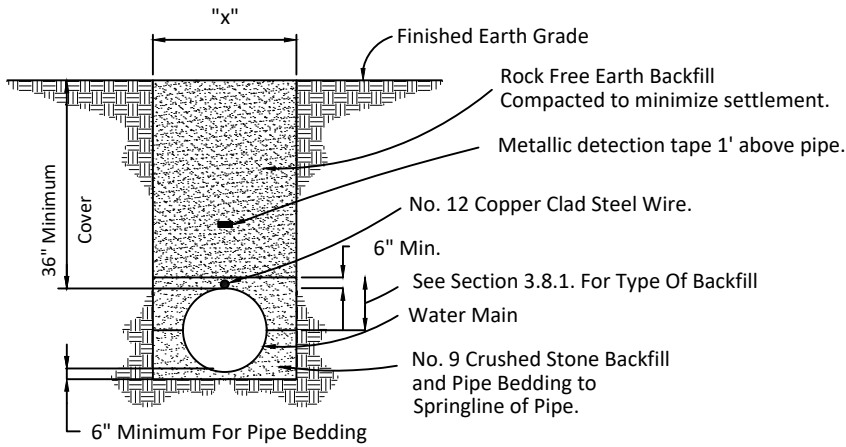


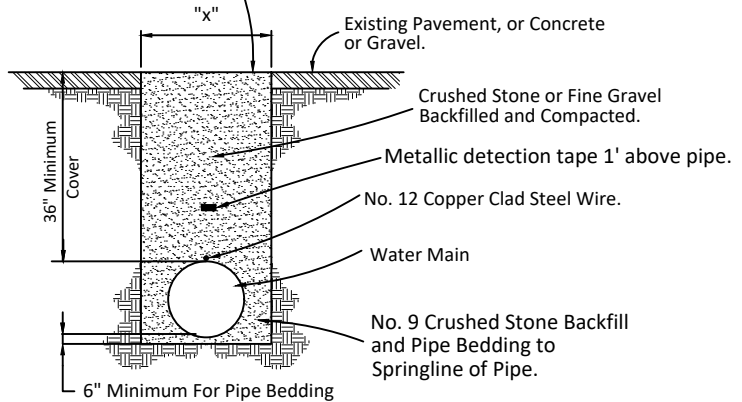
# Standard Water Main Details



- Method "A" -  
(Open Areas)

TRENCH WIDTH	
PIPE SIZE	"X"
4" Thru 12"	24"
14" Thru 18"	36"
20" Thru 24"	42"
26" Thru 36"	54"

Pavement Replacement To Meet  
The Requirements Of The  
Appropriate Governing Body.



Note:

Cutting and Repairing existing pavement, concrete or gravel shall be in accordance with the owner's requirements

- Method "B" -  
(Paved Areas)

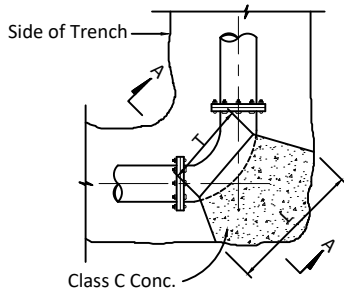
## Typical Backfill & Bedding Methods



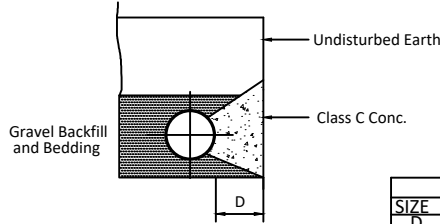
Bowling Green Municipal Utilities  
P.O. Box 10300  
Bowling Green, KY 42102  
PH. 270-782-1200

**WD-1**

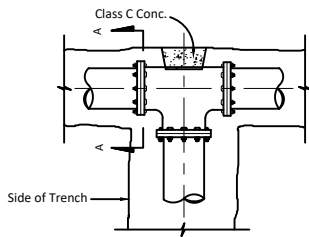
# Standard Water Main Details



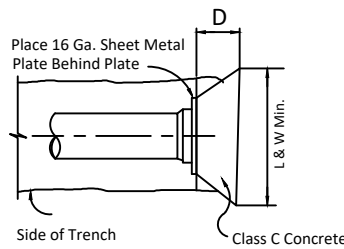
**45° & 90° Bends**



**Section A - A**



**TEES**

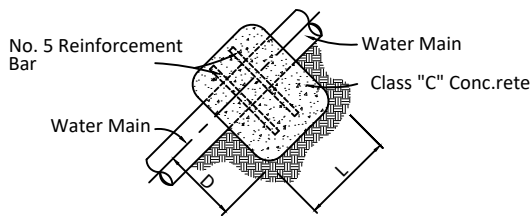


**Plugs**

Plugs & Tees							
SIZE	2"	3"	4"	6"	8"	10"	12"
D	6"	6"	6"	6"	6"	6"	6"
L&W	14"	16"	18"	20"	22"	24"	24"
(45°) Eighth Bends							
SIZE	2"	3"	4"	6"	8"	10"	12"
D	6"	6"	6"	6"	6"	6"	6"
L	12"	14"	16"	18"	20"	22"	24"
T	10"	12"	14"	16"	16"	18"	18"
(90°) Quarter Bends							
SIZE	2"	3"	4"	6"	8"	10"	12"
D	6"	6"	6"	8"	10"	12"	12"
L	15"	18"	21"	24"	27"	30"	34"
T	10"	12"	14"	16"	18"	20"	22"

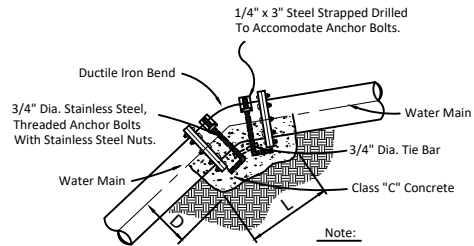
## Concrete Thrust Blocks

**Note:**  
Anchors To Be Full Width Of Trench.  
Anchors Must Be Placed Against Undisturbed Earth.



**Straight Pipe**

Vertical Bend & Straight Pipe							
SIZE	2"	3"	4"	6"	8"	10"	12"
D	10"	12"	12"	15"	15"	18"	18"
L	12"	18"	18"	24"	24"	30"	30"



**Note:**  
Mechanical Joint Restraint Systems  
"Mega Lug" 1100 Series or Approved  
Equal.

**Vertical Bends**

## Typical Concrete Anchor Blocks

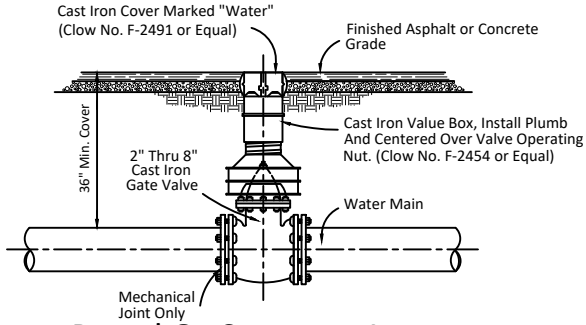
- Note:**
- All bolts shall be coated with a rubberized spray on undercoating
  - All thrust backs shall be placed against undisturbed earth.
  - Tracer wire crossing fittings shall not be wrapped around bolts or criss crossed across fitting.



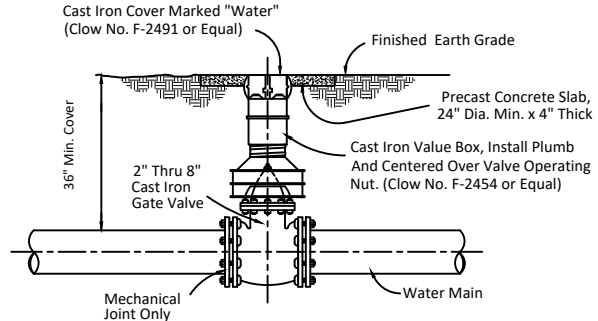
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**WD-2**

# Standard Water Main Details

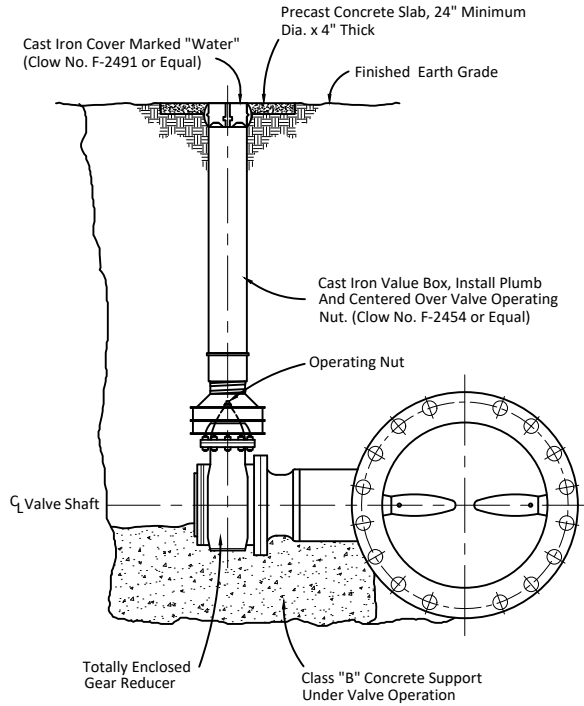


**Paved Or Concrete Areas**



**Earth Areas**

## Typical Gate Valve Setting



Note: Butterfly Valves to be used on Water Mains 10" or larger.

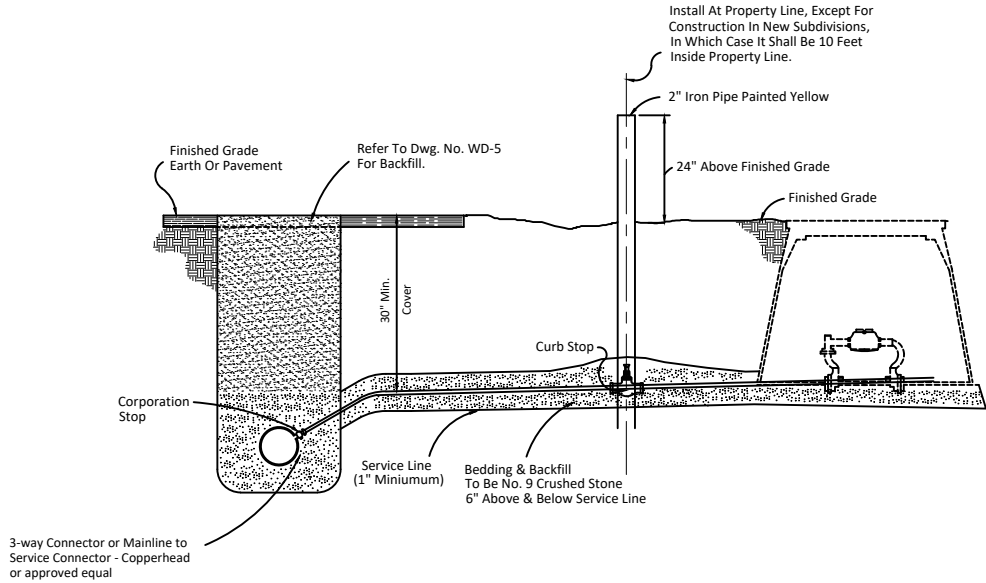
## Typical Setting For Buried Butterfly Value



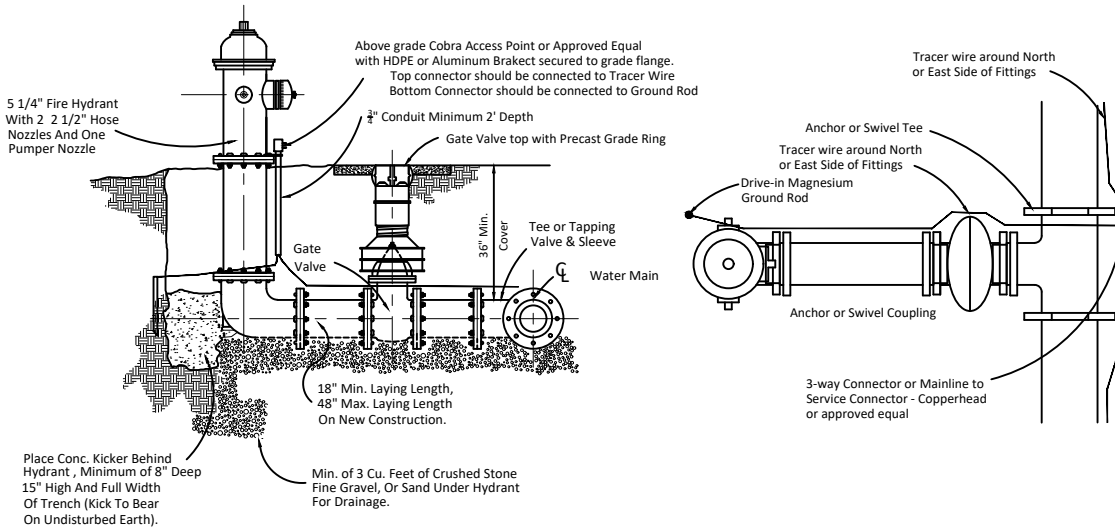
Bowling Green Municipal Utilities  
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**WD-3**

# Standard Water Main Details



**Typical 5/8" & 1" Service Connection**



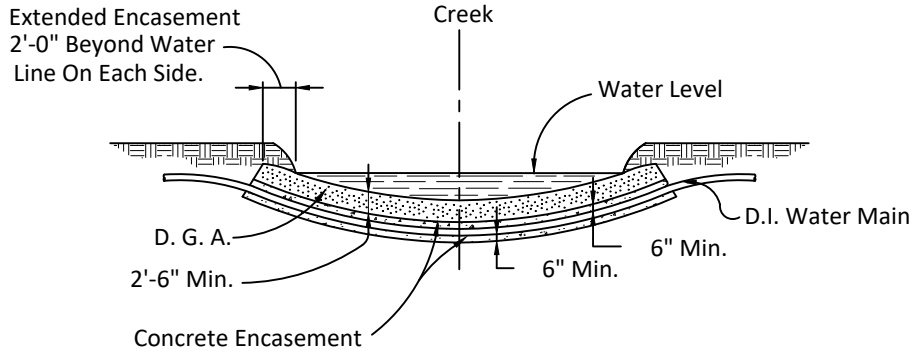
**Typical Fire Hydrant Setting**



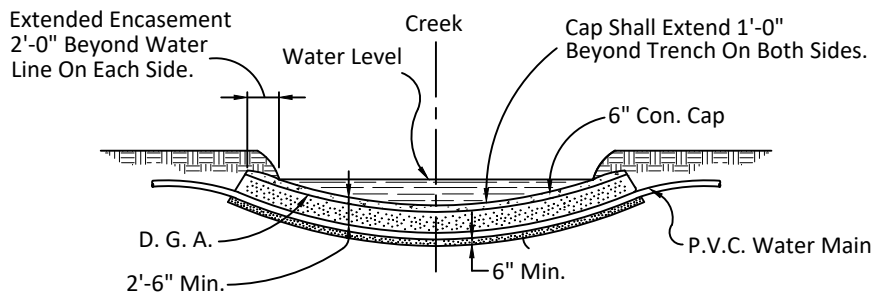
Bowling Green Municipal Utilities  
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**WD-4**

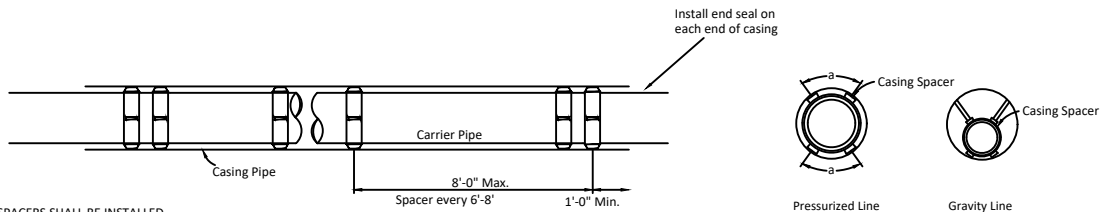
## Standard Water Main Details



Typical Creek Crossing For  
D.I. Water Main



Typical Creek Crossing For  
P.V.C. Water Main



NOTE  
1 - CASING SPACERS SHALL BE INSTALLED  
A MAXIMUM OF 1" ON EITHER SIDE OF A  
PIPE JOINT.

Casing For Water Or Sewer Line  
Installation In Casing Pipe

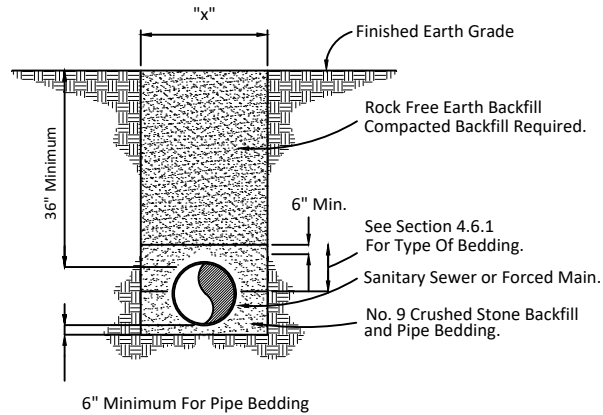


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WD-5

## Standard Sanitary Sewer Details

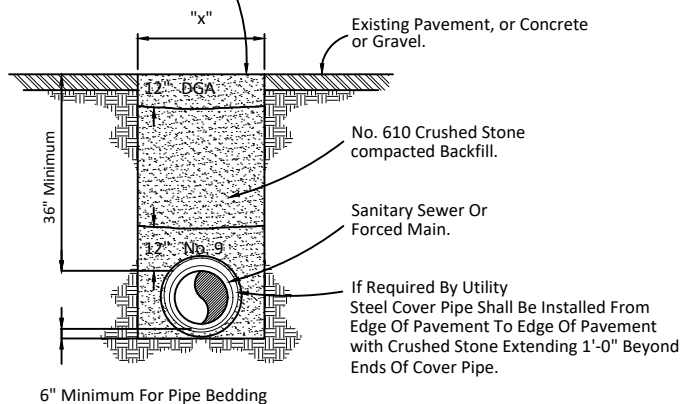
Trench Width	
Pipe Size	"X"
4" Thru 12"	30"
14" Thru 18"	36"
20" Thru 24"	42"
26" Thru 36"	54"



6" Minimum For Pipe Bedding

### - Method "A" - (Open Areas)

Pavement Replacement To Meet  
The Requirements Of The  
Appropriate Governing Body.



6" Minimum For Pipe Bedding

### - Method "B" - (Paved Areas)

**Note:**

Cutting and Repairing Existing Pavement  
Concrete or Gravel Shall Be in Accordance  
With Owners Requirements.

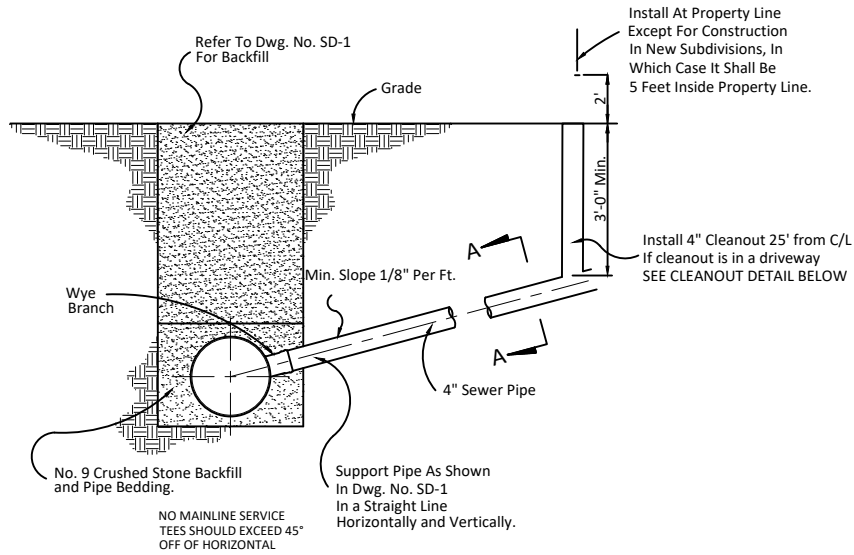
## Typical Backfill & Bedding Methods



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# SD-1

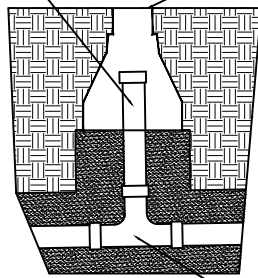
# Standard Sanitary Sewer Details



## House Connection For Shallow Sewer In Earth Or Rock

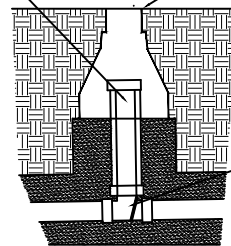
Clean out shall be within 5' of the property line.

Clean out Casting shall be Utility Defender with marker pole.



Clean out shall be within 5' of the property line.

Clean out Casting shall be Utility Defender with marker pole.



Rectorseal Clean Check Backwater Valve or approved equal.

Install 2-way Cleanout Tee to allow camera inspection in both directions.

CLEAN OUT DETAIL

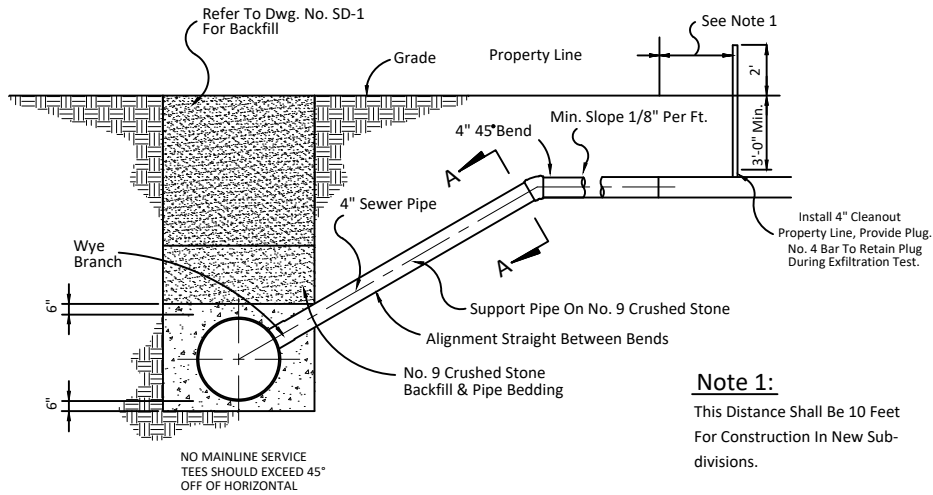
CLEAN OUT DETAIL  
WHEN HOUSE IS BELOW  
MANHOLE GRADE OR  
BASEMENT GRAVITY



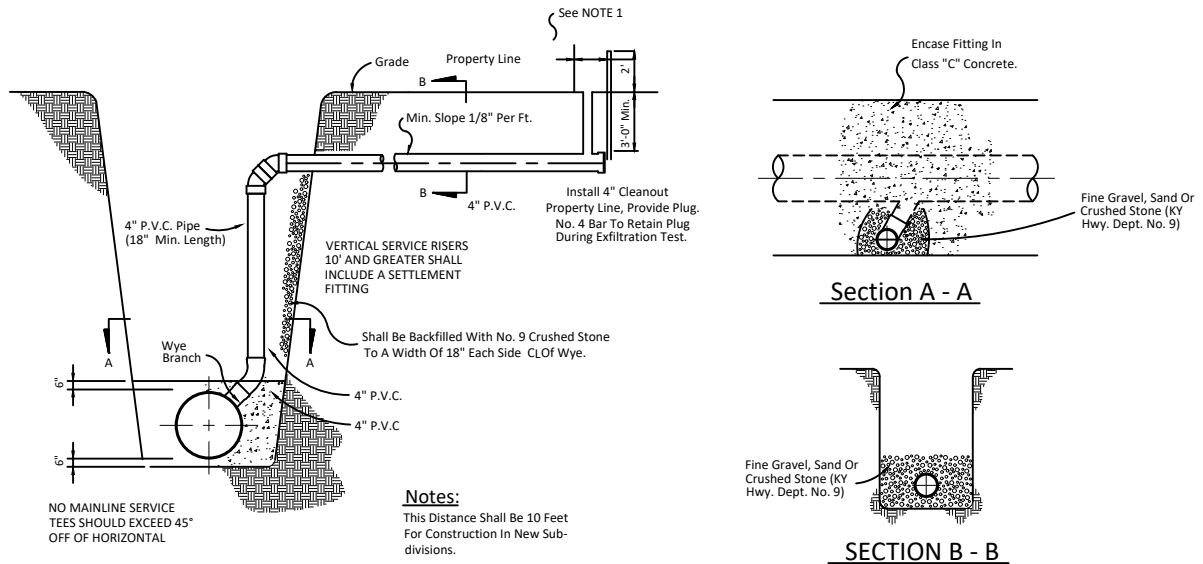
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**SD-2**

# Standard Sanitary Sewer Details



## House Connection For Deep Sewer In Earth



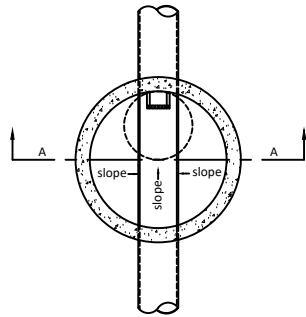
## House Connection For Deep Sewer In Rock Excavation



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PH. 270-782-1200

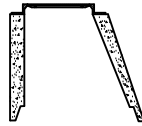
**SD-3**

# Standard Sanitary Sewer Details



Section B-B

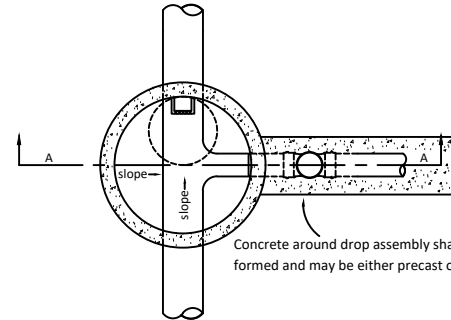
Note: Eccentric barrel sections shall be installed in all instances unless otherwise specified by BGMU



The view A-A of each manhole is downstream and therefore does not illustrate the eccentricity of the top barrel.

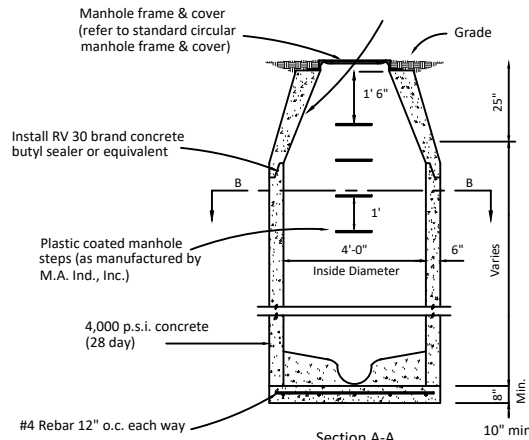
Note:

1. Manhole to be set on foundation of 12" of graded stone. If structure is accidentally over excavated, compacted stone backfill will be used to bring back to grade.
2. All precast seams shall be primed and wrapped with Infi-Shield Gator Wrap or approved equal.



Section B-B

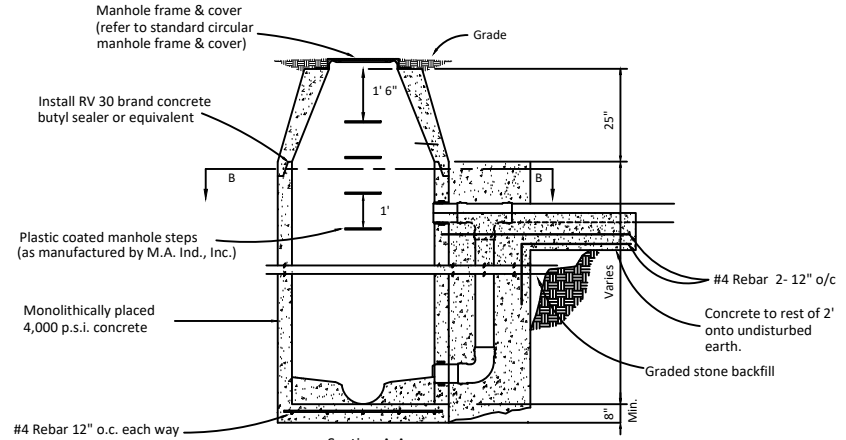
Concrete around drop assembly shall be formed and may be either precast or poured-in-place



Section A-A

Typical Standard Manhole (precast)

Set frame casting in full Portland Cement Mortar bed



Section A-A

Typical Drop Manhole (precast)

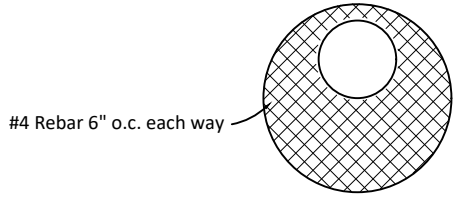
## Typical Standard Manholes (precast)



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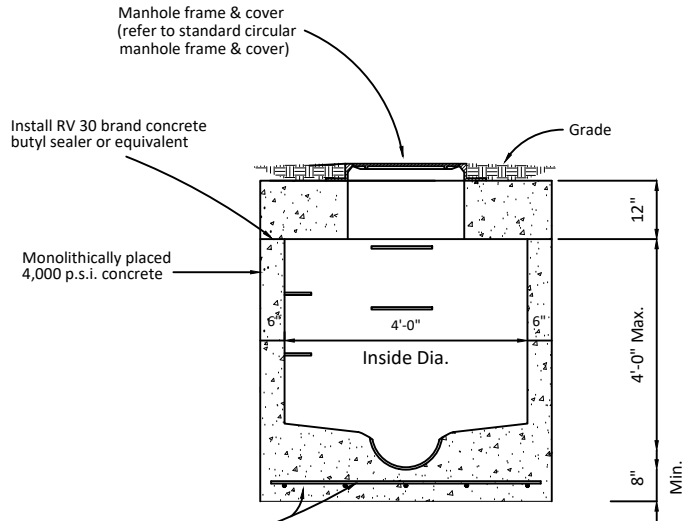
SD-4

# Standard Sanitary Sewer Details



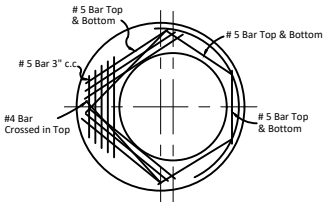
#4 Rebar 6" o.c. each way

Top Of Slab Reinforcement Plan

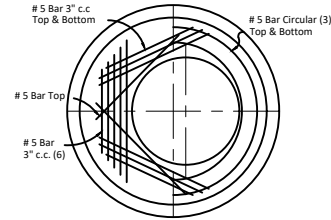


#4 Rebar 8" o.c. each way

Typical Shallow Manhole (precast)

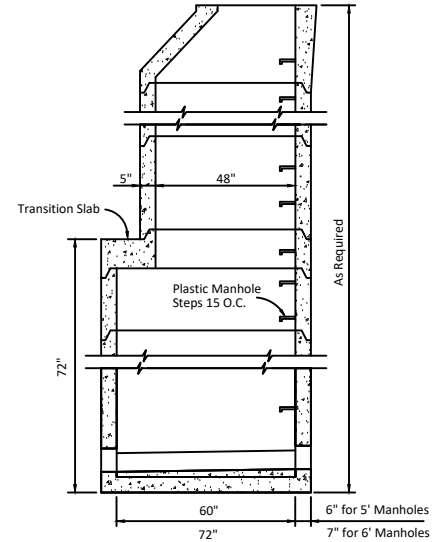


5'-0" To 4'-0" Transition Slab



6'-0" To 4'-0" Transition Slab

**Note:**  
Concrete 4500 PSI @ 28 Days  
Reinforced to ASTM C-478  
Transition Slab Reinforcement.



5' Dia. To 4' Dia. M.H.  
6' Dia. To 4' Dia. M.H.

- Note:**
1. Manhole to be set on foundation of 12" of graded stone. If structure is accidentally over excavated, compacted stone backfill will be used to bring back to grade.
  2. All precast seams shall be primed and wrapped with Infi-Shield Gator Wrap or approved equal.

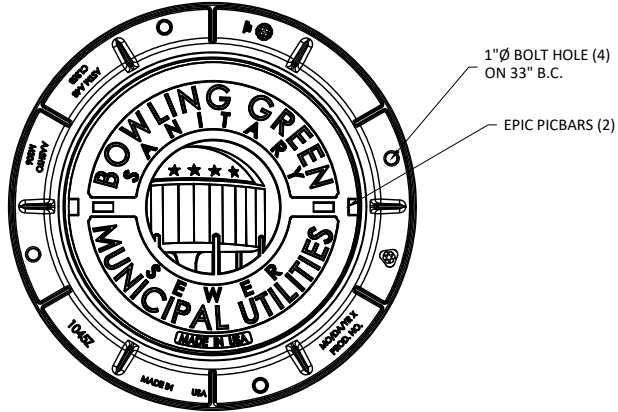


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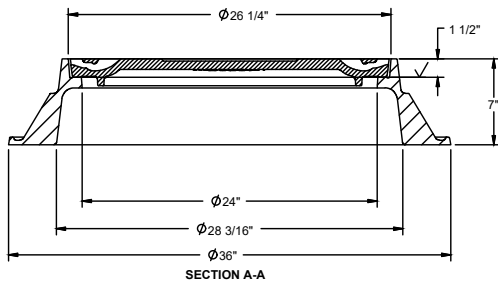
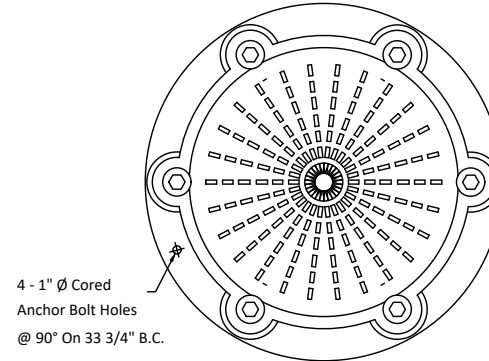

**SD-5**

## Standard Sanitary Sewer Details

J.R. HOE CASTINGS  
MC-375 BGMU CASTING

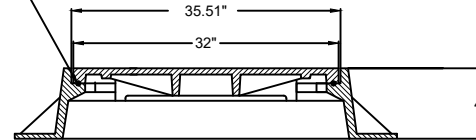


Watertight Manhole Casting  
Pantight Manhole Cover and Frame (32")



Standard Circular Manhole  
Frame And Cover

1/2" Ø Neoprene Cord  
Gasket 40 Durometer



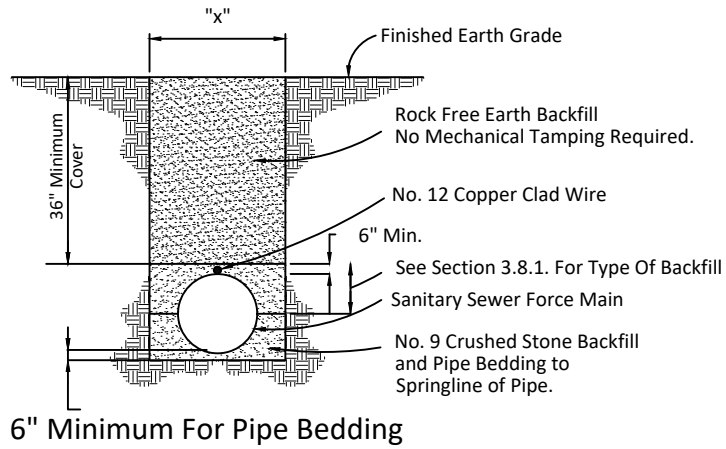
Standard Watertight Manhole  
Frame And Cover



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SD-6

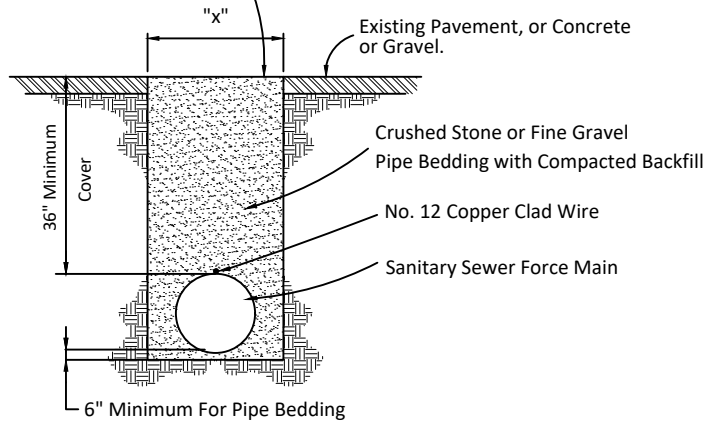
## Standard Sanitary Sewer Details



- Method "A" -  
(Open Areas)

TRENCH WIDTH	
PIPE SIZE	"X"
4" Thru 12"	30"
14" Thru 18"	36"
20" Thru 24"	42"
26" Thru 36"	54"

Pavement Replacement To Meet  
The Requirements Of The  
Appropriate Governing Body.



- Method "B" -  
(Paved Areas)

**Note:**

Cutting and Repairing existing pavement,  
concrete or gravel shall be in accordance  
with the owner's requirements

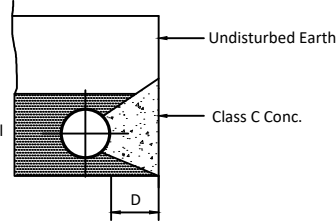
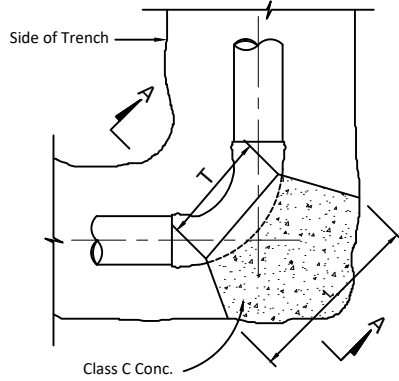
### Typical Backfill & Bedding Methods



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# SD-7

# Standard Sanitary Sewer Details

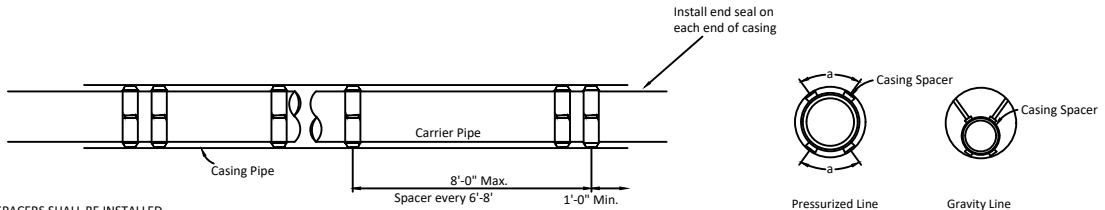


Section A - A

Plugs & Tees							
Size	2"	3"	4"	6"	8"	10"	12"
D	6"	6"	6"	6"	6"	6"	6"
L & W	14"	16"	18"	20"	22"	24"	24"
(45°) Eighth Bends							
Size	2"	3"	4"	6"	8"	10"	12"
D	6"	6"	6"	6"	6"	6"	6"
L	12"	14"	16"	18"	20"	22"	24"
T	10"	12"	14"	16"	16"	18"	18"
(90°) Quarter Bends							
Size	2"	3"	4"	6"	8"	10"	12"
D	6"	6"	6"	8"	10"	12"	12"
L	15"	18"	21"	24"	27"	30"	34"
T	10"	12"	14"	16"	18"	20"	22"

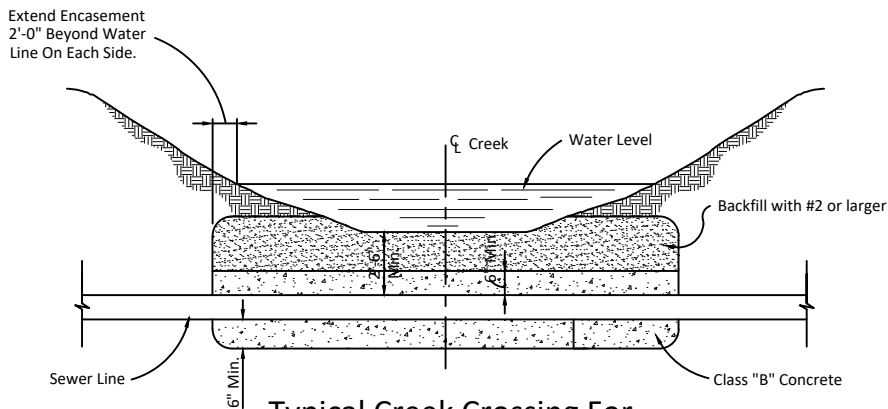
45° & 90° Bends

Force Main Thrust Blocks



NOTE  
 1 - CASING SPACERS SHALL BE INSTALLED A MAXIMUM OF 1' ON EITHER SIDE OF A PIPE JOINT.  
 2 - USE MOLDED END SEALS ON EACH SIDE OF CASING. Model AM from APS, LLC or approved equal.

Casing For Water Or Sewer Line  
 Installation In Casing Pipe



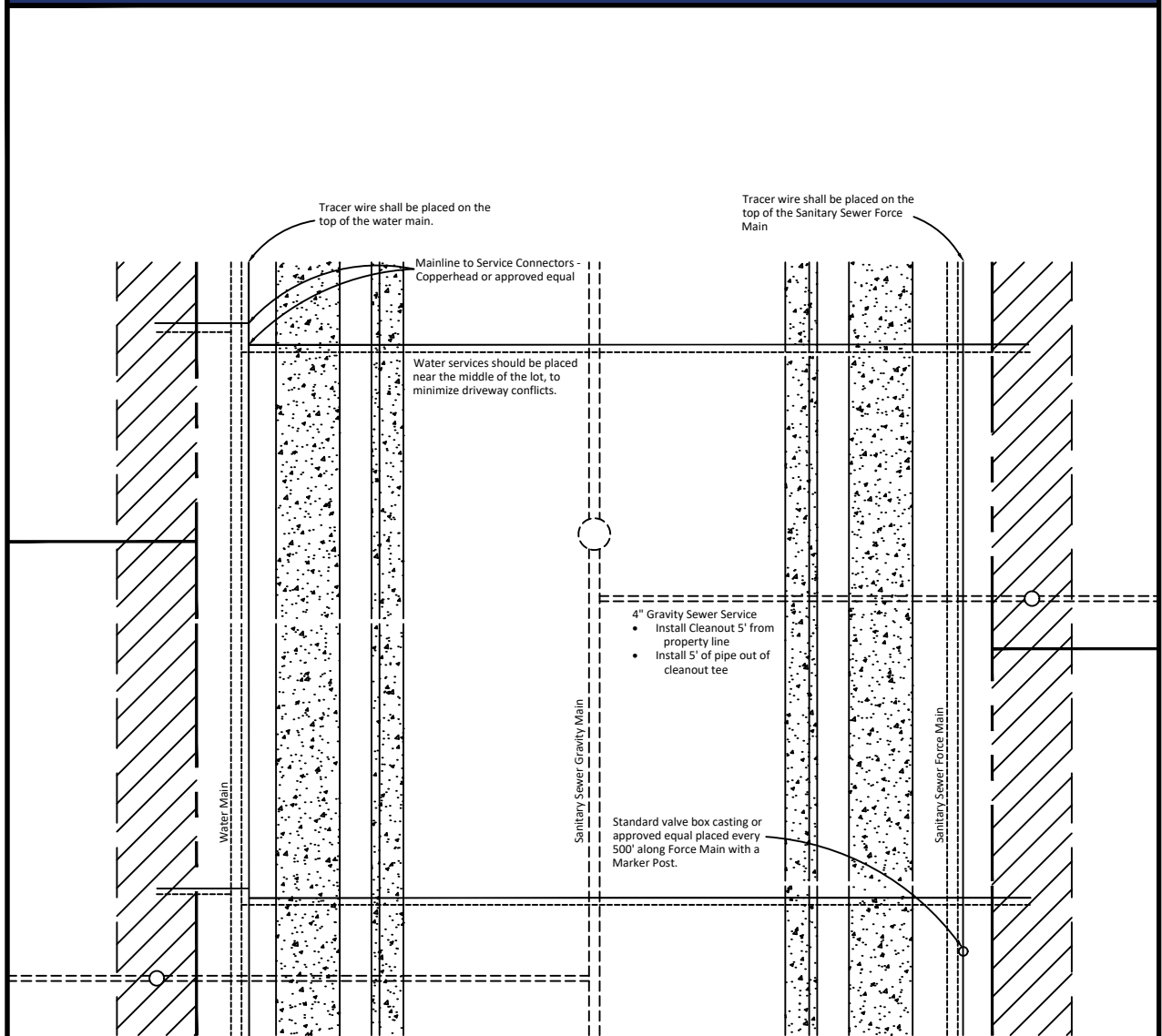
Typical Creek Crossing For  
 Sanitary Sewer Line



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**SD-8**

# Standard Utility Detail



WATER AND SANITARY SEWER TYPICAL STREET LAYOUT



Bowling Green Municipal Utilities  
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**UD-1**