# BOLINAS COMMUNITY PUBLIC UTILITY DISTRICT

## SEWER SYSTEM MANAGEMENT PLAN

### APPENDIX 5:

### SPECIFICATIONS FOR LATERAL SEWERS

Originally adopted as part of the BCPUD Sewer System Management Plan.

Administrative update effective 4/30/2026— reformatted and updated to reflect BCPUD-specific standards, contacts, and practices. No new Board action required.

# BCPUD SSMP — Appendix 5: Specifications for Lateral Sewers

All lateral sewers within the **Bolinas Community Public Utility District (BCPUD)** must conform to these specifications and the District's Standard Specifications and Sanitary Code (including BCPUD Ordinance 29, as amended by Ordinance 39), copies of which are available from the District offices at 270 Elm Road, Bolinas, CA 94924 or by calling (415) 868-1224. These definitions, specifications and details are in addition to and to the extent more strict than the District's Standard Specifications, supersede them for laterals only. All other provisions of the codes and Standard Specifications remain in effect with regard to private sewer laterals and side sewers.

Following is a summary of the specifications regarding lateral sewers.

***Lateral or Private Sewer Lateral.*** The sanitary sewer pipe beginning at the wye connection with the main sewer and terminating at its point of connection to the building's sanitary or waste plumbing at the point the plumbing first extends outside the building's foundation, which location must be two feet or less from the building foundation. The lateral or building sewer, including the wye, is privately owned and maintained.

***Upper Lateral.*** That portion of the lateral sewer lying within private property. (Normally that portion of the lateral sewer between the connection to the building's waste plumbing and public right-of-way or property line.) The upper lateral sewer is privately owned and maintained.

***Lower Lateral.*** That portion of the lateral sewer lying within a street or sewer right-of-way. (Normally that portion of the lateral sewer between the main sewer and property or right-of-way line.) The lower lateral sewer is privately owned and maintained.

***Main Sewer.*** The public sewer pipe which accommodates more than one lateral sewer and is normally six inches or more in diameter. The District maintains the main sewer.

## Section 1. GENERAL INFORMATION

### 1-01 Jurisdiction.

The District has jurisdiction over all property to receive sewer service within the District boundaries. District jurisdiction includes, but is not limited to: issuing permits to connect to the main sewer, specification of design, type of material, construction requirements, inspection, and testing. IMPORTANT: BCPUD has maintained a moratorium on new sewer connections since 1985 (Resolution 259, as amended by Resolution 500). No new connection to the BCPUD sewer system may be made without prior approval of both the BCPUD Board of Directors and the Regional Water Quality Control Board (RWQCB), San Francisco Bay Region. These specifications apply primarily to repair, replacement, rehabilitation, and maintenance of existing lateral sewers. Any inquiry regarding a potential new connection must be directed to the BCPUD General Manager at (415) 868-1224 before any work is planned or initiated.

### 1-02 Ownership and Maintenance.

Each building's lateral sewer, including the sewer ejector pump system if applicable, is owned and maintained by the property owner from the building to the connection with the sewer main.

### 1-03 Liability.

The District and its officers and employees shall not be liable for injury or death to any person, or damage to any property, arising during or growing out of, the performance of any work described herein.

## 1-04 California Environmental Quality Act Requirements.

Any person requesting a sewer connection permit must also comply with all applicable environmental guidelines, including the District's Local Guidelines adopted pursuant to the Environmental Quality Act of 1970, and must make all deposits required and pay all fees established by the District to process applications to comply with said Act.

## 1-05 Prohibited Wastes.

Except as hereinafter provided, it is unlawful for any person to discharge, or cause to be discharged, any of the following described waters or wastes into any manhole or sanitary sewer connecting to the main sewer:

a) Drainage. Leaders from roofs and surface drains for rainwater. Surface or subsurface drains for rainwater, storm water, seepage, industrial cooling water, or unpolluted industrial process waters.

b) Swimming pool discharge water, except when the size of the pipe carrying the discharge water is less than two inches and under a head not to exceed twenty feet. If the water is discharged by pumping, the rate of flow cannot exceed fifty (50) gallons per minute. The swimming pool discharge connection must be equipped with an approved separator to prevent the backflow of sewage into the swimming pool or piping system.

c) Septic tank sludge.

d) Industrial waste or any solid, semisolid, or liquid substance resulting from any industrial manufacturing, commercial process, or from any garage, service station, or wash rack, without first having obtained a permit to discharge.

e) Liquid or vapor having a temperature higher than 150° F.

f) Water or waste which contains more than 100 parts per million, by weight, of fat, oil, or grease.

g) Food waste that has not been shredded so that all particles will be carried freely under the flow conditions normally prevailing in the main sewer, with no particle greater than one-half inch in any dimension.

h) Ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, paint, solvents, or any other solid or viscous substance capable of causing obstruction to the flow in sewers or causing other interference with the proper operation of the sewage works.

i) Waters or wastes having a pH lower than 5.5 or higher than 9.0 or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the sewage works.

j) Waters or wastes containing toxic or poisonous substance(s) in sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, or create any hazard in the receiving waters of the sewage treatment plant.

k) Waters or wastes containing suspended solids of such character or quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant.

l) Noxious or malodorous gas or substance capable of creating a public nuisance.

## Section 2. Permits and Inspections

### 2-01 Permits & Regulations.

Following is a summary of the permits and regulations that are generally applicable to the installation of lateral sewers. This list is not intended to be all inclusive.

Contractors performing work requiring a permit by the District shall be licensed by the State of California. Work on public property, streets, roads and other rights-of-way shall be performed only by duly licensed Contractors.

1. All sewer work requiring shoring shall be performed by a licensed contractor holding a Class "A" or Class "C-34".
2. All work on private sewer laterals shall be performed by a licensed contractor holding a Class "A", Class "C-34", "C-36" or "C-42".
3. All trench work and pavement repair within any public right-of-way shall be performed by a Class "A","C-12" or "C-34" licensed contractor.
4. All CCTV work and inspection report shall be performed by licensed plumber, contractor or technician with a current NASSCO Certification.

Property owners may perform private sewer work on their own property.

### 2-02 Building Permit.

For new buildings and remodels, a building permit issued by the building department of jurisdiction must be obtained prior to issuance of a sewer connection permit by the District.

### 2-03 Plans Required.

Plans approved by the building department of jurisdiction must be furnished to the District upon making application for a sewer connection permit for new structures. Said plans must show the location of the proposed structure, floor plans showing plumbing fixtures, including any floor drains, and the location of the lateral sewer. Plans should be in a PDF (electronic) format. The District may require a survey by a registered land surveyor or engineer if it is necessary to determine: a) the invert elevation of the lateral sewer and/or building floor; and/or b) that the proposed sewer installation is within the property line or easement.

### 2-04 Encroachment Permit (As Required).

When lateral sewer construction extends into a street right-of-way, an encroachment permit must be obtained from the agency having jurisdiction over said street, and all construction must comply with the State, County, and City/Town laws, ordinances, rules and regulations pertaining to the cutting of pavement, opening, barricading, lighting, and protection of trenches, backfilling and paving. The lateral encroachment permit and/or other permits required must be obtained prior to issuance of a sewer connection permit by the District.

### 2-05 Sewer Connection Permit.

A permit from the District is required for any alteration, repair, replacement, new construction, connections, or abandonment/disconnect of lateral sewers that flow to the District's public sewer system. Note that plumbing changes within the building are regulated by the building department of the jurisdiction in which the building is located. Work performed without a valid District Permit will be subject to removal, reconstruction, and additional fees to the property owner. MORATORIUM NOTICE: BCPUD has maintained a moratorium on new sewer connections since 1985. A new connection permit will not be issued without prior approval of the BCPUD Board of Directors and the RWQCB. This permit section applies to repairs,

replacements, and rehabilitations of existing connections unless BCPUD has specifically granted an exception. To obtain a permit from the District:

m) Complete the District's application form for the proposed sewer lateral work.
n) Provide a set of approved plans showing work to be performed and plumbing fixtures including Building Permit Number.
o) Provide a copy of encroachment permits (if applicable).
p) Copies of recorded easements for laterals crossing private property of other property owners.
q) Determine appropriate fees to District per District's application forms and payment of applicable fees to District. Fees are established by BCPUD Board resolution. Contact the BCPUD office at (415) 868-1224 or visit 51 Overlook Drive, Bolinas, CA 94924 for the current fee schedule.

**2-06 Permits are Non-Transferable.**

Permits are issued for a specific property giving the property's street address and Assessor's Parcel Number. Permits may not be transferred to another property without written approval of the BCPUD Board of Directors.

**2-07 Time Limit on Permits.**

The sewer connection permit becomes void and the fees paid are forfeited under the following conditions: a) work is not commenced within one year from date of issue; or b) after partial completion, work is discontinued for a period of one year. Work may not begin/resume until a new, valid sewer connection permit is obtained. The new sewer connection permit will be issued upon application and payment of applicable fees.

**2-08 Compliance with Regulations.**

A copy of all required permits must be kept at the job site when the lateral sewer is being constructed.

**2-09 Mandatory Inspection and Testing Triggers (Ordinance 29 Cross-Reference).**

In addition to permits required for new construction, repair, or replacement under Sections 2-01 through 2-08 above, BCPUD Ordinance 29 (as amended by Ordinance 39) establishes the following circumstances under which a property owner may be required to inspect, test, and/or obtain a Sewer Lateral Certificate for their building sewer lateral:

- **Remodel Trigger (Ordinance 29, Section 36):** Whenever a property owner applies for a building or use permit for a remodel involving one or more plumbing fixtures, the lateral must be tested for infiltration and inflow and a Sewer Lateral Certificate obtained from the General Manager, unless the owner provides satisfactory proof that the lateral is less than 20 years old or has been repaired (but not fully replaced) within the last 10 years.
- **Manager's Order to Abate (Ordinance 29, Section 18g):** The General Manager may periodically require that any building sewer be tested. Any stoppage or break in watertight integrity is conclusively presumed to be a menace to life, health, safety, or property and must be abated. This authority covers situations including but not limited to: known or suspected lateral collapse or failure; a property identified as a likely contributor to infiltration and inflow through smoke testing, CCTV inspection, or wet weather flow monitoring; or a sewer spill or backup traced to or near the property.

- **Lateral Maintenance Responsibility (Ordinance 29, Section 34):** All property owners are responsible for maintenance and repair of the sewer lateral from the building to its connection with the District's main, at their own expense. Owners are liable for any damages resulting from failure to maintain their lateral in good order.

*Note: BCPUD may in the future amend Ordinance 29 to establish additional mandatory testing triggers, including but not limited to: point-of-sale inspection requirements; age-based inspection requirements for laterals over 40 years old; change-of-use triggers; and enhanced requirements for properties in proximity to Bolinas Lagoon. Refer to the current version of Ordinance 29 at bcpud.org for the most up-to-date requirements.*

## Section 3. Design Requirements

### 3-01 Separate Sewers.

Each structure requiring sewer service must be separately and independently connected to the main sewer. Upon application, the District may grant an exception in the following situations: a) multiple structures on one lot that cannot be subdivided; or b) condominiums having CC&R's providing for sewer maintenance by the homeowner's association. Exceptions are granted at the discretion of the District. Note: BCPUD's moratorium on new connections (in effect since 1985) applies to all new service connections. Any proposed new separate connection requires prior approval of the BCPUD Board of Directors and the RWQCB before a permit will be issued.

### 3-02 Pipe Size.

The minimum size of pipe for lateral sewers is: a) 4-inch inside diameter when serving less than one hundred-fifty (150) fixture units; and b) when serving over one hundred-fifty (150) fixture units, the pipe must conform to the size requirements for horizontal drainage based on fixture unit loading as set out in the California Plumbing Code. In no event will a lateral sewer be permitted to connect to a main sewer of lesser size on the downstream side.

### 3-03 Pipe Slope.

The minimum slope for a four-inch diameter lateral sewer is 2.0 foot per 100 feet (2.0%), unless specifically approved by the District. The minimum slope for a lateral sewer greater than four inches is 1.0 feet per 100 feet (1.0%).

### 3-04 Pipe Cover.

The minimum cover over the top of a lateral sewer must be: a) See Table 1 when pipe is outside of street right-of-way; and b) three feet when pipe is in a street right-of-way. When the foregoing pipe cover cannot be maintained, special pipe bedding, rip-rap, and/or concrete cap may be required by the District.

### 3-05 Pipe Materials.

See Table 1 - Private Lateral Sewer Pipe Materials List. Per the BCPUD SSMP, the district's collection system consists primarily of PVC and AC pipe (over 80% of which is slip-lined with PEP). New lateral installations shall use PVC per Table 1 below. AC pipe connections require approval by the District's General Manager or designated engineering consultant. Contact BCPUD at (415) 868-1224 to confirm any additional approved materials.

### 3-06 Cleanouts.

Cleanouts must be installed at the following locations: a) at the junction of the building plumbing and the lateral sewer (two feet or less, outside the building); b) at each bend or change in direction of the lateral sewer greater than 45° (1/8 bend); and c) where a run of pipe without bends exceeds ninety feet. All cleanouts, except the blow-off cleanout, must be brought to grade, properly capped, and completely watertight.

## 3-07 Backwater Prevention Device (Blow-off Cleanout).

All lateral sewers must be equipped with a backwater prevention device (blow-off or popper cleanout) as shown in Standard Drawings SD-5, SD-6 and SD-7. The elevation of the overflow rim of the backwater prevention device must be at least three inches above finish grade and at least six inches below the lowest plumbing fixture. In driveways or other paved areas, a pipe may be extended to the side from a wye to the backwater prevention device. If this installation is not feasible, a check valve must be installed in the lateral sewer ahead of the backwater prevention device in accordance with Standard Drawings SD-5, SD-6 and SD-7.

## 3-08 Interceptors Required & Maintenance.

Fats, Oils, and Grease, (FOG), and sand interceptors must be permitted, installed and maintained in conjunction with commercial sewers when necessary, in the opinion of the District, for the proper handling of liquid wastes containing grease in excessive amounts, flammable wastes, sand, or other substances capable of causing: a) a public nuisance, or b) damage or hazard to structures, equipment, and personnel of the sewage works. Interceptors must be: a) a type and capacity approved by the District and the wastewater treatment authority BCPUD (the Bolinas Community Public Utility District, operating the Bolinas Wastewater Treatment Plant at 101 Mesa Road), b) easily accessible for cleaning and inspection, and c) maintained in a continuously efficient operation at all times by the property owner at the property owner's expense.

## 3-09 Residential Sewage Pump Systems.

Where gravity service is not feasible, special application may be made to the District to allow installation of a residential sewage pump system in accordance with Standard Drawings SD-17 and 17.1. The District must approve the design of the system, and the District reserves the right to prohibit the installation of a residential sewage pump system. When installation of a residential sewage pump system is approved, the following general requirements must be met:

Installation of the sewer ejector pump, electrical work, holding tank and alarm must: a) meet the codes and regulations of the building department of jurisdiction issuing the building permit; and b) be inspected by an Inspector from said building department.

The discharge pipe from the building outlet to the sewage pump must be gravity flow and be equipped with a blow-off cleanout. The pressurized discharge line from the holding tank must be equipped with a check valve as close as possible to the holding tank, followed by a gate valve. The pressurized discharge line must be installed for the shortest distance feasible, at which point the pressurized discharge line must be converted to gravity flow using a wye, and a cleanout must be installed on the gravity flow portion of the wye. A pressurized discharge line will not be permitted to connect to the main sewer unless no other alternative is possible AND, in the opinion of the District, the main sewer can facilitate the pressurized connection.

All gravity and pressure discharge lines must be inspected by a District Representative before being covered.

## 3-10 Taps into Main Sewer.

Tap connections to the main sewer, when permitted, must be made in the presence of a District Representative. Subject to price approval of the District, connections must be made as follows:

r) 6-inch or less diameter main sewers - a wye (for HDPE pipe use a tee or wye which must be electrofusion-welded to HDPE main)

s) 8-inch or larger diameter main sewers - “Tap Tite” or equal pipe penetration type connection may be used only if pre-approved by the BCPUD General Manager in consultation with the District’s engineering consultant. [Note: BCPUD’s collection system mains range from 2 to 6 inches in diameter per the SSMP; this provision is therefore unlikely to apply but is retained for completeness.]

## 3-11 Pipebursting Rehabilitation of Laterals.

Pipebursting rehabilitation of lateral sewers with a minimum of three (3) feet of cover within street right of ways may be performed with District approval.

The District may reject the use of pipe bursting method for rehabilitation of lateral sewers based on the pre-installation CCTV or on site conditions.

The trenchless pipe replacement shall utilize High Density Polyethylene (HDPE) Pipe with a DR of 17 as the carrier pipe and a minimum size of 4" ID (4.5" OD).

Pipes shall be pipeburst using a method that will not cause undue vibration or impact in the ground around the pipe or damage adjacent utilities.

## 3-12 Cured-in-Place (CIPP) Rehabilitation of Laterals.

CIPP rehabilitation of lateral sewers shall not be allowed unless approved by District staff. In order to obtain approval, contractor must demonstrate that CIPP is the only feasible alternative. CIPP materials shall be approved by the District. The Contractor shall provide written certificates from the lining manufacturer. Prior to water being discharged into the sewer system, Contractor shall obtain a permit from the wastewater treatment authority BCPUD (phone: 415-868-1224).

## 3-13 Closed Circuit Television Inspections (CCTV).

All CCTV inspections of the inside of lateral pipes must be performed by a licensed contractor or certified technician. CCTV inspections submitted to the District for review shall include an audio/video recording and a written inspection report, submitted via USB drive or electronic file transfer (DVD format also acceptable). Documentation and video shall list all pipe events, defects, sags, lateral connection locations including quadrant position, infiltration points and other conditions, etc., observed on a footage basis. [Note: The NASSCO certification requirement for CCTV technicians is industry best practice but may limit the pool of available contractors in a small, rural community. BCPUD may consider accepting inspections by licensed plumbers or contractors who can demonstrate equivalent competency, subject to General Manager approval.] Video PROCEDURES shall comply with the following:

### Inspection Documentation

A private sewer lateral inspection report must be completed during the video inspection (documents enclosed). The property owner/contractor is required to submit this form when triggered by the sewer lateral ordinance and when submitting a sewer permit or requesting a private sewer lateral test.

### Verification of Property Address

Each video inspection must visually verify the property address of the lateral being inspected. The camera must be clear of any debris and must move slowly so as to clearly show physical landmarks.

**Audio**

Each video inspection must begin with an introduction by the person conducting the inspection and shall include the following:

5. Name of the individual conducting the inspection and the name of the company
6. Date of the inspection
7. Address being inspected, and
8. Access point and direction of travel (i.e. upstream or downstream)
9. If audio is unavailable, the operator may use the camera to record the top section of the private sewer lateral inspection report form.

**Visibility During TV Inspection**

Where practical, the TV inspection will be conducted in a manner that provides an unobstructed view of the entire pipe. The pipe should be free of debris and obstructions that impede visibility. If the pipe segment was not cleaned prior to TV inspection and significant debris/obstructions are encountered, the inspection should be rescheduled after the line is properly cleaned. Lines that were cleaned but still have debris/obstructions should be recleaned and televised.

**Incomplete Inspections/Reversals**

The inability to complete a video inspection from the building structure to the connection with BCPUD may result if there are obstructions or equipment limitations. It is very important to televise as much of the pipe segment as possible. All reasonable efforts must be made to fully inspect the segment, including removal of obstructions. Incomplete video inspections will be rejected if reasonable efforts to complete the inspection were not made (i.e. mechanical rodding or hydro jet cleaning).

**Movement of camera**

The camera will be moved through the pipe at a steady pace not to exceed 30 feet (9 meters) per minute. The camera must be stopped for every section joint, defect and features for a minimum of 3 seconds.

**Lighting**

Lighting during the inspection should be adequate to fully illuminate the entire pipe, but not over illuminate.

**Color**

Correct color is very important for proper identification and documentation of defects. The operator should follow manufacturer's recommendations to ensure the camera video display correctly reflects the true colors within the pipe and on the video display.

**Location & Depths**

The location and depth of the private sewer lateral must be identified at the following locations: Exit of the foundation of the building structure at the curb/public right-of-way, and at the connection with the District sewer main. Locations must be marked with paint by the contractor. Depths must be recorded on the private sewer lateral inspection report form.

**Sketch of the Private Sewer Lateral**

Sketch the approximate location of the private sewer lateral, main, building, street, property line, north point, cleanout(s) and backwater prevention device (BPD), pumps or ejectors, easements and any other pertinent information. BCPUD sewer system maps are available from the BCPUD office. Staff plans to complete updated GIS mapping of the collection system including all sewer

mains, manholes, and lateral points of connection. Contact BCPUD at (415) 868-1224 for current map availability.

## 3-14 Old Lateral Sewers.

A new structure or major remodel is not permitted to connect to an old lateral sewer unless the old lateral sewer is tested in the presence of a District Representative and found to meet all current District requirements, including installation of a backwater prevention device. All costs for examination and testing must be paid by the property owner. A sewer connection permit is required for the new structure and said permit will only be issued after: a) the building department of jurisdiction issues the building permit; and b) payment of applicable fees to the District. Note: A new structure constitutes a new sewer connection and is therefore subject to BCPUD's moratorium on new connections (Resolution 259, as amended). BCPUD Board of Directors approval and RWQCB concurrence are required before any new connection permit may be issued. See also Ordinance 29, Section 36 (remodel trigger) and Section 18g (Manager's authority to require testing).

## 3-15 Abandoned or Unused Lateral Sewers.

Any abandoned or unused lateral sewer connected to the main sewer, including lateral sewers from structures that are demolished, must be dug out to the main sewer, and the wye, tee, or connection area must be cut away and spliced with a solid piece of pipe of the same size and dimension, i.e. plugged off. Plugging off must be done in the presence of a District Representative. A 30" long 316 type "L" Stainless Steel full circle repair clamp may be used only with prior written approval by the BCPUD General Manager.

## 3-16 Existing Septic Tanks.

Septic tanks are under the jurisdiction of the Marin County Environmental Health Services (EHS) Department (3501 Civic Center Drive, Room 308, San Rafael, CA 94903; phone: 415-473-6919). The Health Department must be notified when a septic tank is abandoned or encountered during installation of a lateral sewer. The District's requirements are: a) all building plumbing outlets must connect to the lateral sewer and completely bypass the septic tank; and b) the septic tank must be abandoned following regulations of the California Plumbing Code and the County of Marin Environmental Health Department.

Septic tanks must be abandoned if the nearest building is less than 400 feet from the District main. Note: BCPUD to confirm this 400-foot distance requirement matches its current policy and any applicable Marin County EHS requirements.

## 3-17 Creek or Drainage Channel Crossing.

Any public or private sewer crossing over a creek or drainage channel must have prior approval by the BCPUD General Manager, in consultation with the District's engineering consultant as needed. Any crossing under the channel may require casing or concrete protection. The contractor is also responsible for verifying whether additional permits are required by other jurisdictions, including but not limited to the California Department of Fish and Wildlife and the US Army Corps of Engineers. [Note: Given BCPUD's proximity to Bolinas Lagoon and coastal drainages, any creek crossing will likely require coordination with RWQCB and potentially the Gulf of the Farallones National Marine Sanctuary.]

## Section 4. Construction

### 4-01 Location of Lateral Stub.

It is the responsibility of the property owner or his contractor to locate and uncover the lateral stub or wye installed to serve the property. When the lateral stub or wye cannot be located, even though the District's records indicate such a connection exists, the lateral sewer must be connected to the main sewer at a location designated by the District at the expense of the property owner as required in Section 3-10 of this Specification. The District does not guarantee the presence or location of lateral stubs or wyes.

### 4-02 Laying Pipe.

Lateral sewers must be laid by the shortest route from the building plumbing outlet to connect to the main sewer and must be perpendicular to the public right-of-way when possible. All pipes must be laid to line and grade. Each length of pipe must be laid on a firm bed as detailed in Standard Drawing SD-4 and must have full bearing for its entire length between bells. When applicable, an adequate bell hole must be dug at the end of each pipe length for making the joint. Blocking under the lateral sewer will not be permitted. The inside edge of any cut pipe must be beveled, and both bell and spigot must be marked for proper inspection and cleaned before the joint is made. Care must be taken to prevent foreign materials from entering the pipe. Water must be pumped from the trench while the pipes are laid and the joints made. Backfill must be carefully and uniformly placed around the pipe, with no rocks or clods touching the pipe. In rocky areas, imported bedding material may be required. Pipe must not be covered until inspected by a District Representative.

### 4-03 Inspections.

Prior to backfilling, lateral sewer installations and modifications must be inspected by a District Representative (the Chief Operator – Wastewater or designee). When required, tests for watertightness must be done in the presence of a District Representative. Connections to the main sewer must be done in the presence of a District Representative. Inspections must be scheduled with the District giving at least two working days advance notice; contact BCPUD at (415) 868-1224 to schedule. [Note: Given BCPUD’s small staff size, advance scheduling is important – contractors should coordinate closely with the Chief Operator.] Inspections are not made on Saturdays, Sundays, or holidays.

### 4-04 Trenches Lateral Sewers – Excavation and Backfilling.

Trenches for lateral sewers within public streets must be excavated and backfilled and the pavement restored in strict accordance with the laws, ordinances, and regulations of the State of California and the County of Marin (BCPUD is located in an unincorporated area of West Marin County). The County of Marin reserves the right to require compaction tests on trench backfill by a soils engineer. The cost of compaction tests must be paid by the contractor or property owner.

### 4-05 Clay Plugs.

Impervious clay trench plugs must be constructed in the pipe zone backfill at intervals of approximately fifty (50) feet, or as otherwise directed by a District. Impervious clay trench plugs must: a) consist of dense clay material free of rocks and vegetation, and b) be moisture-conditioned and mechanically compacted to the same density as the adjoining backfill material.

### 4-06 Trenches in Slopes.

Trenches in ground sloping greater than fifty percent (50%) from the horizontal must be protected from erosion by placing rip-rap in cement mortar or concrete laid flush with the slope over the backfilled trench, or other protective measures must be taken as directed by a soils engineer and approved by the District. Drains which are two inches in diameter must be installed in the concrete covering at five-foot intervals along the trench line.

For trenches in slopes less than fifty percent (50%) the District may require the use of redwood trench dams or other types of erosion control.

## 4-07 Testing of Sewers Lateral.

A test witnessed by the District's authorized representative (Chief Operator – Wastewater or designee) is required to verify that all work on a Private Sewer Lateral passes a pressure test and complies with District standards. The water pressure test is the preferred method for BCPUD. Air pressure testing is permitted only if the contractor provides certified pressure testing equipment and a qualified operator; BCPUD does not supply air testing equipment. All leaks discovered must be repaired and the test repeated before backfill is approved. Testing is required for all new installations, repairs, and replacements, and may also be required under the trigger provisions of BCPUD Ordinance 29 (see Section 2-09 of these Specifications).

- **Water pressure test (preferred):** Install a riser at least eight (8) feet in height from the crown of the sewer at the upstream manhole or cleanout, or from the surface of groundwater, whichever is higher. For all lateral pipe diameters there shall be no water level drop over a one (1) hour test period. Any leaks discovered shall be repaired and the test repeated.
- **Air pressure test (permitted, contractor-supplied equipment only):** The contractor must supply certified air pressure testing equipment and a qualified operator. BCPUD does not provide air testing equipment. The air test pressure shall be between four (4) psi maximum and three and one-half (3.5) psi minimum at the beginning of the test. For all lateral pipe diameters there shall be no pressure drop over a 15-minute test period. Any leaks discovered shall be repaired and the test repeated.

## 4-08 Testing of Pressure Sewers.

Pressure sewers must be tested under a pressure of not less than 50 psi without leakage for a period of one hour. Air Testing is Not allowed.

## 4-09 Special Conditions.

When encountering special conditions which are not covered by the Specifications herein or the District Standard Specifications and/or Code, the BCPUD General Manager (or the Chief Operator – Wastewater for field conditions) will direct the contractor or property owner in the required procedures. For unusual or complex conditions, the General Manager may consult with the District's engineering consultant (currently West Yost, Inc., (925) 949-5800).

## TABLE 1 – PRIVATE LATERAL SEWER PIPE MATERIALS LIST

**(Approved materials consistent with BCPUD's PVC-based collection system. Contact BCPUD at (415) 868-1224 to confirm approval for any material not listed as "Yes" below.)**

| Pipe Specifications | Can Be Used for Gravity Sewer Laterals | Can Be Used for Ejector Pump Discharge Pipelines |
|---|---|---|
| Vitrified Clay Pipe, VCP | No | No |
| ABS Pipe (Glue Joints or Rubber Coupler Joints) | No | No |
| Cast Iron Soil Pipe (No Hub), CIP, 316 Stainless Steel Shear Band Couplers | Yes[2] | No |
| Ductile Iron Pipe w/Rubber Ring Joints, DIP | Yes[2] | No |
| PVC, SDR=35 | No | No |
| PVC ASTM D-2241, SDR=26 | Yes[1] | Yes[1] |
| PVC AWWA C-900, SDR=21 | Yes[2] | Yes[2] |
| PVC Sch 40 | Yes[1] | Yes[1] |
| PVC Sch 80 | Yes[2] | Yes[2] |
| Polyethylene, min SDR=17 | Yes[1] | Yes[1] |
| Cured In Place Pipe (CIPP) | No | No |

1 Requires minimum 3-foot cover with imported bedding and pipe zone backfill.
2 Requires minimum 18-inch cover on private property with imported bedding and pipe zone backfill or shaded with select native material containing rocks no larger than 1" sieve size.

## Section 5. Details

See BCPUD Standard Sewer Specifications – Standard Drawings

*NOTE: BCPUD has adopted the standard drawings from Sanitary District No. 2 (Town of Corte Madera, Marin County) by reference, as BCPUD does not maintain its own standard drawings at this time. The drawings listed below (SD 5 through SD 17.1) shall apply to all BCPUD lateral sewer work. BCPUD may develop district-specific drawings in the future, at which time this section should be updated accordingly.*

| | |
|---|---|
| Typical Private Sewer Lateral Details | SD 5 |
| Standard Cleanout and Backwater Prevention Device | SD 6 |
| Backwater Check Valve and Shutoff System | SD 7 |
| Sewer Lateral Protection Above Utility Crossing | SD 10.0 |
| Sewer Pipe Protection Below Utility Crossing | SD 11 |
| Sewer Lateral Reconstruction at Utility Crossing | SD 12 |
| Standard Concrete Pipe Protection | SD 13 |

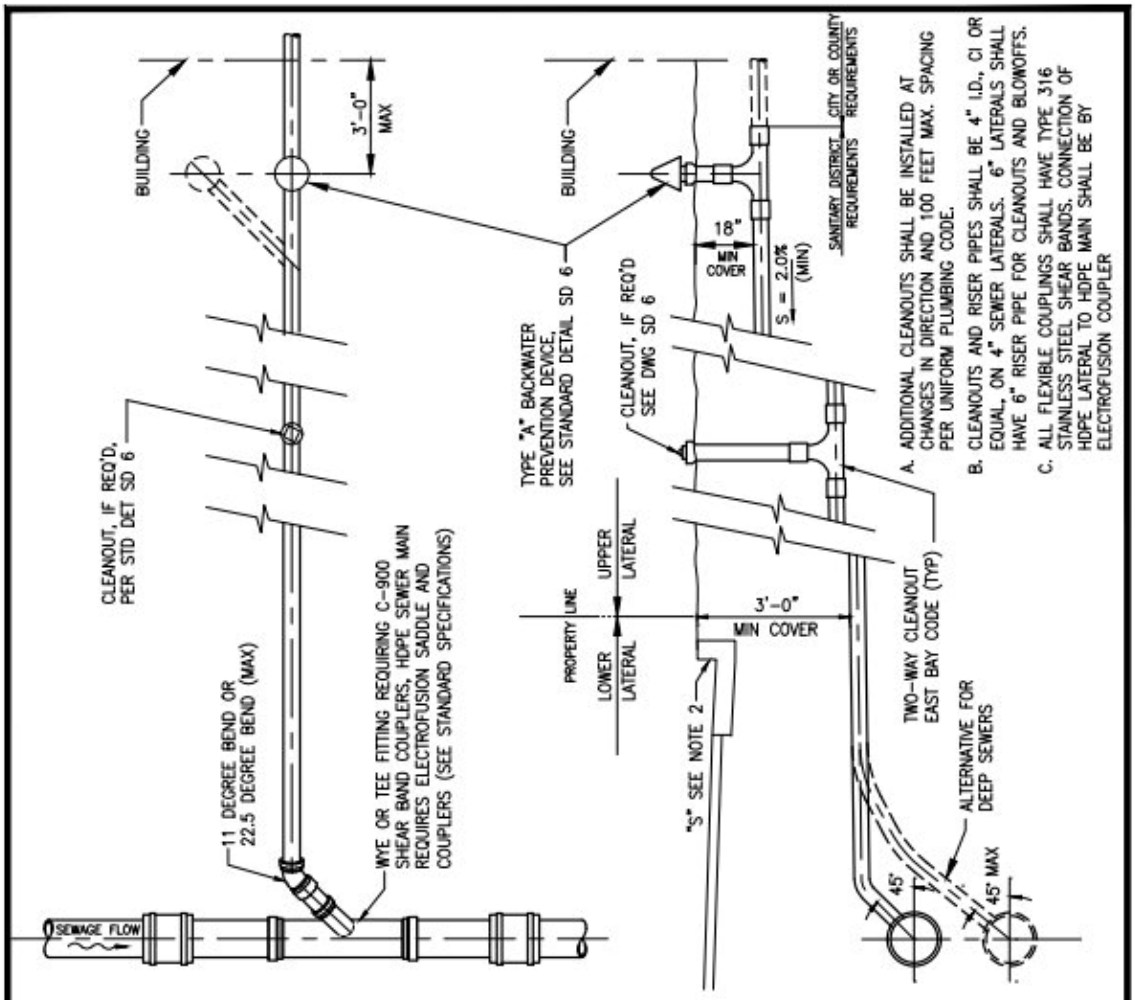
| | |
|---|---|
| Standard Redwood Check Board | SD 15 |
| Standard Rip-Rap Installation | SD 16 |
| Residential Sewer Pump System, Shallow Sewer Main Connection | SD 17.0 |
| Residential Sewer Pump System, Deep Sewer Main Connection | SD 17.1 |

🟡 *END OF DOCUMENT — Review all yellow-highlighted sections and update with BCPUD-specific information before finalizing.*

# STANDARD DRAWINGS

*The following standard drawings (SD 5 through SD 17.1) are adopted by BCPUD by reference from Sanitary District No. 2 of Marin County (2018). These drawings apply to all lateral sewer work within the BCPUD service area. Original title blocks are retained to identify the source drawings.*

**SD 5 — Typical Side Sewer Details**




NOTES:

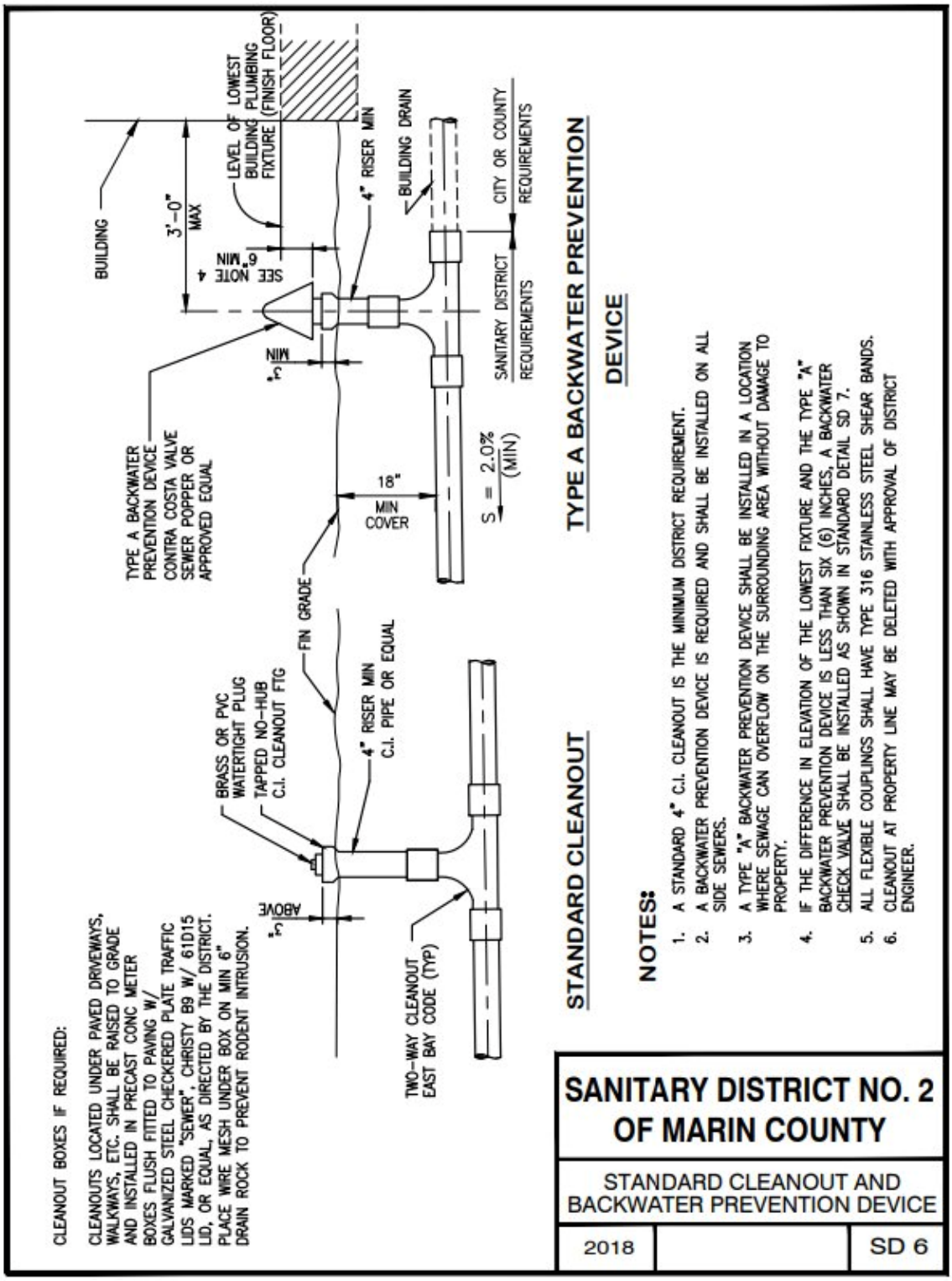
1. WHEN A LATERAL SEWER IS INSTALLED IN ADVANCE OF THE BUILDING SEWER, IT SHALL BE TERMINATED AT OR NEAR THE PROPERTY LINE. THE END OF THE LATERAL SHALL BE MARKED WITH A 4" x 4" REDWOOD STAKE, PAINTED GREEN, FROM THE TOP OF THE PIPE TO A MINIMUM OF 6" ABOVE THE FINISHED GROUND SURFACE.
2. WHERE CONCRETE CURBS AND GUTTERS EXIST OR ARE TO BE A PART OF AN IMPROVEMENT, EACH SIDE SEWER SHALL BE PERMANENTLY LOCATED BY IMPRINTING OR CHISELING AN "S" ( 3" size) IN THE FACE OF THE CURB VERTICALLY ABOVE THE SEWER PIPE.
3. BACKFILL SHALL NOT BE PLACED UNTIL PIPE INSTALLATION HAS BEEN INSPECTED AND APPROVED BY THE DISTRICT. PIPE BEDDING 3" AROUND PIPE ON PRIVATE PROPERTY MAY BE SAND WHERE REQUIRED BY COUNTY BUILDING PERMIT.
4. TYPE A BACKWATER PREVENTION DEVICE (CONTRA COSTA RELIEF VALVE, ALSO KNOWN AS MUSHROOM CAP) SHALL BE INSTALLED ON A 4" MINIMUM RISER PIPE NOT MORE THAN 2' FROM BUILDING WALL, PER STANDARD DETAIL SD6.
5. TYPE A BACKWATER PREVENTION DEVICE MAY BE INSTALLED TO LEFT OR RIGHT SIDE OF LATERAL IN GARAGE OR STEP AREAS.
6. LATERAL TRENCHES IN AREA OF PUBLIC STREET CURB, GUTTER AND SIDEWALK SHALL BE COMPACTED THE SAME AS TYPICAL TRENCH DETAIL SD 4. AREAS AROUND NEW CONCRETE CLEAN-OUT BOXES SHALL BE SOILS TESTED TO 90% COMPACTED. CONTRACTOR IS TO USE WHATEVER MEANS NECESSARY TO ACHIEVE 90% COMPACTION.

**SANITARY DISTRICT NO. 2 OF MARIN COUNTY**

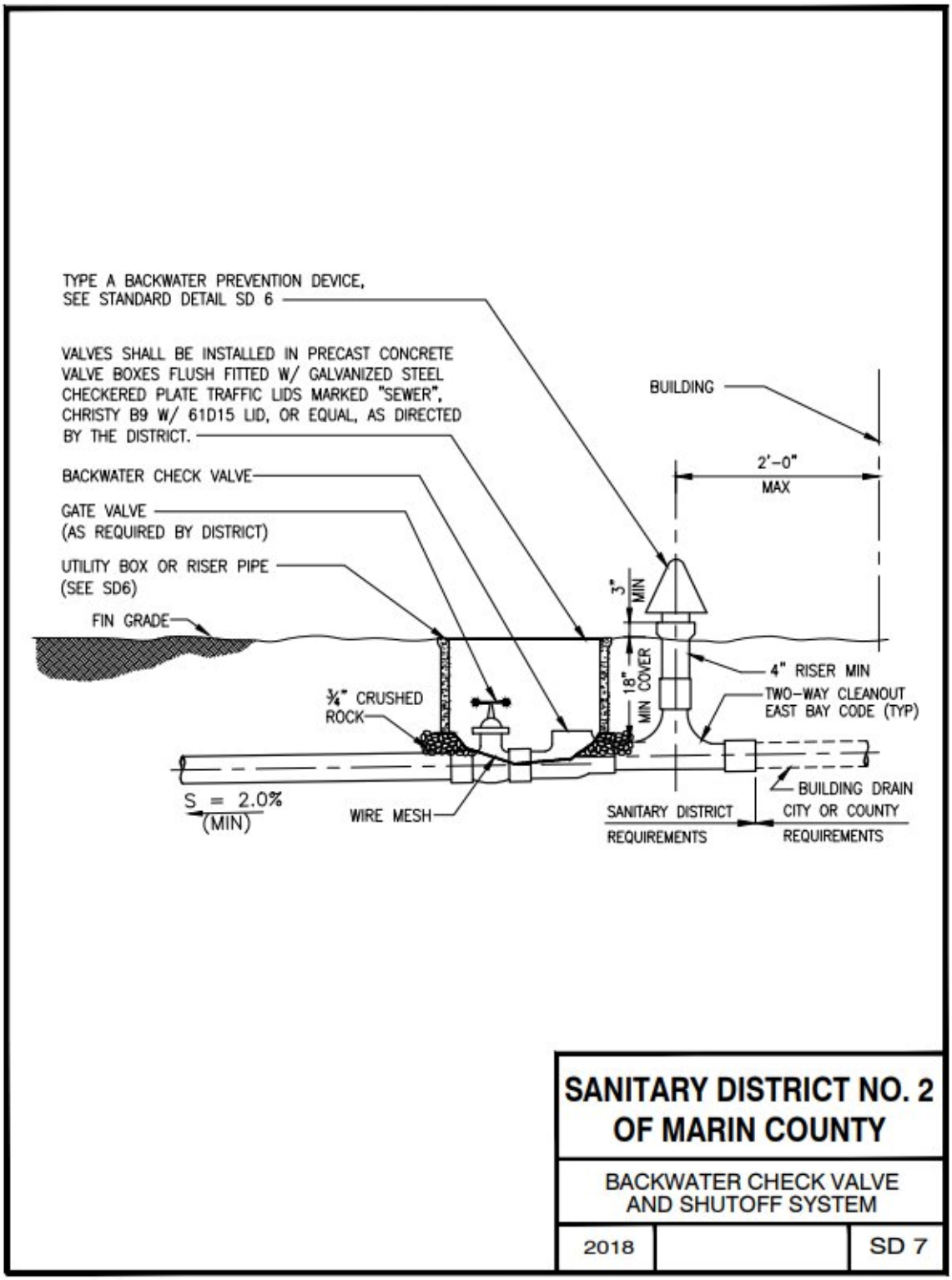
TYPICAL SIDE SEWER DETAILS

| 2018 | | SD 5 |
|---|---|---|

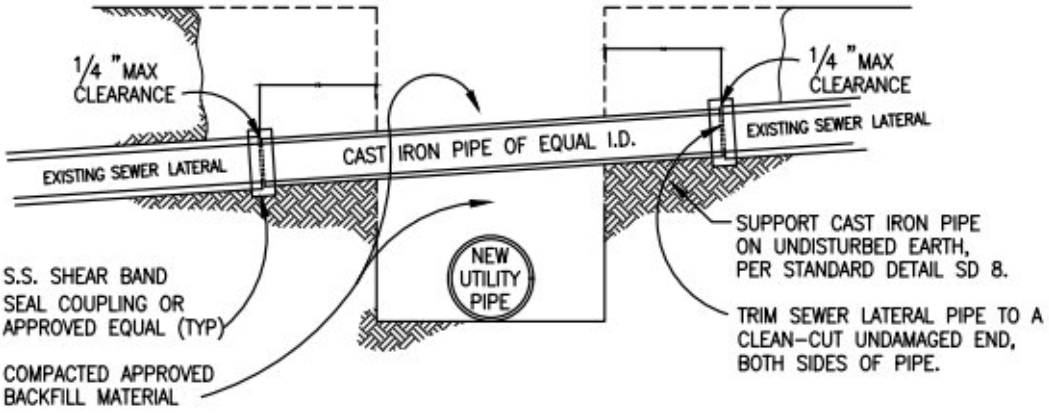
**SD 6 — Standard Cleanout and Backwater Prevention Device**



**SD 7 — Backwater Check Valve and Shutoff System**



**SD 10.0 — Sewer Lateral Protection Above Utility Crossing**

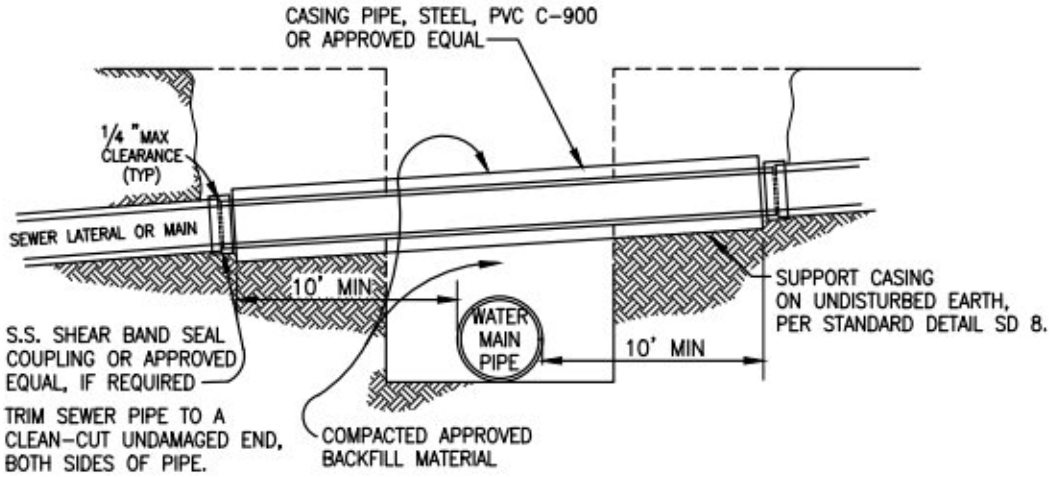



NOTES:

1. SEWER PROTECTION, AS DETAILED HEREON, SHALL BE PROVIDED WHEN A NEW UTILITY PIPE, 12" OR LARGER, IS INSTALLED BELOW AN EXISTING SEWER LATERAL.
2. BACKFILL SHALL NOT BE PLACED UNTIL PIPE INSTALLATION HAS BEEN INSPECTED AND APPROVED BY DISTRICT.
3. WHEN THE OUTSIDE DIAMETER OF THE PIPES ARE WITHIN 1" OF THE OTHER THERE SHALL BE A 4" x 4" PAD OF 35-45 DUROMETER RUBBER PLACED SNUGLY BETWEEN PIPES.
4. IF UTILITY IS A WATER MAIN, SEE SD 10.1

| SANITARY DISTRICT NO. 2 OF MARIN COUNTY | | |
|---|---|---|
| SEWER LATERAL PROTECTION ABOVE UTILITY CROSSING | | |
| 2018 | | SD 10.0 |

**SD 10.1 — Sewer Pipe Casing Above Water Main Crossing**

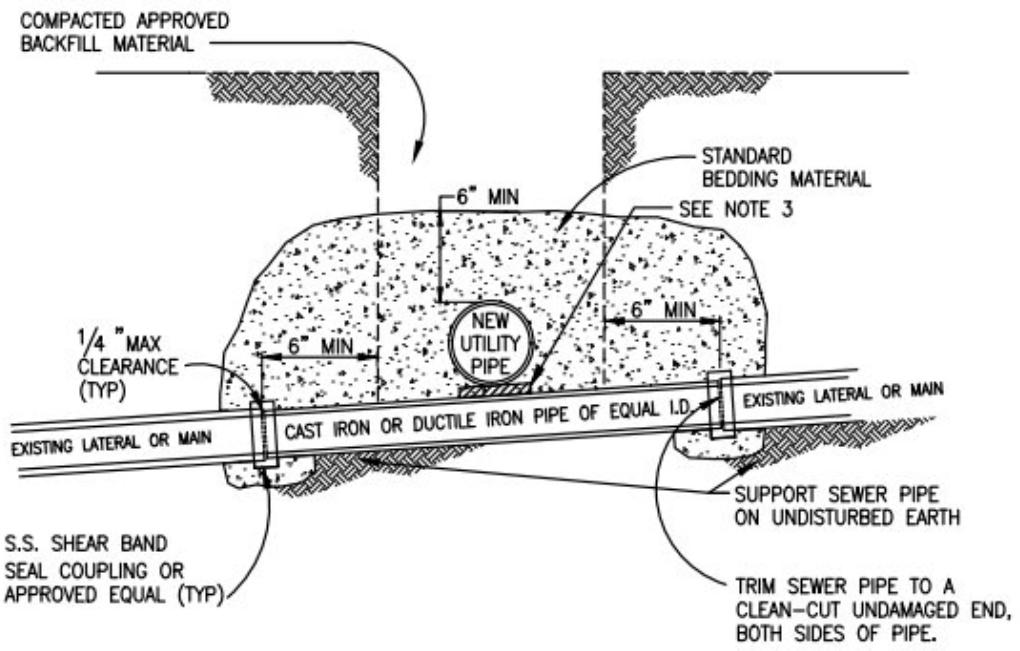



NOTES:

1. SEWER CASING PROTECTION, AS DETAILED HEREON, SHALL BE PROVIDED FOR ALL SEWER PIPES, MAIN OR LATERAL, INSTALLED OVER WATER MAINS.
2. BACKFILL SHALL NOT BE PLACED UNTIL PIPE INSTALLATION HAS BEEN INSPECTED AND APPROVED BY DISTRICT.
3. WHEN THE OUTSIDE DIAMETER OF THE WATER PIPE AND CASING ARE WITHIN 1" OF THE OTHER THERE SHALL BE A 4" x 4" PAD OF 35-45 DUROMETER RUBBER PLACED SNUGLY BETWEEN PIPES.
4. CASING LENGTH MUST EXTEND 10' BEYOND EITHER SIDE OF THE WATER MAIN.

| SANITARY DISTRICT NO. 2 OF MARIN COUNTY | | |
|---|---|---|
| SEWER PIPE CASING ABOVE WATER MAIN CROSSING | | |
| 2018 | | SD 10.1 |

**SD 11 — Sewer Pipe Protection Below Utility Crossing**

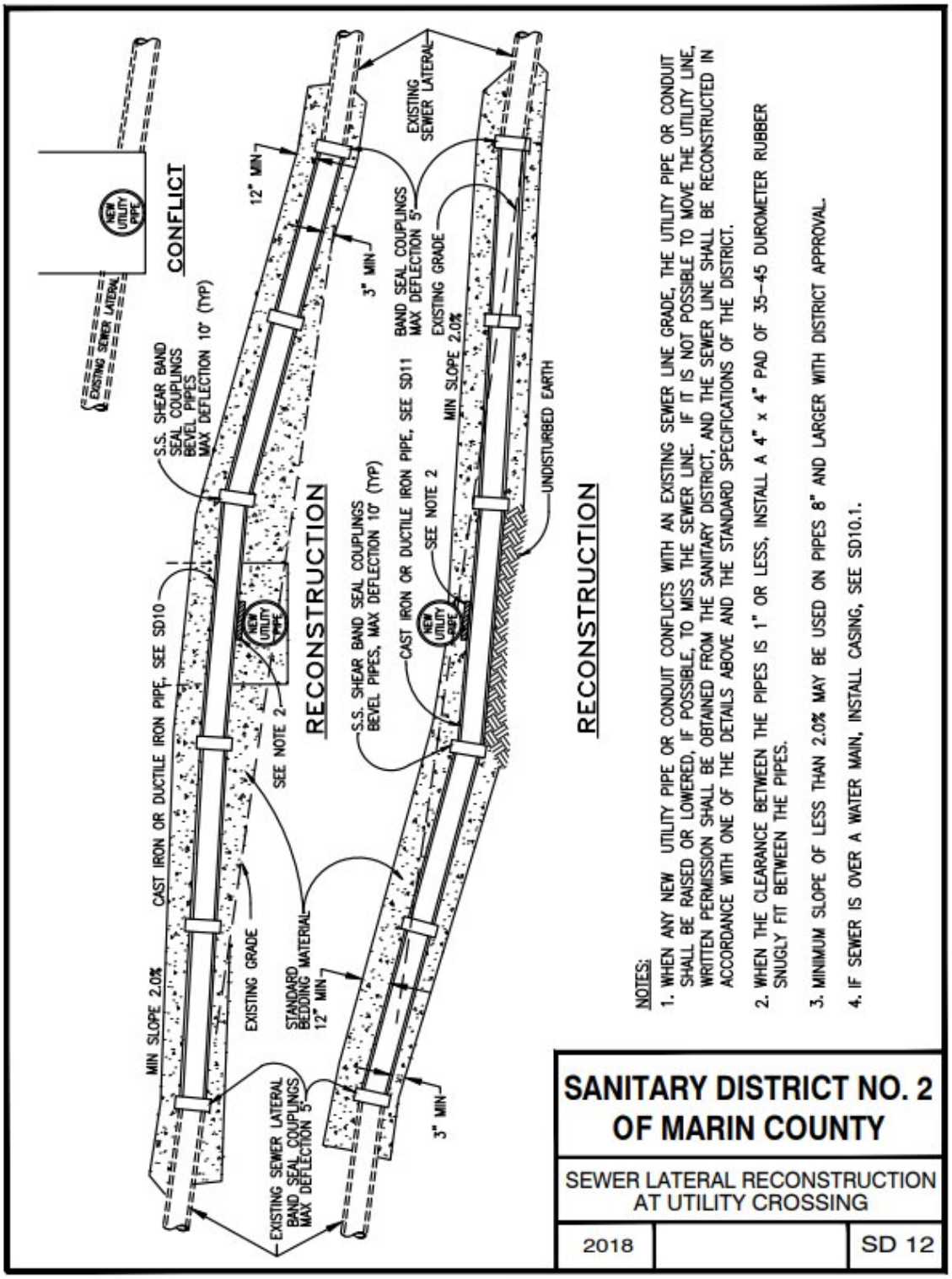



NOTES:

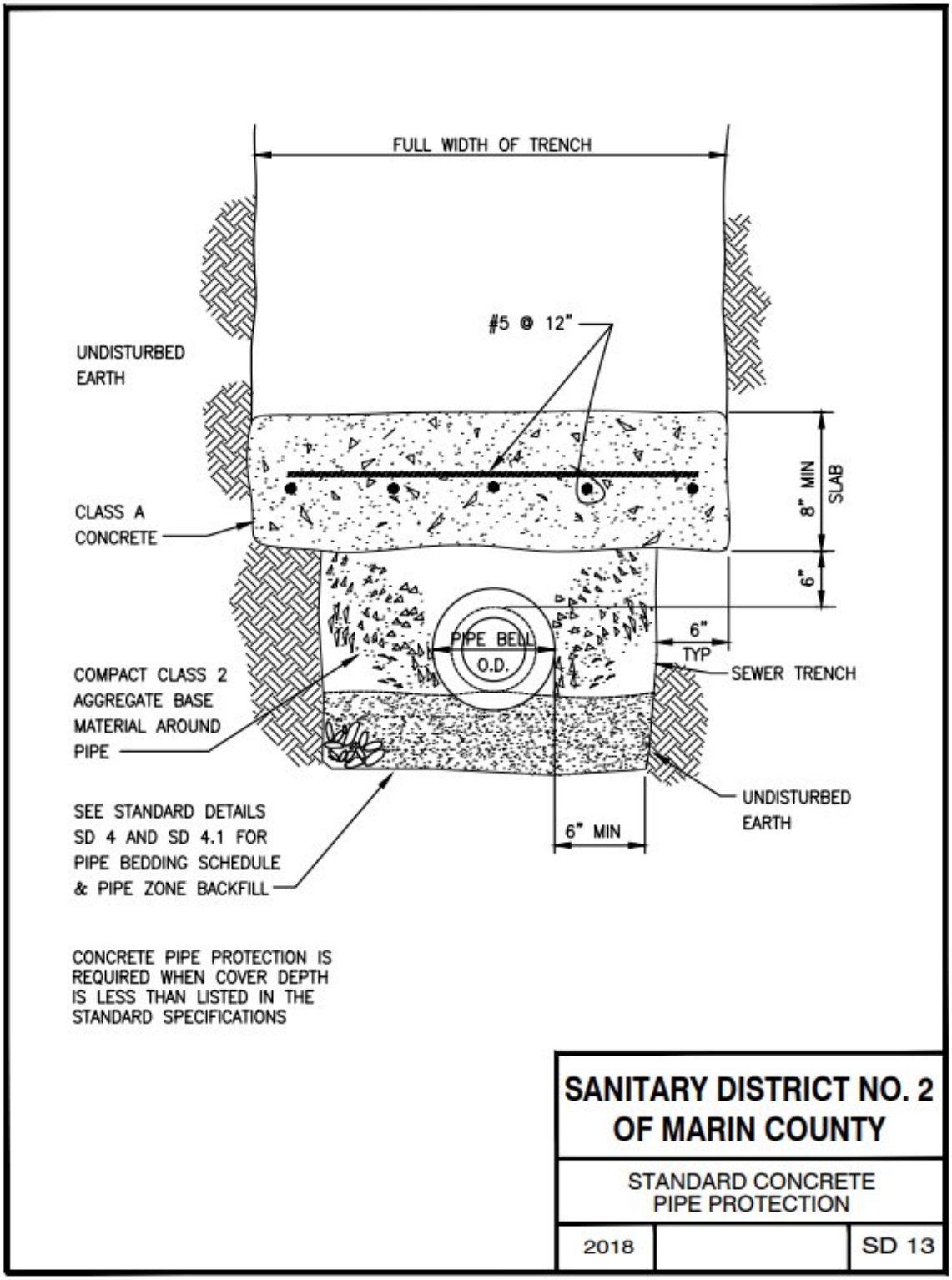
1. SEWER PROTECTION, AND REPLACEMENT OF PIPE SECTION IF DAMAGED, AS DETAILED HEREON, SHALL BE PROVIDED WHEN ANY NEW UTILITY PIPE IS INSTALLED ABOVE AN EXISTING SEWER PIPE AND THE CLEARANCE IS LESS THAN 12".
2. BACKFILL SHALL NOT BE PLACED UNTIL PIPE INSTALLATION HAS BEEN INSPECTED AND APPROVED BY THE DISTRICT.
3. WHEN THE CLEARANCE BETWEEN THE PIPES IS 1" OR LESS, INSTALL A 4" x 4" PAD OF 35-45 DUROMETER RUBBER SNUGLY FIT BETWEEN THE PIPES.

| SANITARY DISTRICT NO. 2 OF MARIN COUNTY | | |
|---|---|---|
| SEWER PIPE PROTECTION BELOW UTILITY CROSSING | | |
| 2018 | | SD 11 |

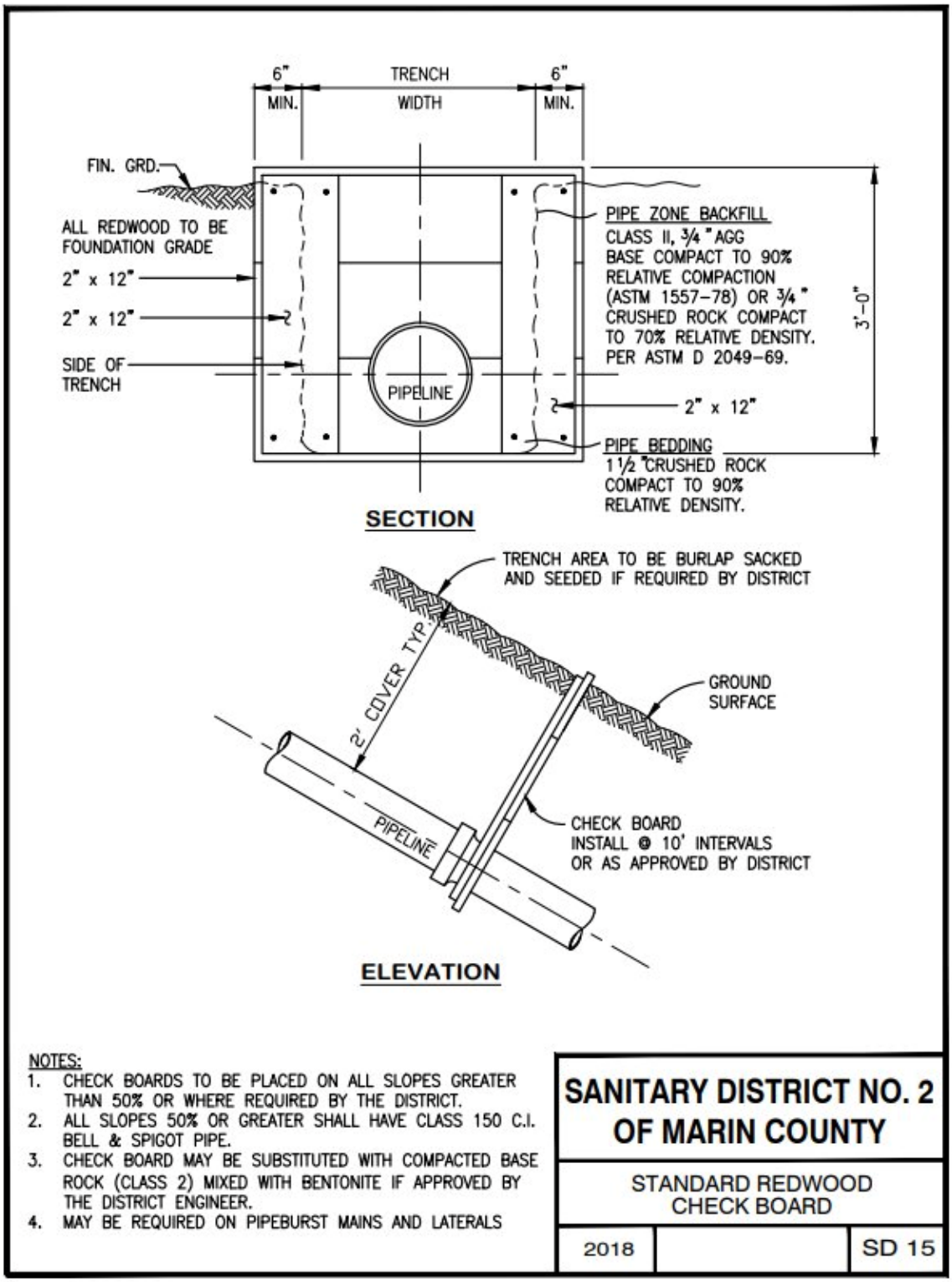
**SD 12 — Sewer Lateral Reconstruction at Utility Crossing**



**SD 13 — Standard Concrete Pipe Protection**



**SD 15 — Standard Redwood Check Board**




NOTES:

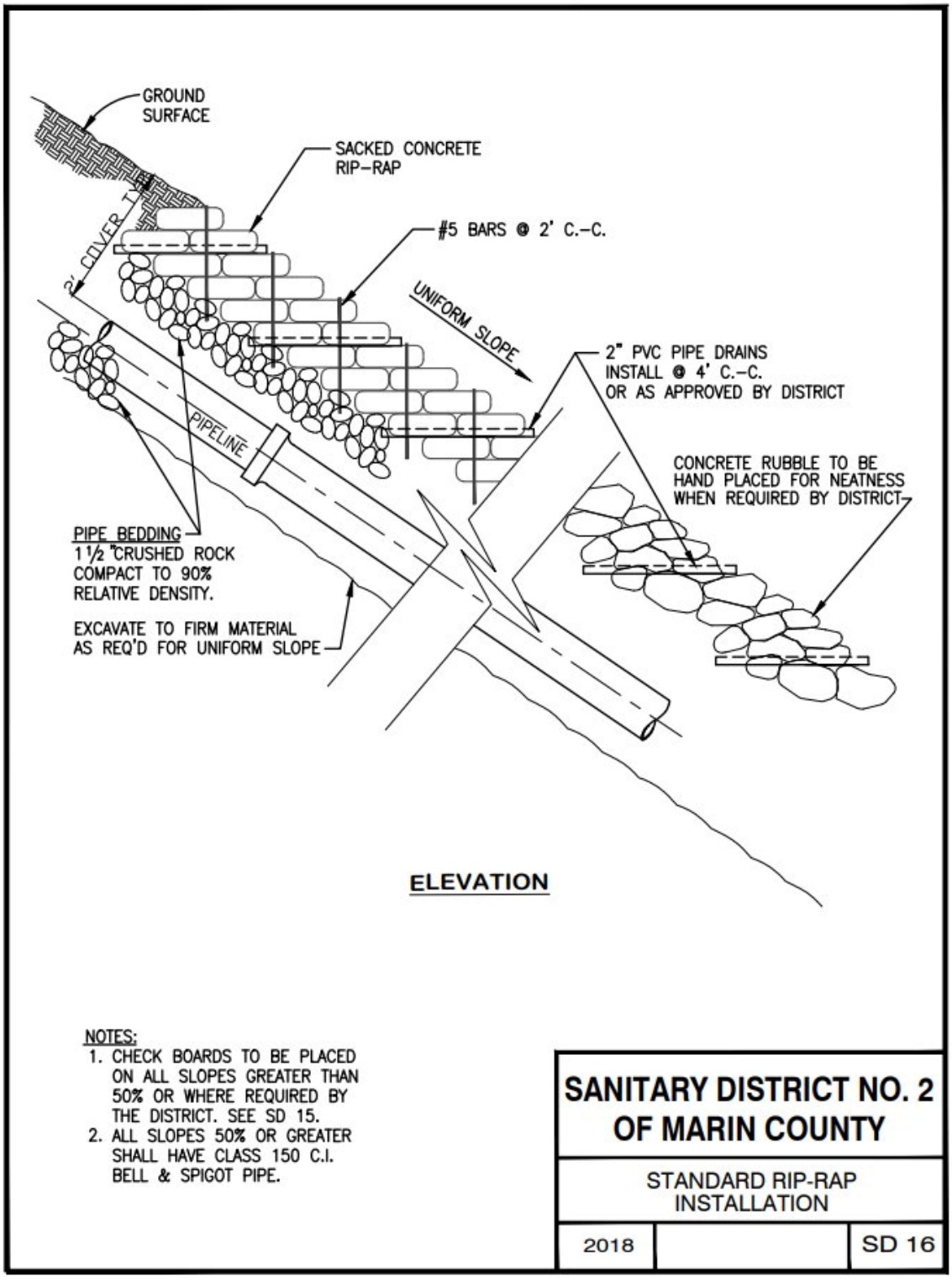
1. CHECK BOARDS TO BE PLACED ON ALL SLOPES GREATER THAN 50% OR WHERE REQUIRED BY THE DISTRICT.
2. ALL SLOPES 50% OR GREATER SHALL HAVE CLASS 150 C.I. BELL & SPIGOT PIPE.
3. CHECK BOARD MAY BE SUBSTITUTED WITH COMPACTED BASE ROCK (CLASS 2) MIXED WITH BENTONITE IF APPROVED BY THE DISTRICT ENGINEER.
4. MAY BE REQUIRED ON PIPEBURST MAINS AND LATERALS

**SANITARY DISTRICT NO. 2 OF MARIN COUNTY**

STANDARD REDWOOD CHECK BOARD

| 2018 | | SD 15 |
|---|---|---|

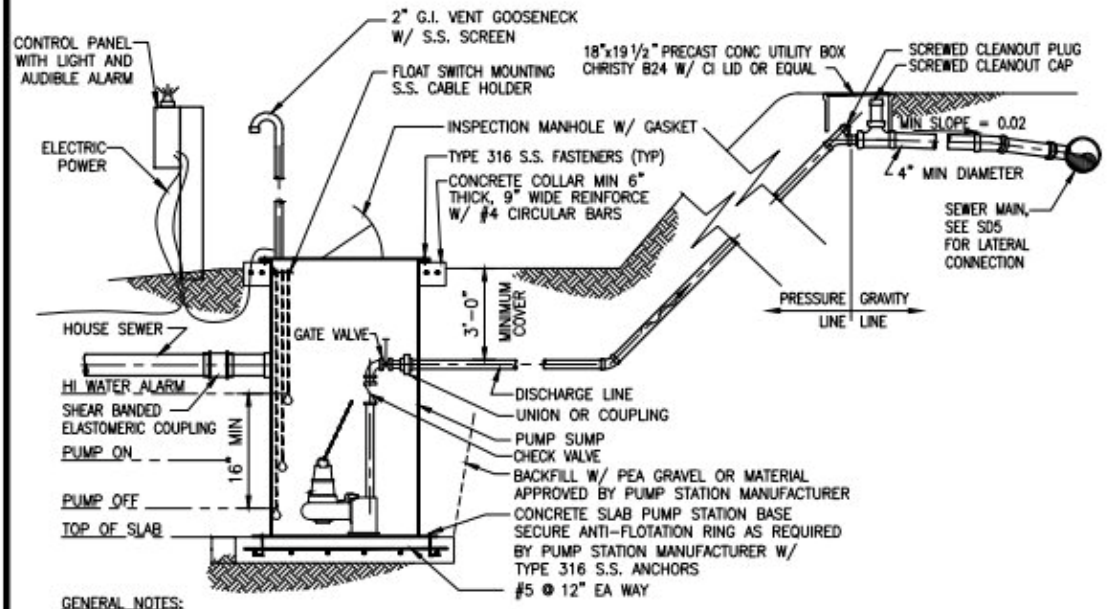
**SD 16 — Standard Rip-Rap Installation**




NOTES:
1. CHECK BOARDS TO BE PLACED ON ALL SLOPES GREATER THAN 50% OR WHERE REQUIRED BY THE DISTRICT. SEE SD 15.
2. ALL SLOPES 50% OR GREATER SHALL HAVE CLASS 150 C.I. BELL & SPIGOT PIPE.

| SANITARY DISTRICT NO. 2 OF MARIN COUNTY | | |
|---|---|---|
| STANDARD RIP-RAP INSTALLATION | | |
| 2018 | | SD 16 |

**SD 17.0 — Residential Sewerage Pumping System (Shallow Connection)**




GENERAL NOTES:

THE MINIMUM REQUIREMENTS FOR A RESIDENTIAL SEWAGE PUMPING SYSTEM CONNECTING A SINGLE RESIDENCE OR EQUIVALENT TO THE DISTRICT'S SYSTEM ARE SPECIFIED BELOW. THE DISTRICT ACCEPTS NO RESPONSIBILITY FOR THE DESIGN, OPERATION OR MAINTENANCE OF SUCH PRIVATELY OWNED AND OPERATED SYSTEMS. ALL WORK SHALL COMPLY WITH THE UNIFORM PLUMBING AND BUILDING CODES.

MANUFACTURERS:
ALL EQUIPMENT AND ACCESSORIES SHALL BE INDUSTRY STANDARD MANUFACTURED ITEMS AND THOSE COMING IN DIRECT CONTACT WITH SEWAGE SHALL BE SPECIFICALLY MANUFACTURED FOR SEWAGE USE.

PUMPS:
PUMPS SHALL BE SUBMERSIBLE SOLIDS HANDLING OR GRINDER TYPE SEWAGE PUMPS. PUMP MOTORS FOR RESIDENTIAL SERVICE SHALL BE EXPLOSION PROOF OR MEET CLASS 1, DIVISION 2 REQUIREMENTS PER NEC. ALL COMMERCIAL INSTALLATIONS SHALL CONSIST OF DUPLEX EXPLOSION PROOF PUMPS EACH RATED FOR TOTAL LOADING. ALL PUMP MOTORS SHALL BE UL LISTED.

PUMP SUMP:
THE PUMP SUMP SHALL BE CONSTRUCTED OUT OF NON-CORROSIVE MATERIAL OF SUITABLE STRENGTH TO WITHSTAND HYDRAULIC AND EARTH LOADS. THE PUMP SUMP SHALL BE A MINIMUM 36" DEEP WITH A MINIMUM CAPACITY OF 200 GALLONS AND SHALL BE PROVIDED WITH A FOUR (4) INCH MINIMUM INLET. IN ANY CASE THE INLET I.D. SHALL BE EQUAL TO OR GREATER THAN THE BUILDING PLUMBING STUB. THE TOP OF THE PUMP SUMP SHALL BE SECURELY ANCHORED TO THE PUMP SUMP BY BOLTS, AND ALL JOINTS BETWEEN THE COMPONENT PARTS SHALL BE SEALED WITH A WATERPROOF MASTIC.

ELECTRIC POWER SERVICE:
THE POWER REQUIREMENTS SHALL BE AS RECOMMENDED BY PACIFIC GAS AND ELECTRIC COMPANY.

ELECTRICAL WORK AND CONTROLS:
ALL ELECTRICAL WIRING AND INSTALLED CABLING, CONDUIT AND CONTROLS SHALL MEET NEC CLASS 1, DIVISION 2 REQUIREMENTS AND CONFORM TO THE REQUIREMENTS OF THE CITY OR COUNTY. THE ELECTRICAL CONTROLS SHALL PROVIDE ADEQUATE PROTECTION FOR MOTOR AND EQUIPMENT. THE ELECTRICAL CONTROL PANEL SHALL MEET NEC AND UL STANDARDS FOR SAFETY. OUTDOOR PANELS SHALL BE WEATHER TIGHT NEMA 4X. INDOOR PANELS SHALL BE NEMA 1.

FLOAT SWITCH ASSEMBLY AND HIGH-WATER ALARM:
A VISIBLE RED LIGHT AND AUDIBLE HIGH WATER ALARM SHALL BE PROVIDED. THE HIGH WATER ALARM SHALL BE ACTIVATED BY A DEDICATED FLOAT AND SHALL HAVE BATTERY BACKUP. ALL FLOAT SWITCHES SHALL HAVE GAS-TIGHT MOUNTINGS.

VENT FOR PUMP SUMP:
WHERE SYSTEM IS LOCATED WITHIN THE DWELLING, A VENT TWO (2) INCHES OR LARGER SHALL BE PROVIDED. WHERE SYSTEM IS LOCATED OUTSIDE THE DWELLING, A TWO (2) INCH OR LARGER VENT SHALL BE EXTENDED TO A POINT TEN (10) FEET ABOVE THE PUMP SUMP COVER.

DISCHARGE LINE:
THE PRESSURE PORTION OF THE DISCHARGE LINE SHALL INCLUDE A CHECK VALVE, GATE VALVE AND FLEXIBLE COUPLINGS AND SHALL BE A MINIMUM 1/2" DIAMETER LARGER THAN THE PUMP DISCHARGE. ALL PIPE, VALVES AND COUPLINGS SHALL CONFORM TO THE STANDARD SPECIFICATIONS. THE GRAVITY PORTION OF THE DISCHARGE LINE SHALL BE FOUR (4) INCH MINIMUM DIAMETER PIPE, SHALL MEET THE DISTRICT REQUIREMENT FOR SIDE SEWERS AND SHALL PROVIDE A MINIMUM TWELVE (12) INCH VERTICAL DROP AT THE JUNCTION WITH THE PRESSURE LINE.

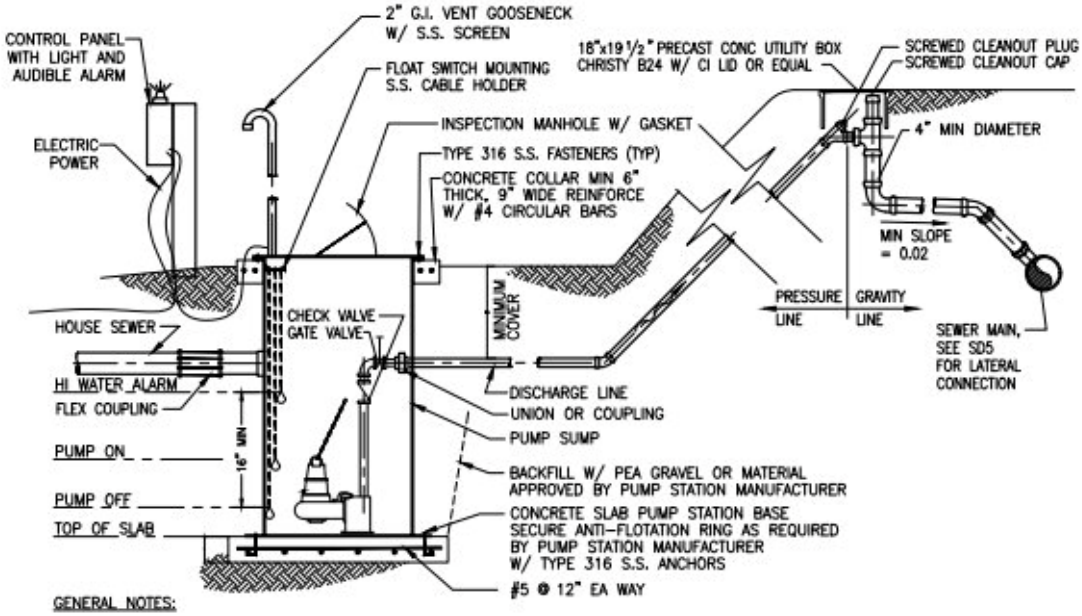
**SHALLOW SEWER MAIN CONNECTION**

**SANITARY DISTRICT NO. 2 OF MARIN COUNTY**

RESIDENTIAL SEWERAGE PUMPING SYSTEM

| 2018 | | SD 17.0 |
|---|---|---|

## SD 17.1 — Residential Sewerage Pumping System (Deep Connection)




GENERAL NOTES:

THE MINIMUM REQUIREMENTS FOR A RESIDENTIAL SEWAGE PUMPING SYSTEM CONNECTING A SINGLE RESIDENCE OR EQUIVALENT TO THE DISTRICT'S SYSTEM ARE SPECIFIED BELOW. THE DISTRICT ACCEPTS NO RESPONSIBILITY FOR THE DESIGN, OPERATION OR MAINTENANCE OF SUCH PRIVATELY OWNED AND OPERATED SYSTEMS. ALL WORK SHALL COMPLY WITH THE UNIFORM PLUMBING AND BUILDING CODES.

MANUFACTURERS:
ALL EQUIPMENT AND ACCESSORIES SHALL BE INDUSTRY STANDARD MANUFACTURED ITEMS AND THOSE COMING IN DIRECT CONTACT WITH SEWAGE SHALL BE SPECIFICALLY MANUFACTURED FOR SEWAGE USE.

PUMPS:
PUMPS SHALL BE SUBMERSIBLE SOLIDS HANDLING OR GRINDER TYPE SEWAGE PUMPS. ALL COMMERCIAL INSTALLATIONS SHALL CONSIST OF DUPLEX EXPLOSION PROOF PUMPS EACH RATED FOR TOTAL LOADING. ALL PUMP MOTORS SHALL BE UL LISTED.

PUMP SUMP:
THE PUMP SUMP SHALL BE CONSTRUCTED OUT OF NON-CORROSIVE MATERIAL OF SUITABLE STRENGTH TO WITHSTAND HYDRAULIC AND EARTH LOADS. THE PUMP SUMP SHALL BE A MINIMUM 36" DEEP WITH A MINIMUM CAPACITY OF 200 GALLONS AND SHALL BE PROVIDED WITH A FOUR (4) INCH MINIMUM INLET. IN ANY CASE THE INLET I.D. SHALL BE EQUAL TO OR GREATER THAN THE BUILDING PLUMBING STUB. THE TOP OF THE PUMP SUMP SHALL BE SECURELY ANCHORED TO THE PUMP SUMP BY BOLTS, AND ALL JOINTS BETWEEN THE COMPONENT PARTS SHALL BE SEALED WITH A WATERPROOF MASTIC.

ELECTRIC POWER SERVICE:
THE PUMP SYSTEM POWER REQUIREMENTS SHALL BE PROVIDED AS RECOMMENDED BY PUMP SYSTEM MANUFACTURER.

ELECTRICAL WORK AND CONTROLS:
ALL ELECTRICAL WIRING AND INSTALLED CABLING, CONDUIT AND CONTROLS SHALL MEET NEC AND UL STANDARDS FOR SAFETY REQUIREMENTS AND CONFORM TO THE REQUIREMENTS OF THE CITY OR COUNTY. THE ELECTRICAL CONTROLS SHALL PROVIDE ADEQUATE PROTECTION FOR MOTOR AND EQUIPMENT. THE ELECTRICAL CONTROL PANEL SHALL MEET NEC AND UL STANDARDS FOR SAFETY. OUTDOOR PANELS SHALL BE WEATHER TIGHT. INDOOR PANELS SHALL BE NEMA 1.

FLOAT SWITCH ASSEMBLY AND HIGH-WATER ALARM:
A VISIBLE RED LIGHT AND AUDIBLE HIGH WATER ALARM SHALL BE PROVIDED. THE HIGH WATER ALARM SHALL BE ACTIVATED BY A DEDICATED FLOAT AND SHALL HAVE BATTERY BACKUP.

VENT FOR PUMP SUMP:
WHERE SYSTEM IS LOCATED WITHIN THE DWELLING, A VENT TWO (2) INCHES OR LARGER SHALL BE PROVIDED. WHERE SYSTEM IS LOCATED OUTSIDE THE DWELLING, A TWO (2) INCH OR LARGER VENT SHALL BE EXTENDED TO A POINT TEN (10) FEET ABOVE THE PUMP SUMP COVER.

DISCHARGE LINE:
THE PRESSURE PORTION OF THE DISCHARGE LINE SHALL INCLUDE A CHECK VALVE, GATE VALVE AND FLEXIBLE COUPLINGS AND SHALL BE A MINIMUM 1/2" DIAMETER LARGER THAN THE PUMP DISCHARGE. ALL PIPE, VALVES AND COUPLINGS SHALL CONFORM TO THE STANDARD SPECIFICATIONS. THE GRAVITY PORTION OF THE DISCHARGE LINE SHALL BE FOUR (4) INCH MINIMUM DIAMETER PIPE, SHALL MEET THE DISTRICT REQUIREMENT FOR SIDE SEWERS AND SHALL PROVIDE A MINIMUM TWELVE (12) INCH VERTICAL DROP AT THE JUNCTION WITH THE PRESSURE LINE.

**DEEP SEWER MAIN CONNECTION**

| SANITARY DISTRICT NO. 2 OF MARIN COUNTY | | |
|---|---|---|
| RESIDENTIAL SEWERAGE PUMPING SYSTEM | | |
| 2018 | | SD 17.1 |