



# Montara Water and Sanitary District

## STANDARD SEWER SPECIFICATIONS

### ATTACHMENT A:

### SPECIFICATIONS FOR LATERAL SEWERS

*Adopted by the Board of Directors by Resolution No. \_\_\_\_\_*

*On December 7th, 2017*

# SPECIFICATIONS FOR LATERAL SEWERS

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# MONTARA WATER AND SANITARY DISTRICT

## SPECIFICATIONS FOR LATERAL SEWERS

All lateral sewers within the Montara Water and Sanitary District must conform to these specifications and each District's Standard Specifications and Sanitary Code, copies of which are available from the District offices. These definitions specifications and details supersede District's Standard Specifications and Sanitary Code for laterals only. The remainder of the codes and Specifications remain in effect.

Following is a summary of the specifications regarding lateral sewers.

*Lateral or Building Sewer.* 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.

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.

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. To obtain a permit from the District:

- a. Complete the District's application form for the proposed sewer lateral work.
- b. Provide a set of approved plans showing work to be performed and plumbing fixtures including Building Permit Number.
- c. Provide a copy of encroachment permits (if applicable).
- d. Copies of recorded easements for laterals crossing private property of other property owners
- e. Determine appropriate fees to District per District's application forms and payment of applicable fees to District.

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 District 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.

### **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.

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

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 (MWSD or Sewer Authority Mid-costside, SAM), 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 a 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:

- a) 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)

- b) 8-inch or larger diameter main sewers - "Tap Tite" or equal pipe penetration type connection may be used only if pre-approved by the District Engineer.

### 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 may be performed only upon prior approval by the District. 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 (MWSD or SAM).

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

All CCTV inspections of the inside of lateral pipes must be performed by a licensed plumber. CCTV inspections submitted to the District for review shall include a .pdf log on a DVD or USB memory stick and a written inspection report. Listing all pipe events, defects, sags, lateral connection locations including quadrant position, infiltration points and other conditions, etc., observed on a footage basis.

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.

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.

3-16 Existing Septic Tanks. Septic tanks are under the jurisdiction of the County of San Mateo Environmental Health Department. 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 San Mateo Environmental Health Department.

Septic tanks must be abandoned if the nearest building is less than 400 feet from the District main.

## **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 or Engineer (Representative). 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 three working days advance notice. 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, San Mateo County and/or agency having jurisdiction over said street. The District, City and/or County 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 Gravity Sewers. Unless otherwise directed by the District, lateral sewers must be tested by plugging and filling with either water or compressed air to four (4) psi, in accordance with the District Standard Sewer Specifications. For water tests, leakage must not exceed 20 gallons per day per inch of internal diameter per mile of sewer line being tested (0.07 gallons per hour per 100 feet of 4-inch diameter pipe). For air tests, the pressure must not drop more than one psi over a three-minute period. Tests must be performed in the presence of a District Representative.

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 fifteen minutes. 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, a District Representative and/or the District Engineer will direct the contractor or property owner in the required procedures.

References:

Table 1 – Private Lateral Sewer Pipe Materials List

## Section 5. Details

See District Standard Sewer Specifications – Standard Drawings

Typical Side Sewer 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

# MONTARA WATER AND SANITARY DISTRICT

**TABLE 1  
PRIVATE LATERAL SEWER PIPE MATERIALS LIST  
(Specific Use Subject to District Approval)**

Pipe Specifications	Can Be Used for Gravity Sewer Laterals	Can Be Used for Ejector Pump Discharge Pipelines
Vitrified Clay Pipe, VCP	<b>No</b>	<b>No</b>
ABS Pipe (Glue Joints or Rubber Coupler Joints)	<b>No<sup>3</sup></b>	<b>No<sup>3</sup></b>
Cast Iron Soil Pipe (No Hub), CIP, 316 Stainless Steel Shear Band Couplers	Yes <sup>2</sup>	<b>No</b>
Ductile Iron Pipe w/Rubber Ring Joints, DIP	Yes <sup>2</sup>	<b>No</b>
PVC, SDR=35	<b>No</b>	<b>No</b>
PVC ASTM D-2241, SDR=26	Yes <sup>1</sup>	Yes <sup>1</sup>
PVC AWWA C-900, SDR=21	Yes <sup>2</sup>	Yes <sup>2</sup>
PVC Sch 40	Yes <sup>1</sup>	Yes <sup>1</sup>
PVC Sch 80	Yes <sup>2</sup>	Yes <sup>2</sup>
Polyethylene, min SDR=17	Yes <sup>1</sup>	Yes <sup>1</sup>
Cured In Place Pipe (CIPP)	Yes	<b>No</b>

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.

3. ABS Pipe will not be accepted for direct burial for private laterals after December 31, 2017.