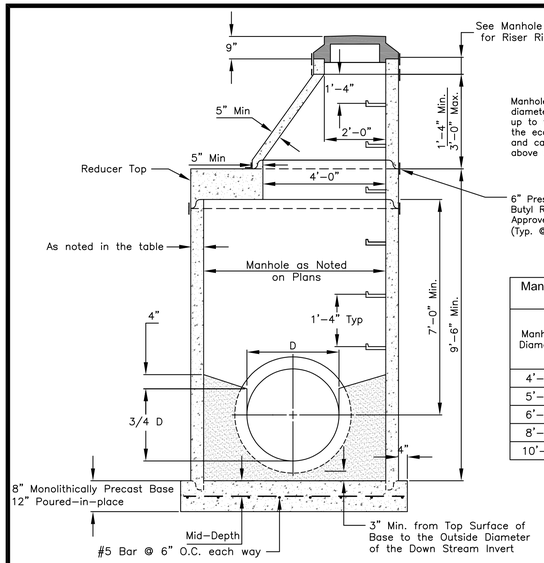
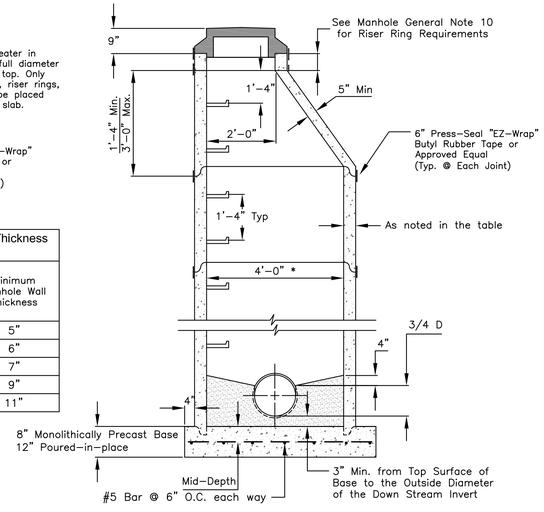


Manhole 5' and greater in diameter shall be full diameter up to the reducer top. Only the eccentric cone, riser rings, and casting shall be placed above the reducer slab.

Manhole Wall Thickness Table	
Manhole Diameter	Minimum Manhole Wall Thickness
4'-0"	5"
5'-0"	6"
6'-0"	7"
8'-0"	9"
10'-0"	11"

5' AND GREATER STANDARD PRECAST MANHOLE (ECCENTRIC CONE)

No Scale



* UNLESS OTHERWISE NOTED ON PLANS

4' DIA. STANDARD PRECAST MANHOLE (ECCENTRIC CONE)

No Scale

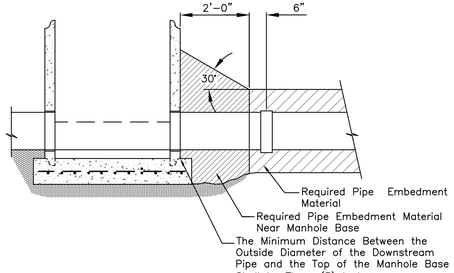
MANHOLE GENERAL NOTES:

1. All manhole rings shall be set in a minimum of two (2) rows of 3/4 to 1 inch pre-formed butyl joint sealer.
2. All manhole rings to be placed in pavement or in areas to be subsequently paved shall have "Machined Horizontal Bearing Surfaces" and shall comply with Class #25 as established in ASTM A-48.
3. The inside diameter of the manhole shall be 4'-0" for pipe diameters from 8" thru 24" and shall be 5'-0" for pipe diameters from 27" thru 36". In addition, the inside diameter (ID) of manholes up to 20 feet deep shall be 4'-0". ID shall be 5'-0" for depths up to 25 feet and ID shall be 6'-0" for depths exceeding 25 feet unless otherwise noted on the plans.
4. All manhole bases (pre-cast or poured-in-place) shallhave No. 5 reinforcing bars placed on 6" centers both ways.
5. All standard manhole rings and covers to be Deeter 1315-jcs, Neenah NF-15360009/B (frame) and NF-15360010/B (cover), or approved equal. All manhole rings and covers shown in plans to be "bolt- down" to be Cloy & Bailey Manufacturing Co. No. 20140R, Neenah R-1915-F2 or approved equal. An extra payment for furnishing "bolt-down" ring and cover as shown in plans will not be made, but shall be considered as subsidiary to the item, "Standard Manhole".
6. Standard manhole steps to be steel core, plastic coated steps (M.A. Ind., Inc. No. PS1- PF, PS2-PF, or approved equal).
7. Maximum grade adjustment allowable is 8". Minimum allowable thickness for precast concrete grade adjustment ring is 4".
8. Reinforcement in all precast sections shall equal or exceed A.S.T.M. C-478 specifications.
9. Butyl material to be used at all precast sections joints. O-Rings may be used for joints below the cone section, but the cone section itself shall not have O-ring joints.
10. Riser Rings:

    A. Manholes in Pavement: The thickness of the recycled rubber riser rings shall not be less than one (1) inch nor greater than four (4) inches. If the required thickness of riser rings exceeds 4 inches, a 4-inch or 6-inch precast concrete riser ring maybe installed between the rubber riser ring and the cone. Riser rings may be used up to a maximum of 12 inches. The minimum number of riser rings required to achieve the necessary adjustment shall be used. The rubber riser rings shall be tapered to match the slope of the existing or proposed pavement at the manhole. The joints between the cone, rubber riser rings, and casting shall be sealed with the manufacturer-supplied sealant.

    B. Manholes Not in Pavement: All manholes shall be provided with riser ring(s) underneath the casting as shown on Drawings. A minimum of one (1) 4-inch riser ring shall be installed on top of the cone section. If a greater depth of adjustment rings is necessary, a combination of 4-inch and 6-inch riser rings may be used up to a maximum of 12 inches of riser rings. The minimum number of riser rings required to achieve the necessary adjustment shall be used. If precast concrete riser rings are used, the joints between the cone, riser rings, and casting shall be sealed with a double bead of preformed butyl rubber sealant. If recycled rubber riser rings are used, the joints between the cone, rubber riser rings, and casting shall be sealed with the manufacturer-supplied sealant.

    C. Brick and mortar adjustments will not be allowed.

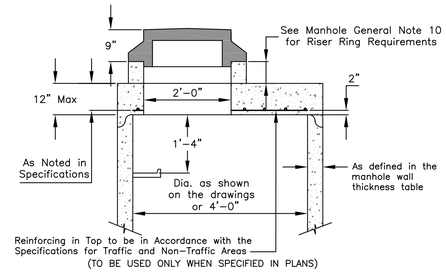


Notes:

1. First joint of RCP or VCP pipe shall be embedded in concrete to within 6" of the first joint.
2. If flexible or semi-flexible pipe is used, flexible wall connector must be used.
3. If a flexible wall connection is used in conjunction with PVC or Ductile Iron pipe, a standard flexible embedment shall be used.
4. Flexible wall connections shall be press A-LOK X-CEL, Z-LOK, Press-Seal (PSX Boot-Type Gasket) or approved equal.

MANHOLE BASE SECTION

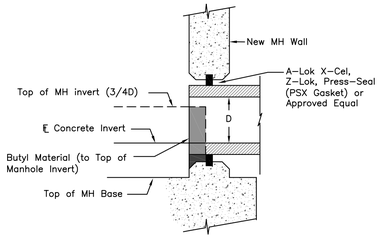
No Scale



(TO BE USED ONLY WHEN SPECIFIED IN PLANS)

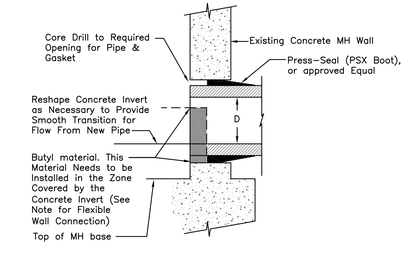
STANDARD PRECAST MANHOLE (SHALLOW TYPE)

No Scale



FLEXIBLE WALL CONNECTION DETAIL

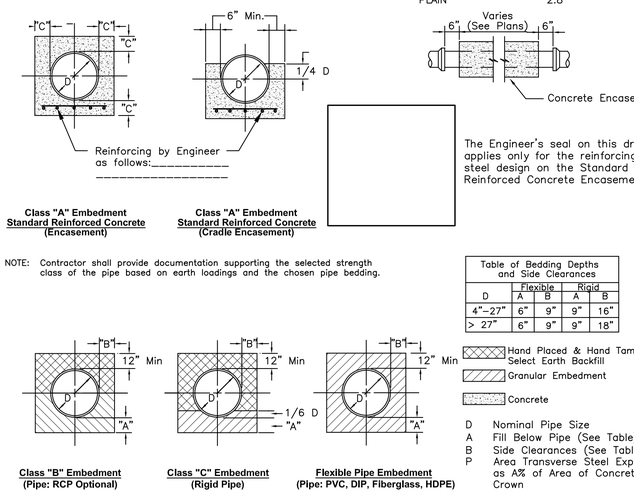
No Scale



Note: Connections to Existing Brick or Block Manholes shall be as Directed by JCW.

EXISTING WALL CONNECTION DETAIL

No Scale



TYPE	P	LOAD FACTOR
REINFORCED	0.40%	3.4
REINFORCED	1.00%	4.8
PLAIN		2.8

The Engineer's seal on this drawing applies only for the reinforcing steel design on the Standard Reinforced Concrete Encasement.

NOTE: Contractor shall provide documentation supporting the selected strength class of the pipe based on earth loadings and the chosen pipe bedding.

Table of Bedding Depths and Side Clearances				
	Flexible		Rigid	
D	A	B	A	B
4"-27"	6"	9"	9"	16"
> 27"	6"	9"	9"	18"

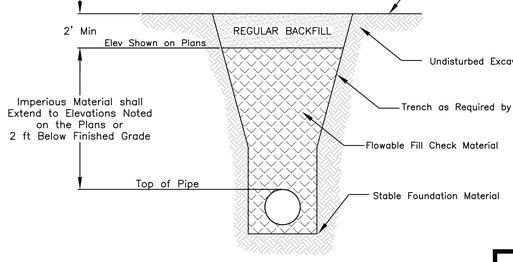
Hand Placed & Hand Tamped Select Earth Backfill
Granular Embedment
Concrete

D Nominal Pipe Size
A Fill Below Pipe (See Table)
B Side Clearances (See Table)
P Area Transverse Steel Expressed as A% of Area of Concrete at Crown

STANDARD EMBEDMENTS

No Scale

Note: If the Contractor uses Blasting as a Means of Excavation the Contractor shall Remove all Fractured Materials to the Limits of where Material is Undisturbed before Installing Impervious Ditch Check.

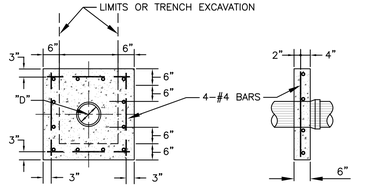


Notes:

1. Impervious ditch checks shall be placed where shown on the plans. Length shall be a minimum of 5 L.F.. Flowable fill shall be used and consist of a Portland cement grout having a minimum 28 day comprehensive strength of five hundred pounds per square inch (500 psi).
2. Regular backfill (above ditch check) shall be Top Soil.
3. Top of impervious material shall be a minimum of 2'-0" below finished grade.

IMPERVIOUS DITCH CHECK DETAIL

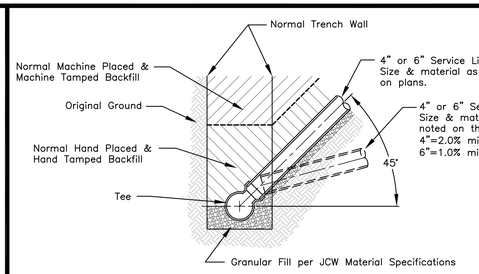
No Scale



NOTE: See Section 2536 for Concrete Anchor Placement Spacing Requirements.

CONCRETE ANCHOR DETAIL

No Scale

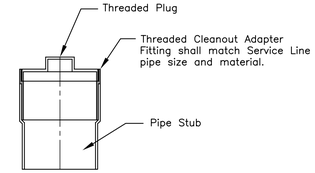


TEE ORIENTATION AND RISER DETAIL

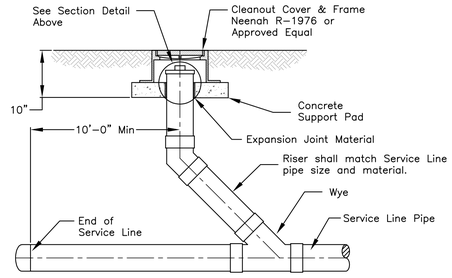
No Scale

Note:

1. Concrete anchors will be required where the service line is installed at a grade of 30° or greater. See Section 2536 of the Specifications and detail on this sheet.
2. No service line shall be installed with a grade greater than 45°.

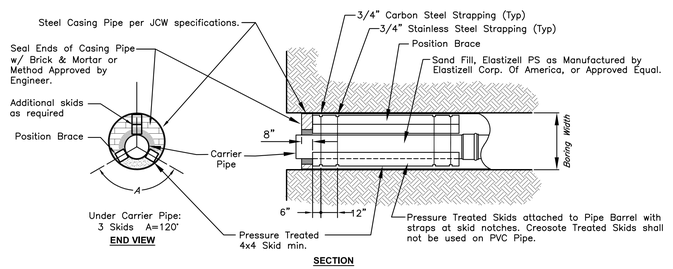


Section Detail



CLEANOUT DETAIL

No Scale



Note: In lieu of wood skids with brick and mortar end seals, the Contractor may install casing spacers and fabricated end seals per Section 2445 of the Standard Specifications. A minimum of three (3) spacers shall be installed on each pipe segment. Casing Spacers shall be approved by the Engineer then JCW Prior to Installation.

GRAVITY SEWER CASING PIPE AND END SEAL DETAIL

No Scale

SANITARY SEWER STANDARD DETAILS

JOHNSON COUNTY KANSAS
Wastewater
11811 S. Sunset Drive, Suite 2500
Olathe, Kansas 66061
Phone (913) 715-8500 | Fax (913) 715-8501
www.jocogov.org | @jocogov | F/jocogov

Drawing No.: JCW-00

Chief Engineer: Aaron A. Witt, P.E.

Scale: N.T.S.

Date: 03/07/2019