

# SAN RAFAEL SANITATION DISTRICT

# LAS GALLINAS VALLEY SANITARY DISTRICT

MARIN COUNTY, CALIFORNIA



## SPECIFICATIONS FOR LATERAL SEWERS

**2019**

Adopted by the SRSD Board on \_\_\_\_\_

Adopted by Las Gallinas Valley Sanitary District Board on 8/1/2019.

# SPECIFICATIONS FOR LATERAL SEWERS

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# SAN RAFAEL SANITATION DISTRICT LAS GALLINAS VALLEY SANITARY DISTRICT

## SPECIFICATIONS FOR LATERAL SEWERS

All lateral sewers within the San Rafael Sanitation District and Las Gallinas Valley Sanitary District (both herein referred to as "District") must conform to these specifications and each District's Standard Specifications and Drawings, copies of which are available from the District offices. These definitions, specifications, and details supersede District's Standard Specifications and Drawings, for laterals only. The remainder of the Standard Specifications and Drawings remain in effect.

Following is a summary of the specifications regarding lateral sewers.

*Lateral or Building Sewer.* The privately owned and maintained sewer, which connects the plumbing system of the building to the public sewer main. The lateral or building sewer begins at and includes the connection to the public sewer main and terminates at the point of connection to the building plumbing system, which is two (2) feet or less from the building foundation.

*Upper Lateral.* That portion of the lateral sewer lying within private property. (Typically, 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 public street right-of-way or sewer easement within the property, including the wye or tee fitting connection. (Typically, it is 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 (6) 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 private sewage pump system if applicable, is owned and maintained by the Property Owner from the building to the connection at 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 Lateral 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) The District will allow swimming pools, spas, or swimming pool/spa filter backwash to be drained into the sanitary sewer system provided that the Property Owner adheres to the following requirements:

Notification:

Notification must be provided to the District a minimum of 48 hours prior to draining swimming pools, spas, or swimming pool/spa filter backwash into the sanitary sewer system.

Air Gap:

The drained and/or pumped water must pass through an air gap tank prior to discharge into the sewer to prevent overflows.

Lateral Cleanout:

Discharge must be into a sanitary sewer cleanout located on the property's sewer lateral. If the property's upper lateral does not have an existing cleanout, then the installation of a new lateral cleanout may be required.

Max Flowrate:

The flowrate of the discharge into the sanitary sewer shall not exceed 50 gallons per minute at any time.

Weather:

Draining must occur during dry weather. The discharge of swimming pools or spas into the sanitary sewer system during rain events will not be allowed.

- b) Septic tank sludge.
- c) 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.
- d) Liquid or vapor having a temperature higher than 150° F.
- e) Water or waste which contains more than 100 parts per million, by weight, of fat, oil, or grease.
- f) 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.
- g) 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.
- h) 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.
- i) 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.
- j) 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.
- k) Noxious or malodorous gas or substance capable of creating a public nuisance.
- l) Trash container discharge, except where there is an enclosure. The enclosure shall be covered by a roof to prevent rainfall from entering the enclosure. Roof drainage shall flow away from trash enclosure. The enclosure shall be constructed with wall, berms and/or slopes that prevent runoff from entering into or flowing from the enclosure. District approval is required.

## 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" or "C-12" licensed contractor.
4. All CCTV work shall be performed by licensed plumber, contractor or technician with a current National Association of Sewer Service Companies (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 Lateral 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 Lateral Permit. 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, public sewer main, and sewer easements. Plans shall be stamped by a registered Civil Engineer in California. Plans should be in a PDF (electronic) format or 11"x17" hard copy. 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 elevation; and/or b) that the proposed sewer lateral installation is within the property line or easement.

2-04 Encroachment Permit (As Required). When lateral sewer construction extends into a street or public right-of-way, an encroachment permit must be obtained from the agency having jurisdiction over said street or public right-of-way, and all construction must comply with the State, County, and City/Town laws, ordinances, rules and regulations pertaining to the cutting of pavement, sidewalk and restoration, traffic control, opening, barricading, lighting, and protection of trenches, backfilling and paving. The encroachment permit and/or other permits required must be obtained prior to issuance of a Sewer Lateral Permit by the District.

2-05 Sewer Lateral 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. (For LGVSD, a separate application process for approval of additional capacity in addition to the sewer lateral permit is required for new buildings/structures/developments and additions or alterations that will cause the existing structures to attain a larger Plumbing Fixture Unit count. Connection fee will be assessed based on the additional capacity being requested. *Application for Allocation of Capacity* is available from the LGVSD website. This process is typically done prior to issuance of building permit.) 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(s) for the proposed 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. Payment of applicable fees.

2-06 Permits are Non-Transferable. Permits are issued for a specific property given the property's street address and Assessor's Parcel Number. Permits may not be transferred to another property without written approval of the District.

2-07 Time Limit on Permits. The Sewer Lateral Permit becomes void and the fees paid are forfeited under the following conditions: a) work is not commenced within one year from date of issuance; or b) after partial completion, work is discontinued for a period of one year. Work may not begin or resume until a new, valid Sewer Lateral Permit is obtained. The new Sewer Lateral 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 sewer maintenance provided by the homeowner's association. Exceptions are granted at the discretion of the District.



3-02 The inside diameter of lateral sewers shall meet the following requirements:

1. The pipe must conform to the size requirements for horizontal drainage based on fixture unit loading as set out in the California Plumbing Code. Minimum pipe inside diameter shall be as follows:

<b>Number of Fixture Units</b>	<b>Min Inside Diameter</b>
Less than 150	4 inch
Greater than or equal to 150	6 inch

- a. In no event will a lateral sewer be permitted to connect to a sewer of lesser inside diameter on the downstream side.
- b. When more than one building sewer is allowed to be connected to a single side sewer, the lateral sewer from the point of intersection of one or more building sewers to the main sewer shall be calculated and submitted to the District for the proper size, and the approval shall be at the District's discretion.

3-03 Pipe Slope. The minimum slope for a four-inch diameter lateral sewer is 1.5 foot per 100 feet (1.5%), 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%). The maximum slope of any portion of a lateral sewer shall not be greater than 150 feet per 100 feet (150%).

3-04 Pipe Cover. The minimum cover over the top of a lateral sewer must be: a) See Table 1 when pipe is in Non-Traffic Areas; and b) three (3) feet when pipe is in Traffic Areas. When the foregoing pipe cover cannot be maintained, special pipe bedding, and/or concrete cap may be required by the District. If pipebursting a lateral sewer that has less than three (3) feet of cover within the street right-of-way and pipebursting is approved by the District, the Contractor shall sawcut and remove existing pavement and install shallow pipe protection consisting of one-sack concrete slurry or 3" thick reinforced concrete cap for the full width of the pipe trench. Where depth of minimum cover is less than the minimum required, the District Inspector reserves the right to accept alternative methods on a case-by-case basis.

3-05 Pipe Materials. See *Table 1 - Private Lateral Sewer Pipe Materials List*.

3.06 Cleanouts.

A. The following are requirements for cleanouts on sewer laterals:

1. Cleanouts shall be installed at the following locations on sewer laterals:
  - a. Within two (2) feet of the building foundation.
  - b. At or near the property line or public right of way line if required by the District.
  - c. At intervals not to exceed ninety (90) feet of laid pipe length.
  - d. At any single bend greater than forty-five degrees (45°).

- e. At intervals along the lateral sewer system where the cumulative total of deflection from the point of connection to the main sewer or from another cleanout equals or exceeds ninety degrees (90°).
2. The cleanout(s) nearest the building foundation shall be provided with a Backwater Prevention Device (BPD).
3. Cleanouts shall be a two-way or a "Tee" wherever possible.

3-07 Backwater Prevention Device (Blow-off Cleanout). All lateral sewers must be equipped with a backwater prevention device as shown in Lateral Details LD-1 and LD-2. New BPD is required for any and all repairs or alterations to existing lateral sewers that do not have an existing and properly functioning backflow prevention device in place. A BPD is required at every location where sanitary sewer piping exits a building. The BPD shall be located within two (2) feet of the building foundation. The required 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. The Property Owner or Contractor is responsible to confirm that the BPD is at the proper elevation. If any subsequent modification of the property results in the BPD being at an improper elevation, the Property Owner or Contractor shall adjust the BPD to the proper elevation at their cost. In driveways or other paved areas, a pipe may be extended to the side from a wye to the backwater prevention device. If the required elevation of the BPD overflow rim is not feasible as determined by the District, a check valve must be installed in the lateral sewer ahead of the backwater prevention device in accordance with Lateral Details LD-1 and LD-2.

3-08 Interceptors Required & Maintenance. Grease, oil, and sand interceptors must be installed 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 (LGVSD or Central Marin Sanitation Agency), 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 Private Sewage Pump Systems. Where gravity service is not feasible, special application may be made to the District to allow installation of a private sewage pump system in accordance with Lateral Detail LD-6. The District must approve the design of the system, and the District reserves the right to prohibit the installation of a private sewage pump system. When installation of a private sewage pump system is approved, the following general requirements must be met:

- A. 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; b) be inspected by an inspector from said building department; and c) be inspected by the District Inspector. The District Inspector is responsible for the inspection of the gravity line from the building to the holding tank and the pressurized discharge line and gravity line from the holding tank to the main sewer.

- B. The discharge pipe from the building outlet to the holding tank 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.
- C. All gravity and pressure discharge lines must be inspected by a District Inspector before being covered.

3-10 Connections to Sewer Mains.

- A. Connections of lateral sewers to sewer mains shall be per *Table 1: Private Lateral Sewer Pipe Materials List*, as follows:

Sewer Main Pipe Material	Connection Type
VCP, PVC, DIP, CIP or ACP	New Wye Fitting
HDPE	Electrofusion Saddle
Existing Pipe Lined w/ CIPP	Tap Connection

1. New Wye Fitting: The Contractor shall cut and remove a portion of the existing main as required. Install a new wye fitting, spools of pipe, and adjustable repair couplings for connection to the existing main.
  - a. If the new wye fitting is within 12 inches of an existing joint on the main line, the installation and replacement of the main shall extend beyond the joint (i.e., the joint shall be cut and removed). The new pipe material shall match the existing main, unless otherwise noted.
2. Tap connections (in lieu of a new wye fitting) may be used for connections to existing sewer mains with an inside diameter of 10 inches or larger. Tap connections shall be per DETAIL “Tap Connections to Existing Sewer Mains”.
3. Electrofusion Saddle: Electrofusion saddles shall be per DETAIL “HDPE Couplings”.
4. Tap Connection: Remove host pipe and connect tap connections to existing CIPP liner. Tap connection shall be per DETAIL “Tap Connections to Existing Sewer Mains”.
5. The District Inspector reserves the right to accept existing connection on a case-by-case basis.

### 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 pipebursting method for rehabilitation of lateral sewers based on the pre-installation CCTV or on-site conditions. If lateral has sag(s) or bend(s), it will not be eligible for pipebursting.

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.

Any obstruction, blockage, or bend encountered, shall be dug up and removed so the pipebursting can be completed without changing pipe material. Whatever portion of the lateral cannot be pipeburst shall be replaced by direct burial.

Contractor shall provide air gaps between existing utilities, repair surface upheaval, and repair sags.

Contractor shall televise lateral after replacement and submit to the District.

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

CIPP rehabilitation of lateral sewers may be performed only upon prior approval by the District and if a special condition exists. CIPP materials shall be approved by the District. The Contractor shall provide written certificates from the lining manufacturer. Prior to CIPP curing water being discharged into the sewer system, Contractor shall obtain a discharge permit from the wastewater treatment authority (LGVSD or CMSA). Contractor shall televise lateral with District Inspector's presence and submit the recorded video to the District for its file.

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

All CCTV inspections of the inside of lateral pipes must be performed by a licensed plumber or PACP certified inspector. 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., listed on a footage basis. The CCTV report and log shall be in accordance with National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Standards.

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 Inspector 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 Lateral 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. When abandoning lateral sewers or there are unused lateral sewers connected to the main sewer, including lateral sewers from structures that are demolished, the connection to the main must be dug out, and the wye, tee, or connection area must be cut away and spliced with a solid spool of pipe of the same size and dimension, i.e. plugged off. Plugging off must be done in the presence of a District Inspector. The lateral sewer to be abandoned shall be either completely removed, or abandoned in place and completely filled with controlled low strength material (CLSM) or low density cellular concrete (LDCC).

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

Septic tanks must be abandoned if the exterior wall of the nearest building connected to the septic tank 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, 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 Bypass Pumping. When performing work on lateral sewers, the Contractor shall bypass wastewater around the work area or shall arrange with the Property Owner to temporarily shut down the lateral sewer. The Contractor shall ensure that no wastewater is discharged from the lateral sewer to the excavation.

4-03 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 Lateral Detail LD-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 Inspector.

4-04 Inspections. Prior to backfilling, lateral sewer installations and modifications must be inspected by a District Inspector. When required, tests for watertightness must be done in the presence of a District Inspector. Connections to the main sewer must be done in the presence of a District Inspector. It is the responsibility of the Contractor to arrange for any necessary District inspections. Inspections must be scheduled with the District giving three (3) working days advance notice and must be done during regular business hours. Inspections are not made on Saturdays, Sundays, or holidays. Work performed without inspection will be required to be exposed and tested in the presence of the District Inspector at the Property Owner or Contractor's expense. Contractor shall set-up and be ready for testing/inspection upon the District Inspector's arrival. If Contractor is not ready and will need to reschedule, Contractor is subject to Inspection and Re-inspection Fees.

4-05 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, County of Marin, City of San Rafael 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.

4-06 Clay Plugs. Impervious clay trench plugs must be constructed in the pipe zone backfill at intervals of approximately one hundred (100) feet, or as otherwise directed by a District Inspector. 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.

4-07 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.

4-08 Testing of Gravity Sewers. Lateral sewers must be tested by an Air test at a minimum of 4 psi for a minimum period of five (5) minutes. If the pressure remains constant during the test period, the line has passed. If the pressure drops during the test time, the line has failed the test.

- a. Hydrostatic testing of gravity pipelines may be performed in lieu of air testing if approved by the District. Fill segment with water to an elevation four (4) feet above the top of pipe at the upstream end of the test section, or four (4) feet above the existing groundwater elevation, whichever is greater. If the water level is maintained for a minimum of fifteen (15) minutes, the line has passed.

4-09 Testing of Pressure Sewers. Pressure sewers must be tested under a pressure of one hundred fifty percent (150%) of maximum design operating pressure measured at the lowest point of the pipeline section being tested, or 50 psi, whichever is greater. The leakage shall be zero for a minimum test period of fifteen minutes.

4-10 Special Conditions. When encountering special conditions which are not covered by the Specifications herein or the District's Standard Specifications and/or Code, a District Inspector and/or the District Engineer will direct the Contractor or Property Owner in the required procedures.

**SAN RAFAEL SANITATION DISTRICT  
LAS GALLINAS VALLEY SANITARY DISTRICT**

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

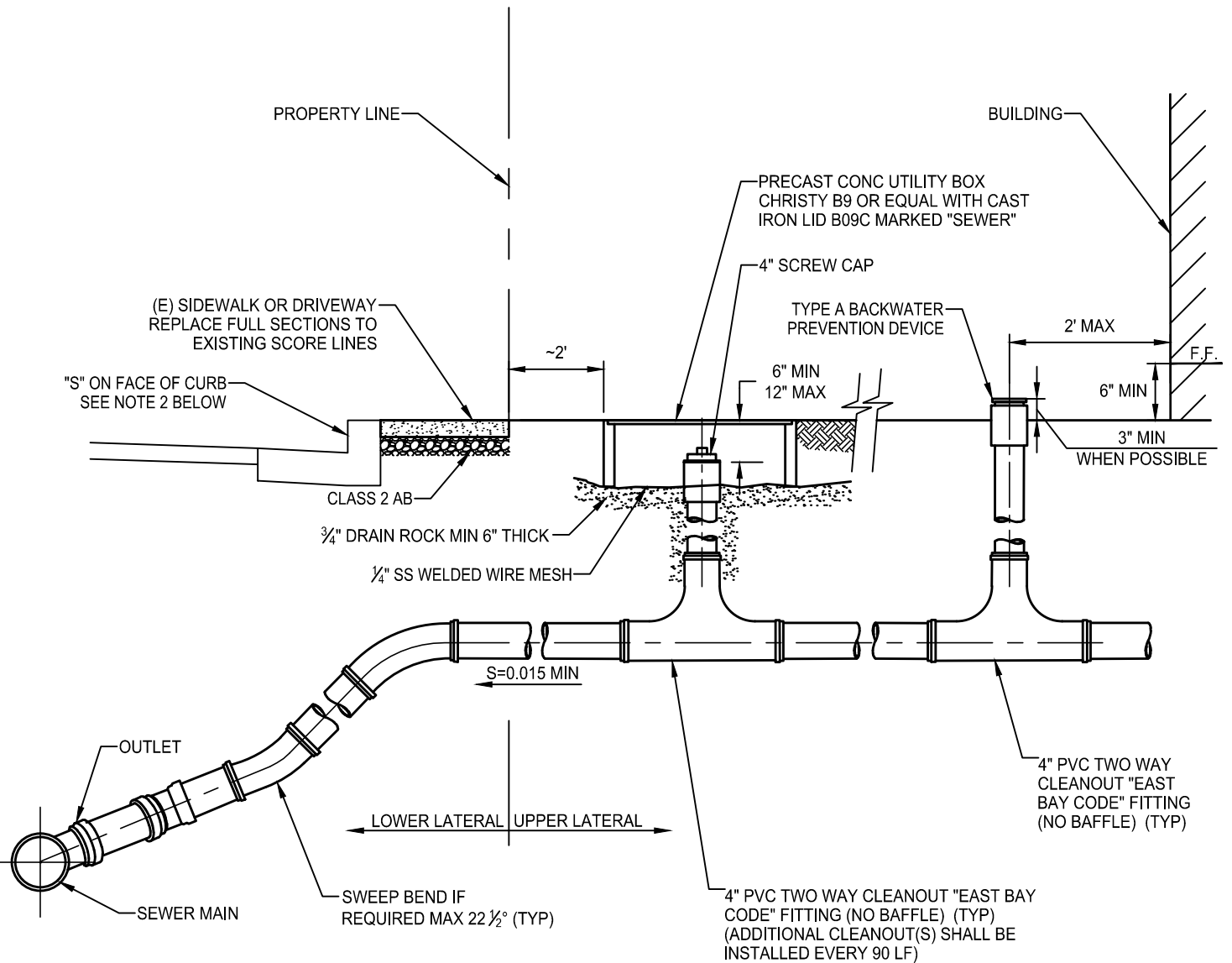
Pipe Specifications	Can Be Used for New Gravity Sewers	Can Be Used for Ejector Pump Discharge Pipelines <sup>4</sup>
Vitrified Clay Pipe (No Hub), VCP	No	No
Acrylonitrile Butadiene Styrene Pipe, ABS	No	No
Cast Iron Soil Pipe (No Hub), CIP	No	No
Ductile Iron Pipe w/ Shear Band Joints, DIP	Yes <sup>2</sup>	No
PVC ASTM D-2241, SDR=26 Pipe <sup>4</sup>	No	No
PVC AWWA C-900, min SDR=21 Pipe	Yes <sup>2</sup>	Yes <sup>2</sup>
PVC Sch 40 Pipe	No	No
PVC Sch 80 Pipe	Yes <sup>2</sup>	Yes <sup>2</sup>
Polyethylene (HDPE), min SDR = 17 Pipe <sup>3</sup>	Yes <sup>1</sup>	Yes <sup>1</sup>

- <sup>1</sup> Requires minimum 3-foot cover with imported bedding and pipe zone backfill for Non-Traffic Areas.
- <sup>2</sup> 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 for Non-Traffic Areas.
- <sup>3</sup> HDPE Pipe shall be fused. Internal beads from fusing action must be removed (de-beaded). Rubber shear bands are not allowed where HDPE pipes are of the same SDR designation, in which case butt-fused welding is possible. All fittings must have the bead removed.
- <sup>4</sup> Pressure pipe applications require minimum pressure rating of 50 psi, or as required by the California Plumbing Code, whichever is greater. Pressurized sewer pipes less than 10 feet from water mains requires 150 psi for pressure testing.



## **Section 5. Lateral Details & Accepted Materials**

- LD 1 – 4” Lateral Sewer Detail
- LD 2 – 6” or 8” Lateral Sewer Detail
- LD 3 – Lateral Connection to Sewer Main
- LD 4 – Typical Trench Section
- LD 5 – Steep Slope Lateral Installation
- LD 6 – Private Sewage Pumping System
- AM 1 – Utility Boxes
- AM 2 – Geotextile Fabric
- AM 3 – Adjustable Repair Couplings
- AM 4 – HDPE Couplings
- AM 5 – Backwater Prevention Devices
- AM 6 – Backwater Check Valves
- AM 7 – Tap Connections to Existing Sewer Mains
- AM 8 – Side Sewer Fittings
- AM 9 – Cured-in-Place Pipe (CIPP) Products
- AM 10 – Ductile Iron Pipe (DIP) Products
- AM 11 – Individual Lot Packaged Pump Systems



**NOTES:**

1. WHEN A LATERAL SEWER IS INSTALLED IN ADVANCE OF THE BUILDING, 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.
4. BACKWATER PREVENTION DEVICE (CONTRA COSTA VALVE OR DISTRICT APPROVED) SHALL BE INSTALLED ON A 4" MINIMUM RISER PIPE NOT MORE THAN 2' FROM BUILDING WALL, PER STANDARD DETAIL LD 2.
5. LATERAL TRENCHES IN AREA OF PUBLIC STREET CURB, GUTTER AND SIDEWALK SHALL BE COMPACTED THE SAME AS TYPICAL TRENCH DETAIL LD 4. AREAS AROUND NEW CONCRETE CLEAN-OUT BOXES SHALL BE SOILS TESTED TO VERIFY 95% COMPACTION.
6. SLOPES LESS THAN 0.015 MUST BE APPROVED BY DISTRICT ENGINEER.

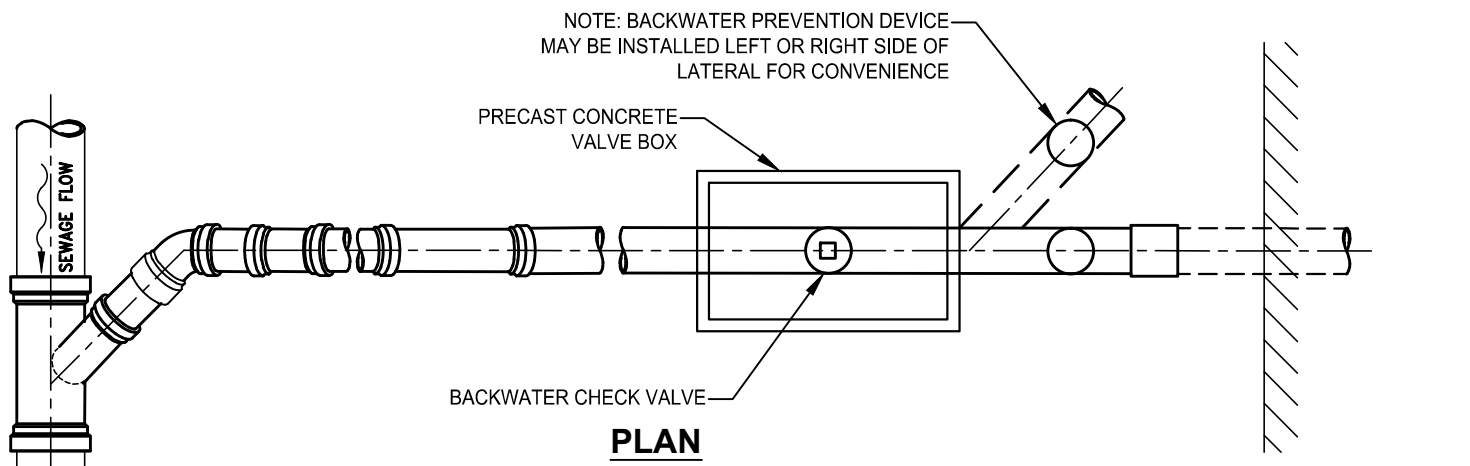
**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

**4" LATERAL SEWER DETAIL**

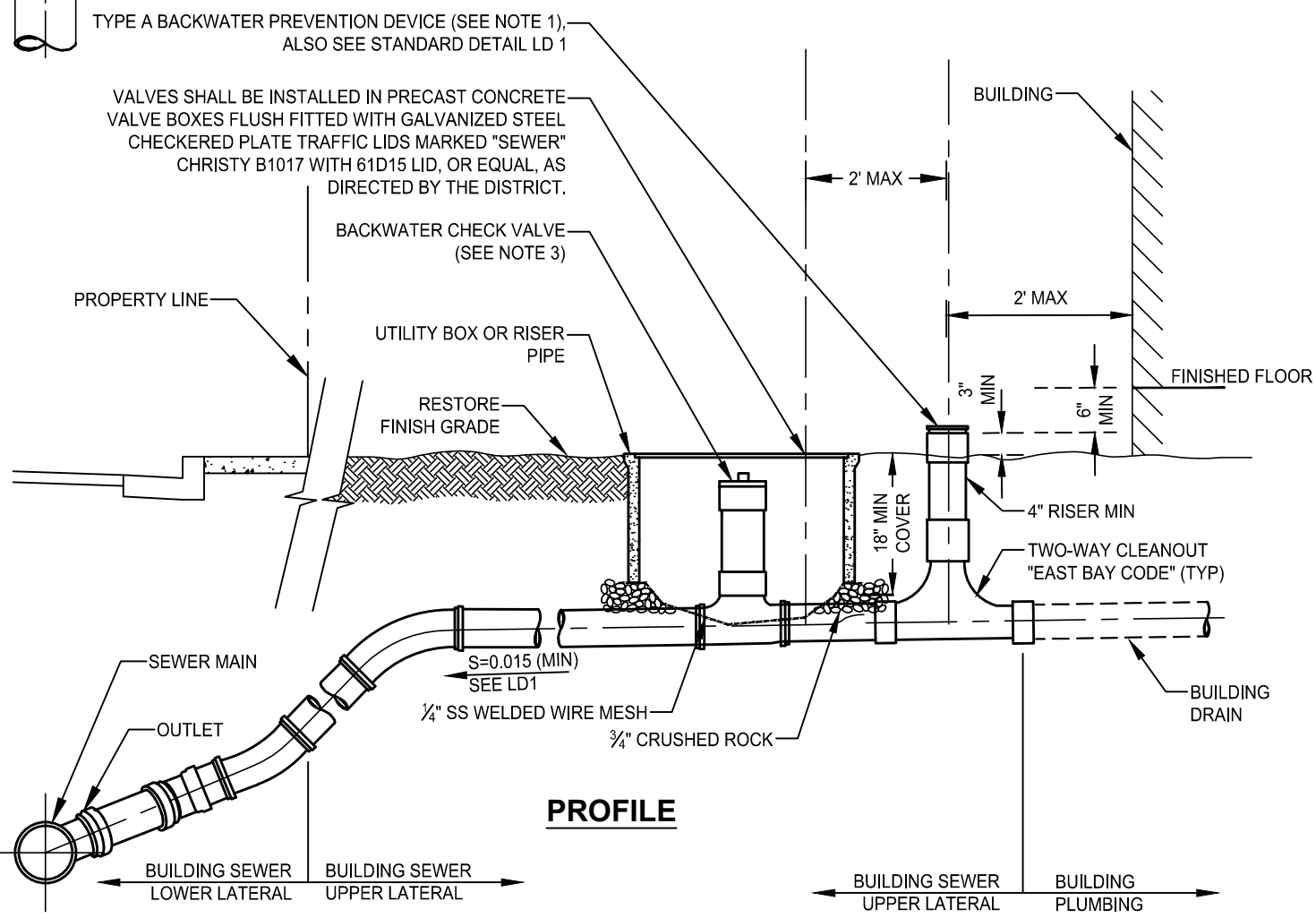
**2019**

PLOTTED ON 6/8/2021  
7:57 AM

**LD 1**



**PLAN**

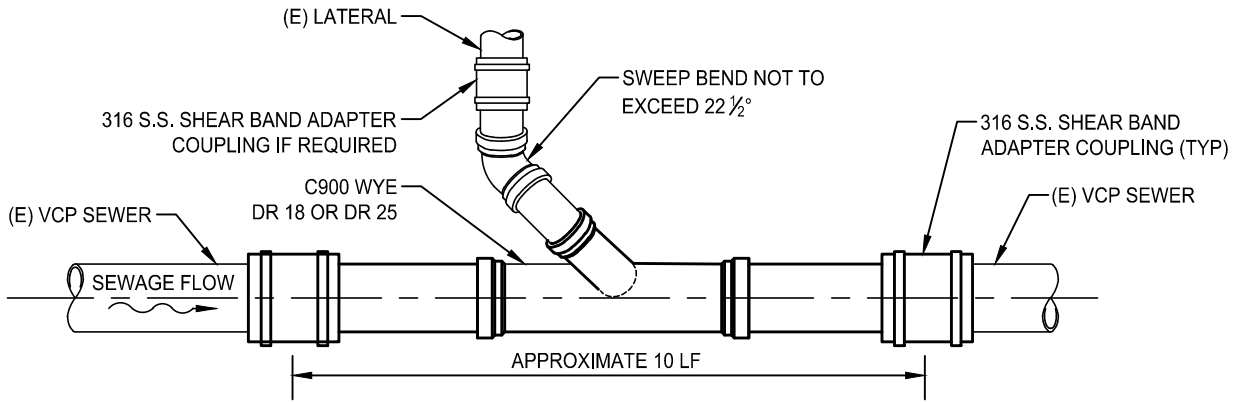


**PROFILE**

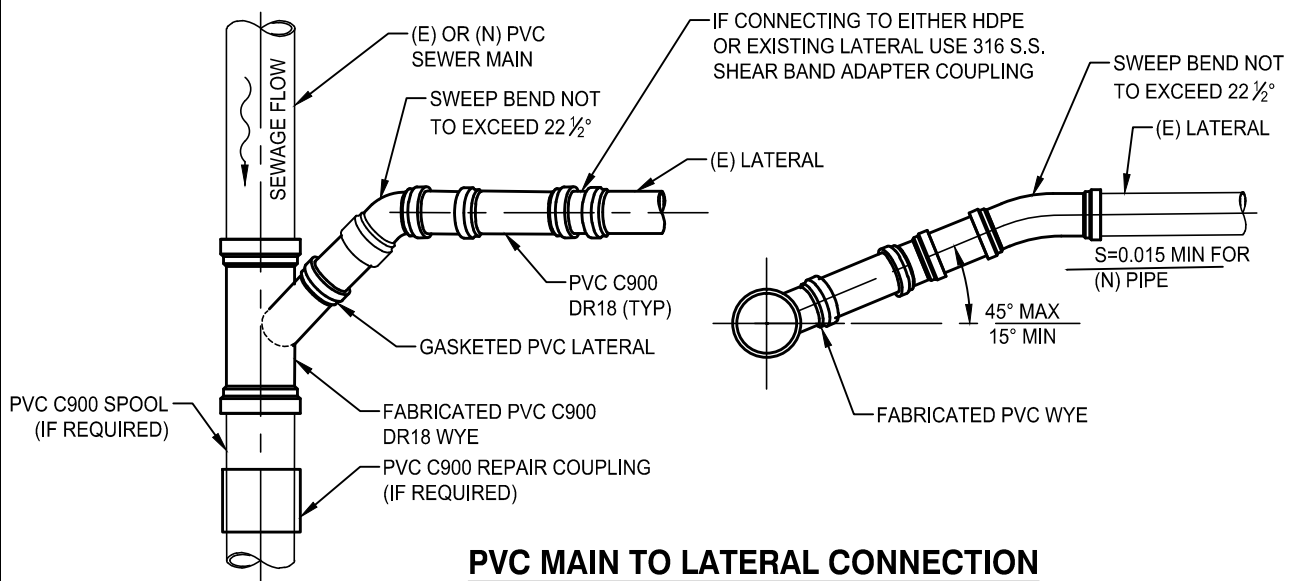
**NOTE:**

1. BACKWATER PREVENTION DEVICE (CONTRA COSTA VALVE OR DISTRICT APPROVED) SHALL OPEN WHEN WATER PRESSURE BUILDS BENEATH IT TO OFFER PROTECTION TO THE HOUSE FROM SEWER BACKUPS INTO THE STRUCTURE.
2. FINISHED FLOOR MUST BE AT LEAST 6" ABOVE THE BACKWATER PREVENTION DEVICE.
3. THE BACKWATER CHECK VALVE IS REQUIRED WHEN THE FINISHED FLOOR IS LESS THAN 6" ABOVE THE UPSTREAM MANHOLE OR RODHOLE ON THE DISTRICT SEWER MAIN.

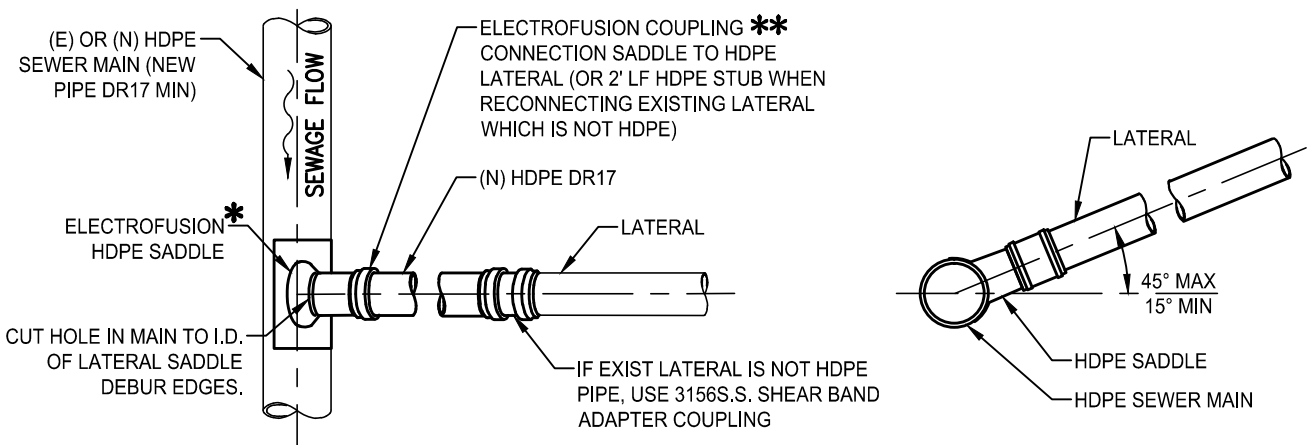
<b>LAS GALLINAS VALLEY SANITARY DISTRICT</b>		
<b>6" OR 8" LATERAL SEWER DETAIL</b>		
<b>2019</b>	PLOTTED ON 6/8/2021 7:12 AM	<b>LD 2</b>



**VCP SEWER MAIN TO LATERAL CONNECTION**



**PVC MAIN TO LATERAL CONNECTION**

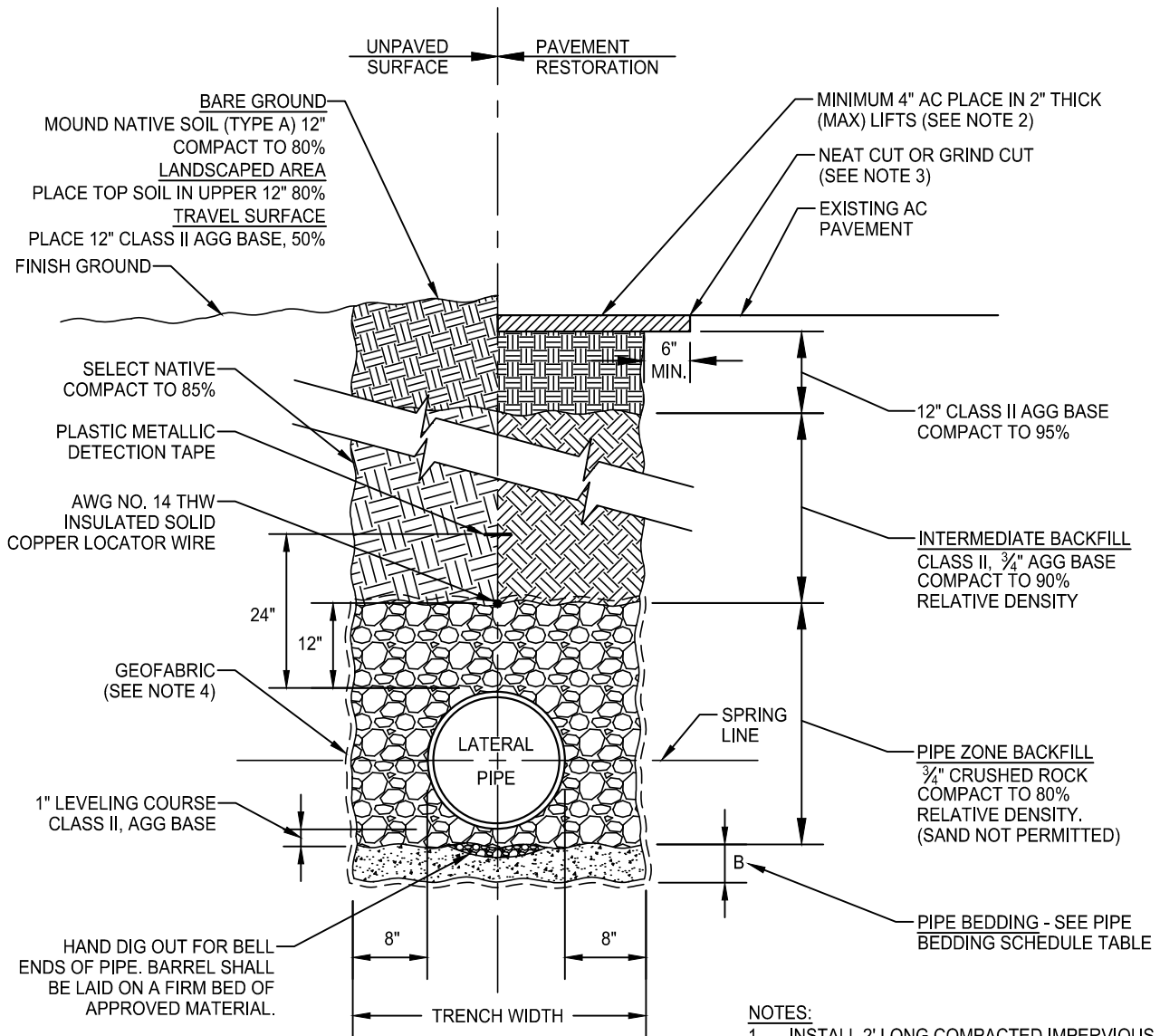


**HDPE MAIN TO LATERAL CONNECTION**

\* CENTRAL, IPF, OR APPROVED EQUAL WITH PLAIN END COUPLING

\*\* LATERAL CONNECTION CENTRAL, FRIATEC, OR APPROVED EQUAL

<b>LAS GALLINAS VALLEY SANITARY DISTRICT</b>		
<b>LATERAL CONNECTION TO SEWER MAIN</b>		
<b>2019</b>	PLOTTED ON 6/8/2021 7:13 AM	<b>LD 3</b>



## PIPE TRENCH SECTION DETAIL

### NOTES:

1. INSTALL 2' LONG COMPACTED IMPERVIOUS CLAY OR CDF PLUGS IN PIPE ZONE BACKFILL AND PIPE BEDDING AT 100' INTERVALS, OR AS DIRECTED BY THE DISTRICT.
2. ASPHALT THICKNESS SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY WITH JURISDICTION OVER STREET.
3. CONSULT LOCAL JURISDICTION FOR ASPHALT CUTTING REQUIREMENTS. (ENCROACHMENT PERMITS MAY BE REQUIRED)
4. INSTALL WHEN DIRECTED BY THE DISTRICT. INSTALL GEOFABRIC BACK FILL WRAP.

PIPE BEDDING SCHEDULE		
TRENCH MATERIAL	BEDDING DEPTH - B	BEDDING MATERIAL
SOIL - DRY	6"	¾" CRUSHED ROCK
SOIL WITH WATER	12"	1 ½" CRUSHED ROCK
ROCK OR HARD PAN - DRY/WET	6"	¾" CRUSHED ROCK
BAY MUD	12"	1 ½" CRUSHED ROCK (GEOFABRIC WRAP)

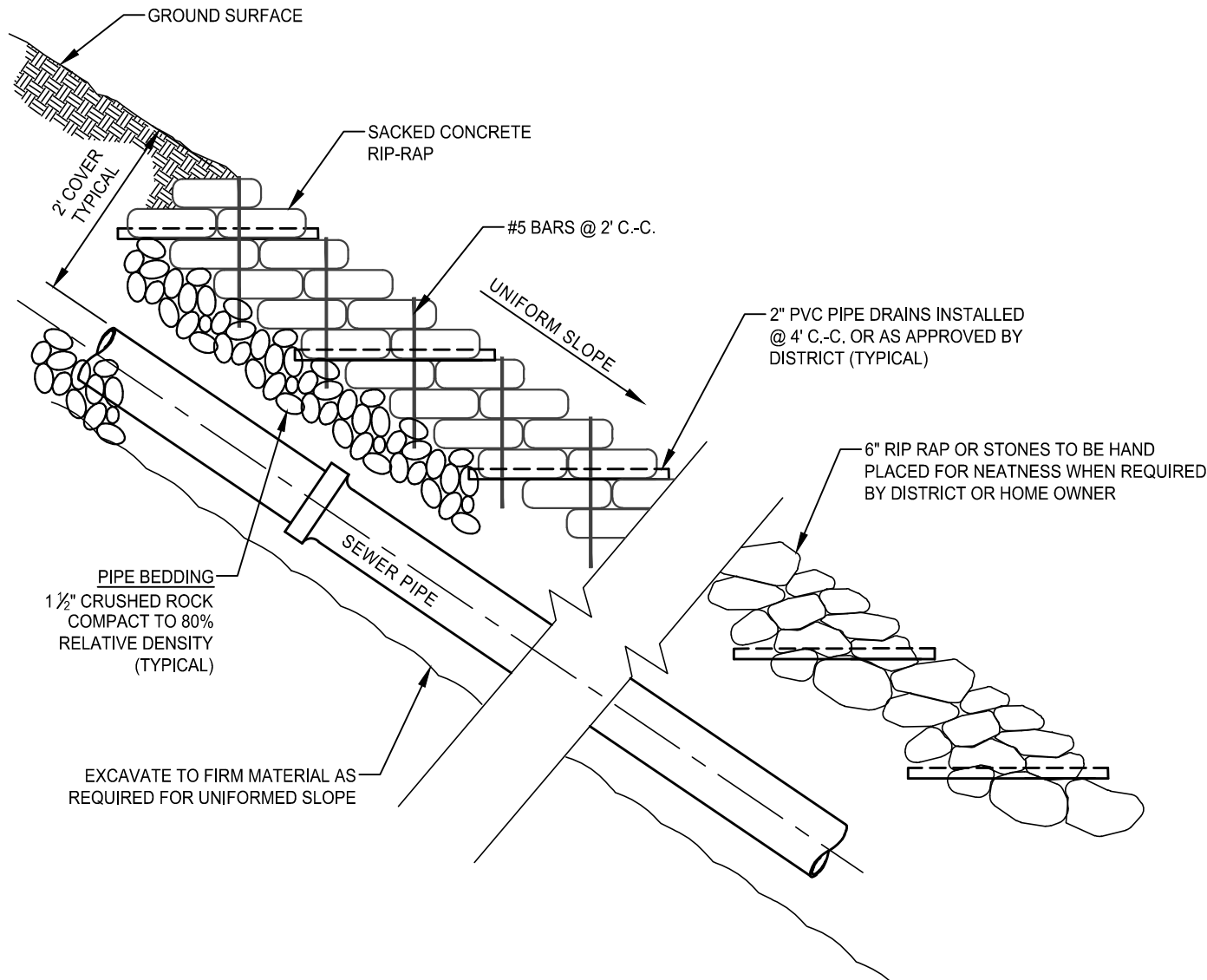
# LAS GALLINAS VALLEY SANITARY DISTRICT

## TYPICAL TRENCH SECTION

2019

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7:14 AM

LD 4



**ELEVATION**

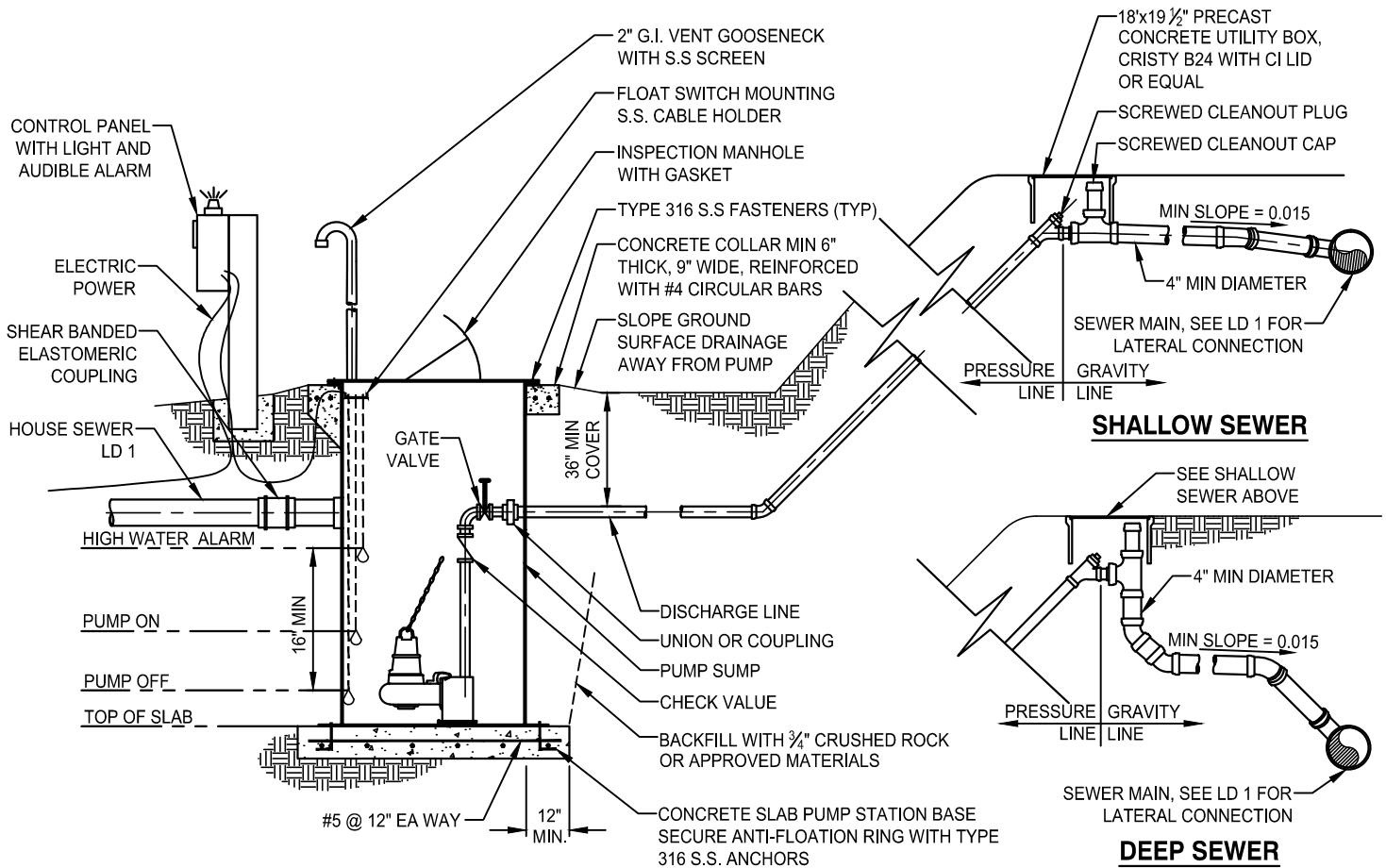
**NOTES:**

1. CHECK BOARDS TO BE PLACED ON ALL SLOPES GREATER THAN 50% OR WHERE REQUIRED BY THE CITY.
2. ALL SLOPES 50% OR GREATER SHALL HAVE CLASS 150 C.I. (MIN) OR C-900 DR18 BELL & SPIGOT PIPE, OR PIPE APPROVED BY THE DISTRICT ENGINEER.
3. SEEDED LANDSCAPE AND EROSION CONTROL DETAIL MUST BE APPROVED BY DISTRICT ENGINEER.

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

**STEEP SLOPE  
LATERAL INSTALLATION**

<b>2019</b>	PLOTTED ON 6/8/2021 7:14 AM	<b>LD 5</b>
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## SEWER MAIN CONNECTION

N.T.S.

**GENERAL NOTES:**

THE MINIMUM REQUIREMENTS FOR A PRIVATE 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 PUMP STATIONS FOR RESIDENTIAL OR 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 AND FIVE (5) FEET FROM BUILDING FACE MUST EXIT 6" (MIN) ABOVE BUILDING ROOF.

**DISCHARGE LINE:**

THE PRESSURE PORTION OF THE DISCHARGE LINE SHALL INCLUDE A CHECK VALVE, GATE VALVE AND FLEXIBLE COUPLINGS AND SHALL BE A MINIMUM 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.

# LAS GALLINAS VALLEY SANITATION DISTRICT

## PRIVATE SEWAGE PUMP SYSTEM

2019

PLOTTED ON 6/8/2021  
7:15 AM

LD 6

# UTILITY BOXES

All lids shall be **marked/labeled "Sewer"** as available, unless otherwise noted.

LOCATION	ITEM DESCRIPTION	PRODUCT
<b>Traffic Areas</b> (including all paved areas and driveways)	Cleanout Boxes	Christy B1017
	Backwater Prevention Devices (Type 2)	
	Backwater Check Valves	Christy B1017
	Box at end of pressure side sewer (for private pump stations)	Christy B1324 w/ steel cover
<b>Non-Traffic Areas</b>	Cleanout Boxes	Christy B09 Box, w/ precast concrete lid
	Backwater Prevention Devices (Type 2)	
	Box at end of pressure side sewer (for private pump stations)	Christy B16
	Backwater Check Valves	Christy B09 Box, w/ precast concrete lid



**Christy B1017**



**Christy B09**

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

**2019**

PLOTTED ON 7/17/2019  
3:47 PM

**AM 1**



# GEOTEXTTILE FABRIC

Geotextile fabric for laying and wrapping/separating backfill materials shall be manufactured by, or approved equal:

1. Mirafi, 140N
2. US Fabrics, US 135NW
3. Carthdage Mills, FX-45HS

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

**SANITARY DISTRICT  
ACCEPTED MATERIALS**

**2019**

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3:48 PM

**AM 2**

# ADJUSTABLE REPAIR COUPLINGS

Use for repairs and alterations to gravity piping at connections of dissimilar materials.

Banded rubber couplings shall have four (4) clamps and metal shear bands.

**All hardware shall be Type 316 Stainless Steel**, including shear bands.

Adjustable repair couplings shall be manufactured by, or approved equal:

1. Fernco, 5000 Series RC Coupling, w/ all type 316 SS hardware
2. Mission Rubber Company, Adjustable Repair Coupling



**Fernco, 5000 Series RC Couplings**



**Mission Rubber Co, Adjustable Repair Coupling**

The following are not allowed:



**Mission® Band Seal**



**Joints® Calder Coupling**



**Anaco – Husky Couplings**



**Fernco, Proflex Coupling**



**Mission Clay Band-Seal (Type 1 or 2)**

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

2019

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AM 3

# HDPE COUPLINGS

Use for field closure of HDPE pipe, as required.

Electrofusion couplings, manufactured by, or approved equal:

1. Ipex USA LLC, Friatec Couplings
2. Central Plastics



**Friatec - Electrofusion Coupling**

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

2019

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3:48 PM

AM 4

# Backwater Prevention Devices (BPDs)

Required at every location where sanitary sewer piping exits a building/home to prevent sewage from entering homes and businesses and reroute the spill outside the building.

BPD Type	MANUFACTURER	PRODUCT NAME
Type 1 or "Mushroom" Type	Genplex	Kelly Backwater Device (No-Hub & IPS)
Type 2	Stephens Corp	Sewer Popper™ Model S62-304
	Unlimited Home Solutions LLC (www.unlimitedhomesolutions.com)	Sewer Relief Cap

## Type 1



Mushroom Type

## Type 2



Sewer Popper™ OPD



Sewer Relief Cap

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

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ACCEPTED MATERIALS

2019

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AM 5

# BACKWATER CHECK VALVES

Backwater check valves shall be extendable type . Manufactured of PVC

Manufactured by the following, or approved equal

1. Rector Seal, Clean Check Backwater Valve
2. Mainline Backflow Products, Adapt-A-Valve Inspector chamber w/ Test-Eze Gate Feature



PVC Extendable Backwater Valve

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

2019

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AM 6

# TAP CONNECTIONS TO EXISTING SEWER MAINS

All connections to new mains shall be with new wye fittings matching the main pipe material, or electrofusion saddles for new HDPE mains.

Tap connections will only be allowed for connection to existing mains 10-inch and larger and will require District approval. However, all new connections to existing mains with an existing CIPP liner shall be with a tap connection (new wye fittings will not be allowed on existing CIPP).

Tap connections shall be “Wye type” were feasible.

EX MAIN PIPE MATERIAL	MAINLINE TAP
VCP, PVC, DIP, Cast Iron, or ACP	Cascade Waterworks MNFR Co, CSWRY Stainless Steel Sewer Saddle –Wye
HDPE	Electrofusion saddles: $\leq 12$ " main wye type, $> 12$ " main may be tee type, manufactured by, or equal: <ul style="list-style-type: none"> <li>• Central Plastics</li> <li>• Industrial Pipe Fittings, LLC - Plasson</li> </ul>
Ex Pipe Lined w/ CIPP	Remove host pipe at connection and install directly to CIPP. <ul style="list-style-type: none"> <li>• Inserta Wye or Inserta Tee</li> <li>• Cascade Waterworks MNFR Co, CSWRY Stainless Steel Sewer Saddle – Wye</li> <li>• LMK Technologies, Lined Main Tap</li> </ul>



Cascade CS WRY



Inserta Wye



Inserta Tee



HDPE – Central Plastics



HDPE – IPF Plasson



LMK, Lined Main Tap

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

2019

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AM 7

# SIDE SEWER FITTINGS

Side sewer fitting material shall match side sewer pipe material, unless otherwise directed or allowed by the District.

Property line cleanouts shall be a two-way or a "Tee" wherever possible. However, a one-way will be allowed. Contractor is advised to discuss with property owner, and the District encourages the use of two-way cleanouts.

SIDE SEWER MATERIAL	SIDE SEWER FITTINGS
<b>PVC C900 DR-18</b>	PVC C900, min DR-18 thickness, bell and spigot. Tee, Wye, 45° fitting, or 90° sweep fittings. White color where feasible. Manufactured by, or equal: <ul style="list-style-type: none"> <li>• Specified Fittings, C900 Gasketed</li> <li>• Multi Fittings, Sewer Brute</li> </ul>
<b>HDPE</b>	HDPE, SDR 17 min thickness. <ul style="list-style-type: none"> <li>• Butt fusion Tee, Wye, 45° fitting, or 90° elbow. Fuse directly to side sewer, or use couplings as required. Manufactured by: Performance Pipe, Agru America, or equal.</li> <li>• Electrofusion tees. Manufactured by Central Plastics, Harrington Corp, or equal.</li> <li>• Electrofusion taps (for cleanout risers). Manufactured by Central Plastics Harrington Corp, or equal.</li> </ul>
<b>SCH 80 PVC</b>	Schedule 80 PVC. Tee, Wye, 45° fitting, or 90° sweep fittings. Solvent welded, threaded, or flanged joints.

## HDPE FITTINGS



**Butt Fusion Tee**



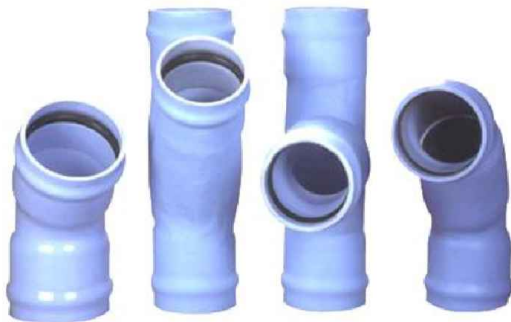
**Butt Fusion Wye**



**Electrofusion Tee**



**Electrofusion Tap**



**PVC C900 fittings**



**Schedule 80 PVC fittings**

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

**2019**

PLOTTED ON 7/17/2019  
3:49 PM

**AM 8**

# Cured-in-Place Pipe (CIPP) Products

## Chemical Grout

For sealing side sewer connection to mains and/or pipe connections to manholes. Manufacturer shall be, or approved Equal

- Avanti, AV-100

## CIPP Main to Side Sewer Seals

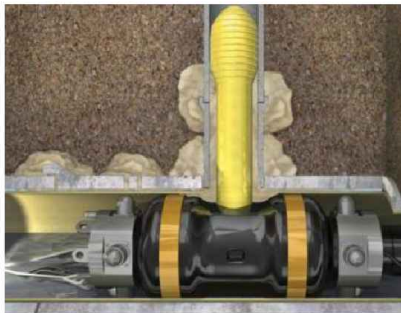
For repairing side sewer connection to mains 8-inch or larger where main is in suitable condition, as Determined by the District. Manufactured by, or approved equal:

- Pro Pipe Professional Pipe Services, Top Hat Lateral Seals

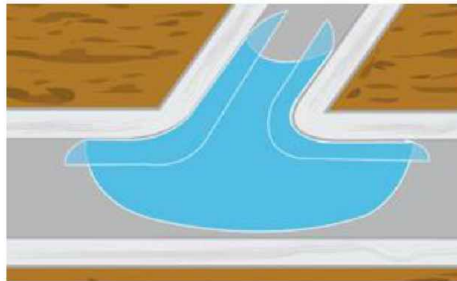
## Main to Side Sewer CIPP Connection Liners

For repairing side sewer connection to mains 8-inch or larger where the main is in suitable condition, as Determined by the District. Manufactured by, or approved equal:

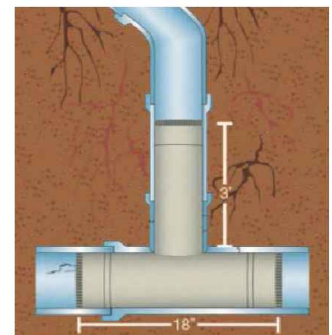
- LMK Technologies, T-Liner/Shorty



**Avanti, AV-100**



**Top Hat**

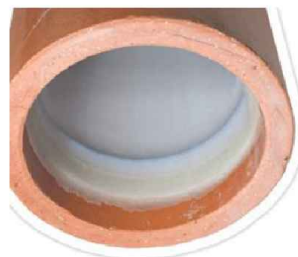


**T-Liner/Shorty**

## CIPP Point Repairs

Use only where approved by the District. Manufacture by, or approved equal:

- LMK Technologies, Mainline Sectional Repair



**LMK Mainline Sectional Repair**

## CIPP for Side Sewers

Use only where approved by the District. Installer must be certified by the manufacturer. CIPP Manufacturer shall be, or approved equal:

- Perma-Liner Industries, LLC
- MAXLINER LLC

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

2019

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AM 9



# DUCTILE IRON PIPE (DIP) PRODUCTS

AWWA C150 and AWWA C151, Class 53 wall thickness

## Ductile Iron Pipe

Manufactured in the USA, by one of the following, or approved equal:

1. U.S. Pipe and Foundry Co.
2. American
3. McWane Ductile

## Ductile Iron Fittings

Manufactured in the USA, by one of the following, or approved equal:

1. Tyler Union
2. Mueller Company
3. American

## Protective Lining

Interior surfaces of all ductile iron pipe and fittings shall be lined with one of the following:

1. Protecto 401 Ceramic Epoxy,
2. Tnemec 431 Perma-Shield, or approved equal.

The dry film thickness shall be no less than 40 mils.

## Protective Coating

Buried DIP: asphaltic coating with polywrap

Exposed DIP: Coat per Standard Spec Section 09800, Protective Coatings

Exposed DIP in Wet Wells, one of the following:

1. Tnemec 141, at min dry film thickness of 16 mils
2. US Pipe Ceramawrap, at min Dry film thickness 20 mils

## Polywrap

For all buried ductile iron pipe. Polywrap shall be manufactured by, or approved equal:

1. T. Christy Enterprises.

General purpose adhesive tape to connect plastic film shall be two inches wide by 10 mils thick. Adhesive tape shall be manufactured by, or equal:

1. Scotchwrap No. 50
2. Polyken No. 900
3. Tapecoat CT

## Flange Gaskets:

EPDM, suitable for use with wastewater service.

## Grooved Couplings and Adapters

Rigid type, manufactured by, Victaulic, or approved equal.

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

2019

PLOTTED ON 7/17/2019  
3:49 PM

AM 10

# INDIVIDUAL LOT PACKAGED PUMP SYSTEMS

**Material Type(s):** Pre-Approved Pump Systems, Pipe

**Description:**

VENDOR	SYSTEM
E-One	D-Series, W-Series, I-Series and G-Series
Liberty	2448- Series, Pro370 Series, Pro380 Series
Aqua Pro Pump Systems	E-Series, EDP Series, ESP-Series, SG-Series, DG-Series

**Note:** Complete packages are required for Pre-Approved Pump Systems. This includes a pump, alarm panel, isolation and check valves, sump and sump extensions (as required). Individual parts of Pump System are not pre-approved by the District. Models include but are not limited to the ones below, contact the District for special approval of all others.



**E-One Model  
D-H071**



**Liberty  
2448 Series**



**E-One®  
Model Gator**



**Liberty® Pro370 Series  
(2" discharge system,  
required Access Driver)**



**Liberty® Pro380 Series  
(2" discharge system,  
required Access Driver)**



**Aqua Pro  
SG-1182-2**

**LAS GALLINAS VALLEY  
SANITARY DISTRICT**

SANITARY DISTRICT  
ACCEPTED MATERIALS

**2019**

PLOTTED ON 7/17/2019  
3:49 PM

**AM 11**