SANITARY SEWER SYSTEM
DESIGN STANDARDS AND SPECIFICATIONS

WITHIN THE

SHERIDAN SANITATION DISTRICT NO. 2

ARAPAHOE AND DENVER COUNTIES,
COLORADO

AUGUST 12, 2026

SANITARY SEWER SYSTEM
DESIGN STANDARDS AND SPECIFICATIONS

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INTRODUCTION

The purpose of this manual is to provide information related to the design and construction of any sewer system extension and/or associated appurtenances within the Sheridan Sanitation District No. 2 ("District") sanitary sewer system. This publication is divided into four sections: (1) Administrative Process and Procedures; (2) Technical/Construction Specifications; (3) Sanitary Sewer System Details; and (4) District Forms.

1. Sanitary Sewer System Administrative Process and Procedures

This section provides information related to the general procedures and requirements for submitting and obtaining approval of sanitary system construction plans by the District. It also includes requirements for constructing sanitary sewer system facilities in accordance with the approved plans, and for obtaining final acceptance by the District to own, operate, and maintain public sewer infrastructure, as may be applicable.

2. Sanitary Sewer System Technical/Construction Specifications

This section provides technical information for materials, processes and procedures used in the construction and testing of sewer facilities.

3. Sanitary Sewer System Details

This section provides details of the materials and facilities described in the Sanitary Sewer System Technical/Construction Specifications section. The appropriate detail drawings are to be included on the construction plans submitted to the District.

4. District Forms

Reserved for future use.

Definitions

1. Best Management Practice: Any reasonable practice or procedure deemed to be necessary by the District to prevent, abate or remedy the consequences of the introduction of unlawful pollutants or concentrations of pollutants into the District's sanitary sewer system by an industrial or commercial user to the extent technically and economically practical.

2. CDOT: The Colorado Department of Transportation.

3. District: The Sheridan Sanitation District No. 2.

4. District Engineer: The engineering firm authorized by the Sheridan Sanitation District No. 2 to provide engineering services on behalf of the District.

5. District System: The public sanitary sewer system and related facilities owned and/or operated by the Sheridan Sanitation District No. 2 or Metro Water Recovery.

6. Domestic Sanitary Sewage: Liquid wastes: a) from the noncommercial preparation, cooking and handling of food, or b) containing human excrement and similar matter from the sanitary conveniences of dwellings, commercial buildings, industrial facilities, and institutions.

7. Fats, Oil or Grease (FOG): Non-petroleum fats, oils, and grease derived from animal or plant sources.

8. Flow: Volume of wastewater.

9. Garbage: Solid wastes from the domestic and commercial preparation, cooking and dispensing of food, and from the commercial handling, storage and sale of produce.

10. Grease Interceptor or Gravity Grease Interceptor (GGI) - A plumbing appurtenance or appliance that is installed in a sanitary drainage system to intercept non-petroleum fats, oils, and greases (FOG) from a wastewater discharge and is identified by capacity volume and number of compartments.

11. Individual (Private) Wastewater Disposal System: A septic tank, cesspool or similar self-contained receptacle or facility which collects and/or treats or otherwise disposes of wastewater and which is not connected to the District System.

12. Industrial: Of or pertaining to industry, manufacturing, commerce, trade or business, as distinguished from domestic or residential.

13. Industrial Wastes: The liquid wastes or solid wastes from industrial manufacturing processes, trades, or business as distinct from sanitary wastewater.

14. Owner: Any person, association, corporation, entity, or government agency constructing and/or connecting sanitary sewer improvements to the Sheridan Sanitation District No. 2 sewer system.

15. Pollutant: Dredged soil, dirty slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat wrecked or discarded equipment, rock, sand or any industrial, municipal or agricultural waste.

16. Pollution: The marinade or man-induced alteration of the chemical, physical, biological and radiological integrity of water.

17. Sanitary Sewer Main: A public sanitary sewer collection or interceptor main which carries sewage and to which storm, surface, and groundwaters are not intentionally admitted, including the pipe or conduit system and appurtenances, for the collection, transportation, pumping, and treatment of sewage. This definition shall also include the terms "sewer main," "public sewer," "sewer system," or "sewer."

18. Sewer Service Line: All pipe, fittings, and appurtenances, including the connection to the District System, used for conveying wastewater from an Owner's property or premises to the District System.

19. State: The State of Colorado.

20. Tap/Connection: A physical connection to a District sewer main which, together with appropriate permits, impacts sewer service to individual customers.

21. Tap Fee: The fee imposed by the District related to the tap/connection of sanitary sewer facilities to the District System.

SHERIDAN SANITATION DISTRICT NO. 2

ADMINISTRATIVE PROCESS AND PROCEDURES

SANITARY SEWER SYSTEM
ADMINISTRATIVE PROCESS AND PROCEDURES

Sanitary Sewer Improvement Plan Submittal:

All plans for sanitary sewer main extensions, improvements and modifications shall be submitted to the District. All plans must be approved by the District prior to initiation of construction. Plans shall be submitted and reviewed in accordance with the following procedures:

1. Review and approval of construction plans by the District Engineer is required prior to the commencement of construction. If modifications to the plans are required, the plans will be returned for revision and subsequent approval.

   The following items shall be submitted for review:

   a. A set of sanitary sewer system construction plans and an electronic PDF copy stamped and signed by a Professional Engineer licensed to practice in the State of Colorado.

   b. Copies of legal descriptions for any easements required by the District (if applicable).

   c. Paper copies and an electronic copy of a sanitary sewer study showing sewage contribution and hydraulic calculations used to size the sewer lines for the anticipated service area. The study will set forth all assumptions and criteria that serve as basis for the calculations and will show design for the initial and ultimate average and peak flows along the sewer lines including the initial and final buildout (as applicable).

NOTE: The approval of sanitary sewer system construction plans signifies only that the plans meet the minimum requirements of the District's standards and specifications based on the information provided. Approval is not a representation or warranty that the improvements will perform any certain function. The designing engineer shall be fully responsible for the adequacy and satisfactory performance of the sanitary sewer system design.

2. Approved plans will be signed by the District Engineer using the following approval block.

ENGINEERING APPROVAL SHERIDAN SANITATION DISTRICT NO. 2	
REVIEW IS ONLY FOR GENERAL COMPLIANCE WITH SHERIDAN SANITATION DISTRICT NO. 2 ENGINEERING STANDARDS AND REQUIREMENTS. ALL RESPONSIBILITY FOR EXISTING CONDITIONS, CORRECTNESS OF DIMENSIONS, DETAILS, CONCEPTS, QUANTITIES AND SAFETY DURING CONSTRUCTION SHALL REMAIN WITH THOSE DESIGNING, DEVELOPING AND CONSTRUCTING THE PROJECT.	
DISTRICT ENGINEER	DATE

3. All costs associated with the plan review by the District Engineer will be charged to the Owner, as applicable.

4. Plans and specifications are approved for a one-year period. If construction has not begun within this one year, or if it has been halted and not restarted prior to expiration of the approval period, the plans must be resubmitted for review and approval.

5. A pre-construction meeting shall be held between the District Engineer and applicable parties, including but not limited to the design engineer, construction contractor, and Owner representative, following approval of construction plans and prior to commencement of work.

6. Authorization to commence construction will be granted by the District Engineer upon approval of the plans and completion of the pre-construction meeting.

7. For public improvements to be owned and/or operated by the District, the District and Owner shall enter into a separate agreement providing final terms and conditions as related to the construction, conveyance, and acceptable of such public improvements prior to the approval of construction plans or commencement of any work. (*See below* Requirements for District Acceptance of Public Improvements).

General Construction Requirements:

1. The District Engineer shall be notified at least 48 hours prior to the start of any construction and prior to resumption of any work suspended for more than three (3) working days.

2. The District will provide observation during construction to ensure quality control and conformance with District specifications. Observation should in no way be considered a guarantee of proper construction. Construction observation does not relieve any obligation to construct facilities in accordance with the District's specifications and the approved construction plans.

3. During construction, no work may be backfilled, including bedding material above the spring line of the pipe, until construction has been observed and accepted by the District Engineer. Any improvements covered prior to observation shall be excavated to allow for observation at no expense to the District.

4. All construction work must be accomplished in accordance with District specifications, the approved sanitary sewer system construction plans, and all applicable engineering standards and regulations. Any modifications, field changes, etc., to the approved plans must be approved by the District Engineer prior to proceeding with the work. Failure to obtain approval of proposed changes in writing will require that construction be completed in accordance with the originally approved plans. Any additional expenses incurred due to failure to obtain District approval shall not be the liability of the District.

5. Unless designated on the approved construction plans or approved in the pre-construction meeting, phasing of a construction project is not permitted. Approval of completed sewer taps on only a portion of a project requires written approval of the District Engineer. A request for said approval must be submitted in writing and should include a description and drawing of the exact limits of the phased construction.

6. All costs associated with the construction observation services by the District will be charged to the Owner, as applicable.

7. A Best Management Practices (BMP's) Plan may be required, at the sole discretion of the District, to identify how the sewer facilities will manage solid and liquid wastes in adherence to applicable District, State and Federal standards and/or requirements.

8. Applicable Fats, Oil and Grease (FOG) and Petroleum, Oil, Grease and Sand (POG) policies shall be followed in accordance with Metro Water Recovery rules and regulations or other local policy.

9. No connection to a District owned or operated sanitary sewer main, or approved stub-out, shall be made prior to the purchase of a District Connection/Tap Permit and payment of associated Tap Fee.

Requirements for District Acceptance of Public Improvements:

The following items are required for public sanitary sewer improvements to be owned and operated by the Sheridan Sanitation District No. 2:

1. District Agreement.

    a. The District and the Owner shall enter into a separate agreement outlining final terms and conditions as related to the construction and acceptance of public sewer improvements to be owned and operated by the District prior to the approval of construction plans or commencement of any work. Any terms and conditions of such agreement which contradict these Design Standards and Specifications shall rule and supersede.

    b. Owner will be required to enter into an Indemnification Agreement and two-year Warranty Agreement with the District prior to conveyance and District acceptance of completed public sanitary sewer improvements.

2. As-Builts/Record Drawings.

    As-Builts and record drawings shall be submitted to the District Engineer prior to District acceptance of completed improvements, and shall conform to the following requirements:

    a. Submittal shall include two (2) full-size (22" X 34" or 24" X 36") prints of the record drawings with the As-Built conditions or changes in red, as well as electronic PDF file and AutoCAD file copies.

    b. As-Builts shall show the location, size, type, class, elevation, condition, updates, and changes in slope of all sanitary sewer pipes, manholes, inverts, and services.

    c. As-Built redline drawings and electronics will be revised on the approved project plans to document all changes, revisions and construction conditions, and to show all As-Built horizontal locations to within one foot (1') and all vertical elevations to within one tenth of a foot (0.1').

    d. As-Built/Record Drawings shall be reviewed, approved, stamped and signed by the professional engineer responsible for the design, who must

be licensed in the State of Colorado. The following certification shall appear on the cover sheet of the drawings:

Registered Colorado Professional Engineer:
Based upon review of and reliance on the field survey data and a final site investigation, I hereby state that to the best of my knowledge, information and belief, it is my professional opinion that the facilities shown in these drawings were constructed in substantial compliance with the Construction Drawings and the Engineer's intent. This statement is based only on a review of the field survey data and a final site investigation.

The revision block of each sheet shall be updated to show the record drawing revision.

3. Video of Final Conditions.

    a. All sanitary lines shall be jet cleaned and videoed. Videos shall be provided to the District Engineer via a flash drive or via link to a file hosting website (e.g., Dropbox, OneDrive).

4. Conveyance Instruments.

    a. Necessary easements and/or bills of sale shall be provided on a form acceptable to the District.

SHERIDAN SANITATION DISTRICT NO. 2

TECHNICAL/CONSTRUCTION SPECIFICATIONS

SANITARY SEWER SYSTEM
TECHNICAL/CONSTRUCTION SPECIFICATIONS

Sanitary Sewer Mains Located in Streets:

Sanitary sewer mains shall be installed in all-weather-surfaced street rights-of-way (ROW). Installation shall be as follows, as appropriate based upon existing utility locations:

1. Streets running north and south: On streets running north and south, the sanitary sewer line shall be placed ten feet (10') west of the center line of the street
2. Streets running east and west: On streets running east and west, the sanitary sewer line shall be placed ten feet (10') south of the centerline of the street.
3. Streets with turns: On streets shaped as a "U" or on streets having unusually sharp turns, the sewer line will conform to the above specifications as near as is practical, but the final location shall be determined by the Engineer or their representatives. Curvilinear sewer mains shall not be allowed without prior approval of the District Engineer. Designs must attempt to minimize the use of manholes.
4. Curb and gutter: In no case shall the sanitary sewer manhole be installed closer than three feet (3') clear to the lip of a concrete pan or gutter and five feet (5') clear to the sanitary sewer line.
5. Waterline clearance: In no case shall the sanitary sewer main be installed closer than ten feet (10') clear to the waterline.
6. Tracer Wire: A 10-gauge, UF-rated tracer wire shall be installed on all sanitary sewer mains and services. For services, a test station will be located at the building. For manholes, the tracer wire shall enter the top of the manhole through ½ inch groove in adjustment rings or through a ½ inch hole near the top of the cone, sealed with caulking. 3 feet of wire shall be inside the manhole and will be accessible from the surface.
7. Pipe – General: No public sewer main shall be less than eight inches (8") in diameter. Private sewer services shall not be less than four inches (4") in diameter. The minimum and maximum slopes for sewer lines shall be as shown in **Table 1**. The slopes between manholes must be uniform.
8. Minimum slopes – Sewer mainlines shall be designed to transport average sewage flow at mean velocities of 2.0 feet per second.

Table 1		
Size of Sewer (Inches)	Minimum Slope (%)	Maximum Slope (%)
4*	2.0	12.0
6*	1.0	10.0
8	0.50	7.5
10	0.35	6.0
12	0.30	5.0
15	0.25	4.0
18	0.15	3.0
21	0.10	2.0

*Private services only.

NOTE: Where it is necessary to design or install sewer lines with a greater slope than the maximum indicated in the preceding table, special provisions shall be made to protect against pipe displacement and erosion. Prior written approval must be obtained from the District Engineer in any case involving such slopes.

Sanitary Sewer Line Installation and Repair:

1. All PVC gravity sanitary sewer service pipe and fittings shall conform to ASTM D3034 gasketed integral bell PVC gravity sewer pipe, SDR 35 at a minimum. Pipe supplied for gravity sewer applications is green in color. All joints should be bell and spigot. PVC pipe shall be straight, shall not be warped and shall be free of cracks, blisters, chips, and fractures.

2. All fittings and couplings should be PVC gasketed push-on type for SDR35 non-pressure sewer pipe, unless otherwise noted on the approved plans.

3. All joint rubber coupling adaptors should be protected by a manufactured solid guard device for proper pipe alignment and for prevention of joint shear failure. Fernco Strong Back coupling with concrete (3,000 PSI) cradle below coupling required.

4. Elastomeric pipe joint gaskets should be lubricated prior to pipe placement with a proper lubricant specified, or supplied, by the pipe manufacturer.

5. Pipe laying should proceed up gradient with the spigot ends pointing in the direction of the flow.

6. Pipe Bedding and Trench De-Watering:

    a. Trench Gravel: Uniformly graded mineral aggregate should be placed and compacted for a minimum of 6 inches under, alongside and 12" on top of the entire length of installed pipe. Rocky and bedrock conditions will require evaluation by the District Engineer.

    b. Stabilization Rock: In the event the trench subgrade is not stable, three fourths an inch to one and one half inch (¾"-1 ½") diameter stabilization rock should be placed below the trench bedding material to make a firm foundation. Sub-stabilization rock and fabric shall be evaluated by the District Engineer.

    c. All excavated sewer service trenches should be free from ground water. Under no circumstance shall groundwater be allowed to enter the District System.

7. Trench Backfill and Compaction:

    a. Street cut permits must be issued by the applicable governing agency prior to trench backfill within public right-of-way.

    b. Trench backfill material shall be placed in horizontal lifts of depth no greater than 8-inches and then compacted to maximum dry density as required by the street cut permit, and as tested in accordance with procedures specified by AASHTO T-99, to a depth no greater than 12-inches below final surface grade level.

Manhole Size and Construction:

1. General Requirements:

    a. Manholes shall be installed at distances no greater than four hundred feet (400'). Manholes shall be installed at all changes in sewer grade and alignment.

    b. All manholes shall be watertight or waterproof, wet precast concrete sections of minimum 28-day concrete strength of 5,000 psi, using Type II cement and shall comply with ASTM C478. The base of the manhole shall be a minimum 8" thick below the channel. Manholes will require an exterior coating of bituminous waterproofing or approval equal. Manhole structures shall be designed for H-20 traffic loading in accordance with AASHTO Specifications. Cast-in-Place manhole bases are allowed only with prior approval and only when practicable by construction, such as the installation to connect to an existing pipeline with a new

manhole. Manholes shall be in accordance with the District Design Standards and Specifications. Dry cast manholes are not permitted.

c. Manholes shall be minimum of forty-eight inches (48″) in diameter. Manhole sizing shall be in accordance with the District's details. Whenever more than a two-way manhole or 90-degree turn is required, the manhole will need to be increased to a larger diameter. The top section shall be a concentric cone. Concrete adjustment rings shall be used to match final pavement elevations.

d. The minimum drop through any proposed manhole is two tenths of one foot (0.20′).

e. Manhole channel depth shall be the full height of the largest pipe.

f. Where manholes must be extended to finished grade, concrete adjustments or riser rings shall be used. The height of the chimney must not exceed twelve inches (12″) and shall be composed of the largest height combination of rings. No multiple two-inch (2″) and three-inch (3″) height rings will be allowed. If an adjustment ring height greater than twelve inches (12″) is necessary, additional barrel sections must be added. All adjustment rings shall be embedded in butyl sealant strips and be watertight. Interior joints shall not be grouted.

g. Sewer pipe at manholes shall be constructed continuously through the manhole where possible, and the concrete base placed under and around the pipe. At locations where there is a change in the grade or alignment of the sewer, or where a branch enters the manhole, the invert shall be hand-shaped to a true semi-circular section, for a full height channel to the largest pipe. There shall be no rough pipe or concrete edges left and the mortar finish in the bottom of the manhole shall be such that it will not inhibit flow through the manhole.

h. Manholes shall be constructed of precast concrete manhole material. The cone portion of the manhole shall be oriented concentric over the manhole bench.

i. All manholes shall be plumb within one-eighth (1/8″) per one foot (1′).

j. Backfilling and compaction directly against and around manholes (12″ horizontal Contact Zone), appurtenances and structures: Backfill shall be placed in 12″ thick horizontal layers or depth suited for the hand compaction equipment. Compaction beyond the Contact Zone will be accomplished by mechanical equipment (vibratory and/or rolling equipment) to industry standards and soil report

recommendations. Compaction tests will be required to be taken at each manhole, a minimum every vertical (18") beyond the Contact Zone at the manhole, alternating each quarter side or as specified by the appliable governing agency.

2. Concrete Base Manholes (Cast-In-Place):

   a. The poured-in-place concrete manhole base shall conform to details and dimensions shown in the drawings.

   b. Manhole base shall be poured-in-place on a minimum 12" thick bed of ¾" to 1 ½" crushed rock as suited for the conditions or as designed. The base of the manhole shall be a minimum of 8" below the bottom of the lowest pipe and be steel reinforced per the District's detail. Concrete shall be composed of Portland cement, fine and coarse aggregate, and water, so proportioned as to produce a dense, workable, mixture of slump appropriate for the placement circumstances but not greater than five inches (5") and having a minimum compressive strength of four thousand five hundred (4,500) psi after twenty-eight (28) days of field curing. The concrete shall be adequately protected from injury due to mechanical means, rapid evaporation, freezing, or heavy rain during the curing period.

   c. All inlet and outlet pipes in the base shall have installed on them an approved water stop rubber gasket prior to the concrete pour.

3. Precast Manholes:

   a. Precast concrete manhole material shall be wet cast with Type II cement and shall conform to the requirements of ASTM C478, latest revision.

   b. Precast concrete manhole material shall be joined to the poured-in- place concrete base and to other precast manhole sections by installation of flexible mastic sealant material. A continuous, even rope of gasket compound, free from gaps, lumps, or overlaps, shall then be placed on the bearing seat. The precast manhole section shall be carefully placed so that an even, continuous bead of joint compound is forced out of the joint as a visual indication of seal continuity.

   c. Precast barrel joints shall be watertight and constructed with butyl sealant strip equaling in three-quarter inch by three-quarter inch (¾" X ¾") as a minimum and continuously placed with no gaps or separations. A twelve inch (12") wide exterior wrap shall be applied to all joints. The interior joints shall not be grouted.

d. Polypropylene encased steel manhole steps shall be non-skid type with Grade 60 reinforcement or approved equal, with a provision for anchoring into the wall. The steps shall be positioned approximately twelve inches (12") apart, but no farther apart than sixteen inches (16") and shall be aligned straight, non-staggered and centered over a concrete bench.

e. All pipe to manhole connections shall be watertight flexible connections made in cored drilled or cast in place holes with NPC Kor-N-Seal rubber boots, manufactured by Trelleborg Pipe Seals Milford, Inc. or approved equal, meeting all ASTM C923 requirements. For connections to remain flexible, grouting shall follow the manufacturer's recommendations. Prior to installing pipe connection boots, all exposed concrete of the hole shall be coated with the bituminous waterproofing.

4. Drop Manholes:

a. Drop manhole concrete base shall be constructed large enough to form a base for the encasing of the exterior piping of the manhole. The bottom entering pipe shall be supported with concrete cradle up to the spring line. The drop piping shall be encased with flow fill.

b. The maximum amount of vertical drop shall be 6'.

c. All drop manholes shall be constructed in accordance with the District's detail and approved by the District prior to the final design.

d. All drop manholes must not exhibit a splashing effect to the walls and bench.

e. All drop manholes shall be lined with an approved spray liner.

5. Manhole Platforms:

a. All manholes in excess of eighteen feet (18') in depth shall have an intermediate platform located at the center of the depth, measured from cover to invert. The intermediate platform shall have a grating over the manway and shall be in accordance with the District's manhole details.

6. Rings and Covers:

a. Manholes shall have a 24-inch cast iron ring (frame) and cover with the word "SEWER" and with a pick hole lifting notch. The standard depth for the ring is 8

inches. Manhole ring and cover shall be three hundred and thirty-eight (338) pounds or greater, conforming to ASTM A48 Class 35B and meet H-20-wheel loading.

b. Manholes shall have an eighteen inch (18") wide concrete collar flush with top of the ring to a depth two inches (2") below the last adjustment ring, onto the cone for field applications and six inches (6") wide for landscaped areas. Surface shall be sloped away from the cover.

7. Altering Existing Manholes:

a. A hole shall be made in the wall or base of the existing manhole, sufficient in size, to provide at least one inch (1") clearance between the manhole material and the outside diameter of the properly aligned and graded pipe. The space between the pipe and the manhole material shall be filled with sand-cement mortar, and hand-rammed, both inside and outside to make the alteration, as shown in the detailed drawings, watertight.

b. The floor of the manhole shall be shaped by using cement-sand mortar to form an invert from the new pipe into the existing invert. All mortar work inside the manhole shall be left with a smooth, uniform surface.

c. All manhole alteration work shall be accomplished in a manner that will not injure the existing manhole or other lines into or out of the manhole. Care shall be exercised to prevent debris from getting into the manhole. A suitable device shall be used to catch any mortar or demolition debris from entering existing sewer pipes. Any material that does enter the sewer lines shall be removed immediately by whatever means necessary.

8. Sand-Cement Mortar:

a. Cement mortar shall be mixed in a watertight container, either by hand or by machine. The mortar shall consist of two (2) parts mortar sand and one (1) part Portland cement or masonry cement. A minimum amount of water, sufficient to make a workable mixture, shall be used and no re- tempering shall be done. Mortar that has partially set shall not be used.

Private Sanitary Sewer Service Line Requirements:

1. Existing Wye, Tee, or Mechanical Tap: New sewer service line pipe must be reconnected into the sewer main at its existing mechanical tap or wye/tee without disturbing the sewer main.

2. Service line shall be perpendicular to the sewer main.

3. A PVC wye/tee branch fitting must be used for service connection into the sewer main. Wye or tee branches should be inclined upward at an angle of approximately 45° from a horizontal line minimum.

4. Sewer service clean-out: A 4-inch diameter two-way clean out should be installed at building exterior and one-way cleanout every 100 linear feet of service pipe and/or prior to sharp bends where it may be necessary to provide access to the line for cleaning. Commercial 6-inch branch services and clean outs shall be designed for jet cleaning with clean out facing upstream.

5. Four inch (4") private sanitary service lines are not permitted to connect to manholes. Private sanitary service lines 6-inch or 8-inch in diameter shall require a manhole at the connection to the sewer main. No service line shall connect to the sewer main closer than three (3') feet from the outside of the manhole.

6. All abandoned sanitary sewer service taps shall be abandoned at the sewer main.

Trenchless Sewer Service Pipeline Renovation by Pipe Bursting:

1. The use of IPS SDR 17, PE4710, ASTMF714, with thermal butt-fusion joints is acceptable.

Trenchless Sewer Service Pipeline Renovation by Pushed-in-Place (PIPL):

1. Existing, deteriorated, cracked, broken, damaged with holes, root intruded, infiltrated/exfiltrated, joint gaps/separated pipelines shall be rehabilitated by placement of a new liner pipe installed to fit firmly against the existing pipe wall without any appreciable annular space between the inner wall of the existing pipe and the outer wall of the new linear tube.

2. Permissible materials include polyester fiberglass-based and polyester felt-based seamless and jointless cured-in-place liner (CIPL) products of the industry's latest trenchless rehabilitation materials with epoxy resins sufficient to create a structurally sound, watertight, stable environment able to withstand the corrosive effect of the existing residential, commercial and industrial effluents, liquids and/or gases. The installed liner tube/pipe shall be fabricated from such materials that will withstand exposure to such substances and in such concentrations that may reasonably be expected to be present in Domestic Sanitary Sewage.

3. Installation of the liner pipe shall be accomplished entirely by working within the interior of the existing sanitary sewer pipe with access provided only by an existing manhole, cleanout or an opened service pipe.

4. Pipe liner must be flush with the interior pipe wall surface.

    a. The correction and removal of the protruding liner must be accomplished from the interior of the pipeline by means of a remotely controlled cutting device and monitored by a closed-circuit television camera. All work being performed within the District System facilities must be done in accordance with the District's rules and regulations, permits and standards, and in the presence of the District's Engineer or other authorized representative of the District.
    b. Videos of the completed lining shall be provided to the District via a flash drive or via link to a file hosting website (e.g. Dropbox, OneDrive).

Sanitary Sewer Encasement:

1. Concrete sanitary sewer encasements shall be installed under the following conditions upon the District Engineer's evaluation and approval:

    a. Where sewer lines are at a depth too shallow to sustain traffic load or any other load to which they may be subjected.

    b. At locations where lateral forces may cause horizontal movement of the sewer (e.g. stream beds).

    c. At any location designated by the District Engineer.

    d. All encasements shall conform to the District Design Standards and Specifications and shall be of sufficient length to span the conditions encountered. Unless

specifically designed, encasement shall be for the purpose of pipeline protection and shall not be considered a structural beam.

Traffic Control:

1. All necessary work permits shall be obtained, and regulations regarding traffic control through work areas shall be adhered to.

2. Vehicular and pedestrian traffic through and adjacent to all work areas shall be protected by means of approved control devices in accordance with the provisions of the Manual on Uniform Traffic Control Devices and Traffic Controls in Construction and Maintenance Work Zones of the U. S. Department of Transportation, Federal Highway Administration, requirements of any applicable right-of-way permit, and all other applicable law.

Excavation, Trench Preparation and Backfill:

1. Preparing for Excavation.

   a. Adjacent properties shall be properly notified prior to the commencement of construction.

   b. Benchmarks and survey control points shall be protected and maintained from disturbance during construction.

   c. Any existing bituminous or concrete paving shall be neatly scored by saw-cutting and removed prior to the excavation operations.

   d. Erosion-control measures shall be taken to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways per the applicable governing agency.

   e. Existing improvements on the site and adjacent land shall be protected from damage during construction.

   f. Necessary clearing and grading shall be performed along the sewer alignment to facilitate construction and to prevent surface water from entering the excavation site.

g. Utility locate requirements shall be followed prior to any excavation in accordance with applicable law.

2. Sewage Bypass.

   a. A sanitary sewer bypass plan and description shall be submitted to the District Engineer for approval.

   b. Normal sewer flow must be maintained continuously during sewer replacement and construction operations. Sewage shall not be allowed to back up into basements and other low areas, and no sewage shall be allowed to leak or otherwise be discharged on to the ground or into any waters of the State of Colorado.

   c. Where necessary, sewage flow shall be transferred around each manhole-to-manhole reach of existing sewer construction by pumping through a temporary pipeline on the ground surface. Temporary pipeline joints and connections shall be watertight.

   d. Continuous observation and supervision of the pumping operation shall be maintained to prevent manhole surcharge at the pump location or pipeline leakage.

   e. The sewer shall be returned to gravity flow at night, on weekends, or at any other times during which pumping operations are unattended by making temporary connection of dissimilar pipe materials, which shall be accomplished by using appropriate adapter couplings. Otherwise, full-time bypass pumping and monitoring is required. A 2nd backup pump is required on all bypass pumping operations.

3. Excavation.

   a. Trench excavation shall be made in open cut, through whatever material encountered, to the depth shown on the drawings. The trench walls shall be kept nearly vertical to a point at least one foot above the top of the pipe and, if required, shall be shored. Trench excavation shall not advance more than fifty feet (50') ahead of pipe laying. Trenches shall be not less than twelve inches (12") and not more than twenty-four inches (24") wider than the outside diameter of the pipe, to a point at least one foot (1') above the top of the pipe and shall provide equal

space on each side of the pipe. Excavation for manholes shall be sufficient for the installation of the manhole and compaction of backfilled materials.

b. At locations around unattended excavations, or as determined at the site, temporary fence and protection shall be erected for protection and safety.

4. Shoring-Trench Safety.

   a. Shoring and trench safety, conforming to the requirements of the Occupational Safety Health Administration, shall be employed where necessary for the safety of workers, and to retain the banks of the trench in a vertical position.

5. Excavation Below Normal Grade.

   a. At locations where the bottom of the excavation is soft or unstable, and in the opinion of the District Engineer, cannot satisfactorily support the pipe or structure, a greater depth and width shall be excavated and refilled to proper subgrade with stabilization rock to provide a firm foundation for the pipe or structure.

6. Dewatering Excavations.

   a. Groundwater infiltration of excavations may be expected during construction projects. If groundwater is present, concrete cut-off walls will be required. Location and frequency shall be per the District Engineer.

   b. All excavations shall be kept free from excess groundwater accumulation during construction of sanitary lines and appurtenances.

   c. Excessive groundwater shall be removed from excavations to provide a firm subgrade for installation, of pipe and appurtenances; to allow pipe joints to be made in dry conditions; and to prevent entry of groundwater into the sewer pipeline under construction.

   d. Trench and structure excavation shall be kept free from water accumulation until the installation of pipeline and appurtenances is complete to the extent that no damage from hydrostatic pressure.

   e. No groundwater may be discharged to any sanitary sewer system or facility under any circumstances.

f. Dewatering any excavation shall be in accordance with regulations of the applicable governing agency. Dewatering Permits must be obtained as required by the Colorado Department of Public Health.

g. Groundwater may require an addition of a sub-base of crushed stoned and fabric per the site conditions.

7. Work Site Conditions and Access.

a. All tools and equipment used in the work shall be stored, and all material excavated or intended for installation shall be stockpiled, so as not to endanger the work and workmen and in a manner that will avoid obstructing sidewalks and driveways.

b. The work shall be executed in a manner that will cause the least possible interference with traffic and nearby commercial operations. Access to private property shall not be obstructed.

8. Preparation of Trenches.

a. The trench shall be dug to a minimum depth of six inches (6") below the required grade for the bottom of the pipe barrel to allow for proper bedding.

b. At locations where soft yielding trench bottom is encountered, the trench shall be undercut and stabilized to the extent directed by the District Engineer and then backfilled to a point six inches (6") below the pipe barrel with approved material(s).

9. Pipe Bedding Installation.

a. Pipe bedding material (trench gravel) shall be placed in the trench to a loose depth and then fine-graded along the pipe centerline to a thickness of six inches (6"). Special precautions shall be taken to remove sufficient bedding material at the point where the pipe bell will fall to ensure a uniform bearing of the pipe barrel throughout its entire length.

b. After the pipe is properly set and jointed to line and grade, a second loose lift of bedding material, not to exceed six inches (6") in depth, shall be placed along each side of the pipe and then consolidated by tamping or vibration until uniform support under the pipe haunch is obtained. All additional bedding shall be carefully placed to the limits specified and consolidated by a combination of

tamping and vibrating. At all times, special precautions shall be taken to prevent displacement or damage to the pipe.

c. Bedding material shall be thoroughly tamped until bedding material around the pipe is uniformly consolidated.

10. Removal of Existing Sewer Pipeline and Manholes.

a. Existing sewer pipeline shall be removed as common excavation and disposed of offsite at an approved location.

b. Where indicated on the plans, existing manholes shall be disassembled and removed for disposal offsite at an approved location. No existing manhole materials shall be reused in construction of the new sewer facilities.

11. Trench Backfill.

a. Trenches shall be backfilled with bedding gravel and hand tamped up to twelve inches (12") above the top of the pipe promptly after the pipe is laid. Hand-backfilling shall be continued, with suitable native material, over the top of the trench gravel to a depth sufficient to protect the pipe from damage or deflection during the remainder of backfill operations. The remainder of the excavation shall be backfilled with suitable native material in layers, not to exceed eight inches (8") in depth.

b. Suitable native materials excavated from the trench can be used for backfill. The materials shall be free from vegetable matter, frozen material and other deleterious substances and shall not contain rocks or lumps having a diameter of more than three inches (3"). Backfill material shall be placed in evenly spaced layers and thoroughly mixed to ensure uniformity of material in each layer.

c. At locations where, in the opinion of the District Engineer, native soil excavated from the trench is not suitable for trench backfill, such excavated material shall be removed from the site for disposal at an approved location and approved materials shall be imported to the site for trench backfill purposes.

d. The moisture content of trench backfill materials shall be adjusted to meet compaction specifications. Adjustment of moisture content of the backfill material shall be accomplished by aeration or by blending excavated soil with water or with drier backfill material, as necessary.

e. Trench backfill material shall be placed in eight inch (8") loose and horizontal lifts, then compacted to maximum dry density as required by the street cut permit, and as tested in accord with procedures specified by AASHTO T-99, latest revision, to a depth no greater than twelve inches (12") below final surface grade level.

12. Backfill Material Specifications.

a. Trench gravel (bedding material) structural backfill, stabilization rock and flowable material shall conform to the following requirements:

i. Trench gravel shall consist of well-graded sand and gravel having a maximum size of a three-quarter inch (3/4"), and of which not more than fifteen percent (15%) will pass through a No. 100 sieve, No. 67 gravel is acceptable.
ii. Stabilization rock shall consist of gravel of uniform size ranging between three fourths an inch to one and one half inch (¾"-1 ½") diameter. The material shall be free from organic matter and excessive flat or elongated particles. Stabilization rock will be used only when ordered in writing by the District Engineer.

13. Flowable Trench Backfill.

a. All Controlled Low Strength Material (CLSM) and flowable backfill (aka "flash fill") used shall conform to CDOT Standards and specifications.

b. Following pipe installation, at locations indicated on the plans, or at locations designated or approved by the District Engineer, the trench will be backfilled with imported, flowable material.

c. A minimum of two feet (2') in depth of well consolidated, cohesive soil material shall be placed over the pipe bedding to prevent dislocation of the installed pipe alignment by placement of the flowable fill.

d. Flowable backfill shall be placed in layers not to exceed three feet (3') in depth. Additional layers shall not be placed until the previous layer has lost sufficient moisture to support foot traffic without more than two-inch (2") indentation.

e. The exposed surface of each layer shall be protected from freezing or from shrinkage or cracking due to evaporation.

f. Flowable backfill shall be imported to the work site in ready-mix concrete trucks.

14. Structural Backfill.

a. In areas where flowable backfill is not required and the native materials are not suitable for trench backfill, the imported backfill material shall meet CDOT's specifications for Class 1 or Class 2 structural backfill. The materials shall be placed on horizontal lifts of a maximum of eight inches (8") loose, moisture conditioned and then compacted to a maximum dry density as required by the street cut permit, and as tested in accordance with procedures specified by AASHTO T-99, latest revision.

15. Site Restoration and Clean-Up.

a. The construction area shall at all times be kept clean and free from accumulations of waste materials and rubbish, and upon completion of the work shall leave the work and premises in a sightly condition and, as nearly as practicable, in the same condition as prior to construction.

Construction of Sanitary Sewer Pipeline:

1. Alignment and Grade.

a. Pipe shall be laid to the line and grade established by the approved plans.

b. Offset stakes shall be utilized as necessary.

c. After the pipes have been installed and backfill material has been placed and compacted, the pipe between manholes will be examined and as built for vertical and horizontal alignment.

d. The stationing shall match the design construction plans.

e. A laser beam alignment device shall be used.

2. Laying and Joining Sanitary Sewer Pipe.

a. Pipe laying shall proceed up gradient with the spigot ends pointing in the direction of the flow. Each pipe shall be laid to the line and grade given by the approved plans.

b. Full lengths of pipe or maximum pipe lengths are to be used to minimize the number of joints. No short lengths of pipes are to be connected along an alignment in lieu of a longer or full length of pipe.

3. Wye Branches.

   a. Wye branches for service connections shall be placed into sewer lines where required. Wye branches shall be inclined upward at an angle of approximately sixty degrees (45°) from a horizontal line, unless otherwise directed. The branch opening of each branch shall be closed, before laying, by an appropriate PVC cap/plug.

   b. All service line connections shall be located at the 2 o'clock or 10 o'clock position of the mainline section.

4. Sewer Service Line Connection.

   a. The wye branches shall be extended with an appropriate pipe size extension for approximately ten linear feet (10') to connect to the existing sewer service line.

   b. Service connections to the sewer main will be made by installation of appropriate branch fittings at the time such line is installed.

   c. Existing service lines shall be located and exposed prior to installing branch fittings.

   d. For connections to an existing PVC main, a PVC tapping saddle with stainless steel straps shall be used. The tap hole into the existing main shall be oval to suit for a clear opening from the wye or tee saddle. For unlined clay (VCP) main, complete sections of the clay pipes are to be replaced with PVC pipe, a wye fitting and StrongBack couplings. For lined clay pipe (CIPP), the service tap shall be core drilled through and a transition piece ("top hat") installed for a professional smooth transition into the main.

   e. All coupons from connections to the sewer main shall be removed from the District System and provided to the District Engineer.

5. Cutoff Walls.

   a. Concrete cut off wall shall be installed at manholes and 300ft± spacing on sanitary lines or additional locations as specified on the plans or as directed by the District

Engineer when groundwater is present, to prevent migration of water through the pipe trench bedding.

6. Testing.

   a. After backfill material has been placed in the trench and properly consolidated, the pipe between manholes shall be examined for vertical and horizontal alignment.

   b. The sanitary line shall be jet cleaned prior to low pressure air testing.

      i. Each section of constructed sanitary sewer between manholes shall be low-pressure air tested in accordance with ASTM-F1417, latest revision and/or UBPPA-UNI-B-6, latest revision.

   c. Jet Cleaning and Video Mainlines

      i. All sanitary lines shall be jet cleaned and videoed for review by the District Engineer.
      ii. Mainlines shall be backfilled prior to videoing. An appropriate amount, 50 gallons, minimum, of water, shall be introduced to the mainline sections before videoing. All mainlines to be videoed should be cleaned and debris shall be caught and removed as a part of this operation. All mainline sections shall be seated per manufacturer recommendation and mainline sections from manhole to manhole shall be watertight. All manhole pipe penetration shall be watertight. Any mainlines exhibiting infiltration or material entry shall be removed/replaced at no expense to the District.
      iii. Videos shall be provided to the District Engineer via a flash drive or a link to a file hosting website (e.g., Dropbox, OneDrive).

   d. Manholes.

      i. All sanitary manholes shall be cleaned, watertight, and vacuum tested prior to Final Acceptance. Vacuum test shall be performed in accordance with ASTM C1244, latest edition with the exception that backfill will be allowed.

7. Sewer Pipe Materials.

   a. Polyvinyl Chloride (PVC) Pipe: Gravity sewer pipe shall conform to the following specifications for single wall plastic pipe:

      i. ASTM 01784, latest revision, Polyvinyl Chloride Compounds

ii. ASTM 02412, latest revision, External Loading Properties of Plastic Pipe.
iii. ASTM 03034, latest revision, Type PSM-PVC Sewer Pipe and Fittings with SDR-35 Wall Thickness.

b. PVC pipe shall be supplied with the coupling integrally molded to the pipe barrel. All joints shall be bell and spigot.

c. Pipe joints shall be made using an integral bell with an elastomeric gasket push-on type joint. Solvent-cement joints are strictly prohibited.

d. Fittings shall be of the O-ring push-on type as required for non- pressure sewer type. O-ring shall conform to ASTM 01869, latest revision.

e. Elastomeric pipe joint gaskets shall be lubricated prior to pipe placement with a proper lubricant specified, or supplied, by the pipe manufacturer.

f. Each pipe shall be a standard laying length of fourteen feet (14'). Random lengths of pipe shall not be acceptable.

g. Watertight and flexible coupling of plastic pipe to concrete manhole bases will be accomplished by use of factory fabricated manhole water stop gasket fittings.

Steel Sewer Casing:

1. Steel pipe casings shall be used where bored crossings are required under rights-of-way.

2. Where indicated on the plans, a steel sewer casing shall be placed by augering or tunneling while hydraulic jacking a steel casing through the excavation to the lines and limits indicated on the drawings.

3. Casing Placement.

   a. While placing the steel casing with hydraulic jacks, spoil material will be removed from the casing by rotating auger or by tunneling procedures.

   b. The face of the excavation area shall be maintained to preclude free flow of soft or unstable soil material.

c. No excavation shall exceed the outside diameter of the casing by more than half inch (1/2"). No over-excavation for hand tunneling will be permitted. Excavation shall at no time lead the casing placement. Unsupported excavation ahead of pipe is prohibited.

d. The use of water or other liquids to facilitate casing placement and spoil removal is prohibited. If voids develop, or if excavation diameter is more than one inch greater than the outside diameter of the casing, cement-grout must be placed to fill the voids.

e. A bulkhead at the completed excavation face will be placed at any interruption of jacking of the casing.

f. Joints will be completely welded around the entire circumference between sections of the steel casing with complete penetration of the weld.

4. Casing Alignment.

   a. The alignment and grade of the casing shall be continuously monitored during placement operations.

5. Casing Material.

   a. Steel casing pipe shall be steel pipe with a minimum yield strength of thirty-five thousand (35,000) psi (ASTM A53 Grade B).

   b. Casing spacers shall be stainless steel metal or approved polymer construction.

   c. All fasteners shall be stainless steel A304 min.

   d. Runners shall be high-density molecular polyethylene or polymer reinforced fiberglass with DURO hardness A of eighty (80) and a minimum dielectric strength of five hundred (500) volts per mil. Runners shall be attached to risers with bolts or welded studs. Bolt holes shall be filled with silicone caulk.

   e. Casing end seals shall be an appropriate size rubber boot at each end of the casing with an 1/8" minimum thickness. Large opening spaces (≥8") will require removable steel end plates. The design shall be approved by the District Engineer.

Road Resurfacing and Repair:

1. Streets, drives and parking areas within the area of construction activity shall be restored to pre-construction conditions by grading, graveling and/or by sweeping and bituminous or cement concrete patching, as appropriate, in accordance with applicable street cut permit or property owner requirements.

2. Surface Grades.

    a. Unless specifically shown otherwise on the plans, or otherwise directed by the District Engineer, the ground surface shall be restored to original grades and contours following construction of the sewer and appurtenances.

3. Gravel Resurfacing.

    a. Following backfill compaction and fine grading, select gravel material (road base gravel) will be spread and compacted to a depth of eight inches (8"), unless otherwise specified by street cut permit or property owner requirements.

4. Pavement Restoration.

    a. The shoulders of the excavation and paved areas which are damaged by construction operations shall be re-squared as necessary. Edges shall be squared by cutting the pavement vertically with a saw. Excess soil shall be removed to depth below the existing pavement surface that will accommodate the required depth of patch and the subgrade surface compacted with a vibrating compactor.

    b. Paving material, as specified by the street cut permit, or by the property owner, shall be placed only when the base is dry and when weather conditions are suitable. Vehicular traffic shall not be allowed over the patch area until the surfacing material has cured sufficiently to avoid damage or tracking.

Required Manhole Entry Procedures:

Approval to access manholes must be obtained from the District Engineer prior to accessing manholes. All applicable OSHA standards and confined space entry requirements are to be followed when accessing manholes.

Trenchless Sewer Pipe Point Repairs:

1. Installation of the liner pipe shall be accomplished entirely by working within the interior of the existing sewer pipe, with access provided only by existing sewer manholes. Existing lateral sewer service lines will be reopened from within the new liner pipe by use of a video controlled robotic cutting tool.

2. Materials.

    a. Liner pipe shall be formed of such materials, and be of such installed wall thickness, that the complete existing pipe/liner-pipe combination will have properties meeting the minimum requirements of ASTM D2412, D790, D5813, F1216, F1743 and other ASTM standards, latest revisions, that apply to materials, procedures and methods for cured-in-place pipe. The liner is to be designed for fully deteriorated pipe.

    b. The installed liner pipe shall be fabricated from materials that will withstand exposure to such substances and in such concentrations that may reasonably be expected to be present in Domestic Sanitary Sewage.

3. Cleaning Existing Sewer Facilities.

    a. All debris, roots and other deposits that would hinder the proper installation of the new pipe liner shall be removed by use of high-pressure hydraulic jet cleaning apparatus.

4. Bypassing of Sewage Flow.

    a. The flow of sewage around the section of sewer in which the liner pipe is to be installed shall be maintained. Such bypass shall be made by plugging the line at an existing upstream manhole and pumping the flow into a downstream manhole or adjacent sanitary sewer system. The pump and bypass lines shall be of adequate capacity and size to handle the flow.

5. Inspection.

    a. The section of existing pipe to be renovated shall be inspected by means of CCT, and video recording. During the video, water will be run at a constant rate. The location of all lateral connections, obstructions, and discontinuities of the existing pipe will be noted for the line pipe installation and service line reconnection

phases. A flash drive, or link to file hosting website, and written log of the initial observation shall be made and delivered to the District Engineer upon completion of the project.

6. Line Obstructions.

    a. Lines shall be cleared of all obstructions, including but not limited to solids and roots that will prevent the insertion of the liner pipe. If the initial observation reveals an obstruction, such as a protruding service connection, dropped joint, or a collapse that will prevent the installation process, and it cannot be removed by conventional sewer cleaning equipment, point repair excavation shall be used to uncover and remove or repair the obstruction.

7. Installation of Cured-in-Place Liner Pipe (CIPP).

    a. The impregnated liner tube shall be installed and positioned within the existing sewer pipe in accordance with standards of the process patent holder.

    b. The finished liner pipe shall be continuous over the entire length of a run between two (2), or more, manholes and shall be free as practicable from visual defects such as foreign inclusions, dry spots, pinholes, and delamination.

    c. If the line tube fails to make a tight seal due to broken or misaligned existing sewer pipe at the manhole wall, a seal shall be made at that point with a material compatible with the liner pipe material.

8. Reopening of Service Connection.

    a. After the new liner pipe is properly in place and adequate curing has occurred, the existing active service connections shall be restored. This shall be accomplished from the interior of the pipeline by means of a remotely controlled cutting device, monitored by a closed-circuit television camera that re-establishes them to not less than ninety-eight percent (98%) capacity.

9. Records of Final Conditions.

    a. The District Engineer shall be provided with a flash drive, or link to file hosting website (Dropbox, OneDrive, etc.), and written log showing final conditions of the renovated sewer pipelines upon completion.

SHERIDAN SANITATION DISTRICT NO. 2

SANITARY SEWER SYSTEM DETAILS

SANITARY SEWER SYSTEM DETAILS

DRAWING	TITLE
1-3	General Sanitary Sewer Notes
4	Typical Trench Section Pipe Protection
5	Concrete Pipe Saddle
6	Concrete Sewer Encasement
7	Metallic Detection Tape
8	Steel Marker Post
9	Sanitary Sewer Bore Casing
10	Bulkhead Construction
11	Sanitary Sewer Wye Less Than 12’
12	Sanitary Sewer Wye Greater Than 12’
13	Sanitary Sewer Manhole (CIP Base)
14	Sanitary Sewer Manhole (Precast Base)
15	Confined Space Safety Tag
16	Standard Drop Manhole
17	Manhole Base and Deflector
18	Manhole Platform
19	Manhole Ring and Cover with Lift Slot
20	Clean-Out
21	Sewer Tapping
22	Stormline Crossing Pipe Support Construction
23	Monitoring Manhole
24	Grease Interceptor
25	Engineering Approval Block
26	Service Line Abandonment Detail
27	Sanitary Sewer Service Tracer Wire Installation
28	Connection to Existing Sewer Line

1. ALL MATERIALS AND WORKMANSHIP FOR SANITARY SEWER CONSTRUCTION SHALL FIRST CONFORM TO THE LATEST SHERIDAN SANITATION DISTRICT NO.2 ENGINEERING STANDARDS AND THEN THE LATEST ARAPAHOE COUNTY, DEPARTMENT OF PUBLIC WORKS, INFRASTRUCTURE DESIGN AND CONSTRUCTION STANDARDS AND METRO WATER RECOVERY RULES AND REGULATIONS.

2. AT LEAST 5 DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE DISTRICT'S OFFICE AND ATTENDED BY THE CONTRACTOR AND REPRESENTATIVES OF THE OTHER APPROVING AGENCIES. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT SHERIDAN SANITATION DISTRICT NO.2 (THE DISTRICT) TO SCHEDULE THIS MEETING.

3. THE CONTRACTOR TO VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL TIE IN POINTS AND PROVIDE THE DATA TO THE ENGINEER AND THE DISTRICT PRIOR TO CONSTRUCTION.

4. THE CONTRACTOR WILL IDENTIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR WILL REPORT ANY DISCREPANCIES TO THE ENGINEER AND THE DISTRICT IMMEDIATELY AND PRIOR TO CONSTRUCTION.

5. THE CONTRACTOR SHALL HAVE IN THEIR POSSESSION AT ALL TIMES ONE SIGNED COPY OF PLANS APPROVED BY THE THE DISTRICT AND THE DISTRICT ENGINEER. THESE PLANS WILL ALSO INCLUDE ALL ADDENDUMS OR REVISIONS WHICH HAVE BEEN REVIEWED AND APPROVED BY THE DISTRICT.

6. PRIOR TO THE START OF WORK WHERE THE NEW SANITARY SEWER MAIN IS TO BE INSTALLED INTO EXISTING DISTRICT SANITARY SEWER SYSTEMS, THE NEAREST MANHOLE TO THE POINT OF TIE-IN SHALL BE PLUGGED WITH A PLUMBER'S PLUG ON THE INLET SIDE BY THE CONTRACTOR. THIS PLUG SHALL REMAIN IN PLACE UNTIL INITIAL ACCEPTANCE BY THE DISTRICT. ITS PURPOSE SHALL BE TO PREVENT MUD, WATER OR OTHER MATERIALS FROM ENTERING THE ACTIVE MAIN DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PUMPING AND CLEANING THESE MANHOLES AND REMOVING THE PLUG WHEN SO INSTRUCTED BY THE DISTRICT. A SECOND PLUG SHALL BE INSTALL IN FIRST NEW MANHOLE.

7. ALL DIRECT BURY SEWER MAINS SHALL BE PVC, ASTM D-3034, SDR35 UNLESS OTHERWISE APPROVED BY THE DISTRICT ENGINEER.

8. SANITARY SEWER MAIN SHALL BE 10 FEET CLEAR FROM WATER LINES EXCEPT WHEN CROSSING EACH OTHER. FOR SEWER MAINS WHICH CROSS LESS THAN 18-INCHES VERTICALLY FROM WATER LINES, THE CLOSEST SANITARY SEWER JOINT SHALL BE A MINIMUM OF 10 FEET CLEAR FROM THE CROSSING.

9. ALL MANHOLES SHALL BE WATER TIGHT, WET PRECAST CONCRETE, WITH FULL DEPTH CHANNEL TO THE LARGEST PIPE IN THE BENCH, A MINIMUM OF 48 INCH IN DIAMETER WITH CONCENTRIC CONE, 24 INCH CAST IRON RING (8" DEPTH) AND COVER, UNLESS OTHERWISE SPECIFIED. CONCRETE ADJUSTMENT RINGS SHALL BE USED FOR ADJUSTMENT TO MATCH FINAL PAVEMENT ELEVATIONS AND SET IN FLEXIBLE BUTYL RUBBER CAULKING/SEALANT TO OBTAIN A WATER TIGHT SEAL. CONCRETE ADJUSTMENT RINGS SHALL BE THE LARGEST SIZE IN DEPTH TO ELIMINATE MULTIPLE JOINTS. NO MULTIPLE 2" AND 3" RINGS. NO GROUT REQUIRED.

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Sheridan Sanitation District No. 2

GENERAL SANITARY SEWER NOTES

Scale: *NONE*	Date: *APRIL 2026*
Revised:	Detail: *1*

ALL COMPLETED MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C124.

10. PIPE BEDDING CONFIGURATION SHALL BE CLASS "B" AND SHALL CONFORM TO ASTM C-33 OR AASHTO D-448 GRADATION NO. 6 OR NO. 67. OR NO. 8, ⅜" SQUEEGEE ROCK. BEDDING DEPTH SHALL BE 6" UNDER AND AROUND THE SIDES OF THE PIPE AND 12" OVER THE PIPE. CONSOLIDATION IN PIPE ZONE SHALL BE BY HAND TAMPING PER THE MATERIAL. FOR PIPE INSTALLATION DEPTHS EQUAL TO OR GREATER THAN TWENTY FEET (20'), PIPE MATERIAL AND BEDDING SHALL BE DETERMINED BY THE DESIGN ENGINEER AND SPECIFIED ON THE PLANS.

11. ALUMINUM FOIL WARNING TAPE SHALL BE USED FOR ALL NEW DIRECT BURY SANITARY SEWER MAINS. THE TAPE WILL BE INSTALLED 2' BELOW FINISHED GRADE. TAPE MUST BE GREEN IN COLOR.

12. FERNCO STRONGBACK RC SERIES PIPE COUPLINGS WILL BE REQUIRED FOR PIPE AND LATERAL SERVICES. APPROPRIATE CONCRETE CRADLES SHALL ALSO BE INSTALLED UNDER FERNCO STRONGBACK.

13. TRENCH BACKFILL CANNOT HAVE ROCKS LARGER THAN 3" IN DIAMETER.

14. IF GROUND WATER IS ENCOUNTERED, CONCRETE CUT-OFF WALLS OR FLASH FILL WALLS SHALL BE INSTALLED AROUND THE PIPE EVERY 300'+/- AND 10' +/- FROM EACH SIDE OF MANHOLE UPON ENGINEERING EVALUATION AND APPROVAL.

15. IF GROUNDWATER AND UNSUITABLE OR UNSTABLE SOILS ARE ENCOUNTERED, A SUB-BEDDING BASE DEPTH OF 18" MINIMUM OF 2" MINIMUM DIAMETER CRUSHED ROCK, SURROUNDED AND COVERED BY GEOTEXTILE FABRIC SHALL BE INSTALLED. THIS CONDITION SHALL BE CONFIRMED AND EVALUATED BY AN ENGINEER. IF STABLE SOIL IS PRESENT, INCREASE THE DEPTH OF NO.67 BEDDING PER ENGINEERING EVALUATION AND APPROVAL.

16. IF SEWAGE BYPASS PUMPING IS NECESSARY, THE CONTRACTOR WILL SUPPLY AND MONITOR THE PUMP DURING THE ENTIRE PUMPING PERIOD. A BACK-UP PUMP WILL BE ONSITE FOR USE IF NECESSARY. BYPASS HOSE SHALL BE PROTECTED FROM TRAFFIC DAMAGE USING APPROVED APPARATUS FOR ALL SEWAGE BYPASS PUMPING. THE CONTRACTOR WILL HAVE CONTINUOUS ON SITE MONITORING OF PUMPING OPERATIONS.

17. PRIOR TO TESTING, INITIAL AND FINAL ACCEPTANCE WALK-THROUGH, THE CONTRACTOR/DEVELOPER SHALL JET CLEAN AND VIDEO THE ENTIRE NEW SANITARY SEWER SYSTEM AND PUMP OUT AT THE PLUGGED MANHOLE AND DISPOSE OF WATER AND MATERIAL OFFSITE IN ACCORDANCE WITH LATEST CDPHE STANDARDS. NO MATERIAL IS TO BE WASHED INTO THE ACTIVE SYSTEM. PRIOR TO THE VIDEOING, THE CONTRACTOR WILL DUMP CLEAN WATER DOWN THE NEW SANITARY SEWER MAIN. THE SANITARY MAIN SHALL EXHIBIT NO SAGS OR DIPS OF MORE THAN 5% OF THE PIPE CROSS-SECTIONAL AREA. THE CONTRACTOR WILL PROVIDE REPORTS AND VIDEOS TO THE DISTRICT FOR REVIEW AND EVALUATION.

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Sheridan Sanitation District No. 2

GENERAL SANITARY SEWER NOTES (CON'T)

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 2

18. ALL MANHOLE AND SANITARY SEWER MAIN TESTING SHALL BE TO ASTM C1244 AND F1417 STANDARDS AND WITNESSED BY A REPRESENTATIVE OF THE DISTRICT. A MINIMUM OF 48 HOURS ADVANCED NOTICE IS REQUIRED PRIOR TO TESTING. SANITARY MAINS SHALL BE CLEANED PRIOR TO TESTING.

19. ALL MATERIALS AND TESTING TO ADHERE TO LATEST APPLICABLE ASTM STANDARDS.

20. CONSTRUCTION STAKING STATIONING TO USE DESIGN PLAN STATIONING.

21. SANITARY SEWER SERVICE LOCATION AND ELEVATIONS OUT OF BUILDINGS WILL BE PROVIDED TO DISTRICT ENGINEER PRIOR TO CONSTRUCTION OF SERVICE LINE. SANITARY SEWER SERVICES SHALL BE WYES. SERVICE WYES FOR EACH UNIT OR PROPERTY SHALL BE STAKED. THE CONTRACTOR SHALL FURNISH TO THE DISTRICT ASBUILT LOCATIONS OF WYES AND ENDS OF STUBS.

22. TRACER WIRE: A SOLID GREEN 10 GAUGE, UF RATED TRACER WIRE SHALL BE INSTALLED ON ALL SANITARY SEWER MAINS AND SERVICES. FOR SERVICES, THE TRACER WIRE SHALL END AT A TEST STATION BY THE BUILDING OR IN A CLEAN OUT WITH A BOX. FOR MANHOLES, THE TRACER WIRE SHALL ENTER THE TOP OF THE MANHOLE THROUGH THE ADJUSTMENT RINGS OR THROUGH A $\frac{1}{2}$ INCH HOLE FOR A FLAT TOP, SEALED WITH CAULKING, OR A $\frac{1}{2}$ INCH GROOVE AT THE TOP OF THE CONE, SEALED WITH CAULKING. NO CI RIM CONTACT OR PINCH POINT ALLOWED. 3 FEET OF CONTINUOUS WIRE SHALL BE INSIDE THE MANHOLE AND WILL BE ACCESSIBLE FROM THE SURFACE. NO SPLICES ARE ALLOWED INSIDE OF THE MANHOLE.

23. ABANDONING PROCEDURES: FOR SANITARY SEWER MAINS TO BE ABANDONED: PLACE MECHANICAL PLUG IN THE PIPE AND FILL 2' OF ABANDONED SANITARY SEWER MAIN WITH CONTROLLED LOW SLUMP MATERIALS (CLSM) OR CONCRETE.

FOR SANITARY SEWER MANHOLES TO BE ABANDONED: REMOVE CAST IRON COVER, RIM, CONCRETE ADJUSTMENT RINGS AND CONE. FILL LOWER 1/3 OF MANHOLE WITH CLSM OR CONCRETE AFTER THE PIPE HAS BEEN PLUGGED AND REMAINDER OF MANHOLE WITH CLEAN COMPACTED BACKFILL OR SMALL DIAMETER ROCK. THE MANHOLE COVERS AND RIMS ARE THE PROPERTY OF THE DISTRICT. CONTACT DISTRICT ENGINEER FOR DISPOSITION.

SANITARY SEWER SERVICE TO BE ABANDONED: REMOVE THE EXISTING SEWER SERVICE PIPING AND CAP AT SEWER MAIN LINE WITH APPROPRIATE CAP AND SEAL FROM ANY INFILTRATION OR TREE ROOTS INCURSION.

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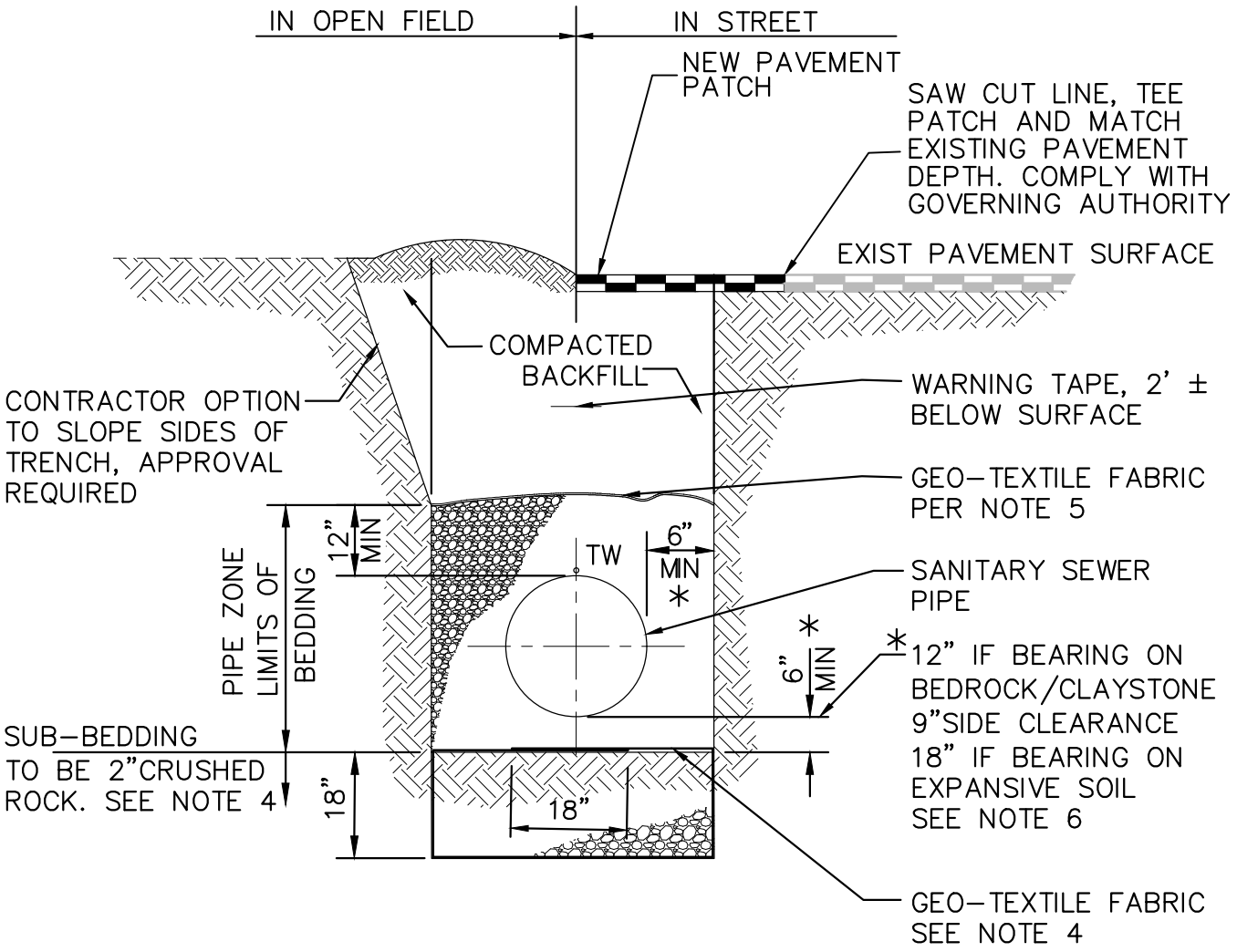
GENERAL SANITARY SEWER NOTES (CON'T)

Scale: *NONE*	Date: *APRIL 2026*
Revised:	Detail: *3*



PIPE BEDDING AND BACKFILL NOTES:

1. TRENCH WALLS TO BE SUPPORTED AS REQUIRED BY OSHA.
2. TRENCH BACKFILL SHALL CONTAIN NO ROCKS/STONES LARGER THAN 3" IN DIAMETER.
3. HAND COMPACTION IS REQUIRED AROUND ALL MANHOLES, DISTRICT APPURTENANCES, AND ALL OTHER GROUND OBSTACLES.
4. IF GROUND WATER IS PRESENT AND UNSUITABLE/UNSTABLE SOIL IS ENCOUNTERED, SUB-BEDDING AND GEO-TEXTILE FABRIC IS REQUIRED. IF STABLE SOIL IS PRESENT, INCREASE THE DEPTH OF NO. 67 BEDDING AS SHOWN PER ENGINEERING EVALUATION AND APPROVAL.
5. GEO-TEXTILE FABRIC TO COVER GRANULAR BEDDING MATERIAL, NO. 67.
6. IN EXPANSIVE SOILS AS DETERMINED BY SOIL REPORT. SANITARY SEWER PIPE SHALL BE PVC SDR26 OR APPROVED ALTERNATE.

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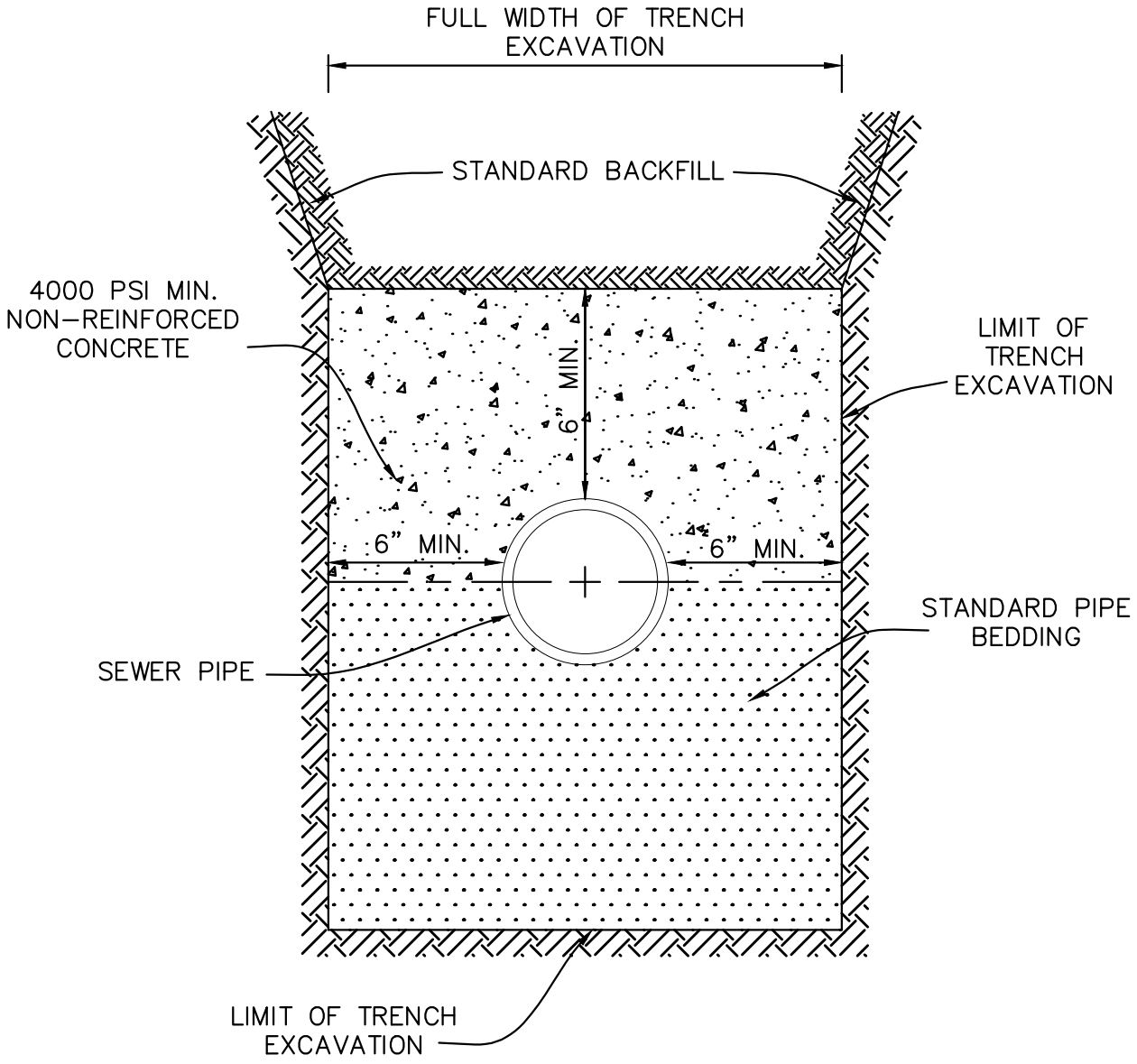
TYPICAL TRENCH SECTION PIPE PROTECTION

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 4



CONCRETE PIPE SADDLE NOTES:

1. LENGTH OF CONCRETE SADDLE SHALL BE 5' BEYOND OUTSIDE EDGE OF CROSSING UTILITY OR LOAD STRUCTURE IF REQUIRED.

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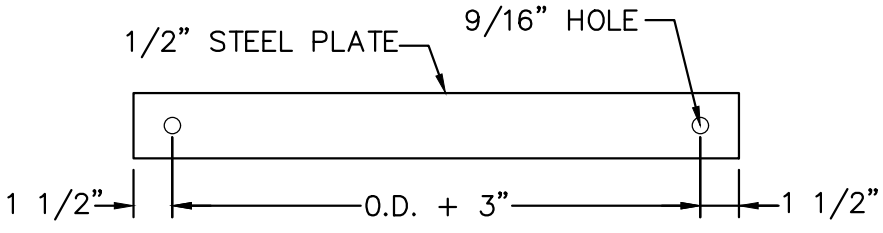
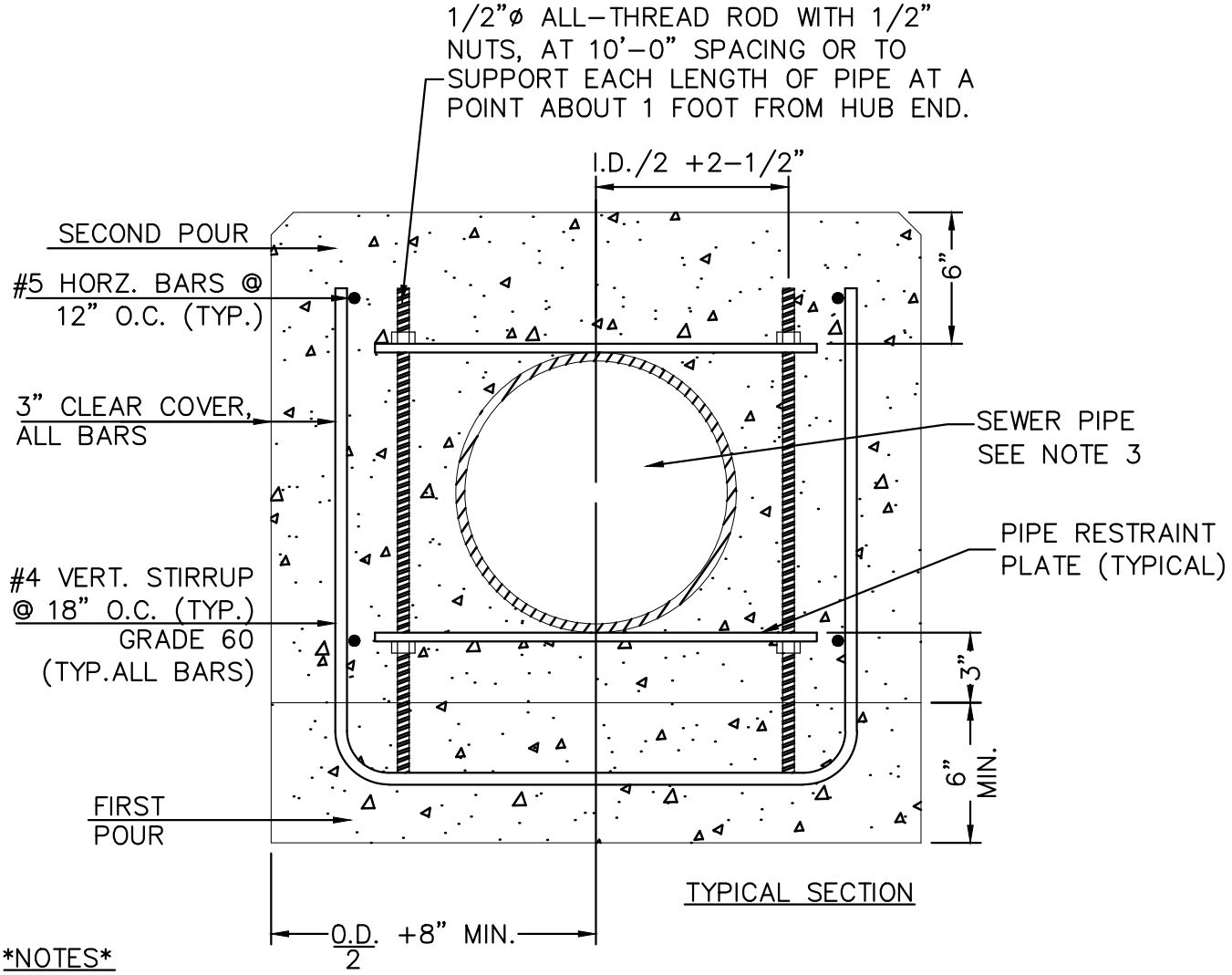
CONCRETE PIPE SADDLE

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 5



I.D.X 3/8" STEEL PLATE

PLAN – PIPE RESTRAINT PLATE



TYPICAL SECTION

NOTES

1. MINIMUM LENGTH OF REINFORCEMENT LAP SPLICES TO BE 18 INCHES
2. CDOT CLASS A OR B CONCRETE
3. CLAY (VCP) AND CONCRETE PIPE TO BE REPLACED WITH PVC

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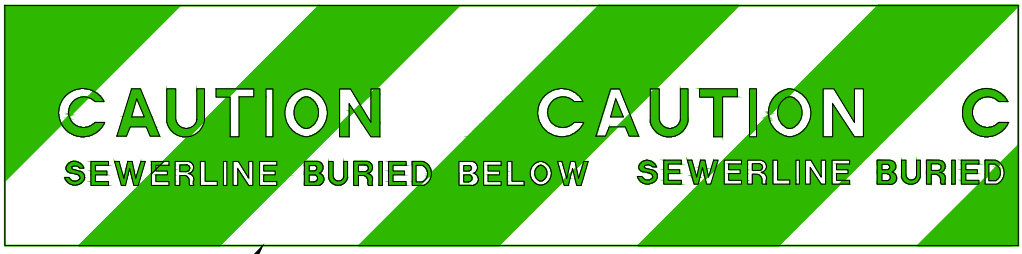
CONCRETE SEWER ENCASEMENT

Scale: *NONE*	Date: *APRIL 2026*
Revised:	Detail: *6*



SOLID GREEN
OR
GREEN AND WHITE STRIPES

TAPE TO BE PLACED CONTINUOUSLY, APPROXIMATELY 2' BELOW THE FINISHED GRADE, BOTH MAIN LINE AND SERVICE LINE.

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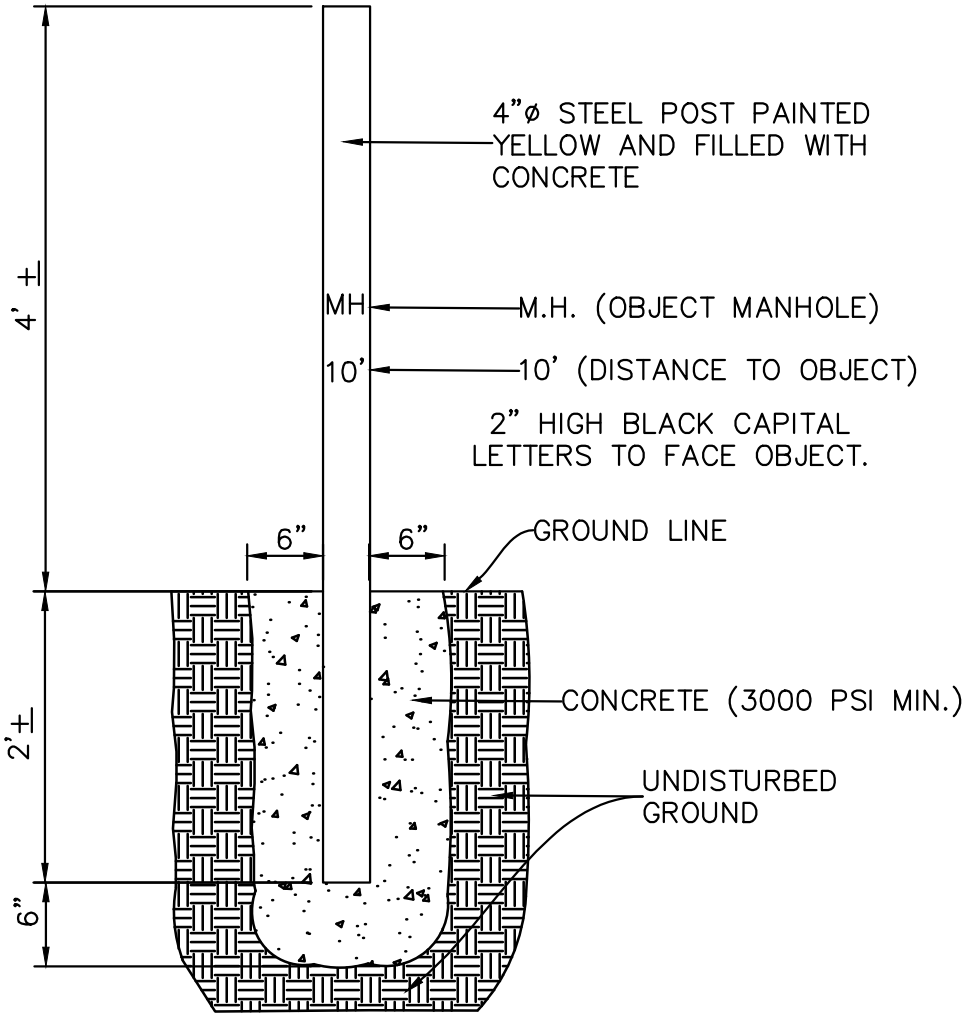
METALLIC DETECTION TAPE

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 7



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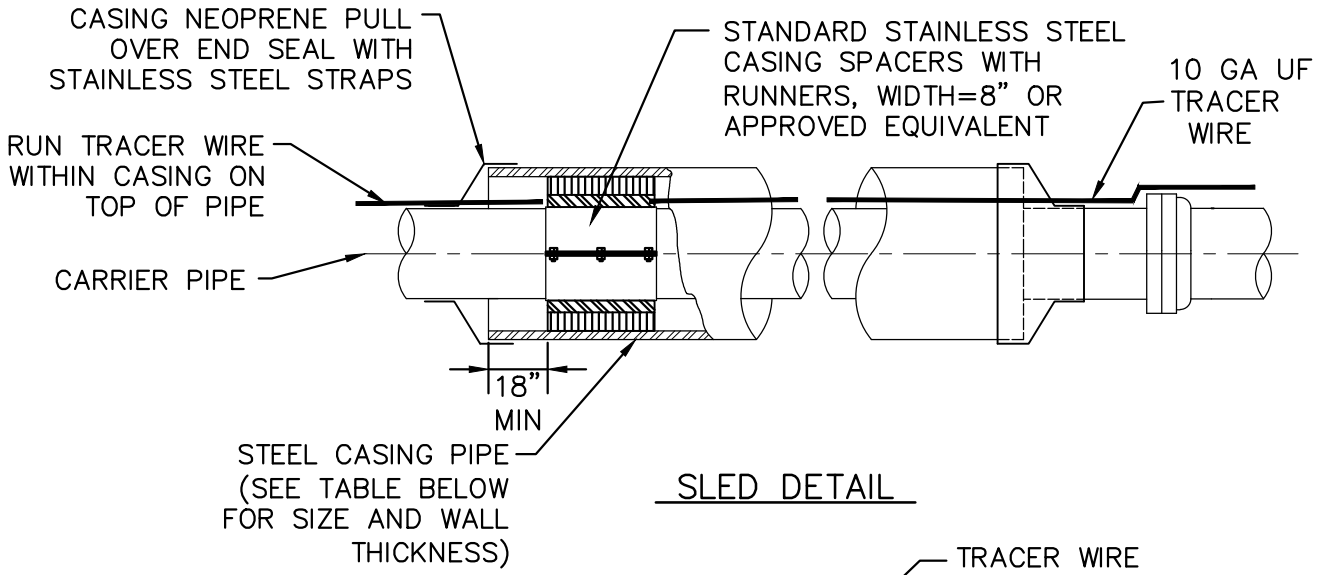
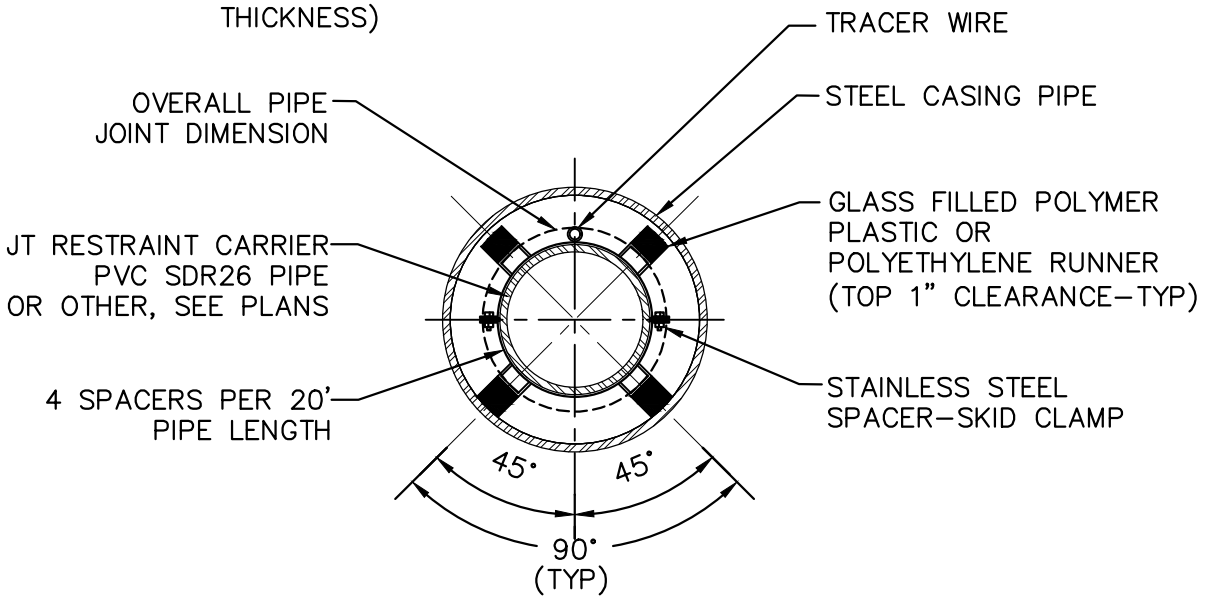
STEEL MARKER POST

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 8



SLED DETAIL



PIPE CASING DETAIL

CARRIER PIPE NOMINAL ø	CASING PIPE	
	MIN OD	MIN WALL THICKNESS
6"	16"	0.375"
8"	20"	0.375"
10"	24"	0.375"
12"	30"	0.375"
15"	36"	0.500"
18"	42"	0.500"
24"	48"	0.500"
30"	54"	0.500"

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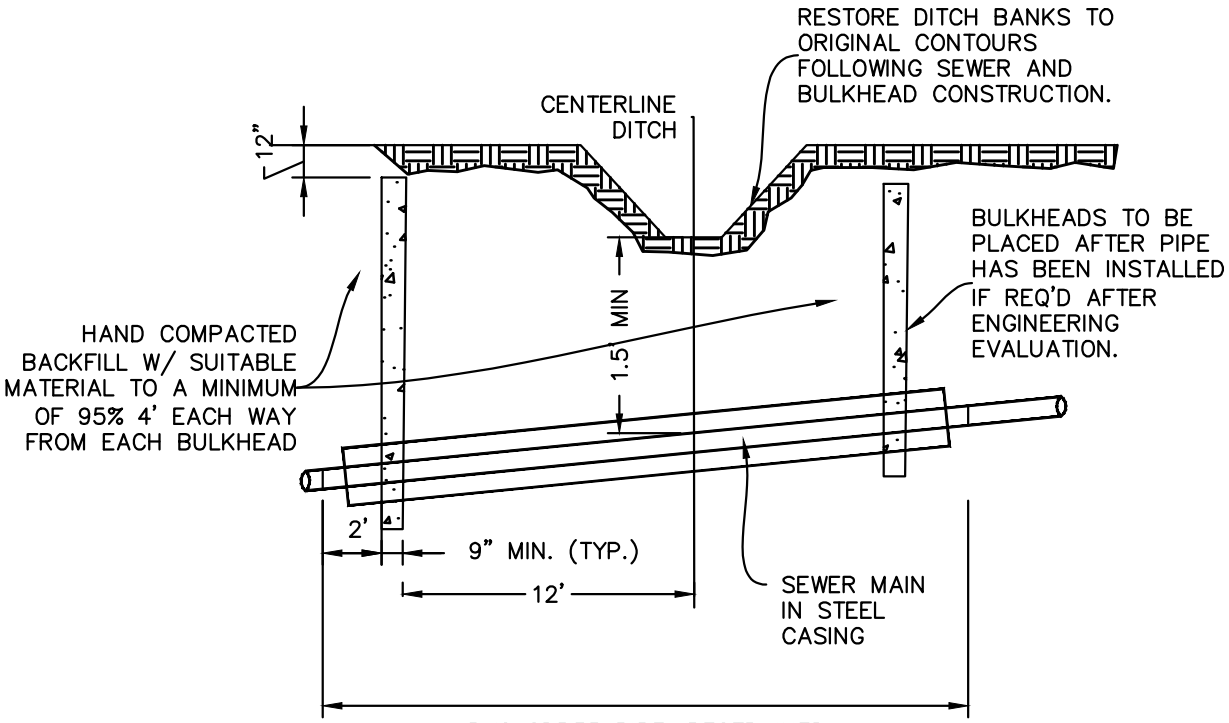
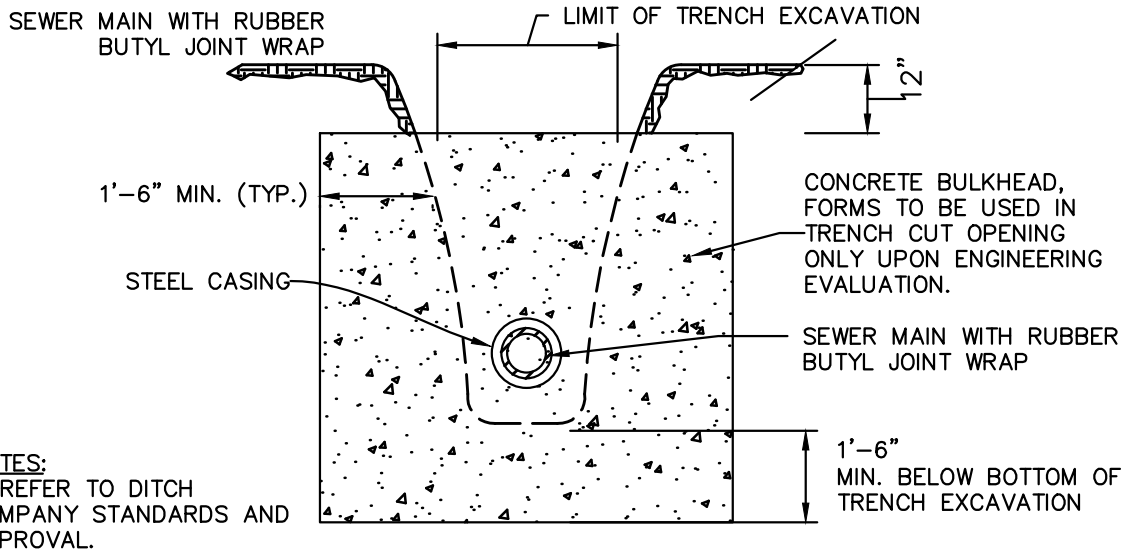
SANITARY SEWER BORE CASING

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 9



PIPE CASING DETAIL



CROSS SECTION VIEW

NOTES:
1. REFER TO DITCH COMPANY STANDARDS AND APPROVAL.
USE IF DITCH COMPANY HAS NO STANDARDS.

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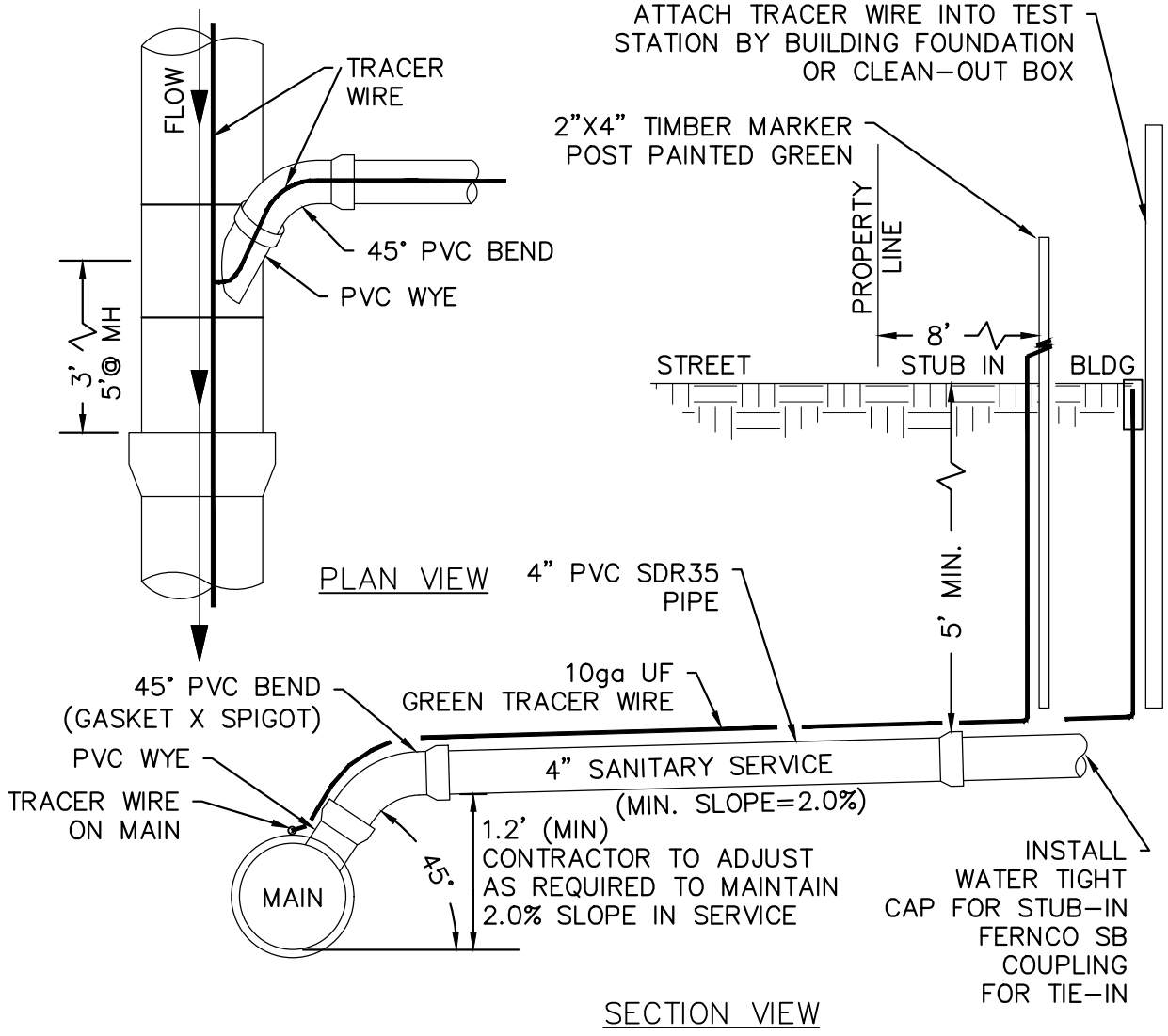
BULKHEAD CONSTRUCTION

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 10



NOTES:

1) SANITARY SEWER SERVICE TAPS SHALL BE LOCATED ON THE MAIN AT THE 2 O'CLOCK OR 10 O'CLOCK POSITION.
2) SANITARY SEWER SERVICE TAPS SHALL NOT BE MADE WITHIN 3 FEET OF A PIPE JOINT OR FROM OUTSIDE EDGE OF MANHOLE TO CL WYE FITTING.
3) DEPTH OF BURY OF SANITARY SEWER SERVICE LINE AT ROW WILL BE AT THE DISCRETION OF THE DISTRICT AND TO BE DETERMINED ON A PROJECT BASIS AND DISCUSSED AT THE PRE-CONSTRUCTION MEETING.
4) MINIMUM DISTANCE BETWEEN TWO 45° BENDS IS 3 FEET.
5) SEWER SERVICE CONNECTIONS SHALL BE MADE USING "WYE" FITTINGS. EXISTING MAIN-PVC SADDLE WITH STAINLESS STEEL STRAPS.
6) RISER SEGMENT SHALL BE EXTENDED AS NEEDED TO MAINTAIN THE SANITARY SERVICE AT A SLOPE OF 2%-8%.

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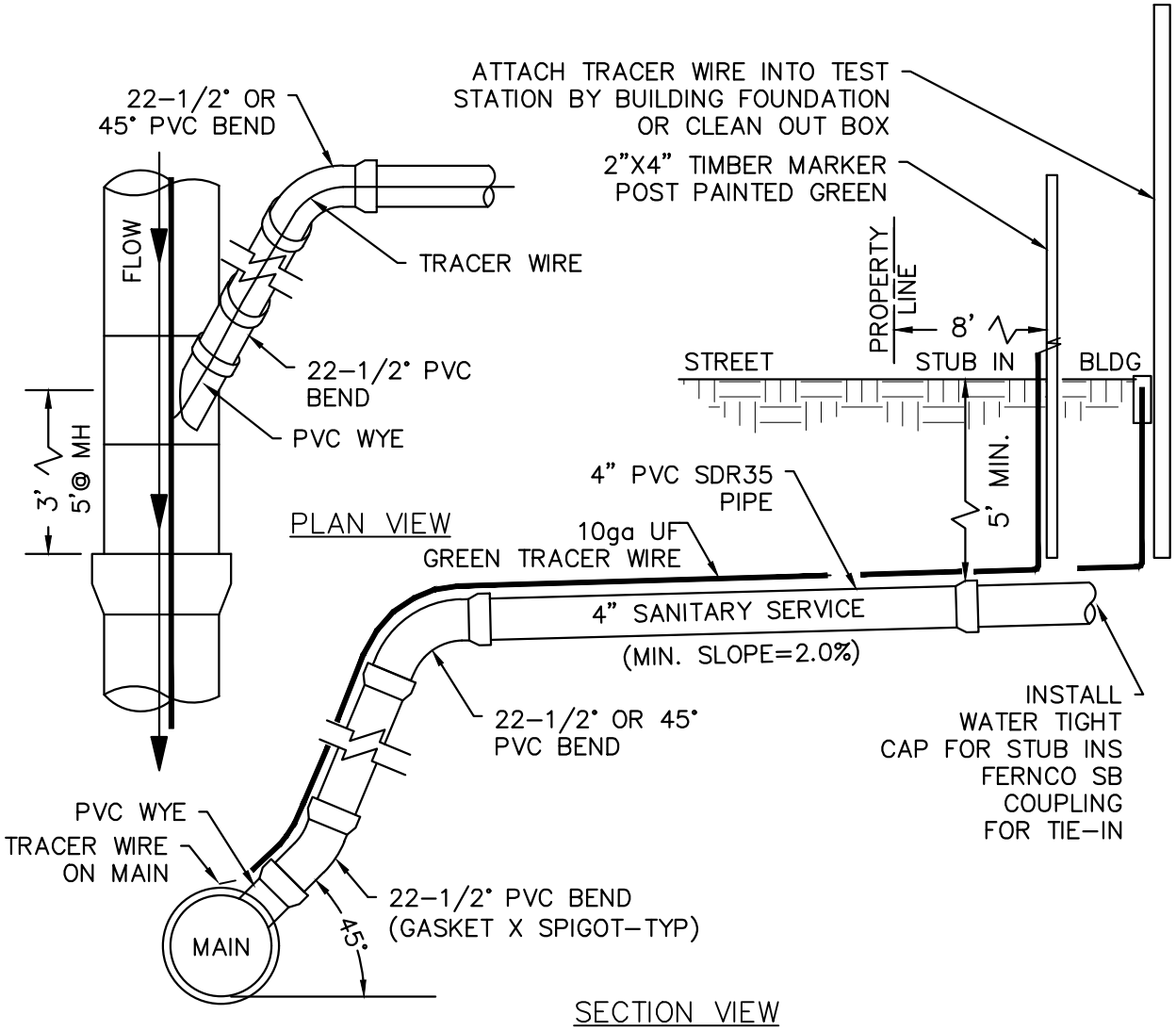
SANITARY SEWER WYE BRANCH CONNECTION FOR MAIN DEPTH LESS THAN 12'

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 11



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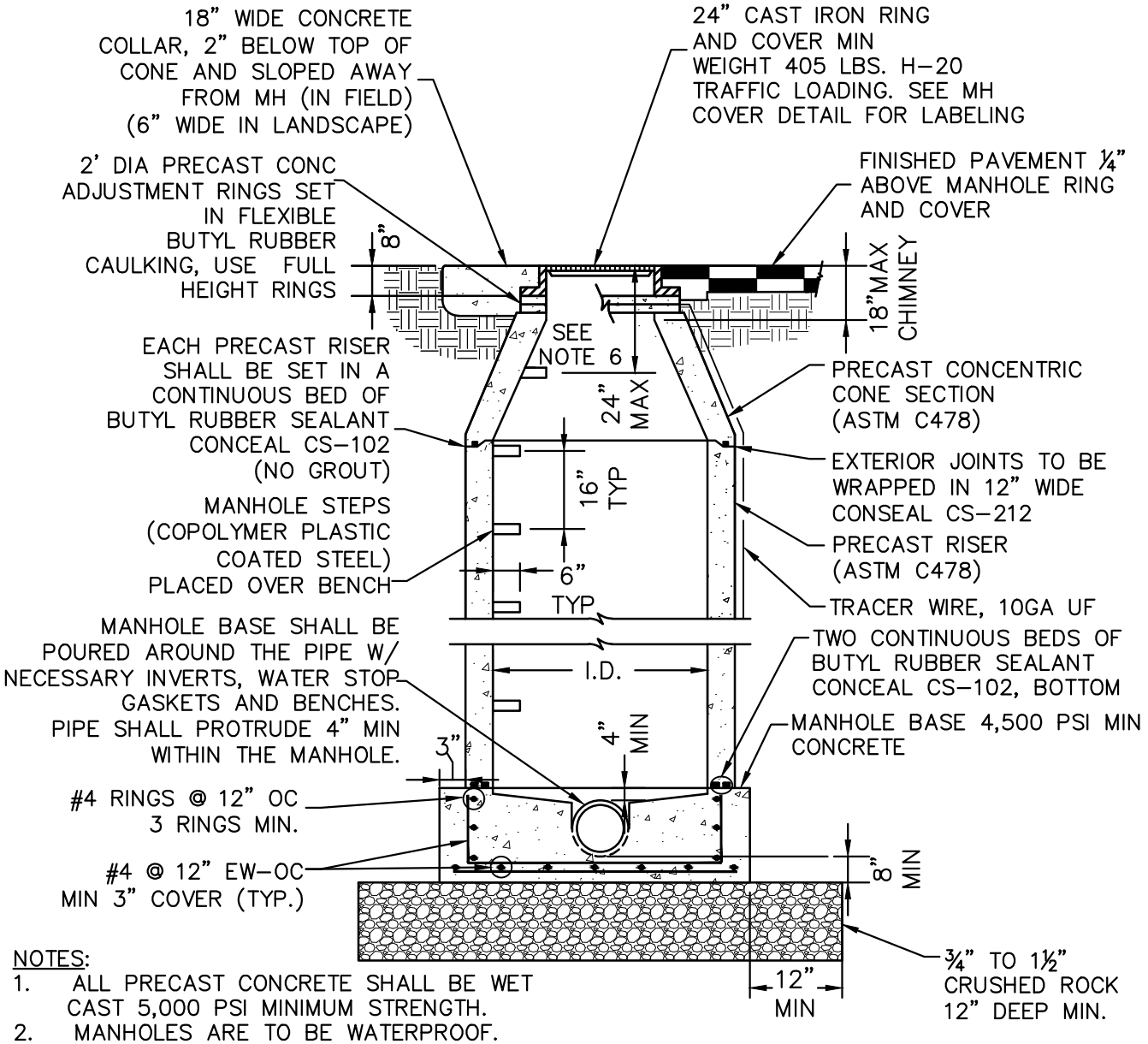
SANITARY SEWER WYE BRANCH CONNECTION FOR MAIN DEPTH GREATER THAN 12'

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 12



NOTES:

1. ALL PRECAST CONCRETE SHALL BE WET CAST 5,000 PSI MINIMUM STRENGTH.
2. MANHOLES ARE TO BE WATERPROOF.
3. PRECAST MANHOLE/VAULT BARREL SECTIONS, WALLS WILL REQUIRE AN EXTERIOR COATING OF BITUMINOUS WATERPROOFING OR APPROVED EQUIVALENT.
4. THE BENCH SHALL HAVE A BRUSHED SURFACE AND A FULL DEPTH CHANNEL.
5. 5' STUB-OUT PIPES SHALL CONTAIN WATER-TIGHT PLUGS.
6. A TWO-SIDED CONFINED SPACED WARNING TAG SHALL BE ATTACHED TO THE TOP STEP.
7. IF STEP IS PROTRUDING THE CHIMNEY, USE A 3" HAND HOLD STEP, S2-PF-HH.

MANHOLE ID:

ID=4' FOR SEWER MAIN DIAMETERS < 15"
ID=5' FOR SEWER MAIN DIAMETERS 15"-36"
ID=6' FOR SEWER MAIN DIAMETERS 42"-48"

WHENEVER MORE THAN A TWO WAY MH OR 90° TURN, THE MH SHALL BE INCREASED TO LARGER DIA SIZE.

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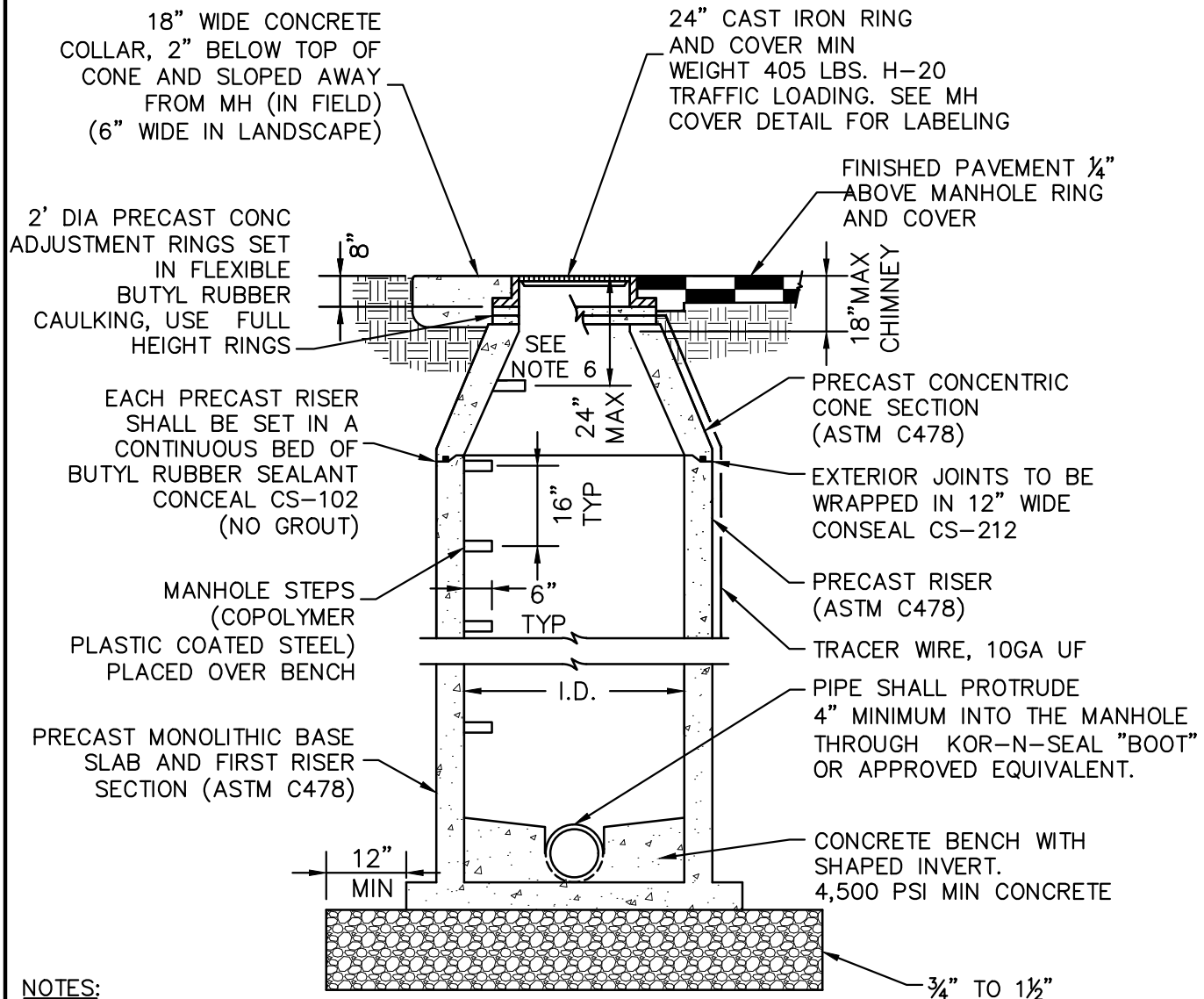
Sheridan Sanitation District No. 2

SANITARY SEWER MANHOLE (CIP BASE)

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 13



NOTES:

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2. MANHOLES ARE TO BE WATERPROOF.
3. PRECAST MANHOLE/VAULT BARREL SECTIONS, WALLS WILL REQUIRE AN EXTERIOR COATING OF BITUMINOUS WATERPROOFING OR APPROVED EQUIVALENT.
4. THE BENCH SHALL HAVE A BRUSHED SURFACE AND A FULL DEPTH CHANNEL.
5. 5' STUB-OUT PIPES SHALL CONTAIN WATER-TIGHT PLUGS.
6. A TWO-SIDED CONFINED SPACED WARNING TAG SHALL BE ATTACHED TO THE TOP STEP.
7. IF STEP IS PROTRUDING THE CHIMNEY, USE A 3" HAND HOLD STEP, S2-PF-HH.

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ID=6' FOR SEWER MAIN DIAMETERS 42"-48"

WHENEVER MORE THAN A TWO WAY MH OR 90° TURN, THE MH SHALL BE INCREASED TO LARGER DIA SIZE.

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SANITARY SEWER MANHOLE (PRECAST BASE)

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 14

1. THE CONFINED SPACE WARNING TAG SHALL BE 15 MIL DOUBLE SIDED PVC PLASTIC OR POLYESTER WITH A $\frac{3}{8}$" BRASS GROMMET WITH A 8" NYLON TIE. SIZE=3"X6" +/– OR APPROVED EQUIVALENT,
2. THE WARNING TAG SHALL BE FASTENED TO THE TOP STOP STEP OF MH.

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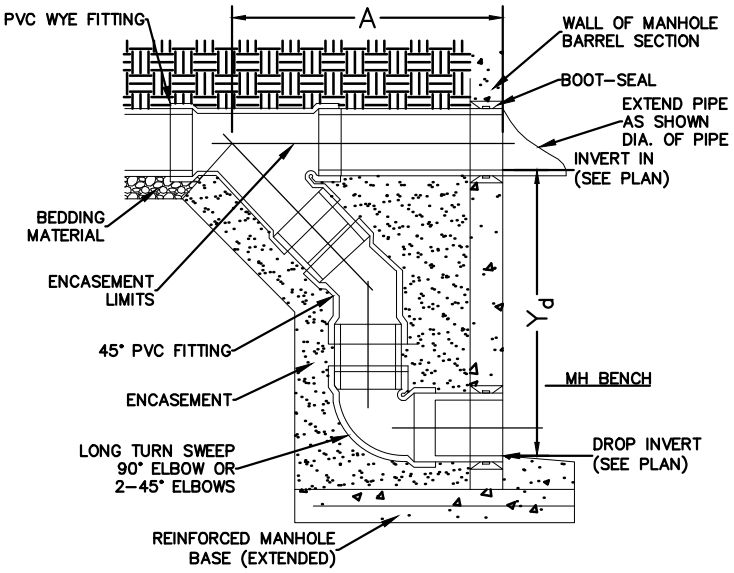
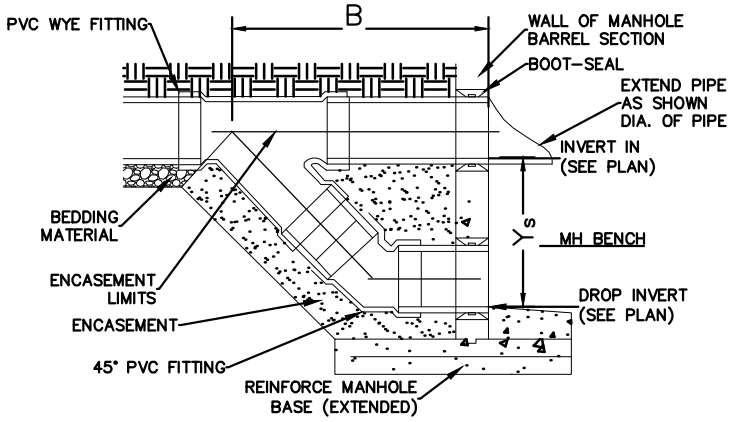
CONFINED SPACE SAFETY TAG

Scale: *NONE*	Date: *APRIL 2026*
Revised:	Detail: *15*



OUTSIDE DROP – DEEP: FOR PVC



OUTSIDE DROP – SHALLOW: FOR PVC

DROP MANHOLE NOTES:

1. ALL PIPE AND FITTINGS TO BE ASTM D3034, F679 AND DISTRICT APPROVED. PIPE 12" AND LARGER SHALL BE CONSTRUCTED WITH SDR 26 PIPE AND FITTINGS.
2. DIAMETER OF THE DROP PIPE SHALL NOT BE LESS THAN MAIN LINE PIPE DIAMETER.
3. FOR 18" DIAMETER AND LARGER, OUTSIDE DROP SHALL BE A SPECIAL DESIGN AND DISTRICT APPROVED PRIOR TO REVIEW SUBMITTAL.
4. A KOR–N–SEAL BOOT SHALL BE USED FOR THE CONNECTIONS IN A PRECAST MH. A WATER STOP GASKET AROUND THE PIPE SHALL BE USED IN A CAST IN PLACE (CIP) BASE AND SHALL BE DISTRICT APPROVED.
5. OUTSIDE DROP SHALL BE ALL OF ONE MATERIAL AND SIZE.
6. FLOW FILL ENCASEMENT SHALL BE A MINIMUM OF 8" THICK ALL AROUND.
7. PIPE DIMENSIONS ARE APPROXIMATE AND MAY VARY FROM ONE MANUFACTURER TO ANOTHER.
8. FOR CIP BASE MH WITH EXTENDED BASE, EXTEND #4 BAR PATTERN INTO EXTENSION.
9. FOR CIP EXTENSION TO PRECAST MH BASE, USE #4 DOWELS X 22"LG (4" EMB) AND #4 @ 12 EW MAT. BASE THICKNESS TO MATCH THE PRECAST MH BASE THICKNESS, 8" MIN. BASE DIMENSIONS TO SUPPORT ENCASEMENT.
10. ALL REQUIRED WALL OPENINGS SHALL BE PRECAST BLOCK–OUTS OR CORE DRILLED. JACK HAMMERING OF OPENINGS IS NOT ALLOWED.
11. EXCEEDING THE MAXIMUM ALLOWABLE DROP NOTED, SHALL BE APPROVED BY THE DISTRICT PRIOR TO THE REVIEW SUBMITTAL.
12. ALL DROP MANHOLES SHALL BE LINED WITH A POLYURETHANE OR EPOXY LINING SYSTEM.

	DEEP								SHALLOW							
DIMENSIONS (NOMINAL)	Y_d (INCHES)				A (INCHES)				Y_s (INCHES)				B (INCHES)			
PIPE DIAMETER (INCHES)	8	10	12	15	8	10	12	15	8	10	12	15	8	10	12	15
MINIMUM DROP GREATER THAN	31	37	39	55	42	47	49	65	18	18	22	28	41	43	51	61

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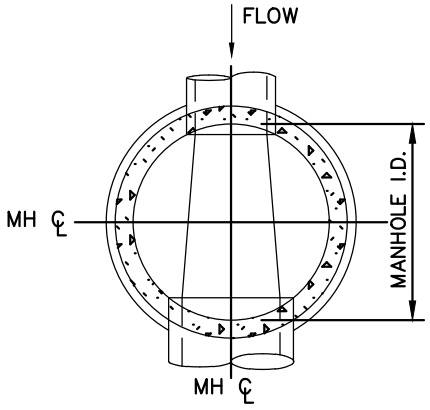
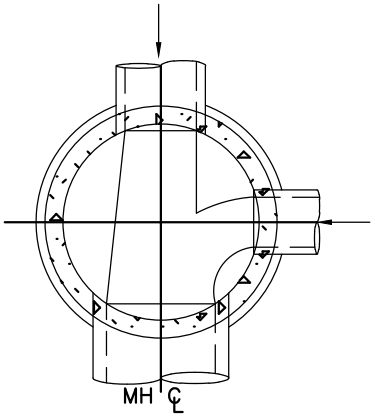
Sheridan Sanitation District No. 2

STANDARD DROP MANHOLE

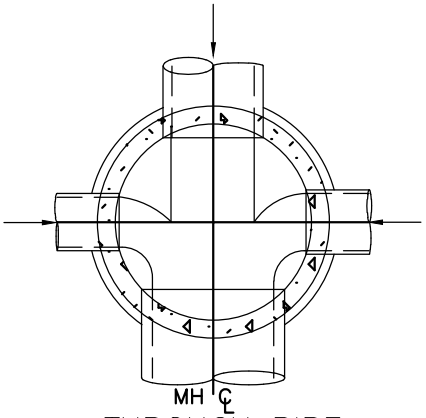
Scale: NONE	Date: APRIL 2026
Revised:	Detail: 16



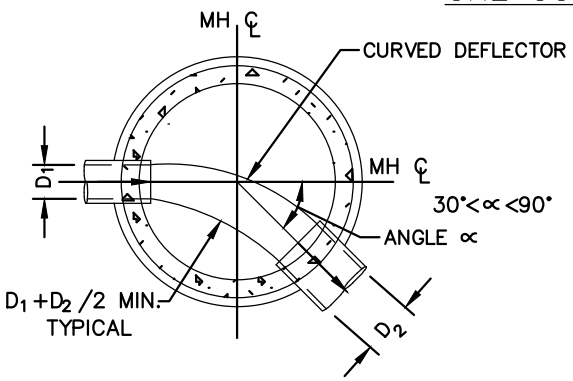
THROUGH PIPE



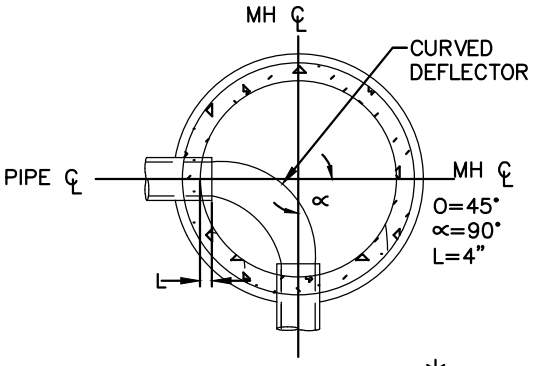
THROUGH PIPE
ONE COLLECTION LINE*



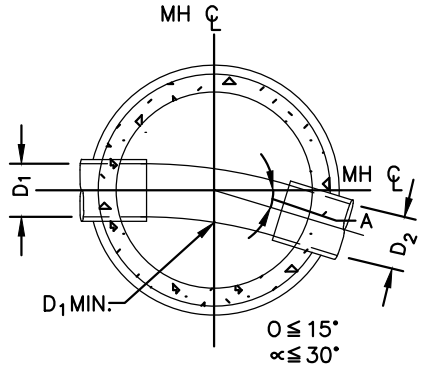
THROUGH PIPE
TWO COLLECTION LINES*



INTERMEDIATE ANGLE

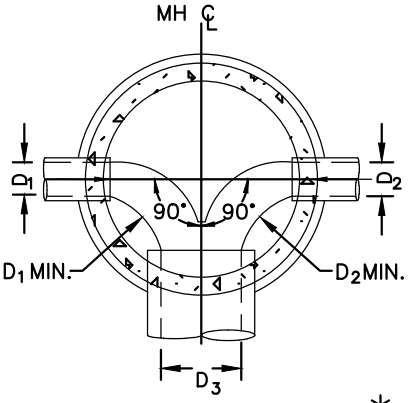


SHARP ANGLE*



INTERMEDIATE ANGLE

NOTE:
1. DETAILS SHOWN ARE TYPICAL ONLY FOR INSTALLATIONS WITH A MAXIMUM OF UP TO 8" INSIDE DROP IN A 4' MH WITH ENGINEERING APPROVAL



OPPOSED LATERALS*

* INCREASE MH TO LARGER DIA

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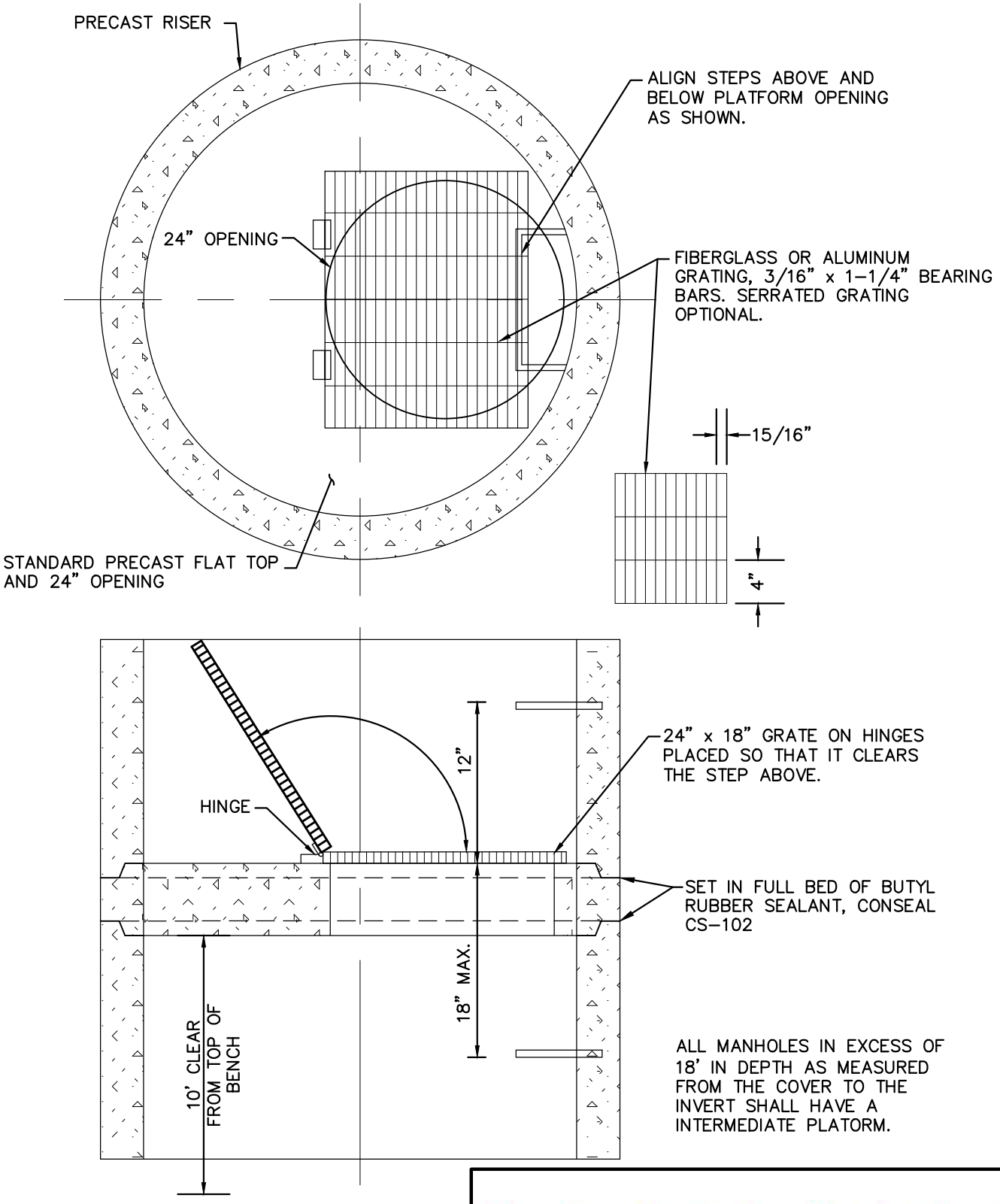
Sheridan Sanitation District No. 2

MANHOLE BASE & DEFLECTOR

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 17



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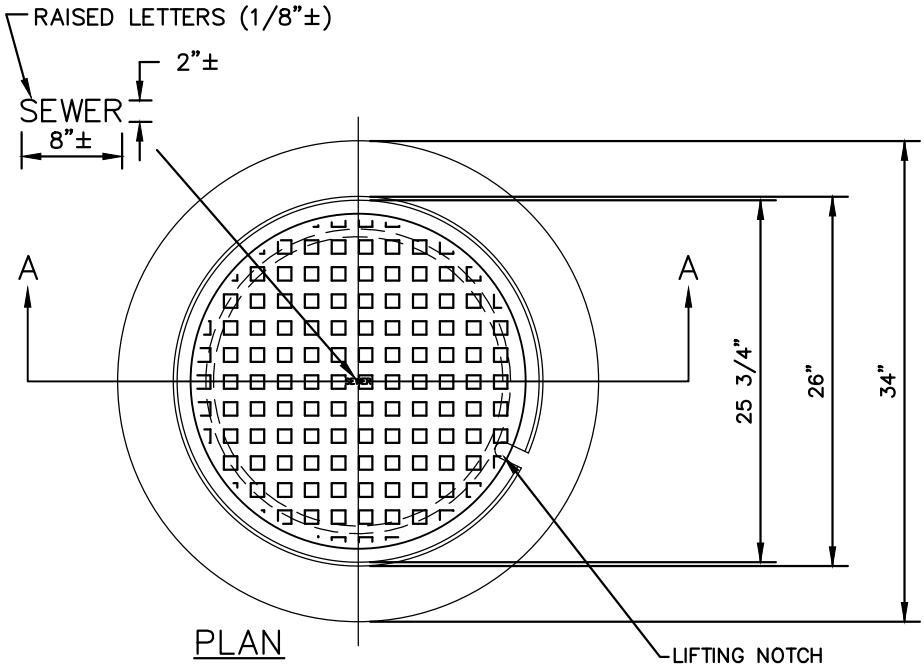
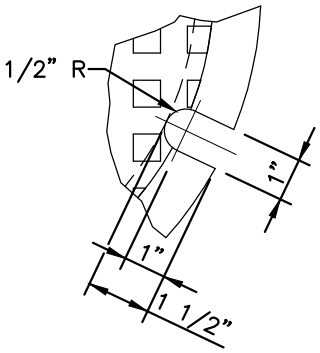
MANHOLE PLATFORM

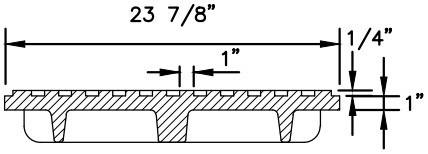
Scale: NONE	Date: APRIL 2026
Revised:	Detail: 18

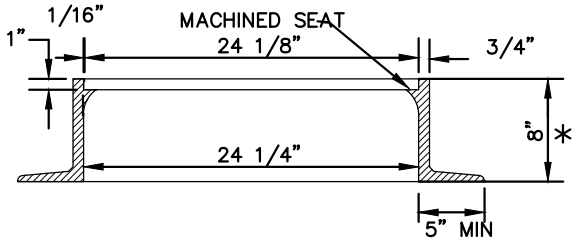


PLAN



LIFTING NOTCH





SECTION A–A

NOTE:

1. CASTING SPECIFICATIONS: ASTM A–48 WITH A MINIMUM TENSILE STRENGTH OF 35 KSI (CLASS 35)
2. NOMINAL WEIGHTS
   8" RING/COVER

RING	240 LBS
COVER	165 LBS
TOTAL	405 LBS

* OTHER RING HEIGHTS REQUIRE ENGINEERING APPROVAL

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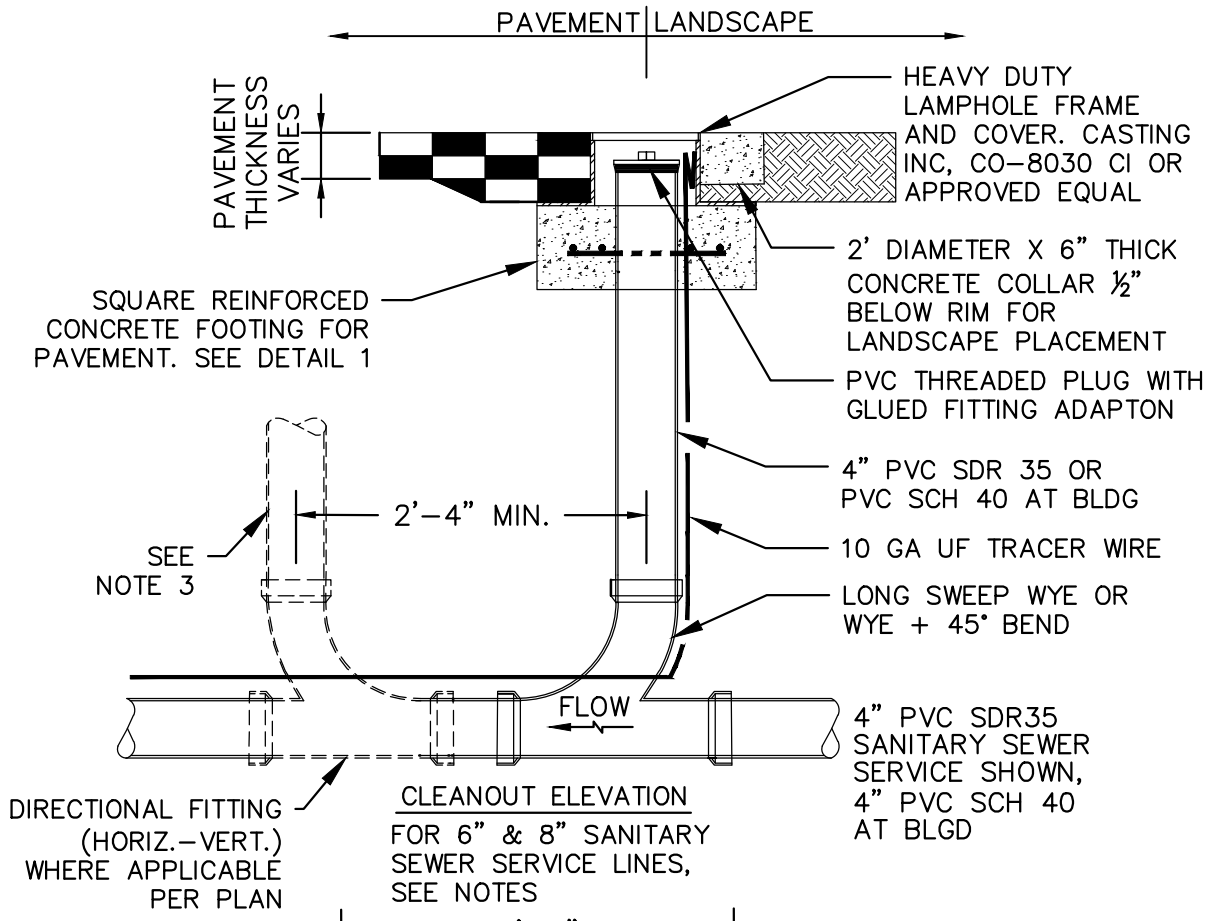
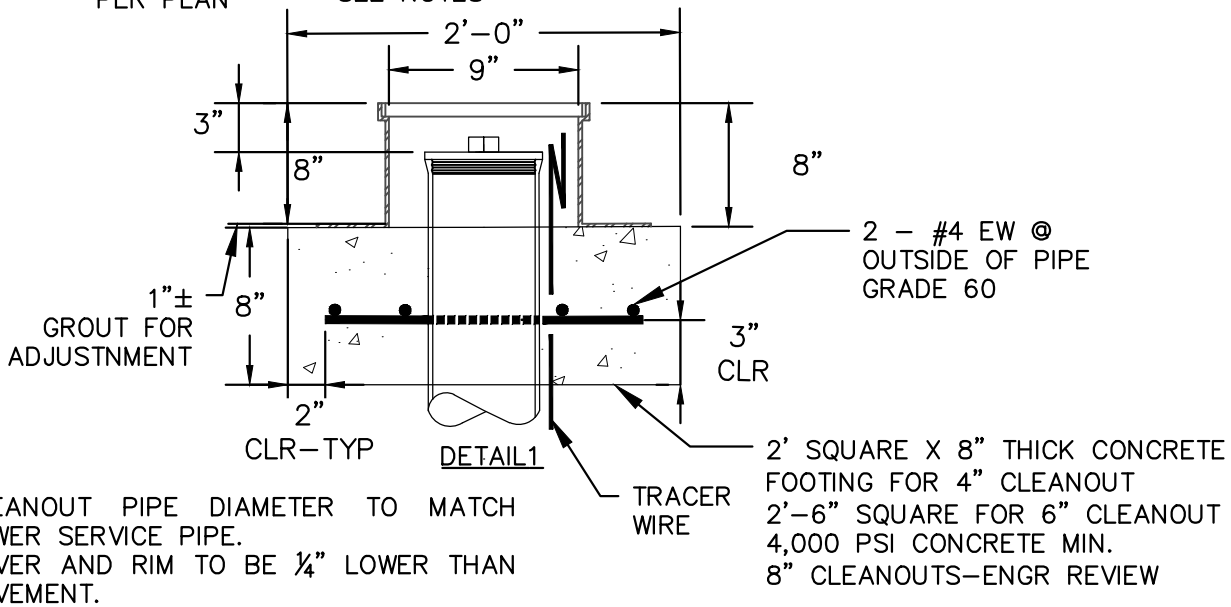
Sheridan Sanitation District No. 2

MANHOLE RING AND COVER WITH LIFT SLOT

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 19





NOTES:

1. CLEANOUT PIPE DIAMETER TO MATCH SEWER SERVICE PIPE.
2. COVER AND RIM TO BE ¼" LOWER THAN PAVEMENT.
3. OPTIONAL TWO WAY CLEANOUT AS SPECIFIED ON PLANS.
4. SINGLE 6" OR 8" CLEANOUTS SHALL FACE UP STREAM, BELOW THE BEND FOR JET CLEANING.

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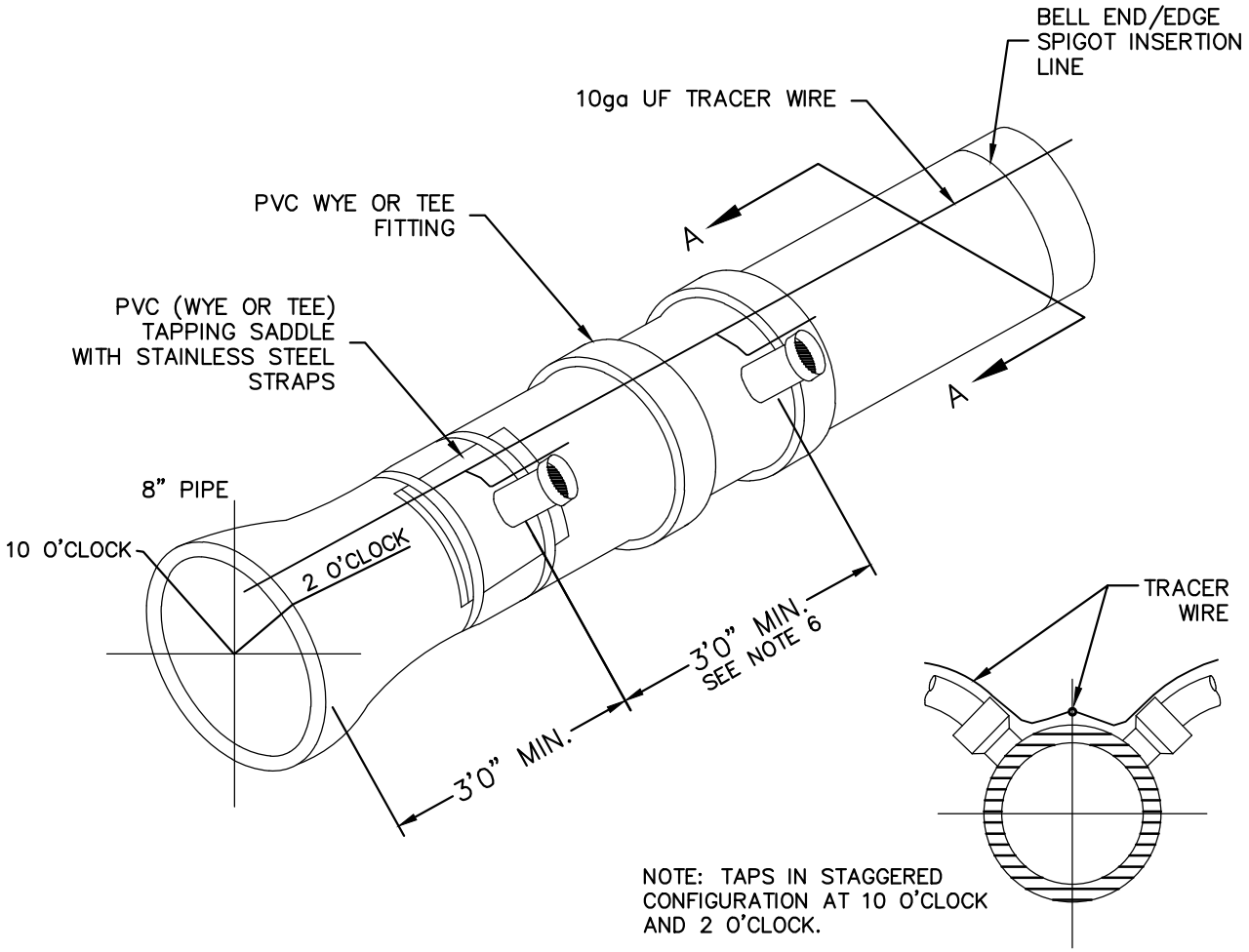
CLEAN-OUT

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 20



SECTION A–A

SANITARY SEWER

1. SEWER SERVICE CONNECTIONS SHALL BE POSITIONED AT EITHER THE 2 O'CLOCK OR THE 10 O'CLOCK POSITION ON THE CIRCUMFERENCE OF THE SEWER MAIN.
2. ON NEW INSTALLATIONS, EITHER PVC WYE OR TEE FITTINGS SHALL BE USED. WHEN TAPPING INTO AN EXISTING SEWER MAIN, A PVC SADDLE CONNECTION WITH STAINLESS STEEL STRAPS AND APPROVED CORING METHOD SHALL BE USED.THE HOLE SHALL BE OVALED OR A WYE.
3. 8" PIPE: THE MINIMUM DISTANCE FROM EITHER THE BELL OR SPIGOT INSERTION LINE OF A PIPE SHALL BE 3 FEET FOR TAPS AND 3 FEET TO THE CL OF THE WYE–TEE FITTING. OTHER PIPES ADD DIAMETER TO 3 FEET. THE MINIMUM DISTANCE FROM THE OUTSIDE OF A MANHOLE TO THE CL OF SERVICE CONNECTION SHALL BE 3 FEET FOR TAPS OR 3 FEET TO THE WYE–TEE FITTING.
4. A MAXIMUM OF 4 SEWER SERVICE CONNECTIONS SHALL BE ALLOWED PER 20–FEET LENGTH OF PIPE.
5. WITH AWWA C–900 CLASS 235, DR18 PIPE, USE AWWA C–900 CLASS 235 PVC TEES FOR SERVICES, CONFORMING TO DR18 OR APPROVED EQUAL. SDR 26 PIPING WILL REQUIRE SDR 26 HEAVY WALL (GASKETED) FITTINGS.
6. THE MINIMUM DISTANCE BETWEEN SERVICE WYE–TEE FITTINGS SHALL BE 3 FEET FOR 6" & 8" PIPE. FOR PIPE LARGER THAN 8", THE MINIMUM DISTANCE BETWEEN WYE–TEE FITTINGS IS 3 FEET PLUS THE DIAMETER OF PIPE.
7. WHEN TAPPING AN EXISTING CIPP LINED MAIN THE NEW HOLE THROUGH THE PIPE AND LINER SHALL BE PROFESSIONALLY SEALED WITH AN EPOXY, SIKADUR31 HI–MOD GEL, OR EQUIVALENT.

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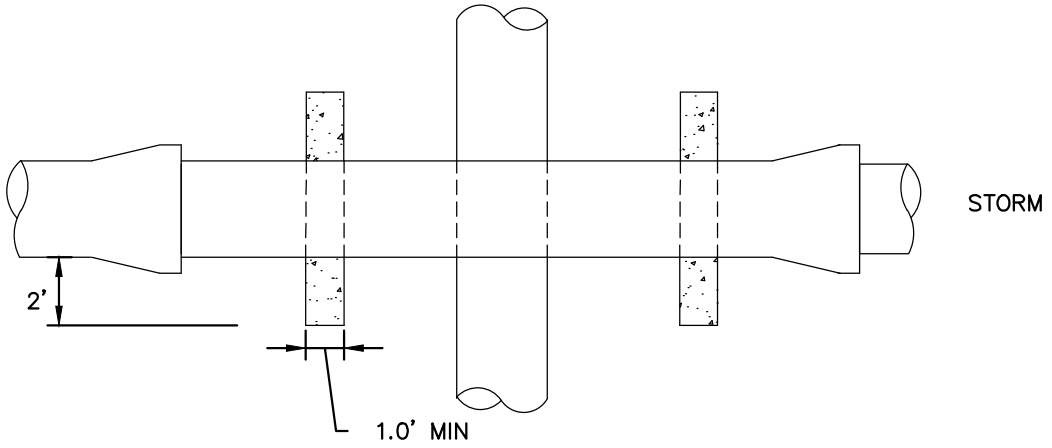
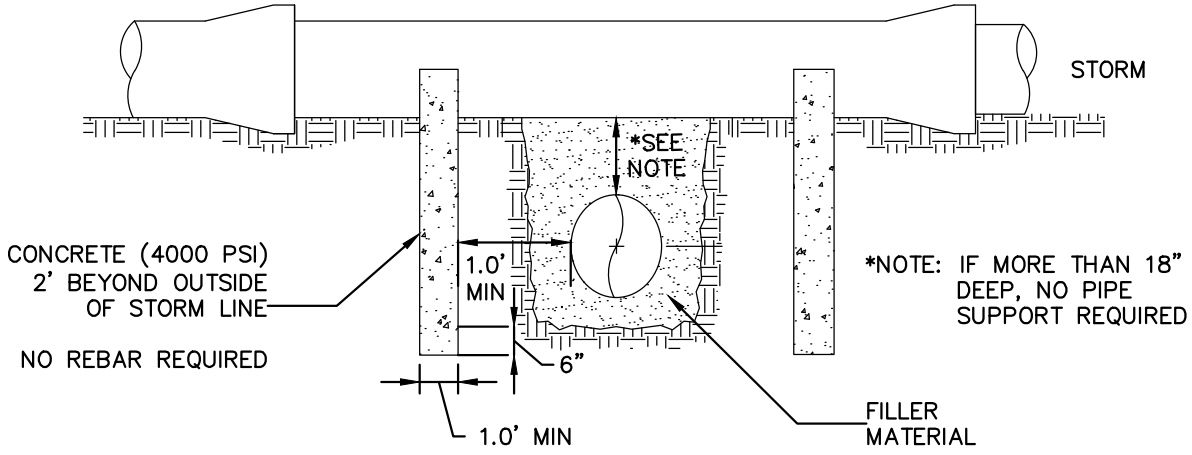
SEWER TAPPING

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 21



PLAN VIEW
NTS

ALL CONDITIONS TO BE EVALUATED
AND APPROVED BY ENGINEER



ELEVATION VIEW
NTS

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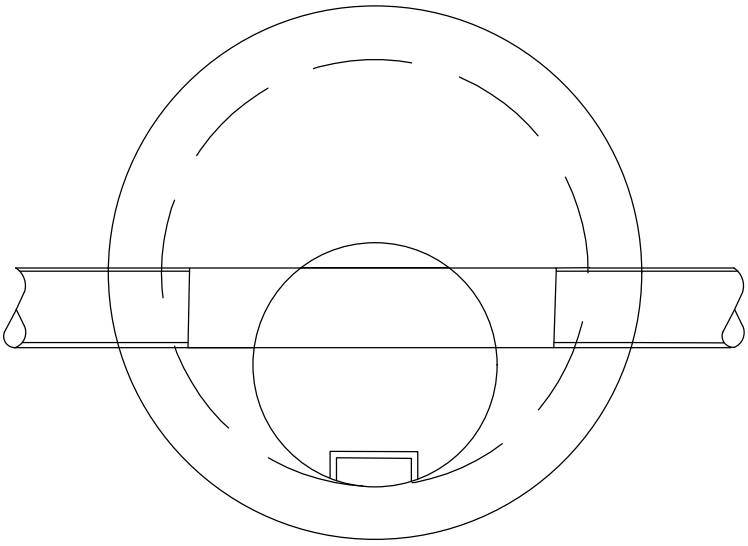
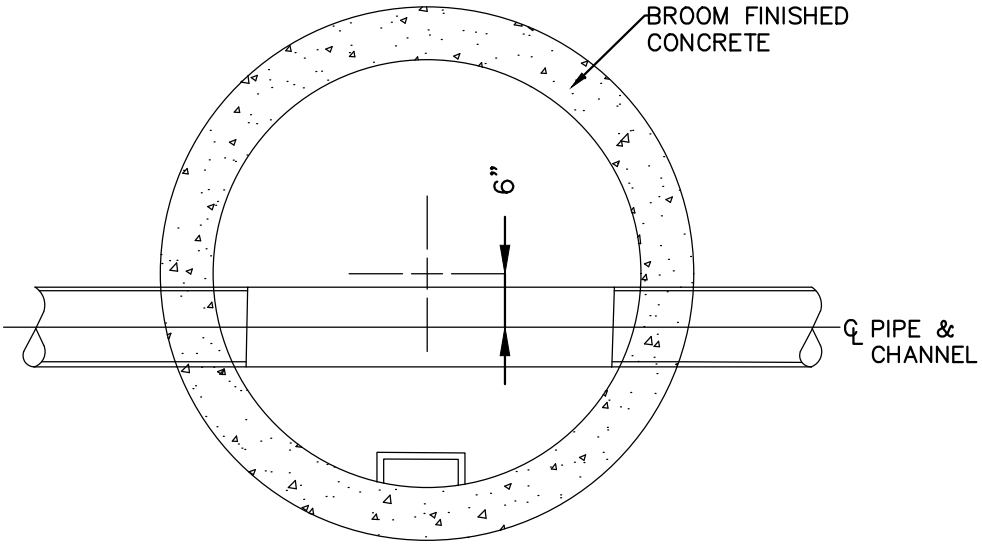
STORMLINE CROSSING PIPE SUPPORT CONSTRUCTION

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 22



DETAIL 1
MANHOLE ECCENTRIC
CONE LAYOUT
NOT TO SCALE



DETAIL 2
MANHOLE BELOW
RIM LAYOUT
NOT TO SCALE

NOTES:
1. MANHOLE DIAMETER IS 5'

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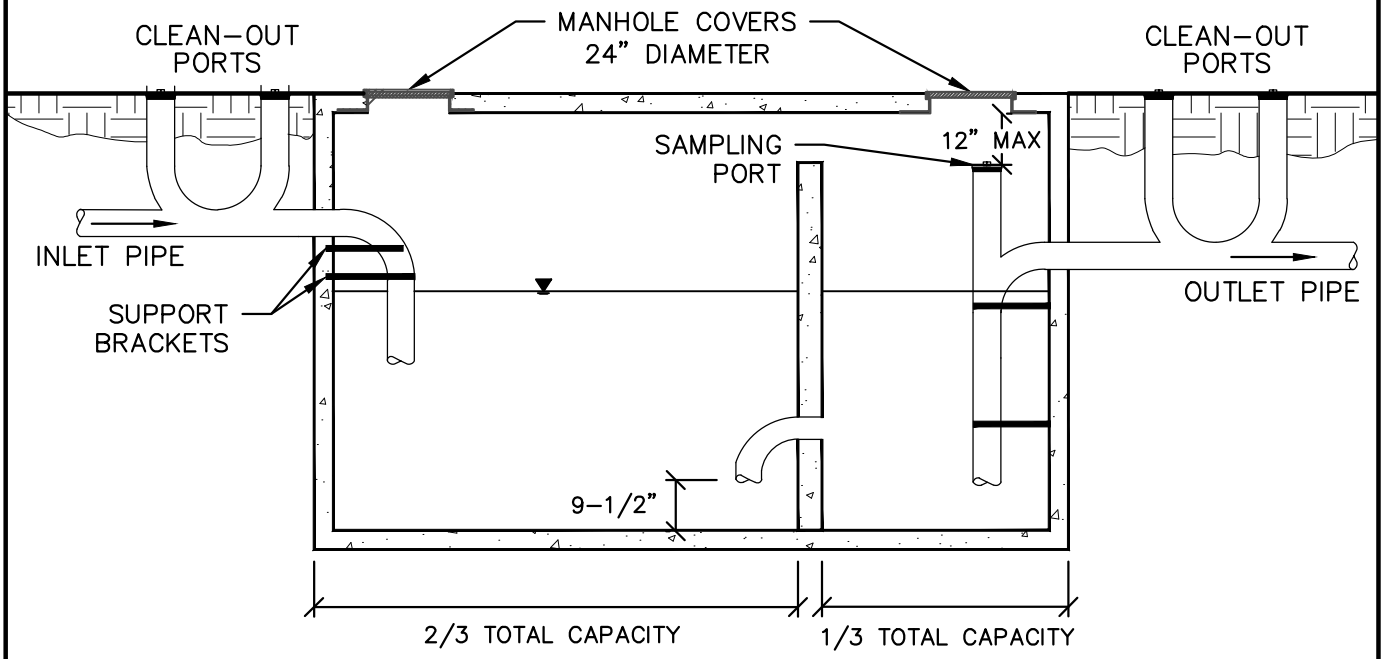
Sheridan Sanitation District No. 2

MONITORING MANHOLE

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 23



THE SIZING OF THE INTERCEPTOR SHALL BE DETERMINED BY DISTRICT.

IF THE SIZING CALCULATIONS INDICATE THAT A GREASE INTERCEPTOR OF LESS THEN SEVEN HUNDRED AND FIFTY (750) GALLONS IS REQUIRED, THE DISTRICT MAY DETERMINE A GGI DOES NOT NEED TO BE INSTALLED BY THE USER. THIS DETERMINATION WILL BE MADE UPON A INITIAL REVIEW OF PLANS AND THE USER'S PROPOSED OPERATIONS.

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GREASE INTERCEPTOR

Scale: *NONE*	Date: *APRIL 2026*
Revised:	Detail: *24*

ENGINEERING APPROVAL
SHERIDAN SANITATION DISTRICT NO. 2

REVIEW IS ONLY FOR GENERAL COMPLIANCE WITH SHERIDAN SANITATION DISTRICT NO.2 ENGINEERING STANDARDS AND REQUIREMENTS. ALL RESPONSIBILITY FOR THE EXISTING CONDITIONS, CORRECTNESS OF DIMENSIONS, DETAILS, CONCEPTS, QUANTITIES AND SAFETY DURING CONSTRUCTION SHALL REMAIN WITH THOSE DESIGNING, DEVELOPING AND CONSTRUCTING THE PROJECT.

THESE PLANS ARE VALID FOR ONE (1) YEAR AFTER THE DATE OF APPROVAL. RESUBMITTAL TO THE DISTRICT IS REQUIRED AFTER THAT TIME PERIOD.

DISTRICT ENGINEER _____ DATE _____

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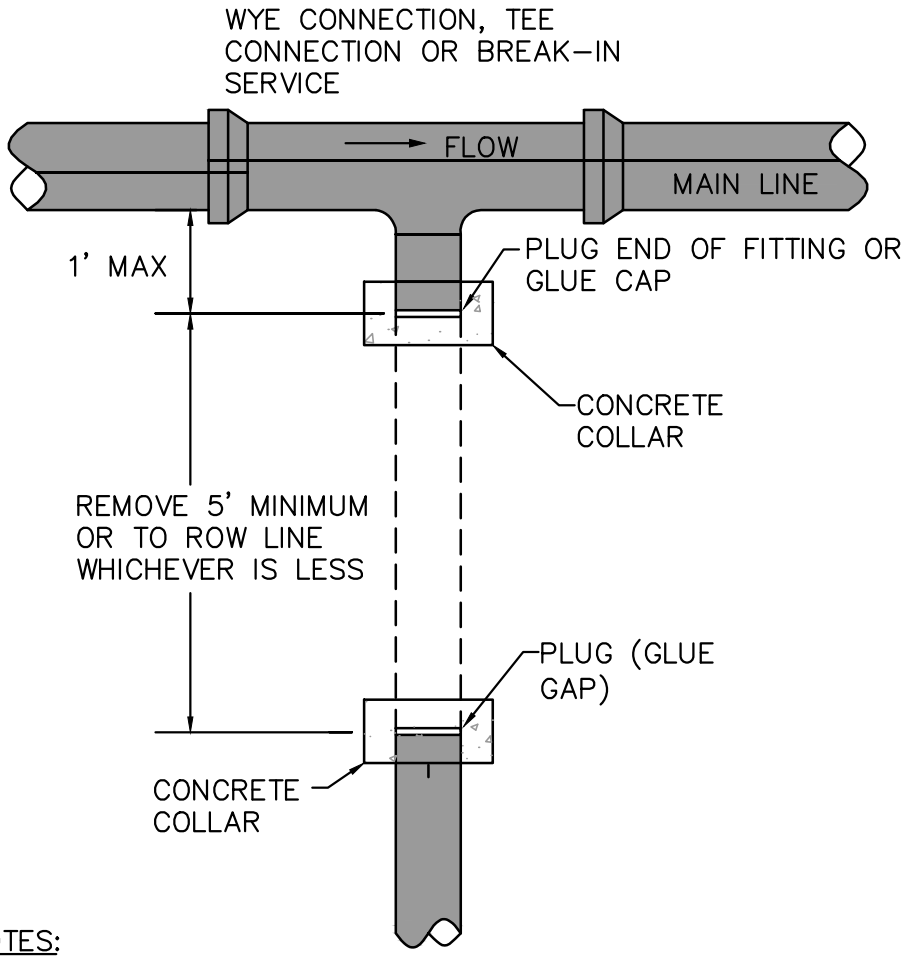
Sheridan Sanitation District No. 2

ENGINEERING APPROVAL BLOCK

Scale: *NONE*	Date: *APRIL 2026*
Revised:	Detail: *25*



GENERAL NOTES:

1. INSTALL PLUGS AT CUT SERVICE CONNECTIONS AND POUR CONCRETE COLLAR 4 INCHES EACH SIDE OF PIPE END. MINIMUM 4 INCHES THICK.

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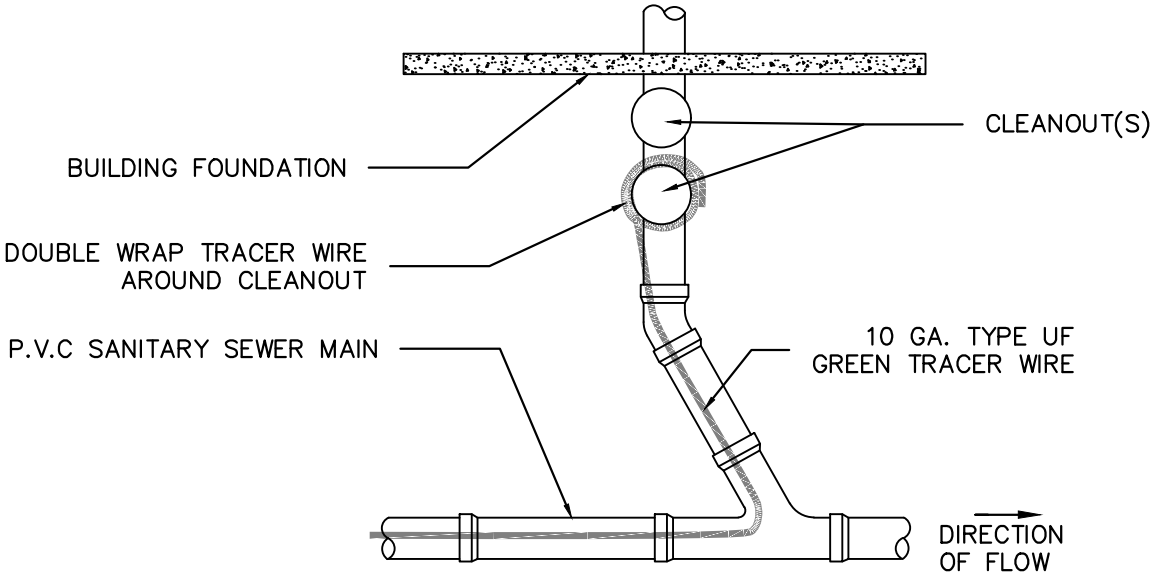
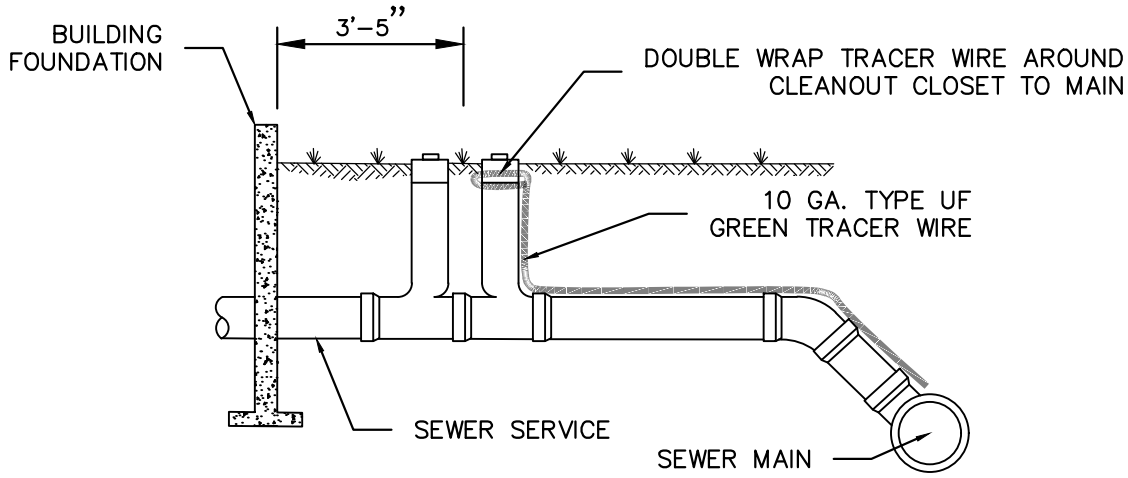
Sheridan Sanitation District No. 2

SERVICE LINE ABANDONMENT DETAIL

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 26



TRACER WIRE AT CLEANOUTS–PLAIN VIEW



TRACER WIRE AT CLEANOUTS–PROFILE

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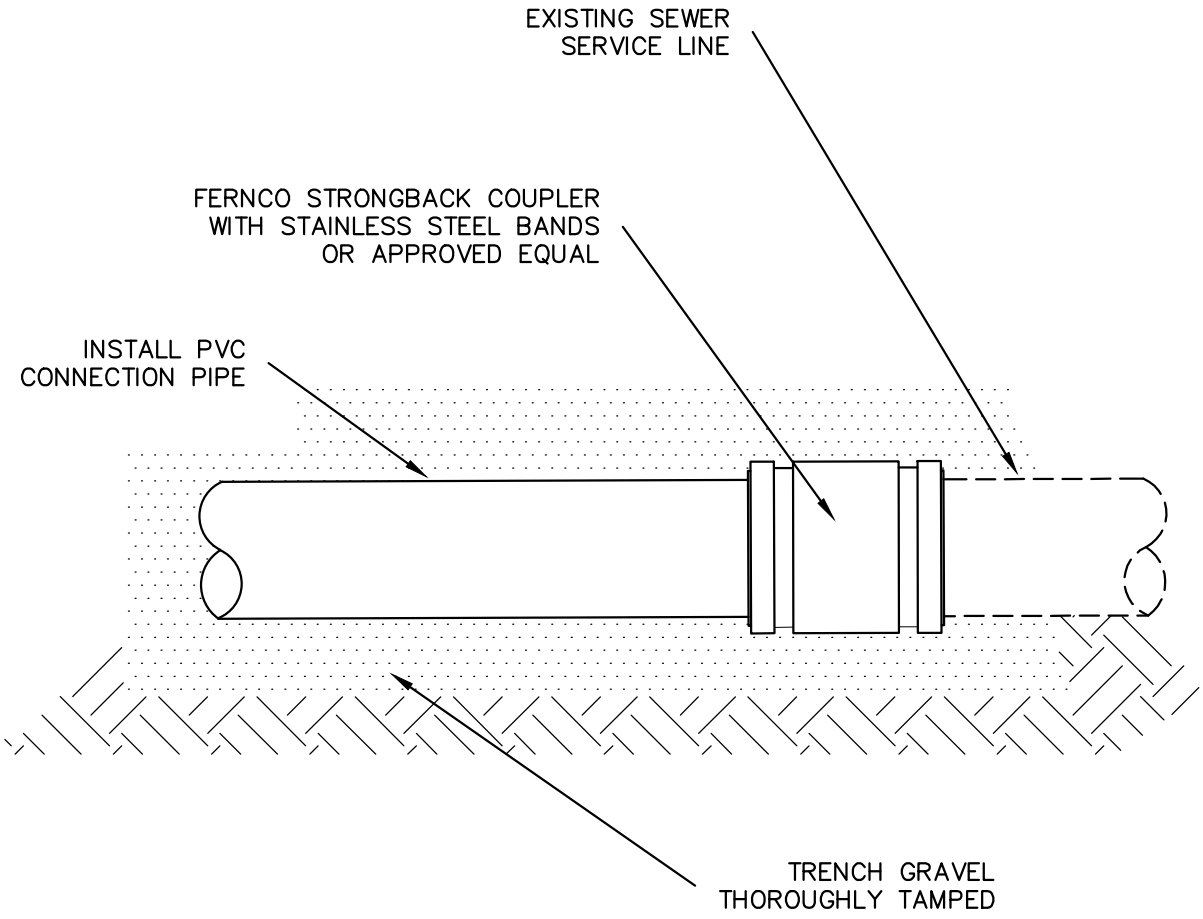
Sheridan Sanitation District No. 2

SANITARY SEWER SERVICE TRACER WIRE INSTALLATION

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 27



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Sheridan Sanitation District No. 2

CONNECTION TO EXISTING SEWER LINE

Scale: NONE	Date: APRIL 2026
Revised:	Detail: 28

SHERIDAN SANITATION DISTRICT NO. 2

DISTRICT FORMS

RESERVED FOR FUTURE USE