SEWER SYSTEM MANAGEMENT PLAN

REVISIONS

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5-Year Recertification	November 7, 2019
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Section 1 – Goals

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The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.

The goals of the Fallbrook Public Utility District Sewer System Management Plan include:

- To prevent SSOs, keeping the public and waters of the United States safe and clean.
- To properly manage, operate, and maintain all portions of the District's Collections System.
- To provide adequate capacity to convey the peak wastewater flows.
- To minimize the frequency of SSOs.
- To mitigate the impacts that are associated with any SSO that may occur.
- To meet all applicable regulatory notification and reporting requirements.

The specific collections system goals:

- To flush 200,000 feet of pipeline annually
    - To flush the entire collections system flushed every 2 years
- To CCTV 95,000 feet of pipeline annually
    - To CCTV the entire collections system every 4-5 years

The Wastewater Department Capital Budget outlines the following:

- During the course of routine system maintenance, owing to the age and general condition of our system, we typically identify 500 to 600 feet of main requiring replacement annually and budget $80,000 annually in additional main replacement.
- Staff proposes to undertake ongoing projects to construct manholes at locations in the collections system where they are necessary to allow cleaning. Approximately $49,000 annually in manhole construction and relining of manholes where needed.
- Developer funded improvements to continue at current level of $50,000 annually. The District also currently has 24 "SmartCovers" at critical locations in the service area. These "SmartCovers" assist with early warning of capacity-related spills. These "SmartCovers" may be relocated, as needed.

Section 2 – Organization

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The SSMP must identify:
a) Name of responsible or authorized representative;
b) Names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. Include lines of authority as shown in an organizational chart or similar document with a narrative explanation; and
c) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Quality Control Board, and the State Office of Emergency Services (OES)).

The Fallbrook Public Utility District (FPUD) is a public agency in the unincorporated community of Fallbrook located in County of San Diego, State of California. The District has a publically elected 5-Member Board of Directors.

(a) The General Manager is the District's designated Legally Responsible Official.

Below is the pertinent portion of the Fallbrook Public Utility District's organizational chart, which demonstrates lines of authority for management, administrative, and field staff as related to sewer system overflows and the Sewer System Management Plan (Appendix B includes the complete District Staff Organization Chart). In addition, respective responsibilities are provided in written form following the organizational chart.

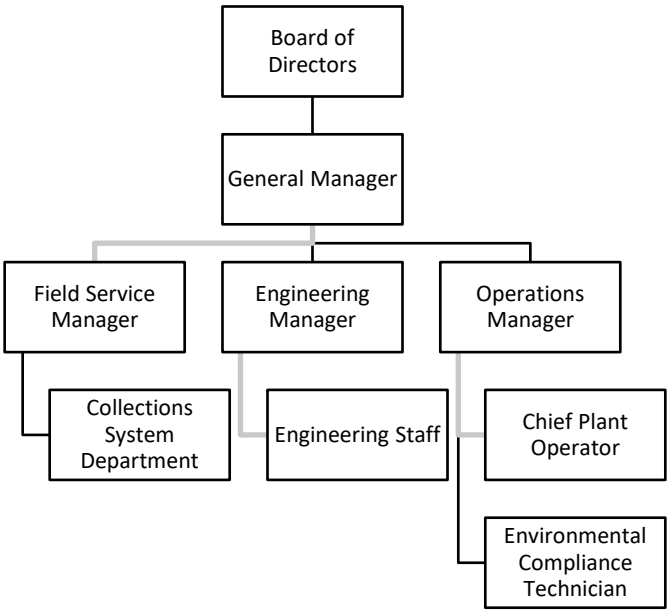


Table 2-1: Responsible Person for Implementation of SSMP Elements

SSMP Element	Responsible Position	Name	Work Phone Number
1. Goal	Collections System Supervisor	Kyle Drake	(760) 728-1125 Ext. 2722
2. Organization	Collections System Supervisor	Kyle Drake	(760) 728-1125 Ext. 2722
3. Legal Authority	General Manager and Chief Plant Operator	Jack Bebee and Owni Toma	(760) 728-1125 Ext. 2701
4. O&M Program	Collections System Supervisor	Kyle Drake	(760) 728-1125 Ext. 2722
5. Design & Performance Provisions	Engineering Manager	Aaron Cook	(760) 728-1125 Ext. 2713
6. Overflow Emergency Response	Collections System Supervisor	Kyle Drake	(760) 728-1125 Ext. 2722
7. FOG Control Program	Collections System Supervisor	Juliana Luengas and Kyle Drake	(760) 728-1125 Ext. 2803 and 2722
8. System Evaluation Assurance Plan	Collections System Supervisor	Kyle Drake	(760) 728-1125 Ext. 2722
9. Monitoring, Measurement, and Program Modifications	Collections System Supervisor	Kyle Drake	(760) 728-1125 Ext. 2722
10. SSMP Program Audits	Environmental Compliance Technician and Collections System Supervisor	Juliana Luengas and Kyle Drake	(760) 728-1125 Ext. 2803 and 2722
11. Communication	Public Information Specialist	Noelle Denke	(760) 728-1125 Ext. 2706

(b) General Manager

Under policy direction of the Board of Directors, serves as Chief Executive Officer of the District; manages, plans, organizes and controls public utility water and wastewater programs, services and resources in accordance with short- and long-term goals, policy statements and directives; interprets and administers policies of the Board; and performs related work as required. The General Manager reports to and serves at the pleasure of the Board of Directors. The General Manager requires notification of all SSOs as soon as practical, following control of the situation.

Engineering Manager

Under general direction of the General Manager, the Senior Engineer organizes and supervises assigned staff and performs various advanced professional engineering functions. The Engineering Manager conducts technical analysis, research, planning, design, and construction management for a variety of capital improvement, major maintenance and/or other District projects. Oversees and participates in planning, design, construction management, and overall project management of routine and complex water, wastewater, and recycled water projects; and performs related duties as assigned. The Engineering Manager is responsible for overall management of the Engineering Department.

Field Service Manager

Under direction of the General Manager, the Field Service Manager plans, organizes, and supervises staff assigned to maintenance, construction, repair and installation of District water, wastewater, and recycled water distribution and facilities. The Field Service Manager will also oversee the building and grounds, meter maintenance and repairs, and fleet services work centers. The Field Service Manager is responsible for managing and directing the construction maintenance, collections and system services/shop supervisors and departments. The Field Service Manager exercises authority in implementing a broad range of services and programs in coordination with other managers and executives. The Field Service Manager is responsible for the development and implementation of the SSMP. The Field Service Manager also oversees the Collections Department.

Collections System Supervisor

Under direction of the Field Services Manager, the Collections System Supervisor plans, organizes, and supervises a staff of employees assigned to wastewater system collection, equipment and facilities; to perform a variety of technical and administrative support functions; and to perform related work as required. The Collections Systems Supervisor is responsible for the first-level supervision and the day-to-day implementation of the District wastewater

collection system. The Collections Systems Supervisor supervises, inspects, and assigns work to two Collections field crews. The Collections System Supervisor also has responsibility over the Fats, Oils, and Grease (FOG) Control Program. The Collections System Supervisor makes recommendations and implements the SSMP and sewer system response; investigates, drafts documentation, and ensures that SSOs have been reported and certified; communicates with District Management regarding overflow specifics, response, and remediation; and trains Collections field crew.

Collections Utility Workers/Field Crew

Under the supervision of the Collections System Supervisor, the Utility Workers/Field Crew performs specialized and skilled work in the construction, installs and maintains of the water storage, metering and distribution systems and the wastewater collection, treatment and disposal systems; and performs related work as required. The Collections Field Crew performs preventative maintenance activities; mobilizes and responds to notification of stoppages and SSOs; drafts SSO documentation and completes required initial notification and reporting, if necessary, during after-hours events.

Operations Manager

Under the general direction of the General Manager, the Operations Manager performs management level duties to plan, organize and supervise a staff of treatment and distribution system operations employees. The Operations Manager is responsible for the first-level supervision of operations crews, valve maintenance employees, instrumentation and controls employee, maintenance electrician employee and the day-to-day implementation of the District potable water UV treatment and disinfection system, distribution systems, and overseeing the operation of the SCADA system including design, programming, maintenance and development. The Operations Manager also participates actively in the Management team.

Chief Plant Operator (CPO)

Under the general direction of the Operations Manager, the Chief Plant Operator performs management level duties to plan, organize and supervise a staff of the Water Reclamation Plant personnel; to inspect, monitor and operate complex wastewater treatment, collection, maintenance and disposal equipment necessary to maintain safe standards throughout the system; to plan, organize and supervise the activities of the laboratory section; participates actively in the Operations Management team as assigned; and to perform related work as required. Positions in this class are responsible for the supervision of plant operation, and laboratory personnel and the day-to-day implementation of the District wastewater treatment

and disposal system. The CPO and Collection System Supervisor oversee the SSMP and SSO duties. The Chief Plant Operator is also authorized to complete the monthly SSO certifications and monthly no-spill certifications.

Environmental Compliance Technician

Under direction of the Chief Plant Operator, the Environmental Compliance Technician plans, organizes and has responsibility for ensuring that NPDES, biosolids, recycled water, stormwater, pretreatment and drinking water operations are in compliance with Federal, State, and local regulations; and performs related duties as assigned. This position has lead-level responsibility with regulatory agencies throughout the State. The Environmental Compliance Technician assists management in the development and implementation of the SSMP; gathers and reports data pertaining to sewer system overflows; ensures that SSOs have been reported and certified in CIWQS; and conducts sampling, if needed, in response to an SSO.

(c) Chain of Communication for Reporting Overflows:

In general, the District is notified of a sewer system overflow either by a call received at the office reception desk or via the District's after-hours answering service. In either event, a member of the Collections Department is notified immediately. If the event is outside of working hours, the Collections Standby Personnel is notified via phone. The Collections Staff promptly mobilizes personnel and equipment to respond and remediate the sanitary sewer spill. Once the spill has been controlled and remediated, the appropriate staff members drafts a report of the overflow incident, and completes initial report notifications, if needed.

The General Manager and Chief Plant Operators are named as the Legal Responsible Officials and are responsible for overseeing the reporting process and certifying all SSOs. The LRO has designated authorized Data Submitters to report overflows to all required agencies as well as CIWQS, the online Water Board database. Data Submitters include the Collections System Supervisor, both Collections Utility Technicians, and the Environmental Compliance Technician. The General Manager, as the designated legally responsible official for the District, is authorized to complete online SSO certifications and monthly no-spill certifications. The Chief Plant Operator is also authorized to complete the monthly SSO certifications and monthly no-spill certifications.

Data Submitters understand the necessity to review the written report for accuracy and then make the appropriate reporting notifications. The initial report notifications may be done in draft form, with a follow-up finalized report submitted once all data is complete and verified (within the guidelines of the adopted State and local Board Orders).

The District reports all sewage spills regardless of size and whether or not the spill reaches Waters of the State. The District has always believed in keeping the reporting agencies and the public fully informed.

Appendix C contains the contact names and phones numbers for the positions outlined above.

Section 3 – Legal Authority

Section 3 – Legal Authority
Legal Authority: Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:
a) Prevent illicit discharges into its sanitary sewer system (examples include I/I, stormwater chemical dumping, unauthorized debris and cut roots, etc.);
b) Require that sewers and connections be properly designed and constructed;
c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;
d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and
e) Enforce any violation of its sewer ordinances.

This Section describes the legal authority to implement the SSMP plans and procedures.

(a) The inflow sources may include items such as sump pumps, roof leaders, yard and stairwell drains, satellite systems, or any other materials that adversely affect the performance of the Collections System, and the Water Reclamation Plant. Fallbrook Public Utility District's existing Wastewater Discharge Regulations implement the general and specific prohibitions and verifications on discharges.

(b) Fallbrook Public Utility District Engineering Department develops and maintains construction standards for Fallbrook Public Utility District pumping stations and the Collections System. The construction and inspection of new lateral connections and bypass piping facilities is legally enforced through Fallbrook Public Utility District's connection permit program, as authorized by the Fallbrook Public Utility District Administrative Code. Fallbrook Public Utility District issues permits to property owners and contract for work according to Fallbrook Public Utility District standards. Approved design and construction standards are situated in electronic files, and are also available on compact disc. Inspection and testing of new system connections is governed by the permit and related construction standards, which are also located at the permit counter in the Engineering Department at the District Headquarters.

(c) Legally-binding documents will ensure that the testing is conducted, and the baseline condition assessment is completed for sewer system construction projects (air test, CCTV, pump station performance, etc.) and that procedures are in place to transfer the resulting test data to the end user. These should also require development and implementation of technical requirements and training standards for construction inspectors.

(d) The Fats, Oils, and Grease Programs will be for commercial, industrial, and institutional users and will combine source and field control to reduce SSOs caused by the discharge of FOG

to the collections system. Legal authority for control of fats, oil, and grease (FOG) from Food Service Establishments (FSEs) was established on January 12, 2004 when the FOG Ordinance No. 307 was passed and adopted by Fallbrook Public Utility District Board of Directors. The FOG Ordinance was effective commencing February 12, 2004. FOG Ordinance No. 308 was passed on February 23, 2004. FOG Ordinance No. 312 pertaining to fees was passed and adopted on November 22, 2004, and took effect on December 20, 2004. During implementing the FOG Program, programmatic changes are anticipated which may necessitate revisions of FOG Ordinance No. 307, 308, and 312. Fallbrook Public Utility District's Engineering Department will be responsible for periodically reviewing and updating these documents, as the need arises, to ensure that the legal authority is comprehensive and covers all aspects of the FOG Source Control Program. On August 24, 2020, FPUD updated the FOG Program and Ordinance under Resolution No. 5000. The District also established a condition of a Special Use Permit pursuant to Article 20 of the Administrative Code.

(e) The legal authority to enforce the SSMP programs and policies are derived from acts of Fallbrook Public Utility District's Governing Board. Interpretation of the enabling state legislation giving authority to Fallbrook Public Utility District is provided by The District's General Counsel. The District's Administrative Code Article 30 - Prohibited Use of District Facilities, effective July 1, 1998, is the main Ordinance for regulating sewer use, wastewater discharges, and controlling inflow and infiltration and illegal connections to the system. The District's Engineering department is responsible for maintaining and updating this ordinance as necessary.

The legal authority for enacting the SSMP programs and policies are included in the Articles of the Fallbrook Public Utility District's Administrative Code.

Legal authority, as outlined in Fallbrook Public Utility District's Administrative Code, is found online on FPUD's website or on file in the Board Secretary's office. The link to FPUD's Administrative Code: https://www.fpud.com/administrative-code. Standard testing and inspection requirements, permit construction, other sections are contained in the Fallbrook Public Utility District Administrative Code.

Refer to Appendix D for an Index of the District's Administrative Code.

Section 4 – Operations and Maintenance Program

Section 4 – Operations and Maintenance Program
The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system.
a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;
b) Describe routine preventative operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;
c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;
d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and
e) Provide adequate equipment and replacement part inventories, including identification of critical replacement parts.

(a) Collection System Mapping:

Maps are utilized by the Collections Department to identify the location of critical components of the system such as sewer mains, force mains, lift stations, and hot spots. Maps are updated regularly as Collection Crews note discripencies and changes within the Collections System. The Engineering Department is responsible for updating the maps using ArcGIS, a Geographic Information System (GIS) software. Refer to Appendix E for the maps of the collection system. Collection Crews refer to hard copies of maps or digital through the use of a tablet, laptop, or phone.

(b) Preventative Maintenance:

The District has developed several maintenance programs to maintain the sewer system and prevent SSOs. These include:

1. Regular Main Line Cleaning

2. Hot Spot Cleaning
3. Closed Circuit Camera Inspection (CCTV)
4. Lift Station Maintenance
5. Hot Spot Lateral Maintenance
6. Outfall Main Line Program
7. Fats, Oils and Grease (FOG) Program

The District's Collections Department has a seven-man crew with a supervisor. The Collections Department is divided into two separate crews: one four man-crew and one three-man crew, each led by a Utility Technician. The Utility Technician is a lead position and is responsible for quality control and performance. The four-man crew is responsible for main line cleaning, new construction and repairs. The three-man crew is responsible for CCTV, lift stations, the lateral maintenance program, and the outfall main line program.

Table 4-1: Collection Crews and Responsibilities

	Crew	Positions	Responsibilities
1.	Four-Man Crew	Utility Technician + Three Collections Staff	Main Line Cleaning, New Construction, Repairs
2.	Three-Man Crew	Utility Technician + Two Collections Staff	CCTV, Lift Stations, Lateral Maintenance and Outfall Main Line Program

System Cleaning

Timeline: The District cleans its sewer system on a two-year program with more frequently scheduled cleaning of identified hot spots. A "Hot Spot" is identified as a location in the collections system that has a higher susceptibility to spills or complications and requires a level of maintenance greater than routine. Hot spots are cleaned monthly, quarterly, semi-annually, or annually depending on the type of problem.

The District uses a sectional map to clean one section at a time down to a major trunk line. Daily information is then recorded into Granite.net.

The District has two combination sewer cleaning trucks, one is used as a primary cleaner for one of the crews, and the other as a back-up in case of breakdown or emergency. Various cleaning nozzles are used, including root saws and flails. The District also has an easement machine, which is used with the combination trucks to maintain the limited-access right-of-way areas.

CCTV

Timeline: The District inspects 8,000 feet of main line per month and inspects about 95,000 feet of pipeline annually. The entire collections system is inspected with CCTV every 4 to 5 years. The District has a CCTV van with a CUES pan and tilt camera with 1,500 feet of cable. The CCTV records on the Granite.net system. Each main line section is inspected, scored, and documented. Each section is then reviewed for problems and corrective actions are planned. These processes are documented on the Granite.net System. Granite.net allows the user to view past CCTV inspections, asset information, root intrusion reports, I&I reports, and other maintenance items. Chemical root control is used in areas found to be heavy in roots during CCTV inspection.

Lift Stations

Timeline: The District's wastewater lift stations are inspected weekly. Telemetry alarms are also tested on a weekly basis. Maintenance programs are conducted monthly and include mechanical and safety inspections, inspections of the valves, and air-n-vacs on the force mains. Wet wells are cleaned on a monthly schedule. The District performs all operation and maintenance of its lift stations.

Lateral Maintenance

Although the District does not own any part of the laterals within the system, (owners are responsible from the main line to the building), there is a fee agreement to help maintain the lateral from the main to the property line clean-out. The District has a program similar to the main line hot spots, in which it will clear stoppages and maintain laterals chemically with root problems.

Outfall

Timeline: The District has a monthly Outfall program in which the right of ways, air-n-vacs, vault inspections, and valve maintenance are performed. Outfall maintenance records are documented on FPUD's Cityworks GIS Program.

Fats, Oil, and Grease (FOG) Program

The District has an ordinance providing for a Fats, Oil, and Grease (FOG) Control Program within its service area. The FOG Program is implemented to prevent fats, oils, and grease from entering the main sewer system. It is the goal of the District to conduct inspections and perform annual testing of the Food Service Establishments (FSEs) within the service area. Sampling may be done more frequently, if needed.

Table 4-2: Preventative Maintenance Schedules and Tracking

Program	Service	Schedules	Method of Tracking
1. System Cleaning	Main Line Cleaning	2-Year Completion Cycle	Sectional Map & Granite.net
	Hot Spot Cleaning	Monthly, Quarterly, Semi-Annual, and Annual	Sectional Map & Granite.net
2. New Construction	Smaller Projects - FPUD	As Needed	Engineering Department
	Larger Projects - Contractor		
3. Repairs	See Rehab and Replacement Plan Section	See Rehab and Replacement Plan Section	See Rehab and Replacement Plan Section
4. CCTV	Inspection	Monthly 8,000 Feet of Main Line	Granite.net
		5-Year Completion Cycle	
5. Lift Stations	Inspection	Weekly	Cityworks and Onsite Logbook
	Alarm Testing	Weekly	
	Maintenance	As Needed	
6. Lateral Maintenance	Maintenance	As Needed	Lateral Maintenance Binder in Collections Office
7. Outfall Main	Maintenance	Monthly, Quarterly, Semi-Annual, and Annual	Cityworks

(c) Rehabilitation and Replacement Plan:

1) Condition Assessment and Inspection

The Collections Maintenance Department has a Collections System Assessment Policy with goals to clean the system every two (2) years and conducting a video condition assessment every five (5) years or sooner depending on the scores given to that segment of sewer main.

The CCTV inspection is performed with District employees. Information gathered from the inspections is stored in Granite.net Data Collection System for review by Management, Engineering Staff, and Department Lead Positions. Repair and replacement projects are typically the result of observed deficiencies in the sanitary sewer system. During the inspection of a sewer line, numeric scores are given to the defects and then an overall grade will be assigned to that segment. This grade will put that main in one of three categories for further review and assignment for cleaning, root control, repairs or further inspections.

Table 4-3: Numeric Assessment of Defects

Numeric Assessment of Defects		
Defect Category	**Guideline**	**Severity Score (Per Occurrence)**
Structural	**Cracks/Spalls**	
	None	0
	Without Offset, <1/3" Thickness	2
	With Offset, > 1/3" Thickness	4
	Severe-Gapped Soil Exposure	10
Alignment	**Grade**	
	None	0
	Ponding <1/3" Thickness Diameter	2
	Ponding <1/2" Diameter	4
	Ponding > 1/2" Diameter	6
	Submerged	10
	Offset Joint/Lateral	
	None	0
	Downstep Or Gap, No Step	2
	Upstep, 1/2" or Less	4
	Upstep, 1/2" or More, Gap	6, 7, or 8
Other	**Protruding Lateral**	*

*Will be scheduled for repair/replacement

Table 4-4: Score Card

Grade	Scores	Action
Good	0-2	• Record score in database • Archive video record
Fair	4-6	• Record score in database • Record key defect(s) in database • Schedule maintenance to be completed as soon as possible • Schedule necessary additional cleaning or further observation • Schedule repairs when time permits • Archive video record

Poor	8-10	• Record score in database
		• Record key defect(s) in database
		• Recommend review level to management
		  ○ Immediate risk of failure: emergency repair
		  ○ Potential risk of failure: scheduled repair
		  ○ Poor condition: scheduled maintenance and/or further observation, further observation will occur at regular intervals to re-evaluate status and to determine if further degradation has occurred
		• Non-emergency scheduled rehabilitation and/or repair will be completed, if necessary, as soon as practical
		• Archive video record

The numeric assessment of the defects will provide the District with a basis for determining prioritization for subsequent cleanings, increased observation, scheduling of maintenance, and rehabilitation and repair.

Repairs are scheduled according to the numeric score given to the defect and then after the repair, the main line will be videoed with CCTV and given a new grade.

Mains that have been labeled hot spots will be inspected on an annual basis. Most do not have structural defects, rather are of FOG and root-related problems.

Manholes are inspected during the routine cleaning cycles and forms are filled in the field using Granite.net. These forms are reviewed and manholes in need of rehabilitation are prioritized and scheduled for repairs in the next budget year or sooner if needed.

Capital Improvement Plan

The District currently has sufficient capital allocated to sewer treatment and collections from now through build-out of the District's sewer service area. Furthermore, on March 26, 2007, the Board of Directors adopted a policy to deny any future discretionary annexations into the District's sewer service area, until conditions change, such as down zoning or permanent open space additions.

The District has funding for rehabilitation and repairs in addition to any major line replacement identified in the wastewater collections system five-year capital budget. The District has an annual budget of $125,000 for capital improvements. This includes either mainline repair and replacement or manhole replacement and relining, with projects alternating every other year.

Refer to Section 8 of this SSMP and Appendices O, P and Q for further information on capacity.

(d) Training:

The District believes in being proactive instead of reactive in its approach towards the safety of their employees and therefore has a solid safety training program in place.

Collections personnel are trained in the following fields, within their first year of employment:

- Traffic Control and Flagging
- Confined Space and Confined Space Rescue
- Hazardous Materials Technician
- Trenching and Shoring Competent Person
- Backhoe Safety
- CCTV School
- Combination Truck Training
- CPR/First Aid
- Pumps and Motors
- State and Regional Spill Reporting
- Lockout/Tagout
- Electrical Hazards

The District also performs refresher training on an annual basis or as recommended. Personnel are also required to read and understand the District's Code of Safe Practices and Injury, Illness, & Prevention Program (IIPP). They also participate in weekly Safety Tailgate Talks, as well as periodic seminars and training sessions encompassing areas of the wastewater profession. Training records are kept by the District's Safety & Risk Officer.

(e) Equipment and Replacement Parts:

The Collections Department has the necessary equipment to maintain and keep in good working order the sanitary sewer system. This includes the gravity sewer lines, lift stations, force mains, and the Water Reclamation Plant located at 1425 Alturas Road, Fallbrook.

The District has two combination trucks for cleaning the sewer system. One combination truck is Vactor 2100 and the other is Vactor 2100 Plus. They are both 2100 single axle with 1,000-gallon tank for fresh water, 5-yard debris tank, PD blower, 600' of 1" hose, and 10' boom extension. An all-terrain self-propelled easement machine with a 600 feet of 1" hose, is used for places where the combination trucks cannot gain access.

A ¾ ton van with a CUES CCTV system, Granite.net system, and pan & tilt color camera, with 1500 feet of cable is used for sewer pipe inspection and video library. The District has replacement parts and trained employees to do almost all repairs needed to the camera system. The District also has a Pearpoint hand-push 200 feet lateral camera system.

Crew trucks consist of a 1-ton extended cab with utility bed truck, tailgate lift, generator, under the hood air compressor used to operate pneumatic tools for construction and repairs, a 1-ton extended cab with utility bed, tailgate lift, generator, drain cleaning machine for laterals, and a 1.5-ton with utility bed, generator, under the hood air compressor. The District has a 10,000-foot pound crane, and a 4,000 pound capacity crane. All trucks are stocked with various parts and hand tools.

The Department has access to numerous heavy equipment including front loaders, backhoes, excavators, skid steer loader, crane, dump trucks, fifth-wheel tractor and trailers, portable air compressor, asphalt cutting machine and light stand are available from the District, as well as a rental business in our town.

The safety equipment for confined space and rescue consist of: two main 4-gas detectors, two personal 4-gas detectors, rescue rated harnesses, two DBI-Sala tripods and one Davit arm with two main wenches, two self-retracting life lines, and two ventilation blowers.

The District also keeps replacement parts and motors in stock for all lift stations. These parts include: motors, impellers, volutes, front and back heads, and seals. Smaller pumps are replaced with new units when necessary.

Replacement parts for equipment are basic with a few exceptions of critical parts (jetting hose, check valves, nozzles etc.) for the combination trucks. Rentals are used if equipment is down for extended periods of time.

Section 5 – Design and Performance Provision

Section 5 – Design and Performance Provision
a) *Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and*
b) *Procedures and standards for inspecting and testing the installation of new sewers, pumps and other appurtenances and for rehabilitation and repair projects.*

(a) The District's Standard Specifications for Sewer System Construction is used for all collections system pipeline construction, including new construction, rehabilitation, and repair. The District's Standard Specifications include 21 Construction Details and 18 General Sewer Notes that are required to be placed on the cover sheet of all approved plans. Refer to Appendix F for the District's Standards for Sewer Construction. Refer to Appendix G for a copy of the District's General Sewer Notes.

(b) All new construction, rehabilitation, and repair is either completed by District crews or inspected by a District representative per the District's *Standard Specifications*. Contractors are always required to have a copy of the District's *Standard Specifications* on the job site. All new sewer mains are tested and cleaned prior to District acceptance of the sewer main and before put into service. District testing includes air testing of the pipeline, mandrel, wayne ball cleaning, and final CCTV inspection of the pipeline. On occasion, the District will develop a job specific set of plans and specifications for projects, such as pump stations and Water Reclamation Plant construction. These job specific plans and specifications are developed by either the District's Engineer or a consulting engineer.

Section 6 – Overflow Emergency Response Plan

Section 6 – Overflow Emergency Response Plan	
Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:	
a)	*Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSO's in a timely manner;*
b)	*A program to ensure an appropriate response to all overflows;*
c)	*Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;*
d)	*Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;*
e)	*Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and*
f)	*A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.*

Requirements **(a)-(f)** are consolidated below:

Objective of the SSO Emergency Response Plan

The District operates a diverse system of collections sewers, pump stations, force mains, and treatment facilities that are well maintained. The overflow emergency response plan is directed toward several key actions:

- Protecting the public health and the environment
- Performing repair, clean-up, and restoration of the area affected
- Returning damaged equipment and/or facilities back to normal operations as soon as possible

Overflow Detection

In general the District may receive notification of a sewer overflow by the general public, field personnel, or (early warning) by designated "SmartCover" manhole alarms which are located on manholes in certain hot spots within the District's collections system.

Overflow notifications received by the District during regular office hours, or by the District's answering service after hours, are directed to the Collections Department for immediate response. The collections personnel rotate standby duties to cover after-hours emergency calls (scheduled by the Collections System Supervisor).

"SmartCover" manhole alarms transmit alarms to the secure SmartCover Systems website and then to appropriate District personnel. In addition, intrusion alarms and high level alarms are transmitted to the Collections Department cell phone, as well as, the cell phone of the Collections Supervisor.

Because the District also has potable water employees, guidance documents such as the "Spill Vehicle Card" and the "Outside Agency Spill Notification Tree" have been developed which provide detailed instructions for response and notification in the event of a potable water, recycled water, or sanitary sewer spill. These instructions cover immediate in-house and regulatory notifications specific to the type of spill.

Initial Response

Once notification of an overflow is received, Collections Personnel shall initiate immediate response to the location of the overflow. Once the Collections Crew arrives onsite, they will be able to determine if they need to call additional personnel and/or equipment to support response efforts. This includes an overall assessment of needs pertaining to stopping the overflow, overflow recovery, and overflow clean-up. Furthermore, safety concerns such as traffic control are also assessed.

Recovery and Clean Up (Mitigation)

Collections personnel are trained to determine the proper course of action and equipment needed to stop the overflow and begin recovery and cleanup efforts. Every effort is made to contain and prevent the discharge of untreated and partially treated wastewater to surface waters and storm drains and to minimize or correct any adverse impacts on the environment resulting from SSOs.

The collections department utilizes a variety of equipment in recovery and cleanup efforts including combination and vactor trucks, drain cleaning machines, CCTV equipment, containment devices, and heavy equipment for repairs. Additionally, the Collections Department places is a large emphasis on containment and wash down whenever possible in order to be able to recover the debris or overflow.

Public Access and Warning

During response to an SSO, the Collections Personnel will make a determination regarding whether or not public access is reasonably anticipated. In making this decision, several factors are considered, including but not limited to:

- Ease of public access or restriction based on fencing or private property
- Terrain
- Destination of Spill (Land, Storm Drain, or Surface Water)
- Proximity to Schools
- Spill Recovery
- Ability to Treat and Remediate Spill

If potential public access is anticipated, crews will post the appropriate warning signs in all appropriate locations for a minimum of 72 hours.

Furthermore, when notification is made to the San Diego County Department of Environmental Health, they may require Public Warning Postings depending on the specifics of the spill. The District will make certain that all posting requirements are met. Signs must be posted at all areas, including water bodies, where the public may encounter wastewater spills. The SDCDEH will be responsible for any required public notifications such as press releases. The SDCDEH will also advise responsible agencies when to remove signs based on bacteriological sampling and other environmental conditions.

Water Quality Sampling and Analysis

With certain SSOs the San Diego County Department of Environmental Health, State or Regional Water Quality Control Boards may require water quality sampling and analysis. The DEH will advise FPUD on requirements for sampling if they determine it is needed. The District Environmental Compliance Technician and Collections System Supervisor will make sure that proper sampling and analysis is conducted to comply with any regulatory agency requests. Furthermore, the District, may initiate sampling on its own, if deemed prudent, both in the interest of public health and safety as well as for investigative purposes.

The District Environmental Compliance Technician and Collections System Supervisor will conduct water quality sampling within 48 hours after initial SSO notification for all Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters. Water quality results will be uploaded into CIWQS.

Investigation and Documentation

Upon arrival to an SSO, the crew observes flow volume and location of flow (both source and destination). When needed, they will reference the SSCSC Manhole Overflow Gauge for estimating sewer spill volume (refer to Appendix H). They will determine if there are any possible witnesses to the overflow, and if so, gather additional information pertaining to start time, as well as other observations. This information is compiled and included in the District's SSO Report Form (refer to Appendix I), which is then completed in its entirety by the crew or the Collections System Supervisor. The report form is thoroughly reviewed to provide the regulatory agencies with the most accurate information known at the time. Many times digital photographs will be taken to document pertinent aspects of the SSO. These photographs are kept in binders in the Collections Supervisor's Office. If there are elements of the overflow that require further investigation or assessment, an in-depth investigation will continue beyond just the scope of immediate response and remediation. The Collections System Supervisor will coordinate this investigation with the Environmental Compliance Technician.

Equipment

The collections department utilizes a variety of equipment in recovery and clean-up efforts including combination/vactor trucks, drain cleaning machines, CCTV equipment, containment devices, and heavy equipment for repairs or assistance with cleanup. A complete inventory of collections department equipment can be found in this SSMP, Section IV, Operations and Maintenance Program, Equipment and Replacement Parts.

Training

During a new employee's probationary period, the Collections System Supervisor and Environmental Compliance Tech will conduct training on the proper procedures for responding to an SSO. In addition, employees receive field training conducted by the Collections System Supervisor or Utility Technicians. Instruction includes:

- SSO Response
- Remediation
- Necessary Equipment
- Information Gathering, Documentation, and Completion of the SSO Report Form

Regulatory Notification & Reporting

The District is committed to making all regulatory notifications as required depending on the size, location, and final destination of the sanitary sewer overflow. Regulatory notification and

reporting is done using as much data as possible at the time to meet required deadlines, up to and including the thoroughly reviewed SSO Report Form in its entirety.

Based on the requirements or guidelines provided by each regulatory agency, the District follows up on spill notifications with written/computerized reporting as deemed appropriate depending on the criteria of each spill.

The following is a summary of our notification and reporting guidelines by agency:

1) Office of Emergency Services (OES) – California

Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface waters or spilled in a location where it probably will be discharged to surface waters, the California Office of Emergency Services (Cal OES) is notified and staff obtain a notification control number.

- **Office of Emergency Services: (800) 852-7550**

2) County of San Diego – Environmental Health (DEH)

DEH is normally notified by OES, however FPUD notifies DEH as well. Contact information for Environmental Health:

- **Spill Line: (858) 505-6657**

3) Regional Water Quality Control Board

Notification to the San Diego Region 9 Water Quality Control Board is made through:

- CIWQS, SSO Reporting
- **Calling the Spill Line: (619) 516-1990**
- Include sandiego@waterboards.ca.gov or RB9SSO@waterboards.ca.gov on all spill notices

District personnel, who are registered as data submitters in CIWQS and assigned a login and password are permitted to report SSOs using the online database (currently this includes the Collections System Supervisor, the two Utility Technicians, and Environmental Compliance Technician). The General Manager, as the designated legally responsible official for the District, is authorized to complete online SSO certifications and monthly no-spill certifications. The Chief Plant Operator is also authorized to complete the monthly SSO certifications and monthly no-spill certifications.

4) California Department of Fish and Game

California Department of Fish and Game is normally notified by OES. For oil spills that impact water resources, immediately contact:

- **Oil Spill Notification: (800) 852-7550**

5) Camp Pendleton – Environmental Security Wastewater Quality Branch

Camp Pendleton 24-Hour Spill Hotline is to be notified immediately, in the event of a sewage spill which reaches and impacts Fallbrook Creek, thereby potentially impacting water resources on Camp Pendleton.

- **24-Hour Spill Hotline Number: (760) 725-4324**

After initial phone notification, spill reports may be emailed to Camp Pendleton, per their request.

Table 6-1: CIWQS Reporting Requirement Based on Type of Spill

CIWQS Reporting Requirement Based on Type of Spill		
Category 1	Definition	Discharges of untreated or partially treated wastewater of any volume that reaches or will likely reach surface water/drainage channel tributary or that reach a storm drain and are not fully captured.
	Notification	If it's greater than 1,000 gallons, notify the Regional Board within 2 hours. If it's less than 1000 gallons, notify the Regional Board within 24 hours. For both cases, notify OES and obtain a notification control number at: (800) 852-7550. OES will normally contact San Diego county Dept. of Environmental Health.
	Reporting	Reporting Requirements: In CIWQS, submit draft report within three business days of becoming aware of the SSO. Certify the report within 15 calendar days of SSO end date.
	*Sampling	If the SSO was 50,000 gallons or greater, water quality sampling must be conducted within 48 hours after initial SSO notification and uploaded to CIWQS. An SSO Technical Report is required to be submitted within 45 days.
Category 2	Definition	Discharges of untreated or partially treated wastewater of 1,000 gallons or greater that do not reach surface water, drainage channel or municipal storm system (i.e., less than 1000 gallons and didn't reach surface waters).
	Notification	Notify OES within 24 hours and obtain a notification control number at: (800) 852-7550. OES will normally contact San Diego county Dept. of Environmental Health.
	Reporting	In CIWQS, submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date.
Category 3	Definition	All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system (i.e., less than 1,000 gallons and did not reach surface waters).
	Notification	Notify OES within 24 hours and obtain a notification control number at: (800) 852-7550. OES will normally contact San Diego county Dept. of Environmental Health.
	Reporting	In CIWQS, submit certified report within 30 calendar days of the end of the month in which the SSO occurred.
Private Lateral Sewer Discharge (PLSD)	Definition	Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately-owned sewer lateral connected to the enrollee's sewer system.
	Notification	If PLSD is greater than 1000 gallons, notify Regional Board within 24 hours. If it's less than 1000 gallons and did not reach surface water, no notification is required. If it's less than 1000 gallons and it did reach surface, notify Regional Board within 24 hours.
	Reporting	In CIWQS, submit certified report within 30 calendar days of the end of the month in which the SSO occurred.

Supplemental Documents

Each District truck belonging to the Collections Department is supplied with a red binder titled Sewer Overflow Emergency Response. This binder contains critical spill response information, including but not limited to guidance documents created by Fallbrook Public Utility District, such as:

- CIWQS Reporting Requirements Based on Type of Spill (Appendix J)
- Spill Vehicle Card (Appendix K)
- Outside Agency Spill Notification Tree (Appendix L)

Guidelines documents created by various regulatory agencies which can be found in the appendices of this document are:

- San Diego Regional Board - General Guidelines for Sewage Collections Overflows (Appendix M)
- OES - Fact Sheet, Reporting Sewage Releases (Appendix N)

Section 7 – Fats, Oils, and Grease (FOG) Control Program

Section 7 – Fats, Oils and Grease (FOG) Control Program
Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. IF an Enrollee determines that a FOG control program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:
a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;
c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.
e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;
f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and
g) Development and implementation of source control measures for all sources of FOG discharge to the sanitary sewer system for each section identified in (f) above.

(a) Public Information and Outreach:

In the past, the District currently had an ongoing, effective public awareness campaign that promoted the proper disposal of grease. The FPUD Grease - In the Can, Not in the Drain! Program has been in place since 2003 and is coordinated by the District's Public Affairs Specialist, who conducts educational school presentations in conjunction with a grease-can decorating contest. The public education program, also serves to inform the community about the importance of proper disposal of grease and maintaining infrastructure and protecting the environment. Refer to Section 7 of the SSMP for more detailed information on this program.

As of 2019, the Public Information and Outreach Program is currently on a break due to the high participation and response from the community of Fallbrook. If needed, this program will resume.

FPUD has also developed numerous Fats, Oils, and Grease pamphlets and flyers. As part of our public outreach, FPUD will be handing out these documents to apartment complexes and

restaurants. This will serves to inform the public about proper grease disposal and hopefully reduce possible spills from grease buildup.

(b) Plan and Schedule for FOG Disposal:

The District requires Food Service Establishments (FSE) to capture and properly dispose of the fats, oils and greases generated by their operations. Disposal of the greases in the sewer system contributes to obstruction and blockage of the sanitary sewer system, subsequently causing sewer spills in Fallbrook.

As a requirement of the FOG Program, the FSEs are required to install and maintain grease interceptors or grease traps. These devices are designed to separate and capture FOG to aid in the prevention of sanitary sewer blockages. The FSE will be tested on an annual basis to determine the amount of oil and grease coming from the FSE. A limit of 200 mg/L of oil and grease is allowed within the FPUD service area.

The District has taken measures at the Water Reclamation Plant in an emergency to be able to dispose of grease generated by the local FSEs that have problems and require the assistance of the District's Collections Department. In 2006, FPUD staff constructed a grease disposal station prior to the Headwork's portion of the facility. The Fallbrook Administrative Code states that fees will be incurred by the FSE for additional grease interceptor cleanings and disposals. In the event the FSE can take care of its own grease disposal and does not require the assistance of the district, the FSE can utilize any grease interceptor cleaning/grease hauling company.

A few of the companies that have the ability to perform services in the Fallbrook area are:

Company	**Contact Number**
Liquid Environmental Solutions	(858) 481-8106
Darling International	(858) 566-8600
Baker Commodities	(858) 422-5370
SMC Grease	(951) 788-6042

(c) Legal Authority for FOG Program:

FPUD is subject to stringent limitations per its NPDES Permit and the Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems, Order No. 2006-003. The WDR requires agencies that own or operate sanitary sewer systems to develop and implement Sewer System Management Plans (SSMPs). This SSMP is required to include a FOG Control Program,

thereby giving FPUD the authority to implement a FOG Program for all FSEs within the District limits.

In 2004, FPUD passed Ordinances 307, 308, and 312 (part of the Fallbrook Public Utility District Administrative Code) establishing a Fats, Oils and Grease Control Program. Ordinance 308 provides that penalties will be incurred for persons who shall violate any provisions of the code or standards adopted. Violators would be guilty of a misdemeanor, punishable by a fine not exceeding $1,000 or by imprisonment in County Jail not exceeding six months, or both.

On August 24, 2020, FPUD updated the FOG Program and Ordinance under Resolution No. 5000. The District also established a condition of a Special Use Permit pursuant to Article 20 of the Administrative Code. Minor changes were implemented to the program. In addition, the oil and grease limitation was lowered to 200 mg/L, per the Universal Plumbing Code. The Ordinance includes a Preventative Maintenance Program, Grease Control Program, Grease Interceptor and/or Grease Trap Requirements, Best Management Practices, Fee Schedules, etc.

(d) Requirements and Standards Related to Grease Removal Devices:

FSEs within the Fallbrook service area as mentioned in the “Plan, Schedule, and Disposal Facilities for Disposal of FOG Section" are not required to install a grease interceptor if the establishment meets the requirement of having less than 200 mg/L of oil and grease in its wastewater that is sampled. The District’s goal is to conduct sampling once per year.

The FPUD Engineering Department can make suggestions on proper grease interceptor sizing; however, the District will utilize the Uniform Plumbing Code for confirmation of accurate sizing depending on the size of the facility. If an FSE chooses to install a grease trap, requirements and suggestions can be found in the FOG Ordinance, as well as, the Uniform Plumbing Code. Maintenance requirements for grease interceptors and traps can be found in the Ordinance. The user is required to maintain interceptors and traps at all times.

The grease interceptors must be pumped out completely a minimum of every three months, or more frequently as needed to prevent the carryover of grease into the sanitary sewer system. The grease traps are recommended to be cleaned or serviced on a monthly basis. The complete removal of all contents including, floating materials, wastewater, and bottom sludges or solids also is suggested.

Best Management Practices (BMP) information is in found in the FOG Ordinance. The information available includes:

- Dry Clean-Up
- Spill Prevention
- Maintenance of Equipment
- Oil and Grease Collection
- Recycling

FSEs are required to maintain manifests onsite for proof of disposal. Currently, there are no reporting requirements to either the San Diego Regional Water Quality Control Board or the San Diego Department of Environmental Health. FPUD Staff also keeps a filling system of the Food Service Establishments within the Fallbrook service area. FPUD retains a hardcopy file and an electronic file in Excel format. Records dating 1999 and newer are kept in hard copy.

(e) Inspection and Enforcement Authority:

The District's goal is to perform annual inspections of FSEs. FOG inspection information can be found in the FPUD FOG Ordinance. During each inspection, the FSE will have their waste stream sampled. Sampling of the FSEs are performed unannounced.

As of 2021, there were approximately 85 FSEs required to be inspected and sampled. Each year, the list is updated to account for any new businesses. When a new FSE opens for business, FPUD staff will arrange a meeting with the facility manager and introduce the FOG program requirements and each FSE is offered a copy of the Ordinance as well. In addition, FPUD staff will be given a short tour of the facilities. This tour includes a review of record keeping requirements and discussion on Best Management Practices (BMP) with the facility manager.

The enforcement authority originated with the development of District's FOG Ordinance, which was adopted by the FPUD Board of Directors. In summary, the Ordinance contains enforcement provisions which allow District staff to collect fines for non-compliance of the established 200 mg/L oil and grease limit. It is not the desire of the District to collect monetary fines, but rather to assist the FSEs to be in compliance with the established limit.

(f) Sewer System FOG "Hot-Spots" and Source Control Measures:

FPUD established a Collections System Hot Spot Management Program in 2004. A "Hot Spot" is identified as a location in the collections system that has a higher susceptibility to spills or complications and requires a level of maintenance greater than routine.

When a "Hot Spot" location and cleaning frequency has been established, the collections crew will clean the section and observe the results (grease, roots, etc.) by trapping and removing the material at the downstream manhole. The crew will document the cleaning and the results will be recorded on a specific Hot Spot Card and classify the material as light, moderate, or heavy. Hot Spot Cards are kept up to date on Granite.net. Prior to this date, hard copies are available in binders located in the Collections Supervisor's Office.

(g) Root Control and Management Policy:

Fallbrook Public Utility District is committed to keeping our sewer mains flowing and free of root problems. The following policy has been adopted to accomplish these commitments. It is the policy of the Fallbrook Public Utility District to identify and eliminate roots in the sewer system. CCTV inspections are performed with District employees to identify these issues in the sewer mains. This policy favors non-chemical root control procedures over the use of herbicides or other root control chemicals.

Sewer mains are scored in three categories: Heavy, Medium and Light. When a heavy root mass that is causing a flow restriction in the sewer main is identified, the CCTV crew will call out the sewer main cleaning crew to come address the problem at that time. The crews will work together to alleviate the root problem with hydraulic nozzles that will remove the root mass and be captured in the downstream manhole. They have a number of hydraulic nozzles available to use (Warthog, Reaper, Root Dog, Chain Fail or Root Saw). After the root mass has been eliminated, the sewer main segment will be either put on a hot spot list or a chemical root control list.

When medium or light roots are scored, they will be put on a schedule to eliminate the problem by hydraulic means or chemical root control. Sewer main segments that have multiple medium or light root problems will be either added to the hot spot cleaning program or scheduled for chemical root control.

If the District faces the need to use root control chemicals in the future, the District will:

- Use chemicals registered by the Environmental Protection Agency or the State of California. Root control agents must have a half-life of less than thirty (30) days in water.
- Ensure licensed root control contractors that comply with the recommendations of the manufacturer of the chemical and as required by OSHA.

- Maintain records that identify the pipe sections treated with root control chemicals, a map identifying locations where the treatment occurs, the chemical(s) used, including the SDS sheets, and the amount(s) of chemical(s) applied.
- Monitor the areas where the chemical root control has been applied for vegetation die-off in a pattern suggesting root control chemicals have escaped from the sewer resulting in plant mortality. If such vegetation die-off is observed, the District will take action to avoid recurrence.
-

Typically, the Collections Department treats about 3,000 - 5,000 feet of pipeline with chemical industrial root control annually. For minor root problems, District employees may apply ROOTX. On a yearly basis, the District also contracts out root control to a licensed contractor. Duke's Root Control meets all the requirements of the District Policy. They also provide detailed service reports and have a two-year guarantee on all work.

Section 8 – System Evaluation and Capacity Assurance Plan

Section 8 – System Evaluation and Capacity Assurance Plan
The Collections system agency shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:
a) Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;
b) Design Criteria: Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and
c) Capacity Enhancement Measures: The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.
d) Schedule: The Collections system agency shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements.

(a) The District does not typically experience overflow events caused by peak flow or hydraulic deficiencies. Currently, there are only a few areas of the collections system that have been identified as having hydraulic deficiencies. These areas are listed for future improvements on the Capital Budget. Hydraulic deficiencies, if identified during routine flushing or cleaning, are reported to the Collections Supervisor and then to the Field Service Manager. The Field Service Manager and the Collections Supervisor then evaluate the details and specifics of each deficiency. Those deficiencies are then presented to the Engineering Department for recommendations. Determinations are then made regarding the appropriate improvements and repairs to force mains and main lines. Some improvements may be placed on the Capital Budget mentioned above or scheduled for other action or repairs.

Hydraulic Capacity

The sewer system consists of the following facilities:

- A Water Reclamation Plant with a design capacity of 2.7 MGD average annual flow
- 6 lift stations
- 78.6 miles of gravity fed sewer lines
- 4.6 miles of force mains

- 11.97 miles of outfall piping from Fallbrook to the Pacific Ocean

The District's WRP was originally designed with a build-out flow annual average flow of 2.7 MGD. Since the current average annual flow is 1.6 MGD (60% of design flow) and the projected total population increase projected by the San Diego Association of Governments (SANDAG) by 2030 is only a total of 24% by 2040, it is unlikely that the WRP will reach design capacity within a 20-30-year planning horizon, but the system has been designed to this capacity and it has been utilized to represent the long-term build-out scenario. There are currently no large developments being planned that would cause an immediate increase in capacity needs. In addition, much of the sewer service area consists of lower density developments that are on septic and additional development may choose to go on septic versus going to the sewer, so the exact build-out flow demands are highly uncertain.

Based on previous studies the following build-out projections and peaking factors were utilized for the sewer flows to the WRP based on maintaining the original build-out plant design capacity of 2.7 mgd average annual flow (Preliminary Design Report: Improvements to the Fallbrook Water Reclamation Plant, Black and Veatch 2012). These build-out flows are not anticipated to occur within the next 30 years.

(b) See Appendix F for the District's Construction Standard Index.

(c and d) Refer to the following appendixes for more information on capacity:

- Appendix O: FPUD Wastewater Master Plan (2017)
- Appendix P: Deficient Sewer Main Replacement Study by Dudek (2011)
- Appendix Q: District Analysis (1991)

Section 9 – Monitoring, Measurement and Plan Modifications

Section 9 – Monitoring, Measurement and Plan Modifications
The collections system agency shall:
a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
c) Assess the success of the preventative maintenance program;
d) Update program elements, as appropriate, based on monitoring or performance evaluations; and
e) Identify and illustrate SSO trends, including: frequency, location, and volume.

Requirements **(a)-(e)** are consolidated below:

The District is committed to continually improving its methods and practices, including the Sewer System Management Plan and its elements. The District utilizes Microsoft Excel to records all Sanitary Sewer Overflow Events. Information on each spill is entered including Event ID, Overflow Type, Date, Street Number, Street Name, if discharge reached surface waters or a storm drain, the agencies the spill was reported to, volume spilled, and volume recovered. This spreadsheet along with the online CIWQS system helps us monitor the history of SSOs, the effectiveness of our SSMP, the effectiveness of our cleaning and maintenance program, as well as identify areas needing further evaluation or improvement.

Each month, the “Monthly Reports” Spreadsheet is updated on the Collection Supervisor’s computer.

This spreadsheet includes information on

- Flushing
- Hot Spots
- CCTV Data
- Overflows
- Number of Spills (Amount Recovered and Lost)
- Odors

This spreadsheet includes the following charts:

- 5-Year SSO Total Volume vs. Recovered
- 5-Year SSO per 100 Miles
- 5-Year CCTV Conducted
- 5-Year Regular Flushing by Feet
- 5-Year Maintenance by Feet
- 5-Year Sewer Flushing by Feet

This report displays information on a monthly, annual and 5-year basis. It is reviewed thoroughly each month.

The District tracks all sewer line cleaning activity and hot spot schedules. The Monthly Report as described above is included in a monthly packet to the District's Board by the Collections Supervisor. The packet is presented to the General Manager and the Board of Directors for review.

From time to time, careful review of historic and current SSO data and trends may indicate that a change or modification is needed to the District's current maintenance schedule or SSMP. This may typically be realized through ongoing regular discussions between staff, supervisor, and management at various levels, who are regularly involved with the collections system or compliance. It may also be indicated as a result of the supervisor's review of the monthly reports provided to him summarizing all SSOs. When a change in maintenance scheduling or revision of the SSMP is deemed necessary, implementation will be initiated following the appropriate chain of command to ensure that the change or revision is completed in a timely and effective manner.

Furthermore, the District has also determined that completion of the annual questionnaire on the CIWQS site is a good reminder to review the entire SSMP, and to evaluate both its accuracy and effectiveness in consideration of any potential revisions.

Maintenance reports can be generated any time through Granite.net and Cityworks.

Section 10 – SSMP Program Audits

Section 10 – SSMP Program Audits
The collections system agency shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the agency's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP and steps to correct them.

This District's Field Service Manager, Collections Supervisor and Environmental Compliance Technician are responsible for conducting the internal audit of the SSMP. The Audit Report shall be conducted every two (2) years, at minimum, and will focus on evaluating the effectiveness of the SSMP and compliance with the Waste Discharge Requirements, including identification of any deficiencies and corrective actions.

The 2-Year Program Audit will include the following review elements:

- Section by section review of the entire SSMP
- Completion of any needed or recommended updates and revisions, including attachments
- Distribution of changes to all District SSMP binders
- Review and evaluation of the two (2) most recent Annual Summaries of SSOs
- Implementation of any changes required as a result of the review and evaluation of the above reports
- A brief written summary of any notable Audit results and findings, including comments on the effectiveness of the SSMP, the District's compliance with SSMP requirements, and identification of any deficiencies and the corrective actions

Section 11 – Communication Program

Section 11 – Communication Program
The collections system agency shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the collections system agency as the program is developed and implemented. The collections system agency shall also create a plan of communication with systems that are tributary and/or satellite to the collections system agency's sanitary sewer system.

Approval and Certification of the SSMP

The SSMP was adopted, certified, and implemented by the District's Board of Directors at a public Board Meeting on June 22, 2009. Upon approval by the Board of Directors, all sections of the SSMP were certified as complete and implemented by the District's Legally Responsible Official on July 7, 2009 using the online CIWQS system and printing and signing the automated form, and sending it to:

State Water Resources Control Board
Division of Water Quality
Attn: SSO Program Manager
P.O. Box 100
Sacramento CA 95812

The following notice is posted on the District's website:

FPUD's Sewer System Management Plan: FPUD welcomes public input regarding its Sewer System Management Plan. A copy may be viewed online, or by appointment at FPUD's Engineering department, 990 E. Mission Road in Fallbrook, CA. For comments or questions pertaining to this plan, please contact Noelle Denke (noelle@fpud.com) via email, or by calling 760-728-1125.

The Sewer System Management Plan was adopted, certified and implemented by the Board of Directors during a public Board Meeting on June 22, 2009.

2-Year Audit – Communication

Every two (2) years, the District will conduct a Program Audit that focuses on evaluating the effectiveness of the District's SSMP and compliance with the requirements, including identification of any deficiencies and the steps to correct them.

5-Year SSMP Update/Recertification

The SSMP must be updated every five (5) years, and must include any significant program changes. When significant changes are made to the SSMP, recertification by the District's Board of Directors is required.

Additional Public Communication

FPUD Grease - In the Can, Not in the Drain! public education program, also serves to inform the community about the importance of proper disposal of grease and maintaining infrastructure and protecting the environment. Refer to Section 7 of the SSMP for more detailed information on this program.

As of 2019, the Public Information and Outreach Program is currently on a break due to the high participation and response from the community of Fallbrook. If needed, this program will resume.

FPUD has also developed numerous Fats, Oils, and Grease pamphlets and flyers. As part of our public outreach, FPUD will be handing out these documents to apartment complexes and restaurants. This will serves to inform the public about proper grease disposal and hopefully reduce possible spills from grease buildup.

Appendix A: Audits

Fallbrook Public Utility District

Sewer System Management Plan

2-Year Audit: September 1, 2021

Section by Section Review of SSMP:

Section 1 – Goals	☒ OK	☐ Revised
Section 2 – Organization	☐ OK	☒ Revised
Section 3 – Legal Authority	☒ OK	☐ Revised
Section 4 – Operations & Maintenance Program	☒ OK	☐ Revised
Section 5 – Design & Performance Provision	☒ OK	☐ Revised
Section 6 – Overflow Emergency Response Plan	☐ OK	☒ Revised
Section 7 – Fats, Oils, and Grease (FOG) Control Program	☐ OK	☒ Revised
Section 8 – System Evaluation and Capacity Assurance Plan	☒ OK	☐ Revised
Section 9 – Monitoring, Measurement, and Plan Modifications	☒ OK	☐ Revised
Section 10 – SSMP Program Audits	☒ OK	☐ Revised
Section 11 – Communication Program	☒ OK	☐ Revised

Comments on Revisions:

Section 1 – Goals: There were no significant changes made to this section.

Section 2 – Organization: Updated the District's organizational chart. Updated the employees responsible for implementing elements of the SSMP. Updated the job narratives of all the positions involved with the SSMP Program.

Section 3 – Legal Authority: There were no significant changes made to this section. Added language referencing the updated FOG Ordinance (Resolution No. 5000), and updates to Article 20 of the Administrative Code.

Section 4 – Operations and Maintenance Program: There were no significant changes made to this section.

Section 5 – Design & Performance Provisions: There were no significant changes made to this section.

Section 6 – Overflow Emergency Response Plan: Updated contact information, phone numbers, and emails for spill notification and reporting. FPUD spill forms and documents have also been revised.

Section 7 – Fats, Oils, and Grease (FOG) Control Program: Minor changes were made to this section, included additional information regarding the status of the Public Outreach Program. The updated FOG Ordinance has been incorporated into the SSMP.

Section 8 – System Evaluation and Capacity Assurance Plan: There were no significant changes made to this section.

Section 9 – Monitoring, Measurement, and Plan Modifications: There were no significant changes made to this section.

Section 10 – SSMP Program Audits: There were no significant changes made to this section. Therefore, board approval was not required for re-certification.

Section 11 – Communication Program: There were no significant changes made to this section.

Completed Section and/or Attachment Revisions?	☒ Yes	☐ N/A
Completed Distribution of Revisions to all Binders?	☐ Yes	☒ N/A
Reviewed Monthly Reports Spreadsheets?	☒ Yes	☐ No
Reviewed Granite.net & Cityworks Maintenance Schedules?	☒ Yes	☐ No

Changes as a Result of Reviewing the Reports Listed Above:

- Create an Calendar Event for the next 2–Year Audit and 5–Year Recertification of the SSMP
- Continue preventative and routine maintenance using Granite.net and Cityworks. The current maintenance schedules are a definite success in minimizing and eliminating the risk of spills.
- Continue implementing FOG Program
- Continue to train staff in all elements of the SSMP
- Ensure staff is updated on any changes regarding spill notification procedure (forms, contacts, phone numbers)

This Audit was completed and approved by:

Juliana Luengas — 03/10/2022

Environmental Compliance Technician — Date

Kyle Drake — 03/10/2022

Collections System Supervisor — Date

Jack Bebee — 03/11/2022

General Manager — Date

Fallbrook Public Utility District

Sewer System Management Plan

5-Year Recertification: November 7, 2019

Section by Section Review of SSMP:

Section 1 – Goals	☐ OK	☒ Revised
Section 2 – Organization	☐ OK	☒ Revised
Section 3 – Legal Authority	☒ OK	☐Revised
Section 4 – Operations & Maintenance Program	☒ OK	☐ Revised
Section 5 – Design & Performance Provision	☒ OK	☐ Revised
Section 6 – Overflow Emergency Response Plan	☐ OK	☒ Revised
Section 7 – Fats, Oils, and Grease (FOG) Control Program	☒ OK	☐ Revised
Section 8 – System Evaluation and Capacity Assurance Plan	☒ OK	☐ Revised
Section 9 – Monitoring, Measurement, and Plan Modifications	☒ OK	☐ Revised
Section 10 – SSMP Program Audits	☒ OK	☐ Revised
Section 11 – Communication Program	☒ OK	☐ Revised

Comments on Revisions:

Overall Comments: Updated formatting throughout all the sections, revised the spacing and structure of the text. Appendices are all current and up to date. Minor changes were made throughout the SSMP.

Section 1 – Goals: Minor changes were made to this section, revised the overall formatting. Revised the collections systems goals for the District with the current numbers. Updated the budget and projects for the District.

Section 2 – Organization: Updated the District's organizational chart. Added two positions to the SSMP, the Operations Manager and the Field Service Manager. Removed Assistant General Manager from the SSMP. Updated the job narratives of all the positions involved with the SSMP Program.

Section 3 – Legal Authority: No major changes were made to this section.

Section 4 – Operations and Maintenance Program: Minor changes were made to this section, revised the overall formatting.

Section 5 – Design & Performance Provisions: No major changes were made to this section.

Section 6 – Overflow Emergency Response Plan: Updated SDC Department of Environmental Health Spill Notification information. Updated the new contact information, phone numbers, and emails for Joseph Palmer and Domonique Edwards. Also added Keith Yaeger as a contact for the San Diego Regional Board. Reorganized information in a concise manner. Updated relevant appendices with appropriate contact information.

Section 7 – Fats, Oils, and Grease (FOG) Control Program: Minor changes were made to this section, included additional information regarding the status of the Public Outreach Program. Updated FOG Ordinance has been incorporated into the SSMP. Revised the overall formatting of the section.

Section 8 – System Evaluation and Capacity Assurance Plan: Minor changes were made to this section, revised the overall formatting.

Section 9 – Monitoring, Measurement, and Plan Modifications: Minor changes were made to this section, revised the overall formatting.

Section 10 – SSMP Program Audits: Due to changes in District staff, the 5-Year Audit was delayed. The District regretfully acknowledges this lapse and strives to stay in compliance with all provisions of the Order moving forward. No major changes were made to this section. Revised the overall formatting of the section.

Section 11 – Communication Program: Minor changes were made to this section, included additional information regarding the status of the Public Outreach Program.

Completed Section and/or Attachment Revisions?	☒ Yes	☐ N/A
Completed Distribution of Revisions to all Binders?	☒ Yes	☐ N/A
Reviewed Monthly Reports Spreadsheets?	☒ Yes	☐ No
Reviewed Granite.net & Cityworks Maintenance Schedules?	☒ Yes	☐ No

Brief Summary of Notable Audit Results and Findings:
Although the SSMP did not have an official 2-Year Audit in 2017, there were several minor changes implemented in the last couple years. The document was last updated in 2017 and 2018. Therefore, this official 5-Year Audit had minimal revisions. With the appropriate staff now in place, the District will strive to stay in compliance with all provisions of the Order moving forward.

FALLBROOK PUBLIC UTILITY DISTRICT

SSMP 2-YEAR AUDIT – MAY 22, 2017

Section by Section Review of SSMP:

Section 1 – Goals	☐ OK	☒ Revised
Section 2 – Organization	☐ OK	☒ Revised
Section 3 – Legal Authority	☐ OK	☒ Revised
Section 4 – Operations & Maintenance Program	☐ OK	☒ Revised
Section 5 – Design & Performance Provision	☐ OK	☒ Revised
Section 6 – Overflow Emergency Response Plan	☐ OK	☒ Revised
Section 7 – Fats, Oils, and Grease (FOG) Control Program	☐ OK	☒ Revised
Section 8 – System Evaluation and Capacity Assurance Plan	☐ OK	☒ Revised
Section 9 – Monitoring, Measurement, and Plan Modifications	☐ OK	☒ Revised
Section 10 – SSMP Program Audits	☐ OK	☒ Revised
Section 11 – Communication Program	☒ OK	☐ Revised

Comments on Revisions:

Overall: Changed format so that each requirement of a section is easily notated through a lettering system and bullets [i.e., (a)(b)(c)]; updated overall design, created section at end for appendices; appendices included in newest version are up-to-date, updated revisions page, added page numbers to Table of Contents page including newly listed appendices.

Section 1 – Goals: Revised amount of pipeline CCTV'd each year and frequency; updated the following: capital budget projects, budget for Main Replacement, and manhole construction and relining.

Section 2 – Organization: - Updated job narrative of Environmental Compliance Technician and Collection System Supervisor; added Table 2-1: Responsible Person for Implementation of Each SSMP Element; created outline of requirements (a-e).

Section 3 – Legal Authority: Updated source of legal authority powers (statutory); updated location of Administrative Code (appendix) and included link. Legal authority requirements (a-e) are now outlined in a concise manner that expands on each provision.

Section 4 –O&M: Updated collection system maps and inspection recordkeeping (from filing to Granite XP System and CMMS); updated Condition Assessment to include field reports using laptops running Granite XP Light; updated Rehabilitation and Repairs budget. Updated Training program; changed tailgate safety meetings from bi-weekly to weekly; updated equipment. Added Table 4-1: Collection Crews and Responsibilities; added Table 4- 2: Preventative Maintenance Schedules and Tracking; added Table 4-3: Numeric Assessment of Defects; added Table 4-4: Score Card.

Section 5 –Design & Performance: Provided an updated version of Design and Construction Standards (see appendices). Broke down paragraphs based on requirements (a) and (b) from the Order.

Section 6- SSO Emergency Response Plan: Updated Environmental Health spill line phone numbers and contact number for Keith Kezer from County of San Diego Environmental Health, Edward Kaulius from Camp Pendleton Naval Weapons and Joann Lim from the San Diego Regional Board. Reorganized information in a concise manner. Added Table 6-1: Summary of SSO Regulatory Requirements. Updated relevant appendices with appropriate contact information.

Section 7 –FOG Control Program: Updated Plan, Schedule and Disposal of FOG section, updated haulers, length of pipe treated with root killer. Broke down requirements in body of text (a) – (g).

Section 8 –System Evaluation and Capacity Assurance Plan: Included information from the Wastewater Master Plan on hydraulic capacity and deficiencies. Provided points (a)-(d) based on information in District's Capacity Assurance Plan. Included District's Capacity Assurance Plan in Appendix O.

Section 9 – Monitoring, Measurement, and Plan Modifications: Provided requirements (a)-(e) throughout body of text.

Section 10 – SSMP Program Audits: While several components of the SSMP underwent a revision in 2015, an official 2-year audit form was not completed due to changes in staffing. District regretfully acknowledges this lapse and will strive to stay in compliance with all provisions of the Order moving forward.

Section 11 – Communication Program: No changes were determined to be necessary.

Completed Section &/or Attachment Revisions?	☒ **Yes**	☐ N/A
Completed Distribution of Revisions to all binders?	☒ **Yes**	☐ N/A
Reviewed Monthly Reports Spreadsheets?	☒ **Yes**	☐ No
Reviewed Granite XP & CMMS Maintenance Schedules?	☒ **Yes**	☐ No

Changes recommended as a result of reviewing the reports listed above:

- Create an Outlook Calendar event for the next 2-year audit and 5–year certification for SSMP signatories.
- Maintain the current level of preventative and routine maintenance using Granite XP and CMMS. The current maintenance schedules are a definite success in minimizing and eliminating the risk of spills. There have been no public spills for the 2017 calendar year thus far.
- Maintain the current level of report-review as current.
- Continue to train staff in SSMP elements.

Brief summary of notable Audit results and findings:

While several components of the SSMP underwent a revision in 2015, an official 2-year audit form was not completed due to change in staff at this time. District regretfully acknowledges this lapse and will strive to stay in compliance with all provisions of the Order moving forward.

This audit was completed by:

Toma — Environmental Compliance Technician — 7/19/17 Date

Collections System Supervisor — 7-19-17 Date

Assistant General Manager — 7-19-17 Date

A copy of this audit report is to be given to the General Manager and any other management or staff requesting a copy.

This completed 2-Year Audit is to be reported to the Board of Directors by way of inclusion in a monthly board packet and also posted on FPUD's website for public review and comment for an appropriate duration of time.

Fallbrook Public Utility District

SSMP 2-Year Audit – December 19, 2013

Section by Section Review of SSMP:

Section 1 – Goals	☑ OK	☐ Revised
Section 2 – Organization	☐ OK	☑ Revised
Section 3 – Legal Authority	☑ OK	☐ Revised
Section 4 – Operations & Maintenance Program	☑ OK	☐ Revised
Section 5 – Design & Performance Provision	☐ OK	☑ Revised
Section 6 – Overflow Emergency Response Plan	☐ OK	☑ Revised
Section 7 – Fats, Oils, and Grease (FOG) Control Program	☑ OK	☐ Revised
Section 8 – System Evaluation and Capacity Assurance Plan	☑ OK	☐ Revised
Section 9 – Monitoring, Measurement, and Plan Modifications	☑ OK	☐ Revised
Section 10 – SSMP Program Audits	☐ OK	☑ Revised
Section 11 – Communication Program	☐ OK	☑ Revised

Comments about revisions:

Reviewed entire SSMP. Made revisions per SWRCB Order No. WQ 2013-0058-EXEC. Also made revisions to current staffing, contact numbers, and budget information.

Completed Section &/or Attachment Revisions? ☑ Yes ☐ NA

Completed Distribution of Revisions to all binders? ☑ Yes ☐ NA

Includes: General Manager, Engineering and Planning Manager, Operations Manager, Collections Foreman, Engineering Dept., Operations Tech./Plant

Reviewed last two Annual Year-End Summaries of SSOs? ☑ Yes ☐ No

Reviewed last two Annual Maintenance Reports? ☑ Yes ☐ No

Changes recommended as a result of reviewing the reports listed above:

Brief written summary of any notable Audit results and findings:
Include comments on the effectiveness of the SSMP, the District's compliance with SSMP requirements, and identification of any deficiencies and the recommended corrective steps:

The SSMP continues to meet the requirements and be effective. The District has maintained compliance with the SSMP. There were no notable deficiencies discovered at the time of the audit. Most changes were to update current staffing, contact numbers, budgets numbers, and revisions for SWRCB Order No. WQ 2013-0058-EXEC.

This audit was completed by:

Operations Manager — 1-21-14 Date

Collections Foreman — 1-16-14 Date

Engineering Technician III — 1-16-14 Date

A copy of this audit report is to be given to the General Manager and any other management or staff requesting a copy. A copy is also to be kept in each SSMP binder at the back of Section 10.

This completed 2-Year Audit is to be reported to the Board of Directors by way of inclusion in a monthly board packet and also posted on FPUD's website for public review and comment for an appropriate duration of time.

Fallbrook Public Utility District

SSMP 2-Year Audit - November 8, 2011

Section by Section Review of SSMP:

Section 1 – Goals	☐ OK	☑ Revised
Section 2 – Organization	☐ OK	☑ Revised
Section 3 – Legal Authority	☑ OK	☐ Revised
Section 4 – Operations & Maintenance Program	☐ OK	☑ Revised
Section 5 – Design & Performance Provision	☑ OK	☐ Revised
Section 6 – Overflow Emergency Response Plan	☐ OK	☑ Revised
Section 7 – Fats, Oils, and Grease (FOG) Control Program	☐ OK	☑ Revised
Section 8 – System Evaluation and Capacity Assurance Plan	☑ OK	☐ Revised
Section 9 – Monitoring, Measurement, and Plan Modifications	☐ OK	☑ Revised
Section 10 – SSMP Program Audits	☐ OK	☑ Revised
Section 11 – Communication Program	☑ OK	☐ Revised

Comments about revisions:

Reviewed entire SSMP. Made minor revisions to ensure data and program was up-to-date and accurate. Core of program remains the same. Most revisions were related to current staffing, contact numbers, budget numbers, equipment information, etc.

Completed Section &/or Attachment Revisions? ☑ Yes ☐ NA

Completed Distribution of Revisions to all binders? ☑ Yes ☐ NA

Includes: General Manager, Engineering and Planning Manager, Operations Manager, Collections Foreman, Engineering Dept., Operations Tech./Plant

Reviewed last two Annual Year-End Summaries of SSOs? ☑ Yes ☐ No

Reviewed last two Annual Maintenance Reports? ☑ Yes ☐ No

Changes recommended as a result of reviewing the reports listed above:

No changes recommended at this time.

Brief written summary of any notable Audit results and findings:
Include comments on the effectiveness of the SSMP, the District's compliance with SSMP requirements, and identification of any deficiencies and the recommended corrective steps:

The SSMP continues to meet the requirements and appears to be effective. The District has maintained compliance with the SSMP. There were no notable deficiencies discovered at the time of the audit. Most changes were minor in nature and related to current staffing, contact numbers, budget numbers, equipment information, etc.

This audit was completed by:

Operations Manager — 11/ 08/11 Date

Collections Foreman — 11/08/11 Date

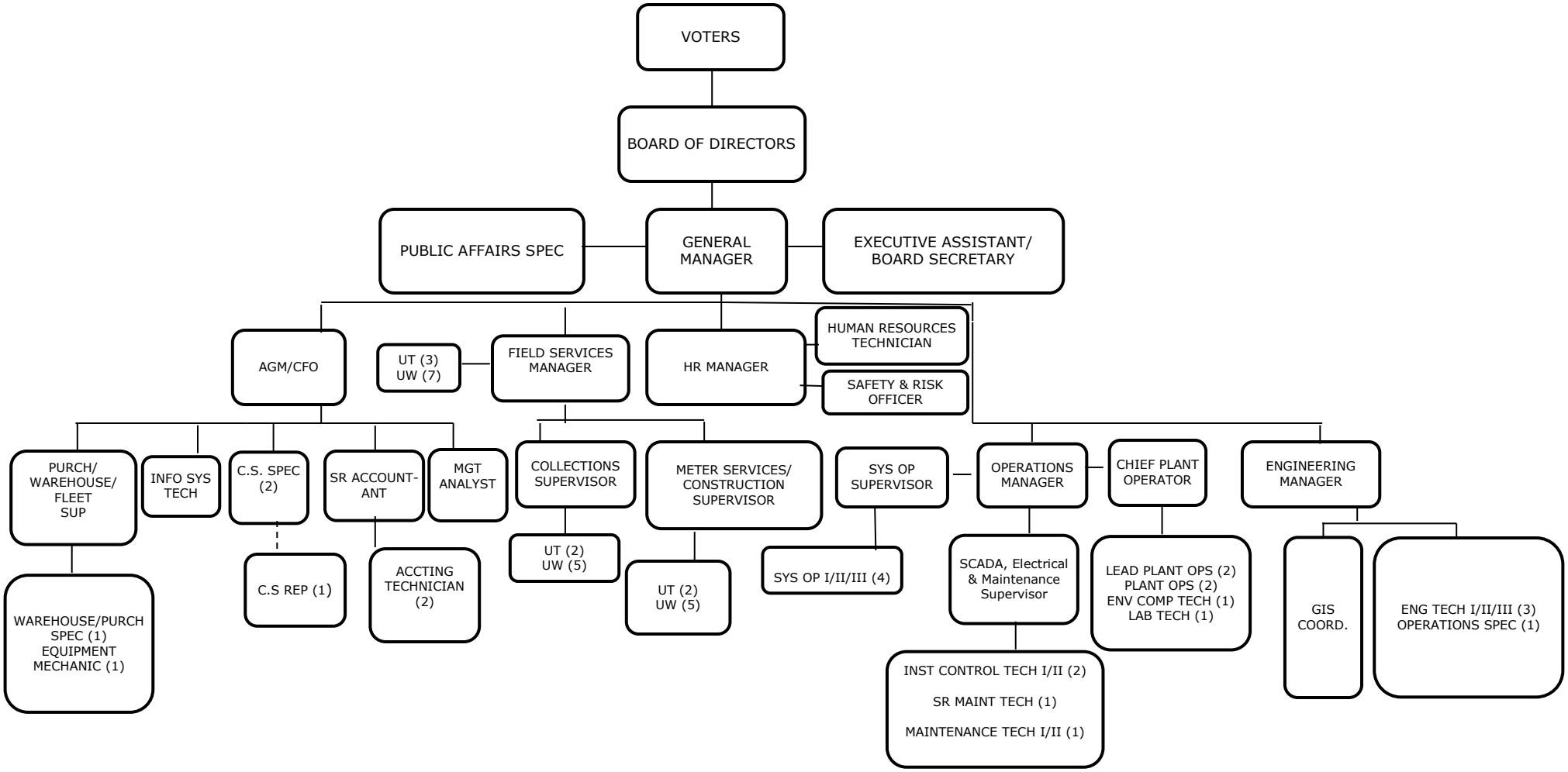
Operations Technician — 11/08/11 Date

A copy of this audit report is to be given to the General Manager and any other management or staff requesting a copy. A copy is also to be kept in each SSMP binder at the back of Section 10.

This completed 2-Year Audit is to be reported to the Board of Directors by way of inclusion in a monthly board packet and also posted on FPUD's website for public review and comment for an appropriate duration of time.

Appendix B: FPUD Organization Chart

FPUD Org Chart



69 Total Positions

Appendix C: SSMP Staff Contact Information

SSMP Staff Contact Information

FPUD Main Number (760) 728-1125			
Position	**Name**	**(760) 999-Extension**	**Cell Phone**
Field Services Manager	Steve Stone	2723	(760) 497-5776
Collections System Supervisor	Kyle Drake	2722	(760) 497-4056
Environmental Compliance Technician	Juliana Luengas	2803	(760) 420-9523
Chief Plant Operator	Owni Toma	2802	(951) 400-1335
Utility Technicians	Jeff Wolfe		(760) 419-6733
	Alex Stanko		(760) 497-1189
Utility II	Peter Velasco		(760) 419-6919
	Chad Wodarczyk		(760) 497-3976
Utility I	Devin Rodrioguez		(760) 468-5010
	Rene Ramos		(760) 497-5779
	Brandon Stewart		(760) 497-5875
Collections Standby Cell			(760) 497-3393

Emergency Response

Collections Standby Personnel (760) 497-3393
Collections System Supervisor: Kyle Drake (760) 497-4056
FPUD Main Number (760) 728-1125 After Hours Answering Service

Appendix D: FPUD Administrative Code Index

FALLBROOK PUBLIC UTILITY DISTRICT

ADMINISTRATIVE CODE
INDEX

* As of February 2021, the Board of Directors adopted Resolution 5006, and the Table of Contents was renumbered to remove unused articles and make existing articles sequential.

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Appendix E: Collection Maps

DISCLAIMER: By accepting this map, you agree that the Fallbrook Public Utility District assumes no liability or responsibility of any kind arising from use of this map. This map, its Data, and any calculations associated with this map is provided without warranty of any kind.

PS LIFT STATIONS

SEWER MAIN

FORCE MAIN

SEWER MAINS FALLBROOK PUBLIC UTILITY DISTRICT

0 500 1,000 2,000 3,000 4,000 Feet

0 0.125 0.25 0.5 0.75 1 Miles

Source: FPUD, ESRI Projection: California State Plane Zone 6, NAD 83, Feet. Epoch 1991.35
Map Created by Todd Jester (10-5-21). X:\GIS\Data - Inside\Project Specific\Figures for Kyle\SEWER_MAINS.MXD

N W G.I.S. Fallbrook Public Utility District E S

DISCLAIMER: By accepting this map, you agree that the Fallbrook Public Utility District assumes no liability or responsibility of any kind arising from use of this map. This map, its Data, and any calculations associated with this map is provided without warranty of any kind.

LIFT STATIONS
SEWER MAIN
FORCE MAIN

TROUBLE SPOT CLEANING FREQUENCY
- 1 MONTH
- 3 MONTH
- 6 MONTH
- 12 MONTH

SEWER TROUBLE SPOTS

0 390 780 1,560 2,340 3,120 Feet

0 0.1 0.2 0.4 0.6 0.8 Miles

Source: FPUD, ESRI Projection: California State Plane Zone 6, NAD 83, Feet. Epoch 1991.35
Map Created by Todd Jester (10-5-21). X:\GIS\Data - Inside\Project Specific\Figures for Kyle\SEWER_TROUBLE_SPOTS.MXD

N
W G.I.S. FPUD Fallbrook Public Utility District E
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Appendix F: Construction Standards Index

DOMESTIC WATER
AND
SANITARY SEWER
CONSTRUCTION STANDARDS MANUAL

NOVEMBER 3, 2021 EDITION

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FALLBROOK PUBLIC UTILITY DISTRICT
CONSTRUCTION STANDARD SPECIFICATIONS FOR
DOMESTIC WATER AND SANITARY SEWER FACILITIES

TABLE OF CONTENTS

FALLBROOK PUBLIC UTILITY DISTRICT
CONSTRUCTION STANDARD SPECIFICATIONS FOR
DOMESTIC WATER AND SANITARY SEWER FACILITIES

Appendix G: General Sewer Notes

SECTION 1

GENERAL CONDITIONS

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SECTION 1

GENERAL CONDITIONS

1.01 GENERAL

These specifications establish standards for work, materials, and construction procedures for improvements to the water and sewerage systems of FPUD. These specifications are intended to establish general requirements for all work performed within the District. These Standards are not intended to provide specific requirements for any particular project. Therefore, each project shall also be designed under the specific direction of a civil engineer licensed in California. The District Engineer shall use professional judgment in allowing any deviations from these requirements.

1.02 REFERENCE SPECIFICATIONS

Wherever reference is made within these documents to certain standard specifications, the reference shall be construed to mean the latest standards, with all subsequent amendments, changes, or additions as thereafter adopted and published that are in effect at the date of approval by the District of the plans and specifications prepared by a private engineer.

APWA	American Public Works Association
ASTM	American Society for Testing Materials
AWWA	American Water Works Association
ASME	American Society of Mechanical Engineers
ANSI	American National Standard Institute
ACI	American Concrete Institute
SSPWC or "Green Book"	Standard Specifications for Public Works Construction
SDRSD	San Diego Regional Standard Drawings

1.03 DEFINITION OF TERMS

A. Whenever in these specifications or other contract documents where these specifications govern, the following terms are used, they shall be defined as follows:

1. Applicant: Shall mean any property owner who makes application for District service or enters into an agreement with the District.
2. Appurtenances: Valves, stops, bends, elbows, reducers, services, backflow preventers, bushings, plugs, caps, blocks, jackets, wyes, cleanouts, manholes, frames and covers, lateral markers and all other fittings, nuts, bolts, washers, gaskets or other work required to make a complete installation.
3. Board of Directors: The Board of Directors of FPUD.
4. Contract: The Contract between the Applicant (property owner) and his Contractor.
5. Contractor: The person or entities entering into a contract with the Applicant for performance of the work or improvements pursuant to these specifications. The contractor shall at all times be represented on-site in person or by a duly designated

agent or superintendent. Instructions or information given by the District Engineer to the Contractor's superintendent or agent on the work shall be considered as having been given to the Contractor.

6. Days: Unless otherwise specified, days shall mean calendar days.
7. District: The FPUD.
8. Elevation: Elevations referred to herein are to be based upon the U.S.C. & G.S. datum.
9. Engineer: A registered civil engineer appointed by the District acting either directly or through his properly authorized agent, engineers, assistants, inspectors and superintendents, unless otherwise qualified. Also see District Engineer
10. FPUD: Fallbrook Public Utility District.
11. General Manager: General Manager of the FPUD.
12. District Engineer: District Engineer of FPUD or an authorized representative.
13. Inspector: A designated representative of the District acting through the District Engineer.
14. Owner (Developer): Any person or entity who agrees to construct and install facilities which after acceptance will become part of the District's system and who must select and employ a licensed Class A, or approved C-34 or C-42 contractor, to perform the work.
15. Plans: The official scale and full size approved detail drawings, or exact reproductions thereof, which show location, character, dimensions, elevations, and details of the work to be done.
16. Design Manual: The applicable design criteria published in the "Design and Construction Standards for Potable Water and Sanitary Sewer Facilities of the FPUD." This includes water system and sewer system requirements for subdivisions and other extensions within the boundaries of the FPUDs as adopted by the Board of Directors including all amendments thereto.
17. Specifications: The "Design and Construction Standards for Potable Water and Sanitary Sewer Facilities of the FPUD," unless otherwise modified..
18. Standard Drawings: The standard drawings, a part of the "Design and Construction Standards for Water and Sanitary Sewer Facilities of the FPUD," unless otherwise modified.
19. Subcontractor: Any person or entity who has a contract with the Contractor to perform any of the work at the site. Subcontractor also means any person who has a contract with a subcontractor to perform any of the work at the site. All subcontractors must be approved by the District.
20. Work: Labor, materials, equipment, transportation, or other facilities and safety measures necessary to complete the improvement proposed under the Contract or Permit.
21. Private Engineer: A California registered civil engineer employed by the Applicant.
22. Approved, directed, satisfactory, proper, acceptable, required, necessary, and/or equal: shall be defined as considered approved, directed, satisfactory, proper, acceptable, required, necessary, or equal in the opinion of the District.

23. Utility: Public or private facilities for the transportation of fluids, gases, power, signals, or communications.
24. Building Lateral: Shall refer to the extension from the building to the service lateral clean-out at the property line, or other place of disposal.
25. Service Lateral, Sewer: Shall mean the sewer pipeline from a the lateral clean-out at the property line to a collection line within public right-of-way or easement.
26. Collection Line: Shall mean the District's sewer pipeline to which the service laterals are connected.
27. Trunk Line: Shall mean a main line sewer pipeline to which collection lines are connected and that serves the primary purpose of transporting sewage from collection lines to the treatment plant.
28. Service Lateral, Water: Shall mean the water line from the water distribution main within the public right-of-way or easement to the water meter.
29. Distribution Main: Shall mean the District's water pipeline to which the water service laterals are connected.
30. Transmission Main: Shall mean a large diameter main water pipeline to which distribution mains are connected and that serves the primary purpose of transporting water from one area of the District to another.

1.04 ABBREVIATIONS

The abbreviations used in the plans and specifications are abbreviations of the meanings of which are established by general usage throughout the industry and those defined below:

ABAN - Abandoned
AC - Acre/Asphalt Concrete/Alternating Current
ACP - Asbestos-Cement Pipe
AGG - Aggregate
ANSI - American National Standards Institute
APWA - American Public Works Association
ASCE American Society of Civil Engineers
ASPH - Asphalt
ASSY - Assembly
ASTM - American Society for Testing & Materials
AWWA - American Water Works Association
BC - Beginning of Curve
BVC - Begin Vertical Curve
CMLC - Cement Mortar Lined & Coated
CONC - Concrete
DIA - Diameter
DIP - Ductile-Iron Pipe
DIPRA - Ductile-Iron Pipe Research Association
EC - End of Curve
EL - Elevation/Each Layer
ELEC - Electric
EP - Edge of Pavement
EPA - Environmental Protection Agency (Federal)
ESMT - Easement
MIN - Minimum
MIP - Male Iron Pipe Thread
MISC - Miscellaneous
MJ - Mechanical Joint
MOV - Motor Operated Valve
NA - Not Applicable
NACE - National Association of Corrosion Engineers
NBS - National Bureau of Standards
NC - Normally Closed
NE - Northeast
NTS - Not to Scale
NW - Northwest
NWL - Normal Water Level
OAE - Or Approved Equal
OC - On Center
OD - Outside Diameter
OSHA - Occupational Safety and Health Administration, U.S. Department of Labor, as defined in the General Conditions
PE - Plain End
PI - Point of Intersection
PO - Push-On

EST - Estimate or Estimated
EVC - End Vertical Curve
FG - Finished Grade
FH - Fire Hydrant
FIP - Female Iron Pipe Thread
FLG - Flange
FPS - Feet Per Second
FS - Finished Surface/Floor Sink/Federal Specifications
FT - Feet
G - Gas
GAL - Gallon
GALV - Galvanized
GB - Grade Break
RWGV - Resilient Wedge Gate Valve
HDPE - High-Density Polyethylene Pipe
HGL - Hydraulic Grade Line
HORIZ - Horizontal
HWL - High Water Level
HWY - Highway
ID - Inside Diameter
IE - Invert Elevation
IN - Inches
INV - Invert
I/O - Inlet/Outlet
IPT - Iron Pipe Thread
IRR - Irrigation
LF - Linear Foot
LP - Light Pole
LWL - Low Water Level
MATL - Material
MAX - Maximum
MECH - Mechanical
MGD - Million Gallons Per Day
MH - Manhole
POB - Point of Beginning
PSI - Pounds Per Square Inch
PV - Plug Valve
PVC - Polyvinyl Chloride
PVI - Point of Vertical Intersect
PVMT - Pavement
QTY - Quantity
RJ - Restrained Joint
R/W - Right-Of-Way
RWGV - Resilient Wedge Gate Valve
S - South
SCADA - Supervisory Control and Data Acquisition
SCH - Schedule
SE - Southeast
SPEC - Specification
SSPWC - Standard Specifications for Public Works Construction
SS - Stainless Steel
ST - Street
STA - Station
STD - Standard
SW - Southwest
SYS - System
TC - Top of Curb
TEMP - Temporary
TYP - Typical
UTIL - Utilities
VC - Vertical Curve
VERT Vertical
VPI - Vertical Point of Intersection
W - West
WM - Water Meter
WT - Weight
WTR - Water

1.05 INSPECTION

The District Engineer or representative will provide inspection for all work which is to be dedicated to the District upon completion. All materials and work shall be performed only in the presence of the District Engineer and any work done in the absence of said District Engineer shall be subject to rejection. The Contractor shall notify the District Engineer five (5) working days prior to starting and two (2) working days during construction, in order that inspection services may be provided. No inspection shall be available on weekends, District holidays or before 7:00 a.m. or after 3:30 p.m.

1.06 DEFECTIVE WORK

The inspection of the work shall not relieve the Applicant of any of his obligations to fulfill his agreement or permit with the District. Defective work shall be made good, and unsuitable materials may be rejected, notwithstanding that such work and materials may have been previously inspected by the District Engineer and accepted. If the work, or any part thereof, shall be found

defective at any time before the final acceptance of the whole work, the Applicant or his Contractor shall correct such defect in a manner satisfactory to the District Engineer. All costs for retesting and re-inspection which are necessitated by defective materials and/or workmanship shall be at the sole expense of the Applicant.

1.07 TEMPORARY SUSPENSION OF WORK

The District Engineer shall have the authority to suspend the work wholly or in part for such time as he may deem necessary due to the failure on the part of the Contractor to carry out orders given, or to perform any provisions of the Contract. The Contractor shall immediately comply with the written order of the District Engineer to suspend the work wholly or in part. The work shall be resumed when methods or defective work has been corrected as ordered or approved in writing by the District Engineer.

In the event that a suspension of work is ordered as provided above, such suspension of work shall not relieve the Contractor of his responsibility to complete the work within the time limit set forth in the Agreement for Construction of Water and/or Sewer System, and shall not be considered cause for extension of the time for completion.

1.08 ERRORS OR DESCREPANCIES NOTED BY CONTRACTOR

If the Contractor, either before commencing work or in the course of the work, finds any discrepancy between these Specifications and Drawings, or between either of them and the physical conditions at the site of the work, or finds any error or omission in any of the drawings or in any survey, he shall promptly notify the District Engineer in writing of such discrepancy, error or omission.

1.09 REQUESTS FOR INFORMATION

Inquiries for existing FPUD facilities shall be made in writing or in person at the District offices.

1.10 PLAN AND PROFILE REQUIREMENTS

A. General.

1. All plans approved by FPUD shall have a two (2) year period in which to begin construction beginning from the date of the District Engineer's approval. At the end of the two year period the plans will be considered as expired. The plans must be resubmitted with the entire plan check fee and other submittal requirements before being considered for plan check. If FPUD standards are revised within the two year period, the project plans must be revised and conform to new standards.
2. All proposed work prepared by a Private Engineer shall be submitted to the District Engineer for approval on sheets which conform to the requirements of this section. All sheets shall be signed, sealed and dated by the Private Engineer responsible for the designs.
3. The overall size of each sheet shall be 24-inches high by 36-inches wide. Each sheet shall have a 2-inch wide margin on the left-hand border and ½-inch wide margins on the top, bottom, and right-hand borders.
4. Digital files with the District's standard title block, border, revision box and General Notes are available at the District Office. The District Engineer's approval is required for any deviation from this format.

5. Name and registration number of the Private Engineer responsible for the preparation of the project or the name of the firm and the name and registration number of the private engineer under whose direction the plans were prepared. Space shall also be provided for the Private Engineer's signature, seal, date of expiration of said registration and seal.
6. The Revision box shall include the letter of the revision, date made, description of change and space for the initials of both the person making the change and for District approval. Revisions shall be marked with small triangles containing the letter of the revision and placed near the location of such change.
7. Each project shall contain a legend and list of abbreviations for use in defining the symbols and abbreviations used on the sheets. All symbols and abbreviations used must be defined on the Title sheet or Note sheet.
8. Waterline and Sewerline data table is required for each project. Include a column for Delta, bearing, radius, length, description and station.

   A lateral table is required for each project. For water service include a column for lot number, design station, As-Built station, size of service, static pressure at service, and length of service. For sewer laterals provide lot number, design station, As-Built station, length of lateral, depth at property line and a column to indicate the use of a backflow preventer.
9. The following information shall be located on the Title Sheet:
   a. The name, address and phone number of the Private Engineer responsible for the preparation of the project.
   b. A location map at a scale of 1-inch = 2,000 feet showing and labeling the boundary of the project in relation to major streets or interstate, district boundaries, adjacent developments and other pertinent features. The location map shall have a north arrow oriented towards the top of the sheet.
   c. A vicinity map at a scale of 1-inch = 200 feet (minimum) to show the entire project without match lines. The vicinity map shall contain lot boundaries, street right-of-way lines and names, a general layout of the sewer and/or water lines with size and material, location of manholes, main line valves, fire hydrants, blow-offs, air and vacuum valves and other major appurtenances, and other features, natural or artificial, necessary for a general understanding of the project. The vicinity map shall have a north arrow oriented towards the top of the sheet.
   d. A written description of benchmarks, including locations and elevations.
   e. An index to all drawings.
   f. Applicable approval blocks for County Department of Public Works, North County Fire Protection District and Department of Health Services.
   g. Plan Declaration: The following declaration shall be placed on the first sheet of the Plans and signed, sealed, and dated by the responsible registered civil engineer:

      > I hereby declare that the design of the improvements as shown on these plans complies with professional engineering standards and practices. As the engineer in responsible charge of the design of these improvements, I assume full responsible charge for such design. I understand and acknowledge that the plan check of these plans by the FPUD is a review for the limited purpose of ensuring the plans comply with District procedures and other applicable policies

and ordinances. The plan check is not a determination of the technical adequacy of the design of the improvements. Such plan check does not, therefore, relieve me of my responsibility for the design of these improvements.

As Engineer of Work, I agree to indemnify and save the FPUD, its officers, agents, and employees harmless from any and all liability, claims, damages or injuries to any person or property which might arise from the negligent acts, errors or omissions of the Engineer of Work, my employees, my employees agents or consultants.

Engineer	License No.	Date

h. Manholes shall be sequentially numbered on the plans with numbers beginning at the lowest invert.

B. Plan Drawings. The Plan view of all drawings shall include the following:

1. Scale shall be a minimum of 1-inch = 40 feet unless otherwise approved by the District Engineer.
2. All sewer and/or water facilities, street lines, lot lines, curb grades, storm drains, driveways and other utilities both existing and proposed and all other features necessary to give a complete understanding of the project.
3. Survey stationing of the centerline of all manholes, valves, or other structures relative to centerline stationing or right-of-way stationing and provide the pipe data for all bends, curves, or deflections.
4. Show the alignment with bearings and distances and width of all easements for facilities not within public rights-of-way.
5. The plan shall include a north arrow oriented generally upwards or to the left.
6. Match lines shall be used between the sheets separated portions of the plan. Each match line shall be cross-referenced to show the sheet location of the matching portion of plan whether it be on the same or different sheet.
7. Existing monumentation in existing streets shall be shown.

C. Profile Drawings. Profile drawings shall normally be shown on the same sheet and directly above the corresponding plan view so that manholes, valves, air and vacuum valves and other appurtenances in both the plan and profile view are vertically aligned as nearly as possible. Profile drawings shall be drawn at the same horizontal scale as the plan view. The normal vertical scale shall be 1-inch = 4-feet. The vertical elevations shall be written on both the left and right sides of the profile. Where water and sewer lines cross or where they cross other facilities such as drainage structures, the profile shall show elevations of top and bottom of the lines at the crossings.

Profile drawings shall show and label the following information, as applicable:

1. Profile (at centerline of street or easement) of existing and proposed ground surface.
2. Size, slope (to 4 significant figures), pressure rating, and material of pipeline.

3. All deflection angles shall be shown in profile and labeled as Grade Break (G.B.). The angle shall be shown in degrees, minutes, seconds. When high deflection couplings are used they must be called out in profile at the location of the grade break.
4. Survey stationing of street centerline between centerline of manholes or valves and actual distance between centerline of valves or outside of manhole to outside of manhole.
5. Pipeline elevations to the nearest 0.01-foot of invert for sewer and to the nearest 0.01-foot of centerline for water. The invert of the pipeline shall be shown in profile and labeled as "invert grade".
6. Rim elevation of manholes or other structures.
7. Any existing or proposed pipeline, utility, or similar structure that crosses the waterline or parallels the line with less than 5-feet between the existing and proposed utilities.
8. The location and limits (include station) of other features such as a steel casing, concrete encasement, extra strength pipe, special pipe bedding, etc.
9. Depth of manhole from rim to flow line of lowest pipe invert.
10. Elevations at the inlet and outlet of the manholes.
11. Private sewer laterals must be shown in profile where they cross other utilities where it appears a potential conflict exists.
12. Match lines shall be used between the sheets separated portions of the profile. Each match line shall be cross-referenced to show the sheet location of the matching portion of profile whether it be on the same or different sheet.
13. Profile drawings shall be discontinued at match lines with survey stationing and cross-referencing corresponding to the match lines shown on the plan drawing.

D. Standard Details. Where the Private Engineer intends to use any of the Standard Details without modification, these details need not be reproduced on the Construction Plans provided that specific reference is made to each detail. For example, a manhole detail would not be required provided that the callout for the manhole refers to FPUD Standard Drawing S-4. Where the Private Engineer intends to modify any of the Standard Details, these revised details shall be included in the Construction Drawings in their entirety for District approval.

E. Special Details. Special Details are required for any tie-in to an existing waterline or as required by the District Engineer. Connection details must include all pipe and fitting materials, couplings, fittings and adapters necessary to construct the tie-in.

F. As-Builts Plans. On completion of the project the District Engineer shall be given a complete set of full-size photo reproducible mylar sheets (ammonia mylar sheets are not allowed) that shall show, in complete detail, all elements of the project, as constructed, text must be legible. The words "As-Builts" shall be boldly stamped on each sheet in ½-inch high bold block letters. The As-Built drawings will be reviewed and must be signed off by the District Engineer prior to issuing a Notice of Completion. An electronic copy of the mylar sheets shall also be provided on a computer disk or CD. Each sheet shall also be provided in an AutoCAD format. Each sheet of the drawing set shall be scanned and saved as a separate file as a TIF image.

G. Advertising. Plans shall be free of advertising, insignia, labels, emblems, seals, or other markings not relevant to the work. When approved and accepted by the District Engineer, such plans shall become the property of the FPUD.

H. Responsibility. Approval of plans by FPUD will not relieve the Applicant, Owner or Engineer of any responsibility because of errors in the plans either of commission or omission. Such errors, when brought to the attention of the private engineer by the District Engineer, shall be promptly remedied as herein provided.

I. Revisions. After mylars have been approved and filed, or after inspection fees have been paid, changes may be made to the plans upon approval of the District Engineer. In order to obtain such approval, the Private Engineer shall first submit two (2) sets of duplicate bluelines of the original drawings upon one set of which the proposed change is shown. At the discretion of the District Engineer, construction of changes shall not be completed until revisions are approved.

1.11 SUBMITTALS

A. Two (2) sets of the water and sewer facilities design drawings shall be submitted to the District Engineer for plan check. The drawings shall be accompanied by a complete description of all materials, structures, and mechanical equipment to be used on the project.

B. One (1) set of street improvement plans. Approved street plans are required prior to District approval of water and/or sewer improvement plans.

C. One (1) set of storm drain or drainage improvement plans. Approved storm drain or drainage improvement plans are required prior to District approval of water and/or sewer improvement plans.

D. One (1) copy of the soils report

E. One (1) set of grading plans.

F. One (1) set of irrigation plans.

G. One (1) copy of the tentative tract or parcel map indicating phasing schedule, if applicable.

H. One (1) copy of the final tract or parcel map.

I. One (1) copy of Conditions of Approval.

J. One (1) copy of the area study and design calculations for sizing of the water and sewer improvements.

K. Letter of Fire Flow Requirements from the appropriate Fire Protection District. The requirements may be included in the Conditions of Approval.

L. Wet stamped Private Engineers cost estimate for all public water and sewer facilities. This cost estimate shall be based on a copy of the San Diego County Subdivision Cost Guidelines.

M. Calculations for length of restrained joint including all assumptions used.

N. Legal description, and plat for all easements.

O. Disclaimer. The District is not responsible for the accuracy of the location of underground lines and the following note is required on the Title page of each plan: "Approval of this plan by the FPUD does not constitute a representation as to the accuracy of the location of, or the existence of, any underground utility, pipe, or structure within the limits of this project." The District accepts no responsibility for any reimbursement due to additional facilities or time delays as a result of these additional facilities.

P. Contractor submittals are required for all installations. Submit materials to the District Engineer for approval.

1.12 PROCESSING OF PRIVATE CONTRACTS

A. Legal Description. A legal description and a plat of the property to be served by the proposed water main or sewer or the property through which the proposed water or sewer line will traverse must be filed with the District in the form of a Preliminary Title Report.

B. Plan Check Application. The required plan checking fee shall be paid to the District and two (2) sets of blueline prints shall be submitted to the District Engineer for checking, signed and stamped by a registered civil engineer. Checking of the plans will commence by the District Engineer as soon as fees are paid and as soon as possible following receipt of the items to be submitted per Section 2 General Conditions.

C. Items to be Submitted. Irrigation plans, street improvement plans, grading plans, and the latest tract maps shall be submitted along with the required prints. In addition, the Applicant shall submit a plan of the subdivision lots and streets prepared on mylar at a scale of 1-inch = 200-feet. Other items are listed under Section 1.11.

D. Corrections. After the District has checked the proposed plans and if corrections are necessary, the plan will be directed back to the Private Engineer or Applicant. After the required changes and corrections are made, the plan shall be resubmitted to the District Engineer including two (2) sets of new blue line prints, the old check print and the original mylars. When all corrections or modifications to the plans are complete and all necessary supplemental data, including records, letters, maps, and payments, are on file in the District office, the plans will be approved. After mylars are signed, provide four (4) sets of approved drawings and the original mylars to the District Engineer.

E. Other Permits. The Applicant, or his authorized representative, shall obtain the necessary permits or approvals relative to the construction work and, if required, a State Highways Utility Encroachment Permit and/or a City/County Encroachment/Excavation Permit. Any approvals or permits from utility companies, i.e. SDG&E, shall also be obtained by the Contractor.

F. Notification for Inspection Services. The District Engineer shall be notified a minimum of five (5) working days prior to the commencement of construction and two (2) copies of water and sewer cut sheets are to be furnished to the District Engineer before work is started.

G. Easements. The Applicant shall convey to the District Engineer easements and scaled plats covering property in which water and/or sewer facilities are constructed in all

instances when the facilities are not located in dedicated streets. All easement boundaries shall be staked prior to waterline construction. All easements where District Facilities are installed shall be dedicated to FPUD. Access to and across the easement shall be kept clear and free of obstruction.

H. Final Inspection. When all construction work has been completed and inspected per Article 1.05 of this section, the Applicant shall notify the District Engineer that the work is ready for final inspection. The District Engineer shall thereupon inspect the finished work and either approve it or reject it pending fulfillment of unsatisfied requirements. If the work is approved on final inspection, the Applicant shall record a Notice of Completion in a form approved by the District. The notice of completion will only be issued after As-Builts and digital files are submitted and approved and all account balances are brought current.

H. Quit Claim Deed of Facilities to the District. The Applicant shall sign and submit to the District Engineer three (3) copies of a Quit Claim Deed of facilities.

I. Liens. The Applicant shall furnish to the District Engineer satisfactory proof (ordinarily in the form of a title company report) that no liens were filed against the project prior to the expiration of the lien report.

J. Conclusion. Upon satisfaction of all the foregoing requirements, including performance of the terms and conditions of the agreement with the District, the District will accept and will thereafter own, operate, and maintain the facilities. The Contractor is responsible for faulty workmanship or materials for a period of one year after acceptance by the District (See Paragraph 1.06). A final letter will be sent to the Commissioner of Real Estate, upon the Applicant's request.

1.13 COMPLIANCE WITH LAWS AND REGULATIONS

A. Compliance. The Applicant and the Contractor shall keep themselves informed of all laws, ordinances, and regulations in any manner affecting those employed on the work, or materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of agencies having any jurisdiction or authority over the same. They shall at all times observe and comply with, and shall require all their agents, employees, contractors, and subcontractors to observe and comply with all such applicable laws, ordinances, regulations, orders, and decrees in effect or which may become effective before completion of the work.

B. Taxes, Permits and Licenses. Unless otherwise explicitly provided in these specifications, all permits and licenses necessary from the City, County, State or Federal regulatory agencies for prosecution of the work shall be secured by the Applicant or his Contractor at no expense to the District, and he shall pay all taxes assessed against his equipment or property used in connection with the work. The Contractor shall be responsible for providing California Environmental Quality Act compliance and obtaining all permits necessary to complete the work. All work in existing streets will additionally require the contractor to obtain an encroachment permit from the jurisdictional agency.

1.14 CONTRACTOR'S RESPONSIBILITY

A. Excavation Permit. Before any work is commenced, the Contractor shall secure and pay for the excavation permit required by the County and the California Division of Occupational

Health and Safety and shall furnish the District with a copy thereof prior to commencing any excavation.

B. When working in a paved street the contractor shall perform all street work in accordance with San Diego County Standards.

C. Insurance. The contractor will be required to furnish the District Engineer proof of full compliance with all insurance requirements.

D. Protection of the Work. The Contractor shall take all necessary measures to protect the work and prevent accidents during the construction. He shall provide and maintain sufficient night lights, barricades, guards, temporary sidewalks, temporary bridges, danger signals, watchmen, and necessary appliances and safeguards to properly safeguard life and property. He shall also protect all excavations, equipment, and materials with barricades and warning signs and signals so that the public will not be endangered. The construction price to be paid by the Applicant/Owner shall include all costs for safety and protection of the public and his employees.

E. Traffic. The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to traffic and the Public, and he shall have under construction no greater amount of work than he can handle properly with due regard for the rights of the public. All traffic shall be permitted to pass through the work with as little delay and inconvenience as possible, unless otherwise authorized by the governing agency. All traffic control shall be as directed by the jurisdictional agency. No road or street closures shall be permitted without San Diego County approval.

F. Convenience of Abutting Owners. Convenience of abutting owners shall be provided for as far as practicable. Convenient access to mailboxes, driveways, houses and buildings adjoining the work, as well as fire hydrants and valves, shall be maintained and temporary approaches to intersections shall be provided and kept in good condition. When a section of surfacing, pavement, or a structure has been completed, it shall be opened for use by traffic at the request of the District . In order that unnecessary delay to the traveling public may be avoided, the Contractor, when so ordered, shall provide competent flagmen whose sole duty shall consist of directing traffic either through or around the work. The Contractor shall notify all emergency and community services 48 hours in advance of construction or detours on public streets. These shall include but are not limited to: ambulance, fire, sheriff, mail, school districts, bus services, and the newspaper.

G. Private Contract Surveying.

1. All surveying work shall be done under the direction and supervision of a Land Surveyor licensed by the State of California. Prior to beginning any phase of the survey work, the Contractor shall submit to the District Engineer, the Contractor's proposed plan for establishing lines and grades for control of the Project, including his plans and timetable for submitting data to the District Engineer during the course of the work.

2. All survey data shall be recorded in accordance with standard methods approved by the District Engineer. All original filed notes, computations, and other records for the purposes of layout shall be recorded in field books, or other methods acceptable to the District Engineer. The Contractor, immediately upon completing and reducing notes for a portion of survey, shall furnish one (1) copies to the District Engineer for review purposes.

3. With no exceptions and on all projects, “Cut Sheets” shall be forwarded to the District Engineer prior to staking and/or excavation. Any changes to the cut sheets shall be recorded as changes and a complete set of “Record Cut Sheets” shall be submitted to the District Engineer.

4. The Contractor shall layout the project by establishing all lines and grades at the site and along the pipeline alignments necessary to control the project and shall be responsible for all measurements, that may be required for the execution of the project, to the location and limit marks and tolerances prescribed in these specifications or on the plans.

5. The Contractor shall place and establish such additional stakes and markers as may be necessary for control and guidance of his construction operations and as required by the District Engineer. Grade stakes shall include the following: sewer line designation; station; invert elevation; and cut distance. Contractor shall protect in place all grade stakes and hubs during construction. If the grade stakes are removed, damaged, or knocked down during construction the stakes shall be replaced by the Land Surveyor at the Contractor’s expense.

6. Prior to establishing any base line and grade stakes, the Contractor shall have all utility lines located and marked in the field and shall have all rights-of-way cleared to grade, and ready for construction activities.

7. The Contractor shall provide surveyed elevations of all constructed manholes at the end of construction and prior to acceptance by the District Engineer. Such submittal shall be signed by a California licensed Land Surveyor. Variation from approved design elevations may be cause for rejection and rework.

8. The Contractor shall protect property and monumentation and if such monumentation is destroyed by his operations, the Contractor shall at no cost to the Owner, have the monumentation replaced in accordance with the laws of the State of California, and in particular in accordance with State Assembly Bill 1414 including recordation, as required by law.

1.15 MATERIALS AND WORKMANSHIP

A. New Materials. Unless otherwise specified, all materials incorporated in the permanent work shall be new. Materials not otherwise designed by detailed specification shall be of the best commercial quality and suitable for the purpose intended.

B. Workmanship. All workmanship shall be in conformance with the best trade practices. Particular attention shall be given to the appearance of exposed work. Any work or workmanship not conforming to the best practices shall be subject to rejection.

1.16 PROJECT CLEANUP

The Contractor shall at all times maintain an orderly job. Tools, rubbish, and materials shall be picked up and stored in a workmanship manner or disposed of at all times. The Contractor shall remove from the vicinity of the completed work all material, etc., belonging to him or used under his direction during construction. Surfaces shall be returned to a condition acceptable to the District. All excess material shall be disposed of as directed by the District or removed from the job site.

1.17 GUARANTEE

A. Defective Materials or Workmanship. The Contractor and Applicant shall guarantee all parts of the work against defective materials or workmanship and against settlement of backfill and damage to resurfacing for a period of one (1) year from the date of its acceptance by the District, as indicated by the recording date of the Notice of Completion.

B. Repair Work. When defective material or workmanship is discovered in the work, requiring repairs to be made under this guarantee, all such repair work shall commence by the Contractor or Applicant at his own expense within ten (10) days after written notice has been given to him by the District and be completed in as short a time as necessary. Should the Contractor or Applicant fail to begin repairs as directed within ten (10) days thereafter or vigorously pursue the work, the District may make the necessary repairs and charge the Contractor or Applicant with the actual cost of all labor and materials required plus overhead. In emergencies demanding immediate attention, the District shall have the right to repair the defect or damage and charge the Contractor or Applicant with the actual cost of all labor and material required plus overhead. Emergencies shall be defined by the District Engineer, with no exceptions.

C. Performance Bond. The Applicant shall furnish to the District, at no expense to the District, a bond for the performance of the foregoing guarantee in an amount of 100% of the construction cost of the total work which cannot be cancelled for a period of one (1) year.

D. Labor and Materials Bond. The Applicant shall furnish to the District, at no expense to the District, a bond for the labor and materials of the foregoing guarantee in an amount of 100% of the construction cost of the total work which cannot be cancelled for a period of one year.

E. Warranty Bond. Upon acceptance of the work, the Applicant shall furnish to the District, at no expense to the District, a bond for the warranty of the foregoing guarantee in an amount of 10% of the construction cost of the total work which cannot be cancelled for a period of one year.

1.18 REFERENCE TO PUBLICATIONS

Publications. Within these Standards reference is made to other publications. These other publications are made a part of the Standards whether in whole or in part as specified in each reference.

1.19 FEES

A. Plan Checking Fees. Fees shall be paid as indicated in the FPUD Ordinances.

B. Permits and Approvals.

1. Prior to the construction of a water line and/or a sewer main and related appurtenances, the District shall collect from the Applicant the full cost of field inspection for the proposed construction. The fee shall be paid as indicated in the FPUD Administrative Code.
2. The construction will not be allowed until the Applicant has obtained a County of San Diego Road Department Excavation Permit and/or State Highway Utility

Encroachment Permit and the required set of prints have been submitted and approved by the District.

3. Written permission from the property owner shall be obtained by the contractor to access or perform work on properties other than the proposed project. All property damage shall be the responsibility of the contractor. Contractor shall video or photograph the property prior to construction and submit this evidence to the District prior to commencement of work.

1.20 EASEMENTS

The District requires easement documents be submitted and recorded for each easement within a project. Easements indicated only on Tract or Parcel maps are not acceptable. The following procedure shall be followed in order to process private easements:

A. Meet with the District to determine an acceptable location and width for the proposed easement. Minimum easement width is 30-feet. Easements are to be dedicated to FPUD. Utility easements are not allowed.

B. Prepare and submit the originals of the following documents prior to District approval of the easement:

1. Original Plat of the easement with a wet stamp and original signature from a California licensed Land Surveyor or licensed Civil who obtained a California license prior to January 1982.
2. Original legal description of the easement with a wet stamp and original signature from a California licensed Land Surveyor or licensed Civil who obtained a California license prior to January 1982.
3. The District will prepare the easement document for signature by the legal owners. The owner's signature must be notarized by a California licensed notary. The District will not approve plans until the above items are submitted, reviewed and found to be recordable.

1.21 GENERAL NOTES AND REQUIREMENTS

A. The Contractor shall notify the San Diego Gas and Electric Company; and Pacific Bell prior to starting work near company facilities and shall coordinate work with company representatives. For location of electric cable, gas piping and telephone cables and appurtenances, contact Underground Service Alert: 1 800-422-4133, 48 hours prior to start of construction.

B. The Contractor shall notify the District Engineer at least five (5) days prior to starting work, so that inspection may be provided. Telephone No. (760) 728-1125.

C. Separation requirements between water and sewer lines shall conform to California Department of Public Health (CDPH) "Water Works Standards".

D. All work shall be in accordance with the most recent editions of the California Occupational and Health Administration (Cal-OSHA) - California Code of Regulations (CCR) Title 8, Standard Specifications for Public Works Construction, with supplements (APWA specifications), the San Diego Regional Standard Drawings and FPUD Standards Manual.

E. Prior to construction of the water and/or sewer lines, the contractor shall expose the existing water and/or sewer lines where connections will occur and verify their elevation and location. No connection shall be done without District staff present. Approval by the District Engineer a proposed connection to a FPUD facility does not imply approval of the correctness of the elevation and/or location shown on the plans.

F. Contractor shall not backfill trench until the District has inspected the pipe or structure and authorizes the trench to be backfilled. It shall be the Contractor's responsibility to provide accurate "record" drawings to the District immediately after construction.

G. Approval by the District implies no permission other than that within the District's jurisdiction. All permits required by law shall be acquired by the applicant or his contractor. Requirements of FPUD shall take precedence over requirements of other agencies only where FPUD requirements are more stringent.

H. The Contractor shall obtain an excavation permit from the Division of Industrial Safety.

I. Water pipe joints shall not be pulled at any angle greater than the maximum angle recommended by the pipe manufacturer.

J. The proposed work shall be subordinated to any operations FPUD may conduct, and shall be coordinated with such operations as directed by the District Engineer.

K. A preconstruction meeting shall occur prior to construction. Attendees shall include the District Engineer or his designate and the Contractor who will perform the work, and other governmental agencies and/or utility companies as necessary. "Cut-Sheets" shall be provided to the District prior to this meeting for review.

L. Traffic Control shall be in accordance with the current State of California Manual of Traffic Controls. The contractor is responsible for all traffic control on the jobsite.

M. The Contractor shall be responsible for implementing, administering and maintaining a confined space entry program.

N. Pipe shall be handled (with straps, no chains) so as to protect pipe joints, lining and coating, and carefully bedded to provide continuous bearing and prevent settlement. Pipe shall be protected against flotation at all times. Open ends shall be sealed at all times when construction is in process.

O. Upon completion of construction, the Contractor shall hire a video company approved by the District to videotape the CML&C water mains. The District Engineer shall review said videotape for potential construction defects prior to acceptance of the project. Payment for all such services shall be borne by the Contractor.

P. All District facilities shall have a minimum 5-foot clearance from other utilities. This pertains to all sections on all sheets herein.

Q. All rough road grading shall be completed prior to construction of water and sewer facilities.

R. The Design Engineer shall provide the District Engineer with As-Built photo mylars and electronic file in AutoCAD and TIF format.

1.22 WATER NOTES AND REQUIREMENTS

A. Contractor shall furnish and install all facilities in accordance with FPUD Standard Specifications and Standard Drawings for water and sanitary sewer facilities (latest revision). The Specifications and Standard Drawings are available from the District. Contractor shall be in possession of FPUD Standards Manual on the job site at all times. Any construction or material not covered in FPUD Standards shall be approved by the District .

B. All permits required by law shall be acquired by the applicant or their Contractor.

C. Contractor shall conform to all Cal-OSHA, CCR, Title 8 safety requirements.

D. Contractor shall provide written notification requesting a system shutdown for connections to existing system. Said notification shall be made to the District a minimum of two (2) weeks prior to said shutdown.

E. Contractor shall designate a qualified superintendent with full authority to act on behalf of the Contractor. Said superintendent shall be on the job site at all times.

F. Contractor shall perform all encroachment permit work under San Diego County Department of Public Works , in accordance with all requirements of said removal, temporary pavement placement, permanent pavement placement (including base material) and temporary and permanent traffic striping.

G. The water line shall be installed by a private contractor in accordance with FPUD Standards Manual. The Contractor shall be approved by the District Engineer.

H. Minimum cover over the water main shall be 30-inches and the maximum cover of 36-inches-unless prior approval is obtained from the District Engineer.

I. Wherever a water line encounters a storm drain pipe or other obstruction, and crossing over the obstruction will result in less than 30-inches of cover over the water line, it shall cross under the obstruction with 6-inches minimum clearance.

J. Meter boxes shall be field located to clear driveways and located accurately on the As-Built drawings. The Contractor shall adjust meter boxes to sidewalk grade when sidewalks are poured.

K. All water mains are District owned and maintained. The District maintains water service lines up to and including meter and back-flow if required. The fire hydrants are owned by the North County Fire Protection District.

L. Contractor to adjust all valve covers, fire hydrants, meter boxes, etc., to grade as directed by the District.

M. All new fire hydrants to be approved by the North County Fire Protection District .

N. Laying direction of water main shall be in a general uphill direction.

O. The location of air valves and blow-offs to be verified by the District Engineer in the field.

P. All valves shall have access piping that consists of SDR35 or C900 and the 1208N lid covers. (FPUD Standard Drawings W-19 and W-20).

Q. Water meter service laterals shall be 24 inches below finish ground level. Angle stop shall terminate 9-inches below finish ground level with location stamped with a “W” in curb. All others to terminate above ground.

R. The Contractor shall install suitable thrust blocks at selected vertical and/or horizontal change of direction in accordance with FPUD Standards, whether or not specifically called for or shown on the Plan.

S. Contractor to make connections to existing mains only after successful pressure testing and disinfection of new facilities as authorized by the District Engineer.

T. All materials, testing and inspection of pipe shall be in conformity with the requirements of FPUD, and the American Water Works Association (AWWA) Standards. County, and/or the AWWA Specifications will be cause for rejection.

U. All welded steel pipe used shall be cement mortar lined and coated, with a minimum thickness of 3/16” and fully welded joints and hand holes, unless noted otherwise.

V. All steel bends and fittings shall be cement mortal lined and coated and shall be shop fabricated per AWWA C-208-(latest). Contractor shall submit fabrication drawings (from a District approved fabricator) for all AWWA shop fabricated fittings to the District for approval prior to construction. Service connections made to existing ACP, DIP, or PVC pipelines shall utilize a brass or bronze saddle with stainless steel double strap connection.

W. For hydro-static testing purposes, all water pipes shall be 50 psi above the class rating of the pipe at the lowest point in the section being tested; and shall be at least equal to the design class of the pipe at the highest point in the line.

X. The minimum requirements of the pipeline trench shall be per FPUD Standard Drawing W-3.

Y. Pipelines and appurtenances shall be tested, disinfected, and dechlorinated per FPUD Standards Section 15041, Department of Public Health, and/or any other agency having jurisdiction over the work.

Z. Contractor shall uncover locations of connections prior to starting installations to ensure conformance with lines and grades shown on these plans. Any deviation from the plans must be approved by the District prior to construction.

AA. The existence and location of water facilities as shown on the plans were obtained from available records. To the best of our knowledge, the existing water facilities are as shown on the plans. The District shall not be held responsible for any error in the location and elevation of the existing water facilities. The Contractor is required to take precautionary measures to protect any existing facility shown hereon and any other which is not of record or not shown on these plans.

BB. Location and elevations of improvements to be done shall be confirmed by field measurements prior to construction of new work. The Contractor will make exploratory excavations and locate existing underground facilities sufficiently ahead of construction to permit revisions to plans if revisions are necessary because of actual location of existing facilities.

CC. Call the District five (5) working days prior to starting construction, and two (2) weeks if shutdown is required. The District shall be notified at least two (2) working days prior to any inspection. To arrange for inspection, call (760) 728-1125

DD. Pipe deflections for short radius curves and angle points shall normally be accomplished by means of standard fittings, the locations of which shall be detailed on the plans.

EE. All water used on a construction project must be paid for and will be metered. This includes water for loading of new waterlines, flushing of lines, pressure testing, etc. Citations will be issued to parties taking water from unmetered facilities. A construction water meter may be obtained from the District.

FF. Proposed water system improvements are located within the _____ pressure zone (HWL = _____ ASL/MSL).

GG. The Contractor shall install an isolation kit at points of connection of dissimilar material.

HH. Water meter abandonment/removal the service lateral at the mainline must be cut and a cap or plug must be installed into the corporation valve, encase abandoned corporation valve in concrete and remove the lateral from the corporation to the angle stop. Current inspection fees will be required. Shutdown fees may be required.

1.23 SEWER NOTES AND REQUIREMENTS

A. The sewer line shall be installed by a private contractor in accordance with FPUD Standards, Plans and Specifications. The contractor shall be approved by the District Engineer.

B. Sewer mains deeper than fifteen feet deep shall be DIP, per Section 15056..

C. No vertical or horizontal bends are allowed between manholes.

D. Type of sewer pipe and appurtenances used shall be in accordance with the Approved Materials List.

E. Grading over sewer mains shall be done in such a manner as to prevent the ponds of water.

F. The top of all manholes located in pavement shall be raised to pavement grade after streets are paved. All manholes in unimproved areas shall be 6-inches above the ground surface. Manholes located within DG roads shall have an 8-inch PCC collar and rest 3-inches above the ground surface.

G. House connections, wyes and laterals shall be installed per FPUD Standard Drawings. Wyes and laterals shall be maintained by the property owner. The property owner is responsible for the lateral up to connection to the main per FPUD Standard Drawings S-8 and S-9.

H. The minimum class bedding for PVC and DIP sewer shall be in accordance with FPUD Standard Drawings, (S-1).

I. The Contractor shall successfully perform one (1) air test on all sewer lines, in accordance with the test procedures outlined in Green Book Section 306-1.4.4, Amendment 306-1.4.4.1, and the Low Pressure Air Test for Sanitary Sewers as published by the National Clay Pipe Institute. All necessary test equipment shall be furnished by the Contractor and the test shall be made only after the line has been properly installed including any necessary test fittings, and backfilled. The Contractor shall conduct the air test at no cost to the District.

J. Sewer laterals crossing existing curb and gutter shall be backfilled with 1-sack cement, sand slurry backfill. The location shall be stamped with a “S” in curb. No laterals are allowed in driveways unless approved.

K. Connections to existing pipelines shall only be made with the District Engineer present. Test plugs shall only be removed upon direction of the District .

L. Should modification and/or reconstruction (including raising manholes to grade) of an existing manhole be required, prior to the removal of the frame of sewer manhole, the channel of the manhole shall be completely covered with planking or other suitable material so as to prevent debris from entering the channel. After the manhole reconstruction has been completed, all debris shall be removed from within the manhole and the cover over the channel shall be removed.

M. Upon completion of construction, the District, as part of the inspection, will videotape the sewer mains. The District Engineer shall review said videotape for potential construction defects prior to acceptance of the project.

N. New sewer mains shall remain plugged and/or disconnected until the District Engineer authorizes its use.

O. Prior to acceptance of any sewer line by the District, all lines shall be flushed clear using "Wayne Ball" and mandrel tested.

END OF SECTION

Revision History

Date	Approval	Change description
May 2017		
11/3/2021		Section 1.22 FF (Static and HWL reference)

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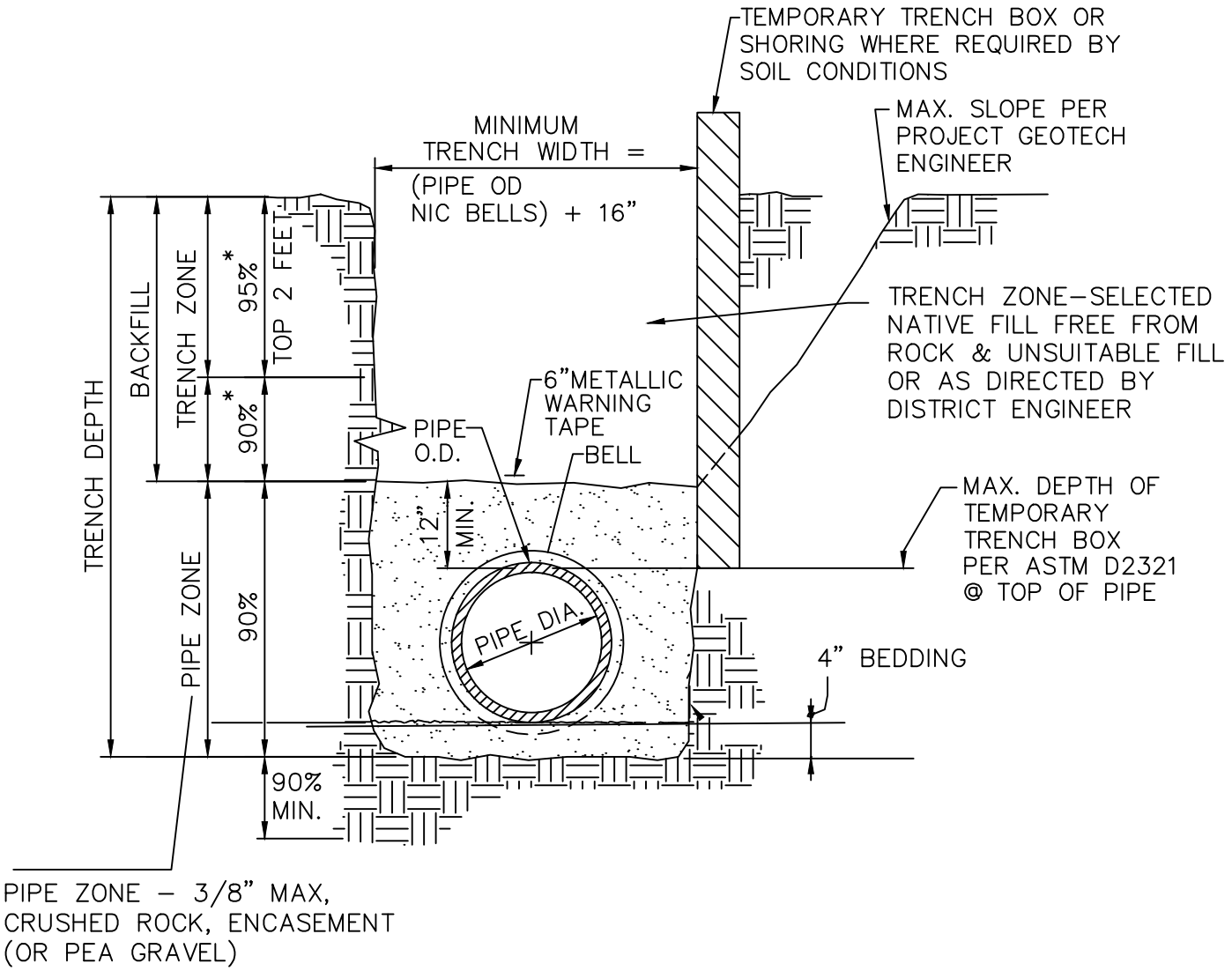
Fallbrook Public Utility District

SECTION 4

STANDARD DRAWINGS
SANITARY SEWER FACILITIES

SECTION 4 STANDARD DRAWINGS – SANITIARY SEWER

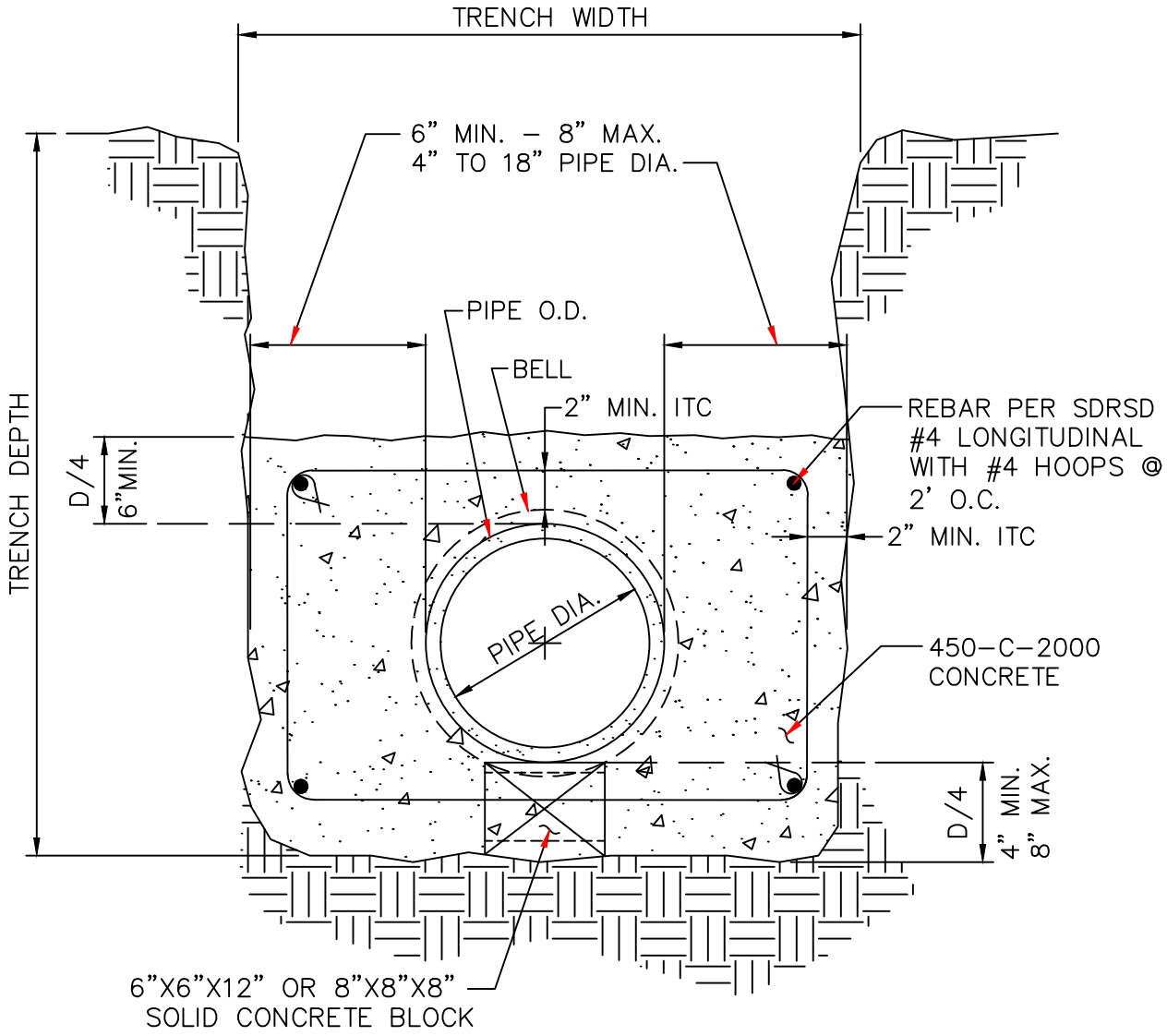
S-1	Standard Pipe Zone and Trench Backfill
S-2	Concrete Encasement
S-3	Pipeline Separation Requirements
S-4	Drawing Deleted
S-5	Standard Precast Concrete Manhole (5’ dia.)
S-6	Standard Precast Concrete Inside Drop Manhole
S-7	36” Manhole Frame and Two Concentric Covers
S-8	New Installation Sewer Lateral
S-9	Deep Cut Sewer Lateral
S-10	Standard Cutoff Wall (Anchor)
S-11	Standard Cul-de-Sac Sewer Laterals
S-12	Sewer Manhole Adjustment & Notes
S-13	DELETED = notes moved to S-12
S-14	Trench Resurfacing Type A & B



NOTES:

1. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE W/ ASTM D2321 (STD PRACTICE FOR UG INSTALLATION OF PIPE FOR SEWERS & OTHER GRAVITY–FLOW APPLICATIONS.)
2. FOR TRENCHING IN IMPROVED STREETS, RESTORE PAVEMENT TO THE JURISDICTIONAL AGENCY'S STANDARDS.
3. (*) INDICATES MINIMUM RELATIVE COMPACTION. RELATIVE COMPACTION UNDER STREETS SHALL BE IN ACCORDANCE WITH LOCAL CITY OR JURISDICTIONAL REQUIREMENTS.

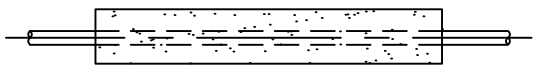
Fallbrook Public Utility District	Rev.Date	By	Apprv'd	REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BEBEE NO. C67084 9/30/2018 CIVIL STATE OF CALIFORNIA	STANDARD PIPE ZONE AND TRENCH BACKFILL	DRAWING NO.
	5/24/17	SMD	JRB			S-1
	3/13/18	SMD	JRB			



SECTION

NOTE:

1. ENCASE PIPE TO NEAREST FLEXIBLE JOINT
2. ALSO APPLIES WHERE WATER LINES MUST BE ENCASED AS DIRECTED BY DISTRICT ENGINEER



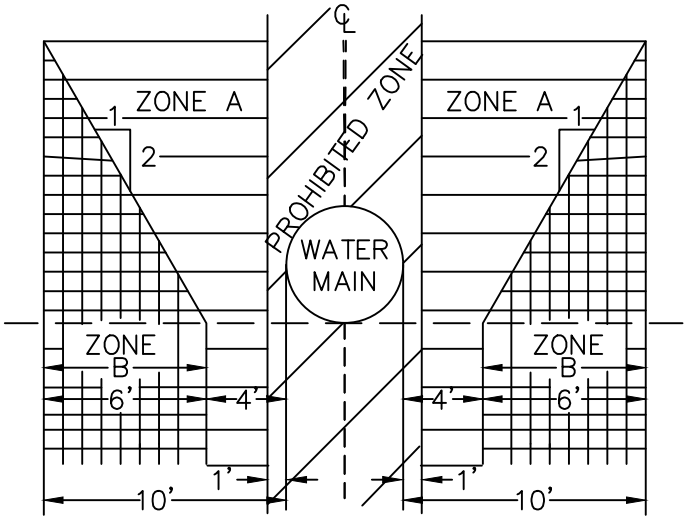
LEGEND ON PLANS

Fallbrook Public Utility District	Rev.Date	By	Apprv'd	REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BEBEE NO. C67084 CIVIL 9/30/18 STATE OF CALIFORNIA	CONCRETE ENCASEMENT	DRAWING NO.
	5/24/17	SMD	JRB			S-2

SEPARATION STANDARDS:

1. WATER & SEWER MAINS SHALL BE INSTALLED IN SEPARATE TRENCHES.
2. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN PRESSURE WATER LINE AND SEWER OR NON-POTABLE PIPE SHALL BE AT LEAST 10 FEET.
3. PERPENDICULAR CONSTRUCTION (CROSSING): PRESSURE WATERLINES SHALL BE AT LEAST 12" ABOVE SEWER LINES OR NON-POTABLE RECYCLED WATERLINES, WHERE THESE LINES MUST CROSS.
4. SPECIAL PROVISIONS: ALTERNATIVE CONSTRUCTION CRITERIA WHERE THE BASIC SEPARATION STANDARDS ABOVE CANNOT BE ATTAINED ARE SHOWN BELOW.

PARALLEL CONSTRUCTION (CASE 1)

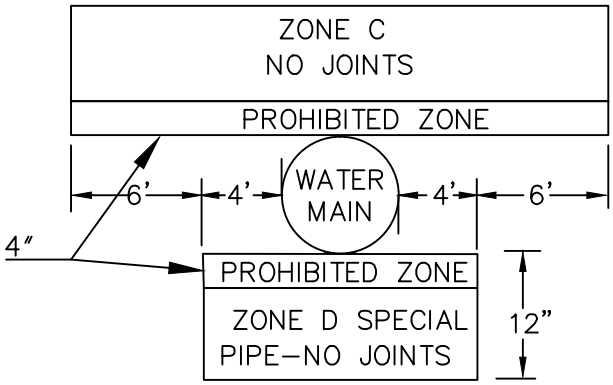


PERPENDICULAR CONSTRUCTION (CASE 1)

NOTES:

A. DIMENSIONS ARE FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF SEWER.

B. SANITARY SEWERS OR WATERLINES ARE NOT PERMITTED WITHIN ANY OF THE INDICATED ZONES UNLESS CONSTRUCTED IN CONFORMANCE WITH THE SPECIAL REQUIREMENTS NOTED BELOW.



ZONE SPECIAL SEWER CONSTRUCTION REQUIREMENTS: (INSTALLING NEAR EXISTING WATERLINE = CASE I)

A. SANITARY SEWER MAINS RUNNING PARALLEL TO WATER MAINS SHALL NOT BE PERMITTED WITHIN THIS ZONE WITHOUT SPECIAL WRITTEN PERMISSION FROM THE SAN DIEGO COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH.

B. NEW SEWER MAINLINES INSTALLED IN THIS ZONE SHALL BE SDR-35 PVC RUBBER GASKETED PIPE.

C. NEW SEWER MAINLINES INSTALLED IN THIS ZONE, PERPENDICULAR TO AND ABOVE WATERLINE, REQUIRES THAT THE SEWER LINE HAVE NO JOINTS TEN (10) FEET ON EITHER SIDE OF THE WATERLINE, AND CONSTRUCTED OF MATERIAL LISTED IN ZONE D.

D. NEW SEWER LINE INSTALLED IN THIS ZONE, BELOW EXISTING WATERLINE, SHALL HAVE NO JOINTS WITHIN FOUR (4) FEET OF THE WATER LINE CROSSING AND BE CONSTRUCTED OF GASKETED CLASS 200, C900 PVC, CENTERED OVER PIPE BEING CROSSED, AND CONCRETE ENCASED OR, OPTIONALLY, WITHIN A CONTINUOUS STEEL CASING 1/4" THICK AND ALL VOIDS BETWEEN SEWER AND CASING PRESSURE GROUTED WITH SAND CEMENT GROUT.

Fallbrook Public Utility District

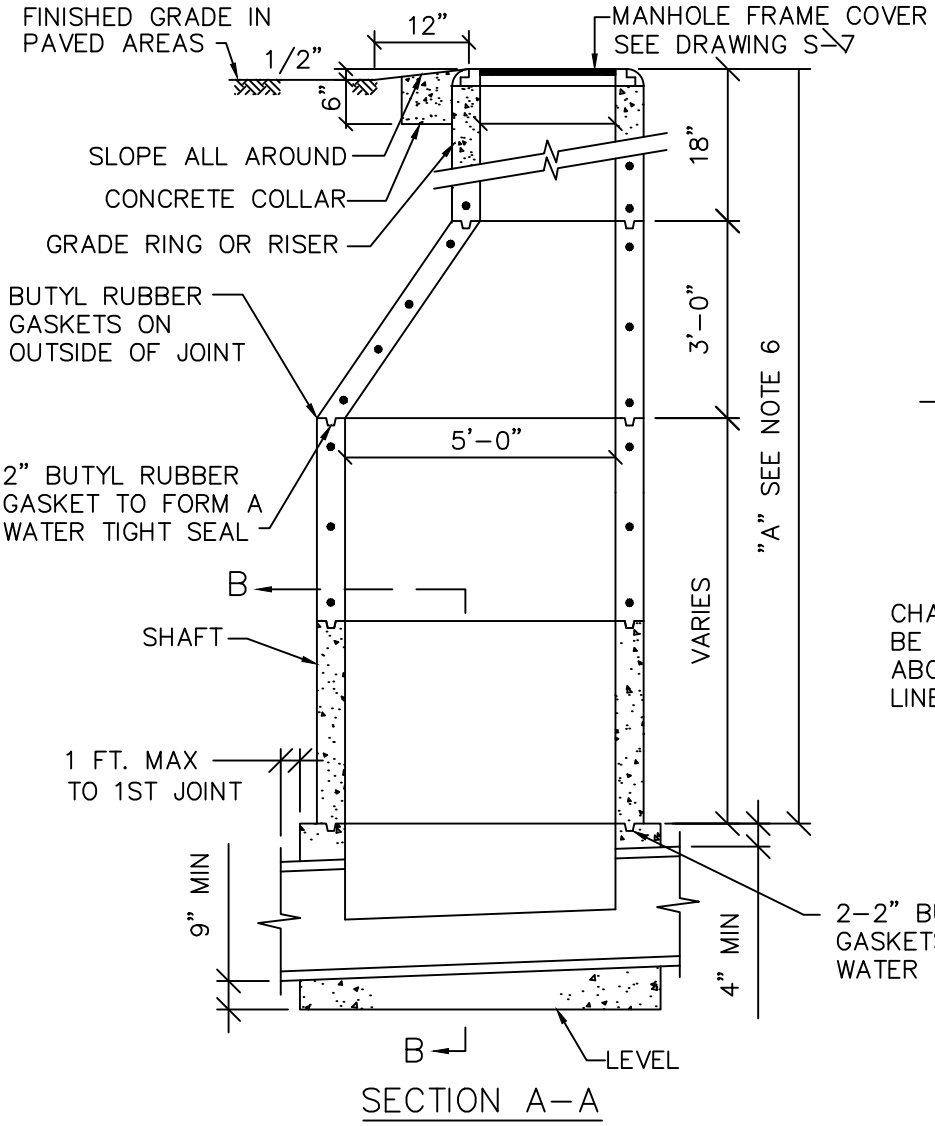
Rev.Date	By	Apprv
5/24/17	SMD	JRB

REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BIBBY NO. C67084 9/30/2018 CIVIL STATE OF CALIFORNIA

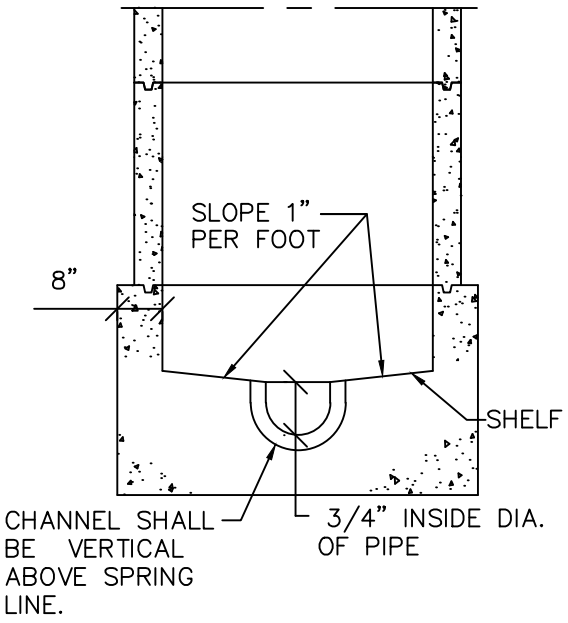
SEWER MAINLINE PIPE INSTALLATION & PIPELINE SEPARATION REQUIREMENTS

DRAWING NO.

S-3



SECTION A-A

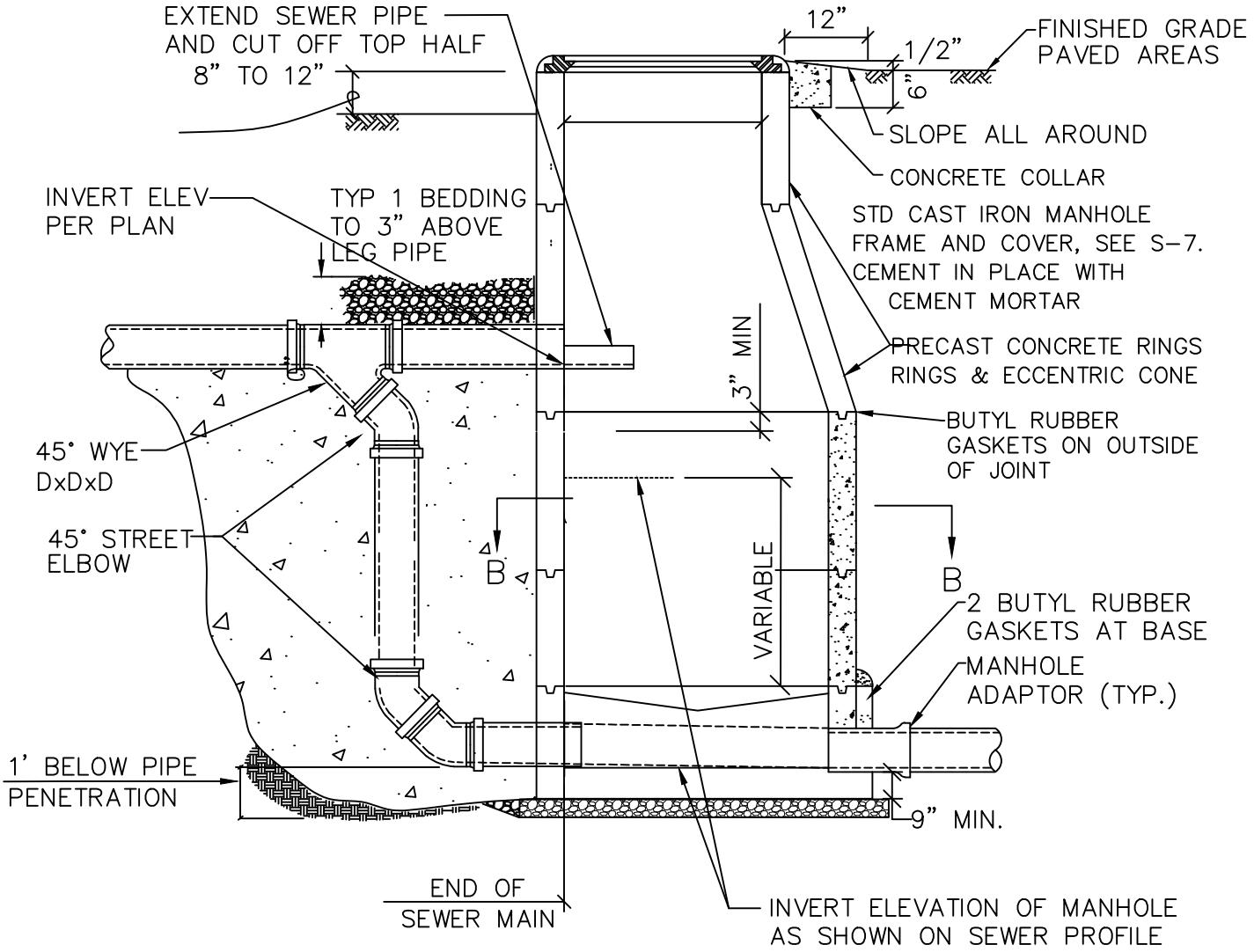


SECTION B-B

NOTES:

1. MANHOLE FRAME SHALL BE SET IN CLASS "C" MORTAR.
2. ALL PRECAST COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
3. VERTICAL WALL OF CONE SHALL BE ON THE UPSTREAM SIDE OF THE MANHOLE.
4. CONCRETE BASE SHALL BE 560-C-3250.
5. "SAND COLLAR" MH ADAPTORS SHALL BE PROVIDED FOR ALL MH CONNECTIONS.
6. PRECAST SECTIONS SHALL BE USED WITHIN DIMENSION "A" AS REQUIRED, IN ORDER OF PREFERENCE LISTED:
   - A. CONE (NOTCHED FOR PIPE IF DIMENSION "A" IS LESS THEN 3').
   - B. 6" TO 18" OF 3' DIAMETER GRADE RINGS/AND/OR RISERS.
   - C. 5' DIAMETER SHAFT VARIABLE HEIGHT.
7. ALL PATCHING WITHIN MANHOLE BASE SHALL BE EPOXY MORTAR.
8. PRIOR APPROVAL OF PRECAST BASE IS REQUIRED BY THE DISTRICT ENGINEER.
9. MAXIMUM ALLOWABLE CHANGE OF DIRECTION AT MH = 45°.
10. PROVIDE SPECIFIC DETAIL FOR REVIEW AND APPROVAL BY DISTRICT ENGINEER FOR MH'S W/ MORE THAN ONE INLET OR OUTLET, 18" OR LARGER.
11. APPLY CORROSION PROTECTION PER SECTION 03461-1.06

Fallbrook Public Utility District	Rev.Date	By	Apprv'd	REGISTERED PROFESSIONAL ENGINEER JACK RICHARD REBBE NO. C67084 9/30/18 CIVIL STATE OF CALIFORNIA	STANDARD PRECAST CONCRETE MANHOLE (5' DIA.) 5x3	DRAWING NO.
	5/24/17	SMD	JRB			S-5

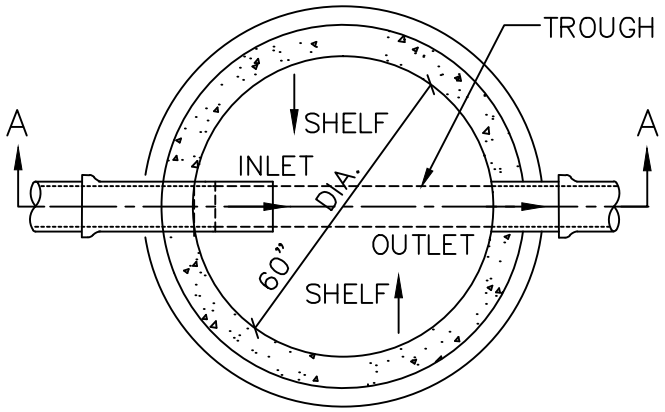


SECTION A–A

(316 SST)

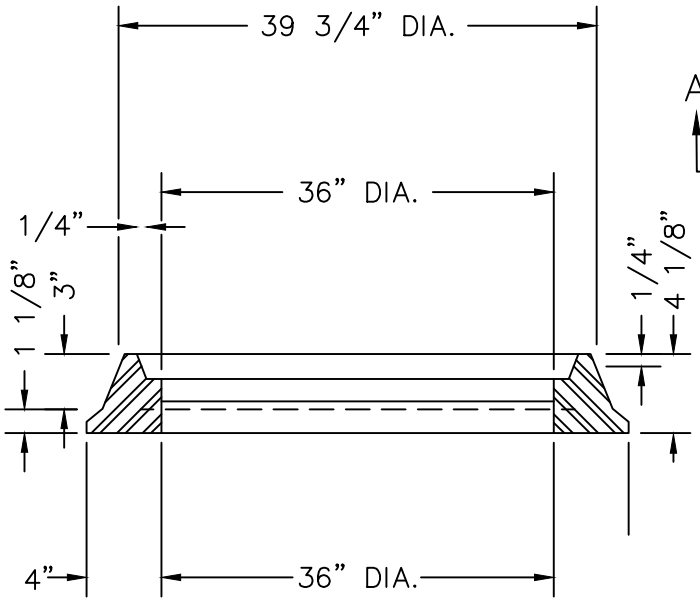
NOTES:

1. DROP MANHOLE SHALL BE IDENTICAL TO STANDARD CONCRETE MANHOLE, EXCEPT FOR PIPE DETAILS AS SHOWN.
2. THE DROP MANHOLE TEE SHALL ENTER THE 5' DIA. RING
3. CLEAN AND ROUGHEN OUTSIDE SURFACE OF RINGS AND APPLY NEAT CEMENT PAST PRIOR TO POURING SUPPORT FOR DROP SECTION.
4. NO MANHOLE STEPS ALLOWED.
5. APPLY CORROSION PROTECTION PER SECTION 03461–1.06

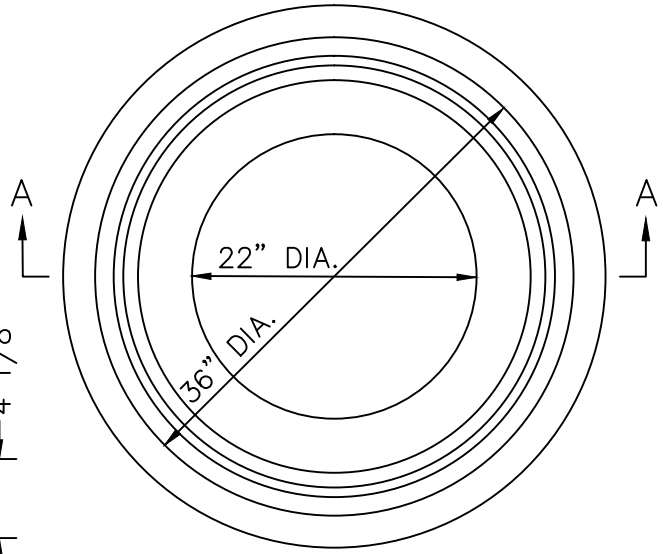


SECTION B–B

Fallbrook Public Utility District	Rev.Date	By	Apprv'd		STANDARD PRECAST CONCRETE INSIDE DROP MANHOLE 5x3	DRAWING NO.
	5/24/17	SMD	JRB	REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BERGE NO. C67084 9/30/18 CIVIL STATE OF CALIFORNIA		S-6



SECTION A–A



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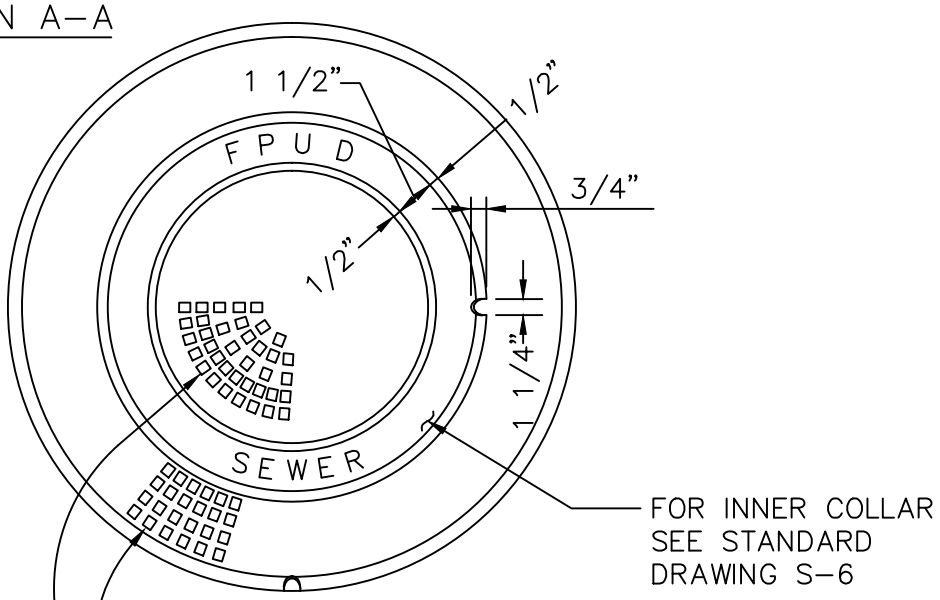
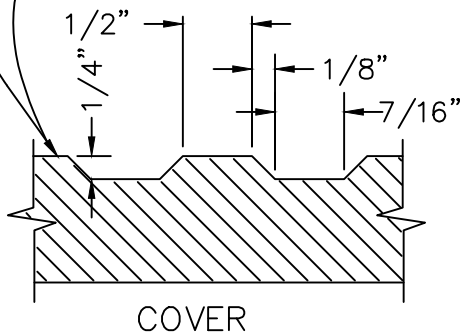




COVER

NOTE:

1. LOCKING FRAMES AND COVERS ARE REQUIRED IN REMOTE AREAS OR AS DETERMINED BY THE DISTRICT ENGINEER

Rev.Date	By	Apprv'd
5/24/17	SMD	JRB

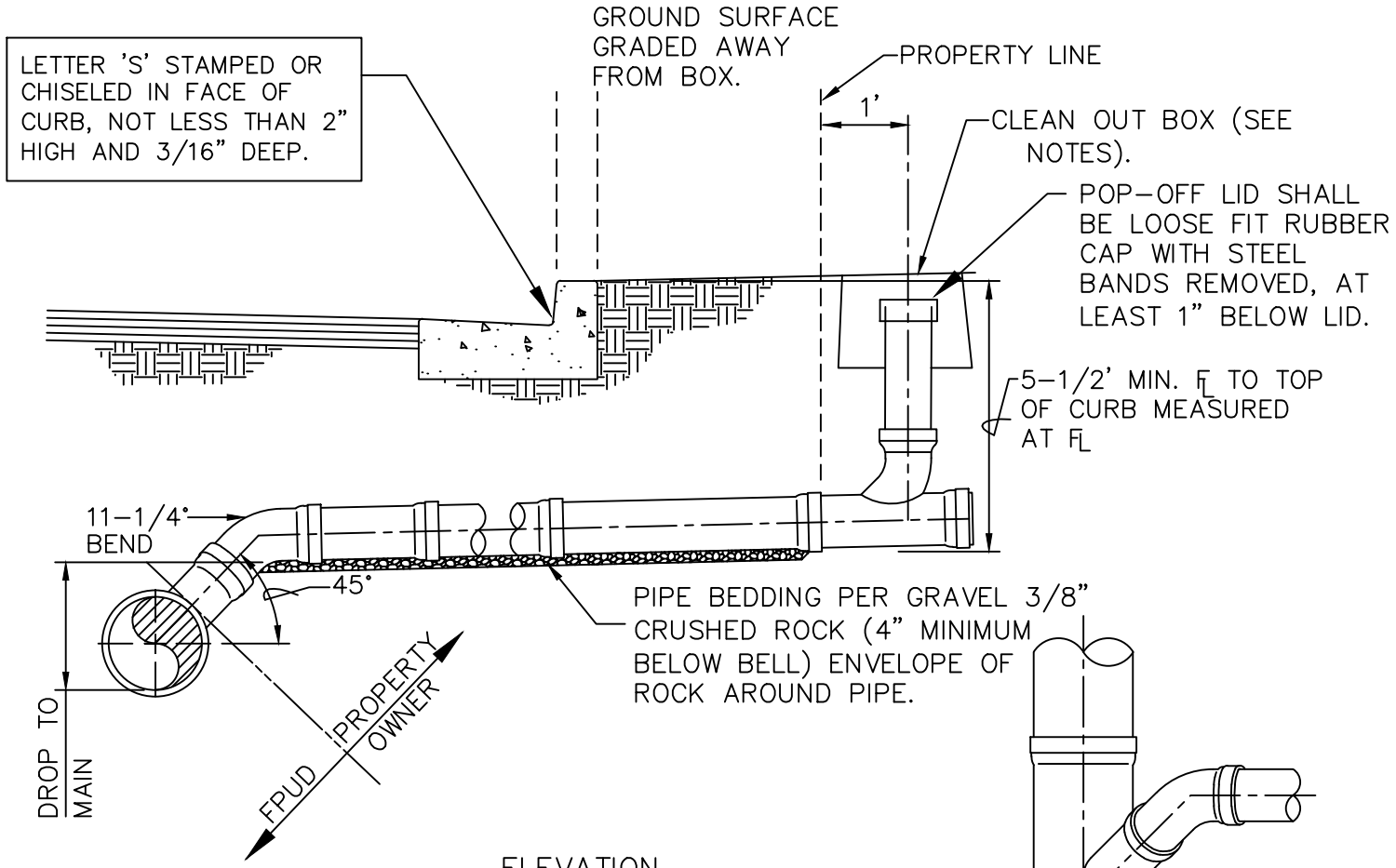
Fallbrook Public Utility District

REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BEEGE NO. C67084 9/30/18 CIVIL STATE OF CALIFORNIA

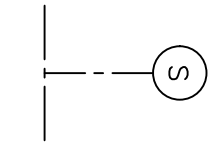
36" MANHOLE FRAME AND TWO CONCENTRIC COVERS

DRAWING NO.

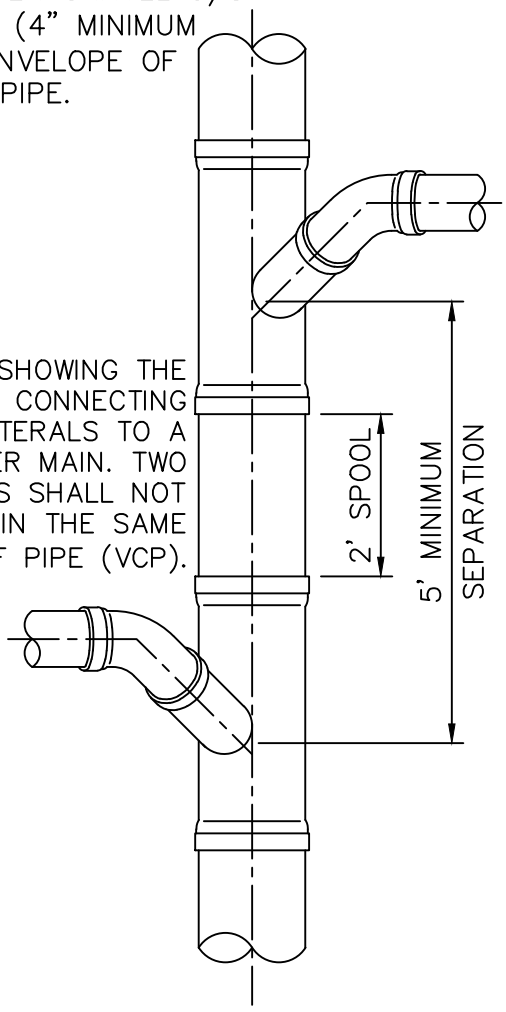
S-7



ELEVATION



LEGEND ON PLAN



DETAIL SHOWING THE MANNER OF CONNECTING OPPOSITE LATERALS TO A SEWER MAIN. TWO CONNECTIONS SHALL NOT BE MADE IN THE SAME LENGTH OF PIPE (VCP).

PLAN

NOTES:
1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.
2. SEWER LATERALS SHALL HAVE A MIN. SLOPE OF 2%.
3. ALL JOINTS ON SEWER LATERAL PIPE SHALL BE COMPRESSION TYPE OR APPROVED SOLVENT WELD.
4. LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS.
5. CLEAN OUT BOX: CARSON IND. SERIES 910-10 / 910-4T COVER, MARKED "SEWER" ON LID. IN PAVED OR TRAFFIC AREAS, USE CONCRETE BOX: BROOKS PROD. P3 W/ STEEL LID MARKED "SEWER".
6. TOP OF CLEAN-OUT BOX MUST BE AT LEAST 2 FT. BELOW HOUSE ELEVATION.
7. CLAY PIPE LATERALS USE BAND-SEAL STOPPER FOR POP-OFF LID (STEEL BAND REMOVED).
8. LATERALS INSTALLED ON EXISTING SEWER MAIN SHALL BE CUT-IN; WYE SHALL BE INSTALLED WITH STUBS AND MAX-ADAPTER COUPLINGS, AS INDICATED ON THE "APPROVED MATERIALS LIST."

Fallbrook Public Utility District

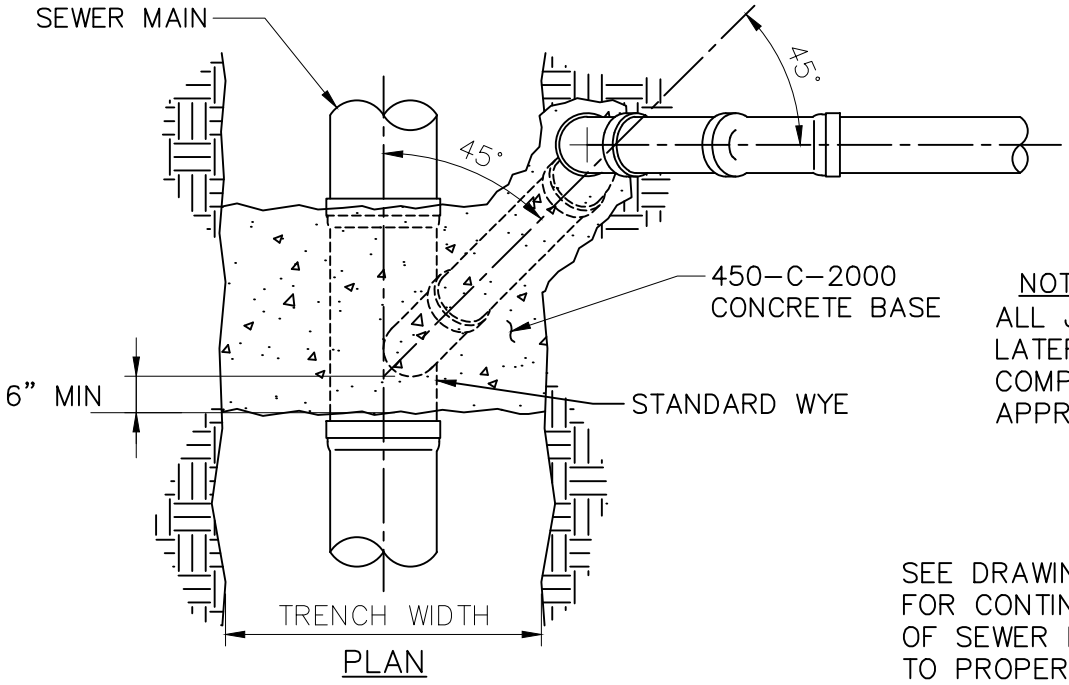
Rev.Date	By	Apprv'd
5/24/17	SMD	JRB
4/26/18	SMD	JRB

REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BEBEE NO. C57084 9/30/2018 CIVIL STATE OF CALIFORNIA

NEW INSTALLATION PVC SEWER LATERAL

DRAWING NO.

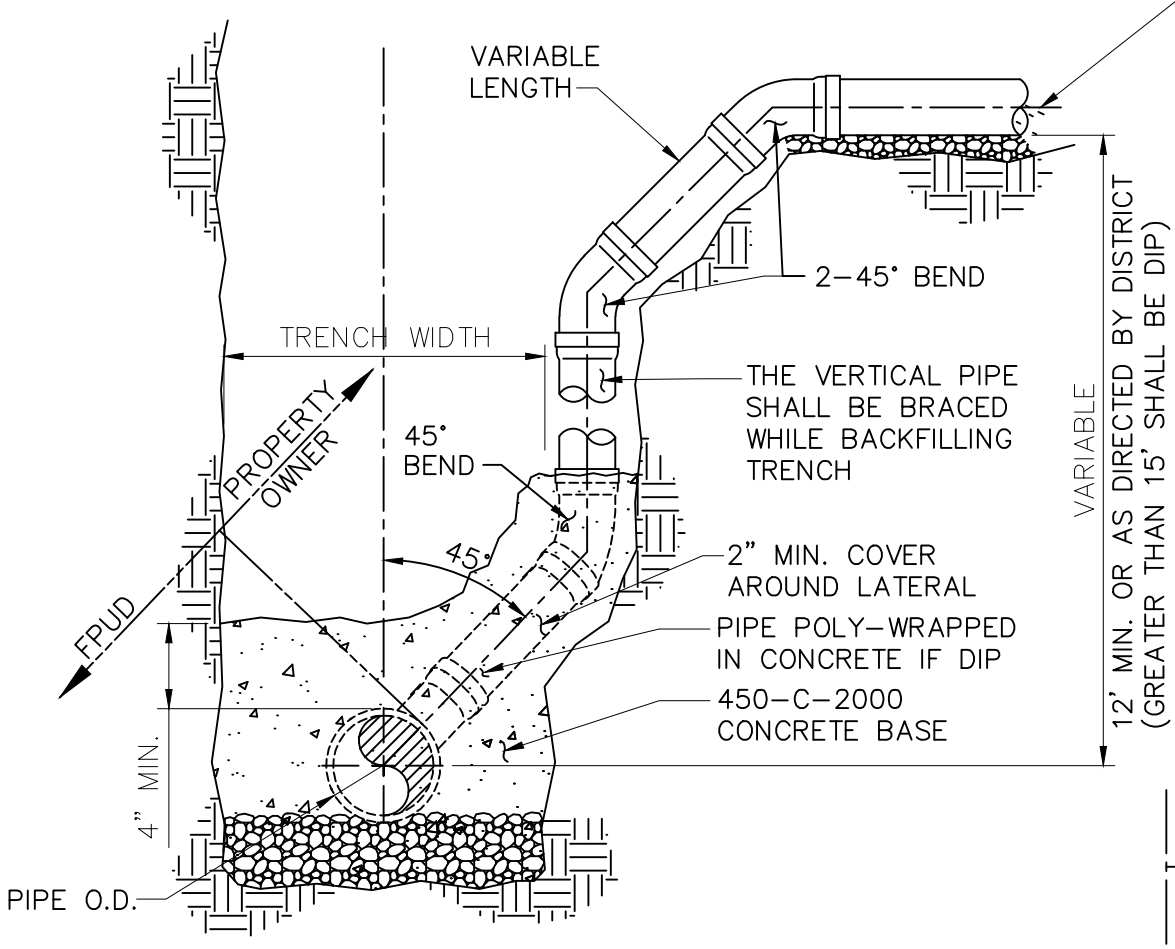
S-8



PLAN

NOTE:
ALL JOINTS ON SEWER LATERAL PIPE SHALL BE COMPRESSION TYPE OR APPROVED SOLVENT WELD

SEE DRAWING S–8 FOR CONTINUATION OF SEWER LATERAL TO PROPERTY LINE



ELEVATION

2

LEGEND ON PLAN

Rev.Date	By	Apprv'd
5/24/17	SMD	JRB

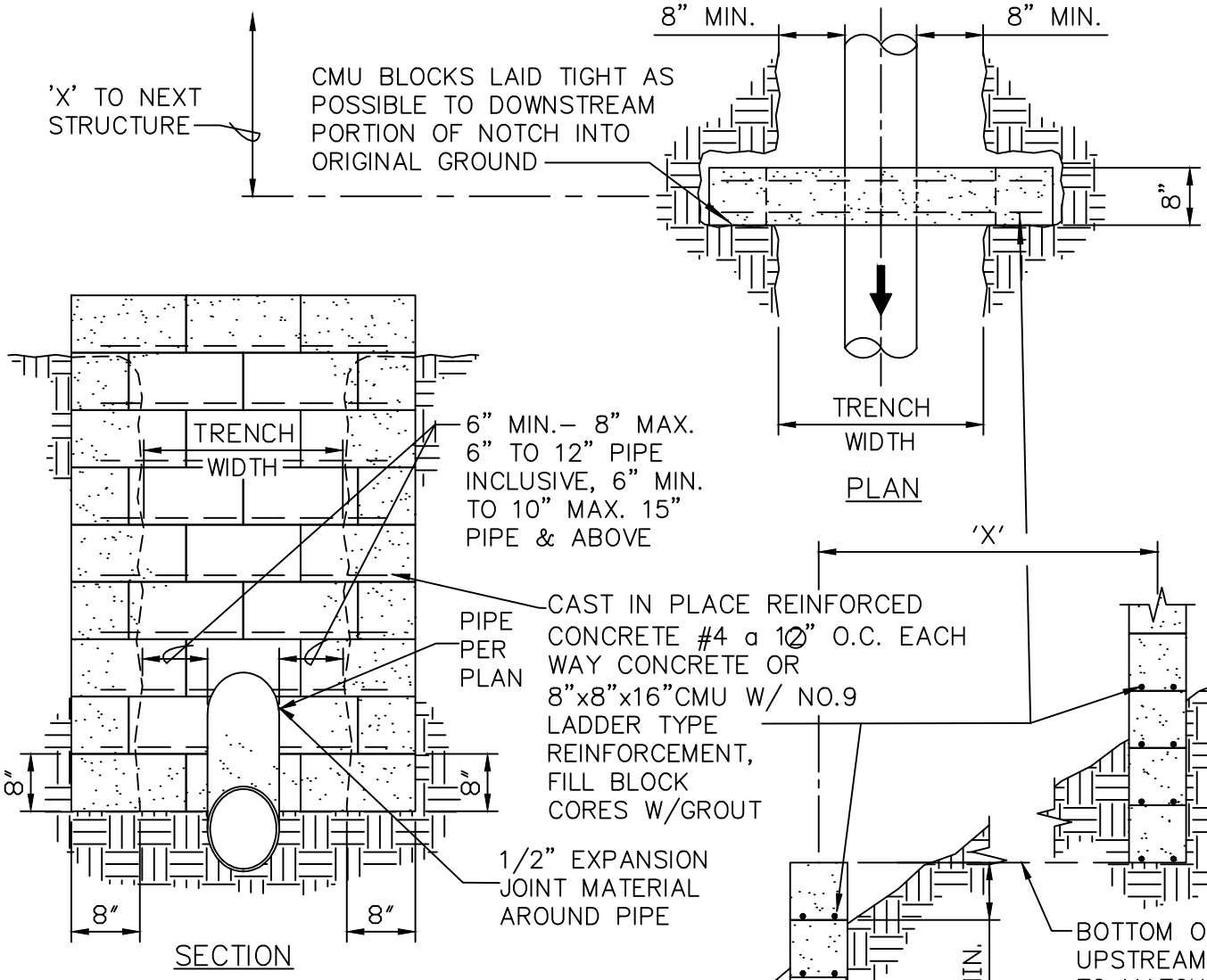
Fallbrook Public Utility District

REGISTERED PROFESSIONAL ENGINEER
JACK RICHARD BEBEE
NO. C67084
9/30/2018
CIVIL
STATE OF CALIFORNIA

DEEP CUT SEWER LATERAL

DRAWING NO.

S-9



PIPE SLOPE	'X'–MAX. DISTANCE
15–20%	45'
20–25%	35'
25–30%	30'
30–40%	20'
>40%	CONSULT DISTRICT

NOTES

1. PIPE ANCHORS REQUIRED ON ALL SLOPES OF 15% OR GREATER.
2. ANCHOR SHALL EXTEND 8" MIN. INTO NATURAL UNDISTURBED SOIL.
3. CONCRETE SHALL BE 450–C–2000
4. ANCHORS FOR TRAPEZOIDAL TRENCH SECTIONS WILL CONFORM TO TRENCH CROSS SECTION AND EXTEND 8" MIN. IN TO UNDISTURBED SOIL.

Fallbrook Public Utility District

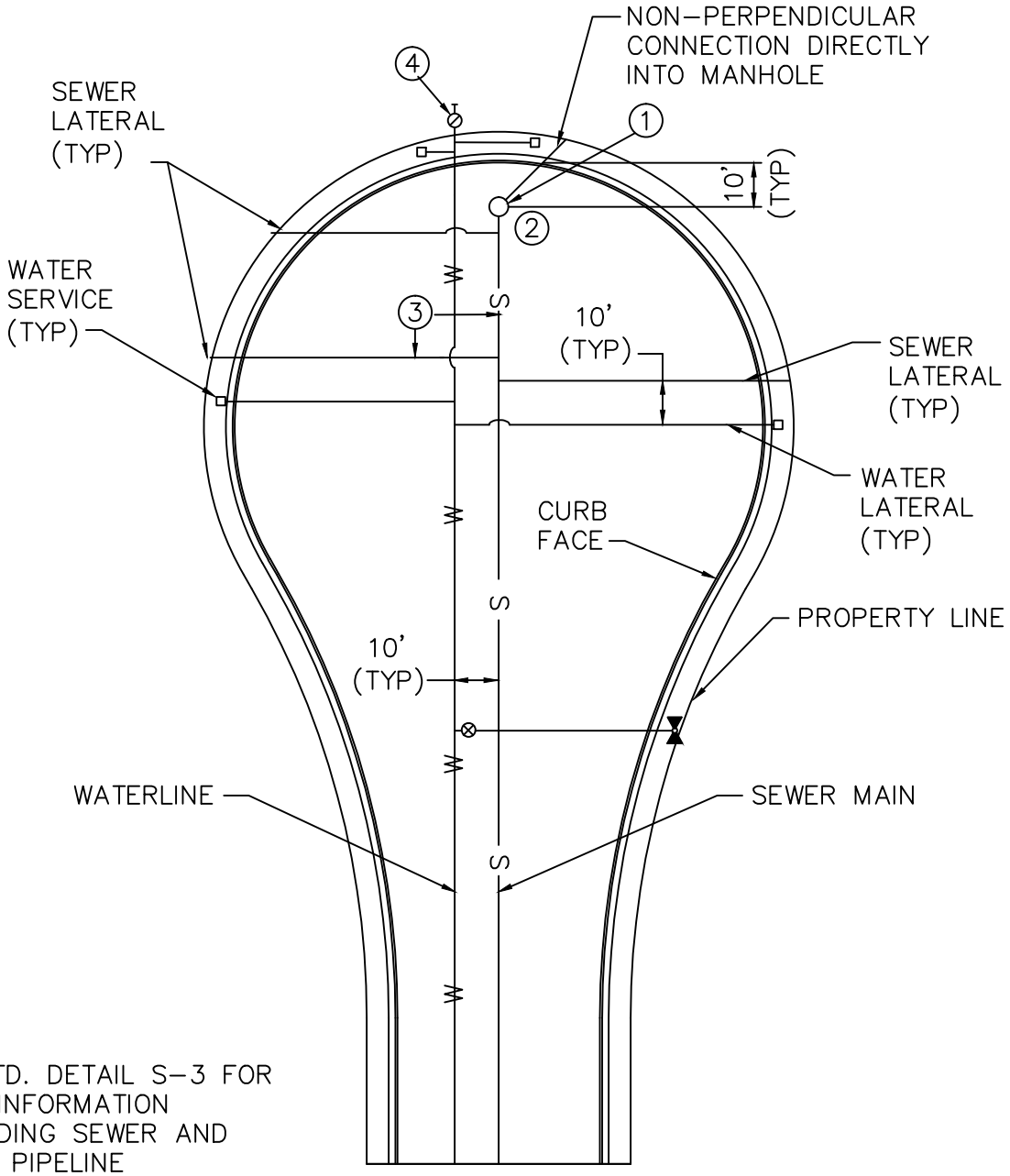
Rev.Date	By	Apprv'd
5/24/17	SMD	JRB

REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BERGE NO. C67084 9/30/2018 CIVIL STATE OF CALIFORNIA

STANDARD CUTOFF WALL (ANCHOR)

DRAWING NO.

S-10



NOTE:
SEE STD. DETAIL S-3 FOR MORE INFORMATION REGARDING SEWER AND WATER PIPELINE SEPARATION REQUIREMENTS.

ITEM	DESCRIPTION
1	USE WATER-TIGHT MANHOLE COVER WHERE CUL-DE-SAC CREATES LOW POINT
2	45° ANGLE ONLY IF NECESSARY TO SERVE REAR LOTS (WATER & SEWER)
3	90° ANGLE (STANDARD) (WATER & SEWER)
4	END OF MAIN (BLOWOFF OR AAV). LOCATE TO CLEAR DRIVEWAYS

Fallbrook Public Utility District

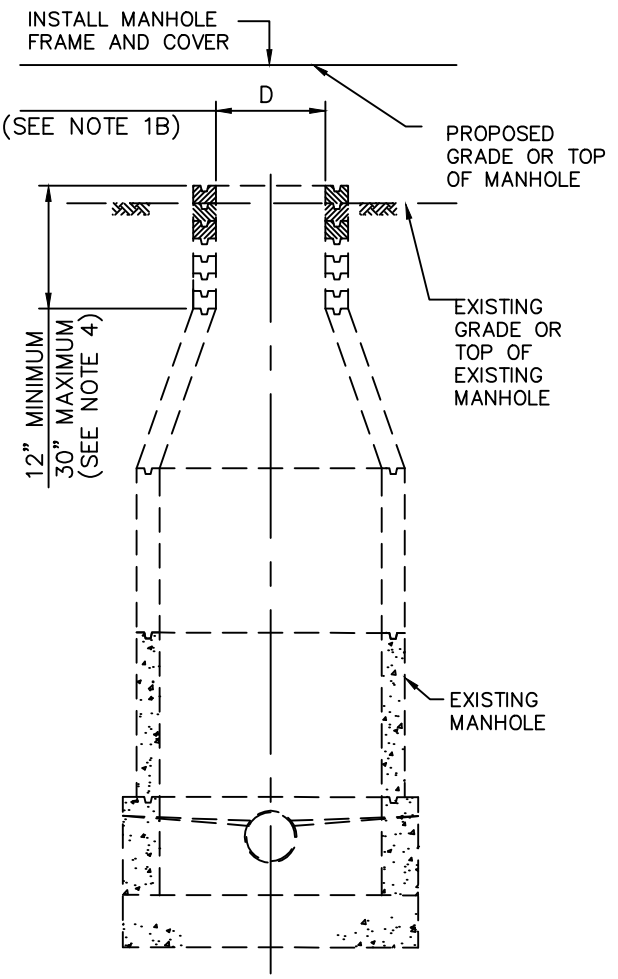
Rev.Date	By	Apprv'd
5/24/17	SMD	JRB

REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BEBEE NO. C67084 9/30/2018 CIVIL STATE OF CALIFORNIA

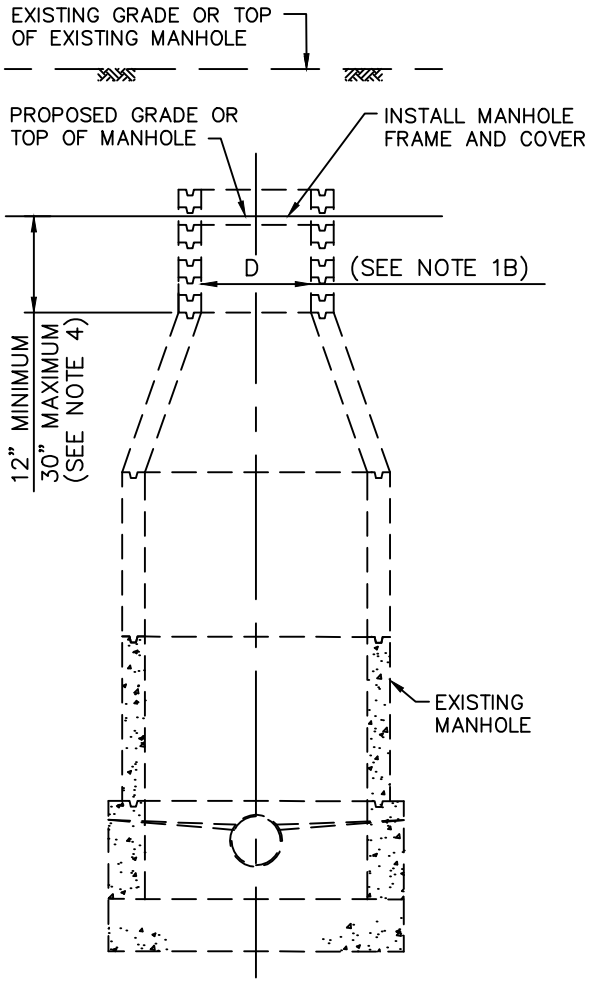
STANDARD CUL-DE-SAC SEWER LATERALS

DRAWING NO.

S-11



RAISING EXISTING PRECAST CONCRETE SEWER MANHOLES



LOWERING EXISTING PRECAST CONCRETE SEWER MANHOLES

PRECAST CONCRETE SEWER MANHOLES

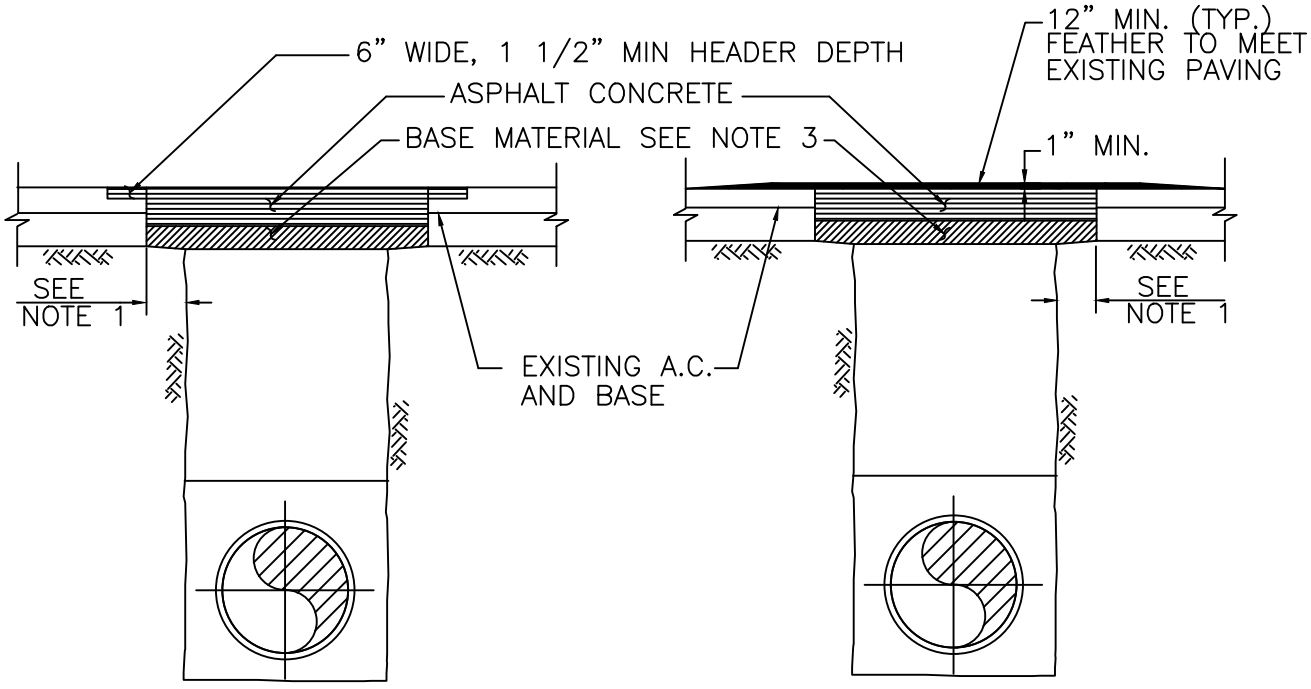
NOTES:

1. GENERAL
   - A. DIMENSION "D" SHALL BE THE SAME AS THE SIZE OF MANHOLE FRAME AND COVER TO BE USED.
   - B. THE CONTRACTOR MAY REUSE THE EXISTING MANHOLE FRAME AND COVER, UNLESS DAMAGED BY HIM DURING HIS CONSTRUCTION OPERATIONS OR WHEN OTHERWISE INDICATED ON THE PROJECT PLANS. ITEMS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED WITH IDENTICAL NEW ITEMS AT NO EXPENSE TO THE AGENCY.

2. RAISING EXISTING PRECAST CONCRETE SEWER MANHOLES
   - A. PRECAST CONCRETE MANHOLES TO BE RAISED LESS THAN 3 INCHES MAY BE RAISED BY APPLYING CLASS "D" MORTAR TO THE TOP OF THE EXISTING MANHOLE, PROVIDED THE TOTAL HEIGHT OF MORTAR, EXISTING AND NEWLY APPLIED DOES NOT EXCEED 3 INCHES.
   - B. WHERE THE PRECAST CONCRETE MANHOLE IS TO BE RAISED 3 INCHES OR MORE, OR WHERE THE TOTAL HEIGHT OF MORTAR, EXISTING AND NEWLY APPLIED, WOULD EXCEED 3 INCHES, GRADE RINGS SHALL BE UTILIZED. CLASS "D" MORTAR MAY BE USED FOR FINAL ADJUSTMENT, BUT NOT MORE THAN 3 INCHES IN HEIGHT. WHERE RAISING THE MANHOLE WOULD RESULT IN THE UPPER SEGMENT OF THE SHAFT BEING MORE THAN 30 INCHES IN HEIGHT, REMOVE THE REDUCER AND THE UPPER SEGMENT OF THE SHAFT. INSTALL ADDITIONAL RINGS OR PIPE TO THE LOWER SEGMENT OF THE SHAFT AND REINSTALL THE REDUCER AND GRADE RINGS AS REQUIRED.

3. LOWERING EXISTING PRECAST CONCRETE SEWER MANHOLES
   - A. REMOVE SUFFICIENT GRADE RINGS TO LOWER THE MANHOLES AS REQUIRED. APPLY CLASS "D" MORTAR TO A HEIGHT NOT EXCEEDING 3 INCHES FOR ADJUSTMENT TO FINAL GRADE.
   - B. WHERE REMOVAL OF GRADE RINGS WOULD RESULT IN THE UPPER SEGMENT OF THE SHAFT BEING LESS THAN 12 INCHES IN HEIGHT, REMOVE THE REDUCER AND SUFFICIENT SECTIONS OF THE LOWER SEGMENT OF THE SHAFT AND REINSTALL ANY NECESSARY SEGMENT OF THE LOWER SHAFT, THE REDUCER, AND THE GRADE RINGS TO CONFORM TO THE REQUIREMENTS OF THIS PLAN.
   - C. EXISTING GRADE RINGS NEED NOT BE REMOVED IF EXISTING MORTAR IS REMOVED AND AT LEAST 1 1/2 INCHES OF MORTAR MAY BE PLACED ON TOP OF THE EXISTING GRADE RINGS TO RESEAT THE FRAME.

Fallbrook Public Utility District	Rev.Date	By	Apprv'd	REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BEBEE NO. C57094 9/30/18 CIVIL STATE OF CALIFORNIA	SEWER MANHOLE HEIGHT ADJUSTMENT	DRAWING NO.
	5/24/17	SMD	JRB			S-12



NOTES:

1) TRENCH EDGES TO BE CUT A MINIMUM OF 6" WIDER THAN TRENCH FOR TRENCHES 3' WIDE OR LESS, AND 12" WIDER FOR TRENCHES OVER 3' WIDE.

2) EXISTING AC SHALL BE CUT AND REMOVED IN SUCH A MANNER SO AS NOT TO TEAR, BULGE OR DISPLACE ADJACENT PAVEMENT. EDGES SHALL BE CLEAN AND VERTICAL. ALL CUTS SHALL BE PARALLEL OR PERPENDICULAR TO STREET CENTERLINE, WHEN PRACTICAL.

3) BASE MATERIAL TO BE REPLACED TO DEPTH OF EXISTING BASE OR 6" MINIMUM, AC MAY BE SUBSTITUTED FOR BASE MATERIAL.

4) A TACK COAT OF ASPHALT EMULSION OR PAVING ASPHALT SHALL BE APPLIED TO EXISTING AC OR P.C.C. CONTACT SURFACES, PRIOR TO RESURFACING.

5) ASPHALT CONCRETE RESURFACING:
   A) MINIMUM TOTAL THICKNESS SHALL BE ONE INCH GREATER THAN EXISTING AC OR 3" MINIMUM,
   B) AC SHALL BE HOT PLANT MIX CALTRANS SPEC GRADE C2-PG-64-10
   C) FINISH COURSE FOR TYPE B RESURFACING SHALL BE LAID DOWN USING A SPREADER BOX.

6) ALL AC RESURFACING SHALL BE SEAL COATED WITH AN EMULSIFIED ASPHALT AND COVERED WITH SAND. CHIP SEALING TO BE APPLIED AS REQUIRED BY AGENCY.

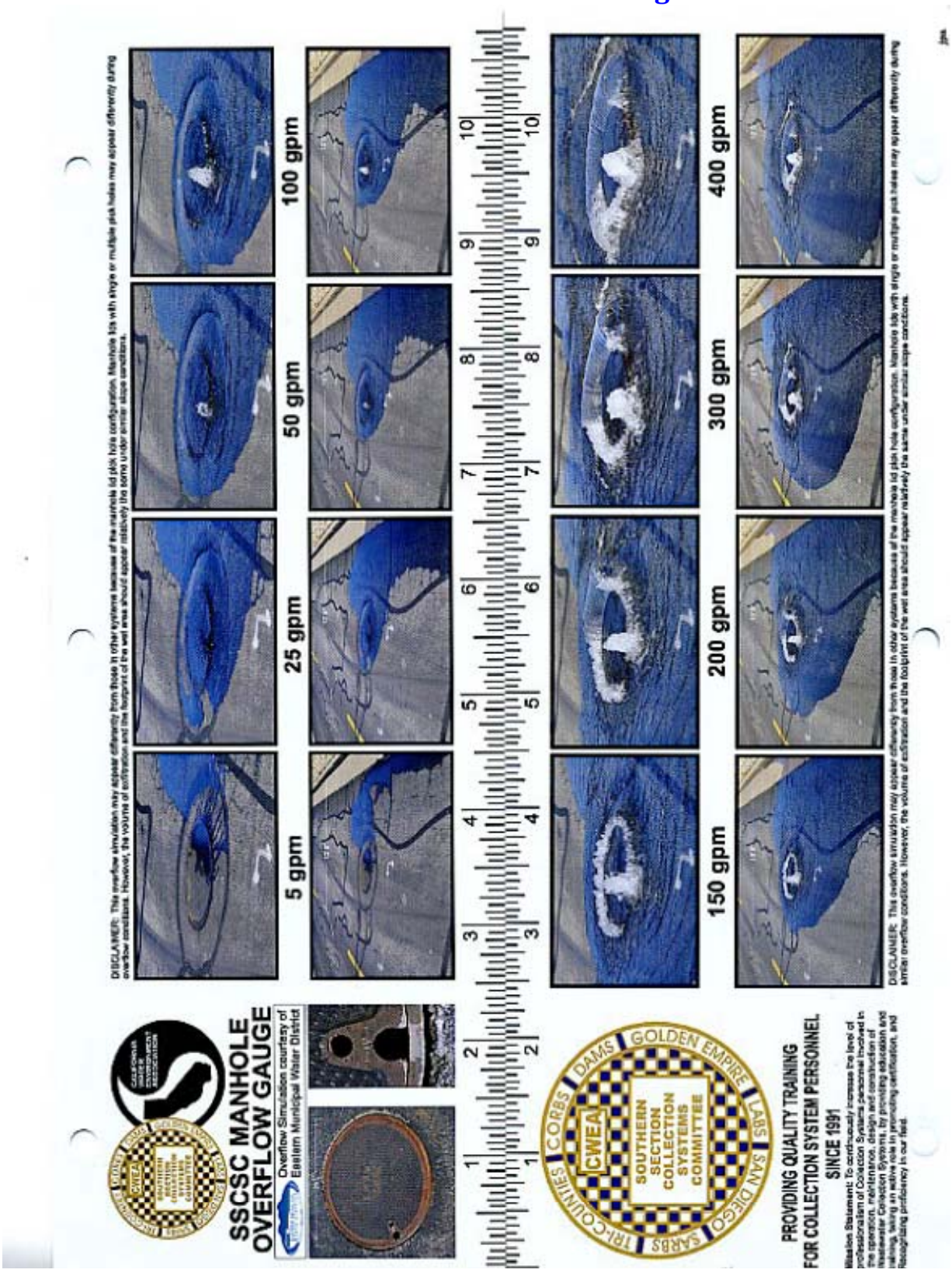
7) TYPE B SHALL NOT BE USED ON LATERAL CROSSINGS.

8) SLOUGHING OF TRENCH UNDER PAVEMENT SHALL BE CAUSE FOR REQUIRING ADDITIONAL PAVEMENT AND BASE.

Fallbrook Public Utility District	Rev.Date	By	Apprv'd	REGISTERED PROFESSIONAL ENGINEER JACK RICHARD BEBEE NO. C67084 9/30/18 CIVIL STATE OF CALIFORNIA	TRENCH RESURFACING TYPES A & B	DRAWING NO. S-14
	5/24/17	SMD	JRB			

Appendix H: SSCSC Ruler Gauge for Overflows

SSCSC Manhole Overflow Gauge



Appendix I: District's Internal SSO Report Form

Event #

Certification #

FALLBROOK PUBLIC UTILITY DISTRICT

SEWER OVERFLOW REPORT FORM

Revised 2020

⇨ ***Circle One:*** Category 1 Category 2 Category 3 PLSD

Category 1: Discharges of untreated or partially treated wastewater of **any volume** resulting from an enrollee's sanitary sewer system failure or flow condition that reach surface water and/or reach drainage channel tributary to a surface water.
****OES MUST BE NOTIFIED WITHIN 2 HOURS @ (800) 852-7550****

Category 2: Discharges of untreated or partially treated wastewater of **1,000 gallons or greater** resulting from an enrollee's sanitary sewer system failure or flow condition that **do not** reach surface water, a drainage channel, or municipal separate storm sewer system unless the entire SSO discharged the storm drain system is fully recovered and disposed of properly.

Category 3: All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.

Private Lateral: Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

THIS REPORT IS (Circle one): PRELIMINARY FINAL REVISED FINAL

1. OVERFLOW SPILL START:

Date: _____ (MM/DD/YYYY) Time: _____ (Military)

When District Was Notified: _____ (MM/DD/YYYY) Time: _____ (Military)

Crew Arrival Time: _____ (MM/DD/YYYY) Time: _____ (Military)

Overflow Spill End: _____ (MM/DD/YYYY) Time: _____ (Military)

2. TOTAL SPILL VOLUME: _____ Gallons

Estimated current GPM, only if still overflowing: _____GPM

Did Spill Reach Storm Drain or Surface Water? YES ☐ NO ☐

If yes, was it fully captured & returned to sewer system? YES ☐ NO ☐

Volume **not** able to be recovered from storm drain/surface water: _____ (Gallons)

Estimated spill volume that reached separate storm drain that flows to a surface water body? _____ (Gallons)

Estimated spill volume recovered from separate storm drain that flows to a surface water body? _____ (Gallons)
**(Do not include water used for clean up)

Estimated spill volume that reached a drainage channel that flows to a surface water body? _____ (Gallons)

Estimated spill volume recovered from a drainage channel that flows to a surface water body? _____ (Gallons)

Estimated spill volume discharged directly to a surface water body? _____ (Gallons)

Estimated spill volume recovered from surface water body? _____ (Gallons)

Estimated spill volume discharged to land? _____ (Gallons)
**(This includes discharges to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/ retention structure, field, or other non-surface water location)

Estimated spill volume recovered from the discharge to land? _____ (Gallons)
**(Do not include water used for clean up)

3. **OVERFLOW VOLUME RECOVERED: _____ Gallons (Do not include wash water)**

4. **EXPLANATION OF VOLUME ESTIMATION METHOD USED?** _____

5. **FINAL SPILL DESTINATION:** ***(Circle as many as appropriate)***

Beach Building/Structure Other Paved Surface Storm Drain

Street/Curb & Gutter Surface Water Unpaved Surface

SANITARY SEWER OVERFLOW LOCATION AND DESCRIPTION:

6. **SPILL LOCATION NAME:** _____

RESPONSIBLE PARTY (Private Lateral Spill): _____

7. **SPILL ADDRESS (# and Name):** _____ **(Include Apt. #)**

STREET DIRECTION *(Circle one):* E N NE NW S SE SW W

TYPE: Alley Avenue Boulevard Circle Court Drive Freeway Highway

Lane Loop Parkway Place Road Street Trail Way

CROSS STREET(S): _____

CITY: _____ STATE: _____ ZIP CODE _____

REGIONAL BOARD: Region 9-San Diego COUNTY: San Diego

8. **LATITUDE:** _____ Deg. _____ Min. _____ Sec. **OR** _____ DECIMAL DEGREES

LONGITUDE: _____ Deg. _____ Min. _____ Sec. **OR** _____ DECIMAL DEGREES

9. SPILL LOCATION DISCRIPTION: _____

Number of Appearance Points? _____

10. SPILL APPEARANCE POINTS:

Cleanout Force Main Gravity Mainline Manhole Pipe

Pump Station Other: _____

11. Did Spill Discharge to Drainage Channel or Surface Water? YES ☐ NO ☐

Did spill reach storm drain? YES ☐ NO ☐

If YES, was it captured and returned to the sanitary sewer system? YES ☐ NO ☐

12. SPILL CAUSE *(Circle one):*

Debris (General or Rags) Flow Exceeded Capacity Grease Deposition (FOG)

Operator Error Pump Station Failure Vandalism Root Intrusion

Pipe Structural Problem/Failure (Upper Lateral/Lower Lateral/Main/Other) – *Circle one*

Other: _____

**If caused by wet weather, choose size of storm:

1-yr / 2-yr / 5-yr / 10-yr / 25-yr / 50-yr / 100-yr / >100-yr / Unknown

13. PIPE INFORMATION *(If applicable):*

Diameter: _____ (Inches) Material: _____

Age of Pipe: _____ Terrain: Flat Mixed Steep

14. RESPONSE AND CORRECTIVE ACTION TAKEN: *(Circle as many as appropriate)*

Cleaned-up (Mitigated effects of spill) Contained all or portion of spill

Inspected sewer using CCTV to determine cause Restored flow

Returned all or portion of spill to sanitary sewer system

Other: _____

IF CATEGORY 1 SPILL, ADDITIONAL ACTION TAKEN *(Circle as many as needed)*

Add to PM Program Adjust Schedule/ Method of PM

Enforcement Action against FOG Source Plan Rehab/ Replacement of sewer

Repair Sewer Other: _____

15. **OVERALL SPILL DESCRIPTION:** _____

_____

_____

_____

SPILL RESPONSE COMPLETION DATE (MM/DD/YYYY) _____

NOTIFICATIONS

16. **OES CONTROL NUMBER:** _____

OES Called: DATE: _____ (MM/DD/YYYY) TIME: _____ (Military)

****OES must be notified within 2 hours of becoming aware of any Category 1 SSO <u>greater than or equal to 1,000 gallons.</u>**

****OES PHONE NUMBER: (800) 852-7550****

17. **OTHER NOTIFICATIONS (IF NEEDED):** _____

Spills to Fallbrook Creek, call Camp Pendleton Water Quality Branch Notification

****24 Hour Spill Hotline: (760) 390-0784****

18. **VISUAL INSPECTION RESULTS FROM RECEIVING WATER** _____

_____

_____

19. **WERE SIGNS POSTED TO WARN OF CONTAMINATION?** **YES** ☐ **NO** ☐

20. **NAME OF IMPACTED SURFACE WATER(S), *(Enter N/A if not applicable)***

_____

21. **NAME OF IMPACTED BEACH(ES):** ***(Enter N/A if not applicable)***

_____

22. WAS SAMPLING CONDUCTED? **YES ☐ NO ☐**

If yes, list agencies reported to: _____

If yes, list analysis performed: _____

23. IS THERE AN ONGOING INVESTIGATION? **YES ☐ NO ☐**

Signature of Author: _____

The following certification must be completed with the notice:

"I swear under penalty of perjury that the information submitted in this document is true and correct. I certify under penalty of perjury that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information; I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Signature: _____

Name: (Print) _____

Title: _____

Date: _____ **Phone Number:** _____

For FPUD Use Only - Do NOT Fax with Report

Was wash down water used? YES ☐ NO ☐ Gallons Used: _____

Was all wash down water recovered? YES ☐ NO ☐

Make sure wash down water is **not included in Question #3 Overflow Volume Recovered**

If little (less than ½) or none of the overflow was recovered, please give explanation:

_____

_____

_____

FPUD WO# _____

Time Arrived: _____ Time Completed: _____

Distance from CO/MH where opened: _____

Upstream Manhole: _____ Downstream Manhole: _____

Flushed/Rodded from MH/CO#: _____ To MH/CO#: _____

Map Section: _____

Revised: 1/2020

Appendix J: CIWQS Reporting Requirement Based on Type of Spill

CIWQS Reporting Requirement Based on Type of Spill		
Category 1	**Definition**	Discharges of untreated or partially treated wastewater of any volume that reaches or will likely reach surface water/drainage channel tributary or that reach a storm drain and are not fully captured.
	Notification	If it's greater than 1,000 gallons, notify the Regional Board within 2 hours. If it's less than 1000 gallons, notify the Regional Board within 24 hours. For both cases, notify OES and obtain a notification control number at: (800) 852-7550. OES will normally contact San Diego County Department. of Environmental Health.
	Report	In CIWQS, submit draft report within 3 business days of becoming aware of the SSO. Certify the report within 15 calendar days of SSO end date.
	Sampling	If the SSO was 50,000 gallons or greater, water quality sampling must be conducted within 48 hours after initial SSO notification and uploaded to CIWQS. An SSO Technical Report is required to be submitted within 45 days.
Category 2	**Definition**	Discharges of untreated or partially treated wastewater of 1,000 gallons or greater that do not reach surface water, drainage channel or municipal storm system (i.e., less than 1000 gallons and didn't reach surface waters).
	Notification	Notify OES within 24 hours and obtain a notification control number at: (800) 852-7550. OES will normally contact San Diego County Department of Environmental Health.
	Report	In CIWQS, submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date.
Category 3	**Definition**	All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system (i.e., less than 1,000 gallons and did not reach surface waters).
	Notification	Notify OES within 24 hours and obtain a notification control number at: (800) 852-7550. OES will normally contact San Diego County Department of Environmental Health.
	Report	In CIWQS, submit certified report within 30 calendar days of the end of the month in which the SSO occurred.
Private Lateral Sewer Discharge (PLSD)	**Definition**	Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately-owned sewer lateral connected to the enrollee's sewer system.
	Notification	If PLSD is greater than 1000 gallons, notify Regional Board within 24 hours. If it's less than 1000 gallons and did not reach surface water, no notification is required. If it's less than 1000 gallons and it did reach surface, notify Regional Board within 24 hours.
	Report	In CIWQS, submit certified report within 30 calendar days of the end of the month in which the SSO occurred.

Appendix K: District Vehicle Spill Notification Cards

INTERNAL SPILL NOTIFICATIONS

For Sanitary Sewer Spills or Outfall Line Breaks:

- Notify Kyle Drake (760) 497-4056
- Notify Collection Systems Stand-By (760) 497-3393
  - Provide spill information to Juliana Luengas (760) 420-9523 OR jluengas@fpud.com

For Potable or Recycled Water Spills:

- Notify Eddie Rodriguez (760) 453-6405
- Notify Water Stand-By (760) 497-3985
  - Provide spill information to Juliana Luengas (760) 420-9523 OR jluengas@fpud.com

For Regulatory Questions:

- Juliana Luengas at (760) 420-9523

Fallbrook Public Utility District

D O N O T R E M O V E F R O M V E H I C L E

OUTSIDE AGENCY SPILL NOTIFICATION

NOTIFTY THE BIG 3 FOR EACH REPORTABLE SPILL:

[1] OFFICE OF EMERGENCY SERVICES: (800) 852-7550 → OBTAIN CONTROL #

[2] COUNTY OF SD ENVIRONMENTAL HEALTH (SDEH): (858) 505-6657

[3] SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD: (619) 516-1990, CIWQS SSO REPORT

[*] IF SPILL IMPACTS OCEANSIDE: (760) 435-4500 OR (760) 435-3900

[*] IF SPILL IMPACTS FALLBROOK CREEK/CAMP PENDLETON: (760) 725-4324

D O N O T R E M O V E F R O M V E H I C L E

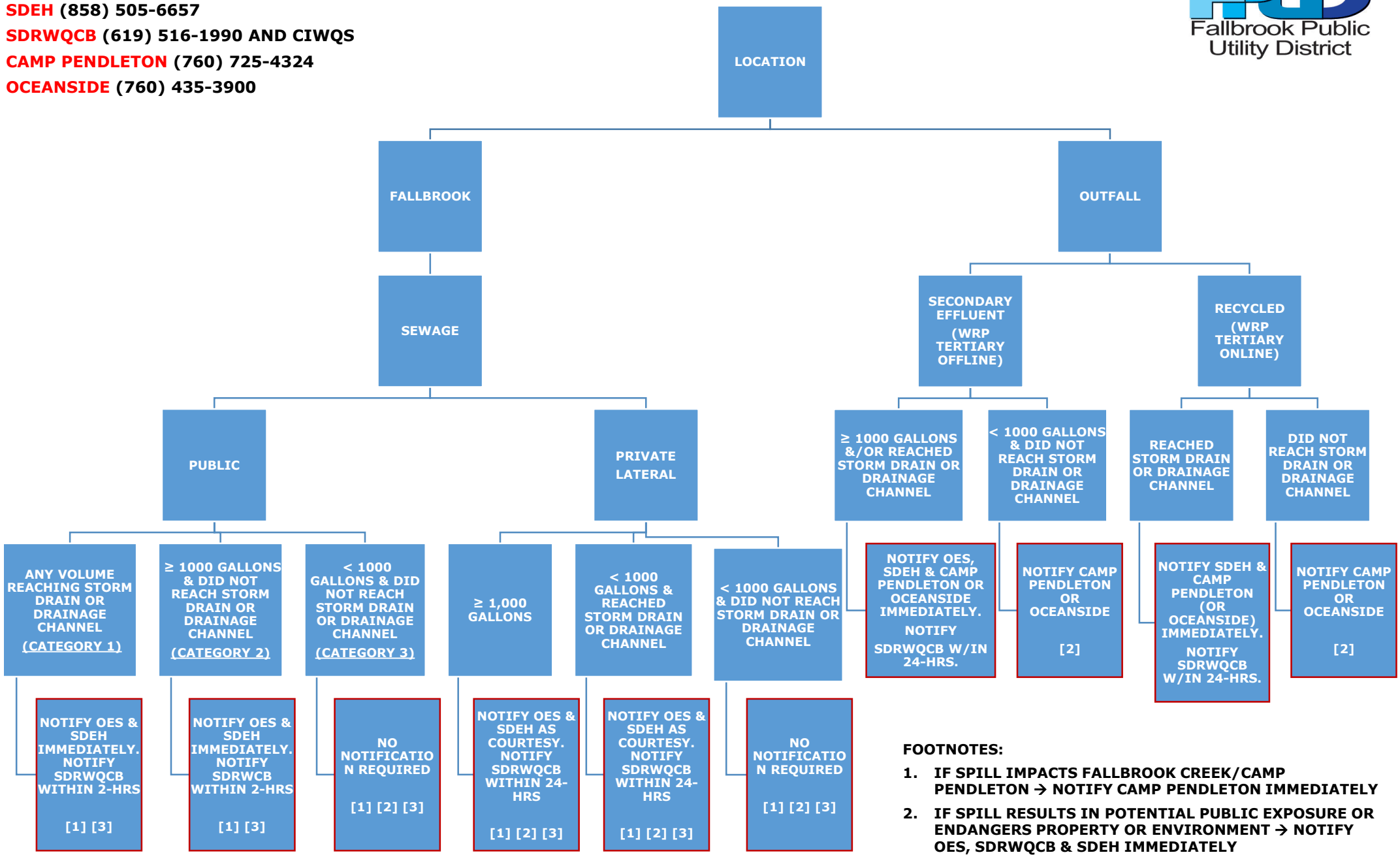
Appendix L: Outside Agency Spill Notification Tree

Outside Agency Spill Notification Tree

CONTACTS:

OES (800) 852-7550
SDEH (858) 505-6657
SDRWQCB (619) 516-1990 AND CIWQS
CAMP PENDLETON (760) 725-4324
OCEANSIDE (760) 435-3900

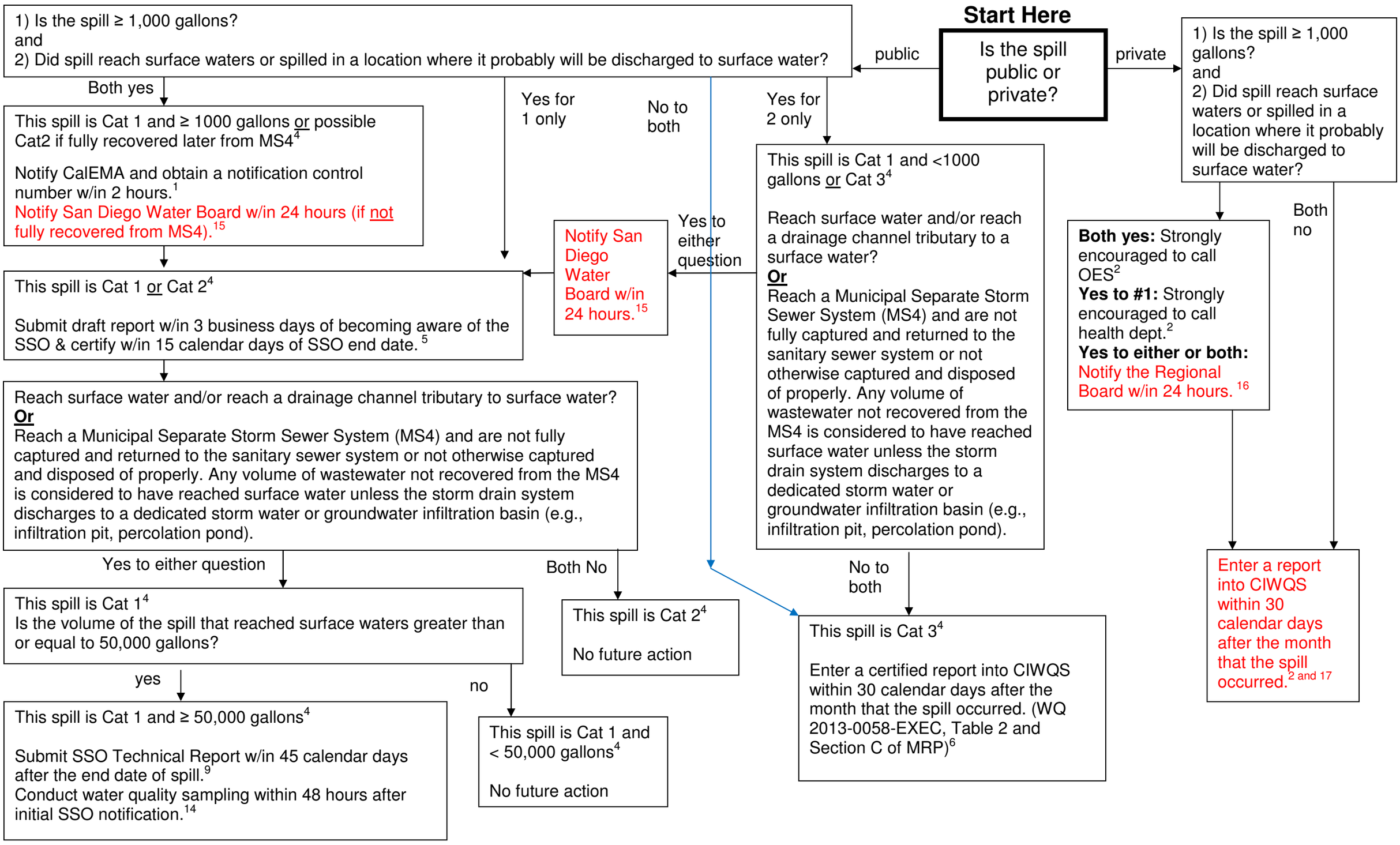
Fallbrook Public Utility District



FOOTNOTES:

1. **IF SPILL IMPACTS FALLBROOK CREEK/CAMP PENDLETON → NOTIFY CAMP PENDLETON IMMEDIATELY**
2. **IF SPILL RESULTS IN POTENTIAL PUBLIC EXPOSURE OR ENDANGERS PROPERTY OR ENVIRONMENT → NOTIFY OES, SDRWQCB & SDEH IMMEDIATELY**

Appendix M: Regional Board SSO Guidance Documents


Start Here
Is the spill public or private?
public
private
1) Is the spill ≥ 1,000 gallons?
and
2) Did spill reach surface waters or spilled in a location where it probably will be discharged to surface water?
Both yes
Yes for 1 only
No to both
Yes for 2 only
This spill is Cat 1 and ≥ 1000 gallons or possible Cat2 if fully recovered later from MS4[4]
Notify CalEMA and obtain a notification control number w/in 2 hours.[1]
Notify San Diego Water Board w/in 24 hours (if not fully recovered from MS4).[15]
This spill is Cat 1 and <1000 gallons or Cat 3[4]
Reach surface water and/or reach a drainage channel tributary to a surface water?
Or
Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).
Yes to either question
Notify San Diego Water Board w/in 24 hours.[15]
This spill is Cat 1 or Cat 2[4]
Submit draft report w/in 3 business days of becoming aware of the SSO & certify w/in 15 calendar days of SSO end date.[5]
Reach surface water and/or reach a drainage channel tributary to surface water?
Or
Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).
Yes to either question
Both No
This spill is Cat 1[4]
Is the volume of the spill that reached surface waters greater than or equal to 50,000 gallons?
This spill is Cat 2[4]
No future action
yes
no
This spill is Cat 1 and ≥ 50,000 gallons[4]
Submit SSO Technical Report w/in 45 calendar days after the end date of spill.[9]
Conduct water quality sampling within 48 hours after initial SSO notification.[14]
This spill is Cat 1 and < 50,000 gallons[4]
No future action
No to both
This spill is Cat 3[4]
Enter a certified report into CIWQS within 30 calendar days after the month that the spill occurred. (WQ 2013-0058-EXEC, Table 2 and Section C of MRP)[6]
1) Is the spill ≥ 1,000 gallons?
and
2) Did spill reach surface waters or spilled in a location where it probably will be discharged to surface water?
Both yes: Strongly encouraged to call OES[2]
Yes to #1: Strongly encouraged to call health dept.[2]
Yes to either or both:
Notify the Regional Board w/in 24 hours.[16]
Both no
Enter a report into CIWQS within 30 calendar days after the month that the spill occurred.[2 and 17]

San Diego Regional Board general guidelines for sewage collection overflows

- Requirements in black are from the State Board Order and requirements in red are from the Regional Board Order.
- If a report is entered into CIWQS as a draft or certified report, then there is no need to fax or email a report to the San Diego Regional Board.
- For reporting purposes, if **one SSO event results in multiple appearance points** in a sewer system asset, the enrollee shall complete one SSO report in the CIWQS Online SSO Database which includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that caused the SSO, and provide descriptions of the locations of all other discharge points associated with the SSO event.[3]
- If **no SSOs for entire calendar month**, certify no SSOs occurred within 30 calendar days of the end of that month.[7]
- **Amendments:** Discharger has 120 days after SSO end date to update or add additional info to a certified SSO report.[8]
- **If CIWQS unavailable**, email required info to San Diego Water Board as required in WQ 2013-0058-EXEC and Order No. R9-2007-0005. Then, enter into CIWQS when available.[10]
- **Collection System Questionnaire**: Update and certify every 12 months.[11]
- These general guidelines are for sewage collection agencies in the San Diego Region and do not supersede any requirements by other agencies (for example - OES and department of health). **Please check with other agencies for any additional requirements**.[12]
- Make **SSMP** available.[13]
- San Diego Water Board contact is Dat Quach (619-521-5899 / Dat.Quach@waterboards.ca.gov / sandiego@waterboards.ca.gov).
- San Diego Water Board Front desk is 619-516-1990 and SSO email account is RB9SSO@waterboards.ca.gov.

Footnotes for Chart

1. Table 2 and Sections B.1, B.2, and B.3 of WQ 2013-0058-EXEC
2. Table 2 and Sections B.4 and B.6 of WQ 2013-0058-EXEC
3. Section C.2 of WQ 2013-0058-EXEC
4. Table 1 and Section C.3 of WQ 2013-0058-EXEC
5. Table 2 and Sections C.4.i, C.8.i.a, C.8.i.b, C.8.i.c, and C.8.i.d of WQ 2013-0058-EXEC
6. Table 2 and Sections C.4.ii and C.8.i.e of WQ 2013-0058-EXEC
7. Section C.4.iii of WQ 2013-0058-EXEC
8. Section C.4.iv of WQ 2013-0058-EXEC
9. Table 2 and Section B.5 of WQ 2013-0058-EXEC
10. Table 2 and Section B.7 of MRP
11. Table 2 and Sections B.8 and C.8.iii of WQ 2013-0058-EXEC
12. Table 2 and Section C.8.ii of WQ 2013-0058-EXEC
13. Section C.8.iv of WQ 2013-0058-EXEC
14. Table 2 and Sections C.5.iii and D of WQ 2013-0058-EXEC
15. Section C.2 of R9-2007-0005, RB9SSO@waterboards.ca.gov
16. Section C.3 of R9-2007-0005, RB9SSO@waterboards.ca.gov
17. Section C.4 of R9-2007-0005

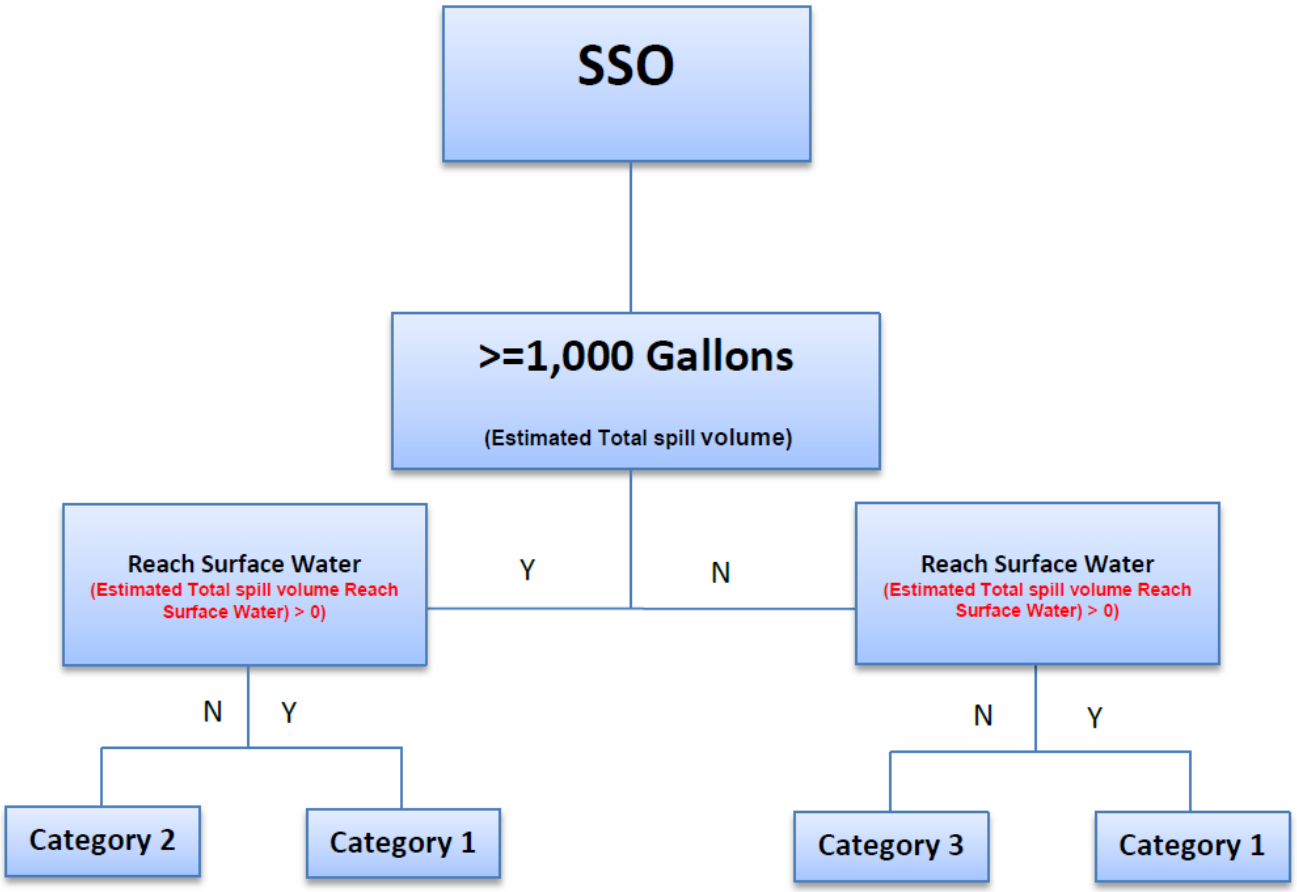
Table 1 – Spill Categories and Definitions

CATEGORIES	**DEFINITIONS** [see Section A on page 5 of SSS WDRs for SSO definition]
CATEGORY 1	Discharges of untreated or partially treated wastewater of **any volume** resulting from an enrollee's sanitary sewer system failure or flow condition that: Reach surface water and/or reach a drainage channel tributary to a surface water; or Reach a municipal separate storm sewer system and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the municipal separate storm sewer system is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or ground water infiltration basin (e.g., infiltration pit, percolation pond).
CATEGORY 2	Discharges of untreated or partially treated wastewater of **1,000 gallons or greater** resulting from an enrollee's sanitary sewer system failure or flow condition that **do not** reach surface water, a drainage channel, or a municipal separate storm sewer system unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
CATEGORY 3	All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.
PRIVATE LATERAL SEWAGE DISCHARGE (PLSD)	Discharges of untreated or partially treated wastewater resulting from blockages or other problems **within a privately owned sewer lateral** connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be voluntarily reported to the SSO Database.

Table 2 – Notification, Reporting, Monitoring, and Record Keeping Requirements

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION (see section B)	Within 2 hours of becoming aware of any Category 1 SSO **greater than or equal to 1,000 gallons** notify the California Office of Emergency Services (Cal OES) and obtain a notification control number.	Call Cal OES at: **(800) 852-7550**
REPORTING (see section C)	Category 1 SSO: Submit Draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. Category 2 SSO: Submit Draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. Category 3 SSO: Submit Certified report within 30 calendar days of the end of month in which SSO occurred. "No Spill" Monthly Certification: Certify that no SSOs occurred within 30 calendar days of the end of the month in which no SSOs occurred. Collection System Questionnaire: Update and Certify every 12 months.	Enter data into the California Integrated Water Quality System (CIWQS) Online SSO Database (http://ciwqs.waterboards.ca.gov/), certified by enrollee's Legally Responsible Official(s).

SSO Categorizations:



Appendix N: OES Fact Sheet on Reporting Sewage Releases

FACT SHEET

Reporting Sewage Releases

May 2016

REPORTING SEWAGE RELEASES:

In the past, there have been occurrences where untreated sewage was released into drinking water sources and was not properly reported to the California Governor's Office of Emergency Services (Cal OES). Proper and timely notification is imperative to allow government agencies and downstream users to take prompt action to protect public health and safety, the environment, and drinking water supplies. The purpose of this Fact Sheet is to help clarify the reporting requirements for sewage releases in California, under California Water Code §13271, *et seq.* and California Health and Safety Code §5411, *et seq.*

State Law requires that an unauthorized discharge of sewage [as defined in 23 California Code of Regulations (CCR) 2250 (b)] into or onto state waters must be reported to **Cal OES**. Upon such notification, Cal OES will then immediately notify the appropriate **Regional Water Quality Control Board** (RWQCB), the **local public health department**, and **local office of environmental health**. These offices are responsible for determining appropriate public and environmental safety measures.

Report Sewage Releases to:

California Governor's Office of Emergency Services
Warning Center

(800) 852-7550

The **Reportable Quantity** for sewage spills is **1000 gallons or more**, as established in regulation [Title 23, California Code of Regulations, Section 2250 (a)]

Please note that the Regional Water Quality Control Boards and Local Health Departments may have additional reporting requirements – please contact them to see what requirements apply to you!

ARE THERE ANY EXCEPTIONS?

Notification of an unauthorized discharge of sewage or hazardous substances, under section 13271 (b) of the California Water Code, is not required if the discharge is in compliance with waste discharge requirements.

PENALTIES FOR NOT REPORTING:

Any person who fails to provide the proper notifications is guilty of a misdemeanor and may be punished by a fine of not more than $20,000 dollars or imprisonment for not more than 1 year or both, per section 13271 (c) of the California Water Code. Additional penalties can be administered under Health and Safety Code §5411, et seq

ADDITIONAL INFORMATION:

Further information on reporting requirements can be located on the Cal OES Website at **www.caloes.ca.gov** in the *California Hazardous Material Spill/Release Notification Guidance* booklet. Please call the Cal OES Hazardous Materials Section at **(916) 845-8788** to answer any further questions.

Appendix O: Wastewater Master Plan

Chapter 4 – Wastewater

4.1 Background

The Fallbrook area was originally served by the Fallbrook Sanitary District which was formed in 1947. In 1994 the Sanitary District was incorporated into the Fallbrook Public Utility District. The sanitary district currently serves approximately 5,000 accounts in a service area of 4,200 acres (see Figure 4-1). The sewer service area boundary is substantially smaller than the District's 28,000 acre water service area. The district started serving reclaimed water in 1991. The sewer system consists of the following facilities

- A water reclamation plant with a design capacity of 2.7 mgd average annual flow
- Six lift stations
- Seventy-eight miles of collection piping and forcemains
- Eighteen miles of outfall piping from Fallbrook to the Pacific Ocean

Currently the WWTP treats all influent flows to tertiary standards. The WRP inflows average approximately 2,000 AFY. The amount of recycled water available varies slightly due to minor infiltration in the wet season, but as shown in Table 2-1 is on average between 155-175 AF per month. The amount of recycled water used by customers varies significantly from summer to winter due to irrigation needs, but in the peak months occur in August or September where recycled demands account for roughly 50% of influent flows as shown in Table 4-1.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
WWTP Influent Flow (AF)	172	156	168	156	167	158	161	158	151	152	156	163	1918
Recycled Water Sales (AF)	33	30	40	56	70	72	78	80	78	60	36	26	660
% Monthly Sales of Total Sales	4.9%	4.5%	6.1%	8.5%	10.6%	11.0%	11.9%	12.1%	11.8%	9.2%	5.5%	3.9%	
Unused Recycled Water (AF)	140	126	127	100	97	85	82	79	73	91	120	137	1258
% Recycled Usage	19%	19%	24%	36%	42%	46%	49%	50%	52%	40%	23%	16%	34%

Table 4-1 - Monthly WRP Flows and Recycled Water Usage Average of 2011-2015 (All figures in AF)

The current operating conditions are summarized in Table 4-2

Design Conditions	Units	Value
Average Annual Flow (2011 - 2015)	MGD	1.6
Peak Day Wet Weather	MGD	3.2
Accounts Served	#	4,966
Equivalent Dwelling Units (EDU's) Served	EDU's	8,375
Unit Flow	Gpd/EDU	191

Table 4-2 – Current Sewer System Operating Conditions

The District's WRP was originally designed with a build-out flow annual average flow of 2.7 mgd. Since the current average annual flow is 1.6 MGD (60% of design flow) and the projected total population increase projected by the San Diego Association of Governments (SANDAG) by 2030 is only a total of 24% by 2040, it is unlikely that the WRP will reach design capacity within a 20-30 year planning horizon, but the system has been designed to this capacity and it has been utilized to represent the long-term build-out scenario. There are currently no large developments being planned that would cause an immediate increase in capacity needs. In addition, much of the sewer service area consists of lower density developments that are on septic and additional development may choose to go on septic versus going to the sewer, so the exact build-out flow demands are highly uncertain.

Based on previous studies the following build out projections and peaking factors were utilized for the sewer flows to the WRP based on maintaining the original build-out plant design capacity of 2.7 mgd average annual flow (Preliminary Design Report: Improvements to the Fallbrook Water Reclamation Plant, Black and Veatch 2012). These build-out flows are not anticipated to occur within the next 30 years.

Design Conditions	Units	Value
Average Annual Flow	MGD	2.7
Peak Hour Dry Flow	MGD	5.2
Maximum Month Flow	MGD	3.1
Peak Day Wet Weather Flow	MGD	4.7
Peak Hour Wet Weather Flow	MGD	6.2

Table 4-3 – Ultimate Build-out Projected Operating Conditions

During the winter of 2016/17, there were several large storms back to back and data from this year was used to estimate infiltration. The overall infiltration rate was estimated to be around 4% of dry weather flows. Most of the infiltration is coming from the older sections of sewer near downtown.

	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Total
Total Influent Monthly (AF)	136.8	123.2	136.0	129.1	133.8	128.6	132.7	134.7	129.6	137.7	133.3	144.8	173.9	143.0	**1917.3**
Dry Weather Average Monthly Influent (AF)	132.4	132.4	132.4	132.4	132.4	132.4	132.4	132.4	132.4	132.4	132.4	132.4	132.4	132.4	**1854.2**
Estimated Infiltration (AF)	4.4		3.6		1.3		0.3	2.3		5.3	0.8	12.3	41.4	10.6	**82.3**
% Infiltration	3%	0%	3%	0%	1%	0%	0%	2%	0%	4%	1%	9%	31%	8%	**4%**

Table 4-4 – Estimated Collections System Infiltration

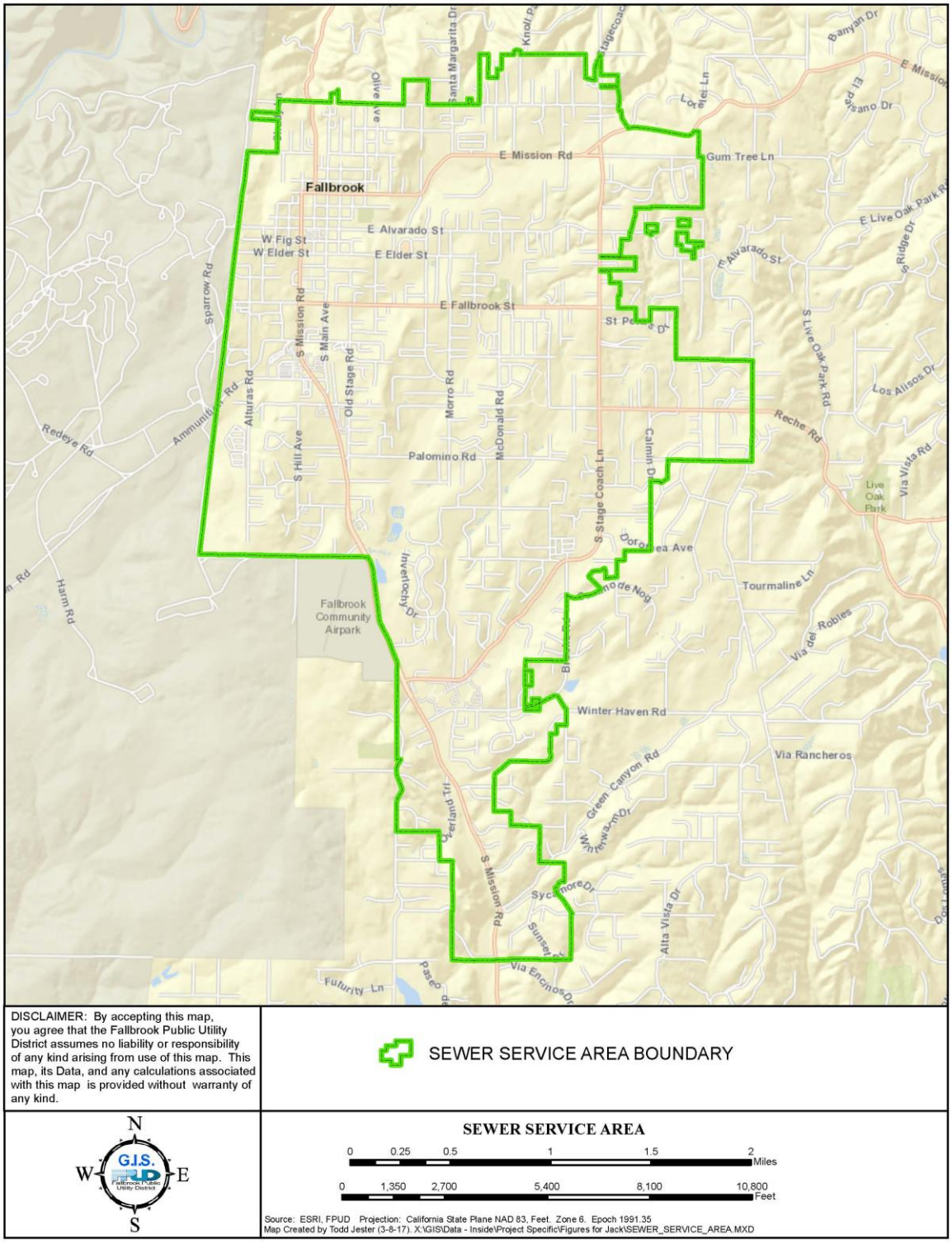


Figure 4-1 Sewer Service Area Boundary

2.2 Wastewater System Needs

2.2.1 Water Reclamation Plant

The District completed a $30 million dollar renovation of the water reclamation plant in 2016 that replaced the vast majority of the electrical and mechanical equipment. The WRP was designed to accommodate build-out demands and at this time no future additional expansion is projected to be necessary. The project also completed necessary structural repairs. The majority of the requirements for the WRP will be to maintain existing equipment and proactively replace equipment as necessary. The WRP processes solids into Class A biosolids using a thermal sludge dryer. The dryer was installed in 2006, and has had on-going reliability issues. The system manufacturer has gone out of business, so maintenance of the system and system support is very limited. District staff has been able to make some reliability improvements with the goal of maintaining the system until it has reached the end of it's useful life in 2023/24 at which time it would be replaced with another Class A sludge drying system. The District currently does not have a asset management plan for individual components of the WRP to help further develop a comprehensive long-term budget for the WRP.

2.2.2 Lift Stations

The District operates six lift stations. The lift stations were installed from the 60's to the 90's and are in need of rehabilitation. The Pumps and motors have been replaced through the years and the electrical components were replaced for many of the lift stations, but a significant overhaul of the lift stations is necessary over the next five to ten years. Three of the District's lift stations are very small (less than 5,000 gpd) and two could be removed from service through extensions of the collections system.

A summary of the lift stations and their capital needs are provided in Table 4-5 below

Facility Name	Lift Station Type	Current EDU's served	Current Estimated Average Flow (gpd)[1]	Current Estimated Average Flow (gpd)[2]	Buildout EDU's served	Estimated Buildout Average Flow (gpd)[1]	Number of Pumps	Pump HP	Year Installed	Chemical Facilities	Generator or MTS	Capital Needs
Shady Lane	Below Grade Dry Well	265	50,350	20,600	323	61,370	2	20	1965	None	Propane Generator	1. Replace with Larger Wetwell and Pumps to meet buildout 2. Relocate Pumps Above Grade
Hawthorne	Submersables	6	1,140	3,000	0	-	1	1/2	1975	None	None	1. Replace with 530 lf of sewer
Anthony's Corner	Below Grade Dry Well	1909	362,710	338,600	2250	427,500	2	60	1978	Bioxide	None	1. Coat wetwell
Overland Trail PS	Series Dry Pit Submersables	1122	213,180	125,600	2017	383,230	4 (2 in Series)	40	1999	None	Generator	1. Repair and Coat Concrete (influent, junction box, wetwell) 2. Remove weir and cover influent channel and junction box include vent with carbon canister. Add second grinder. 3. Replace generator 4. Rehab building (fans, roof, bathroom, kitchen) 5. Sump Pump in overflow 6. Replace pumps and suction piping
Green Canyon	Below Grade Dry Well	7	1,330	4,633	328	62,320	2	15	1965	None	MTS	1. Coat wetwell 2. FM replacement
Debby Street	Partial Dry Well Grinder Pumps	14	2,660	3,013	0	0	2	2	1965	None	None	1. Replace with sewer S. to Surrey Heights (3250 lf)

1. Based on 190 gpd/edu

2. Based on Pump Run Hours

Table 4-5 – Sewage Lift Station Improvement Needs

2.2.2.1 Shady Lane Lift Station

Shady Lane Lift Station will need to be replaced when additional planned developments come on-line and specifically the Dougherty Grove Development. There is a Shady Lane impact fee assessed to new developments within the Lift Station service area to help off-set the cost of the larger lift station. The replacement Lift Station will be designed for the build-out flow of 60,000 gpd. The estimated cost of the replacement lift station is $530,000.

2.2.2.2 Hawthorne Lift Station.

Hawthorne Lift Station was designed as a temporary lift station until additional developments occurred that extended the sewer 530 linear feet as shown in Figure 4-2. Given the Lift Station needs replacement it was determined that it will be more cost effective for the District to extend the sewer and remove the lift station, rather than replacing the existing lift station. The estimated cost of the extension is $130,000 based on past installed sewer cost data of $250/lf.

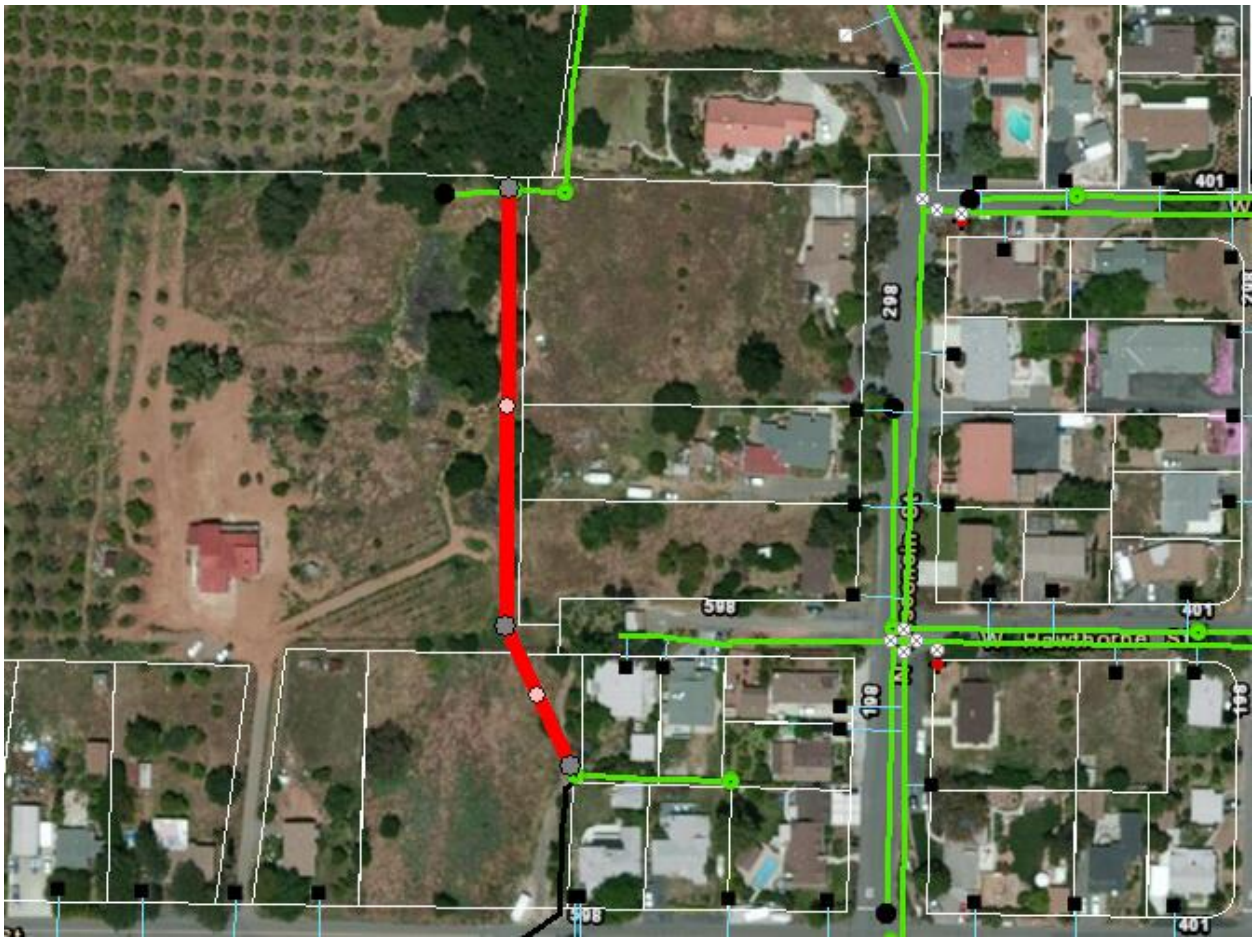


Figure 4-2 – Sewer Extension for Replacement of Hawthorne Lift Station

2.2.2.3 Anthony's Corner Lift Station and Green Canyon Lift Station

While these lift stations have been in-service for over 35 years they are still in relatively good condition. The wetwells for both lift stations need to be coated. The force main from Green Canyon to Plant 2 is an early version of DR 18 PVC pipe and has experience numerous failures and needs to be replaced. The pumps and motors will need routine rehabilitation and replacement, but a complete replacement of the lift stations are not planned at this time. Green Canyon would require replacement if the area begins to build-out in a manner which puts new parcels on sewer. Given the lower density in this area many parcels may stay on septic.

2.2.2.4 Debbie Street Lift Station

This station serves a low area for only 14 EDU's. The lift station was installed in 1965 and is a packaged fiberglass lift station. The overall condition is poor and it needs to be replaced. Several alternatives were evaluated for replacement including the long-term operations and maintenance costs (See Appendix B). Table 4-6 summarizes the alternatives and the preferred option is to extend the sewer to the South as shown in Figure 4.3.

Option	Total Capital Cost	Total Present Worth Cost*	Additional Comments
Option 1. Extend Sewer to the South	$770,000	$785,680	Potential to connect additional sewer customers
Option 2. Replace Lift Station	$550,000	$844,000	Requires on-going maintenance of LS
Option 3. Jack and Bore Deep Sewer North	$815,000	$830,680	Results in 45' deep sewer section

* Based on Present Worth at 3%, 30 years

Table 4-6 – Costs for Debbie Street Lift Station Replacement Alternatives

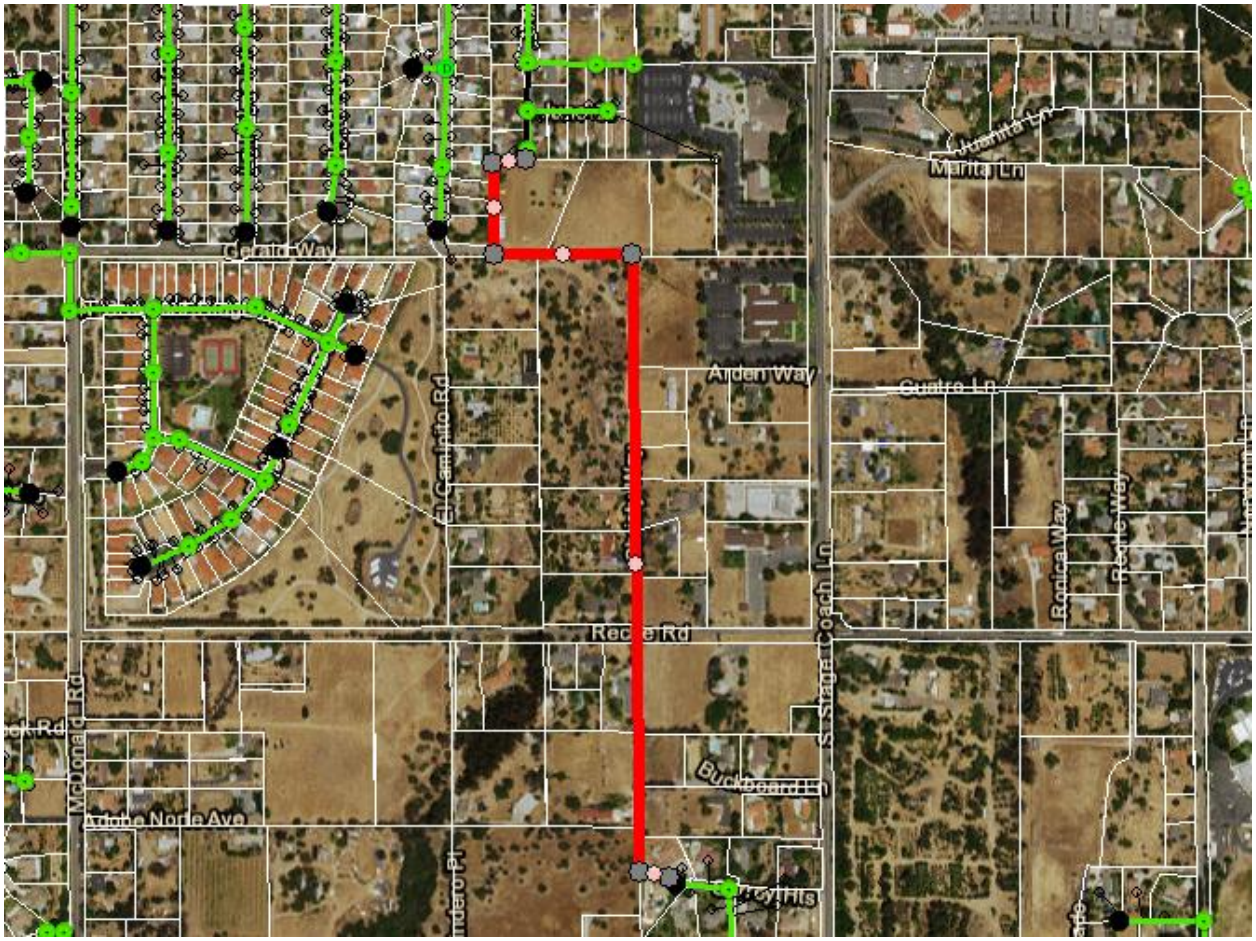


Figure 4-3 – Debbie Street Lift Station Replacement.

2.2.2.4 Overland Trail Lift Station

Overland Trail Lift Station was originally a second WWTP (Plant 2) for the Fallbrook area. In 1999 it was converted to a lift station to pump sewage to the District's WRP. The LS operates at a high discharge pressure given the elevation change from Overland Trail at approximately 480 feet MSL to the WRP at 680 feet MSL with a high point along the force main south of the WRP of 760 MSL. This configuration required two submersible pumps in series. The overall age of the facility requires structural and mechanical improvements including replacing the pumps as shown in Table 4-5. The District is currently evaluating alternatives for pump replacement and necessary structural and mechanical rehabilitation.

2.2.3 Collections, Forcemains and Outfall

The District current operates 78 miles of sewer, 4.4 miles of force main and a 18 mile long outfall. The collection system varies from 4 inch to 20 inch, with some collection pipes over 60 years old. A summary of collections and force main by size and age is summarized below. As shown in the table 4-7 there is over a third of the collections sewer pipelines that are over 50 years old.

	Age (Years Old)					
Diameter	**Less than 10**	**10-20**	**20-30**	**30-40**	**40-50**	**>50**
4	0.00%	0.00%	0.00%	0.08%	0.02%	1.39%
6	0.11%	0.50%	0.82%	11.02%	14.35%	18.00%
8	3.66%	10.58%	9.53%	6.84%	4.23%	8.77%
10	0.00%	0.00%	0.00%	0.29%	0.06%	1.75%
12	0.00%	0.03%	0.06%	0.63%	0.00%	3.22%
14	1.06%	2.06%	0.00%	0.00%	0.00%	0.00%
15	0.00%	0.00%	0.00%	0.09%	0.00%	0.03%
16	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%
18	0.33%	0.00%	0.00%	0.15%	0.00%	0.00%
TOTAL	***5.17%***	***13.17%***	***10.41%***	***19.14%***	***18.66%***	***33.17%***

Table 4-7 – Size and Age of Collections System

While some system expansion will occur due to development, the expansion is occurring slowly and many areas in the sewer service area are on septic and have no plans to connect to sewer. So, the major capital projects for the collections system are related to maintaining the reliability of the existing system to prevent breaks and spills.

2.3.3.1 Collections and Force Main Rehabilitation

The District has a program to reline manholes and sewer lines and to also replace older sections. The District has initiated a program to re-line 1200 lf per year and 10 manholes per year. Given this is only a replacement rate of 0.3% of the collection system the rate will need to increase to at least 1% per year as the system continues to age. The initial re-ling areas are focused on areas that have experienced infiltration and are in areas of downtown that would require costly replacement. The District also completed a high level, 100 year collections system replacement plan that looked at long-term capital costs needed to maintain the system. As shown in Figure 4-4, the replacement needs for the District are lower in the near terms, but begin to increase dramatically as the system continues to age. The District is in the process of updating this evaluation and better connecting it to actual field conditions as well as looking at including the long-term effect of re-lining projects.

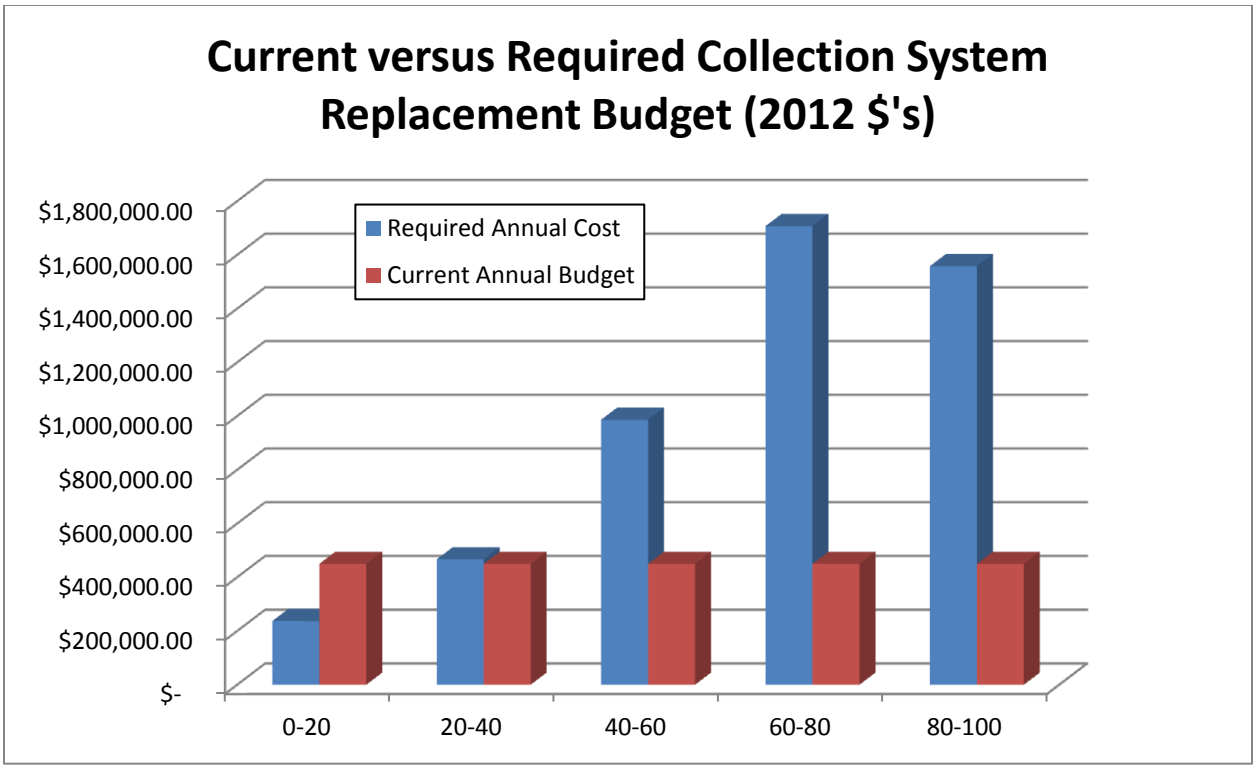


Figure 4-4 – 100 Year Collection System Replacement Budget

The initial replacement objectives were to replace sections of the force mains that have experience breaks and some sections of the collections system that have previously been identified as undersized. The sections with Capacity concerns were in Mission Road and a sewer in Alvarado St. and Brandon St. Improvements to the sewer in Mission Rd are complete and the sewer in Brandon and Alvarado will be replaced by the end of FY 2017/18. The other District priority is to replace sections of forcemain that have experienced breaks due to the condition of the PVC piping used. The District has completed the replacement of the forcemain from the Overland Trail Lift Station to the the WRP except for some limited piping within the WRP site. This piping is in the section where the system is operating under gravity so it has not experience breaks, but it is planned to be replaced as as part of the Santa Margarita Conjunctive Use Project Construction. The next section of forcemain piping to replace will be the forcemain from Green Canyon to Overland Trail which has also experience numerous leaks and is near Ostrich Farm Creek.

2.3.3.2 Collections and Force Main Capacity

The District did a capacity analysis in 1991, which evaluated potential capacity issues with increasing sewer flows. In this study two main sections were identified one along S. Mission road and one section along Brandon and Alvarado Street with potential capacity concerns. The District hired Dudeck Inc. in 2011 to further evaluate alternatives to replace these sections. The District replaced and upsize the sewer section along S. Mission Rd in multiple phases with the final phase being completed in 2015. The Brandon and Alvarado sewer section was awarded in May 2017 and will be constructed in 2017 and

2018. At this time there are no other sewer sections that have capacity constraints as flows have not increased since the 1991 projections. The District continues to monitor manhole levels for signs of surcharging in the system and if there are signs of surcharging then the District will evaluate potential constraints. If the District begins to experience increasing development or flows an update to the hydraulic analysis will be conducted.

2.3.3.3 Collection System Expansion

Although many parcels within the sewer service area are not currently on sewer, many are anticipated to stay on septic as many developments are larger lot custom homes that do not require sewer service. The District has capacity to serve build-out, but it may not be necessary given the planning and development in the sewer service area. A figure showing what full build-out if all parcels were placed on sewer is shown in Figure 4-5

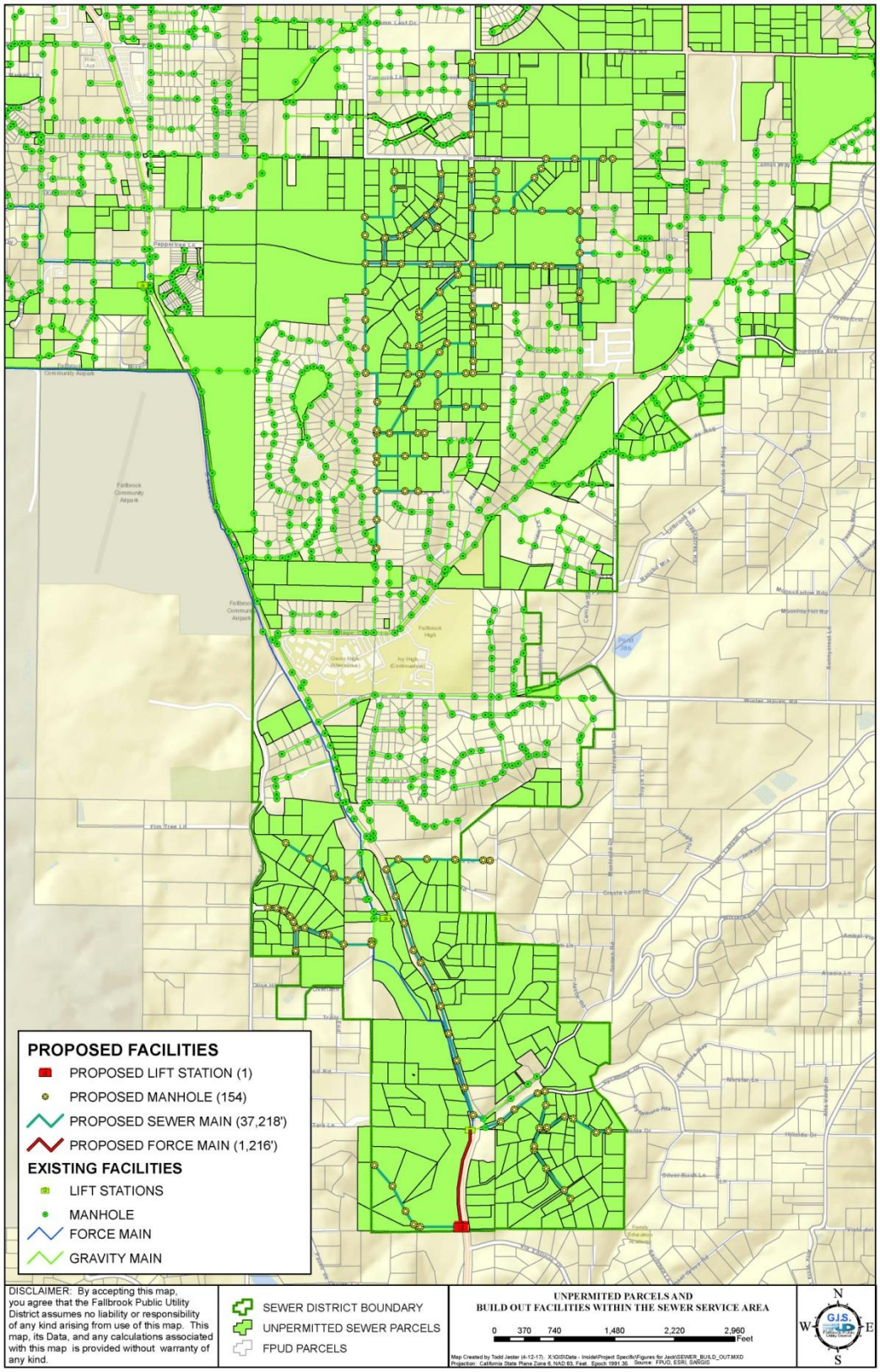


Figure 4-5 – Theoretical Build-out of Sewer Service Area

2.4 Potential Recycled Coordination with other Agencies

FPUD is exploring opportunities to coordinate the collection system operation with other agencies to help reduce operating costs. FPUD is exploring the following opportunities with these agencies:

City of Oceanside

- Since FPUD will begin discharging brine down the outfall once the Santa Margarita Conjunctive Use Project comes on line, the District will not benefit from having a outfall extending all the way to the ocean that must be maintained. The District is working with the City of Oceanside to transfer a portion of the outfall to Oceanside and connect to the Oceanside outfall at the San Luis Rey Treatment Plant. The City of Oceanside is looking to use the FPUD outfall for delivery of recycled water and the arrangement would help reduce maintenance obligation for FPUD.

Naval Weapons Station

- Naval Weapons Station operates a small sewage collection system. FPUD provides treatment for the Weapons Station. Naval Weapons Station is looking to potentially contract out maintenance of the collections system. This would benefit FPUD by increasing utilization of equipment and resources to help reduce costs for FPUD sewer ratepayers.

2.5 Recommendations

The District should pursue the following steps for the sewer system:

1. Begin to develop an asset management plan for the WRP.
2. Initiate a program to begin to replace or retrofit lift stations in accordance with the Master Plan
3. Perform an update collection system and force main asset management analysis and develop a long term prioritized budget for replacements.
4. Increase the manhole and collection relining to reach at least 1& of the total system per year.
5. Continue to pursue transferring part of the outfall to Oceanside and providing services for Naval Weapons Stations.

Appendix P: Deficient Sewer Main Replacement Study by Dudeck (2011)

Due to the size of this document, it has been left out of the SSMP. The study is available by request.

Appendix Q: District Analysis (1991)

Due to the size of this document, it has been left out of the SSMP. The study is available by request.0