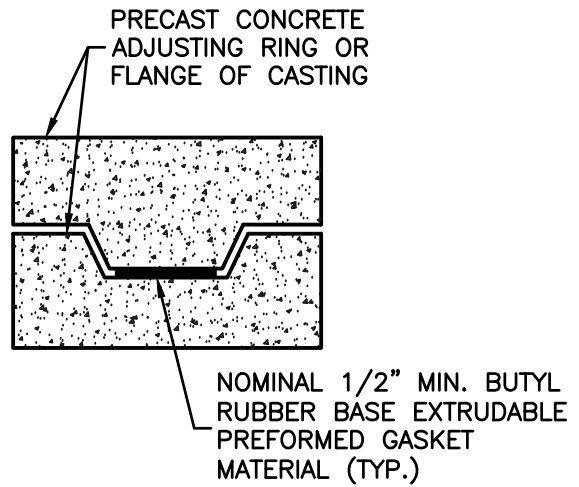
S-5

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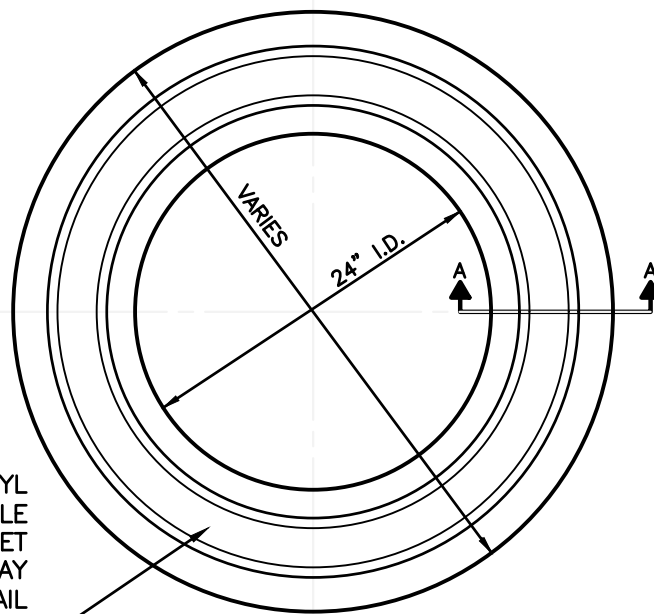




**SECTION "A-A"**



**GASKET DETAIL**



PLACE 1/2" MIN. BUTYL RUBBER EXTRUDABLE PREFORMED GASKET MATERIAL IN KEYWAY (SEE GASKET DETAIL ABOVE)

**PLAN VIEW**

**TYPICAL ADJUSTING RING**

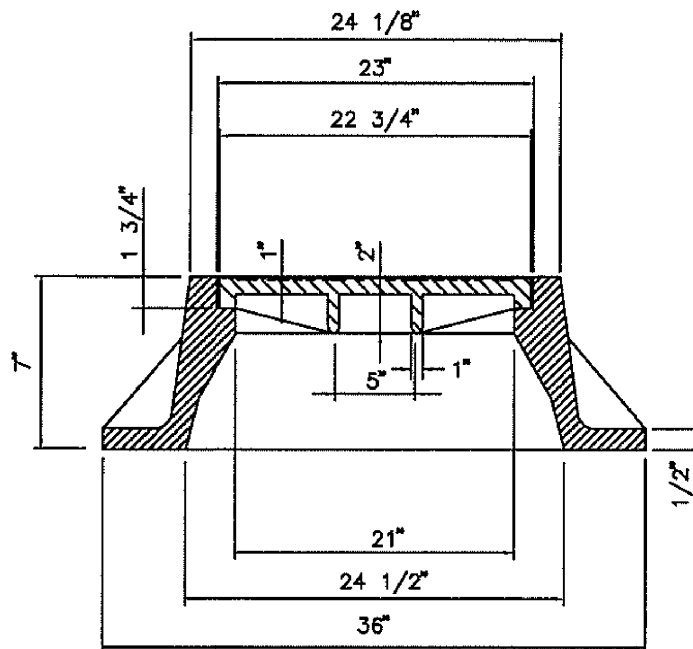
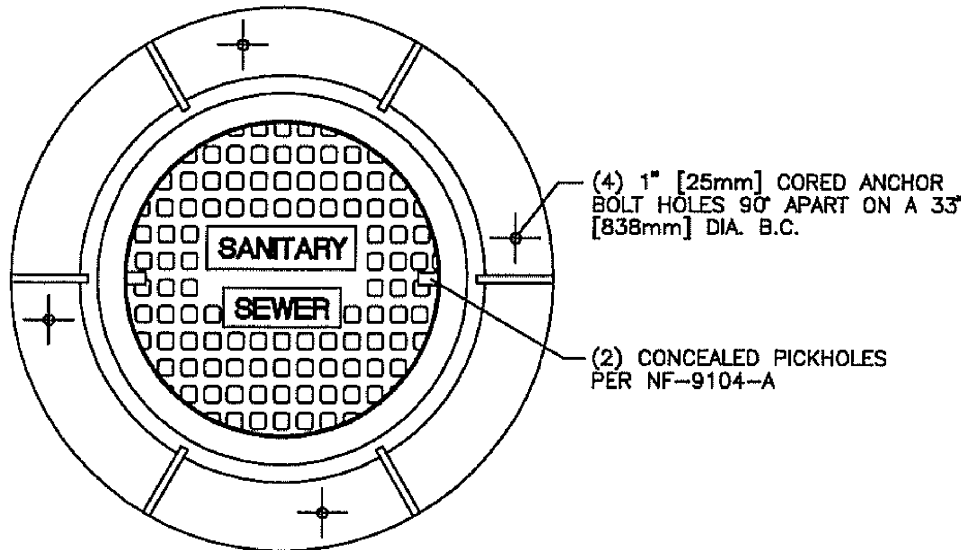
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STANDARD DETAILS  
SANITARY SEWER**

FIGURE

S-6/7

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NOTE: METAL: CAST GRAY IRON ASTM A-48 CL.358  
 FINISH: NOT PAINTED  
 R-1772C BY NEENAH FOUNDRY OR  
 1875-3 BY EAST JORDAN IRON WORKS

STANDARD FRAME AND LID

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 STANDARD DETAILS  
 SANITARY SEWER

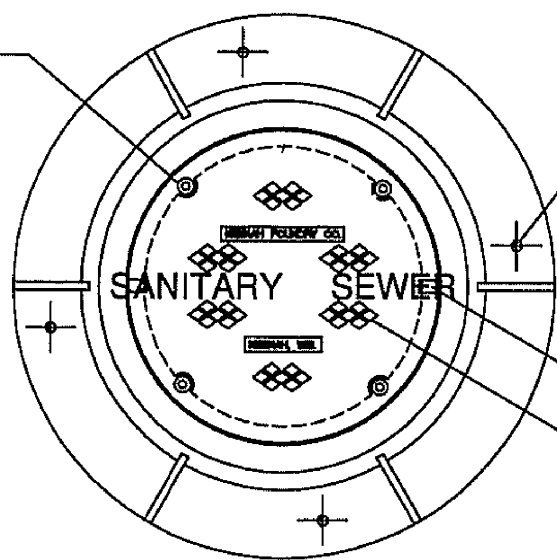
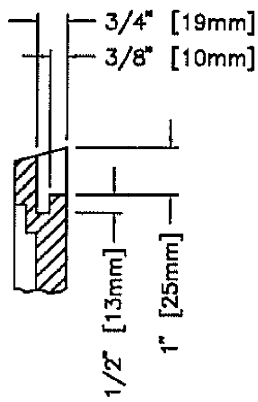
FIGURE

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(4) DRILL AND TAP FRAME FOR  
 1/2 - 13x2 STN. STL.  
 HEX. HD. CAP SCREWS ON A  
 23 3/4" [603mm] DIA. B.C.



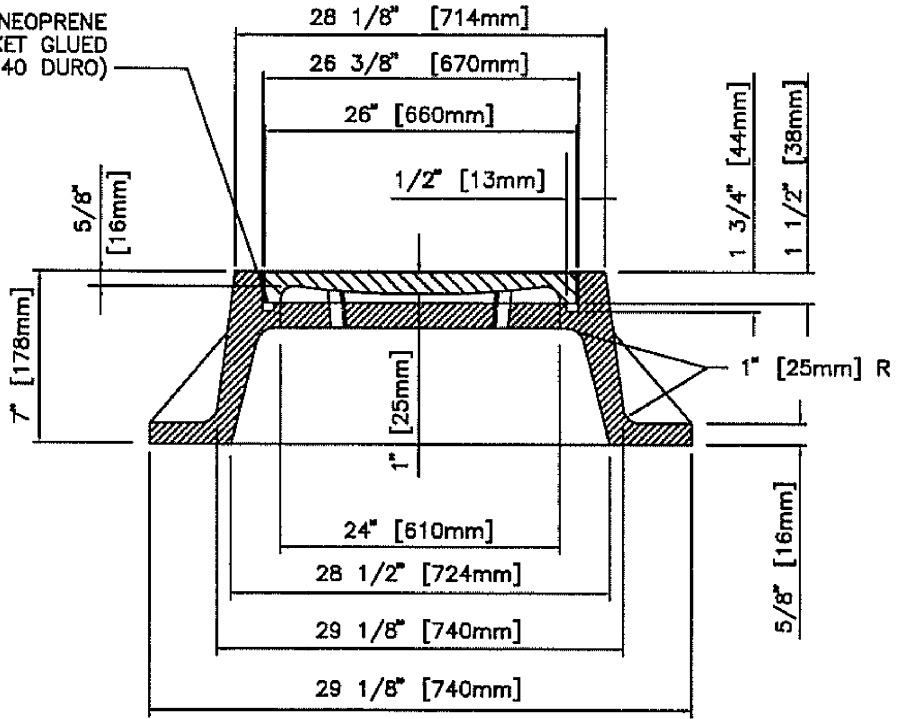
(4) 1" [25mm] CORED ANCHOR  
 BOLT HOLES 90° APART ON A 33"  
 [838mm] DIA. B.C.

(2) CONCEALED PICKHOLES  
 PER NF-22642

TYPE "C" LID DESIGN

PICKHOLE DETAIL  
 QUARTER SCALE

1/2" [13mm] Ø NEOPRENE  
 CORD GASKET GLUED  
 TO FRAME (40 DURO)



NOTE: ALL DIMENSIONS ARE SHOWN IN INCHES AND [MILLIMETERS].  
 COMPONENT NO'S: FRAME 1916-0029, LID 1916-XXXX  
 FINISH: NOT PAINTED  
 WEIGHT: FRAME 216#; LID 130#

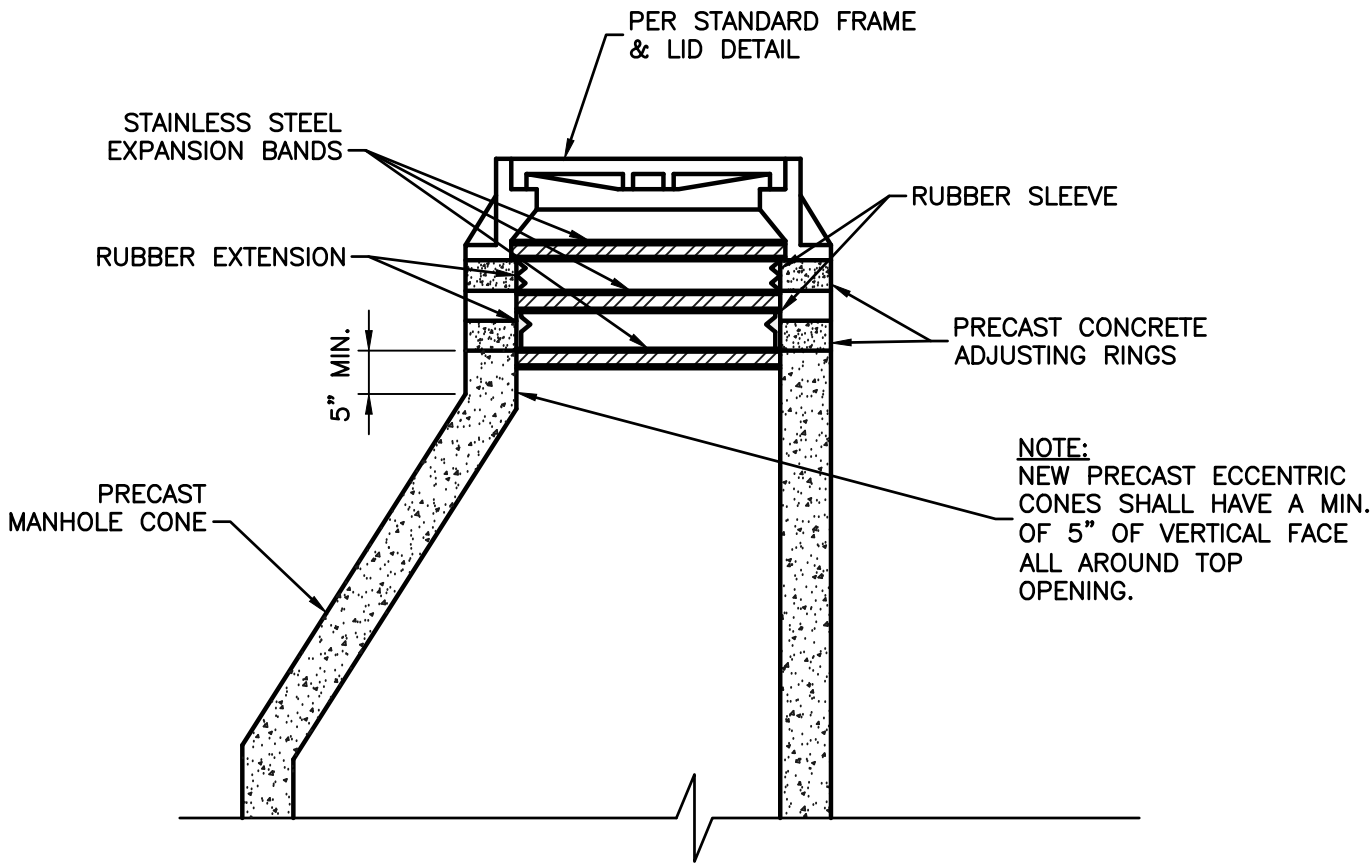
TYPICAL WATERTIGHT FRAME AND LID

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 STANDARD DETAILS  
 SANITARY SEWER

FIGURE
S-9



TO SPAN  
CHIMNEY  
HEIGHTS OF:

0-4 1/2"	.....STD, CHIMNEY SEAL ONLY
2-7 1/2"	.....WIDE CHIMNEY SEAL ONLY
OVER 4 1/2"-10 1/2"	.....STD. SEAL + 7" EXTENSION
OVER 7 1/2"-13 1/2"	.....WIDE SEAL + 7" EXTENSION

TYPICAL CHIMNEY SEAL DETAIL

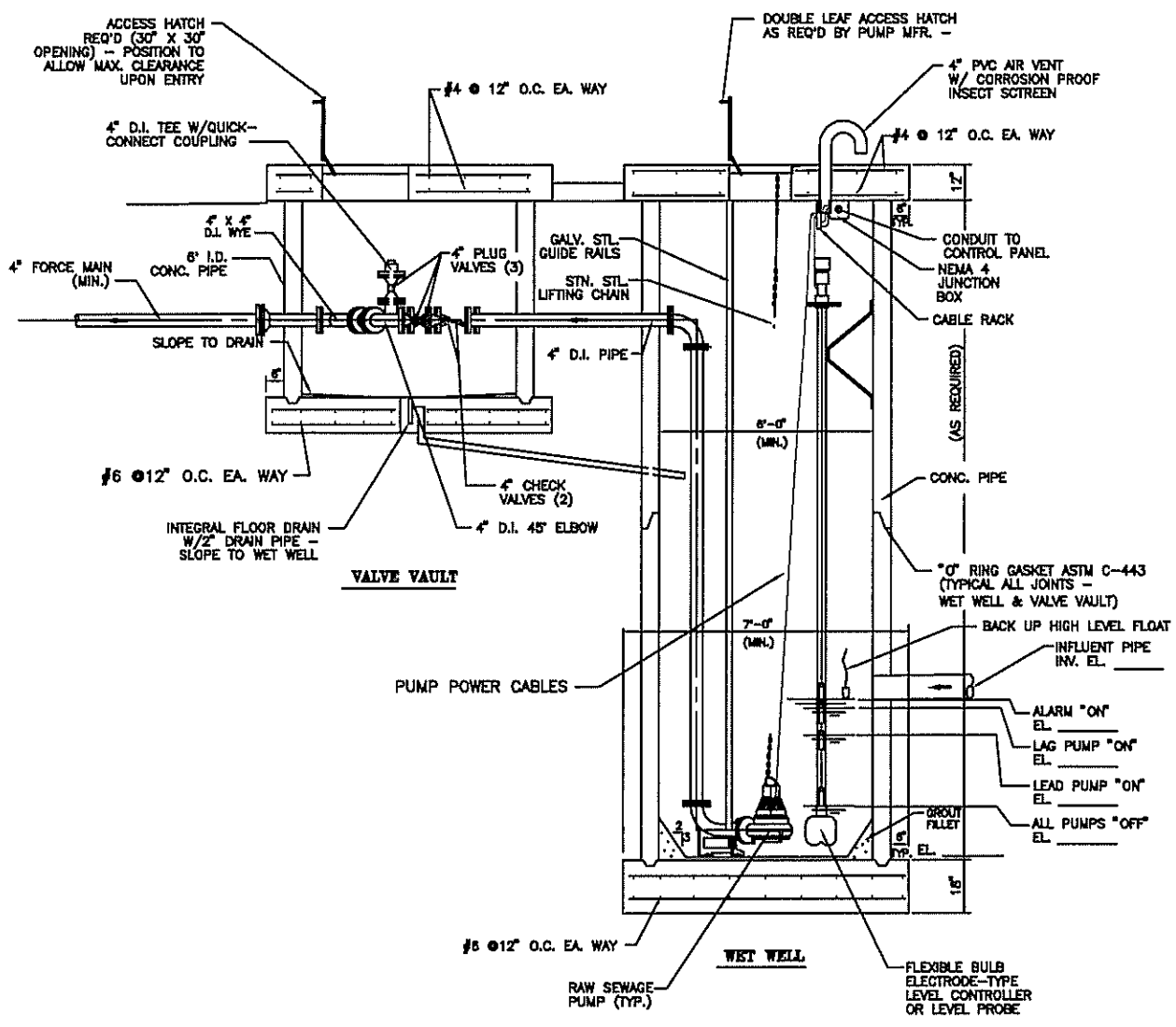
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STANDARD DETAILS  
SANITARY SEWER

FIGURE

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**NOTE:**  
 PIPING AND VALVES SHALL BE SIZED TO MATCH PUMP DISCHARGE  
 BUT NOT LESS THAN 4 INCHES.

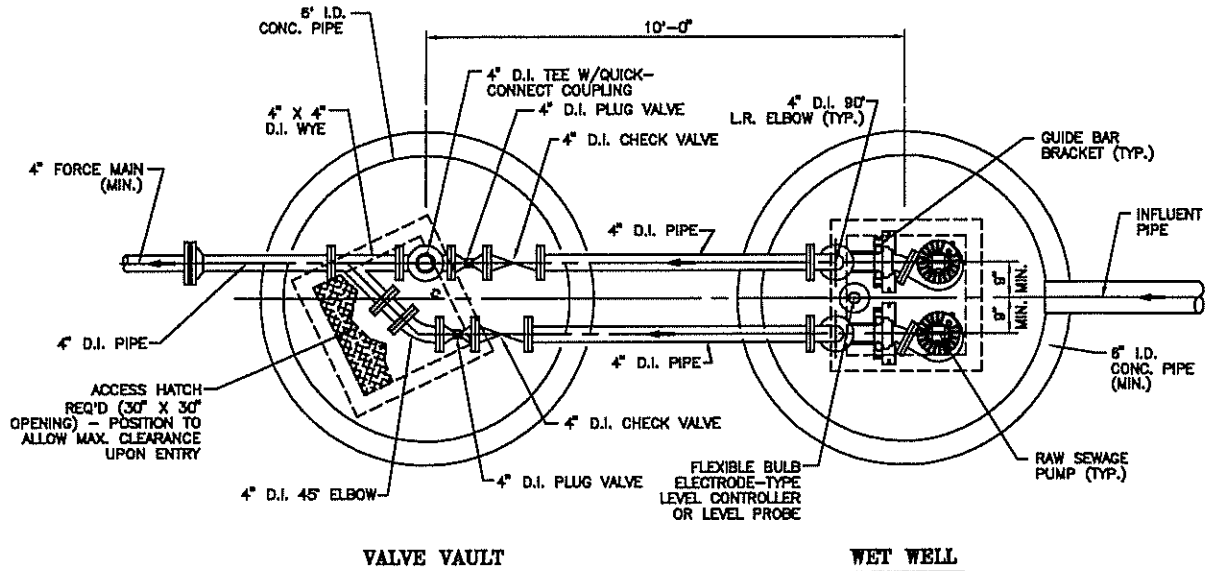
### TYPICAL PUMP STATION SECTION

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**STANDARD DETAILS**  
**SANITARY SEWER**

FIGURE  
  
S-11

DATE: MAY 21st, 2001



NOTE:

PIPING AND VALVES SHALL BE SIZED TO MATCH PUMP DISCHARGE, BUT NOT LESS THAN 4 INCHES.

TYPICAL PUMP STATION PLAN

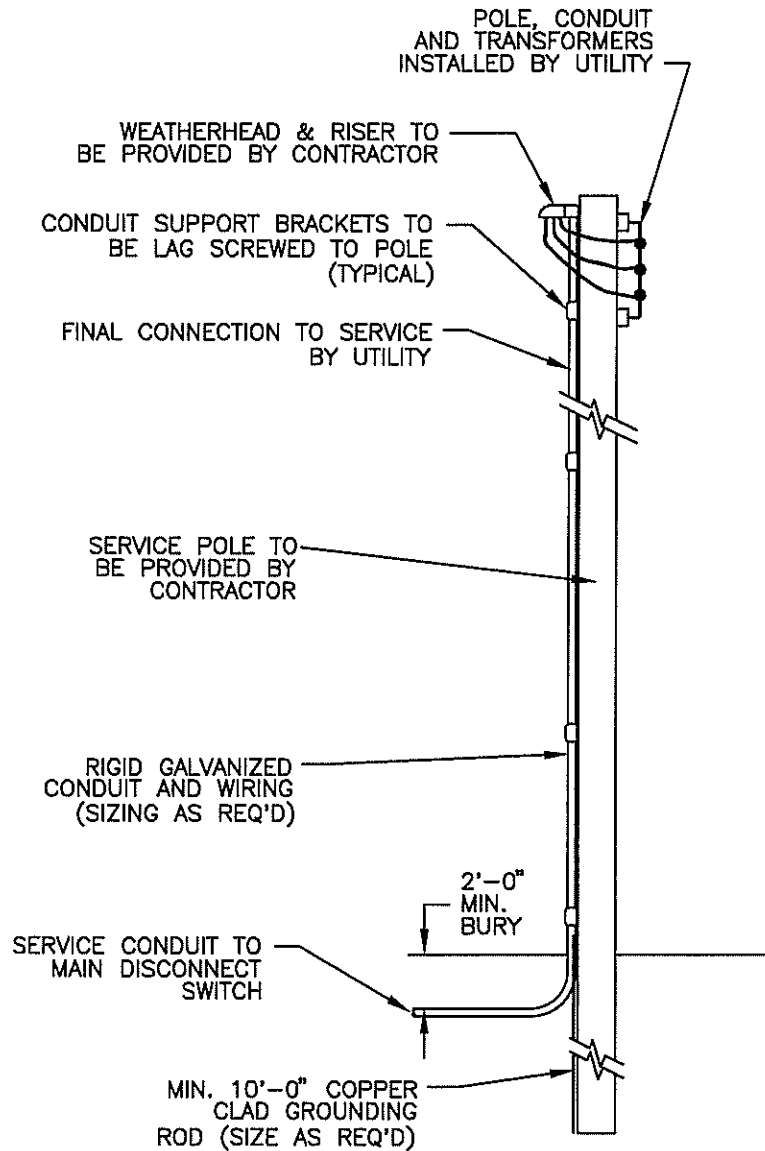
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 SANITARY SEWER

DATE: MAY 21st, 2001

FIGURE

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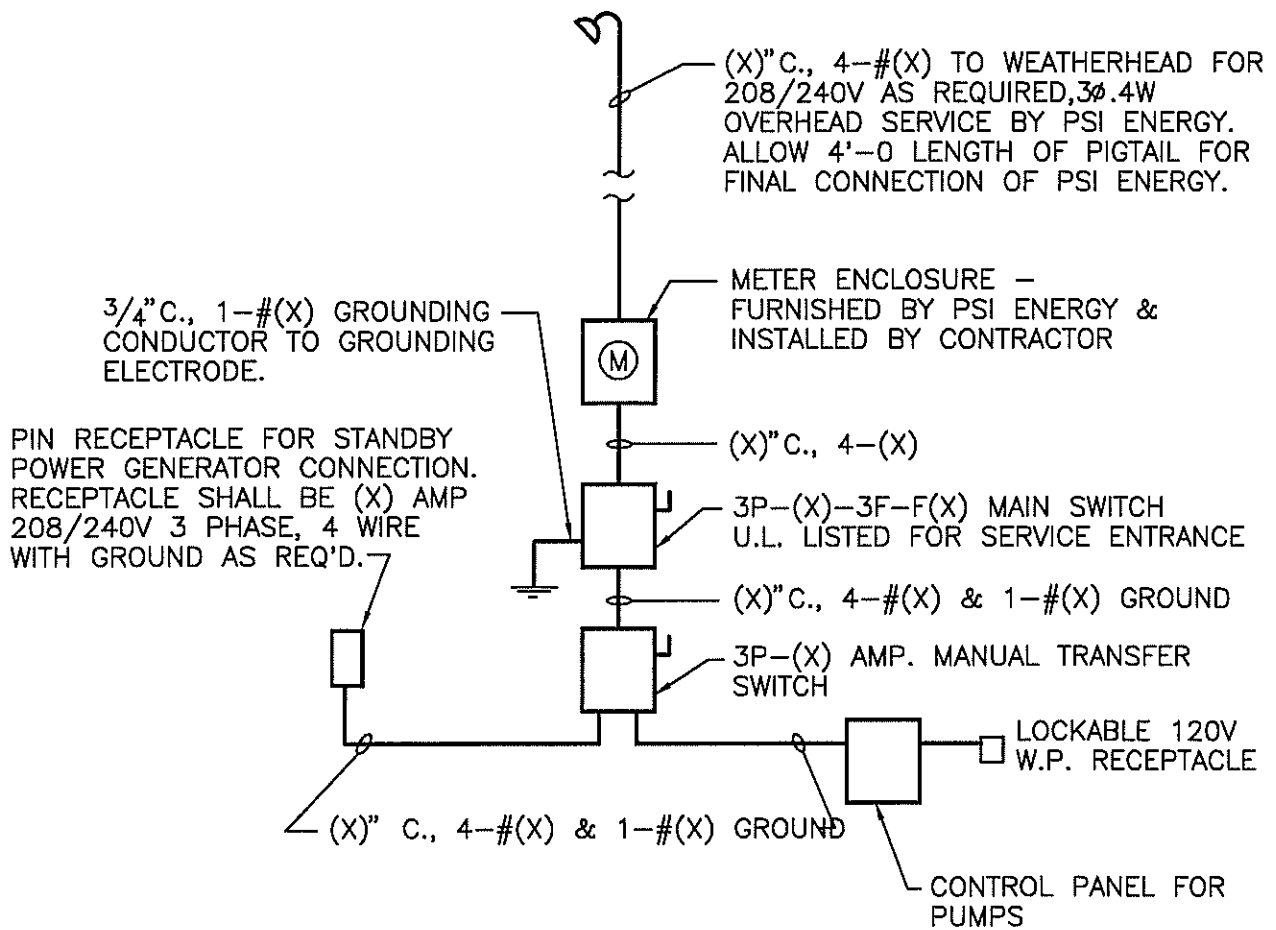
SERVICE POLE ELECTRIC DETAIL

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 STANDARD DETAILS  
 SANITARY SEWER

FIGURE
S-13

DATE: MAY 21st, 2001



NOTES:

MAIN SWITCH, MANUAL TRANSFER SWITCH AND PUMP CONTROL PANEL SHALL BE MOUNTED IN NEMA 3R OR 4X STAINLESS STEEL ENCLOSURES.

(X) - INDICATES VARIABLE SIZING REQUIREMENTS.

TYPICAL LIFT STATION  
POWER DISTRIBUTION SCHEMATIC DETAIL

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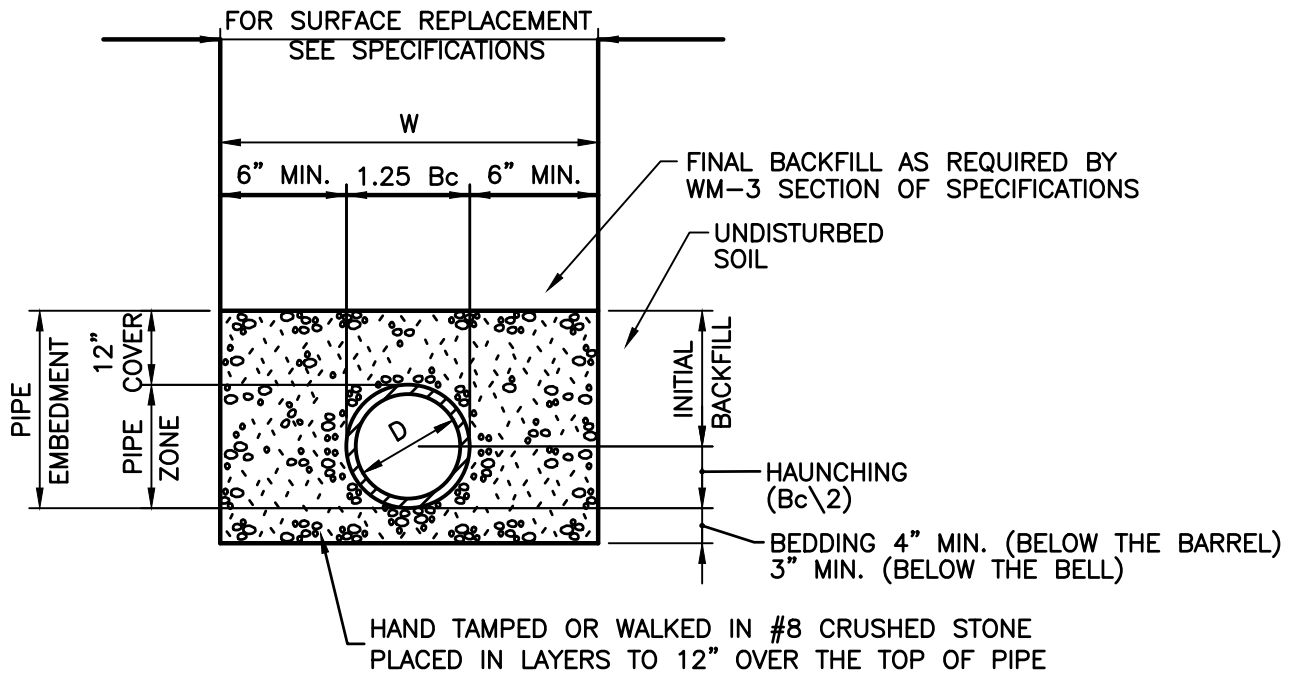
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FIGURE

S-14

DATE: MAY 21st, 2001





- W = MAXIMUM ALLOWABLE TRENCH WIDTH FOR PIPE AS PER ASTM NOT TO EXCEED FOUR (4) FEET FOR 6" THROUGH 24" PIPE NOR SIX (6) FEET FOR 27" THROUGH 48" PIPE
- D = PIPE DIAMETER (INTERNAL)
- Bc = PIPE DIAMETER (EXTERNAL)

**NOTES:**

1. COMPACTED INITIAL BACKFILL SHALL EXTEND A MINIMUM OF 12" ABOVE THE TOP OF THE PIPE. FINAL BACKFILL ABOVE THIS POINT SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND AS REQUIRED HEREIN.
2. WORK FALLING UNDER THE JURISDICTION OF THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) SHALL UTILIZE COMPACTED GRANULAR BACKFILL MATERIAL FOR INITIAL AND FINAL BACKFILL ANYWHERE WITHIN 12 FEET OF THE EDGE OF PAVEMENT. FOR ALL OTHER NON-INDOT PAVEMENT AREAS (INCLUDING BOTH HARD SURFACED AND COMPACTED AGGREGATE), COMPACTED GRANULAR BACKFILL MATERIAL SHALL BE USED WITHIN 5 FEET OF THE EDGE OF THE PAVEMENT.

**TYPICAL TRENCH FOR FLEXIBLE PIPE**

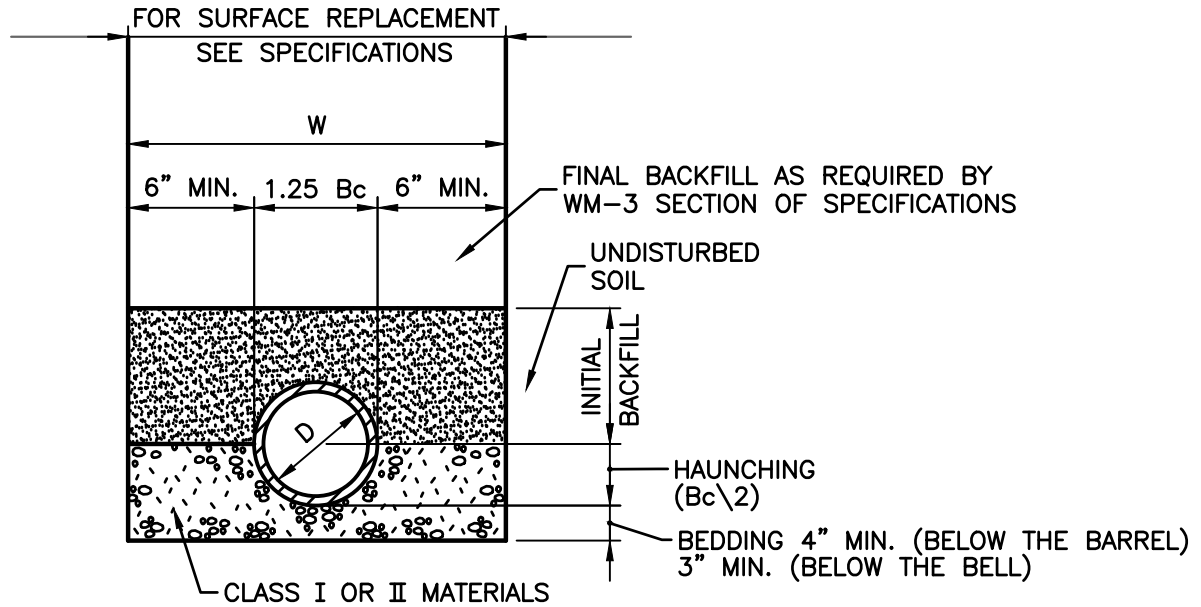
**CITY of MONTICELLO, INDIANA  
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FIGURE

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W = MAXIMUM ALLOWABLE TRENCH WIDTH FOR PIPE AS PER ASTM  
 NOT TO EXCEED FOUR (4) FEET FOR 6" THROUGH 24" PIPE  
 NOR SIX (6) FEET FOR 27" THROUGH 48" PIPE

D = PIPE DIAMETER (INTERNAL)

Bc = PIPE DIAMETER (EXTERNAL)

**NOTES:**

1. COMPACTED BEDDING STOPS AT SPRING-LINE OF THE PIPE. BACKFILLING ABOVE THIS POINT SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND AS REQUIRED HEREIN.
2. WHEN CLASS I MATERIAL IS USED FOR BEDDING, COMPACTION MAY BE ACCOMPLISHED BY HAND OR MECHANICAL TAMPING.
3. WHEN CLASS II MATERIAL IS USED FOR BEDDING, COMPACTION SHALL BE ACCOMPLISHED ONLY BY HAND OR MECHANICAL TAMPING TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY.
4. WORK FALLING UNDER THE JURISDICTION OF THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) SHALL UTILIZE COMPACTED GRANULAR BACKFILL MATERIAL FOR INITIAL AND FINAL BACKFILL ANYWHERE WITHIN 12 FEET OF THE EDGE OF PAVEMENT. FOR ALL OTHER NON-INDOT PAVEMENT AREAS (INCLUDING BOTH HARD SURFACED AND COMPACTED AGGREGATE), COMPACTED GRANULAR BACKFILL MATERIAL SHALL BE USED WITHIN 5 FEET OF THE EDGE OF THE PAVEMENT.

**TYPICAL TRENCH FOR RIGID CONDUITS**

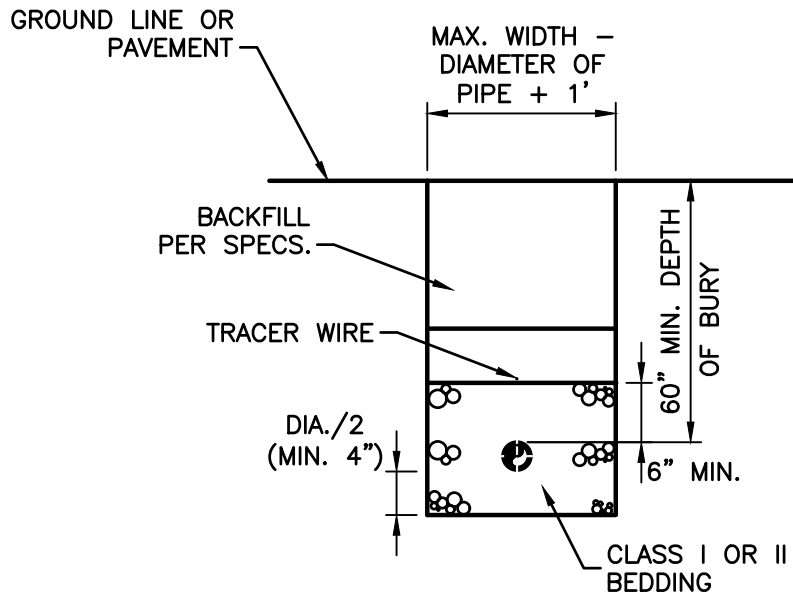
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 STANDARD DETAILS  
 SANITARY SEWER**

FIGURE

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FORCE MAIN PIPE TRENCH DETAIL

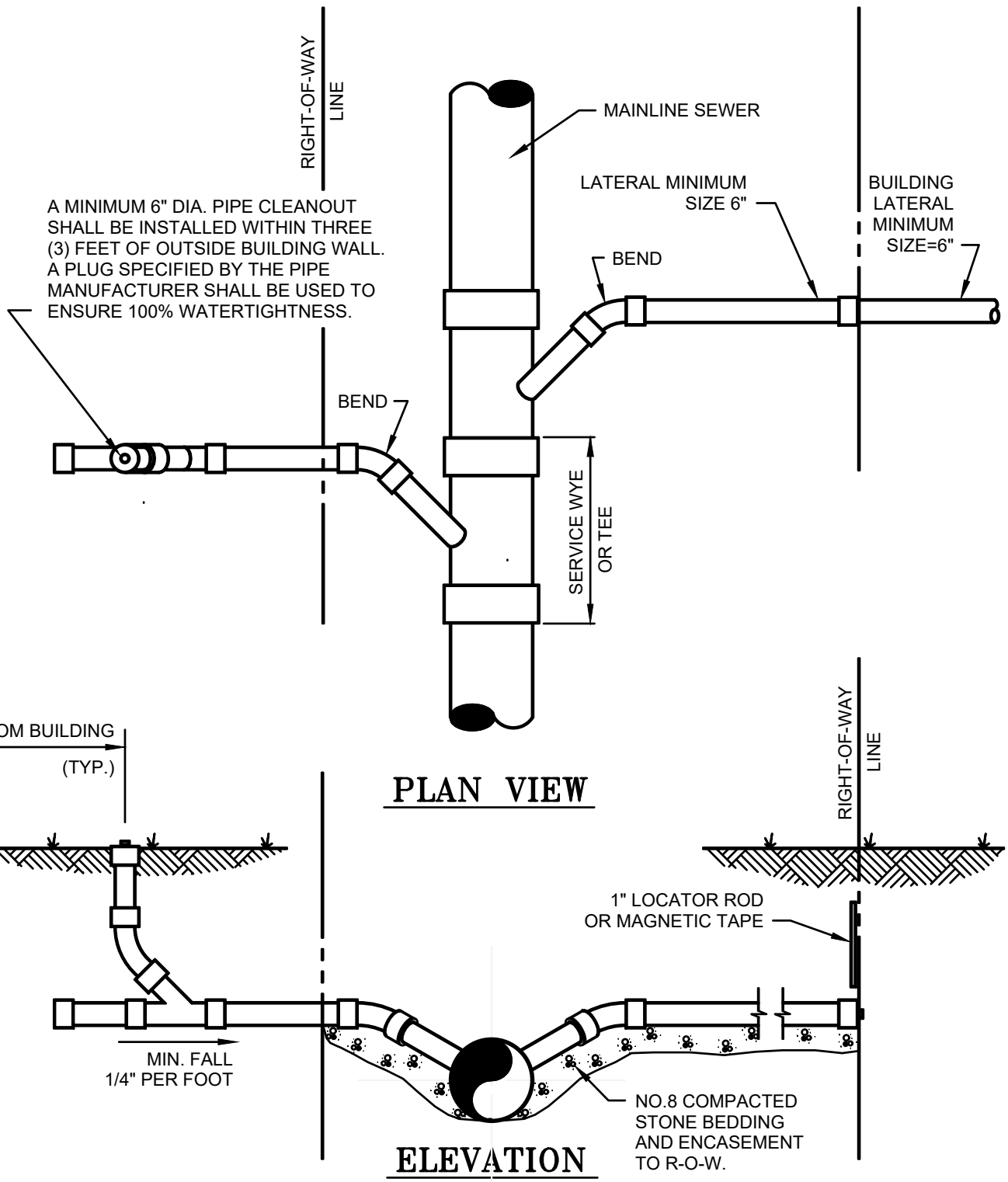
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FIGURE

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SERVICE CONNECTION FOR SHALLOW SEWERS  
(LESS THAN 15' DEEP)

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**STANDARD DETAILS**  
**SANITARY SEWER**

DATE: AUGUST 2019

FIGURE
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45° BEND REQUIRED

6" SERVICE LATERAL

6" ±

10" PVC CASING FILLED WITH UNCOMPACTED FILL. SUPPORTED BY STONE ENCASEMENT.

6" PVC LATERAL

SERVICE TEE ON MAIN LINE

12"

#8 COMPACTED STONE BEDDING, SEE PIPE LAYING METHOD DETAILS.

DEEP LATERAL INSTALLATION OVER 15' DEEP (ALT. #1)

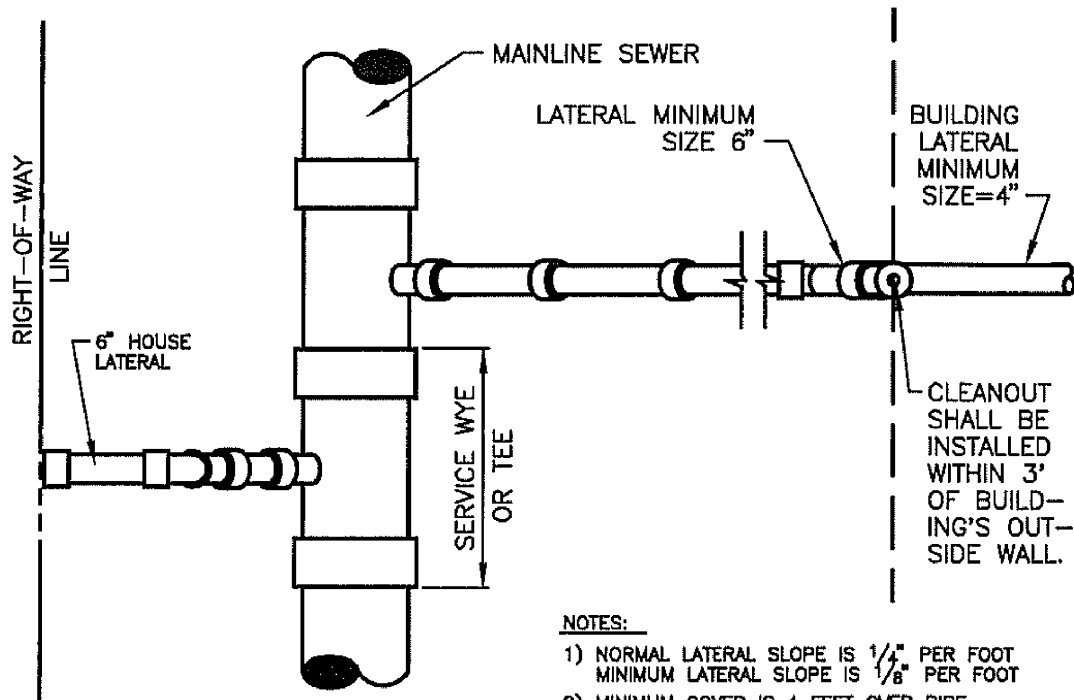
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FIGURE

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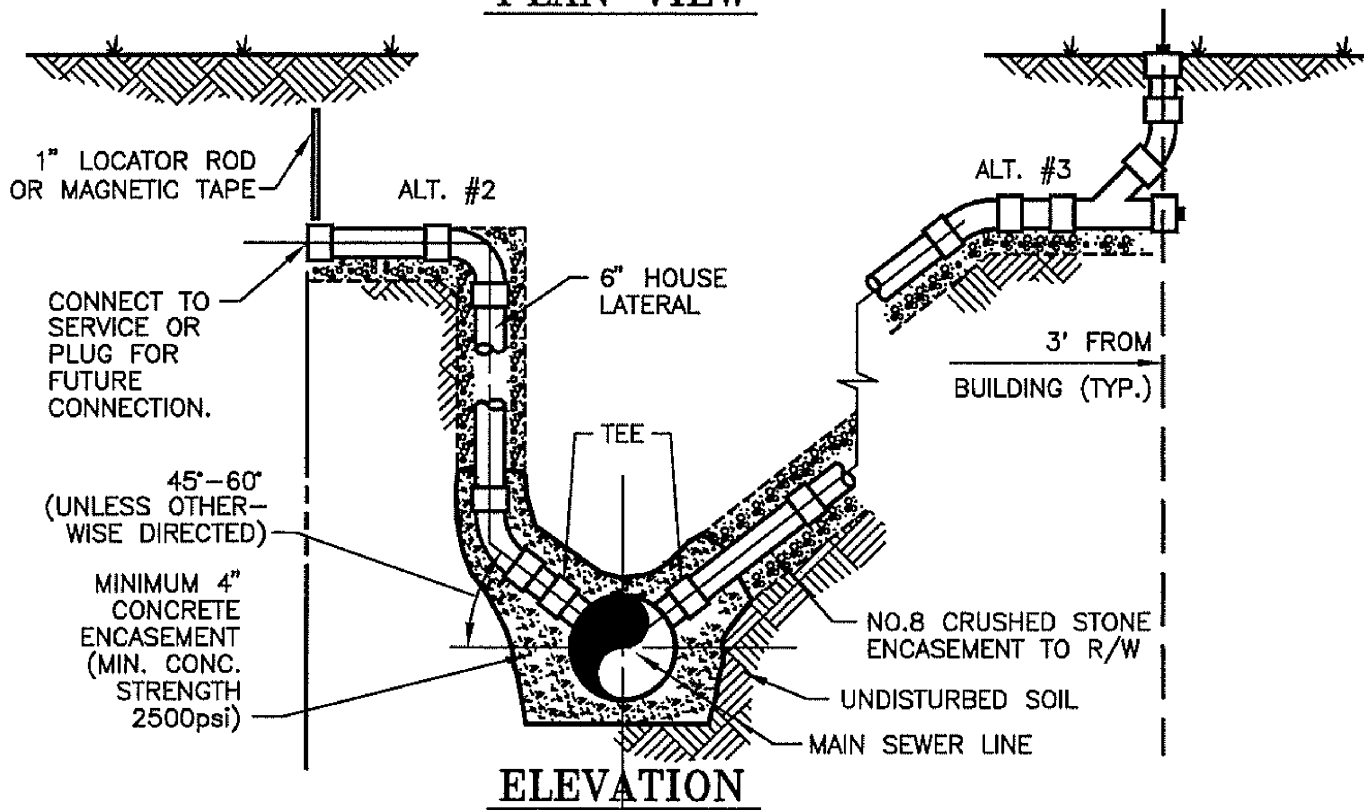
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**PLAN VIEW**

**NOTES:**

- 1) NORMAL LATERAL SLOPE IS  $\frac{1}{4}$ " PER FOOT  
MINIMUM LATERAL SLOPE IS  $\frac{1}{8}$ " PER FOOT
- 2) MINIMUM COVER IS 4 FEET OVER PIPE



**ELEVATION**

**SERVICE CONNECTION FOR SHALLOW SEWERS  
(ALT. #2 & ALT. #3)  
(LESS THAN 15' DEEP)**

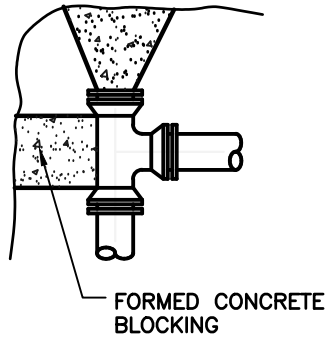
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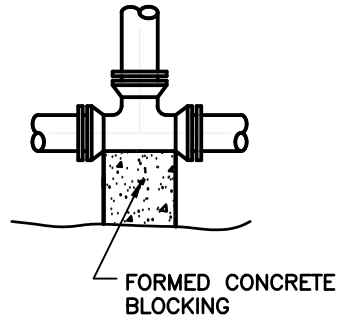
**CITY of MONTICELLO, INDIANA  
STANDARD DETAILS  
SANITARY SEWER**

FIGURE

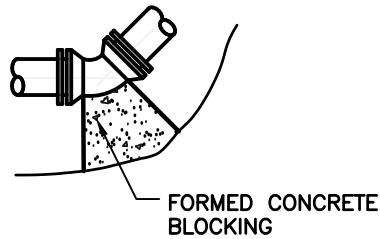
S-20



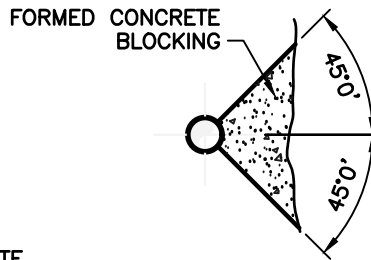
**DETAIL A**



**DETAIL B**



**DETAIL C**



**TYP. PROFILE**

**TABLE OF DIMENSION FOR CONCRETE BLOCKING**

SIZE	TEE				PLUG					90° BEND				45° BEND				22½° BEND				11½° BEND			
	L	T	W	D	L	T	W	D	s	L	T	W	D	L	T	W	D	L	T	W	D	L	T	W	D
4"	18"	12"	12"	8"	18"	12"	18"	18"	2"	24"	12"	24"	8"	18"	8"	12"	8"	18"	8"	12"	8"	15"	8"	12"	6"
6"	18"	12"	12"	8"	18"	12"	18"	18"	2"	24"	15"	24"	8"	18"	10"	12"	8"	18"	10"	12"	8"	18"	10"	18"	6"
8"	30"	12"	24"	8"	30"	18"	30"	24"	4"	36"	16"	30"	8"	24"	12"	18"	8"	24"	18"	18"	8"	24"	12"	18"	8"
10"	36"	18"	30"	10"	36"	18"	36"	24"	4"	48"	20"	36"	10"	30"	14"	24"	10"	30"	14"	24"	10"	24"	14"	18"	8"
12"	48"	18"	36"	10"	42"	18"	42"	24"	4"	54"	24"	48"	10"	36"	16"	30"	10"	36"	16"	30"	10"	30"	16"	24"	10"
14"	54"	24"	42"	12"	48"	18"	48"	30"	6"	60"	28"	60"	12"	42"	16"	42"	12"	42"	16"	42"	12"	33"	16"	27"	12"
16"	60"	24"	48"	12"	54"	18"	54"	30"	6"	66"	32"	63"	12"	48"	18"	48"	12"	48"	18"	48"	12"	36"	18"	30"	12"
18"	66"	30"	54"	14"	60"	24"	60"	36"	6"	66"	36"	66"	14"	54"	18"	54"	14"	54"	18"	54"	14"	39"	18"	33"	14"
20"	72"	30"	60"	14"	66"	24"	66"	36"	8"	72"	40"	69"	14"	60"	20"	60"	14"	60"	20"	60"	14"	42"	20"	36"	14"
24"	84"	36"	72"	18"	78"	30"	78"	42"	8"	84"	48"	75"	18"	72"	22"	72"	18"	72"	22"	72"	18"	48"	22"	42"	18"

**NOTES:**

- FOR TEE WITH BRANCH UNEQUAL TO RUN USE TEE TYPE KICKER WITH D, L, AND W DIMENSIONS THE SAME AS THOSE FOR PLUG WITH SAME DIAMETER AS BRANCH OF TEE, SELECT "T" DIMENSIONS FROM TEE TABLE UNDER COLUMN HEADED BY THE SIZE OF THE BRANCH.
- IF EXACT SIZE PIPE BLOCKING IS NOT SHOWN USE NEXT LARGER SIZE.
- DEPTH "D" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE. BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH OR ROCK.

**THRUST BLOCKING DETAILS FOR FORCE MAIN**

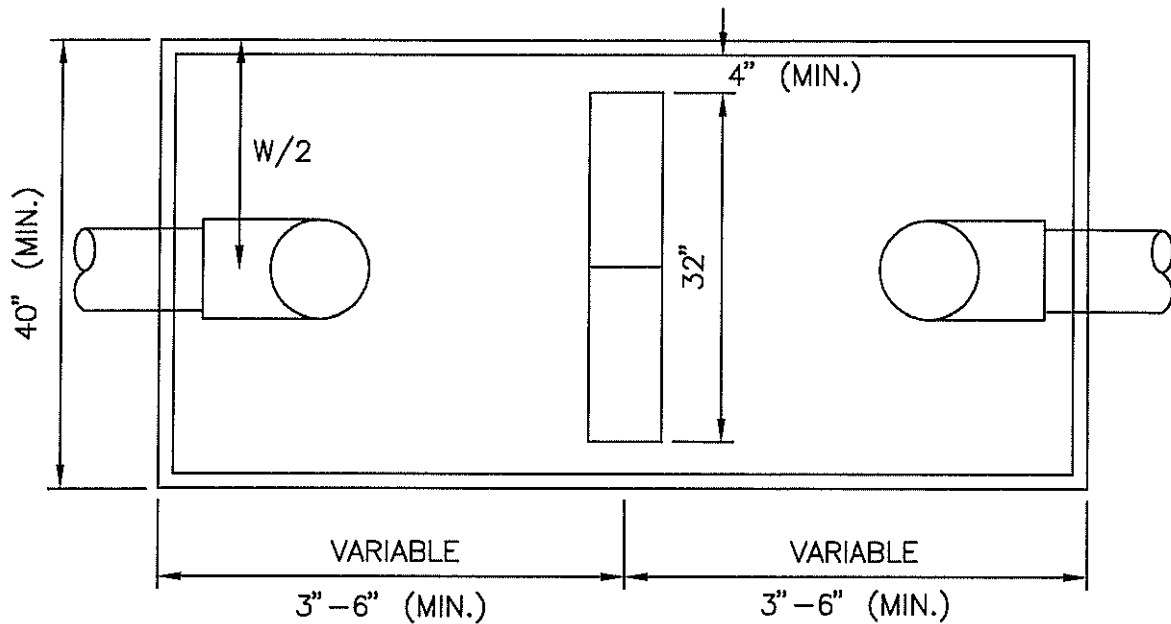
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STANDARD DETAILS  
SANITARY SEWER**

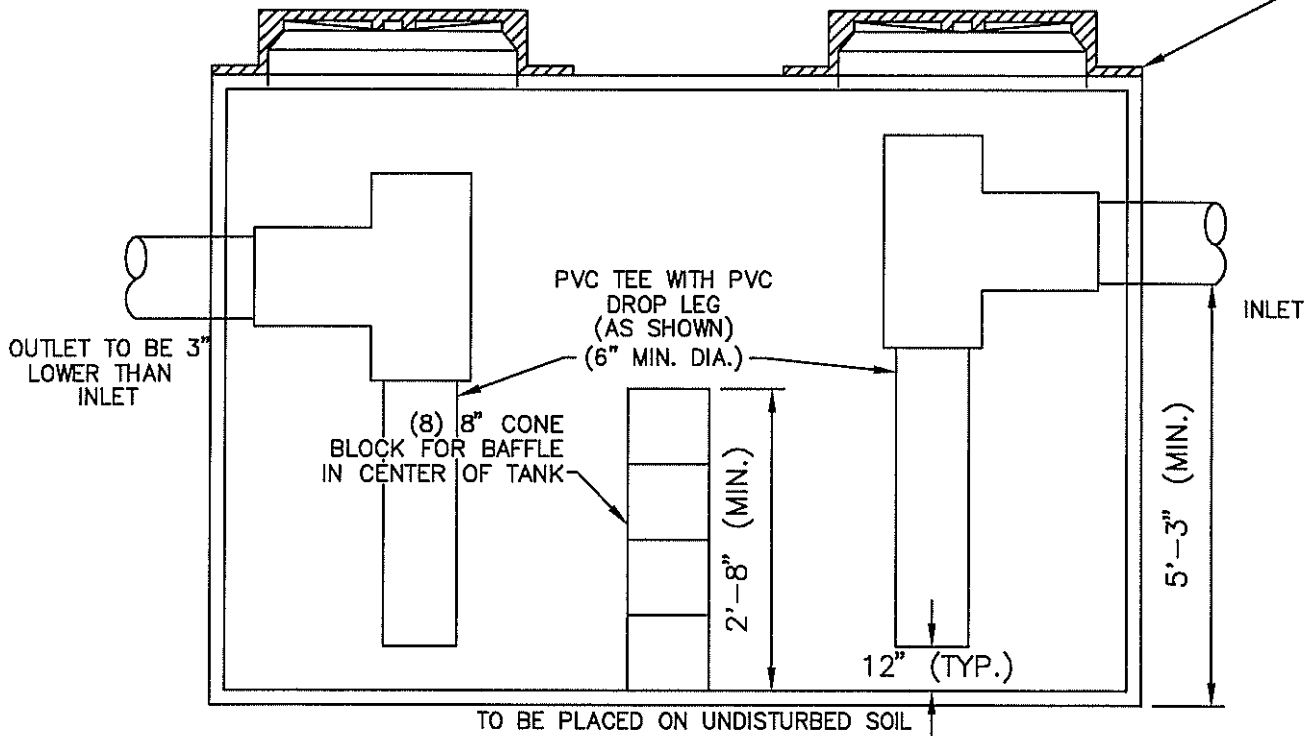
FIGURE

**S-21**

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MANHOLE LID TO BE NEENAH #R1772CVH TYPE "B" "SELF SEALING" WITH CONCEALED PICKHOLE OR EQUAL. LIDS TO BE CENTERED ON THE PRECAST OPENINGS IN TOP OF TRAP AND SET IN BITUMASTIC SEALANT.



GREASE TRAP SHALL BE MADE OF A STANDARD 1,000 GALLON (OR LARGER) PRECAST CONCRETE SEPTIC TANK AS MANUFACTURED BY VERPLANK CONCRETE AND SUPPLY CO., LAFAYETTE, IN OR APPROVED EQUAL

## PROPOSED GREASE TRAP DETAIL

# CITY of MONTICELLO, INDIANA STANDARD DETAILS SANITARY SEWER

FIGURE

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