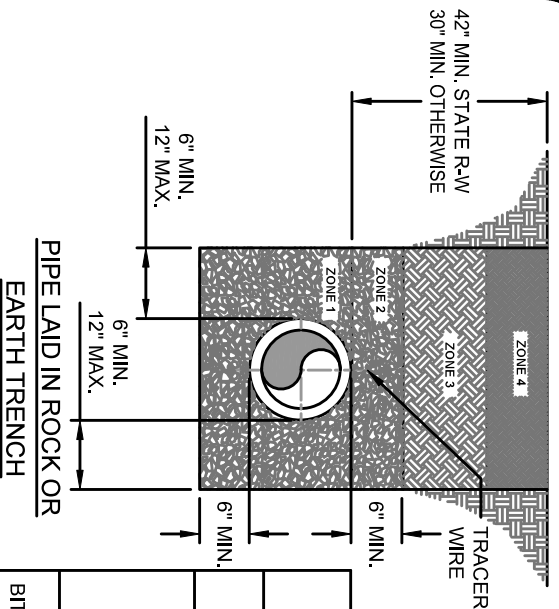




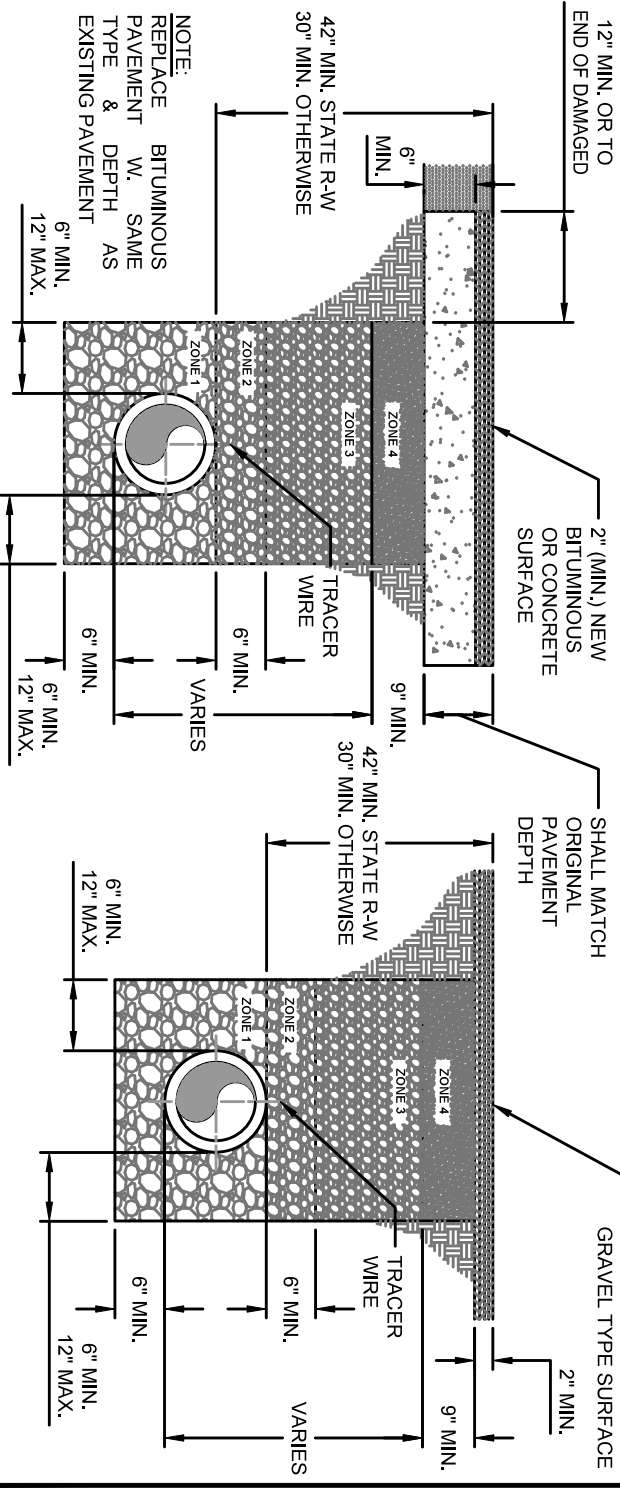
***DESIGN and CONSTRUCTION MANUAL for  
MUPB UTILITIES***

**APPENDIX C**

**STANDARD DETAILS**



BACKFILL NOTES				
SURFACE TYPE	ZONE 1	ZONE 2	ZONE 3	ZONE 4
EARTH TRENCH	CLEAN EARTH OR NO. 9 OR 68 CRUSHED STONE	CLEAN EARTH OR NO. 9 OR 68 CRUSHED STONE	COMPACTED SOIL FREE OF ROCK	TOP SOIL
BITUMINOUS SURFACE > 2" THICK	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	COMPACTED DGA
BITUMINOUS SURFACE < 2" THICK	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	COMPACTED DGA



ORIGINAL BITUMINOUS OR  
CONCRETE SURFACE

ORIGINAL GRAVEL SURFACE

## TRENCH BACKFILL - DETAIL

NOT TO SCALE

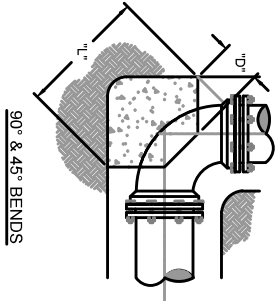


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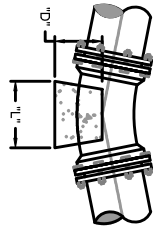
GENERAL PIPE STANDARD DETAIL  
TRENCH BACKFILL

Date	07/06/2021
Revision Date	01/14/2022
Dwg. No.	GP-001

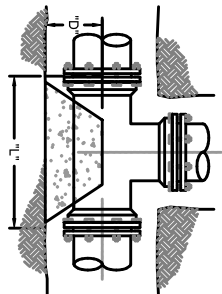
THRUST BLOCK SCHEDULE																	SOIL TYPE - SAND & GRAVEL BEARING STRENGTH = 3000 PSF													
PIPE SIZE	90° BEND						45° BEND						22 1/2° BEND						11 1/2° BEND						TEE & DEAD ENDS					
	BEARING YDS OF AREA	D	W	L	BEARING YDS OF AREA	D	W	L	BEARING YDS OF AREA	D	W	L	BEARING YDS OF AREA	D	W	L	BEARING YDS OF AREA	D	W	L	BEARING YDS OF AREA	D	W	L	BEARING YDS OF AREA	D	W	L		
4"	3,750	.21	18	30	18	1,750	.10	18	18	14	1,000	.06	18	12	12	.500	.02	12	12	6	2,250	.13	18	18	18					
6"	7,000	.39	18	42	24	3,750	.21	18	30	18	2,000	.11	18	24	12	1,000	.04	12	12	12	5,000	.28	18	30	24					
8"	12,250	.91	24	42	42	7,500	.56	24	36	30	4,000	.30	24	24	24	2,000	.11	18	24	12	9,000	.67	24	36	36					
10"	20,000	1.48	24	60	48	10,500	.78	24	42	36	6,000	.44	24	36	24	3,000	.17	18	24	18	14,000	1.04	24	48	42					
12"	30,000	2.78	30	72	60	15,750	1.46	30	54	42	7,500	.69	30	36	30	4,000	.30	24	24	24	20,000	1.85	30	60	48					
14"	39,000	4.33	36	78	72	20,000	2.22	36	60	48	10,500	1.17	36	42	36	6,000	.56	30	36	24	27,500	3.06	36	66	60					
16"	49,000	6.35	42	84	84	27,500	3.56	42	66	60	14,000	1.81	42	48	42	7,500	.83	36	36	30	37,750	4.63	42	78	66					



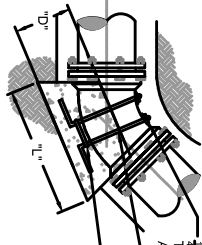
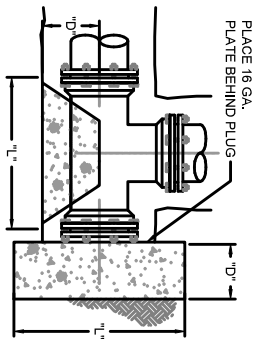
90° & 45° BENDS



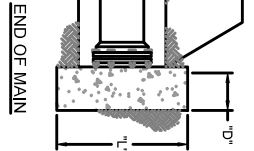
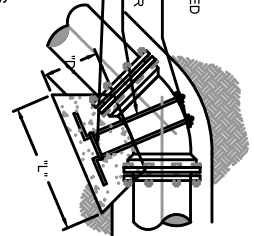
22.5° & 11.25° BENDS



TEES



VERTICAL BENDS



TYP. SECTION

- NOTE:**
- ALL CONCRETE SHALL BE A MIN. OF 3,000 PSI
  - SEE PLAN SHEETS FOR SIZE, MATERIAL & LOCATION OF PIPE.
  - SIDES OF ALL TRENCHES TO BE UNDISTURBED SOIL.
  - SEE DWG # GP-001 FOR TRENCH BACKFILL DETAIL.
  - DEPTH "D" MAY NOT BE SMALLER THAN SPECIFIED.
  - PIERS SHALL BE PLACED AGAINST UNDISTURBED SOIL.
  - PLACE CONCRETE ANCHORS 25' C/C.
  - M.I. FITTING(S) SHALL BE WRAPPED IN PLASTIC WRAP
  - GRIP RINGS SHALL BE USED ON ALL FITTINGS

# CONCRETE THRUST BLOCK - DETAIL

NOT TO SCALE

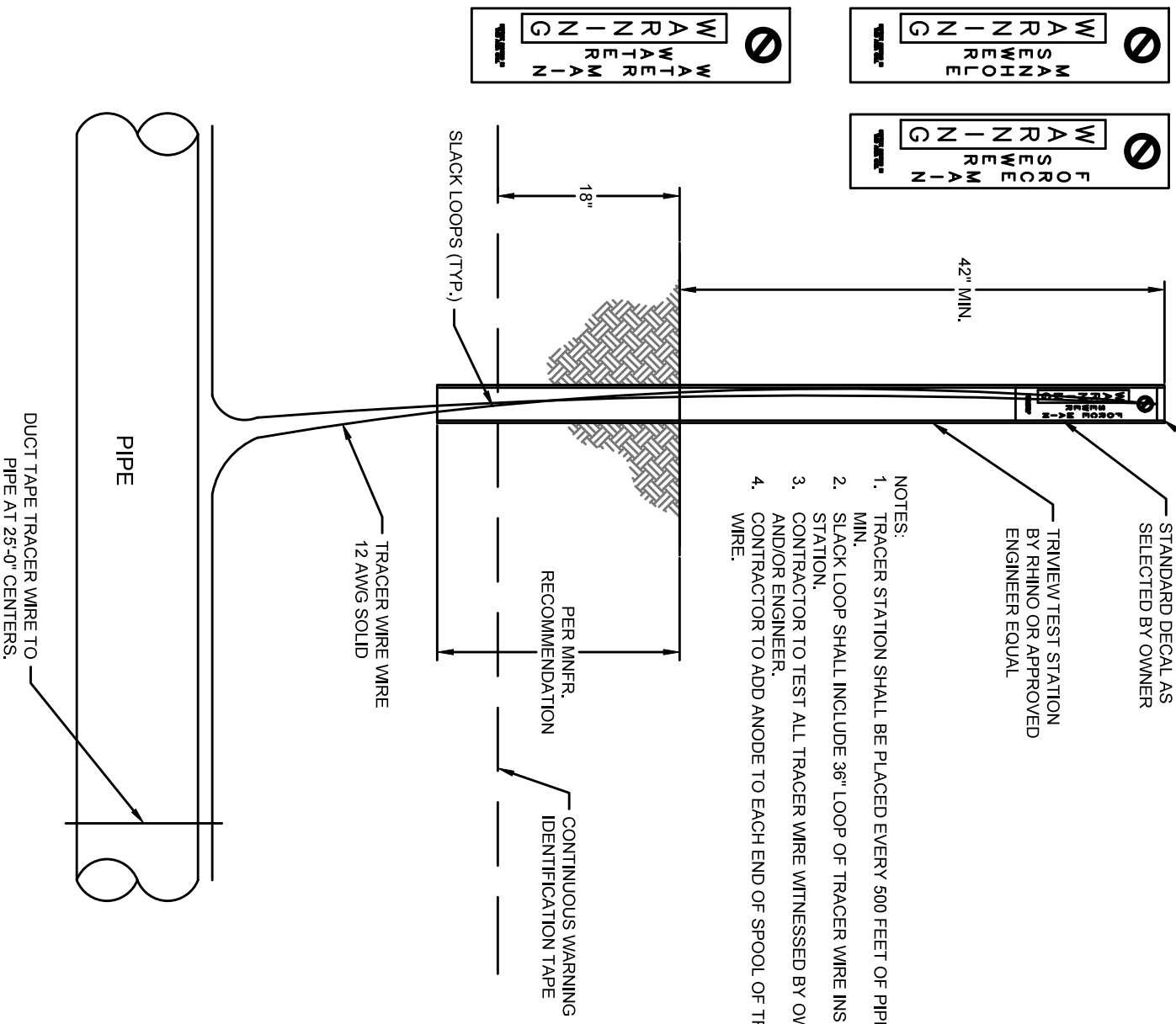


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GENERAL PIPE STANDARD DETAIL  
CONCRETE THRUST BLOCK

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-002

- REMOVABLE CAP W.  
TELESCOPING TERMINALS
- STANDARD DECAL AS  
SELECTED BY OWNER
- TRIMVIEW/TEST STATION  
BY RHINO OR APPROVED  
ENGINEER EQUAL
- NOTES:
1. TRACER STATION SHALL BE PLACED EVERY 500 FEET OF PIPE. AT MIN.
  2. SLACK LOOP SHALL INCLUDE 36" LOOP OF TRACER WIRE INSIDE TEST STATION.
  3. CONTRACTOR TO TEST ALL TRACER WIRE WITNESSED BY OWNER AND/OR ENGINEER.
  4. CONTRACTOR TO ADD ANODE TO EACH END OF SPOOL OF TRACING WIRE.



## ABOVE GRADE TRACER STATION

NOT TO SCALE

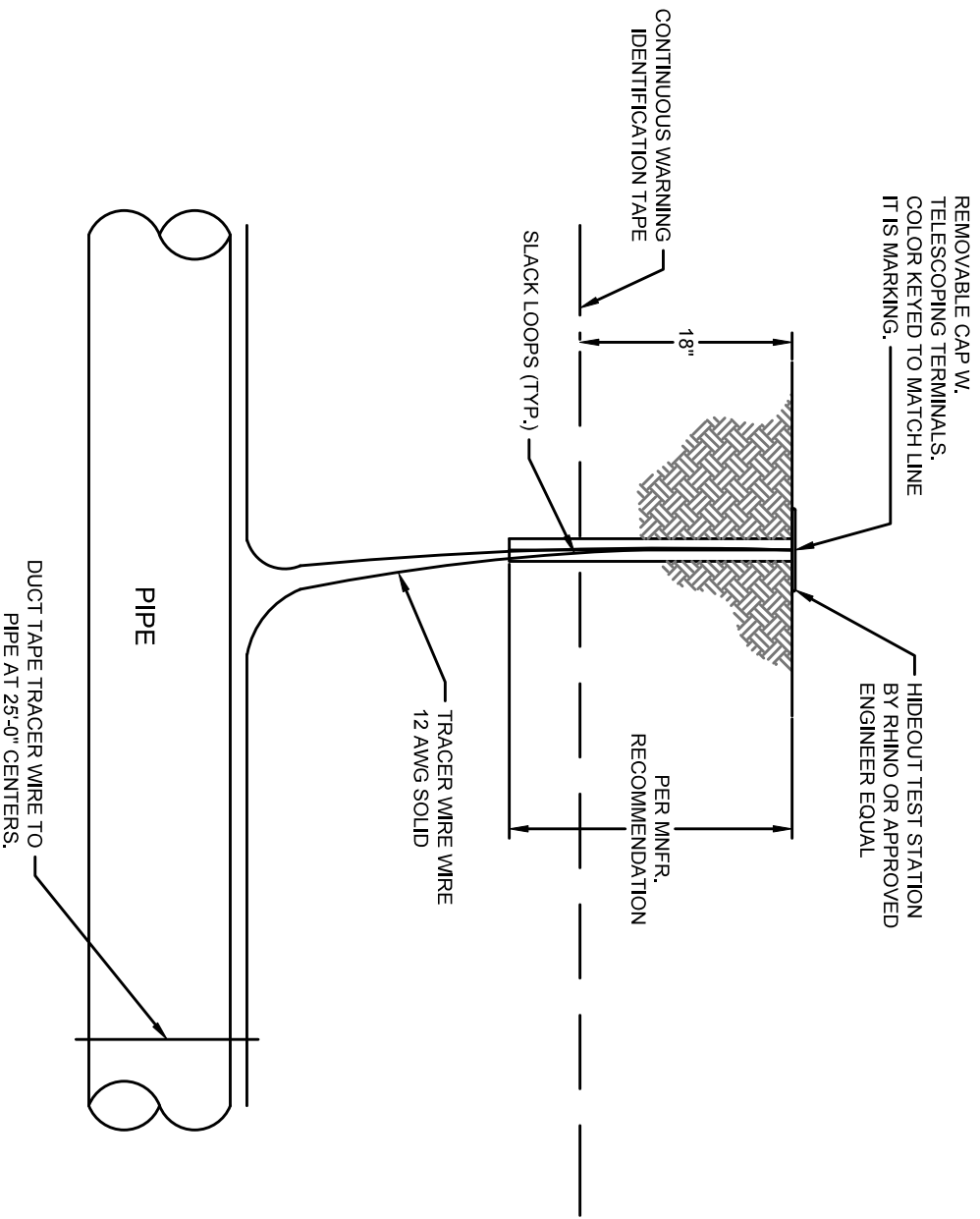


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SANITARY SEWER STANDARD DETAIL  
ABOVE GRADE TRACER STATION

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-003

- NOTES:
1. TRACER STATION SHALL BE PLACED EVERY 500 FEET OF PIPE, LOCATED AT ALL ROAD OR CREEK CROSSINGS, BELOW GROUND MARKERS SHALL NOT BE PLACED IN TRAFFIC OR PARKING LANES WITHOUT OWNER APPROVAL.
  2. SLACK LOOP SHALL INCLUDE 36" LOOP OF TRACER WIRE INSIDE TEST STATION.
  3. CONTRACTOR TO TEST ALL TRACER WIRE WITNESSED BY OWNER AND/OR ENGINEER.
  4. CONTRACTOR TO ADD ANODE TO EACH END OF SPOOL OF TRACING WIRE.



## BELOW GRADE TRACER STATION

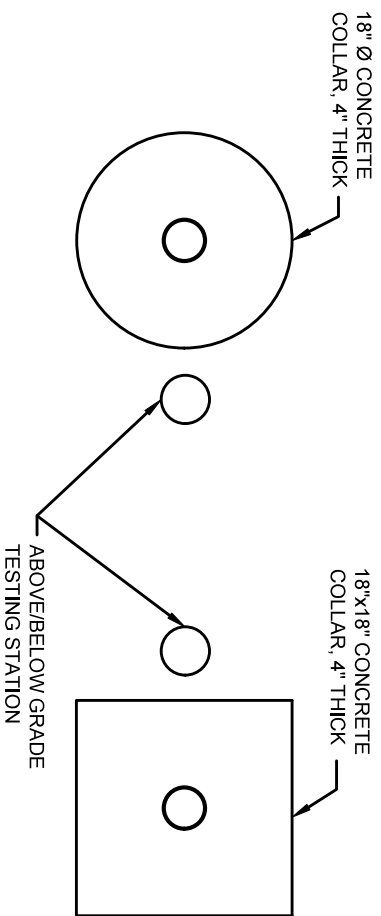
NOT TO SCALE



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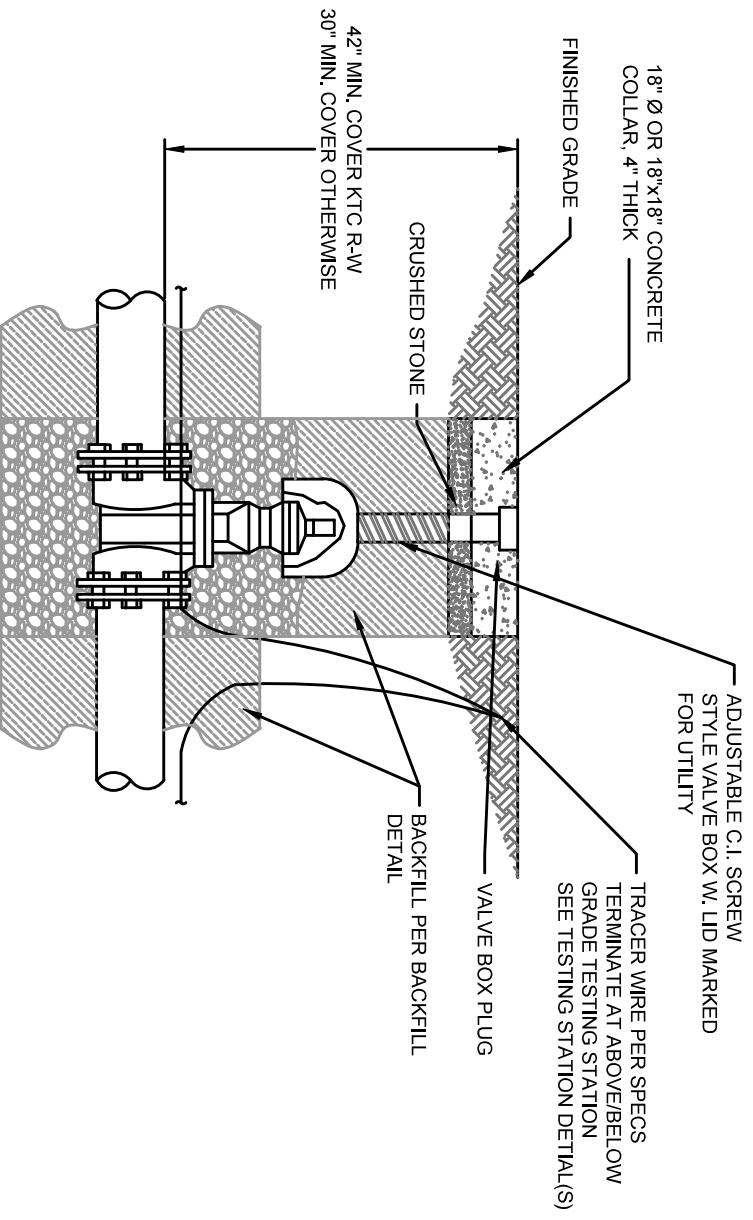
SANITARY SEWER STANDARD DETAIL  
BELOW GRADE TRACER STATION

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-004



**PLAN - CIRCULAR**

**PLAN - SQUARE**



## GATE VALVE BOX ASSEMBLY

NOT TO SCALE



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**GENERAL PIPE STANDARD DETAIL  
GATE VALVE & BOX ASSEMBLY**

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-005



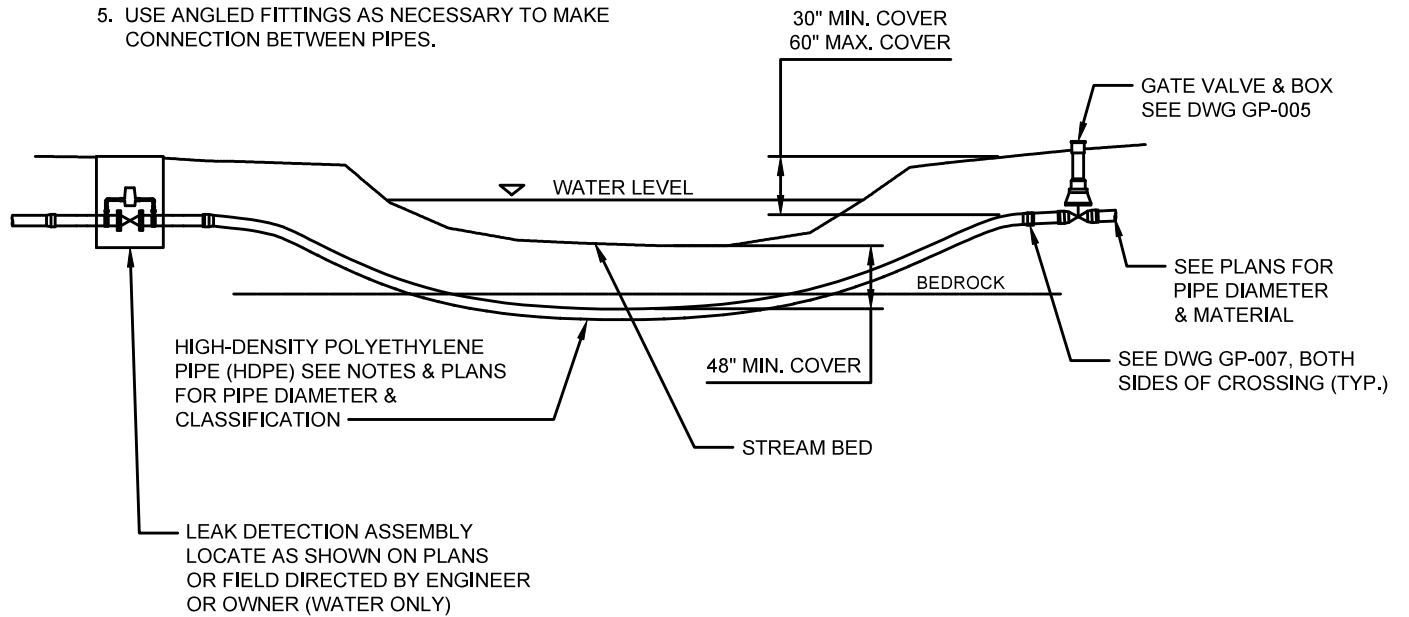
# GENERAL PIPE STANDARD DETAIL DIRECTION DRILL CREEK CROSSING

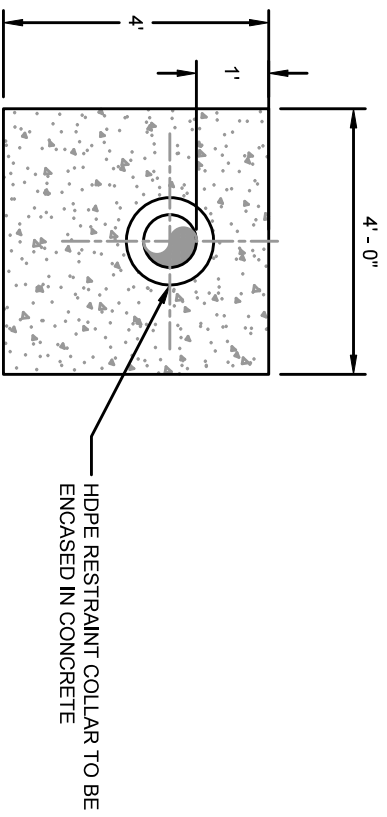
Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	
GP-006	

# DIRECTIONAL DRILLED CREEK CROSSING - DETAIL

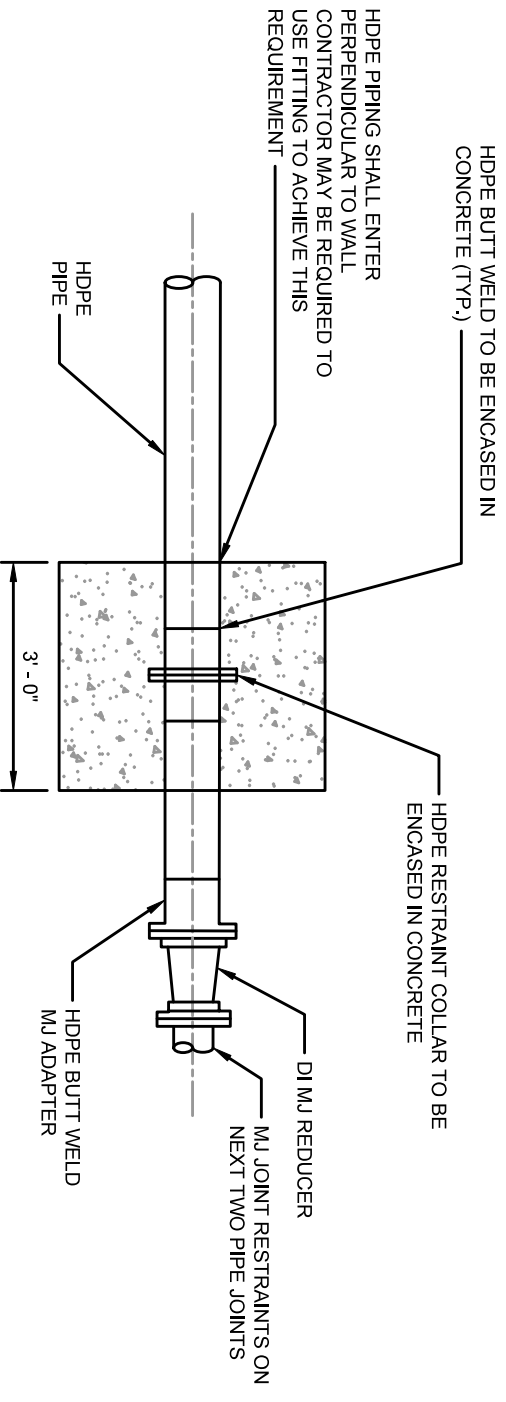
NOT TO SCALE

1. CONNECTION OF THE HDPE TO THE PVC OR DUCTILE IRON PIPE SHALL BE NO DEEPER THAN 5 FEET FROM THE GROUND ELEVATION.
2. DIRECTIONAL BORE SHALL BE MADE IN BED ROCK WITH A MIN DEPTH OF 36".
3. WHEN USING HDPE THE PIPE SHALL BE SIZED UP ONE PIPE SIZE TO ALLOW THE I.D. OF THE HDPE TO EQUAL THE I.D. OF THE CONNECTING PIPE.
4. SEE PLANS FOR PIPE LOCATION, MATERIAL & SIZE.
5. USE ANGLED FITTINGS AS NECESSARY TO MAKE CONNECTION BETWEEN PIPES.





SECTION



ELEVATION

## DIRECTIONAL DRILLED CREEK CROSSING CONNECTION - DETAIL

NOT TO SCALE

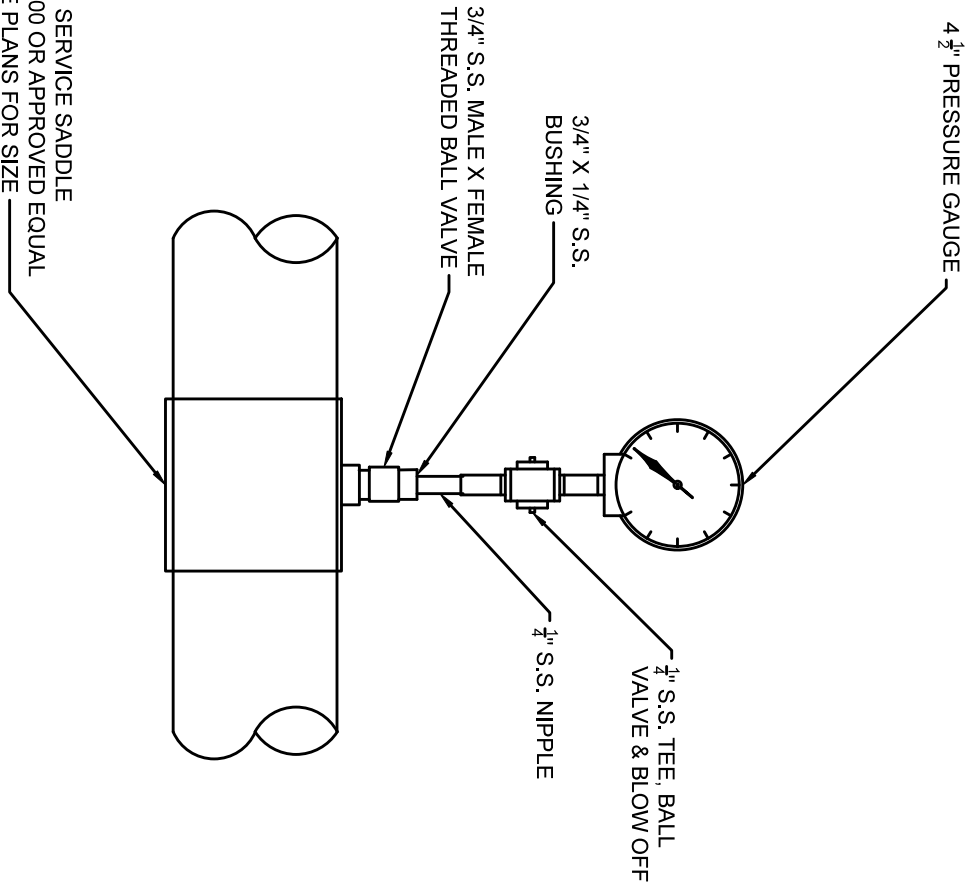


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GENERAL PRESSURE PIPE STANDARD DETAIL  
DIRECTION DRILL CREEK CROSSING  
CONNECTION DETAIL

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-007





## PRESSURE GAUGE ASSEMBLY - DETAIL

NOT TO SCALE



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GENERAL PRESSURE PIPE STANDARD DETAIL  
PRESSURE GAGE ASSEMBLY

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-008



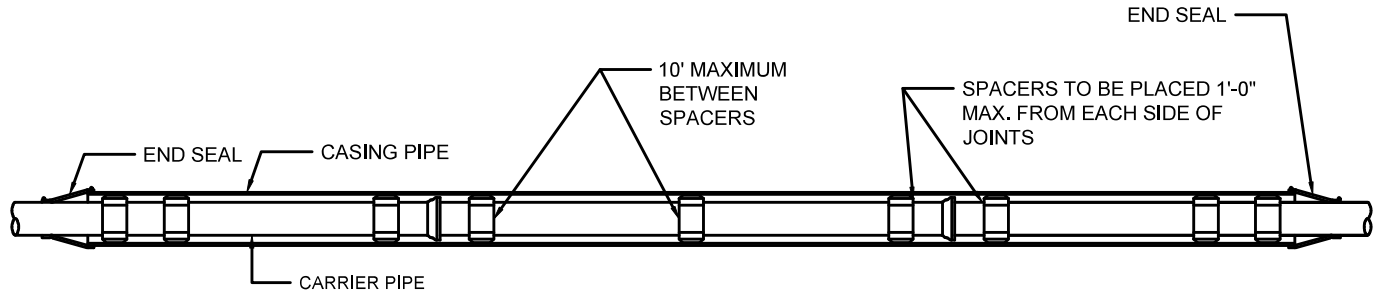
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PLANT BOARD**  
135 SOUTH WILSON AVE.  
MOREHEAD, KY 40351

**GENERAL PRESSURE PIPE STANDARD DETAIL  
STEEL CASING, BORE & JACK**

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-009

# **STEEL CASING BORE & JACK - DETAIL**

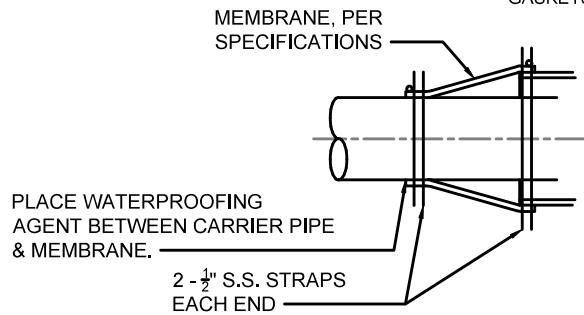
NOT TO SCALE



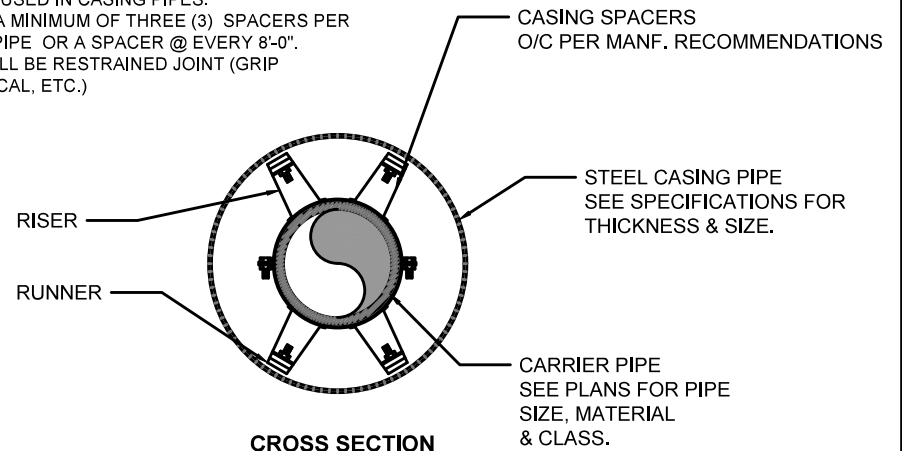
## **PLAN**

### **NOTE:**

1. RUNNER HEIGHTS VARY FROM 1/2" TO 2" AND SHALL BE DETERMINED DURING SHOP DRAWING REVIEW.
2. SPACERS SHALL BE USED IN CASING PIPES.
3. THERE SHOULD BE A MINIMUM OF THREE (3) SPACERS PER JOINT OF CARRIER PIPE OR A SPACER @ EVERY 8'-0".
4. CARRIER PIPES SHALL BE RESTRAINED JOINT (GRIP GASKETS, MECHANICAL, ETC.)



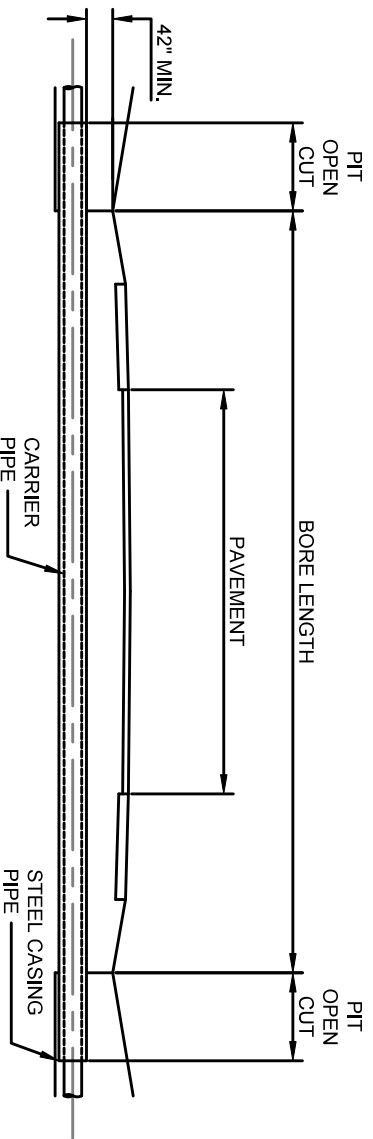
## **DETAIL - END SEAL**



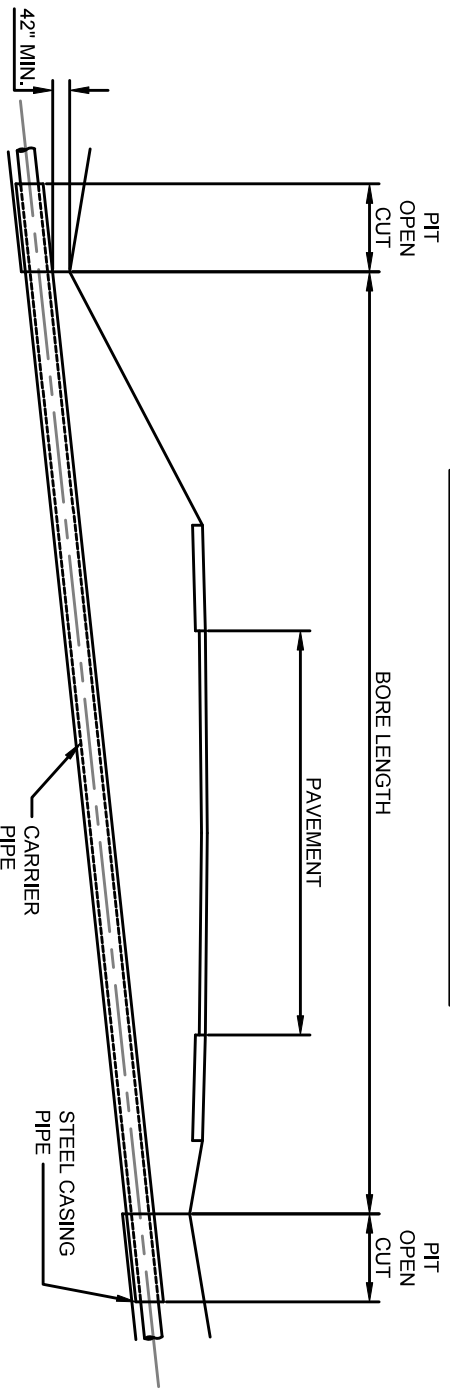
## **CROSS SECTION**

**NOTE:**

1. ALL JOINTS OF STEEL CASING SHALL BE SOLIDLY WELDED. END OF CASING SHALL BE SEALED AFTER LINE HAS BEEN INSTALLED.
2. MINIMUM DEPTHS MAY INCREASE IN AREAS WHICH REQUIRE MINIMUM SEPARATION WITH OTHER FACILITIES.
3. OPEN TRENCH NO CLOSER THAN THE DITCHLINE OR TOE OF FILL FROM THE EDGE OF THE PAVEMENT OR AS DIRECTED BY THE SPECIFICATIONS.
4. HIGHWAY CROSSINGS SHALL UTILIZE STEEL CASING PIPE. STEEL CASING PIPES WALL THICKNESS & DIAMETER PER SPECIFICATIONS. ALL BORED AND JACKED ENCASUREMENT PIPE SHALL BE INSTALLED IN BORE HOLES NO LARGER THEN THE OUTSIDE DIA-METER OF THE ENCASEMENT PIPE.
5. SEE DWG GP-009 FOR STEEL CASING REQUIREMENTS.



**OFFSET FROM EDGE OF PAVEMENT**



**KTC ENCROACHMENT  
REQUIREMENTS - DETAIL**

NOT TO SCALE



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**GENERAL PRESSURE PIPE STANDARD DETAIL  
KTC ENCROACHMENT REQUIREMENTS**

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-010

- NOTE:
- IF 10' HORIZONTAL SEPARATION IS NOT AVAILABLE, THEN THE WATER/SEWER BEING INSTALLED SHALL BE ENCASED IN EITHER CASING PIPE (PVC) FOR THE REQUIRED LENGTH TO OBTAIN 10' HORIZONTAL SEPARATION.
  - IT IS PREFERRED FOR SANITARY SEWER TO BE BELOW POTABLE WATER AT ALL CROSSINGS.
  - IF STEEL CASING IS USED SEE DETAIL GP-009 FOR SPACER REQUIREMENTS.

CASING SPACERS PER  
STEEL CASING DETAIL  
(TYP.) \_\_\_\_\_

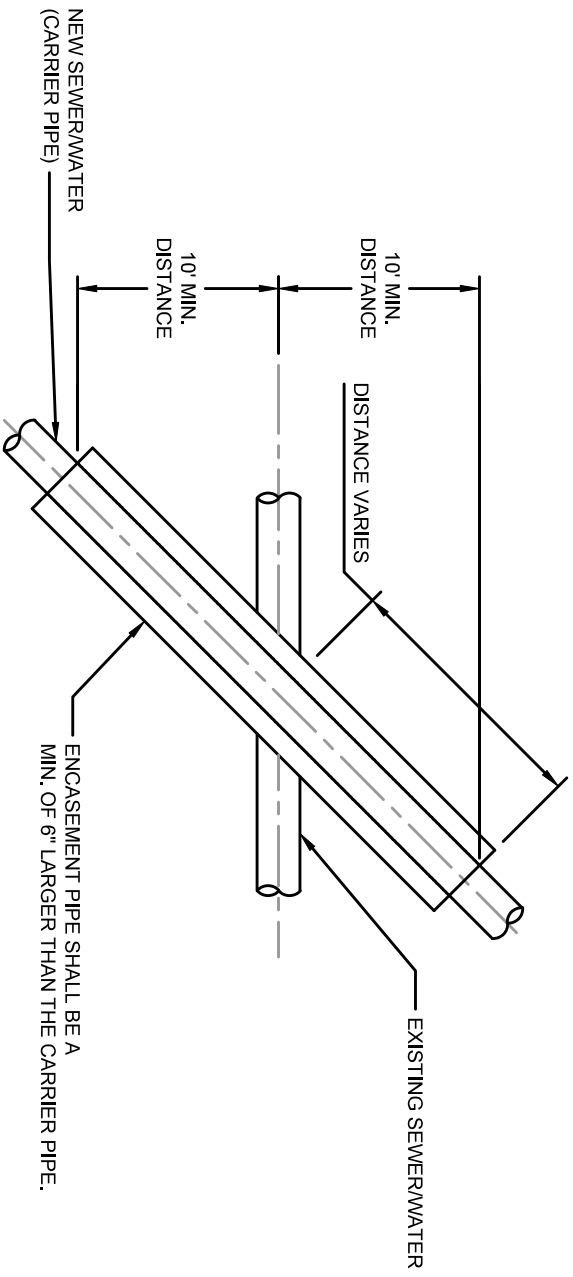
ENCASED NEW LINE, ABOVE EXISTING LINE.  
FULL PIPE SECTION OF NEW MAIN TO BE  
CENTERED OVER EXISTING LINE TO MAXIMUM  
JOINT DISTANCE \_\_\_\_\_

ENCASEMENT PIPE PER  
MINIMUM  
SEPERATION DISTANCES (TYP.) \_\_\_\_\_

EXISTING LINE

SEWER LINE / WATER LINE CROSSING LESS  
THAN 18" OF VERTICAL OR 10' HORIZONTAL  
SEPARATION REQUIRES ENCASEMENT PIPE  
PER DETAIL

## SECTION



## PLAN

# WATER - SEWER CROSSING - DETAIL

NOT TO SCALE

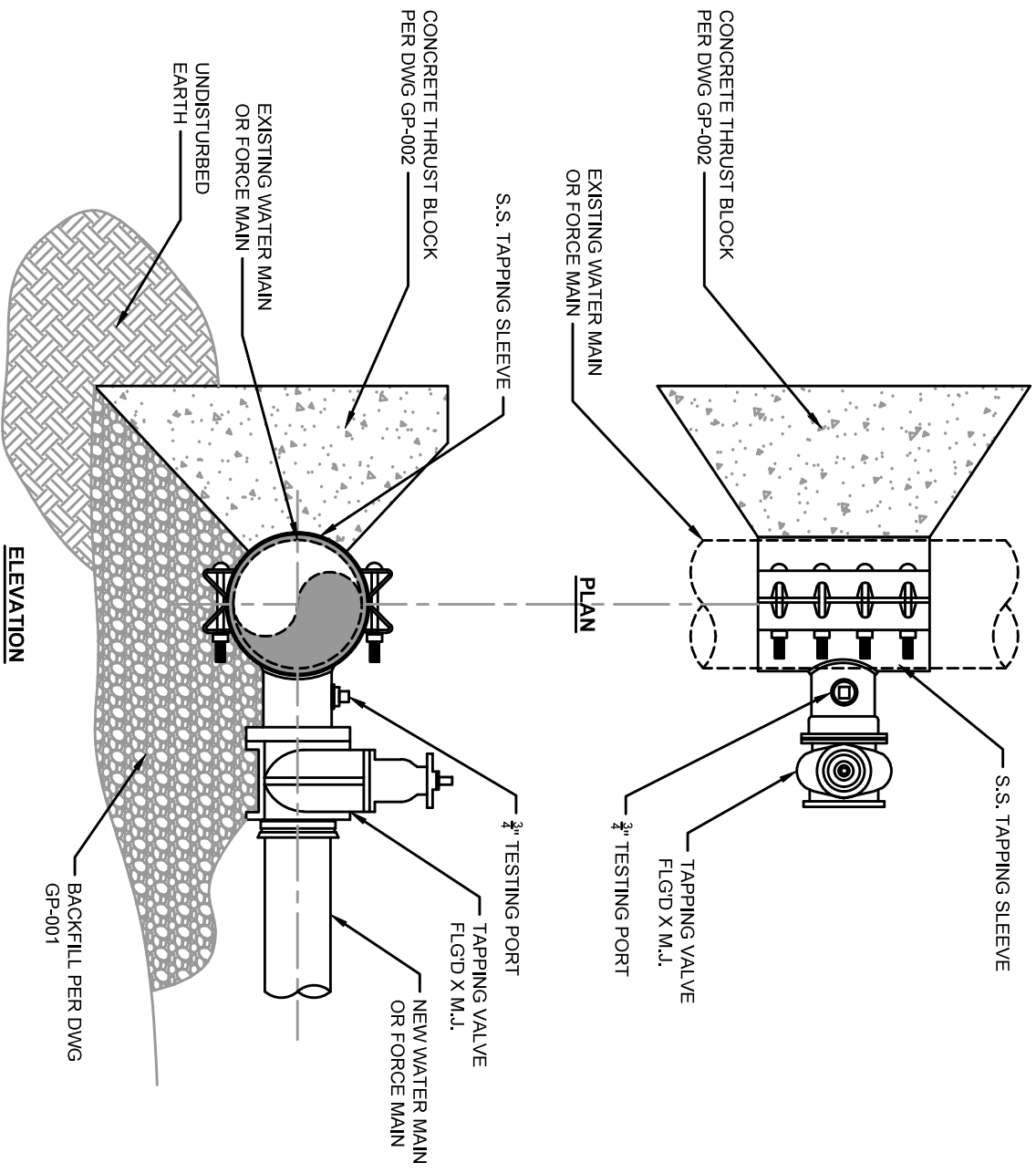


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GENERAL PRESSURE PIPE STANDARD DETAIL  
WATER - SEWER CROSSING

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-011

- NOTE:
- TAPPING SLEEVE & VALVE TO BE TESTED PER MANUFACTURERS RECOMMENDATIONS
  - NO SIZE FOR SIZE TAPPING SLEEVE ALLOWED WITHOUT WRITTEN APPROVAL OF MUPB.



## TAPPING SLEEVE & VALVE ASSEMBLY - DETAIL

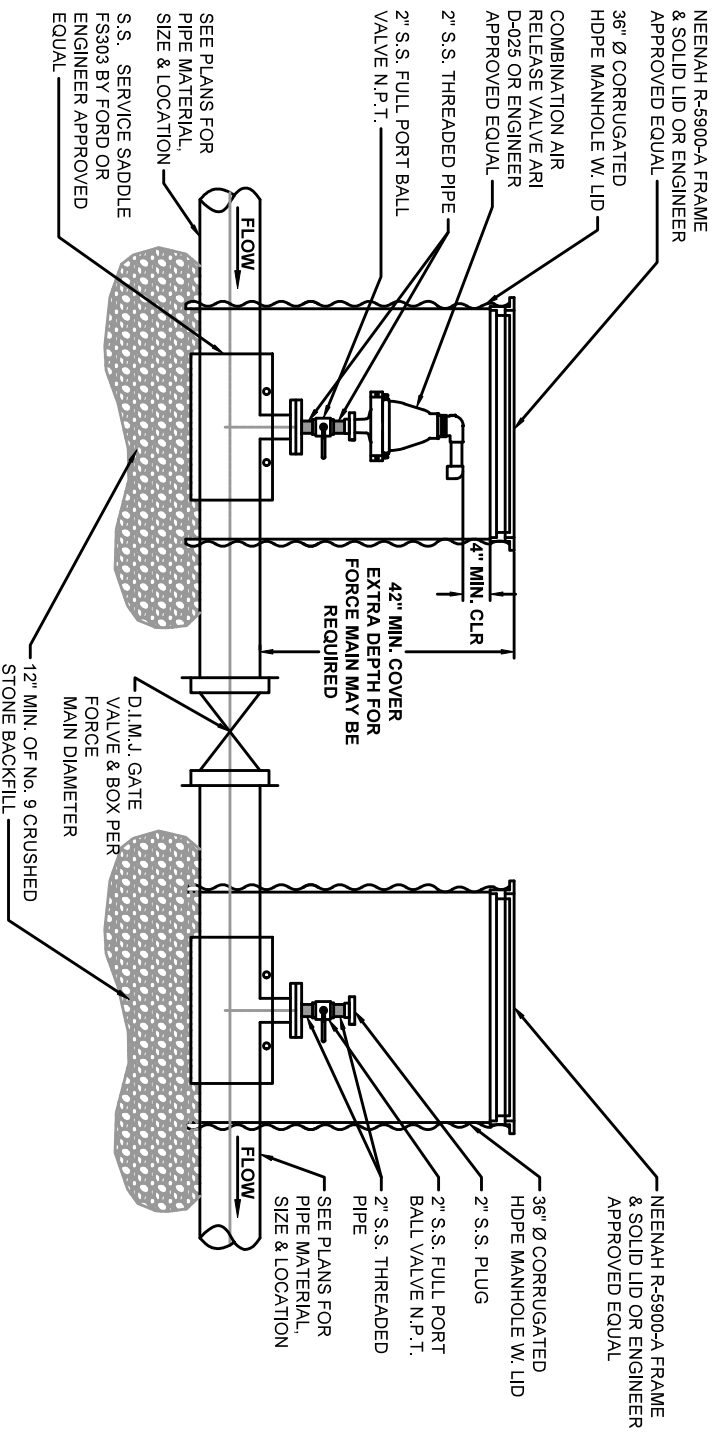
NOT TO SCALE



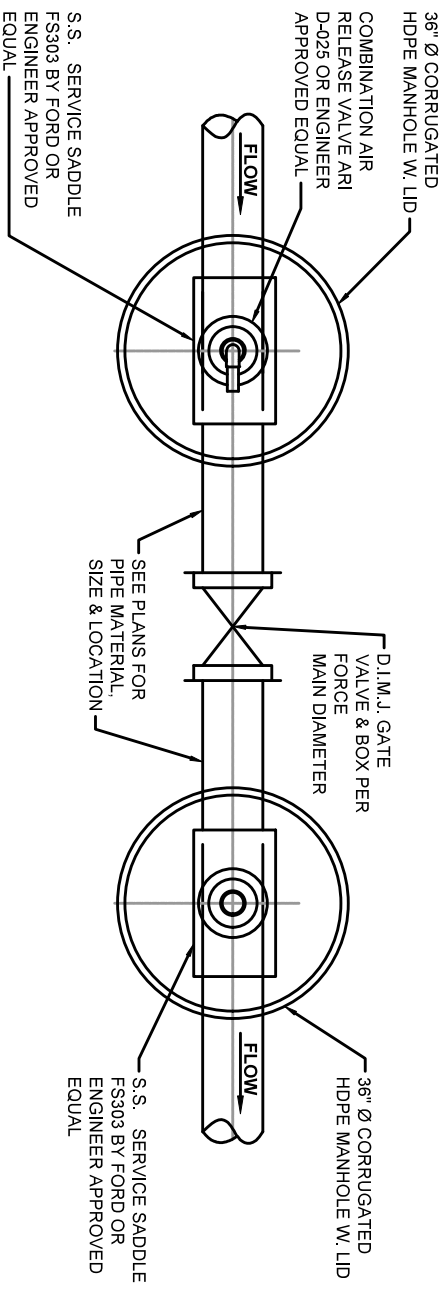
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**GENERAL PRESSURE PIPE STANDARD DETAIL**  
TAPPING SLEEVE & VALVE ASSEMBLY

Date	02/12/2021
Revision Date	01/14/2022
Dwg. No.	GP-012



## CARV ASSEMBLY - ELEVATION FLUSHING ASSEMBLY - ELEVATION



## PLAN

## CARV & FLUSHING CONNECTION - DETAIL

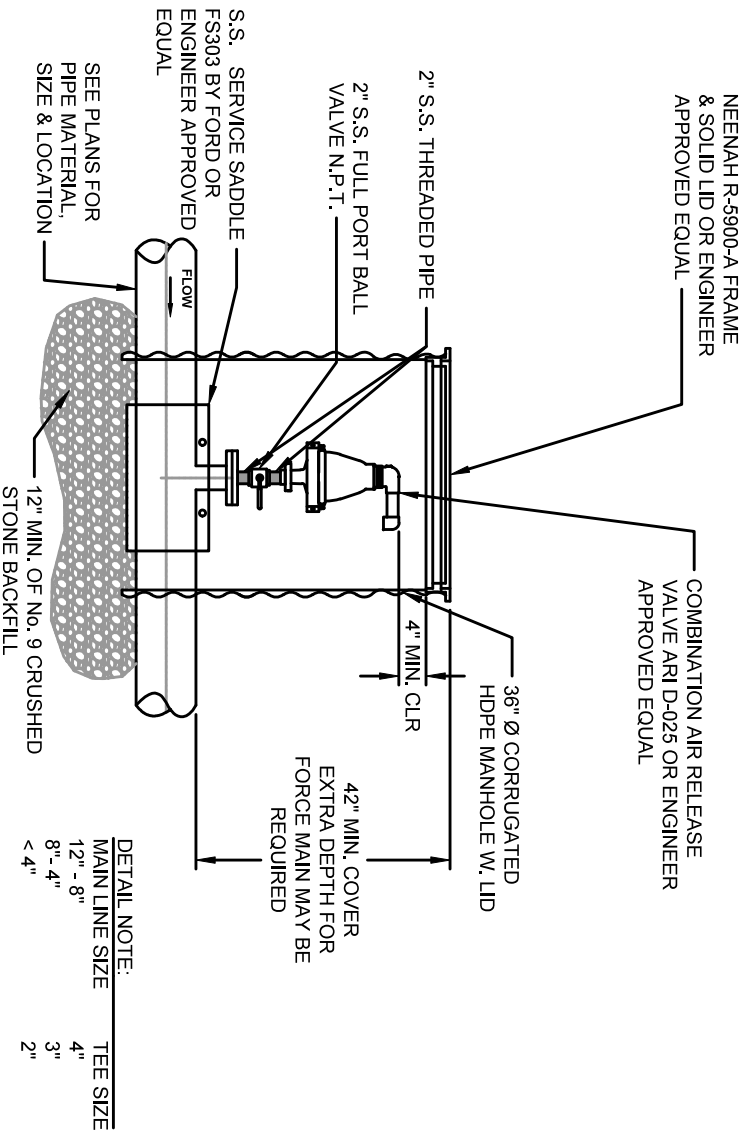
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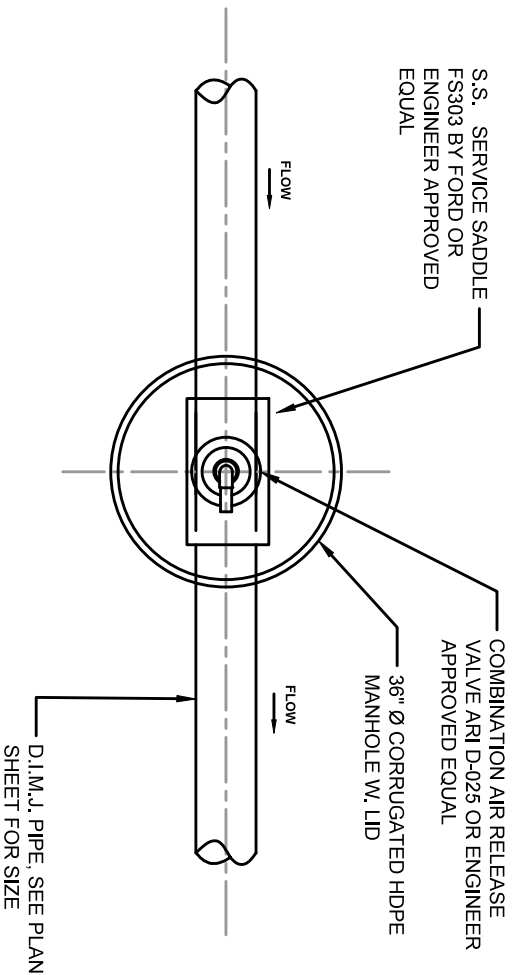
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**GENERAL PRESSURE PIPE STANDARD DETAIL**  
CARV & FLUSHING CONNECTION

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-101



**CARV ASSEMBLY - ELEVATION**



**CARV  
ASSEMBLY - DETAIL**

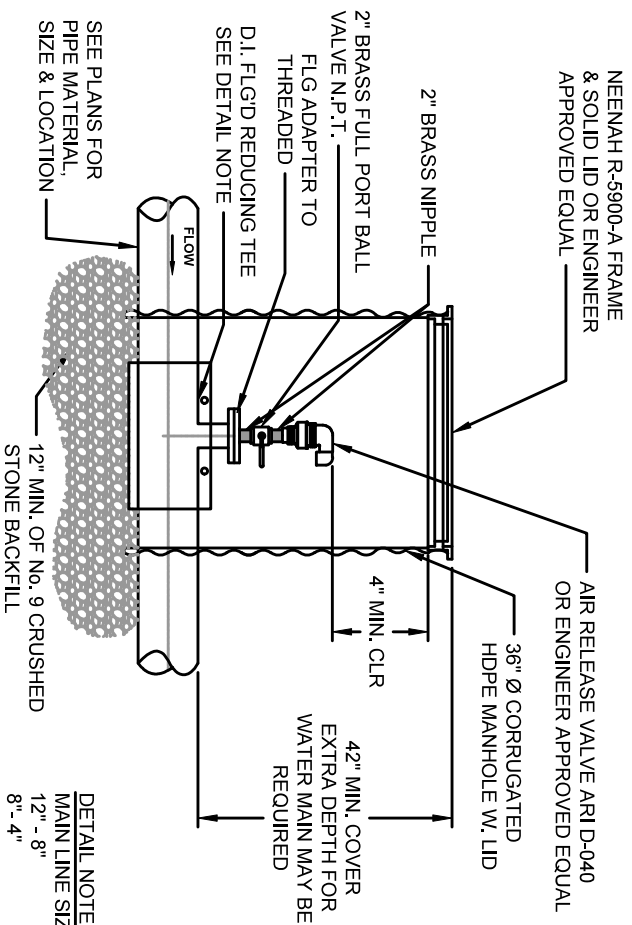
NOT TO SCALE



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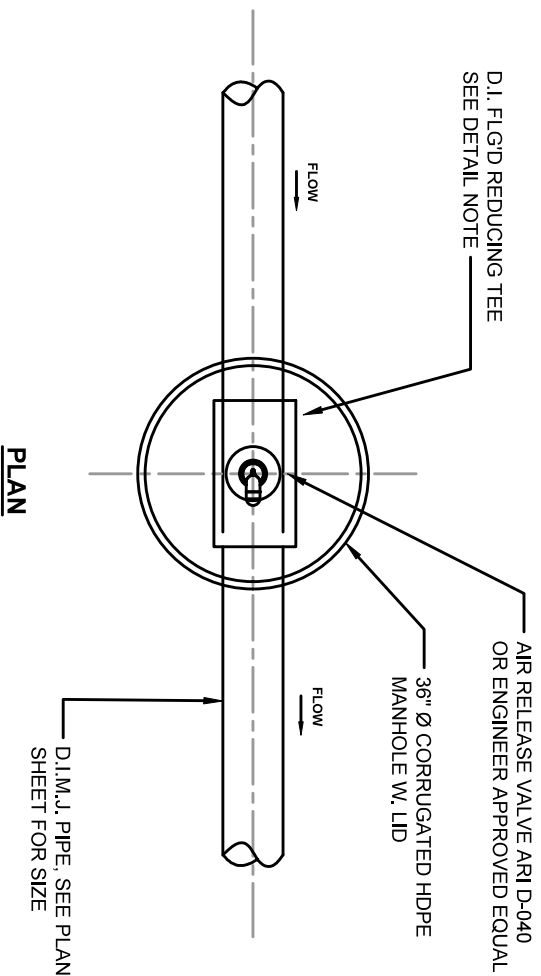
**GENERAL PRESSURE PIPE STANDARD DETAIL**  
**CARV ASSEMBLY**

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-102



DETAIL NOTE:	
MAIN LINE SIZE	TEE SIZE
12" - 8"	4"
8" - 4"	3"
< 4"	2"

### ARV ASSEMBLY - ELEVATION



## ARV ASSEMBLY (WATER ONLY) - DETAIL

NOT TO SCALE



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**GENERAL PRESSURE PIPE STANDARD DETAIL**  
ARV ASSEMBLY (WATER ONLY)

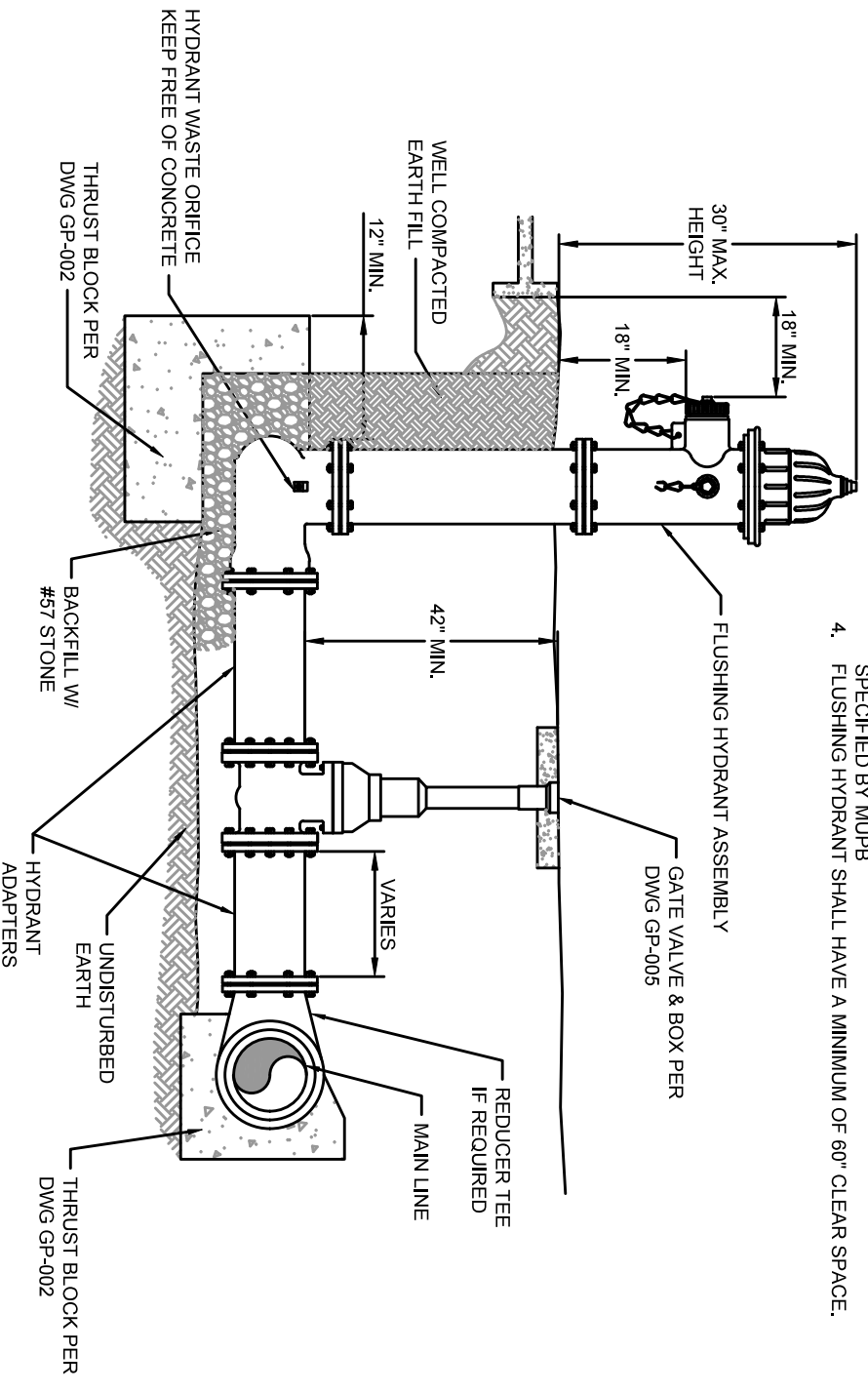
Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-201



NOTE:  
TYPE 1 FLUSHING HYDRANT  
TWO (2)  $2\frac{1}{2}$ " CONNECTIONS AND ONE (1)  $4\frac{1}{2}$ "  
CONNECTION

**NOTE: BEFORE FINAL INSPECTION**

1. ENSURE ADEQUATE VOLUME OF OIL AS SHIPPED BY THE MANUFACTURER
2. HYDRANT SHALL BE CLEANED, WIRE BRUSHED AND TOUCHED UP WITH "KROMIK PRIMER ENAMEL" OR ENGINEER APPROVED EQUAL
3. HYDRANT SHALL RECEIVE TWO FINISHING COATS OF SONNEBORNS HYDRANT ENAMEL PAINT, COLOR TO MATCH EXISTING HYDRANTS OR AS SPECIFIED BY MUPB
4. FLUSHING HYDRANT SHALL HAVE A MINIMUM OF 60" CLEAR SPACE.



# FLUSHING HYDRANT ASSEMBLY TYPE 1 - DETAIL

NOT TO SCALE

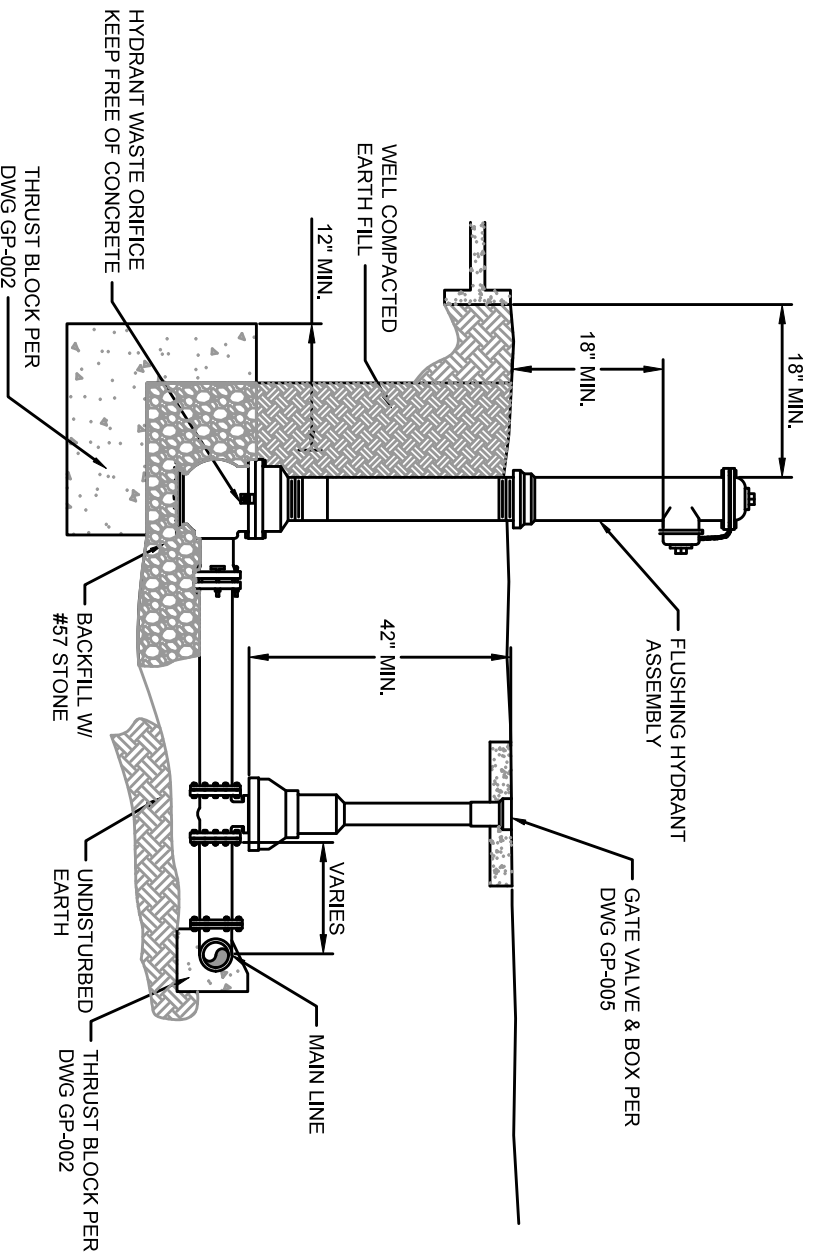


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# GENERAL PRESSURE PIPE STANDARD DETAIL FLUSHING HYDRANT ASSEMBLY, TYPE 1

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-202

- NOTE: BEFORE FINAL INSPECTION
1. ENSURE ADEQUATE VOLUME OF OIL AS SHIPPED BY THE MANUFACTURER
  2. HYDRANT SHALL BE CLEANED, WIRE BRUSHED AND TOUCHED UP WITH "KROMIK PRIMER E4IN" OR ENGINEER APPROVED EQUAL
  3. HYDRANT SHALL RECEIVE TWO FINISHING COATS OF SONNEBORN'S HYDRANT ENAMEL PAINT, COLOR TO MATCH EXISTING HYDRANTS OR AS SPECIFIED BY MUPB



## FLUSHING HYDRANT ASSEMBLY TYPE 2 - DETAIL

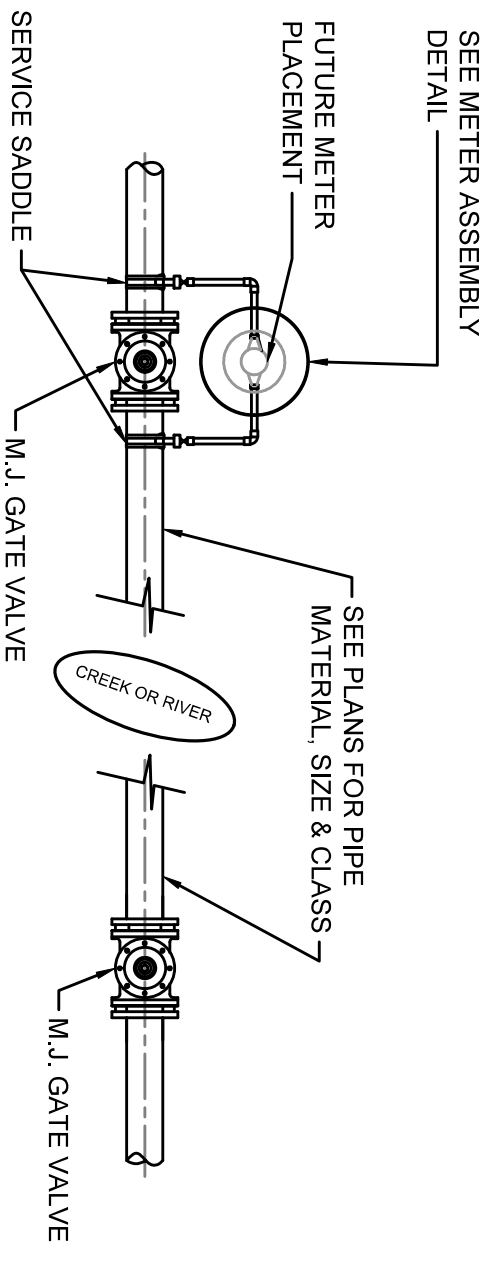
NOT TO SCALE



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**GENERAL PRESSURE PIPE STANDARD DETAIL  
FLUSHING HYDRANT ASSEMBLY, TYPE 2**

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-203



## LEAK DETECTION ASSEMBLY - DETAIL \_\_\_\_\_

NOT TO SCALE



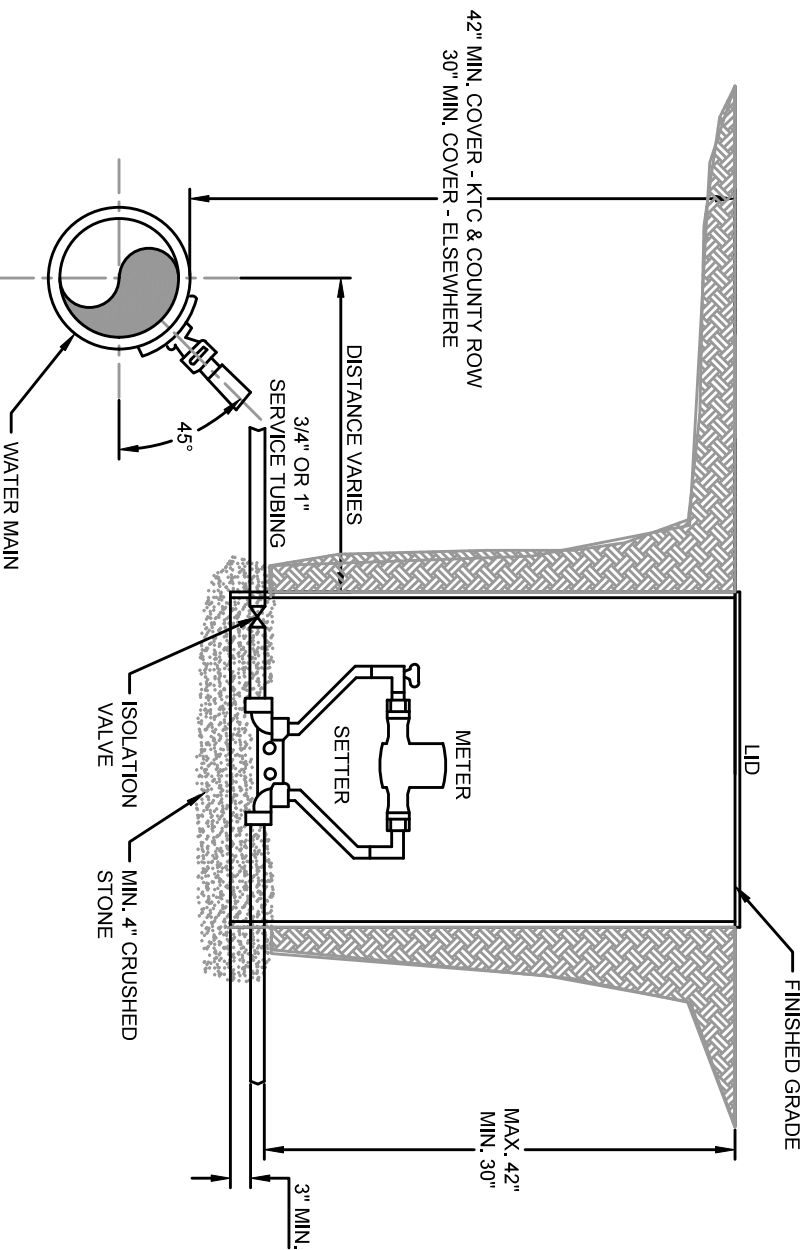
MOREHEAD UTILITY  
PLANT BOARD  
135 SOUTH WILSON AVE.  
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GENERAL PRESSURE PIPE STANDARD DETAIL  
LEAK DETECTION ASSEMBLY

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-204

- METER MATERIAL SCHEDULE**
1. SETTER-SEE SPECIFICATIONS
  2. METER BOX-SEE SPECIFICATIONS
  3. COVER-SEE SPECIFICATIONS
  4. METER-SEE SPECIFICATIONS
  5. INDIVIDUAL PRESSURE REDUCING VALVE (IPRV)-SEE SPECIFICATIONS
  6. CORPORATION STOP-SEE SPECIFICATION
  7. SERVICE SADDLE-SEE SPECIFICATION

- NOTE:**
1. CONTRACTOR IS RESPONSIBLE FOR ALL PLUMBING PERMITS & ASSOCIATED COSTS.
  2. INDIVIDUAL PRESSURE REDUCING VALVES REQUIRED ON ALL METERS WHERE PRESSURE EXCEEDS 90 PSI, ON MUPB SIDE OF METER.
  3. TRACER WIRE TO BE CONNECTED TO WATER MAIN TRACER WIRE AND RAN ON NEW SERVICE TUBING AND TERMINATING IN THE METER BOX.



## RESIDENTIAL METER ASSEMBLY - DETAIL

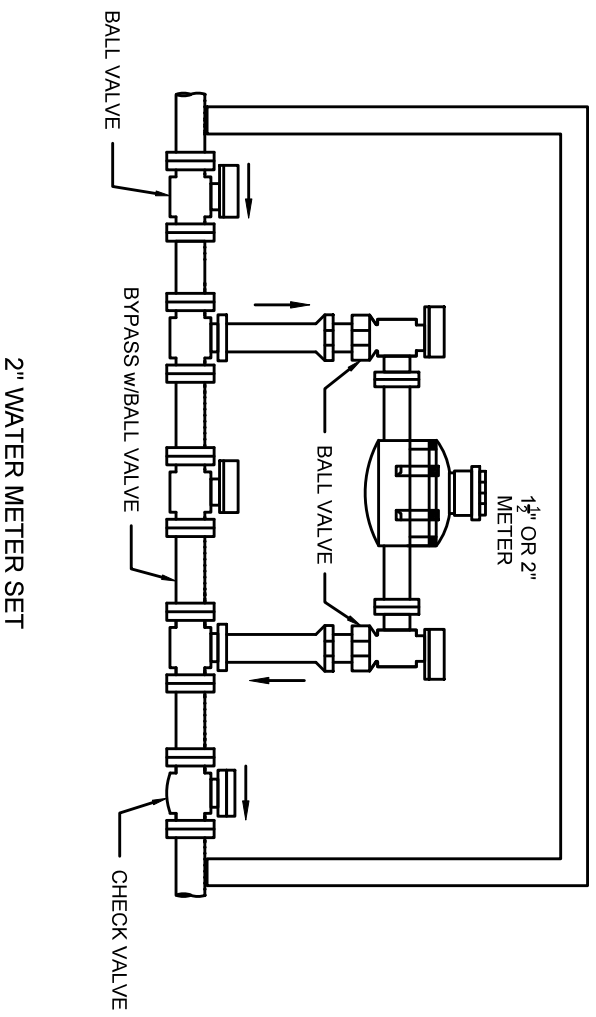
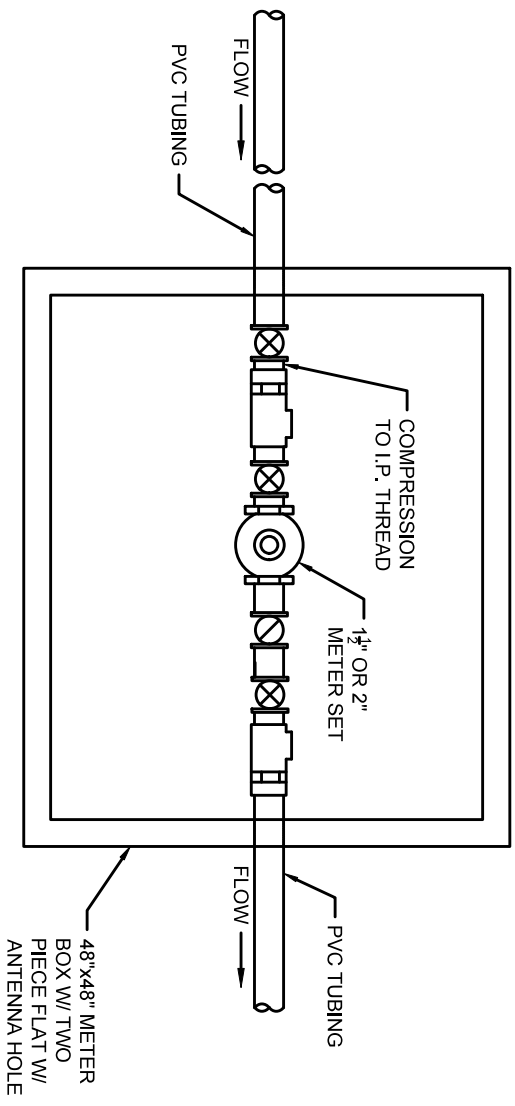
NOT TO SCALE



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135 SOUTH WILSON AVE.  
MOREHEAD, KY 40351

**GENERAL PRESSURE PIPE STANDARD DETAIL  
RESIDENTIAL METER ASSEMBLY**

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-205



# 1 1/2" & 2" METER ASSEMBLY - DETAIL

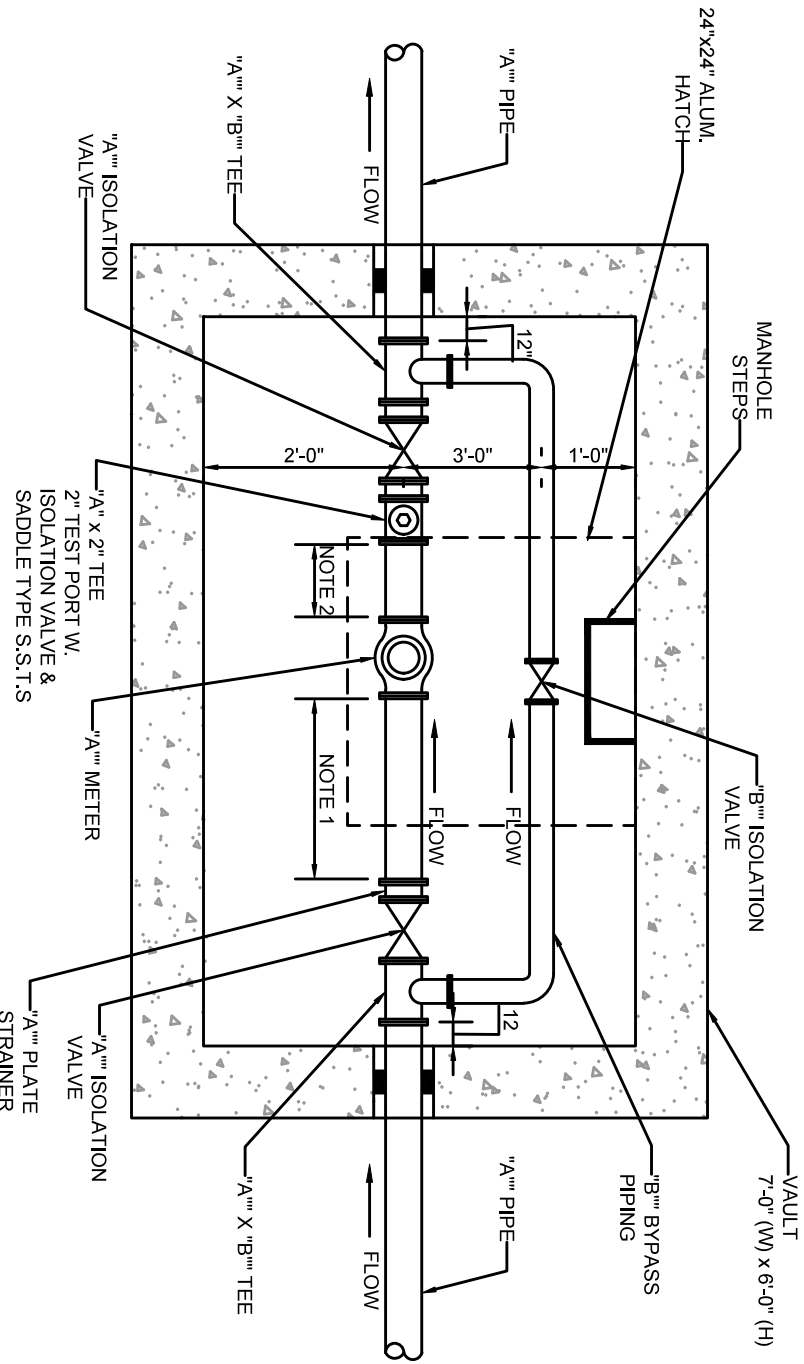
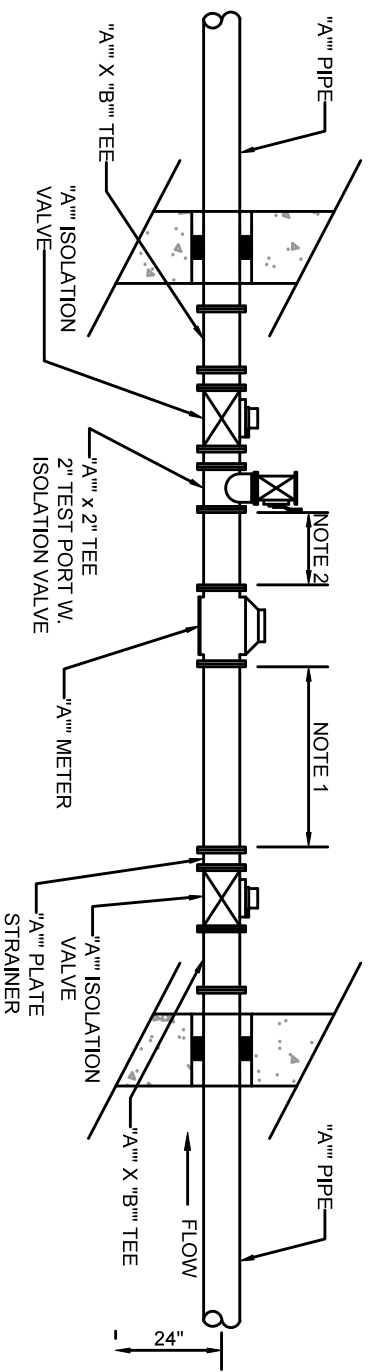
NOT TO SCALE



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GENERAL PIPE STANDARD DETAIL  
1 1/2" & 2" METER ASSEMBLY

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	GP-206



**DETAIL NOTES:**

1. METER SIZE (INCHES) X 5
2. METER SIZE (INCHES) X 2

**NOTE:**  
A PRV SHALL BE PLACED  
BETWEEN THE STRAINER  
AND ISOLATION VALVE

## 3" OR LARGER METER ASSEMBLY VALVE VAULT- DETAIL

NOT TO SCALE



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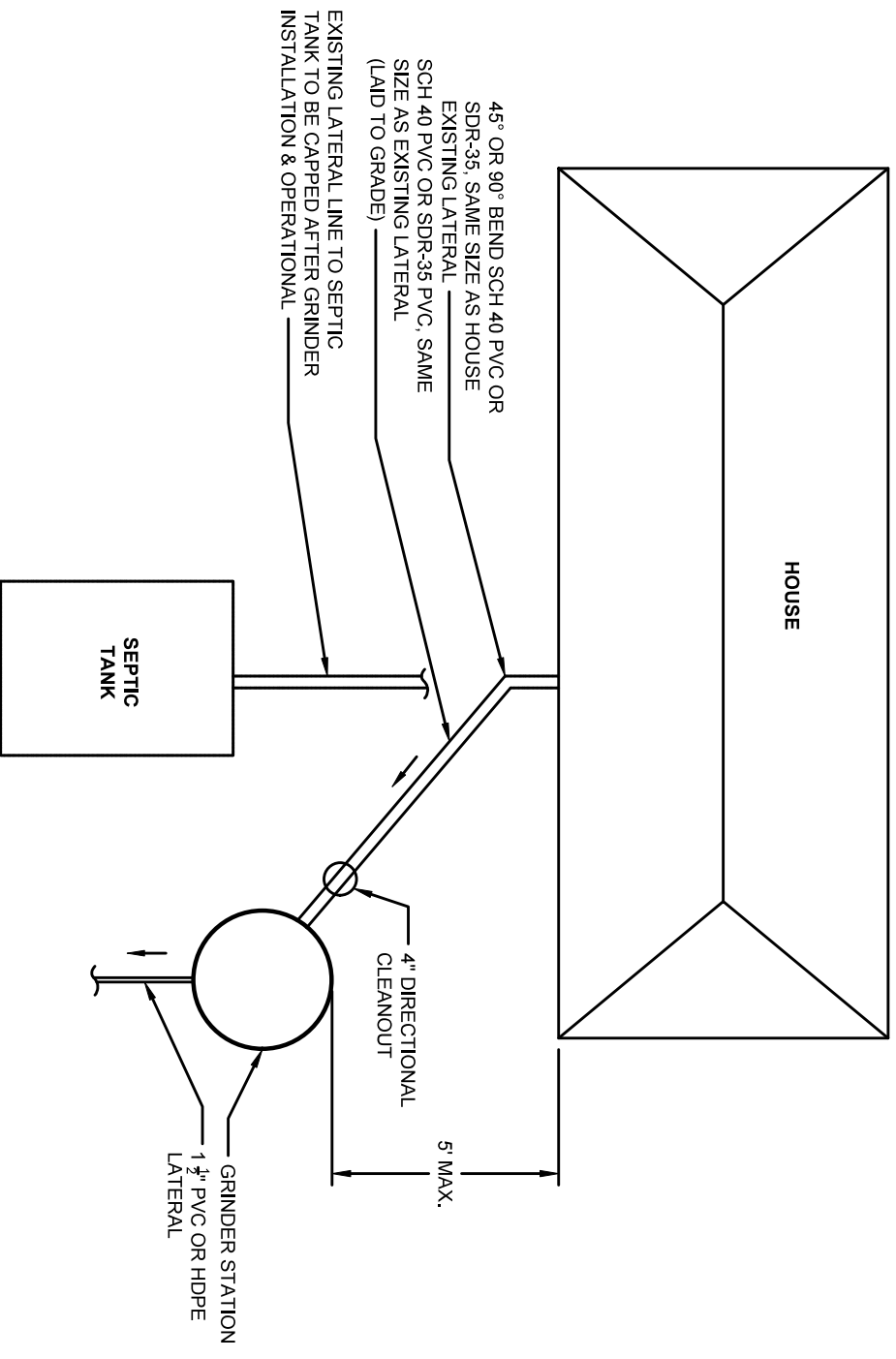
**GENERAL PIPE STANDARD DETAIL**  
3" OR LARGER METER ASSEMBLY VALVE VAULT

Date	07/26/2021
Revision Date	01/14/2022
Dwg. No.	GP-207



NOTES:

1. CONTRACTOR SHALL FURNISH A LICENSED PLUMBER TO MAKE CONNECTION BETWEEN HOMES EXISTING SEWER OUTFALL TO GRINDER UNIT. A PLUMBING PERMIT IS REQUIRED FOR ALL CONNECTIONS FOR HOMES/BUSINESSES AND MUST BE PULLED BY A LICENSED MASTER PLUMBER. WORK RELATING TO THE FINAL HOOK UP SHALL BE PERFORMED BY JOURNEYMAN PLUMBER. THIS SHALL BE INCLUDED IN THE PRICE OF GRINDER PUMP STATION.
2. A DIRECTIONAL FLOW CLEAN-OUT IS REQUIRED FOR EACH CONNECTION OF EXISTING HOME/BUSINESS. THIS SHALL BE INCLUDED IN THE PRICE OF GRINDER PUMP STATION.
3. CONTRACTOR SHALL INSTALL #12 GAUGE METAL DETECTABLE WIRE FROM GRINDER PUMP STATION TO FORCE MAIN. THIS SHALL BE INCLUDED IN THE PRICE OF GRINDER PUMP STATION.
4. IF THE PUMP STATION IS NOT INSTALLED AT THE SAME TIME AS THE CONNECTION INTO THE FORCE MAIN, THE CONTRACTOR SHALL TERMINATE THE SERVICE LINE AT THE PROPERTYLINE, SOLVENT WELD A SCH. 40 PVC CAP TO THE END OF THE PIPE AND PLACE A 2x4 MARKER EXTENDING ABOVE GROUND AT THIS LOCATION. NO GASKETED FITTINGS SHALL BE INSTALLED BETWEEN THE PROPERTY LINE AND THE FORCE MAIN.
5. AFTER HOOK UP HAS BEEN COMPLETED, EACH CONNECTION SHALL BE SMOKE TESTED BEFORE APPROVAL. IF SEWER IS NOT VENTED OUT OF THE ROOF, CONTRACTOR SHALL INSTALL A 2" VENT PIPE BEFORE SEWER ENTERS UNDERNEATH THE HOUSE.



## RESIDENTIAL GRINDER PLUMBING CONNECTION

NOT TO SCALE

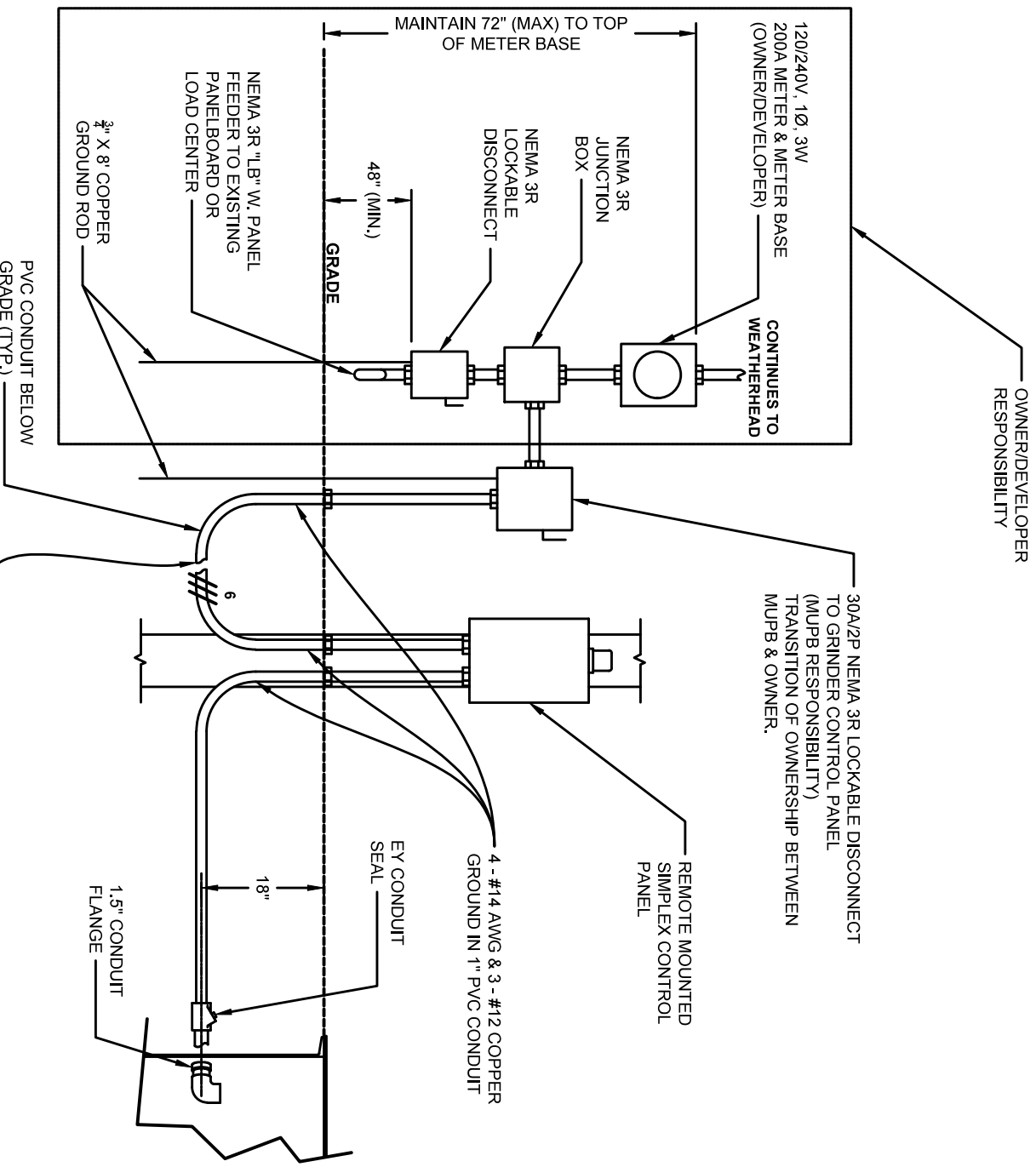


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SANITARY SEWER STANDARD DETAIL  
RESIDENTIAL GRINDER PLUMBING CONNECTION

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	LPS-002





## RESIDENTIAL GRINDER ELECTRICAL DETAIL - DETAIL

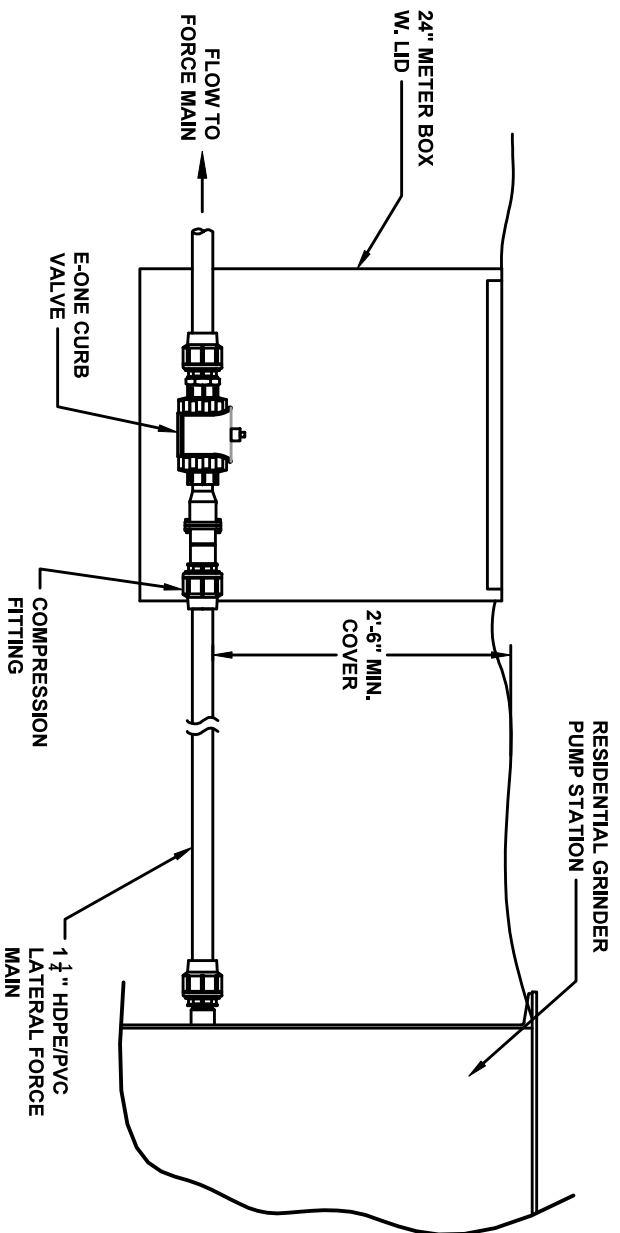
NOT TO SCALE



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MOREHEAD, KY 40361

**SANITARY SEWER STANDARD DETAIL**  
RESIDENTIAL GRINDER ELECTRICAL DETAIL,

Date	07/26/2021
Revision Date	01/14/2022
Dwg. No.	LPS-003



# RESIDENTIAL GRINDER CURB VALVE ASSEMBLY

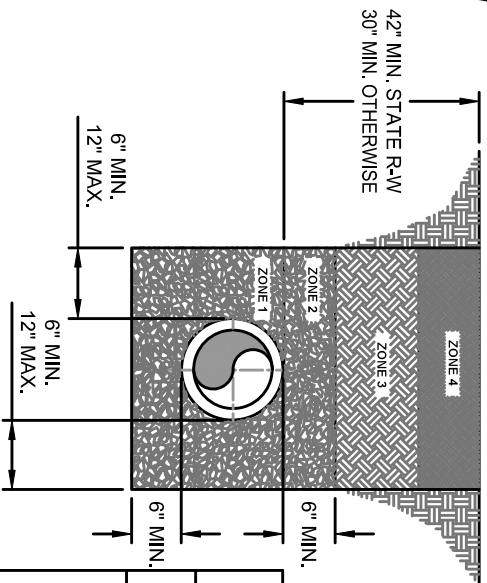
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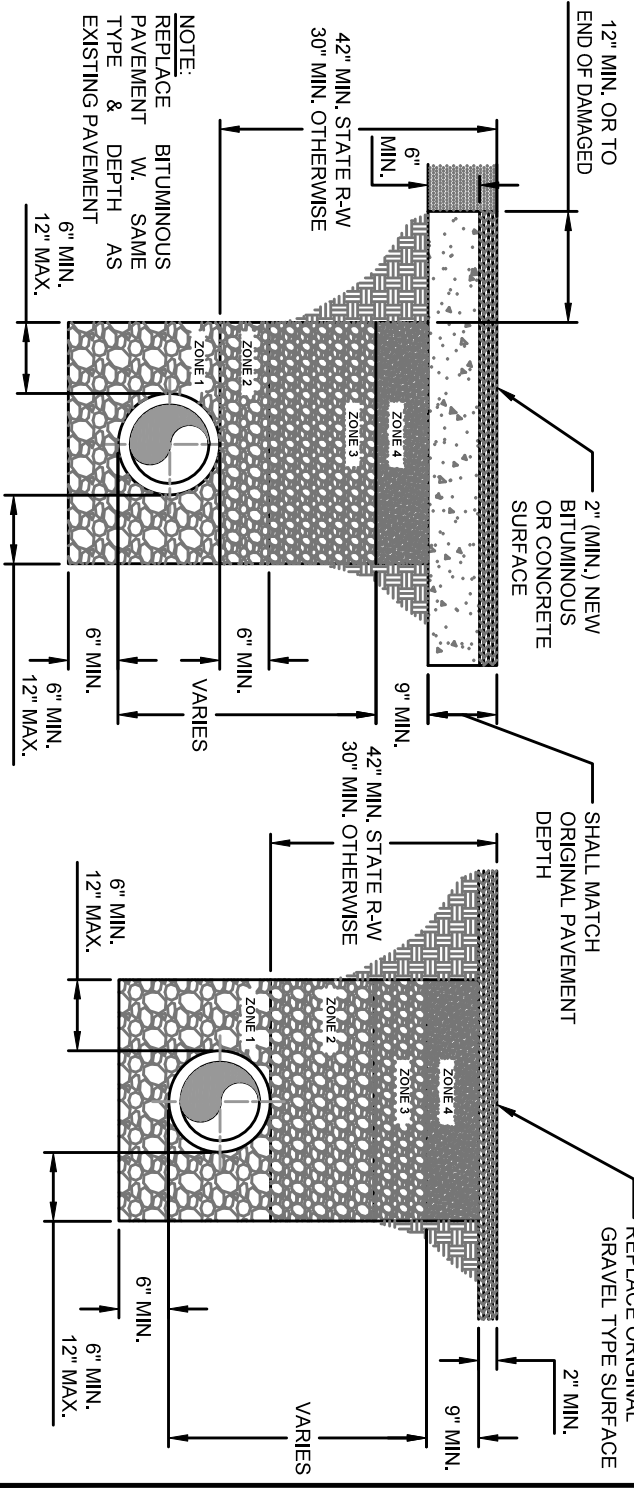
MOREHEAD UTILITY  
PLANT BOARD  
135 SOUTH WILSON AVE.  
MOREHEAD, KY 40351

SANITARY SEWER STANDARD DETAIL  
RESIDENTIAL GRINDER CURB VALVE ASSEMBLY

Date	07/26/2021
Revision Date	01/14/2022
Dwg. No.	LPS-004



BACKFILL NOTES				
SURFACE TYPE	ZONE 1	ZONE 2	ZONE 3	ZONE 4
EARTH TRENCH	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	COMPACTED SOIL FREE OF ROCK	TOP SOIL
BITUMINOUS SERFACE > 2" THICK	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	COMPACTED DGA
BITUMINOUS SURFACE < 2" THICK	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	NO. 9 OR 68 CRUSHED STONE	COMPACTED DGA



ORIGINAL BITUMINOUS OR  
CONCRETE SURFACE

ORIGINAL GRAVEL SURFACE

## TRENCH BACKFILL - DETAIL

NOT TO SCALE



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MOREHEAD, KY 40351

GRAVITY SANITARY SEWER STANDARD DETAIL  
TRENCH BACKFILL

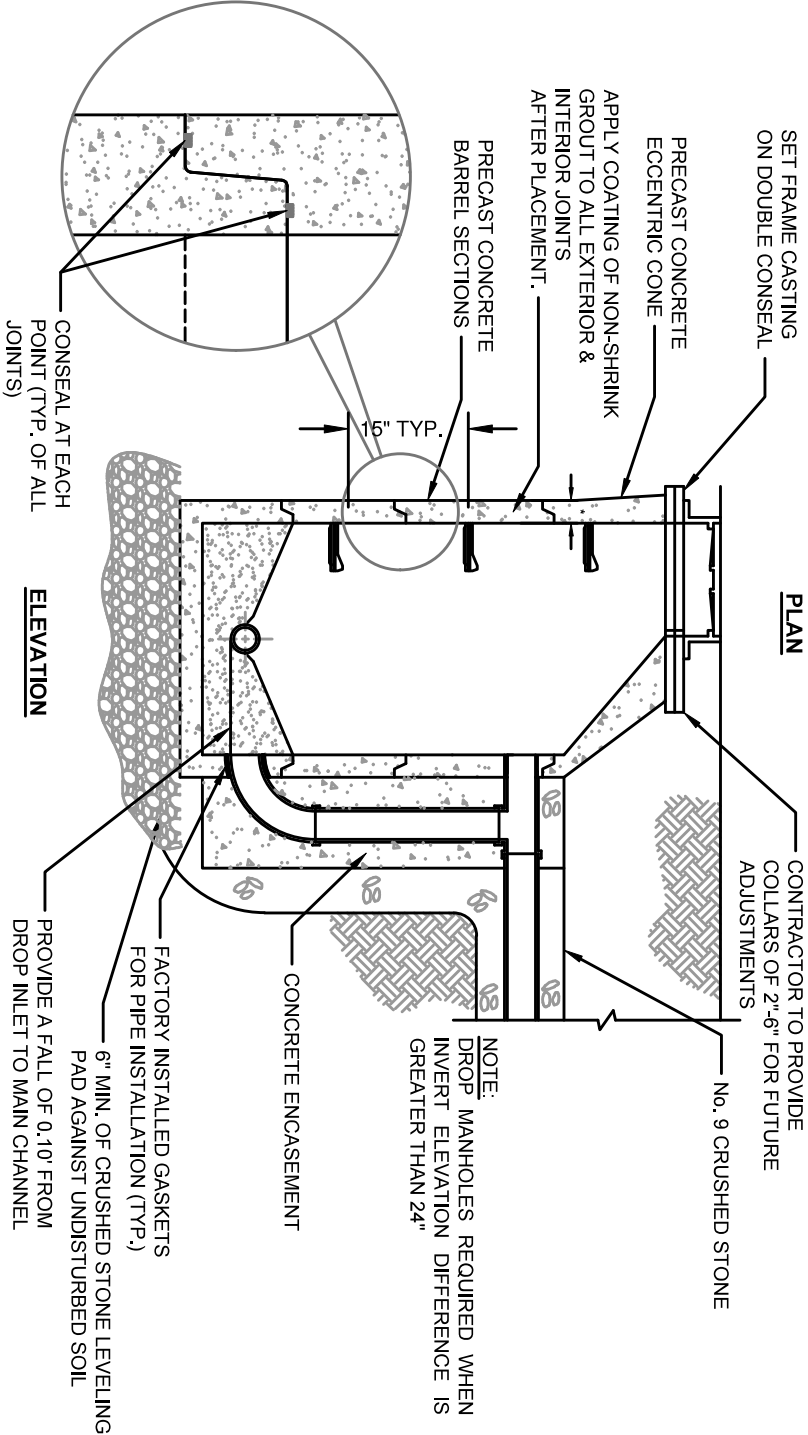
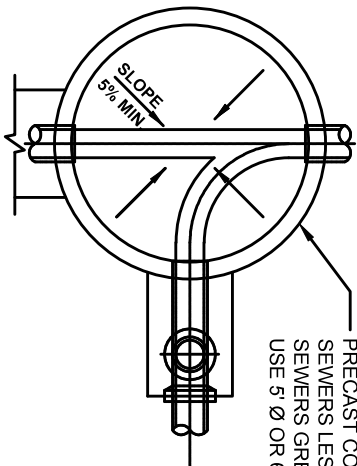
Date	07/23/2021
Revision Date	01/14/2022
Dwg. No.	SS-001



MANHOLE DIAMETERS				
SEWER MAIN SIZE (INCHES)	48" Ø	60" Ø	72" Ø	
< 12	YES	MAYBE	MAYBE	
12<X<18	NO	YES	MAYBE	
X>18	NO	NO	YES	

NOTE:  
ALL PRECAST CONCRETE SHALL BE  
4,000 PSI

\* PRECAST CONCRETE MANHOLE  
WALL THICKNESS: 5" FOR 4' Ø  
MANHOLES, 6" FOR 5' Ø MANHOLES  
& 7" FOR 6' Ø MANHOLES



## PRECAST CONCRETE DROP MANHOLE - DETAIL

NOT TO SCALE



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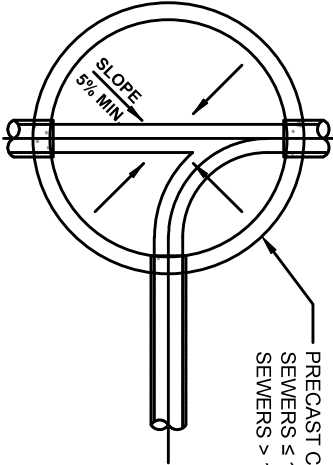
GRAVITY SANITARY SEWER STANDARD DETAIL  
PRECAST CONCRETE DROP MANHOLE

Date	07/23/2021
Revision Date	01/14/2022
Dwg. No.	SS-003

MANHOLE DIAMETERS			
SEWER MAIN SIZE (INCHES)	48" Ø	60" Ø	72" Ø
<= 12	YES	MAYBE	MAYBE
12>X<=18	NO	YES	MAYBE
X>18	NO	NO	YES

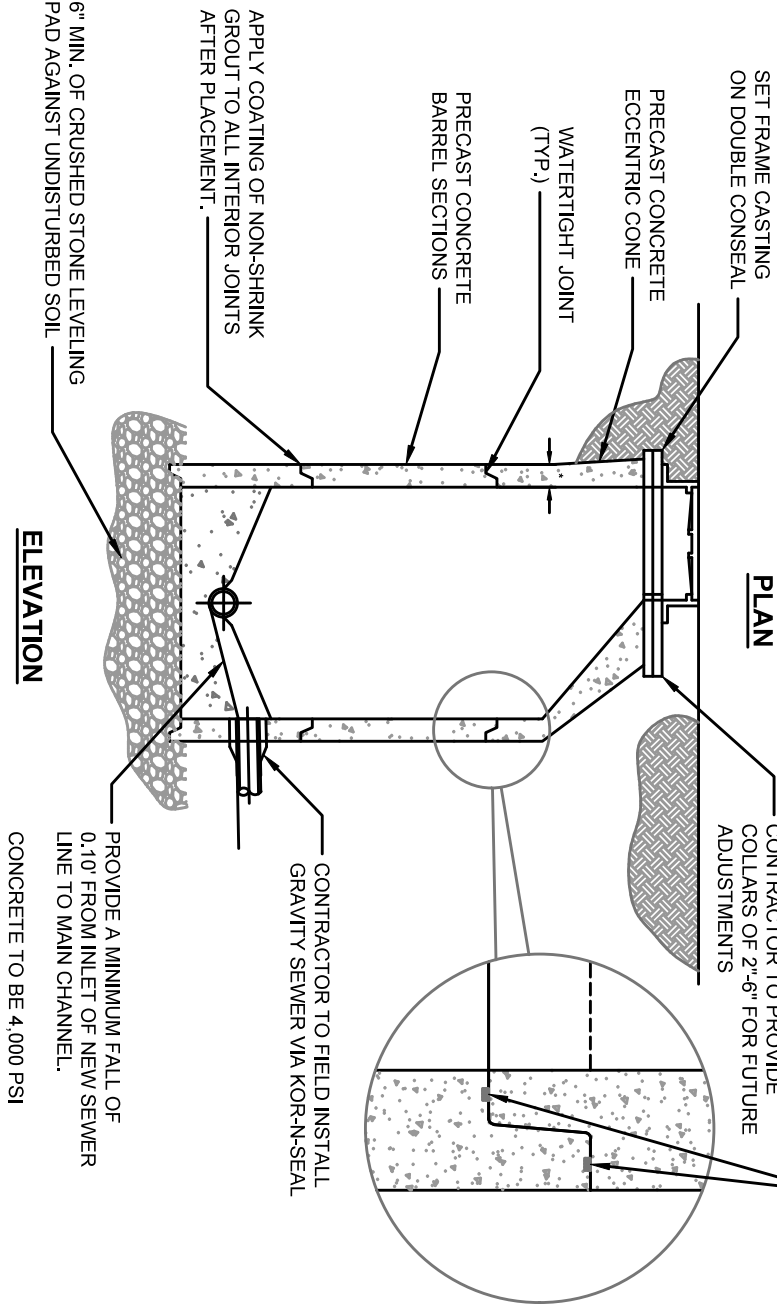
\* PRECAST CONCRETE MANHOLE WALL THICKNESS: 5" FOR 4' Ø MANHOLES, 6" FOR 5' Ø MANHOLES & 7" FOR 6' Ø MANHOLES

PRECAST CONCRETE MANHOLE SEWERS ≤ 12" USE 4' Ø MANHOLES SEWERS > 12" & ≤ 18" USE 5' Ø OR 6' Ø



CONSEAL AT EACH POINT (TYP. OF ALL JOINTS)

NOTE:  
ALL PRECAST CONCRETE SHALL BE 4,000 PSI



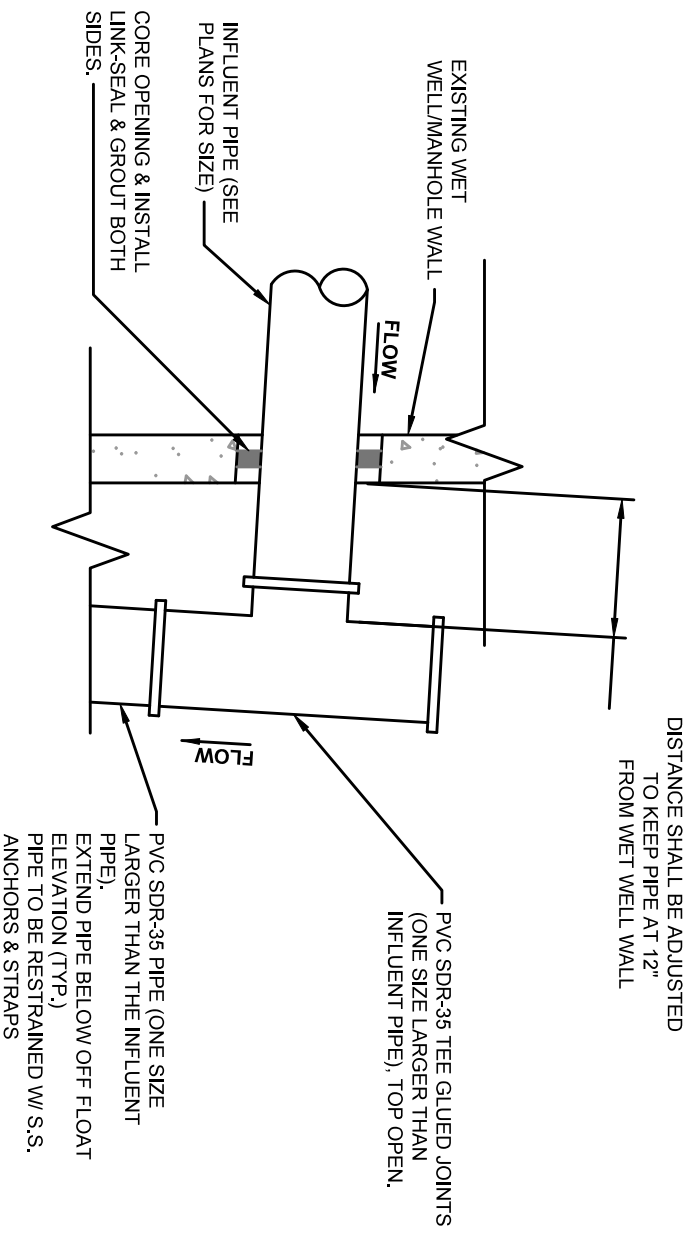
# PRECAST CONCRETE "DOGHOUSE" MANHOLE - DETAIL NOT TO SCALE



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GRAVITY SANITARY SEWER STANDARD DETAIL  
PRECAST CONCRETE "DOGHOUSE" MANHOLE

Date	07/23/2021
Revision Date	01/14/2022
Dwg. No.	SS-004



## INLET PIPE FOR EXISTING STRUCTURE - DETAIL

NOT TO SCALE

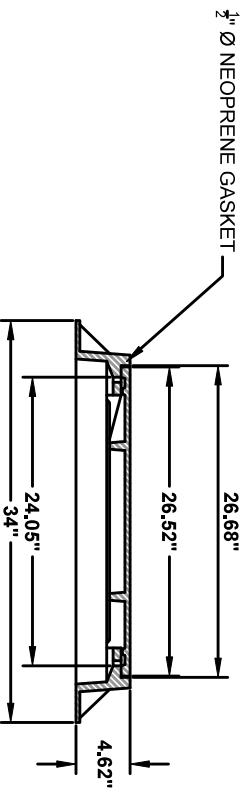


MOREHEAD UTILITY  
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MOREHEAD, KY 40351

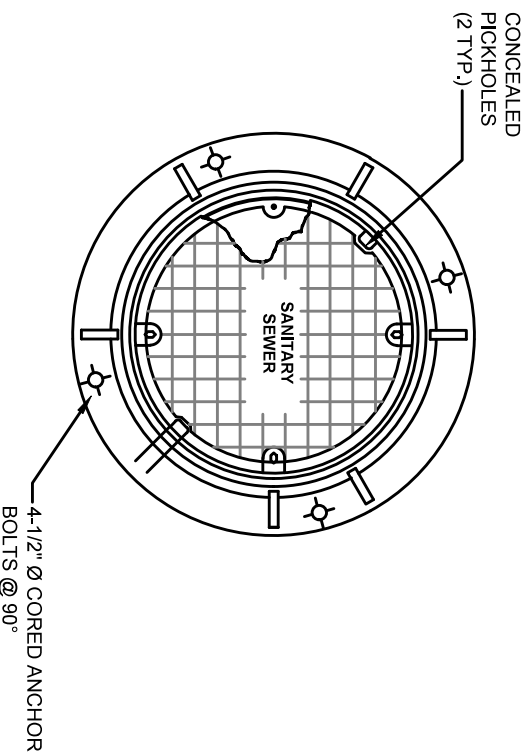
GRAVITY SANITARY SEWER STANDARD DETAIL  
INLET PIPE FOR EXISTING STRUCTURE

Date	07/23/2021
Revision Date	01/14/2021
Dwg. No.	SS-005

- DETAIL NOTE:**
1. MANHOLE LID & FRAME SHALL BE CAP ONE - 24 OR ENGINEERING APPROVED EQUAL
  2. ALL MANHOLE LIDS SHALL BE WATERTIGHT, WITHIN FLOOD PLAIN
  3. LIDS & FRAME SHALL BE COMPOSITE MATERIAL.
  4. COMPOSITE MANHOLE LID & FRAME REQUIRED AT THE TWO CLOSEST MANHOLES TO A LIFT STATION.



### ELEVATION



### PLAN

## COMPOSITE MANHOLE LID & FRAME - DETAIL

NOT TO SCALE



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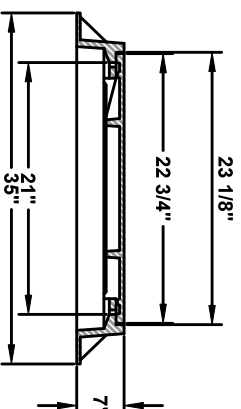
GRAVITY SANITARY SEWER STANDARD DETAIL  
COMPOSITE MANHOLE LID & FRAME

Date	07/23/2021
Revision Date	01/14/2022
Dwg. No.	SS-006

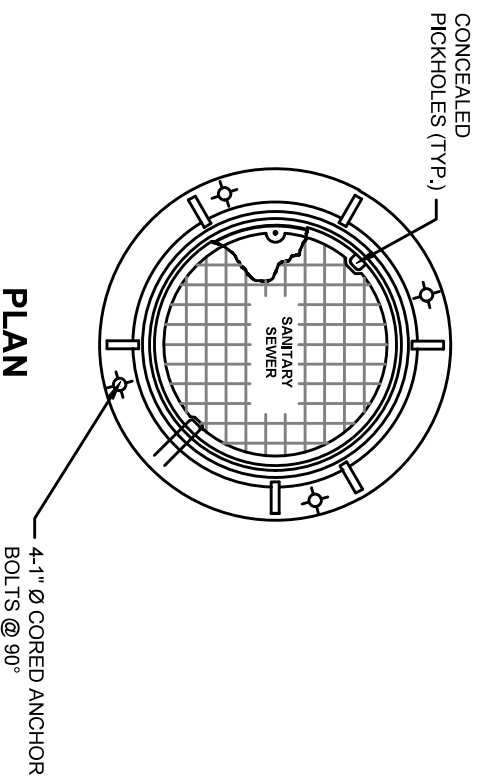


DETAIL NOTE:

1. MANHOLE LID & FRAME SHALL BE J.R. HOE MC 350 OR ENGINEERING APPROVED EQUAL



ELEVATION



**STANDARD MANHOLE  
LID & FRAME - DETAIL**

NOT TO SCALE

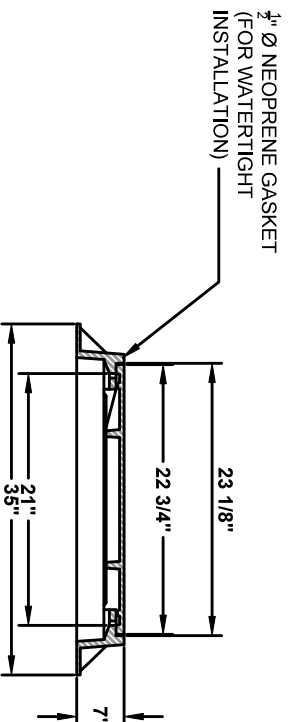


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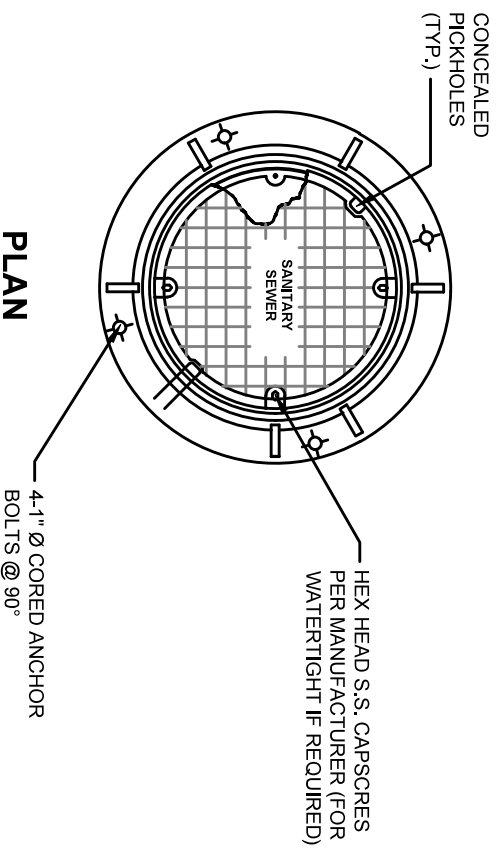
**GRAVITY SANITARY SEWER STANDARD DETAIL**  
STANDARD MANHOLE LID & FRAME

Date	07/23/2021
Revision Date	01/14/2022
Dwg. No.	SS-007

- DETAIL NOTE:**
1. MANHOLE LID & FRAME SHALL BE J.R. HOE MC 350 OR ENGINEERING APPROVED EQUAL
  2. ALL MANHOLE LIDS SHALL BE WATERTIGHT, WITHIN FLOOD PLAIN.



## ELEVATION



## PLAN

# STANDARD WATERTIGHT MANHOLE LID & FRAME - DETAIL

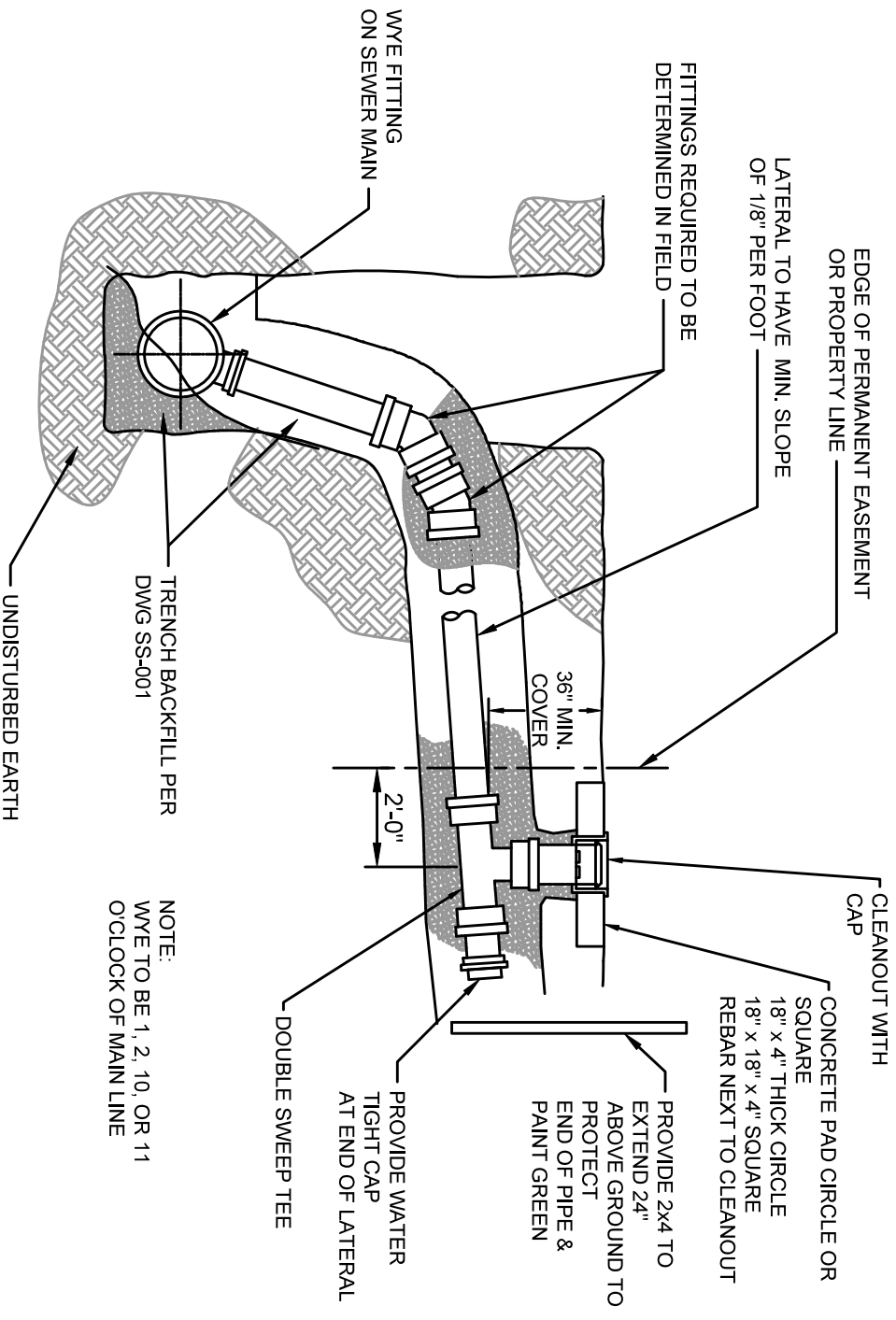
NOT TO SCALE



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**GRAVITY SANITARY SEWER STANDARD DETAIL**  
STANDARD WATERTIGHT MANHOLE LID & FRAME

Date	07/23/2021
Revision Date	01/14/2022
Dwg. No.	SS-008



## LATERAL CONNECTION GRAVITY SEWER & LATERAL CLEANOUT - DETAIL

NOT TO SCALE



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MOREHEAD, KY 40351

GRAVITY SANITARY SEWER STANDARD DETAIL  
LATERAL CONNECTION GRAVITY SEWER &  
LATERAL CLEANOUT

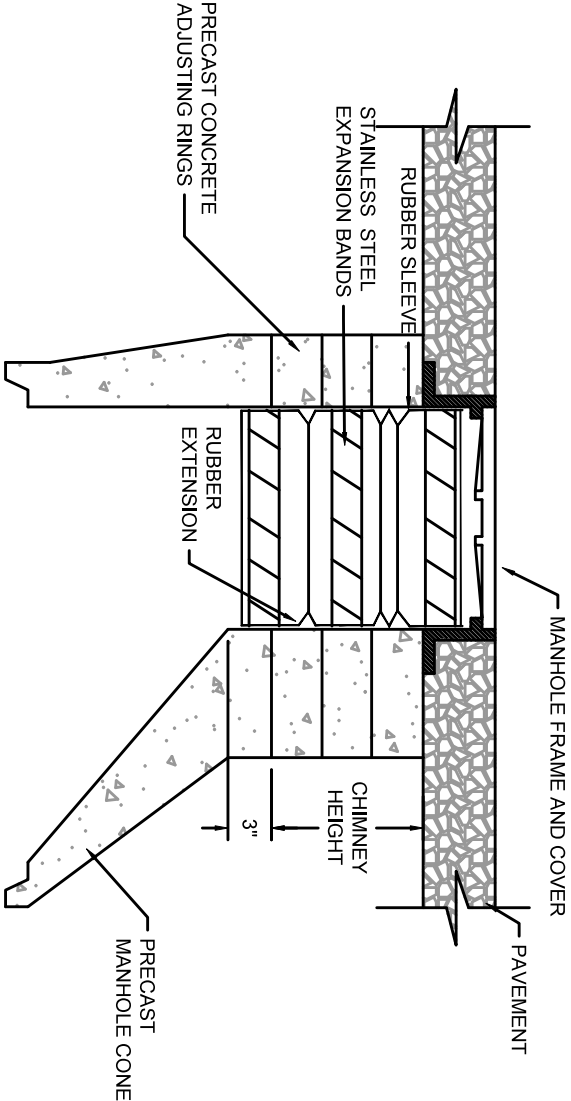
Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	SS-010

NOTES:

- 1. THE RUBBER SLEEVE IS AVAILABLE IN BOTH A 8.5" WIDE DOUBLE PLEATED AND A 10" WIDE TRIPLE PLEATED CROSS SECTION. THE SAME EXPANSION BANDS AND EXTENSIONS ARE USED FOR BOTH.
- 2. SEE CHIMNEY HEIGHT TABLE FOR SEAL AND EXTENSION COMBINATIONS. NEEDED TO SPAN FROM THE FRAME TO THE TOP OF THE CONE ON MANHOLES WITH VARIOUS CHIMNEY HEIGHTS. FRAME OFFSETS OR DIAMETER DIFFERENTIALS WILL REDUCE THESE SPAN HEIGHTS.
- 3. THE TOP OF THE CONE MUST HAVE A MINIMUM 3" HIGH VERTICAL SURFACE THAT IS SMOOTH AND FREE OF ANY FORM OFFSETS OR EXCESSIVE HONEYCOMB. IF A 3" HIGH VERTICAL SURFACE IS NOT AVAILABLE DUE TO THE EXISTING CONFIGURATION OF THE EXISTING MANHOLE CONE, ONE MAY BE CREATED USING A CONE DISK FORM AND A NON SHRINK PATCHING MORTAR.
- 4. CHIMNEY SEAL SHALL BE AS MANUFACTURED BY CRETEX

CHIMNEY HEIGHT TABLE

COMBINATIONS OF SEALS & EXTENSIONS	TO SPAN HEIGHTS OF:	
	W/STANDARD SEAL	W/WIDE SEAL
SEAL ONLY	0 - 4.5"	2" - 7.5"
SEAL + 7" EXTENSION	OVER 4.5" - 10.5"	OVER 7.5" - 13.5"
SEAL + 10" EXTENSION	OVER 10.5" - 13"	OVER 13.5" - 16"
SEAL + MULT. EXTENSIONS	OVER 13"	OVER 16"
ADD 6" OF COVERAGE FOR EACH ADDITIONAL 7" EXTENSION ADD 8.5" OF COVERAGE FOR EACH ADDITIONAL 10" EXTENSION		



CHIMNEY SEAL - DETAIL

NOT TO SCALE



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GRAVITY SANITARY SEWER STANDARD DETAIL  
CHIMNEY SEAL

Date	02/03/2021
Revision Date	01/14/2022
Dwg. No.	SS-011