ARROWBEAR PARK COUNTY WATER DISTRICT

SEWER SYSTEM MANAGEMENT PLAN

Arrowbear Park County Water District
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April 19, 2012

1st Update Adopted
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TABLE OF CONTENTS

APPENDICES

ABBREVIATIONS / ACRONYMS

AB	Assembly Bill
AHJ	Authority Having Jurisdiction
APCWD	Arrowbear Park County Water District
APWA	American Public Works Association
ASCE	American Society of Civil Engineers
BAT	Best Available Technology
BMP	Best Management Practice
Cal OES	California Office of Emergency Services
CASA	California Association of Sanitation Agencies
CCTV	Closed-Circuit Television
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
CIWQS	California Integrated Water Quality System
CM	Corrective Maintenance
CMOM	Capacity, Management, Operations, and Maintenance
CMMS	Computerized Maintenance Management System
COUNTY	County of San Bernardino
CPC	California Plumbing Code
CWEA	California Water Environment Association
DISTRICT	Arrowbear Park County Water District
EMA	Enhanced Maintenance Area
ERP	Emergency Response Plan
FOG	Fats, Oils, and Grease
FSE	Food Service Establishments
GPS	Global Positioning System
GIS	Geographic Information System
GRD	Grease Removal Device
GWDR	General Waste Discharge Requirements also referred to as the Waste Discharge Requirements (WDR)
I/I	Inflow / Infiltration
IERP	Integrated Emergency Response Plan
JPIA	Joint Powers Insurance Authority
LRO	Legally Responsible Official
MOP	Manual of Practice
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
NACWA	National Association of Clean Water Agencies
NASSCO	National Association of Sewer Service Companies
NGO	Non-governmental Organization
NOI	Notice of Intent
NOV	Notice of Violation
O&M	Operation and Maintenance
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services, State of California
Order	State Water Resources Control Board Order No. 2006-0003-DWQ adopted May 2, 2006

PD	Predictive Maintenance
PLSD	Private Sewer Lateral Discharge
PM	Preventative Maintenance
PMP	Preventative Maintenance Program
QA/QC	Quality Assurance/Quality Control
R&R	Rehabilitation and Replacement
RWQCB	Regional Water Quality Control Board
SBCDEH	San Bernardino County Department of Environmental Health
SDRMA	Special Districts Risk Management Authority
SOP	Standard Operating Procedure or Standard Maintenance Procedure
SSO	Sanitary Sewer Overflow and any sewer spill or overflow of sewage
SSMP	Sewer System Management Plan
SWRCB	State Water Resources Control Board
UPC	Uniform Plumbing Code
WDID	Waste Discharge Identification Number
WDR	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant

DEFINITIONS

1. **Collection System** – Generic term for any system of pipes or sewer lines used to convey wastewater to a treatment facility.
2. **Drainage Channel** - For the purposes of complying with the Statewide Sanitary Sewer Order, (1) a man-made canal used to transport storm water as part of a municipal separate storm sewer system, or (2) an intermittent or perennial stream bed.
3. **Enrollee** - A federal or state agency, municipality, county, district, and other public entity that owns or operates a sanitary sewer system, as defined in the General WDR, that has submitted a complete and approved application for coverage under this Order.
4. **Event ID** – A unique identifier assigned by the SSO database to each reported SSO or private lateral sewage discharge.
5. **FOG** – Fats, Oils, and Grease (See also Industrial Waste).
6. **Industrial Waste** – Means any and all waste substances, liquid or solid, except domestic sewage, and includes among other things radioactive wastes and explosive, noxious or toxic gas when present in the sewage system (See also FOG).
7. **Lateral** – Segment of pipe that connects a home or building to a sewer main, which is usually located beneath a street or easement. The responsibility for maintaining a lateral belongs to the private property owner.
8. **Nuisance -** California Water Code Section 13050, subdivision (m), defines a nuisance as anything that meets all of the following requirements:
    a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
    b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
    c. Occurs during, or as a result of, the treatment or disposal of wastes.
9. **Percent Reached Surface Water** – Volume of sewage discharged from a sanitary sewer system or private lateral or collection system estimated to have reached surface water divided by the total volume of sewage discharged.
10. **Percent Recovered –** Volume of sewage discharged that was disposed of properly, divided by the total volume of sewage discharged.
11. **Private Lateral** – Privately owned sewer service lateral.
12. **Private Lateral Sewage Discharge (PLSD)** – Sewage discharges caused by blockages or other problems within privately owned laterals, collection systems or other private sewer assets that are tributary to the reporting Enrollee's sanitary sewer system. Reports of these events may be submitted by Enrollees on a voluntary basis except in San Diego Region 9, but are not the Enrollee's responsibility unless caused by issues in the main line or because of other Enrollee activity. Normally, this type of sewage discharge is the responsibility of the private lateral, private asset, or collection system owner.

13. **(SSO)** - Sanitary Sewer Overflows. Any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:
    i. Overflows or releases of untreated or partially treated wastewater that reaches waters of the United States;
    ii. Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
    iii. Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.
14. **Sanitary Sewer System** - Any system of pipes, pump stations, sewer lines, or other conveyances upstream of a wastewater treatment plant headwork's used to collect and convey wastewater to a publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system and discharges into these temporary storage facilities are not considered to be SSOs. For the purposes of the SWRCB Order sanitary sewer systems include only those systems owned by public agencies that are comprised of more than one mile of pipes or sewer lines.
15. **SSO Category 1** – All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system that resulted in a discharge to a drainage channel and/or surface water.
16. **SSO Category 2** – All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system of a volume equal to or greater than 1,000 gallons that did not reach surface water.
17. **SSO Category 3** – All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system of a volume less than 1,000 gallons that did not reach surface water.
18. **SSO Database** – Online reporting system developed, hosted, and maintained by the SWRCB for compliance with the Monitoring and Reporting Program contained in SSS WDR.
19. **SSO Reporting System** – The on-line spill reporting system that is hosted, controlled, and maintained by the SWRCB. The web address for this is http://ciwqs.waterboards.ca.gov. This on-line database is maintained on a secure site and is controlled by unique usernames and passwords.
20. **Satellite Collection System** - The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which the sanitary system is tributary.
21. **Storm Drain** – For the purposes of complying with the SSS WDR, any pipe that is part of a Municipal Separate Storm Sewer System (MS4) used for collecting or conveying storm water.
22. **Total # of SSOs per 100 miles of Sewer per Year** – Broad metric used to compare the relative performance of Enrollees and their sanitary sewer systems. This metric expresses the number of SSOs for which the reporting Enrollee is responsible, for every 100 miles of pipe or sewer lines in an Enrollee's sanitary

sewer system. Due to the large variation in facility specific characteristics, this metric should only be viewed as a rough comparison of the operation and maintenance performance of Enrollees and their sanitary sewer systems. For systems smaller than 100 miles, this metric tends to skew the result as the miles of pipe get smaller. This metric is calculated as described: Total # of SSOs per year = (Total # of SSOs x 100)/((Years) x (Miles of Pressure Sewer + Miles of Gravity Sewer + Miles of Public Laterals))

23. **Total Volume of SSOs Reached Surface Water per 100 miles of Sewer** – Broad metric used to compare the relative performance of Enrollees and their sanitary sewer systems. This metric expresses the volume of SSOs, for which the reporting Enrollee is responsible, that reached surface water for every 100 miles of pipe or sewer lines in an Enrollee's sanitary sewer system. Because sewage discharges that reach surface water pose a greater threat to public health and the environment, this metric reflects some accounting of the threat posed by SSOs. Due to the large variation in facility specific characteristics, this metric should only be viewed as a rough comparison of the operation and maintenance performance of Enrollees and their sanitary sewer systems. For systems smaller than 100 miles, this metric tends to skew the result as the miles of pipe get smaller. This metric is calculated as described: Total Annual Volume of SSOs Reaching Surface Waters = (Total volume of SSOs reaching Surface Waters x 100)/((Years) x (Miles of Pressure Sewer + Miles of Gravity Sewer + Miles of Public Laterals))
24. **Total Volume Reached Surface Water** – Amount of sewage discharged from a sanitary sewer system, private lateral, or collection system estimated to have reached surface water.
25. **Total Volume Recovered** – Amount of sewage discharged that was captured and disposed of properly.
26. **Untreated or partially treated wastewater** - Any volume of waste discharged from the sanitary sewer system upstream from wastewater treatment plant headworks.
27. **WDID** – Waste Discharge Identification number assigned as a unique identifier by the SWRCB to each Enrollee for regulatory recordkeeping and data management purposes.

INTRODUCTION

The California State Water Resources Control Board ("SWRCB") promulgated a waste discharge requirement ("WDR") permit on May 2, 2006 to regulate sanitary sewer systems. This permit is known as SWRCB Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. A copy of the Order is included as **Appendix A**.

On February 20, 2008, the 2006 Order was amended to reduce the time allowed for Monitoring and Reporting of an overflow and ensure that first responders are notified in a timely manner of SSOs discharged into waters of the state in order to "adequately protect the public health and safety or the beneficial uses of the waters of the state when there is a sewage collection system spill." This was SWRCB Order No. 2008-0002-EXEC.

On July 30, 2013, Attachment A to the Order was promulgated and became effective on September 9, 2013 and is known as Attachment A, SWRCB Order No. WQO 2013-0058-EXEC, amending the Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. This was "Based on over six years of implementation of the SSS WDRs, the State Water Board concludes that the February 20, 2008 MRP must be updated to better advance the SSO Reduction Program4 objectives, assess compliance, and enforce the requirements of the SSS WDRs" (together these documents constitute the "SSS WDR"). A copy of these Orders are included as **Appendix B**.

These Orders, among other things, requires local public sewer collection system agencies, referred to as "Enrollees," to develop a Sewer System Management Plan ("SSMP"). As specified in Section D.14 of the SSS WDR, SSMPs must be self-audited at least every two (2) years and updated every five (5) years from the original adoption date by the Enrollee's governing board. The original SSMP must have been approved by the governing board of the Enrollee at a public meeting and adopted.

The five-year SSMP update must also be approved and certified as do all significant updates to the SSMP. The SSMP, all references in the document, and the adoption documents by the governing board must be available on the agency website or submitted to the SWRCB upon adoption or recertification. Enrollees do not send their SSMP to the State or Regional Water Boards for review or approval, but must make it publicly available, and upload an electronic copy to the SSO database or provide a link to the Enrollees' website where the SSMP is posted.

EXECUTIVE SUMMARY

Section D.13 of the SSS WDR, requires all Enrollees to development an SSMP and make it available to the public and to the SWRCB and RWQCB. The SSS WDR further specifies eleven (11) mandatory Elements that must be addressed in the SSMP. The SSMP is required to include the elements listed below. However, if the District determines and provides justification that any element is not appropriate or applicable, the SSMP does not need to address that element.

1. Goals
2. Organization
3. Legal Authority
4. Operations and Maintenance Program
5. Design and Performance Provisions
6. Overflow Emergency Response Plan (“OERP”)
7. Fats, Oils, and Grease (FOG) Control Program
8. System Evaluation and Capacity Assurance Plan (“SECAP”)
9. Monitoring, Measurement and Program Modifications
10. SSMP Program Audits
11. Communications Program

The following Chapters will address the above elements of the Plan and represent the Arrowbear Park County Water District SSMP.

The original SSMP was adopted by the Arrowbear Park County Water District Board of Directors at a public meeting on April 19, 2012.

The first update to the SSMP was adopted by the Arrowbear Park County Water District Board of Directors at a public meeting on April 20, 2017.

The second update to the SSMP was adopted by the Arrowbear Park County Water District Board of Directors at a public meeting on June 16, 2022.

As required by the Order, the District makes the SSMP available to the State and/or Regional Water Board upon request. A copy of the SSMP is also publicly available for review at the office of the District General Manager at the District Offices at 2365 Fir Dr., Arrowbear Lake, CA 92382 and on the District’s website at arrowbearwater.org.

CHAPTER 1 – GOALS

This chapter describes the Arrowbear Park County Water District's SSMP goals.

1.1 Purpose

The purpose of the Order is to prevent sanitary sewer overflows (SSOs). To support this purpose and facilitate proper funding and management of the sanitary sewer system the Arrowbear Park County Water District is required to develop, implement, and maintain the SSMP. The District is also required to provide certification to the State Water Board by technically qualified and experienced persons to ensure that the SSMP is developed and implemented appropriately.

1.2 Goals

The goal of this Sewer System Management Plan (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 Sanitary Sewer Overflows (SSOs) that may occur.

The Arrowbear Park County Water District recognizes the importance of protecting water quality by preventing sewer spills and is supplementing its existing sewer system management program with the requirements of the new State regulations.

The District seeks to provide high quality and cost-effective wastewater collection for its constituents by implementing the following:

- Be available and responsive to the needs of the public and work cooperatively with local, state and federal agencies to reduce, mitigate impacts of and properly report SSOs.
- Properly manage and operate the District's facilities to minimize SSOs
- Identify, prioritize, and continuously renew and replace sewer system facilities to maintain reliability.
- Implement regular, proactive maintenance of the system to remove roots, debris, and fats, oils, and grease in areas prone to blockages that may cause sewer backups or SSOs
- Uphold the District's standards and specifications on newly constructed public and private sewers.
- Cost effectively minimize infiltration/ inflow ("I/I")
- Maintain and improve the condition and performance of the District's wastewater collection system.
- Understand the condition of and maintain infrastructure to maximize the life of the collection system.
- Properly operate and maintain the collection system to minimize financial impacts on customers.
- Adhere to the components of the SSMP.

An additional element of the Order is a Monitoring and Reporting Program. The Monitoring and Reporting Program requirements are included as **Appendix B** of this SSMP. The elements of this program, included in the original Order, were revised in 2008 by Order No. WQ 2008-0002-EXEC and in 2013 by SWRCB Order No. WQO 2013-0058-EXEC.

1.3 About This Document

The Arrowbear Park County Water District has prepared this SSMP to ensure compliance with the SWRCB Orders. Support materials such as large format drawings, relational databases, and voluminous documents may not be physically included in the SSMP. In these cases a reference will be provided within the SSMP that indicates the type, owner, and location of these support materials.

CHAPTER 2 – ORGANIZATION

This chapter describes The Arrowbear Park County Water District's organization and chain of communication.

2.1 Organization Compliance Requirements

The Order requires that the SSMP include the names and phone numbers of administrative and maintenance positions responsible for implementing measures in the SSMP program, including lines of authority by organization chart and a narrative explanation. In addition, a chain of communication for reporting SSO's from receipt of complaint is required. The intent of the Organization element is to identify persons, by name, responsible for implementing the SSMP, responding to SSO events, and meeting the SSO reporting requirements, including drafting and certifying reports and providing other information required by the CIWQS Online Database.

Legally Responsible Official (LRO), the MRP states that:

- All information required to be reported into the CIWQS Online SSO Database shall be certified by a person designated as described in subsection J of the SSS WDRs. This designated person is also known as a Legally Responsible Official (LRO). An enrollee may have more than one LRO.

- Any designated person (i.e. an LRO) shall be registered with the State Water Board to certify reports in accordance with the CIWQS protocols for reporting.

- Data Submitter (DS): Any enrollee employee or contractor may enter draft data into the CIWQS Online SSO Database on behalf of the enrollee if authorized by the LRO and registered with the State Water Board. However, only LROs may certify reports in CIWQS.

- The enrollee shall maintain continuous coverage by an LRO. Any change of a registered LRO or DS (e.g., retired staff), including deactivation or a change to the LRO's or DS's contact information, shall be submitted by the enrollee to the State Water Board within 30 days of the change by calling (866) 792-4977 or e-mailing help@ciwqs.waterboards.ca.gov.

- A registered designated person (i.e., an LRO) shall certify all required reports under penalty of perjury laws of the state as stated in the CIWQS Online SSO Database at the time of certification.

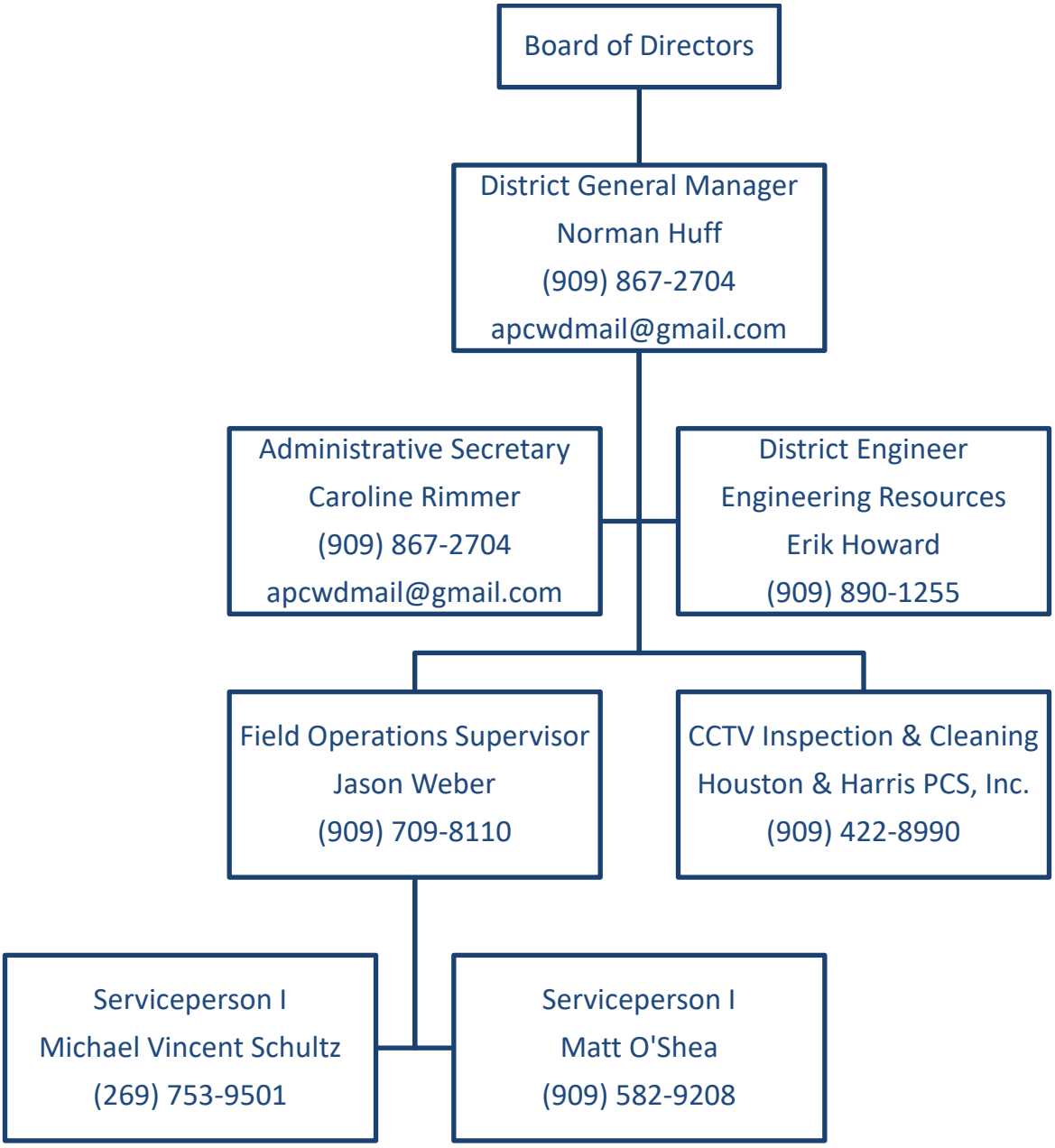
The District General Manager shall be the LRO for the District

2.2 Compliance Summary

The positions described provide current and sufficient staffing to operate the sewer system on a sustainable basis and to comply with all requirements of the Order.

2.3 Compliance Documents

The following organization chart presents the filled positions, names, and contact information for the individuals within the Arrowbear Park County Water District's organizational structure.



2.4 Roles and Responsibilities

The roles and responsibilities of each position in the organization chart are listed below:

Board of Directors

- Establishes Policy.
- Adopt SSMP.

District General Manager

- SSMP Management.
- Prepare public information documents.
- Receives SSO complaints or information.
- Allocates resources.
- Training of Personnel.
- Administers and enforces Sewer Rules and Regulations.
- Prepares wastewater collection system planning documents.
- Manages capital improvement program.
- Documents new and rehabilitated assets.
- Coordinates development and implementation of SSMP.
- Recommends policy.
- Authorizes outside contractors/consultants to perform services.

District Engineer

- Assists General Manager in preparing wastewater collection system planning documents.
- Assists General Manager managing capital improvement delivery system.
- Assists General Manager in documenting new and rehabilitated assets.
- Assists General Manager coordinating development and implementation of SSMP.

CCTV Contractor

- Performs annual cleaning and CCTV inspections of designated gravity sewers at the District's direction.
- Provides emergency services as needed at the District's direction.

Field Operations Supervisor/Sewer Department Chief Operator

- Routine Operation & Maintenance.
- Conduct inspections of sewer lateral construction.
- Conduct inspections of grease interceptors and reports.
- Recommend and review SSMP revisions.
- Provide input into Audit procedure.
- Supervises Servicepersons.

Servicepersons/24-Hour On-call Maintenance Technician (909-255-4324)

- Routine Operation & Maintenance.

Administrative Assistant

- Receives SSO inquiries, complaints and information.
- Provide Education Program information.
- Provide input into Audit procedure.

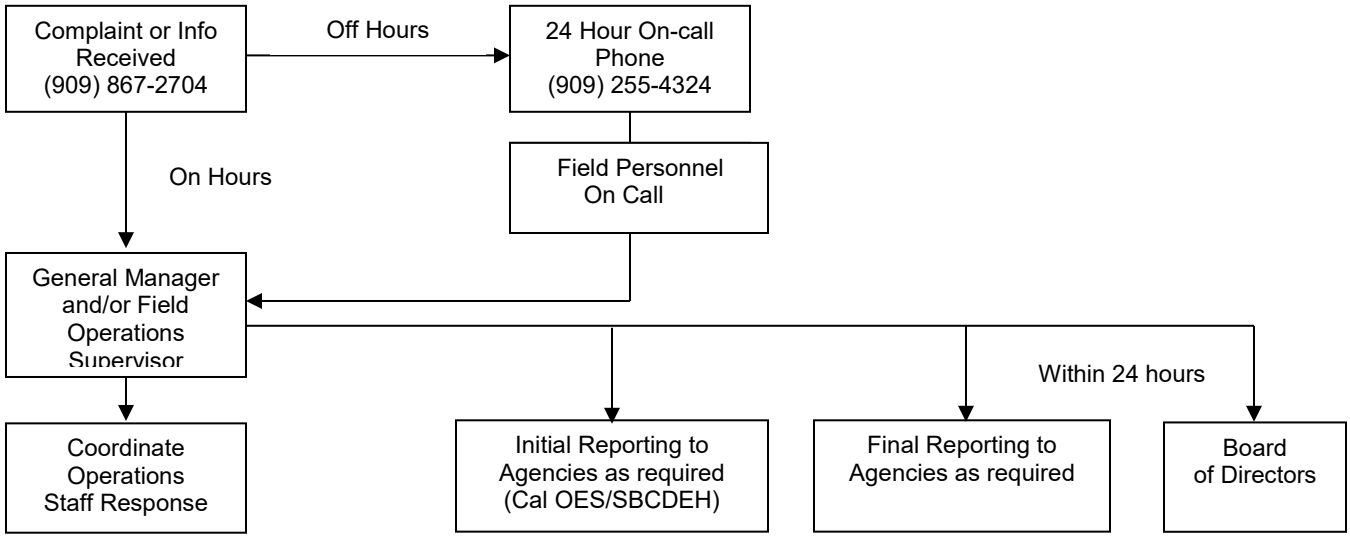
Emergency contact information is also on the District's web-site arrowbearwater.org.

2.5 Chain of Communication Compliance Requirements

The Order requires a specified chain of communications for SSO reporting from receipt of compliant or other information through reporting to the State and Regional Water Boards and other regulatory agencies, as applicable.

2.6 Compliance Summary.

The following flow chart shows the chain of communication for reporting SSOs. It starts with the receipt of a complaint or other information and includes the title of the person responsible for reporting SSOs to the State and Regional Water Boards, San Bernardino County Department of Environmental Health (SBCDEH), and the California Emergency Management Agency (Cal OES). Reporting to the Cal OES is required only if the discharge is 1,000 gallons or larger, may imminently and substantially endanger human health or discharge to surface water. This flowchart is part of the SSO Reporting Guidelines process developed to manage the reporting process and is described in **Appendix F**.



2.7 Contact Information

The following provides the current names, titles, and phone numbers for SSO contacts provided in the chain of communication flow chart. All positions and information for those positions is also listed in section 2.3 above.

Board President
Mark Bunyea
909-329-9012

General Manager
Norman Huff
909-867-2704

Field Operations Supervisor/Sewer Department Chief Operator
Jason Weber
909-709-8110

Administrative Assistant
Caroline Rimmer
909-867-2704

CHAPTER 3 – LEGAL AUTHORITY

3.0 Compliance Requirements

The SSMP must include the legal authority, through sewer use ordinances, service agreements, or other legally binding procedures to

(a) prevent illicit discharges to its sanitary sewer system (including Inflow/infiltration from satellite wastewater collection systems and laterals, storm water, chemical dumping, unauthorized debris, 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 District;

(d) limit the discharge of fats and greases and other debris that may cause blockages; and,

(e) enforce any violation of its sewer ordinances.

3.1 Compliance Summary

The legal authority requirements of this Order are described in the Arrowbear Park County Water District Rules and Regulations Handbook, revised and approved by the Board of Directors at a regular Board of Directors Public Meeting on July 17, 2014. The pertinent sections of the District Rules and Regulations Handbook (Sections 1000, 2000, 2100, 2200, and 2300 are included in **Appendix C**. Compliance with the specific requirements of the Order is described below:

For part (a) - Compliance with the requirements of the Order is described in the Arrowbear Park County Water District Rules and Regulations Handbook for Sewer Service, Section 2020 – Prohibited Wastes.

For part (b) - Compliance with the requirements of the Order is described in the Arrowbear Park County Water District Rules and Regulations Handbook for Sewer Service, Section 2100 – Sewer System Design Criteria, Section 2200 – Sewer System Technical Specifications, and Section 2300 – Sewer System Standard Drawings.

For part (c) – Sewer laterals are not owned or maintained by the District. Private sewer laterals within the District will be installed per applicable codes as determined by the Authority Having Jurisdiction (AHJ), The County of San Bernardino.

For part (d) - Compliance with the requirements of the Order is described in the Arrowbear Park County Water District Rules and Regulations Handbook for Sewer Service, Sections 2000 – 2080, Sewer Service Policy.

For part (e) - Compliance with the requirements of the Order is described in the Arrowbear Park County Water District Rules and Regulations Handbook for Sewer Service, Section 1070 – Violations, Enforcement, and Policing.

3.2 Compliance Documents

The legal authority for enacting the SSMP programs and policies are included in the following documents:

- Arrowbear Park County Water District Rules and Regulations, current update.

The above referenced document is available at District Headquarters, in the office of the General Manager.

3.3 Roles and Responsibilities

The roles and responsibilities for enforcement of the legal authority to enact the SSMP programs and policies are derived from acts of the Board of Directors. Interpretation of the enabling State legislation giving authority to the District is provided by legal counsel.

The roles and responsibilities of the various District positions associated with the Rules and Regulations for Sewer Service are described below:

General Manager

- Administer sewer use policies.
- Apply design and construction regulations.
- Administer sewer maintenance policies.
- Enforce related Sewer Rules and Regulations provisions, which includes, but is not limited to, prosecuting violators and issuing notices and fines.

District Engineer

- Assists General Manager in preparing design and construction standards and regulations.

CHAPTER 4 – OPERATIONS AND MAINTENANCE PROGRAM

4.0 Compliance Requirements

A summary of the Operations and Maintenance Program requirements is as follows:

a) 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;

b) 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 storm water conveyance facilities;

c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation action 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 equipment and replacement parts inventories, including identification of critical replacement parts.

4.1 Compliance Summary

Item (a) - The Arrowbear Park County Water District has an on-going Operations and Maintenance Program that includes a Preventative Maintenance Program. The District's Preventative Maintenance Program is outlined in the Operations and Maintenance Program, included as **Appendix D**.

Item (b) – The District maintains an up-to-date map of the system. Storm water conveyance is largely by overland flow. A reduced copy of the system map is included as **Appendix E**. Detailed maps are maintained at the District offices.

Items (c), (d) and (e) – Refer to the District Operation & Maintenance Program (**Appendix D**) for compliance with these items.

4.2 Compliance Documents

The documents supporting compliance with the requirements for Operations and Maintenance are as follows:

- Preventative maintenance program.
- CCTV and visual inspection program.
- Integrated Emergency Response Program (ERP).
- Wastewater collection system maps (**Appendix E**).

The above referenced documents are available at District Headquarters, in the office of the General Manager.

4.3 Roles and Responsibilities

The roles and responsibilities of staff supporting compliance with the Measures and Activities are as follows:

General Manager

- Sewer mapping.
- Sewer evaluation and rehabilitation activities.
- Training of Personnel.
- Development and budgeting of Capital Improvements.

District Engineer

- Assists General Manager with sewer mapping.
- Assists General Manager with sewer evaluation and rehabilitation activities.

Field Operations Supervisor/Sewer Department Chief Operator

- Sewer evaluation and rehabilitation activities.
- Routine operation, maintenance, and inspection.
- Training of personnel.

Servicepersons

- Routine operation, maintenance, and inspection.

CHAPTER 5 – DESIGN AND PERFORMANCE PROVISIONS

5.0 Compliance Requirements

a) The design and construction standards & specifications for new sewer systems and other appurtenances and the rehabilitation and repair of existing sewer systems; and

b) Procedures and standards for inspecting and testing the installation of new sewers and other appurtenances and for rehabilitation and repair projects.

5.1 Compliance Summary

The Arrowbear Park County Water District Rules and Regulations Handbook, revised and approved by the Board of Directors at a regular Board of Directors Public Meeting on July 17, 2014 contains the pertinent sections of the District Rules and Regulations Handbook (Sections 2100 – 2300) that stipulate design and construction requirements for new sewer systems and for the rehabilitation of existing systems (see **Appendix C** for pertinent sections). These requirements include standards and specifications for the design, construction, inspection and testing for sanitary sewer construction, repair and rehabilitation. These standards, specifications, inspection and testing requirements are reviewed and updated on an on-going basis.

5.2 Compliance Documents

The documents used for design and construction performance evaluations include the following:

- Arrowbear Park County Water District Rules and Regulations Handbook, most current version.
- Arrowbear Park County Water District Standard Plans.
- American Public Works Association (APWA) Standard Plans.
- Standard Specifications for Public Works Construction.
- San Bernardino County standard pipe sizing design criteria (as modified by the District) with regard to hydraulic capacity, slope, and velocity.

The above referenced documents are available at District Headquarters, in the office of the General Manager.

5.3 Roles and Responsibilities

The positions, roles, and responsibilities of the Design and Performance staff are as follows:

District General Manager

- Overall management of sewer design and construction.

- Development of design and construction standards.
- Review of plans submitted by developers.
- Issue construction permits.

District Engineer

- Assists General Manager with sewer design and construction.
- Assists General Manager with sewer development design and construction standards.
- Assists General Manager with sewer construction plan review.

Field Operations Supervisor/Sewer Department Chief Operator

- Field inspection of sewer lateral connection construction.

CHAPTER 6 – OVERFLOW EMERGENCY RESPONSE PLAN

6.0 Compliance Requirements

Under the Order, each discharger shall develop and implement an overflow Emergency Response Plan (ERP) that identifies measures to protect public health and the environment. At a minimum this plan shall include the following:

a) Proper notification procedures so that primary responders and regulatory agencies are informed of all SSOs in a timely manner;

b) A program to ensure appropriate response to all overflows;

c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected agencies (e.g. health agencies, regional water boards, water suppliers, surrounding cities, etc.) of all SSOs that potentially affect public health or reach waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional 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 contract personnel are aware of and follow the Emergency Response Plan and are appropriately trained;

e) Procedures to ensure emergency operations such as traffic/crowd control and other necessary emergency response.

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.

6.1 Compliance Summary

The Arrowbear Park County Water District has developed an SSO Emergency Response Plan (ERP), see **Appendix F**.

The ERP includes notification procedures. Emergency response will be a collaborative effort involving at a minimum local Agencies, Districts, and Wastewater Regulators. All measures are in place now and are part of our existing plan.

6.2 Compliance Documents

The compliance documents are as follows:

- SSO Emergency Response Plan (**Appendix F**)
- Wastewater Collection System Map (**Appendix E**)

A larger version and detailed section maps of the Collection System Map are available at District headquarters, office of the General Manager.

6.3 Roles and Responsibilities

The roles and responsibilities for the SSO emergency response are shown in Section 2.4.

CHAPTER 7 – FOG CONTROL PROGRAM

7.0 Compliance Requirements

The Order requires the District to evaluate its service area to determine if a Fats, Oils and Grease (FOG) control program is needed. If FOG is determined to be a problem the District must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sewer collection system. The program shall include the following elements 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, and record keeping and reporting requirements;

e) Authority to inspect grease producing facilities, enforcement authority, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;

f) 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 discharged to the sanitary sewer system for each section identified in (f) above.

7.1 Compliance Summary

The District has evaluated the effects of FOG on its sewer system and has determined it does not have a significant FOG problem. This determination is based on the fact that there is not a history of FOG related SSO occurrences. In addition, the District requires an interceptor for all non-domestic uses and all existing food service facilities within the District's service area have grease interceptors installed. Also, the District has an active program of monitoring and inspection of private grease interceptors.

FOG that does enter the system is controlled by the District's preventative maintenance program. As part of the Districts FOG control program those segments of the system known to be a potential problem due to location, flat grades, or other conditions are cleaned on a more frequent basis than the remaining system.

The legal authority and other compliance requirements of this Order are described in the Arrowbear Park County Water District Rules and Regulations Handbook, revised and approved by the Board of Directors at a regular Board of Directors Public Meeting on July 17, 2014. The pertinent sections of the District Rules and Regulations Handbook (Sections 1000, 2000, 2100, 2200, and 2300) and are included in **Appendix C**.

7.2 Compliance Documents

Compliance with FOG control provisions of the Order is achieved through implementation of the following:

- Arrowbear Park County Water District Rules and Regulations for Sewer Service, most recent update.
- Grease interceptors.
- Increased cleaning of potential problem areas.

7.3 Roles and Responsibilities

The positions, roles, and responsibilities of the staff in the FOG control program are as follows:

General Manager

- Administer sewer use policies.
- Administer sewer maintenance policies.
- Enforce design and construction regulations.
- Permit sewer related improvements.
- Enforce Rules and Regulations provisions, which includes, but is not limited to, prosecuting violators and issuing notices and fines.

Field Operations Supervisor/Sewer Department Chief Operator

- Conduct inspections related to sewer related improvements.
- Schedules and conducts inspections of grease interceptors.
- Schedules increased maintenance intervals for potential problem areas.

CHAPTER 8 – SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

8.0 Compliance Requirements

As prescribed by the SWRCB Order, the District is required to prepare and implement a Capital Improvement Plan (CIP) that will provide adequate hydraulic capacity of key sewer elements. This plan must include the following:

a) Evaluation: Actions needed to evaluate those portions of the sanitary sewer collection system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including 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;

c) Capacity Enhancement Measures: The steps needed to establish 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, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding; and

d) Schedule: A schedule of completion dates for all portions of the CIP developed in (a) – (c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D.14 of Order 2006-0003-DWQ.

8.1 Compliance Summary

The District sewer system has not experienced any capacity related problems or SSOs. The existing subdivided area is largely sewered with the exception of the southeast corner and the 1987 annexation area (six large undeveloped lots). The District is approximately 60% built out. A system wide Sewer Master Plan was prepared in 1999. The Executive Summary to this report is included as **Appendix G**. The entire report is available in the Office of the General Manager. Very little growth has been experienced since the report was complete. A capacity evaluation of all collection sewers, the two inverted siphons and the lift station/force main was conducted. All were found to have adequate capacity for projected flows with the exception of a flat segment of sewer on Highway 18 (between Deep Creek and Dove Lane).

The District will continue to monitor system capacity with special attention to the Route 18 problem area as additional areas are developed and flows are added.

The District continues to make operational improvements to the system but no capacity related improvements are needed or anticipated for the foreseeable future.

Annually (typically in April), the Board of Directors and the General Manager meet to discuss Master Plan (including Sewer) and CIP needs for the next fiscal year as well as future needs. Funds for Master Plan and CIP are allocated during an Annual Budget Meeting (typically in May), and approved at the regular Board Meeting in June. The most current Annual Master Plan and Approved Budget is available at the District Office.

8.2 Compliance Documents

The documents used for system evaluation and capacity assurance are as follows:

- Annual Master Plan and Budget (including Sewer).
- Sewer Master Plan dated January 1999.
- Wastewater Collection System Map (**Appendix E**).

8.3 Roles and Responsibilities

The monitoring of system capacity and the development and implementation of a Master Plan and Capital Improvement Program to address capacity deficiencies is the responsibility of the District General Manager and Board of Directors.

General Manager

- Prepare Annual Master Plans and Budgets.
- Ongoing monitoring and evaluation of system capacity.

Field Operations Supervisor/Sewer Department Chief Operator

- Evaluate system capacity through regular monitoring of flow volume, pump run times, and system performance.

CHAPTER 9 – MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

9.0 Compliance Requirements

Under the Order there are five key monitoring, measurement, and program modification requirements. They are:

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.

9.1 Compliance Summary

The above requirements will be satisfied through the following actions:

Item (a) - Relevant information used to develop the SSMP activities will be maintained by the District Manager. This information will be in both hard and computer files. A filing system based on each element of the SSMP will be established and additional pertinent information added to the files for use in evaluation and update activities.

Item (b) - Monitoring of the implementation and effectiveness of each appropriate element of the SSMP will be tracked by the internal audit procedure established by the SSMP Program Audit Element (see Chapter 10).

Item (c) - The Arrowbear Park County Water District SSO history is excellent. This is partially due to the past and current preventative maintenance program. The effectiveness of the program is continually tracked by reviewing regular maintenance work as well as emergency and corrective measure work orders. The cause of the problem is determined and the existing preventive maintenance for the area is reviewed and modified if warranted.

Item (d) - SSMP elements will be evaluated every two years at a minimum as a result of the audit procedure. Deficiencies in existing program elements will be identified and revisions made where warranted. Personnel or procedural revisions will be made as they occur.

Item (e) - The District has experienced few SSO’s and expects few in the future. However, should they occur they are reported through the California Integrated

Water Quality System (CIWQS). In addition, District maintenance staff will log the appropriate data so any trends can be identified.

9.2 Compliance Documents

The compliance documents are as follows:

- Sanitary Sewer Management Plan (SSMP) and preparation data.
- Annual audit documents.
- Preventative maintenance records.
- SSO data.

The above referenced documents are available at District Headquarters, in the office of the General Manager.

9.3 Roles and Responsibilities

The positions, roles, and responsibilities are as follows:

Board of Directors

- Provide input to SSMP.
- Adopt SSMP Updates.

District General Manager

- Monitor implementation of plan.
- Initiate review and update of plan.
- Obtain input from staff and make appropriate updates to plan.
- Input monthly SSO information on the CIWQS web-site.
- Input annual required information on the CIWQS web-site.
- Assess the success of the preventative maintenance program.
- Identify and illustrate SSO trends, including frequency, location, and volume.

Field Operations Supervisor/Sewer Department Chief Operator

- Recommend plan revisions.
- Provide comments on plan updates.

CHAPTER 10 – SSMP PROGRAM AUDITS

10.0 Compliance Requirements

As a part of the SSMP the Arrowbear Park County Water District 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. The audit shall focus on evaluating the effectiveness of the SSMP and the Arrowbear Park County Water District's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP and steps to correct them.

10.1 Compliance Summary

The Arrowbear Park County Water District will conduct an internal audit of the SSMP at two year intervals. Audits will be initiated and managed by the District General Manager using the Audit Report Form included as **Appendix H**. In addition to identifying deficiencies the audit will review the effectiveness of the SSMP elements. Deficiencies identified will be addressed and mitigation measures identified and scheduled for action. Strategies to correct deficiencies will be developed by the District General Manager and the Sewer Department Supervisor.

The audit procedure shall begin in January of 2014 and every odd numbered year following. The audit report shall be completed by March 1 and presented to the District Board of Directors at its meeting in March. This schedule will allow the audit to be complete in time for preparation Master Plan and the following fiscal year budget so that appropriate funds can be budgeted for deficiency mitigations.

The audit shall also review the Audit Report Form and procedure and recommend needed revisions.

10.2 Compliance Documents

The documents used for audit evaluations include the following:

- SSO reports.
- Sewer maintenance records.
- SSMP Program Audit Element.
- SSMP Audit Report Form.

The above referenced documents are available at District Headquarters, in the office of the District General Manager.

10.3 Roles and Responsibilities

The positions, roles, and responsibilities of the audit staff are as follows:

Board of Directors

- Provide guidance and policy direction as needed to correct deficiencies or increase efficiencies.
- Approve SSMP Audit.

District General Manager

- Conduct internal audit and prepare reports.
- Collect data on applicable program elements and recommend revisions.

Field Operations Supervisor/Sewer Department Chief Operator

- Provide data on applicable program elements.
- Provide SSO records.
- Review maintenance elements of SSMP to identify deficiencies and recommend revisions.

CHAPTER 11 – COMMUNICATIONS

11.0 Compliance Requirements

The Arrowbear Park County Water District shall communicate on a regular basis with the public on the development, implementation, performance, and updates of this SSMP. The communication program shall provide the public the opportunity to provide input as the program is developed and implemented.

11. 1 Compliance Summary

The Arrowbear Park County Water District communications program will consist of the following short and long-term measures:

- Prepare and distribute newsletter releases regarding development and implementation of the SSMP.
- Place SSMP on District web-site.
- Present SSMP to District Board of Directors for approval at a public meeting.
- Internal audit reports and meetings.
- Prepare Annual/Audit report to District Board of Directors on SSMP status and present at public meeting.

Further information regarding the SSMP communication procedures and activities are described further in **Appendix I**.

11.2 Compliance Documents

- Written reports
- Newsletter releases
- Information on the District web-site
- Mail inserts
- Audit reports

The above referenced documents are available at District Headquarters, in the office of the District General Manager.

11.3 Roles and Responsibilities

The positions, roles, and responsibilities of the communications staff are as follows:

District Manager

- Development and publishing of public information.
- Develop District Board of Director reports.
- Prepare annual/audit reports**.**

STATE WATER RESOURCES CONTROL BOARD
ORDER NO. 2006-0003-DWQ

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

The State Water Resources Control Board, hereinafter referred to as "State Water Board", finds that:

1. All federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California are required to comply with the terms of this Order. Such entities are hereinafter referred to as "Enrollees".

2. Sanitary sewer overflows (SSOs) are overflows from sanitary sewer systems of domestic wastewater, as well as industrial and commercial wastewater, depending on the pattern of land uses in the area served by the sanitary sewer system. SSOs often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease and other pollutants. SSOs may cause a public nuisance, particularly when raw untreated wastewater is discharged to areas with high public exposure, such as streets or surface waters used for drinking, fishing, or body contact recreation. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters.

3. Sanitary sewer systems experience periodic failures resulting in discharges that may affect waters of the state. There are many factors (including factors related to geology, design, construction methods and materials, age of the system, population growth, and system operation and maintenance), which affect the likelihood of an SSO. A proactive approach that requires Enrollees to ensure a system-wide operation, maintenance, and management plan is in place will reduce the number and frequency of SSOs within the state. This approach will in turn decrease the risk to human health and the environment caused by SSOs.

4. Major causes of SSOs include: grease blockages, root blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, excessive storm or ground water inflow/infiltration, debris blockages, sanitary sewer system age and construction material failures, lack of proper operation and maintenance, insufficient capacity and contractor-caused damages. Many SSOs are preventable with adequate and appropriate facilities, source control measures and operation and maintenance of the sanitary sewer system.

SEWER SYSTEM MANAGEMENT PLANS

5. To facilitate proper funding and management of sanitary sewer systems, each Enrollee must develop and implement a system-specific Sewer System Management Plan (SSMP). To be effective, SSMPs must include provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis. Additionally, an SSMP must contain a spill response plan that establishes standard procedures for immediate response to an SSO in a manner designed to minimize water quality impacts and potential nuisance conditions.

6. Many local public agencies in California have already developed SSMPs and implemented measures to reduce SSOs. These entities can build upon their existing efforts to establish a comprehensive SSMP consistent with this Order. Others, however, still require technical assistance and, in some cases, funding to improve sanitary sewer system operation and maintenance in order to reduce SSOs.

7. SSMP certification by technically qualified and experienced persons can provide a useful and cost-effective means for ensuring that SSMPs are developed and implemented appropriately.

8. It is the State Water Board's intent to gather additional information on the causes and sources of SSOs to augment existing information and to determine the full extent of SSOs and consequent public health and/or environmental impacts occurring in the State.

9. Both uniform SSO reporting and a centralized statewide electronic database are needed to collect information to allow the State Water Board and Regional Water Quality Control Boards (Regional Water Boards) to effectively analyze the extent of SSOs statewide and their potential impacts on beneficial uses and public health. The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No. 2006-0003-DWQ, are necessary to assure compliance with these waste discharge requirements (WDRs).

10. Information regarding SSOs must be provided to Regional Water Boards and other regulatory agencies in a timely manner and be made available to the public in a complete, concise, and timely fashion.

11. Some Regional Water Boards have issued WDRs or WDRs that serve as National Pollution Discharge Elimination System (NPDES) permits to sanitary sewer system owners/operators within their jurisdictions. This Order establishes minimum requirements to prevent SSOs. Although it is the State Water Board's intent that this Order be the primary regulatory mechanism for sanitary sewer systems statewide, Regional Water Boards may issue more stringent or more

prescriptive WDRs for sanitary sewer systems. Upon issuance or reissuance of a Regional Water Board's WDRs for a system subject to this Order, the Regional Water Board shall coordinate its requirements with stated requirements within this Order, to identify requirements that are more stringent, to remove requirements that are less stringent than this Order, and to provide consistency in reporting.

REGULATORY CONSIDERATIONS

12. California Water Code section 13263 provides that the State Water Board may prescribe general WDRs for a category of discharges if the State Water Board finds or determines that:

    - The discharges are produced by the same or similar operations;
    - The discharges involve the same or similar types of waste;
    - The discharges require the same or similar treatment standards; and
    - The discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.

    This Order establishes requirements for a class of operations, facilities, and discharges that are similar throughout the state.

13. The issuance of general WDRs to the Enrollees will:
    a) Reduce the administrative burden of issuing individual WDRs to each Enrollee;
    b) Provide for a unified statewide approach for the reporting and database tracking of SSOs;
    c) Establish consistent and uniform requirements for SSMP development and implementation;
    d) Provide statewide consistency in reporting; and
    e) Facilitate consistent enforcement for violations.

14. The beneficial uses of surface waters that can be impaired by SSOs include, but are not limited to, aquatic life, drinking water supply, body contact and non-contact recreation, and aesthetics. The beneficial uses of ground water that can be impaired include, but are not limited to, drinking water and agricultural supply. Surface and ground waters throughout the state support these uses to varying degrees.

15. The implementation of requirements set forth in this Order will ensure the reasonable protection of past, present, and probable future beneficial uses of water and the prevention of nuisance. The requirements implement the water quality control plans (Basin Plans) for each region and take into account the environmental characteristics of hydrographic units within the state. Additionally, the State Water Board has considered water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect

water quality in the area, costs associated with compliance with these requirements, the need for developing housing within California, and the need to develop and use recycled water.

16. The Federal Clean Water Act largely prohibits any discharge of pollutants from a point source to waters of the United States except as authorized under an NPDES permit. In general, any point source discharge of sewage effluent to waters of the United States must comply with technology-based, secondary treatment standards, at a minimum, and any more stringent requirements necessary to meet applicable water quality standards and other requirements. Hence, the unpermitted discharge of wastewater from a sanitary sewer system to waters of the United States is illegal under the Clean Water Act. In addition, many Basin Plans adopted by the Regional Water Boards contain discharge prohibitions that apply to the discharge of untreated or partially treated wastewater. Finally, the California Water Code generally prohibits the discharge of waste to land prior to the filing of any required report of waste discharge and the subsequent issuance of either WDRs or a waiver of WDRs.

17. California Water Code section 13263 requires a water board to, after any necessary hearing, prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge. The requirements shall, among other things, take into consideration the need to prevent nuisance.

18. California Water Code section 13050, subdivision (m), defines nuisance as anything which meets all of the following requirements:
    a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
    b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
    c. Occurs during, or as a result of, the treatment or disposal of wastes.

19. This Order is consistent with State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California) in that the Order imposes conditions to prevent impacts to water quality, does not allow the degradation of water quality, will not unreasonably affect beneficial uses of water, and will not result in water quality less than prescribed in State Water Board or Regional Water Board plans and policies.

20. The action to adopt this General Order is exempt from the California Environmental Quality Act (Public Resources Code §21000 et seq.) because it is an action taken by a regulatory agency to assure the protection of the environment and the regulatory process involves procedures for protection of the environment. (Cal. Code Regs., tit. 14, §15308). In addition, the action to adopt

this Order is exempt from CEQA pursuant to Cal.Code Regs., title 14, §15301 to the extent that it applies to existing sanitary sewer collection systems that constitute "existing facilities" as that term is used in Section 15301, and §15302, to the extent that it results in the repair or replacement of existing systems involving negligible or no expansion of capacity.

21. The Fact Sheet, which is incorporated by reference in the Order, contains supplemental information that was also considered in establishing these requirements.

22. The State Water Board has notified all affected public agencies and all known interested persons of the intent to prescribe general WDRs that require Enrollees to develop SSMPs and to report all SSOs.

23. The State Water Board conducted a public hearing on February 8, 2006, to receive oral and written comments on the draft order. The State Water Board received and considered, at its May 2, 2006, meeting, additional public comments on substantial changes made to the proposed general WDRs following the February 8, 2006, public hearing. The State Water Board has considered all comments pertaining to the proposed general WDRs.

IT IS HEREBY ORDERED, that pursuant to California Water Code section 13263, the Enrollees, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

A. DEFINITIONS

1. **Sanitary sewer overflow (SSO)** - Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:
   (i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;
   (ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
   (iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

2. **Sanitary sewer system** – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

For purposes of this Order, sanitary sewer systems include only those systems owned by public agencies that are comprised of more than one mile of pipes or sewer lines.

3. **Enrollee** - A federal or state agency, municipality, county, district, and other public entity that owns or operates a sanitary sewer system, as defined in the general WDRs, and that has submitted a complete and approved application for coverage under this Order.

4. **SSO Reporting System** – Online spill reporting system that is hosted, controlled, and maintained by the State Water Board. The web address for this site is http://ciwqs.waterboards.ca.gov. This online database is maintained on a secure site and is controlled by unique usernames and passwords.

5. **Untreated or partially treated wastewater** – Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.

6. **Satellite collection system** – The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which the sanitary sewer system is tributary.

7. **Nuisance** - California Water Code section 13050, subdivision (m), defines nuisance as anything which meets all of the following requirements:
    a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
    b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
    c. Occurs during, or as a result of, the treatment or disposal of wastes.

B. APPLICATION REQUIREMENTS

1. Deadlines for Application – All public agencies that currently own or operate sanitary sewer systems within the State of California must apply for coverage under the general WDRs within six (6) months of the date of adoption of the general WDRs. Additionally, public agencies that acquire or assume responsibility for operating sanitary sewer systems after the date of adoption of this Order must apply for coverage under the general WDRs at least three (3) months prior to operation of those facilities.

2. Applications under the general WDRs – In order to apply for coverage pursuant to the general WDRs, a legally authorized representative for each agency must submit a complete application package. Within sixty (60) days of adoption of the general WDRs, State Water Board staff will send specific instructions on how to

apply for coverage under the general WDRs to all known public agencies that own sanitary sewer systems. Agencies that do not receive notice may obtain applications and instructions online on the Water Board's website.

3. Coverage under the general WDRs – Permit coverage will be in effect once a complete application package has been submitted and approved by the State Water Board's Division of Water Quality.

C. PROHIBITIONS

1. Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

2. Any SSO that results in a discharge of untreated or partially treated wastewater that creates a nuisance as defined in California Water Code Section 13050(m) is prohibited.

D. PROVISIONS

1. The Enrollee must comply with all conditions of this Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for enforcement action.

2. It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with the general WDRs. Nothing in the general WDRs shall be:

    (i) Interpreted or applied in a manner inconsistent with the Federal Clean Water Act, or supersede a more specific or more stringent state or federal requirement in an existing permit, regulation, or administrative/judicial order or Consent Decree;
    (ii) Interpreted or applied to authorize an SSO that is illegal under either the Clean Water Act, an applicable Basin Plan prohibition or water quality standard, or the California Water Code;
    (iii) Interpreted or applied to prohibit a Regional Water Board from issuing an individual NPDES permit or WDR, superseding this general WDR, for a sanitary sewer system, authorized under the Clean Water Act or California Water Code; or
    (iv) Interpreted or applied to supersede any more specific or more stringent WDRs or enforcement order issued by a Regional Water Board.

3. The Enrollee shall take all feasible steps to eliminate SSOs. In the event that an SSO does occur, the Enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO.

4. In the event of an SSO, the Enrollee shall take all feasible steps to prevent untreated or partially treated wastewater from discharging from storm drains into

flood control channels or waters of the United States by blocking the storm drainage system and by removing the wastewater from the storm drains.

5. All SSOs must be reported in accordance with Section G of the general WDRs.

6. In any enforcement action, the State and/or Regional Water Boards will consider the appropriate factors under the duly adopted State Water Board Enforcement Policy. And, consistent with the Enforcement Policy, the State and/or Regional Water Boards must consider the Enrollee's efforts to contain, control, and mitigate SSOs when considering the California Water Code Section 13327 factors. In assessing these factors, the State and/or Regional Water Boards will also consider whether:

   (i) The Enrollee has complied with the requirements of this Order, including requirements for reporting and developing and implementing a SSMP;

   (ii) The Enrollee can identify the cause or likely cause of the discharge event;

   (iii) There were no feasible alternatives to the discharge, such as temporary storage or retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, collecting and hauling of untreated wastewater to a treatment facility, or an increase in the capacity of the system as necessary to contain the design storm event identified in the SSMP. It is inappropriate to consider the lack of feasible alternatives, if the Enrollee does not implement a periodic or continuing process to identify and correct problems.

   (iv) The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of the Enrollee;

   (v) The discharge could have been prevented by the exercise of reasonable control described in a certified SSMP for:
      - Proper management, operation and maintenance;
      - Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent SSOs (e.g., adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow (I/I), etc.);
      - Preventive maintenance (including cleaning and fats, oils, and grease (FOG) control);
      - Installation of adequate backup equipment; and
      - Inflow and infiltration prevention and control to the extent practicable.

   (vi) The sanitary sewer system design capacity is appropriate to reasonably prevent SSOs.

(vii) The Enrollee took all reasonable steps to stop and mitigate the impact of the discharge as soon as possible.

7. When a sanitary sewer overflow occurs, the Enrollee shall take all feasible steps and necessary remedial actions to 1) control or limit the volume of untreated or partially treated wastewater discharged, 2) terminate the discharge, and 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water.

   The Enrollee shall implement all remedial actions to the extent they may be applicable to the discharge and not inconsistent with an emergency response plan, including the following:

   (i) Interception and rerouting of untreated or partially treated wastewater flows around the wastewater line failure;
   (ii) Vacuum truck recovery of sanitary sewer overflows and wash down water;
   (iii) Cleanup of debris at the overflow site;
   (iv) System modifications to prevent another SSO at the same location;
   (v) Adequate sampling to determine the nature and impact of the release; and
   (vi) Adequate public notification to protect the public from exposure to the SSO.

8. The Enrollee shall properly, manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the Enrollee, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities.

9. The Enrollee shall allocate adequate resources for the operation, maintenance, and repair of its sanitary sewer system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures. These procedures must be in compliance with applicable laws and regulations and comply with generally acceptable accounting practices.

10. The Enrollee shall provide adequate capacity to convey base flows and peak flows, including flows related to wet weather events. Capacity shall meet or exceed the design criteria as defined in the Enrollee's System Evaluation and Capacity Assurance Plan for all parts of the sanitary sewer system owned or operated by the Enrollee.

11. The Enrollee shall develop and implement a written Sewer System Management Plan (SSMP) and make it available to the State and/or Regional Water Board upon request. A copy of this document must be publicly available at the Enrollee's office and/or available on the Internet. This SSMP must be approved by the Enrollee's governing board at a public meeting.

12. In accordance with the California Business and Professions Code sections 6735, 7835, and 7835.1, all engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. Specific elements of the SSMP that require professional evaluation and judgments shall be prepared by or under the direction of appropriately qualified professionals, and shall bear the professional(s)' signature and stamp.

13. The mandatory elements of the SSMP are specified below. However, if the Enrollee believes that any element of this section is not appropriate or applicable to the Enrollee's sanitary sewer system, the SSMP program does not need to address that element. The Enrollee must justify why that element is not applicable. The SSMP must be approved by the deadlines listed in the SSMP Time Schedule below.

Sewer System Management Plan (SSMP)

(i) **Goal**: 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.

(ii) **Organization**: The SSMP must identify:

(a) The name of the responsible or authorized representative as described in Section J of this Order.

(b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization 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 Board, and/or State Office of Emergency Services (OES)).

(iii) **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 may 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.

(iv) **Operation 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 preventive 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 equipment and replacement part inventories, including identification of critical replacement parts.

(v) **Design and Performance Provisions**:

(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.

(vi) **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 SSOs 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 Code, other State Law, and other applicable Regional 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.

(vii) **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 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 discharged to the sanitary sewer system for each section identified in (f) above.

(viii) **System Evaluation and Capacity Assurance Plan**: The Enrollee 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 Enrollee 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 as described in Section D. 14.

(ix) **Monitoring, Measurement, and Program Modifications:** The Enrollee 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.

(x) **SSMP Program Audits** - As part of the SSMP, the Enrollee 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

Enrollee's compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.

(xi) **Communication Program** – The Enrollee 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 Enrollee as the program is developed and implemented.

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.

14. Both the SSMP and the Enrollee's program to implement the SSMP must be certified by the Enrollee to be in compliance with the requirements set forth above and must be presented to the Enrollee's governing board for approval at a public meeting. The Enrollee shall certify that the SSMP, and subparts thereof, are in compliance with the general WDRs within the time frames identified in the time schedule provided in subsection D.15, below.

    In order to complete this certification, the Enrollee's authorized representative must complete the certification portion in the Online SSO Database Questionnaire by checking the appropriate milestone box, printing and signing the automated form, and sending the form to:

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

    The SSMP must be updated every five (5) years, and must include any significant program changes. Re-certification by the governing board of the Enrollee is required in accordance with D.14 when significant updates to the SSMP are made. To complete the re-certification process, the Enrollee shall enter the data in the Online SSO Database and mail the form to the State Water Board, as described above.

15. The Enrollee shall comply with these requirements according to the following schedule. This time schedule does not supersede existing requirements or time schedules associated with other permits or regulatory requirements.

Sewer System Management Plan Time Schedule

<table>
<tr><td>Task and Associated Section</td><td colspan="4">Completion Date</td></tr>
<tr><td></td><td>Population > 100,000</td><td>Population between 100,000 and 10,000</td><td>Population between 10,000 and 2,500</td><td>Population < 2,500</td></tr>
<tr><td>Application for Permit Coverage
Section C</td><td colspan="4">6 months after WDRs Adoption</td></tr>
<tr><td>Reporting Program
Section G</td><td colspan="4">6 months after WDRs Adoption[1]</td></tr>
<tr><td>SSMP Development Plan and Schedule
No specific Section</td><td>9 months after WDRs Adoption[2]</td><td>12 months after WDRs Adoption[2]</td><td>15 months after WDRs Adoption[2]</td><td>18 months after WDRs Adoption[2]</td></tr>
<tr><td>Goals and Organization Structure
Section D 13 (i) & (ii)</td><td colspan="2">12 months after WDRs Adoption[2]</td><td colspan="2">18 months after WDRs Adoption[2]</td></tr>
<tr><td>Overflow Emergency Response Program
Section D 13 (vi)</td><td rowspan="3">24 months after WDRs Adoption[2]</td><td rowspan="3">30 months after WDRs Adoption[2]</td><td rowspan="3">36 months after WDRs Adoption[2]</td><td rowspan="3">39 months after WDRs Adoption[2]</td></tr>
<tr><td>Legal Authority
Section D 13 (iii)</td></tr>
<tr><td>Operation and Maintenance Program
Section D 13 (iv)</td></tr>
<tr><td>Grease Control Program
Section D 13 (vii)</td><td rowspan="3">36 months after WDRs Adoption</td><td rowspan="3">39 months after WDRs Adoption</td><td rowspan="3">48 months after WDRs Adoption</td><td rowspan="3">51 months after WDRs Adoption</td></tr>
<tr><td>Design and Performance
Section D 13 (v)</td></tr>
<tr><td>System Evaluation and Capacity Assurance Plan
Section D 13 (viii)</td></tr>
<tr><td>Final SSMP, incorporating all of the SSMP requirements
Section D 13</td><td></td><td></td><td></td><td></td></tr>
</table>

1. In the event that by July 1, 2006 the Executive Director is able to execute a memorandum of agreement (MOA) with the California Water Environment Association (CWEA) or discharger representatives outlining a strategy and time schedule for CWEA or another entity to provide statewide training on the adopted monitoring program, SSO database electronic reporting, and SSMP development, consistent with this Order, then the schedule of Reporting Program Section G shall be replaced with the following schedule:

Reporting Program ***Section G***	
Regional Boards 4, 8, and 9	8 months after WDRs Adoption
Regional Boards 1, 2, and 3	12 months after WDRs Adoption
Regional Boards 5, 6, and 7	16 months after WDRs Adoption

If this MOU is not executed by July 1, 2006, the reporting program time schedule will remain six (6) months for all regions and agency size categories.

2. In the event that the Executive Director executes the MOA identified in note 1 by July 1, 2006, then the deadline for this task shall be extended by six (6) months. The time schedule identified in the MOA must be consistent with the extended time schedule provided by this note. If the MOA is not executed by July 1, 2006, the six (6) month time extension will not be granted.

E. WDRs and SSMP AVAILABILITY

1. A copy of the general WDRs and the certified SSMP shall be maintained at appropriate locations (such as the Enrollee's offices, facilities, and/or Internet homepage) and shall be available to sanitary sewer system operating and maintenance personnel at all times.

F. ENTRY AND INSPECTION

1. The Enrollee shall allow the State or Regional Water Boards or their authorized representative, upon presentation of credentials and other documents as may be required by law, to:

    a. Enter upon the Enrollee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;

    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

G. GENERAL MONITORING AND REPORTING REQUIREMENTS

1. The Enrollee shall furnish to the State or Regional Water Board, within a reasonable time, any information that the State or Regional Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Enrollee shall also furnish to the Executive Director of the State Water Board or Executive Officer of the applicable Regional Water Board, upon request, copies of records required to be kept by this Order.

2. The Enrollee shall comply with the attached Monitoring and Reporting Program No. 2006-0003 and future revisions thereto, as specified by the Executive Director. Monitoring results shall be reported at the intervals specified in Monitoring and Reporting Program No. 2006-0003. Unless superseded by a specific enforcement Order for a specific Enrollee, these reporting requirements are intended to replace other mandatory routine written reports associated with SSOs.

3. All Enrollees must obtain SSO Database accounts and receive a “Username” and “Password” by registering through the California Integrated Water Quality System (CIWQS). These accounts will allow controlled and secure entry into the SSO Database. Additionally, within 30days of receiving an account and prior to recording spills into the SSO Database, all Enrollees must complete the “Collection System Questionnaire”, which collects pertinent information regarding a Enrollee’s collection system. The “Collection System Questionnaire” must be updated at least every 12 months.

4. Pursuant to Health and Safety Code section 5411.5, any person who, without regard to intent or negligence, causes or permits any untreated wastewater or other waste to be discharged in or on any waters of the State, or discharged in or deposited where it is, or probably will be, discharged in or on any surface waters of the State, as soon as that person has knowledge of the discharge, shall immediately notify the local health officer of the discharge. Discharges of untreated or partially treated wastewater to storm drains and drainage channels, whether man-made or natural or concrete-lined, shall be reported as required above.

   Any SSO greater than 1,000 gallons discharged in or on any waters of the State, or discharged in or deposited where it is, or probably will be, discharged in or on any surface waters of the State shall also be reported to the Office of Emergency Services pursuant to California Water Code section 13271.

H. CHANGE IN OWNERSHIP

1. This Order is not transferable to any person or party, except after notice to the Executive Director. The Enrollee shall submit this notice in writing at least 30 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new Enrollee containing a specific date for the transfer of this Order's responsibility and coverage between the existing Enrollee and the new Enrollee. This agreement shall include an acknowledgement that the existing Enrollee is liable for violations up to the transfer date and that the new Enrollee is liable from the transfer date forward.

I. INCOMPLETE REPORTS

1. If an Enrollee becomes aware that it failed to submit any relevant facts in any report required under this Order, the Enrollee shall promptly submit such facts or information by formally amending the report in the Online SSO Database.

J. REPORT DECLARATION

1. All applications, reports, or information shall be signed and certified as follows:

    (i) All reports required by this Order and other information required by the State or Regional Water Board shall be signed and certified by a person designated, for a municipality, state, federal or other public agency, as either a principal executive officer or ranking elected official, or by a duly authorized representative of that person, as described in paragraph (ii) of this provision. (For purposes of electronic reporting, an electronic signature and accompanying certification, which is in compliance with the Online SSO database procedures, meet this certification requirement.)

    (ii) An individual is a duly authorized representative only if:

        (a) The authorization is made in writing by a person described in paragraph (i) of this provision; and

        (b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity.

K. CIVIL MONETARY REMEDIES FOR DISCHARGE VIOLATIONS

1. The California Water Code provides various enforcement options, including civil monetary remedies, for violations of this Order.

2. The California Water Code also provides that any person failing or refusing to furnish technical or monitoring program reports, as required under this Order, or

falsifying any information provided in the technical or monitoring reports is subject to civil monetary penalties.

L. SEVERABILITY

1. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

2. This order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the Enrollee from liability under federal, state or local laws, nor create a vested right for the Enrollee to continue the waste discharge.

CERTIFICATION

The undersigned Clerk to the State Water Board does hereby certify that the foregoing is a full, true, and correct copy of general WDRs duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 2, 2006.

AYE: Tam M. Doduc
Gerald D. Secundy

NO: Arthur G. Baggett

ABSENT: None

ABSTAIN: None

Song Her
Clerk to the Board

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER NO. WQ 2008-0002-EXEC

ADOPTING AMENDED MONITORING AND REPORTING REQUIREMENTS FOR STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

The State of California, Water Resources Control Board (State Water Board) finds:

1. The State Water Board is authorized to prescribe statewide general waste discharge requirements for categories of discharges that involve the same or similar operations and the same of similar types of waste pursuant to Water Code 13263, subdivision (i).

2. The State Water Board on May 2, 2006, adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Order No. 2006-0003-DWQ, pursuant to that authority.

3. The State Water Board on May 2, 2006, adopted Monitoring and Reporting Requirements to implement the General Waste Discharge Requirements for Sanitary Sewer Systems.

4. State Water Board Order No. 2006-0003-DWQ, paragraph G.2., and the Monitoring and Reporting Requirements, both provide that the Executive Director may modify the terms of the Monitoring and Reporting Requirements at any time.

5. The time allowed in those Monitoring and Reporting Requirements for the filing of the initial report of an overflow is too long to adequately protect the public health and safety or the beneficial uses of the waters of the state when there is a sewage collection system spill. An additional notification requirement is necessary and appropriate to ensure the Office of Emergency Services, local public health officials, and the applicable regional water quality control board are apprised of a spill that reaches a drainage channel or surface water.

6. Further, the burden of providing a notification as soon as possible is de minimis and will allow response agencies to take action as soon as possible to protect public health and safety and beneficial uses of the waters of the state.

IT IS HEREBY ORDERED THAT:

Pursuant to the authority delegated by Resolution No. 2002-0104 and Order No. 2006-0003-DWQ, the Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems No. 2006-0003-DWQ is hereby amended as shown in Attachment A, with new text indicated by double-underline.

Dated: February 20, 2008

Dorothy Rice
Executive Director

ATTACHMENT A

STATE WATER RESOURCES CONTROL BOARD
MONITORING AND REPORTING PROGRAM NO. 2006-0003-DWQ
(AS REVISED BY ORDER NO. WQ 2008-0002-EXEC)

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS
FOR
SANITARY SEWER SYSTEMS

This Monitoring and Reporting Program (MRP) establishes monitoring, record keeping, reporting and public notification requirements for Order No. 2006-2003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems." Revisions to this MRP may be made at any time by the Executive Director, and may include a reduction or increase in the monitoring and reporting.

NOTIFICATION

Although State and Regional Water Board staff do not have duties as first responders, this Monitoring and Reporting Program is an appropriate mechanism to ensure that the agencies that do have first responder duties are notified in a timely manner in order to protect public health and beneficial uses.

1. For any discharges of sewage that results in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later then two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services, the local health officer or directors of environmental health with jurisdiction over affected water bodies, and the appropriate Regional Water Quality Control Board.

2. As soon as possible, but no later then twenty-four (24) hours after becoming aware of a discharge to a drainage channel or a surface water, the Discharger shall submit to the appropriate Regional Water Quality Control Board a certification that the State Office of Emergency Services and the local health officer or directors of environmental health with jurisdiction over the affected water bodies have been notified of the discharge.

A. SANITARY SEWER OVERFLOW REPORTING

SSO Categories

1. Category 1 - All discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system that:
   A. Equal or exceed 1000 gallons, or
   B. Result in a discharge to a drainage channel and/or surface water; or
   C. Discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.

2. Category 2 – All other discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system.

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

SSO Reporting Timeframes

4. Category 1 SSOs – Except as provided above, all SSOs that meet the above criteria for Category 1 SSOs must be reported as soon as: (1) the Enrollee has knowledge of the discharge, (2) reporting is possible, and (3) reporting can be provided without substantially impeding cleanup or other emergency measures. Initial reporting of Category 1 SSOs must be reported to the Online SSO System as soon as possible but no later than 3 business days after the Enrollee is made aware of the SSO. Minimum information that must be contained in the 3-day report must include all information identified in section 9 below, except for item 9.K. A final certified report must be completed through the Online SSO System, within 15 calendar days of the conclusion of SSO response and remediation. Additional information may be added to the certified report, in the form of an attachment, at any time.

   The above reporting requirements are in addition to do not preclude other emergency notification requirements and timeframes mandated by other regulatory agencies (local County Health Officers, local Director of Environmental Health, Regional Water Boards, or Office of Emergency Services (OES)) or State law.

5. Category 2 SSOs – All SSOs that meet the above criteria for Category 2 SSOs must be reported to the Online SSO Database within 30 days after the end of the calendar month in which the SSO occurs (e.g. all SSOs occurring in the month of January must be entered into the database by March 1st).

6. Private Lateral Sewage Discharges – All sewage discharges that meet the above criteria for Private Lateral sewage discharges may be reported to the Online SSO Database based upon the Enrollee's discretion. If a Private Lateral sewage discharge is recorded in the SSO Database, the Enrollee must identify the sewage discharge as occurring and caused by a private lateral, and a responsible party (other than the Enrollee) should be identified, if known.

7. If there are no SSOs during the calendar month, the Enrollee will provide, within 30 days after the end of each calendar month, a statement through the Online SSO Database certifying that there were no SSOs for the designated month.

8. In the event that the SSO Online Database is not available, the enrollee must fax all required information to the appropriate Regional Water Board office in

accordance with the time schedules identified above. In such event, the Enrollee must also enter all required information into the Online SSO Database as soon as practical.

Mandatory Information to be Included in SSO Online Reporting

All Enrollees must obtain SSO Database accounts and receive a "Username" and "Password" by registering through the California Integrated Water Quality System (CIWQS). These accounts will allow controlled and secure entry into the SSO Database. Additionally, within thirty (30) days of receiving an account and prior to recording SSOs into the SSO Database, all Enrollees must complete the "Collection System Questionnaire", which collects pertinent information regarding an Enrollee's collection system. The "Collection System Questionnaire" must be updated at least every 12 months.

At a minimum, the following mandatory information must be included prior to finalizing and certifying an SSO report for each category of SSO:

9. Category 2 SSOs:

    A. Location of SSO by entering GPS coordinates;
    B. Applicable Regional Water Board, i.e. identify the region in which the SSO occurred;
    C. County where SSO occurred;
    D. Whether or not the SSO entered a drainage channel and/or surface water;
    E. Whether or not the SSO was discharged to a storm drain pipe that was not fully captured and returned to the sanitary sewer system;
    F. Estimated SSO volume in gallons;
    G. SSO source (manhole, cleanout, etc.);
    H. SSO cause (mainline blockage, roots, etc.);
    I. Time of SSO notification or discovery;
    J. Estimated operator arrival time;
    K. SSO destination;
    L. Estimated SSO end time; and
    M. SSO Certification. Upon SSO Certification, the SSO Database will issue a Final SSO Identification (ID) Number.

10. Private Lateral Sewage Discharges:

    A. All information listed above (if applicable and known), as well as;
    B. Identification of sewage discharge as a private lateral sewage discharge; and
    C. Responsible party contact information (if known).

11. Category 1 SSOs:

A. All information listed for Category 2 SSOs, as well as;
B. Estimated SSO volume that reached surface water, drainage channel, or not recovered from a storm drain;
C. Estimated SSO amount recovered;
D. Response and corrective action taken;
E. If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA must be selected.
F. Parameters that samples were analyzed for (if applicable);
G. Identification of whether or not health warnings were posted;
H. Beaches impacted (if applicable). If no beach was impacted, NA must be selected;
I. Whether or not there is an ongoing investigation;
J. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
K. OES control number (if applicable);
L. Date OES was called (if applicable);
M. Time OES was called (if applicable);
N. Identification of whether or not County Health Officers were called;
O. Date County Health Officer was called (if applicable); and
P. Time County Health Officer was called (if applicable).

Reporting to Other Regulatory Agencies

These reporting requirements do not preclude an Enrollee from reporting SSOs to other regulatory agencies pursuant California state law. These reporting requirements do not replace other Regional Water Board telephone reporting requirements for SSOs.

1. The Enrollee shall report SSOs to OES, in accordance with California Water Code Section 13271.

Office of Emergency Services
Phone (800) 852-7550

2. The Enrollee shall report SSOs to County Health officials in accordance with California Health and Safety Code Section 5410 et seq.

3. The SSO database will automatically generate an e-mail notification with customized information about the SSO upon initial reporting of the SSO and final certification for all Category 1 SSOs. E-mails will be sent to the appropriate County Health Officer and/or Environmental Health Department if the county desires this information, and the appropriate Regional Water Board.

B. Record Keeping

1. Individual SSO records shall be maintained by the Enrollee for a minimum of five years from the date of the SSO. This period may be extended when requested by a Regional Water Board Executive Officer.

[2. Omitted.]

3. All records shall be made available for review upon State or Regional Water Board staff's request.

4. All monitoring instruments and devices that are used by the Enrollee to fulfill the prescribed monitoring and reporting program shall be properly maintained and calibrated as necessary to ensure their continued accuracy;

5. The Enrollee shall retain records of all SSOs, such as, but not limited to and when applicable:

   a. Record of Certified report, as submitted to the online SSO database;
   b. All original recordings for continuous monitoring instrumentation;
   c. Service call records and complaint logs of calls received by the Enrollee;
   d. SSO calls;
   e. SSO records;
   f. Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps.
   g. Work orders, work completed, and any other maintenance records from the previous 5 years which are associated with responses and investigations of system problems related to SSOs;
   h. A list and description of complaints from customers or others from the previous 5 years; and
   i. Documentation of performance and implementation measures for the previous 5 years.

6. If water quality samples are required by an environmental or health regulatory agency or State law, or if voluntary monitoring is conducted by the Enrollee or its agent(s), as a result of any SSO, records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical technique or method used; and,
   f. The results of such analyses.

C. Certification

1. All final reports must be certified by an authorized person as required by Provision J of the Order.
2. Registration of authorized individuals, who may certify reports, will be in accordance with the CIWQS' protocols for reporting.

Monitoring and Reporting Program No. 2006-0003 will become effective on the date of adoption by the State Water Board. The notification requirements added by Order No. WQ 2008-0002-EXEC will become effective upon issuance by the Executive Director.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order amended by the Executive Director of the State Water Board.

Jeanine Townsend
Clerk to the Board

STATE OF CALIFORNIA
WATER RESOURCES CONTROL BOARD
ORDER NO. WQ 2013-0058-EXEC

AMENDING MONITORING AND REPORTING PROGRAM
FOR
STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR
SANITARY SEWER SYSTEMS

The State of California, Water Resources Control Board (hereafter State Water Board) finds:

1. The State Water Board is authorized to prescribe statewide general Waste Discharge Requirements (WDRs) for categories of discharges that involve the same or similar operations and the same or similar types of waste pursuant to Water Code section 13263(i).

2. Water Code section 13193 *et seq.* requires the Regional Water Quality Control Boards (Regional Water Boards) and the State Water Board (collectively, the Water Boards) to gather Sanitary Sewer Overflow (SSO) information and make this information available to the public, including but not limited to, SSO cause, estimated volume, location, date, time, duration, whether or not the SSO reached or may have reached waters of the state, response and corrective action taken, and an enrollee's contact information for each SSO event. An enrollee is defined as the public entity having legal authority over the operation and maintenance of, or capital improvements to, a sanitary sewer system greater than one mile in length.

3. Water Code section 13271, *et seq.* requires notification to the California Office of Emergency Services (Cal OES), formerly the California Emergency Management Agency, for certain unauthorized discharges, including SSOs.

4. On May 2, 2006, the State Water Board adopted Order 2006-0003-DWQ, "Statewide Waste Discharge Requirements for Sanitary Sewer Systems"[1] (hereafter SSS WDRs) to comply with Water Code section 13193 and to establish the framework for the statewide SSO Reduction Program.

5. Subsection G.2 of the SSS WDRs and the Monitoring and Reporting Program (MRP) provide that the Executive Director may modify the terms of the MRP at any time.

6. On February 20, 2008, the State Water Board Executive Director adopted a revised MRP for the SSS WDRs to rectify early notification deficiencies and ensure that first responders are notified in a timely manner of SSOs discharged into waters of the state.

7. When notified of an SSO that reaches a drainage channel or surface water of the state, Cal OES, pursuant to Water Code section 13271(a)(3), forwards the SSO notification information[2] to local government agencies and first responders including local public health officials and the applicable Regional Water Board. Receipt of notifications for a single SSO event from both the SSO reporter

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[1] Available for download at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2006_0003.pdf

[2] Cal OES Hazardous Materials Spill Reports available Online at:
http://w3.calema.ca.gov/operational/malhaz.nsf/$defaultview and http://w3.calema.ca.gov/operational/malhaz.nsf

and Cal OES is duplicative. To address this, the SSO notification requirements added by the February 20, 2008 MRP revision are being removed in this MRP revision.

8. In the February 28, 2008 Memorandum of Agreement between the State Water Board and the California Water and Environment Association (CWEA), the State Water Board committed to re-designing the CIWQS[3] Online SSO Database to allow "event" based SSO reporting versus the original "location" based reporting. Revisions to this MRP and accompanying changes to the CIWQS Online SSO Database will implement this change by allowing for multiple SSO appearance points to be associated with each SSO event caused by a single asset failure.

9. Based on stakeholder input and Water Board staff experience implementing the SSO Reduction Program, SSO categories have been revised in this MRP. In the prior version of the MRP, SSOs have been categorized as Category 1 or Category 2. This MRP implements changes to SSO categories by adding a Category 3 SSO type. This change will improve data management to further assist Water Board staff with evaluation of high threat and low threat SSOs by placing them in unique categories (i.e., Category 1 and Category 3, respectively). This change will also assist enrollees in identifying SSOs that require Cal OES notification.

10. Based on over six years of implementation of the SSS WDRs, the State Water Board concludes that the February 20, 2008 MRP must be updated to better advance the SSO Reduction Program[4] objectives, assess compliance, and enforce the requirements of the SSS WDRs.

IT IS HEREBY ORDERED THAT:

Pursuant to the authority delegated by Water Code section 13267(f), Resolution 2002-0104, and Order 2006-0003-DWQ, the MRP for the SSS WDRs (Order 2006-0003-DWQ) is hereby amended as shown in Attachment A and shall be effective on September 9, 2013.

8/6/13
Date

Thomas Howard
Executive Director

[3] California Integrated Water Quality System (CIWQS) publicly available at http://www.waterboards.ca.gov/ciwqs/publicreports.shtml

[4] Statewide Sanitary Sewer Overflow Reduction Program information is available at: http://www.waterboards.ca.gov/water_issues/programs/sso/

ATTACHMENT A

STATE WATER RESOURCES CONTROL BOARD
ORDER NO. WQ 2013-0058-EXEC

AMENDING MONITORING AND REPORTING PROGRAM
FOR
STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR
SANITARY SEWER SYSTEMS

This Monitoring and Reporting Program (MRP) establishes monitoring, record keeping, reporting and public notification requirements for Order 2006-0003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems" (SSS WDRs). This MRP shall be effective from September 9, 2013 until it is rescinded. The Executive Director may make revisions to this MRP at any time. These revisions may include a reduction or increase in the monitoring and reporting requirements. All site specific records and data developed pursuant to the SSS WDRs and this MRP shall be complete, accurate, and justified by evidence maintained by the enrollee. Failure to comply with this MRP may subject an enrollee to civil liabilities of up to $5,000 a day per violation pursuant to Water Code section 13350; up to $1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement. The State Water Resources Control Board (State Water Board) reserves the right to take any further enforcement action authorized by law.

A. SUMMARY OF MRP REQUIREMENTS

Table 1 – Spill Categories and Definitions

CATEGORIES	DEFINITIONS [see Section A on page 5 of Order 2006-0003-DWQ, for Sanitary Sewer Overflow (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 (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).
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 MS4 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 California Integrated Water Quality System (CIWQS) Online SSO Database.

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

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION **(see section B of MRP)**	• Within two hours of becoming aware of any Category 1 SSO **greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water**, 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 of MRP)**	• Category 1 SSO: Submit draft report within three 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 the SSO end date. • Category 3 SSO: Submit certified report within 30 calendar days of the end of month in which SSO the occurred. • SSO Technical Report: Submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. • "No Spill" Certification: Certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred. • Collection System Questionnaire: Update and certify every 12 months.	Enter data into the CIWQS Online SSO Database (http://ciwqs.waterboards.ca.gov/), certified by enrollee's Legally Responsible Official(s).
WATER QUALITY MONITORING **(see section D of MRP)**	• Conduct water quality sampling **within 48 hours** after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results are required to be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD KEEPING **(see section E of MRP)**	• SSO event records. • Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. • Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO Volume.	Self-maintained records shall be available during inspections or upon request.

B. NOTIFICATION REQUIREMENTS

Although Regional Water Quality Control Boards (Regional Water Boards) and the State Water Board (collectively, the Water Boards) staff do not have duties as first responders, this MRP is an appropriate mechanism to ensure that the agencies that have first responder duties are notified in a timely manner in order to protect public health and beneficial uses.

1. For any Category 1 SSO greater than or equal to 1,000 gallons that results in a discharge to a surface water or spilled in a location where it probably will be discharged to surface water, either directly or by way of a drainage channel or MS4, the enrollee shall, as soon as possible, but not later than two (2) hours after (A) the enrollee has knowledge of the discharge, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures, notify the Cal OES and obtain a notification control number.

2. To satisfy notification requirements for each applicable SSO, the enrollee shall provide the information requested by Cal OES before receiving a control number. Spill information requested by Cal OES may include:

    i. Name of person notifying Cal OES and direct return phone number.
    ii. Estimated SSO volume discharged (gallons).
    iii. If ongoing, estimated SSO discharge rate (gallons per minute).
    iv. SSO Incident Description:
        a. Brief narrative.
        b. On-scene point of contact for additional information (name and cell phone number).
        c. Date and time enrollee became aware of the SSO.
        d. Name of sanitary sewer system agency causing the SSO.
        e. SSO cause (if known).
    v. Indication of whether the SSO has been contained.
    vi. Indication of whether surface water is impacted.
    vii. Name of surface water impacted by the SSO, if applicable.
    viii. Indication of whether a drinking water supply is or may be impacted by the SSO.
    ix. Any other known SSO impacts.
    x. SSO incident location (address, city, state, and zip code).

3. Following the initial notification to Cal OES and until such time that an enrollee certifies the SSO report in the CIWQS Online SSO Database, the enrollee shall provide updates to Cal OES regarding substantial changes to the estimated volume of untreated or partially treated sewage discharged and any substantial change(s) to known impact(s).

4. PLSDs: The enrollee is strongly encouraged to notify Cal OES of discharges greater than or equal to 1,000 gallons of untreated or partially treated wastewater that result or may result in a discharge to surface water resulting from failures or flow conditions within a privately owned sewer lateral or from other private sewer asset(s) if the enrollee becomes aware of the PLSD.

C. REPORTING REQUIREMENTS

1. **CIWQS Online SSO Database Account:** All enrollees shall obtain a CIWQS Online SSO Database account and receive a "Username" and "Password" by registering through CIWQS. These accounts allow controlled and secure entry into the CIWQS Online SSO Database.

2. **SSO Mandatory Reporting Information:** 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. **SSO Categories**

   i. **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:

      a. Reach surface water and/or reach a drainage channel tributary to a surface water; or

      b. Reach a 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).

   ii. **Category 2** – Discharges of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from an enrollee's sanitary sewer system failure or flow condition that does not reach a surface water, a drainage channel, or the MS4 unless the entire SSO volume discharged to the storm drain system is fully recovered and disposed of properly.

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

4. **Sanitary Sewer Overflow Reporting to CIWQS - Timeframes**

   i. **Category 1 and Category 2 SSOs** – All SSOs that meet the above criteria for Category 1 or Category 2 SSOs shall be reported to the CIWQS Online SSO Database:

      a. Draft reports for Category 1 and Category 2 SSOs shall be submitted to the CIWQS Online SSO Database within three (3) business days of the enrollee becoming aware of the SSO. Minimum information that shall be reported in a draft Category 1 SSO report shall include all information identified in section 8.i.a. below. Minimum information that shall be reported in a Category 2 SSO draft report shall include all information identified in section 8.i.c below.

      b. A final Category 1 or Category 2 SSO report shall be certified through the CIWQS Online SSO Database within 15 calendar days of the end date of the SSO. Minimum information that shall be certified in the final Category 1 SSO report shall include all information identified in section 8.i.b below. Minimum information that shall be certified in a final Category 2 SSO report shall include all information identified in section 8.i.d below.

ii. **Category 3 SSOs** – All SSOs that meet the above criteria for Category 3 SSOs shall be reported to the CIWQS Online SSO Database and certified within 30 calendar days after the end of the calendar month in which the SSO occurs (e.g., all Category 3 SSOs occurring in the month of February shall be entered into the database and certified by March 30). Minimum information that shall be certified in a final Category 3 SSO report shall include all information identified in section 8.i.e below.

iii. **"No Spill" Certification** – If there are no SSOs during the calendar month, the enrollee shall either 1) certify, within 30 calendar days after the end of each calendar month, a "No Spill" certification statement in the CIWQS Online SSO Database certifying that there were no SSOs for the designated month, or 2) certify, quarterly within 30 calendar days after the end of each quarter, "No Spill" certification statements in the CIWQS Online SSO Database certifying that there were no SSOs for each month in the quarter being reported on. For quarterly reporting, the quarters are Q1 - January/ February/ March, Q2 - April/May/June, Q3 - July/August/September, and Q4 - October/November/December.

If there are no SSOs during a calendar month but the enrollee reported a PLSD, the enrollee shall still certify a "No Spill" certification statement for that month.

iv. **Amended SSO Reports** – The enrollee may update or add additional information to a certified SSO report within 120 calendar days after the SSO end date by amending the report or by adding an attachment to the SSO report in the CIWQS Online SSO Database. SSO reports certified in the CIWQS Online SSO Database prior to the adoption date of this MRP may only be amended up to 120 days after the effective date of this MRP. After 120 days, the enrollee may contact the SSO Program Manager to request to amend an SSO report if the enrollee also submits justification for why the additional information was not available prior to the end of the 120 days.

5. **SSO Technical Report**

The enrollee shall submit an SSO Technical Report in the CIWQS Online SSO Database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters. This report, which does not preclude the Water Boards from requiring more detailed analyses if requested, shall include at a minimum, the following:

i. **Causes and Circumstances of the SSO:**

a. Complete and detailed explanation of how and when the SSO was discovered.

b. Diagram showing the SSO failure point, appearance point(s), and final destination(s).

c. Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.

d. Detailed description of the cause(s) of the SSO.

e. Copies of original field crew records used to document the SSO.

f. Historical maintenance records for the failure location.

ii. **Enrollee's Response to SSO:**

a. Chronological narrative description of all actions taken by enrollee to terminate the spill.

b. Explanation of how the SSMP Overflow Emergency Response plan was implemented to respond to and mitigate the SSO.

c. Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

iii. **Water Quality Monitoring:**

a. Description of all water quality sampling activities conducted including analytical results and evaluation of the results.

b. Detailed location map illustrating all water quality sampling points.

6. **PLSDs**

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 sanitary sewer system assets may be voluntarily reported to the CIWQS Online SSO Database.

i. The enrollee is also encouraged to provide notification to Cal OES per section B above when a PLSD greater than or equal to 1,000 gallons has or may result in a discharge to surface water. For any PLSD greater than or equal to 1,000 gallons regardless of the spill destination, the enrollee is also encouraged to file a spill report as required by Health and Safety Code section 5410 et. seq. and Water Code section 13271, or notify the responsible party that notification and reporting should be completed as specified above and required by State law.

ii. If a PLSD is recorded in the CIWQS Online SSO Database, the enrollee must identify the sewage discharge as occurring and caused by a private sanitary sewer system asset and should identify a responsible party (other than the enrollee), if known. Certification of PLSD reports by enrollees is not required.

7. **CIWQS Online SSO Database Unavailability**

In the event that the CIWQS Online SSO Database is not available, the enrollee must fax or e-mail all required information to the appropriate Regional Water Board office in accordance with the time schedules identified herein. In such event, the enrollee must also enter all required information into the CIWQS Online SSO Database when the database becomes available.

8. **Mandatory Information to be Included in CIWQS Online SSO Reporting**

All enrollees shall obtain a CIWQS Online SSO Database account and receive a "Username" and "Password" by registering through CIWQS which can be reached at CIWQS@waterboards.ca.gov or by calling (866) 792-4977, M-F, 8 A.M. to 5 P.M. These accounts will allow controlled and secure entry into the CIWQS Online SSO Database. Additionally, within thirty (30) days of initial enrollment and prior to recording SSOs into the CIWQS Online SSO Database, all enrollees must complete a Collection System Questionnaire (Questionnaire). The Questionnaire shall be updated at least once every 12 months.

i. **SSO Reports**

At a minimum, the following mandatory information shall be reported prior to finalizing and certifying an SSO report for each category of SSO:

a. **Draft Category 1 SSOs**: At a minimum, the following mandatory information shall be reported for a draft Category 1 SSO report:

1. SSO Contact Information: Name and telephone number of enrollee contact person who can answer specific questions about the SSO being reported.
2. SSO Location Name.
3. Location of the overflow event (SSO) by entering GPS coordinates. If a single overflow event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the SSO appearance point explanation field.
4. Whether or not the SSO reached surface water, a drainage channel, or entered and was discharged from a drainage structure.
5. Whether or not the SSO reached a municipal separate storm drain system.
6. Whether or not the total SSO volume that reached a municipal separate storm drain system was fully recovered.
7. Estimate of the SSO volume, inclusive of all discharge point(s).
8. Estimate of the SSO volume that reached surface water, a drainage channel, or was not recovered from a storm drain.
9. Estimate of the SSO volume recovered (if applicable).
10. Number of SSO appearance point(s).
11. Description and location of SSO appearance point(s). If a single sanitary sewer system failure results in multiple SSO appearance points, each appearance point must be described.
12. SSO start date and time.
13. Date and time the enrollee was notified of, or self-discovered, the SSO.
14. Estimated operator arrival time.
15. For spills greater than or equal to 1,000 gallons, the date and time Cal OES was called.
16. For spills greater than or equal to 1,000 gallons, the Cal OES control number.

b. **Certified Category 1 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 1 SSO report, in addition to all fields in section 8.i.a :

1. Description of SSO destination(s).
2. SSO end date and time.
3. SSO causes (mainline blockage, roots, etc.).
4. SSO failure point (main, lateral, etc.).
5. Whether or not the spill was associated with a storm event.
6. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the overflow; and a schedule of major milestones for those steps.
7. Description of spill response activities.
8. Spill response completion date.
9. Whether or not there is an ongoing investigation, the reasons for the investigation and the expected date of completion.

10. Whether or not a beach closure occurred or may have occurred as a result of the SSO.
11. Whether or not health warnings were posted as a result of the SSO.
12. Name of beach(es) closed and/or impacted. If no beach was impacted, NA shall be selected.
13. Name of surface water(s) impacted.
14. If water quality samples were collected, identify parameters the water quality samples were analyzed for. If no samples were taken, NA shall be selected.
15. If water quality samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA shall be selected.
16. Description of methodology(ies) and type of data relied upon for estimations of the SSO volume discharged and recovered.
17. SSO Certification: Upon SSO Certification, the CIWQS Online SSO Database will issue a final SSO identification (ID) number.

c. **Draft Category 2 SSOs**: At a minimum, the following mandatory information shall be reported for a draft Category 2 SSO report:

1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO.

d. **Certified Category 2 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 2 SSO report:

1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO and Items 1-9, and 17 in section 8.i.b above for Certified Category 1 SSO.

e. **Certified Category 3 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 3 SSO report:

1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO and Items 1-5, and 17 in section 8.i.b above for Certified Category 1 SSO.

ii. **Reporting SSOs to Other Regulatory Agencies**

These reporting requirements do not preclude an enrollee from reporting SSOs to other regulatory agencies pursuant to state law. In addition, these reporting requirements do not replace other Regional Water Board notification and reporting requirements for SSOs.

iii. **Collection System Questionnaire**

The required Questionnaire (see subsection G of the SSS WDRs) provides the Water Boards with site-specific information related to the enrollee's sanitary sewer system. The enrollee shall complete and certify the Questionnaire at least every 12 months to facilitate program implementation, compliance assessment, and enforcement response.

iv. **SSMP Availability**

The enrollee shall provide the publicly available internet web site address to the CIWQS Online SSO Database where a downloadable copy of the enrollee's approved SSMP, critical supporting documents referenced in the SSMP, and proof of local governing board approval of the SSMP is posted. If all of the SSMP documentation listed in this subsection is not publicly available on the Internet, the enrollee shall comply with the following procedure:

a. Submit an **electronic** copy of the enrollee's approved SSMP, critical supporting documents referenced in the SSMP, and proof of local governing board approval of the SSMP to the State Water Board, within 30 days of that approval and within 30 days of any subsequent SSMP re-certifications, to the following mailing address:

State Water Resources Control Board
Division of Water Quality
Attn: SSO Program Manager
1001 I Street, 15th Floor, Sacramento, CA 95814

D. WATER QUALITY MONITORING REQUIREMENTS:

To comply with subsection D.7(v) of the SSS WDRs, the enrollee shall develop and implement an SSO Water Quality Monitoring Program to assess impacts from SSOs to surface waters in which 50,000 gallons or greater are spilled to surface waters. The SSO Water Quality Monitoring Program, shall, at a minimum:

1. Contain protocols for water quality monitoring.

2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.).

3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.

4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.

5. Within 48 hours of the enrollee becoming aware of the SSO, require water quality sampling for, at a minimum, the following constituents:
   i. Ammonia
   ii. Appropriate Bacterial indicator(s) per the applicable Basin Plan water quality objective or Regional Board direction which may include total and fecal coliform, enterococcus, and e-coli.

E. RECORD KEEPING REQUIREMENTS:

The following records shall be maintained by the enrollee for a minimum of five (5) years and shall be made available for review by the Water Boards during an onsite inspection or through an information request:

1. General Records: The enrollee shall maintain records to document compliance with all provisions of the SSS WDRs and this MRP for each sanitary sewer system owned including any required records generated by an enrollee's sanitary sewer system contractor(s).

2. SSO Records: The enrollee shall maintain records for each SSO event, including but not limited to:
   i. Complaint records documenting how the enrollee responded to all notifications of possible or actual SSOs, both during and after business hours, including complaints that do not

result in SSOs. Each complaint record shall, at a minimum, include the following information:

a. Date, time, and method of notification.

b. Date and time the complainant or informant first noticed the SSO.

c. Narrative description of the complaint, including any information the caller can provide regarding whether or not the complainant or informant reporting the potential SSO knows if the SSO has reached surface waters, drainage channels or storm drains.

d. Follow-up return contact information for complainant or informant for each complaint received, if not reported anonymously.

e. Final resolution of the complaint.

ii. Records documenting steps and/or remedial actions undertaken by enrollee, using all available information, to comply with section D.7 of the SSS WDRs.

iii. Records documenting how all estimate(s) of volume(s) discharged and, if applicable, volume(s) recovered were calculated.

3. Records documenting all changes made to the SSMP since its last certification indicating when a subsection(s) of the SSMP was changed and/or updated and who authorized the change or update. These records shall be attached to the SSMP.

4. Electronic monitoring records relied upon for documenting SSO events and/or estimating the SSO volume discharged, including, but not limited to records from:

i. Supervisory Control and Data Acquisition (SCADA) systems

ii. Alarm system(s)

iii. Flow monitoring device(s) or other instrument(s) used to estimate wastewater levels, flow rates and/or volumes.

F. CERTIFICATION

1. All information required to be reported into the CIWQS Online SSO Database shall be certified by a person designated as described in subsection J of the SSS WDRs. This designated person is also known as a Legally Responsible Official (LRO). An enrollee may have more than one LRO.

2. Any designated person (i.e. an LRO) shall be registered with the State Water Board to certify reports in accordance with the CIWQS protocols for reporting.

3. Data Submitter (DS): Any enrollee employee or contractor may enter draft data into the CIWQS Online SSO Database on behalf of the enrollee if authorized by the LRO and registered with the State Water Board. However, only LROs may certify reports in CIWQS.

4. The enrollee shall maintain continuous coverage by an LRO. Any change of a registered LRO or DS (e.g., retired staff), including deactivation or a change to the LRO's or DS's contact information, shall be submitted by the enrollee to the State Water Board within 30 days of the change by calling (866) 792-4977 or e-mailing help@ciwqs.waterboards.ca.gov.

5. A registered designated person (i.e., an LRO) shall certify all required reports under penalty of perjury laws of the state as stated in the CIWQS Online SSO Database at the time of certification.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order amended by the Executive Director of the State Water Resources Control Board.

7/30/13
Date

Jeanine Townsend
Clerk to the Board

ARROWBEAR PARK COUNTY WATER DISTRICT

Rules and Regulations Handbook

APPROVED: 7-17-2014

TABLE OF CONTENTS

ARROWBEAR PARK COUNTY WATER DISTRICT

Rules and Regulations Handbook

1000.10 AUTHORITY - The District has been duly formed, organized, and now operates within the Provisions of Division 12 of the Water Code of the State of California and Division 3 of the Community Services District Law. Under the provisions of this Code the Board of Directors may adopt rules and regulations by motion, resolution, or ordinances for the purpose of exercise and effect of any of its powers or for the purposes for which it was formed.

1000.20 ORDINANCE IN FORCE - This Rules and Regulations Handbook has been adopted by motion at the regular Board Meeting July 17, 2014 and shall be in full force and effect within the boundaries of the District from and after its passage, approval, recording, and publication as provided by the law.

1000.30 SUPERSEDING AUTHORITIES – This Rules and Regulations Handbook supersedes duplicating or redundant previous motions, resolutions, or ordinances previously passed by the Board of Directors.

1000.40 POWERS - The general powers of the District are contained within Division 12 of the Water Code of the State of California and Division 3 of the Community Services District Law. These powers include the right to levy taxes; to acquire, construct, and operate water and sewerage facilities within the district; to compel connection to the sewerage systems; to contract with agencies outside the district; to join other districts for joint operation and other powers contained within the above mentioned code.

1000.50 SCOPE - This is an ordinance regulating the use of public and private sewers and drains, private sewage disposal, the installation and connection of building sewers and the discharge of waters and wastes into the public sewer system; and regulating public and private water lines and facilities, the installation and connection of house services and connection of water service; and providing penalties for violation thereof; within the District

1000.60 ANNEXATION - The District has the power, subject to approval of Board of Directors to annex areas that can be served by the District. The terms of annexation shall be determined by the District and may include fees and transfer of facilities.

1000.70 FEES - The District has the power, subject to approval of Board of Directors, to charge special fees. Generally, charges will be made for operations performed by the District for the direct benefit of others. The Board shall adopt, by Resolution, fees for the issuance of permits and for special services, including but not limited to, inspection, construction, plan checking, preparing special studies, and may further require fees for annexations, connections and use of sewer facilities.

1000.80 PENALTY FOR VIOLATION - For the failure of the Owner and/or Consumer to comply with all or any part of this policy, and any resolution, or order fixing rates and charges of this District, reference is made to Section 1.11 of Ordinance No. 1 of County Service Areas.

1000.90 RULING FINAL - All rulings of the District shall be final, unless appealed in writing to the Board within five (5) days. When appealed, the Board's ruling shall be final.

1000.100 MODIFICATIONS OF RULES AND REGULATIONS - The Board reserves the right to change, modify or amend the Rules and Regulations from time to, time and to adopt new Rules and Regulations when deemed advisable or necessary.

1000.110 HOLD HARMLESS CLAUSE - The District and its officers, agents, and employees shall be held harmless from any liability imposed by law upon District or its officers, agents, or employees, including all costs, expenses, fees, and interest incurred in defending same, or in seeking to enforce this Ordinance.

1010.10 GENERAL POLICY - The general policy of the District is to acquire, maintain, and operate adequate water and sewerage systems and provide fire protection within the District to serve residents of the District and to insure the future development of facilities for the benefit of the District.

1010.20 SEVERABILITY & VALIDITY - This policy and the various parts, sections, and clauses thereof are hereby declared to be severable. If any part, phrase, sentence, paragraph, section, sub-section, or clause is adjudged unconstitutional or invalid, the remainder of this policy shall not be affected thereby. The Board of Directors of the District hereby declares that it would have passed this policy by Motion and each part thereof regardless of the fact that one or more parts thereof be declared unconstitutional or invalid.

1010.30 CHANGES, MODIFICATIONS, AMENDMENTS, AND REVISIONS TO RULES AND REGULATIONS - The Board reserves the right to change, modify, or amend the Rules and Regulations from time to time and to adopt new Rules and Regulations when deemed advisable or necessary by motion or resolution.

1010.40 BILLS AGAINST PROPERTY - Any and all bills rendered for the use of sewer, water, or water service shall be deemed to be indebtedness against the property; and, at the option of the District, legal action may be taken, making unpaid water bills a lien against the property.

1010.50 CRITERIA FOR DESIGN OF SEWERS, WATER MAINS, STORAGE, PUMP STATIONS, AND APPURTENANCES - The necessary criteria for design of sewers, water mains, storage, pump stations, and appurtenances shall be adopted by motion or resolution of the Board of Directors from time to time as necessity dictates and a copy of the subject motion or resolutions as adopted shall be on file in the office of the District and available for public inspection.

1010.60 TECHNICAL SPECIFICATIONS - The technical specifications describing material and workmanship required in the construction of sanitary sewers, water mains, and appurtenances shall be adopted or revised by resolution or motion of the Board of Directors from time to time as necessity dictates after appropriate public hearings and a copy of the subject resolutions or motions as adopted shall be on file in the office of the District and available for public inspection.

1010.70 STANDARD FORMS AND DOCUMENTS - Necessary forms and documents to facilitate the business and activity of the District shall be adopted by the District from time to time as necessity dictates and a copy of the forms and documents as adopted shall be on file in the office of the District and shall be available for public inspection.

1010.80 TAMPERING WITH DISTRICT PROPERTY - No one, except an employee or representative of the District, shall at any time and in any manner trespass upon District property, meddle with or operate the curb cocks, meter valves, main cocks, gates, or valves or interfere with meters, their connections, street mains, or interfere with the system or any increment of the water or sewer systems.

1010.90 PENALTY FOR VIOLATION - For the failure of the Owner and/or Consumer to comply with all or any part of this Rules and Regulations Handbook, and any resolution or order fixing rates and charges of this District, reference made to Section 1070.

1010.100 ENVIRONMENTAL CONCERNS - The Board by Resolution No. 74-4-5 on April 5, 1974 adopted local guidelines for implementing the California Environmental Quality Act of 1970 pursuant to Section 21082 of the Public Resources Code of the State of California. These guidelines shall apply to all projects which may have a significant effect on the environment involving discretionary decision-making on the part of the District.

1020.10 GENERAL DEFINITIONS - For the purpose of this policy, all words used herein in the present tense shall include the future; all words in the plural number shall include the singular number; and all words in the singular number shall include the plural number. Unless otherwise indicated the meaning of terms used in this policy shall be as follows:

1020.10.1 APPLICANT - Applicant shall mean the person making application hereunder and shall be the owner of the premises involved or his agent.

1020.10.2 BOARD - Board shall mean the Board of Directors of the Arrowbear Park County Water District of the County of San Bernardino, State of California.

1020.10.3 CONSUMER - Consumer shall mean the person or persons using sewer facilities or water facilities of the District.

1020.10.4 CONTRACT - The written agreement covering the performance of the work and the furnishing of labor, materials, tools, and equipment in the construction of the work. The contract shall include the Notice to Contractors, Proposal, plans, specifications and contract bonds; also, any and all written supplemental agreements amending or extending the work in a substantial and acceptable manner. Supplemental agreements are written agreements covering alterations, amendments, or extensions to the contract and include contract change orders.

1020.10.5 CONTRACTOR - Contractor shall mean an individual, firm, corporation, partnership, joint venture, other legal entity, or association duly licensed by the State of California to perform the type of work to be done under the permit, contract, or agreement, entering into a contract with the District to perform the work. In case of the work being done under permit issued by the District, the Permitee shall be construed to be the Contractor.

1020.10.6 COST - Cost shall mean the cost of labor, material, transportation, supervision, engineering, and all other necessary overhead expenses.

1020.10.7 COUNTY - County shall mean the County of San Bernardino, State of California.

1020.10.8 DEVELOPER - Developer means any person who improves or develops property, within the District, to the extent that sewer and/or water service is needed or required.

1020.10.9 DISTRICT - District shall mean the Arrowbear Park County Water District.

1020.10.10 DISTRICT ENGINEER - District Engineer shall mean the Engineer appointed by the Board and acting for the District.

1020.10.11 DWELLING OR LIVING UNIT - Dwelling or living unit shall mean any residence, apartment, mobile home, habitation or other structure designed to be occupied by a person or family and requiring sewage disposal service and/or water service.

1020.10.12 EFFLUENT - Wastewater or other liquid, partially or completely treated, flowing out of the treatment plant.

1020.10.13 FIXTURE UNIT EQUIVALENTS - The unit equivalent of plumbing fixtures shall be as indicated in Chapter 4, Table 4-1, of the Uniform Plumbing Code, et seq.

1020.10.14 GARBAGE - Garbage shall mean solid wastes from the preparation, cooking and dispensing of food and from the handling, storage, and sale of produce.

1020.10.15 INSPECTION - Ensuring compliance with the approved plans and specifications and with the criteria of the rules, regulations, and specifications of the District and any and all authorities having jurisdiction over the construction and maintenance of water and sewer systems.

1020.10.16 INSPECTOR - Inspector shall mean the person who shall perform the work of inspecting sewage works and/or water facilities under the jurisdiction or control of the District.

1020.10.17 MANAGER - Manager shall mean the person appointed by the Board as the Manager of the Arrowbear Park County Water District.

1020.10.18 OWNER - Owner shall mean the person holding the legal title to the property or the person in possession of the property or any person exercising, dominion or control over the property.

1020.10.19 PERMIT - Permit shall mean any written authorization required pursuant to this policy or any other regulation of the Board.

1020.10.20 PERSON - Person means a natural person, his heirs, executors, administrators or assigns and shall also include a firm, corporation, municipal or quasi-municipal corporation or governmental agency. Singular includes plural; male includes female.

1020.10.21 PLANS - The official project plans, profiles, typical cross sections, general cross sections, working drawings and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions and details of the work to be performed, and which are to be considered as part of the Contract.

1020.10.22 PRIVATE FIRE PROTECTION SERVICE - Private fire protection service shall mean water service and facilities for building sprinkler systems, hydrants, hose reels and other facilities installed on private property for fire protection, and the water available therefore.

1020.10.23 PUBLIC FIRE PROTECTION SERVICE - Public fire protection service shall mean the service and facilities of the entire water supply, storage and distribution system of the District, including the fire hydrants affixed thereto and the water available for fire protection, excepting house service connections and appurtenances thereto.

1020.10.24 PUBLIC SEWER - Public sewer shall mean a sewer lying within a public right of way, easement, or area specified in a special permit or agreement, which is controlled by or under the jurisdiction of the District.

1020.10.25 REGULAR WATER SERVICE - Regular water service shall mean water service and facilities rendered for normal domestic, commercial and industrial purposes on a permanent basis, and the water available therefore.

1020.10.26 SEWAGE TREATMENT PLANT - Sewage treatment plant shall mean any arrangement of devices and structures used for treating sewage.

1020.10.27 SEWAGE WORKS - Sewage works shall mean all facilities for collecting, pumping, treating and disposing of sewage.

1020.10.28 SEWER - Sewer shall mean a pipe or conduit for carrying sewage.

1020.10.29 SEWER LATERAL - Sewer lateral shall mean that portion of a sewer lying within a public right-of-way or easement connecting a building sewer to the main sewer.

1020.10.30 SPECIFICATIONS - Technical Specifications. The directions, provisions, and requirements contained in the Technical Specifications for the District.

1020.10.31 SUPERINTENDENT - Superintendent shall mean the person appointed as the Superintendent of Operations. In the absence of a Superintendent of Operations, the District General Manager will perform the role of the Superintendent of Operations.

1020.10.32 SUSPENDED SOLIDS - Suspended solids shall mean solids that either float on the surface of or are in suspension in water, sewage or other liquids and which are removable by laboratory filtering.

1020.10.33 TEMPORARY WATER SERVICE - Temporary water service shall mean water service and facilities rendered for construction work and other uses of limited duration and the water available therefore.

1020.10.34 UNIFORM PLUMBING CODE - Uniform Plumbing Code shall be that Code as published by the International Association of Plumbing and Mechanical Officials and adopted by the County of San Bernardino as its plumbing code.

1020.10.35 UNIFORM PLUMBING CODE DEFINITIONS - Uniform plumbing code definitions, being Chapter 1 of the County Plumbing Code, are hereby incorporated as part of the definitions of this policy except as specifically modified herein.

1020.10.36 WATERCOURSE - Watercourse shall mean a channel in which a flow of water occurs, either continuously or intermittently.

1020.10.37 WATER MAIN - Water main shall mean a water line in a street, highway, alley, or easement used for public and private fire protection and for general distribution of water.

1020.10.38 WATER SERVICE CONNECTION - Water service connection shall mean the pipeline and appurtenant facilities such as the curb stop, meter and meter box used to extend water service from a main to premises, the laying thereof and the tapping of the main. Where services are divided at the curb or property line to serve several consumers, each such branch service shall be deemed a separate service.

1020.10.39 WORK - All the work specified, indicated, shown, or contemplated in the contract to construct the improvement, including all alterations, amendments, or extensions thereto made by supplemental agreements or written orders of the Engineer.

ARROWBEAR PARK COUNTY WATER DISTRICT

Rules and Regulations Handbook

POLICY TITLE: Use of Public Sewer and Water Facilities Required **1 of 1**

POLICY NUMBER: 1030 **Approved 7-17-2014**

1030.10 USE OF PUBLIC SEWERS - Use of public sewers shall be as specified in Chapter 3. General Regulations of the Uniform Plumbing Code, the provisions of this policy and rules and regulations adopted pursuant to this policy.

1030.20 USE OF WATER FACILITIES - Use of water facilities shall conform to the provisions of this policy, to Chapter 10, Water Distribution of the Uniform Plumbing Code and rules and regulations adopted pursuant to this policy.

1030.30 OCCUPANCY PROHIBITED - No building, industrial facility or other structure, including mobile structures, shall be occupied until all rules and regulations of the District are complied with.

1030.40 SEWER REQUIRED - The owner of all houses, buildings or properties used for human occupancy, employment, recreation or other purposes situated within the District and abutting on any street in which there is or shall have been located a public sewer of District, is hereby required at his expense to connect said building directly with the sewers of the District in accordance with the provisions of this policy within thirty (30) days after date of official notice by District to do so or within such extension of time allowed by or directed by the District provided that said public sewer is within two hundred (200) feet of the nearest property line.

1030.50 WATER SERVICE REQUIRED - Unless otherwise authorized by the District the owner of all houses, buildings or properties used for human occupancy, employment, recreation or other purposes situated within the District and abutting on any street in which there is or shall have been located a water main of District is hereby required at his expense to connect said building directly with the water main of the District in accordance with the provisions of this policy within thirty (30) days after date of official notice to do so.

1030.60 NO PUBLIC SEWER - Where a public sewer is not available, the building sewer shall be connected to a private sewage disposal system complying with the provisions of the Uniform Plumbing Code administered by San Bernardino County Department of Building and Safety and meeting the requirements of all State agencies regulating sewage discharge.

ARROWBEAR PARK COUNTY WATER DISTRICT

Rules and Regulations Handbook

POLICY TITLE: Building Sewer and Water Connections **1 of 1**

POLICY NUMBER: 1040 **Approved 7-17-2014**

1040.10 BUILDING SEWER AND WATER SERVICE CONNECTIONS TO PUBLIC SEWER AND WATER FACILITIES.

1040.20 CONNECTION PERMIT REQUIRED - No person shall make a connection to any public sewer without first obtaining a written permit from the District and paying all required fees and connection charges. The permit application shall be supplemented by any plans, specifications, or other information considered pertinent in the judgment of the Superintendent. Any person desiring to connect to any public water main shall first make written application to the District for water service and pay all required fees and connection charges. The owner or his agent shall make application on a special form furnished by the District. The District shall cause the water service connection to be installed.

1040.30 USE OF PUBLIC SEWER OR WATER SERVICE - The public sewer or water service shall not be used until the building sewer or building water lines have been inspected and approved by the Department of Building and Safety of San Bernardino County.

1040.40 RULES AND REGULATIONS - The Board of Directors may adopt rules and regulations with respect to making connections to public sewer and water systems including, but not limited to, permit, connection and inspection fees, procedures for installation of services, notices, testing and other regulations.

1040.50 LOCAL REGULATIONS - The connection of the building sewer into the public sewer or sewer lateral shall conform to the requirements of the District, shall be under District jurisdiction, and shall be installed by a licensed and insured contractor.

1040.60 SEPARATE SEWERS - Reference is made to the Uniform Plumbing Code - Independent Systems.

1040.70 OLD BUILDING SEWERS - Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the District, to meet all requirements.

1040.80 BUILDING SEWER TOO LOW - Whenever possible, the building sewer shall be brought to the building at an elevation below the building floor. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved means at owner's expense and discharged to the building sewers.

1040.90 ILLEGAL CONNECTIONS - No person shall make connection of roof downspouts, exterior foundation drains, areaway drains, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sewer.

1050.10 APPROVAL REQUIRED - No person shall construct or extend any public sewer or water facility without first obtaining written approval from the District and paying all fees, connection charges and furnish bonds as required. This provision does not apply to contractors constructing sewers, water mains, and appurtenances under contracts entered into with the District. Design and construction of public sewers and water systems shall be in accordance with the District Standards.

1050.20 LIABILITY - The District and its officers, agents and employees shall not be answerable for any liability or injury or death to any person or damage to any property arising during or growing out of the performance of any work or construction by any applicant, contractor, or owner. The applicant shall save District and its officers, agents and employees harmless from any liability imposed by law upon District or its officers, agents, or employees, including all cost, expenses, fees and interest incurred in defending same, or in seeking to enforce this provision. Applicant shall be solely liable for any defects in the performance of his work or any failure which may develop therein.

1050.30 SUBDIVISIONS - The developer or his engineer shall contact the District to determine whether or not sewer and/or water service is feasible. He will furnish tentative tract maps showing lot sizes, street layout and elevations based on USGS datum, points of connection to the District's sewers and water mains, possible pump stations and flow data based upon the design criteria of the District. The District Engineer will review the tract map and determine whether sewer and water service is feasible and whether any over sizing will be required to facilitate extension of the District's system. In addition the developer shall be subject to all subdivision policies adopted by the County of San Bernardino.

1050.40 MAIN EXTENSIONS OTHER THAN SUBDIVISIONS - Main extensions to serve one or more parcels of land maybe made by the owner or owners of said land. The owner or his Engineer shall follow the same procedure for main extensions as outlined for subdivisions in Section 1050.30. In lieu of this procedure, the owner or owners may request the District to make the necessary investigation, prepare plans and have the work constructed, The owner or owners shall advance all necessary funds for the investigation, plan preparation and construction prior to the District commencing any of the work described above.

1050.50 MAIN SERVICE CHARGE - When persons owning land to which sewer and/or water mains are adjacent in streets or rights-of-way (which mains have been installed by the District or an applicant for service) make application for sewer or water service to a lot, parcel, tract or subdivision, they shall reimburse the District or applicant for their proportionate share of the cost of said main. Their proportionate share of said cost shall be a cost per front foot for benefited land, as set forth in the application and so determined by the District. Special sewer connection charges for connection to sewer mains and facilities constructed pursuant to special assessment proceedings shall be computed and collected in. accordance with District Ordinance No. 1-75 as adopted May 2, 1975.

1050.60 PAYMENT OF COST OF OVERSIZED MAINS - In the event the District elects to install sewer or water lines of greater size than, in the opinion of the District, shall be adequate to supply any new subdivision with sewer and water service, the owner or owners of the proposed subdivision shall not be required to pay more than the cost of mains which, in the

opinion of the District, are adequate to supply such subdivision with sewer and water service The District will pay for the additional cost of materials for oversize, but no other adjustment of the cost of installation shall be made.

1050.70 REFUNDS - When sewer and water main extensions are made and paid for by an applicant and said main extension shall be of benefit to another person or persons in the future, said applicant may enter into a refund agreement with the District. Said refund agreement shall provide for a refund payment from main service charges collected by the District for service connection to a main, paid for by new applicant, Said refund shall be computed on the basis of actual cost to the person making the original main extension per front foot benefited for which the main service charge is collected. All refund agreements shall become null and void ten years from the date first written and the District shall be discharged from the requirement of making any refund thereafter.

1050.80 PLANS AND SPECIFICATIONS - The developer or other person proposing the construction of public sewer and/or water facilities within the District shall employ the services of a currently Registered Civil Engineer to prepare plans and specifications for construction of said facilities in accordance with the District's "Design Criteria and Technical Specifications". Plans and specifications along with tract map indicating easements shall be submitted to the District Engineer for approval. Copies of the design criteria and technical specifications shall be available at the District office. This submittal will not relieve the developer or other persons constructing public sewer and water facilities from compliance with other requirements of State and local agencies. Where the water system is owned other than the District, the water plans shall accompany the sewer plans being submitted.

1050.90 PLAN CHECKING - The District Engineer shall review the sewer and water plans for compliance with its requirements and shall approve such plans after the following conditions have been met:

1050.90.1 The required plan checking fee has been paid by applicant.

1050.90.2 The District Engineer has certified the plans as complying with District Rules and Regulations and as being in conformance with master sewerage and water plans for the area.

1050.100 BONDING OF IMPROVEMENTS - An improvement bond will be required to be furnished to the District by the owner or developer prior to the issuance of a construction permit for sewage and water facilities. The bond shall be accompanied by an agreement between the owner or developer and the District.

1050.100.1 An improvement bond and agreement will be required:

1050.100.1.1. Prior to the acceptance and approval by the Board of a final subdivision map where sewage and/or water facilities are to be constructed, and/or

1050.100.1.2. When the owner or developer has requested a letter to be sent to the State Real Estate Commission for issuance of final Real Estate report.

1050.100.2 The Subdivision Code, San Bernardino County Code, and any amendments thereto shall be followed in respect to the procedures and requirements for the bonds and agreements needed.

1050.100.3 Forms for Bond and Agreement. The bond and agreement forms shall be furnished by the District. Forms for Bond and Agreement shall be approved by the District and its Legal Counsel.

1050.110 CONSTRUCTION - Developer or other person shall construct facilities in accordance with the approved plans and specifications and construction methods as set forth by the District Rules and Regulations. A five-day advanced notice to start construction is required along with approval for construction plans and specifications. Construction of public sewer and water facilities as defined by this policy shall be performed by a person or contractor duly licensed by the State of California.

1050.120 INSPECTIONS - All public sewer and water construction work shall be inspected by a representative of the District or inspector acting for the District to insure compliance with all requirements of the District. No construction shall be covered at any point until it has been inspected. No work shall commence until the required inspection fee has been paid.

1050.130 SERVICES REFUSED - The District may refuse service for noncompliance with its Ordinance, Rules and Regulations, or Service Agreement.

1050.140 ACCEPTANCE OF FACILITIES - Before the District will accept sewer and/or water facilities and appurtenances in its maintained system, the developer or his engineer or agent shall furnish:

1050.140.1 Recorded Notice of Completion in evidence that the work has been completed and paid for in accordance with approved plans and specifications.

1050.140.2 One set of reproducible as-built plans, plus one set of prints, showing exact locations depths and descriptions of all facilities.

1050.140.3 Originals of all Excavation and Encroachment Permits covering all facilities constructed within the public rights of, way.

1050.140.4 Original recorded easement documents for sewers and/or water lines not in public property or not within a tract boundary.

1050.140.5 Original recorded Quitclaim Deed transferring title of facilities to the District.

1050.140.6 Letter from District Engineer certifying that facilities were installed according to plans and specifications.

1050.140.7 Supply operating and maintenance manuals on all mechanical equipment.

1050.150 EASEMENTS - Where it is necessary to cross private property to achieve construction or to provide access for future sewer and water facilities serving adjacent or upstream tributary land, the following procedure shall be used in the preparation, review and processing of the easements and easement documents.

1060.10 PERMIT REQUIRED - No person shall uncover, make any connection with or opening into, use, alter or disturb any public sewer or water facilities without first obtaining a written permit from District.

1060.20 PERMIT PROCEDURE - The Board, by rules and regulations, shall adopt procedures for application and approval of permits regulating the use and construction of the sewer and water facilities.

1060.30 STREET EXCAVATION PERMIT - A permit must be secured from the County, or any other agency having jurisdiction there over, by the owners or contractors intending to excavate in a public street for the purpose of installing sewer or water mains or making service connections.

1060.40 CONNECTION PERMITS - The connection permits will not be issued by the District until the County Transportation Department Excavation Permit and/or State Highway Encroachment Permit, as required, is issued. The connection permit will not be issued until the required set of prints has been submitted and all fees paid.

1060.50 TRUCKER'S DISCHARGE PERMIT - All persons owning vacuum or "cesspool" pump trucks or other liquid waste transport trucks and desiring to discharge septic tank, seepage pit, interceptor or cesspool contents, industrial liquid wastes or other liquid wastes to sewerage facilities of the District or to facilities that discharge directly or indirectly to such sewerage facilities shall first have a valid District Trucker's Discharge Permit. All applicants for a Trucker's Discharge Permit shall complete the application form, pay the appropriate fee, receive a copy of the District regulations governing discharge to sewers of liquid wastes from trucks and shall agree, in writing, to abide by these regulations. Discharge of septic tank, seepage pit, interceptor or cesspool contents or other wastes containing no industrial wastes may be made by trucks holding a District Permit at any of the Districts' designated public dumping manholes. Truck transported industrial wastes shall be discharged only at the locations and times designated by the District Manager. The District shall establish a system of charges for treatment and disposal costs and may refuse permission to discharge certain wastes. The Trucker's Discharge Permit shall be valid for one year from date of issuance. Any person negligently or willfully violating the District requirements for liquid waste discharges from trucks shall be in violation of this policy and may have his Permit revoked by the District Manager.

1060.60 TRAILER SEWAGE DISPOSAL STATION PERMIT - All persons desiring to install a Trailer Sewage Disposal Station connected to sewerage facilities of the District shall first have a valid Trailer Sewage Disposal Station Permit. All applicants for such permit shall complete the application form, pay the appropriate fee, receive a copy of the District regulations governing discharge of liquid wastes to Trailer Sewage Disposal Stations and shall agree, in writing, to abide by those regulations. The District shall establish a system of charges for treatment and disposal costs. The Trailer Sewage Disposal Permit shall be valid one year from data of issuance. Any person negligently or willfully violating the District requirements for disposal of liquid waste to Trailer Sewage Disposal Stations shall

be in violation of this policy and may have his permit revoked by the District Manager. A permit is required from the Division of Building and Safety, County of San Bernardino, prior to construction.

1070.10 VIOLATION UNLAWFUL - Following the effective date of this policy, it shall be unlawful for any person to connect to, construct or install or provide, maintain or use any other means of sewer disposal from any building in the area served with sewers by the District except by connection to a public sewer in the manner as in this policy provides, except as herein otherwise provided.

Following the effective date of this policy, it shall be unlawful for any person to connect to, construct or install or provide, maintain or use any other means of providing a domestic water supply to any building within the area served by water by a District except by connection to the public water system as specifically approved by written agreement with the Board.

1070.20 PROTECTION FROM DAMAGE - All District property is subject to Penal Code, Section 594, which provides:

"MALICIOUS MISCHIEF IN GENERAL DEFINED., Every person who maliciously injures or destroys any real or personal property not his own, in cases otherwise than such as are specified in this Code, is guilty of a misdemeanor".

1070.30 INVESTIGATION POWERS - The officers, inspectors, managers and any duly authorized employees of District shall carry evidence establishing his position as an authorized representative of District and, upon exhibiting the proper credentials and identification , shall be permitted to enter in and upon any and all buildings, industrial facilities, and properties for the purpose of inspection, re-inspection, observation, measurement, sampling, testing or otherwise performing such duties as may be necessary in the enforcement of the provisions of the policies, rules and regulations of the District.

1070.40 PUBLIC NUISANCE - Continued habitation of any building, mobile structure, or continued operation of any industrial facility in violation of the provisions of this policy or any other policy, rule, or regulation of the District is hereby declared to be a public nuisance. District may cause proceedings to be brought for the abatement of the occupancy of the building or industrial facility during the period of such violation.

1070.50 DISCONNECTION - As an alternative method of enforcing the provisions of this policy or any other ordinance, rule or regulation of the District, the District shall have the power to disconnect the user from the sewer and/or water system or facilities of the District. Upon disconnection, the District shall estimate the cost of disconnection from and reconnection to the system and such user shall deposit the cost as estimated before such user is reconnected to the system. The District shall refund any part of the deposit remaining after payment of all costs of disconnection and reconnections. The District shall give seven (7) days written notice to the occupant or user of the premises or property that said system will be disconnected, unless the San Bernardino County Health Department determines that an emergency situation exists that endangers the health of people within the area, in which case written notice of the disconnection need not be given. Where there is a disconnection a "Notice of Disconnection" shall be posted on the property.

1070.60 ABATEMENT - During the period of such disconnection, habitation of such premises by human beings shall constitute a public nuisance, whereupon the District shall cause proceedings to be brought for the abatement of the occupancy of said premises by human beings during the period of such disconnection. In such event and as a condition of reconnection, there is to be paid to the District a reasonable attorney's fee and cost of suit arising in said action.

1070.70 LIABILITY FOR VIOLATION - Any person violating any of the provisions of the policies, ordinances, rules, and regulations of the District shall become liable to the District for any expense, loss, or damage occasioned by the District by reason of such violation.

1070.80 RELIEF ON APPLICATION - When any person, by reason of special circumstances, is of the opinion that any provision of the policies, ordinances, rules, and regulations of the District is unjust or inequitable as applied to his premises, he may make written application to the Board stating the special circumstances, citing the provision complained of, and requesting suspension or modification of that provision as applied to his premises. If such application be approved, the Board nay, by resolution, suspend or modify the, provisions complained of, as applied to such premises, to be effective as of the date of the application and continuance during the period of the special circumstances.

1070.90 RELIEF ON OWN MOTION - The Board may, on its own motion, find that by reason of special circumstances any provision of its policies, ordinances, rules, and regulations should be suspended or modified as applied to a particular premise and may, by resolution, order such suspension or modification for such premises during the period of such special circumstances or any part thereof.

1070.100 VIOLATIONS AND USE OF CITATION - General penalty for violations. Any person violating any of the provisions of the policy shall be guilty of a misdemeanor. Any person convicted for a violation of any of the provisions of the policy, unless otherwise specifically provided in this policy, shall be punishable by a fine of not more than five hundred dollars or by imprisonment in the County Jail for a period of not more than six months or by both such fine and imprisonment.

Continuing violations. Each person shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of this policy is committed, continued, or permitted by such person and shall be punishable accordingly.

Acts including Causing, Aiding, and Abetting. Whenever in this policy any act or omission is made unlawful, it shall include causing, permitting, aiding, or abetting such act or omission.

If any person is arrested for a violation of any provision of this policy, violations of which are punishable as misdemeanors, and such person is not immediately taken before a magistrate, as more fully set forth in the Penal Code of California, the arresting officer shall prepare in duplicate a written notice to appear in Court,

containing the name and address of such person, the offense charged, and the time and place where and when such person shall appear in Court.

1070.100.1. The time specified in the notice to appear must be at least five days after such arrest

1070.100.2. The place specified in the notice to appear shall be the court of a magistrate before whom the person would be taken if the requirement of taking an arrested person before a magistrate were complied with, or shall be an officer authorized by such court to receive a deposit of bail.

1070.100.3. The officer shall deliver one copy of the notice to appear to the arrested person and the arrested person in order to secure release must give his written promise so as to appear in court by signing the duplicate notice which shall be retained by the officer, Thereupon the arresting officer shall forthwith release the person arrested from custody.

1070.100.4. The officer shall, as soon as practicable, file the duplicate notice with the magistrate specified therein. Thereupon the magistrate shall fix the amount of bail which in his judgment., in accordance with the provisions of Section 1275 of the Penal Code, will be reasonable and sufficient for the appearance of the defendant and shall endorse upon the notice a statement signed by him in the form set forth in Section 815a of the Penal Code. The defendant may, prior to the date upon which he promised to appear in court, deposit with the magistrate the amount of bail thus set. Thereafter, at the time when the case is called for arraignment before the magistrate, if the defendant shall not appear, either in person or by counsel, the magistrate may declare the bail forfeited, and may in his discretion order that no further proceeding shall be had in such case. Upon the making of such order that no further proceedings be had, all sums deposited as bail shall forthwith be paid into the County Treasury for distribution pursuant to Section 1463 of the Penal Code.

1070.100.5. No warrant shall issue on such charge for the arrest of a person who has given such written promise to appear in court, unless and until he has violated such promise or has failed to deposit bail, to appear for arraignment, trial or judgment, or to comply with the terms and provisions of the judgment, as required by law.

1070.100.6. When a person signs a written promise to appear at the time and place specified in the written promise to appear and has not posted bail as provided in Section 853.6 of the Penal Code, the Magistrate shall issue and have delivered for execution a warrant for his arrest within twenty days after his failure to appear as promised, or if such person promises to appear before an officer authorized to accept bail other than the magistrate and fails to do so on or before the date which he promised to appear, then, within twenty days after the delivery of such written promise to appear by the officer to the magistrate having jurisdiction over the offense. Nothing herein contained shall be deemed or construed to require any arresting

officer to issue a citation instead of taking the person arrested before a magistrate as otherwise provided by law.

1080.10 NOTICES TO OWNER OR CONSUMER - Notice from the District to an Owner or Consumer will normally be given in writing and either delivered or mailed to him at his last known address. Where conditions warrant, and in emergencies, the District may resort to notification either by door hanger, telephone, or messenger.

1080.20 NOTICES FROM OWNER OR CONSUMER - Notice from the Owner or Consumer to the District may be given by him or his authorized representative in writing at the following places:

1080.20.1 IN PERSON - Operating Office of the District, located at 2365 Fir Dr., Arrowbear Lake, CA 92382.

1080.20.2 FAX – (909) 867-4736

1080.20.3 MAIL – Arrowbear Park County Water District, P.O. Box 4045, Arrowbear Lake, CA 92382-4045.

ARROWBEAR PARK COUNTY WATER DISTRICT

Rules and Regulations Handbook

POLICY TITLE: General Sewer Policy **1 of 1**
POLICY NUMBER: 2000 **Approved 7-17-2014**

2000.10 SEWER SYSTEM - The District provides a system, plant, works, and undertaking used for and useful in conserving and disposing of waste waters from public and private disposal systems including all parts of the enterprise, all appurtenances to it, and lands, easements, rights to land, contract rights, and other collection and disposal facilities and equipment.

2000.20 CODE - The construction of building sewers and connection to the public sewer system shall be governed by the Uniform Plumbing Code except as herein modified.

2000.30 INSTALLATION COSTS - All costs and expenses incident to the installation and connection of the building sewer shall be borne by the Owner. The Owner shall indemnify the District for any cost occasioned by the installation of the building sewer.

2000.40 NOTIFICATION OF DISTRICT - The Applicant for the building sewer permit shall notify the District when the building sewer is ready for inspection and connection to the public sewer. The connection shall be made under the supervision of the District Superintendent or his representative in accordance with Section 2050 of District Rules and Regulations.

2000.50 EXCAVATIONS - All excavations for building sewer installations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the District.

2000.60 TESTING - Connections to the District's lateral sewers or wyes shall be tested and inspected in the presence of the District's Superintendent or his representative. The labor and materials for testing shall be furnished by the person constructing the sewer. All lines showing excessive leakage shall be repaired or replaced at the expense of the person doing the work and shall be done at the direction and to the satisfaction of the Superintendent.

2010.10 SEWER DEFINITIONS - For the purpose of this policy, all words used herein in the present tense shall include the future; all words in the plural number shall include the singular number; and all words in the singular number shall include the plural number. Unless otherwise indicated the meaning of terms used in this policy shall be as follows:

2010.10.1 CONTAMINATION - The term "Contamination" means an impairment of the quality of water of the District by wastes or other degrading elements to a degree which creates a hazard to the public health through the possibility of poisoning or through the possibility of the spreading of disease.

2010.10.2 EFFLUENT - Wastewater or other liquid, partially or completely treated, flowing out of the treatment plant.

2010.10.3 GARBAGE - Garbage shall mean solid wastes from the preparation, cooking and dispensing of food and from the handling, storage, and sale of produce.

2010.10.4 POLLUTION - The term "pollution" means an alteration of the quality of the waters of the District by waste to a degree which adversely affects (1) such waters for beneficial uses, (2) facilities which serve such beneficial uses. "Pollution" may include "Contamination".

2010.10.5 PUBLIC SEWER - Public sewer shall mean a sewer lying within a public right of way, easement, or area specified in a special permit or agreement, which is controlled by or under the jurisdiction of the District.

2010.10.6 SEWERING ENTITY - The terms "Sanitation entity" or "sewering entity" shall mean any public agency which operates and maintains sewage collection and treatment facilities.

2010.10.7 SEPTIC TANK PUMPER - The term "Septic Tank Pumper" shall refer to the operator of a "cesspool septic tank pumping unit" as defined by Section 33.031 of the County Code and which has an operating permit issued by the County.

2010.10.8 SEWAGE - The term "sewage" means a combination of liquid wastes which may include chemicals, house wastes, human excreta, animal or vegetable matter in suspension or solution, and other solids in suspension or solution, and which is discharged from a dwelling, building, or other establishment.

2010.10.9 SEWAGE HOLDING TANK - The term "sewage holding tank" means a watertight, covered receptacle which is designed to receive and store the discharge of sewage and is accessible for the periodic removal of its contents.

2010.10.10 SEWAGE TREATMENT PLANT - Sewage treatment plant shall mean any arrangement of devices and structures used for treating sewage.

2010.10.11 SEWAGE WORKS - Sewage works shall mean all facilities for collecting, pumping, treating and disposing of sewage.

2010.10.12 SEWER - Sewer shall mean a pipe or conduit for carrying sewage.

2010.10.13 SEWER LATERAL - Sewer lateral shall mean that portion of a sewer lying within a public right-of-way or easement connecting a building sewer to the main sewer.

2010.10.14 SUSPENDED SOLIDS - Suspended solids shall mean solids that either float on the surface of or are in suspension in water, sewage or other liquids and which are removable by laboratory filtering.

2020.10 TYPES OF WASTE PROHIBITED - No person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewer:

2020.10.1 FLAMMABLE, TOXIC OR EXPLOSIVE SUBSTANCES - Any gasoline, benzene, naphtha, fuel oil, or other flammable, toxic or explosive liquid, solid and/or gas.

2020.10.2 TOXIC OR POISONOUS SUBSTANCES - Any waters containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly or by interaction with any other wastes, to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the sewage treatment plant, including but not limited to cyanides in excess of two (2) mg/l as CN in the wastes as discharged to the public sewer.

2020.10.3 PH RANGE AND CORROSIVE PROPERTIES - Any waters or wastes having a pH lower than 5.5 or higher than 9.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the sewage works.

2020.10.4 SOLID OR VISCOUS SUBSTANCES - Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the sewage works and treatment such as, but not limited to, diapers, feminine products, needles, ashes, cinders, cigarette or cigar butts, coffee grounds, food, dirt, sand, mud, cat litter, straw, plants, shavings, plastics, metals, glass, rags, clothing, feathers, tar, plastics, wood, whole blood, manure, hair, bones, animal byproducts or waste, fleshings, entrails, paper dishes, cups, milk containers, etc., either whole or ground by garbage grinders.

2020.10.5 HIGH TEMPERATURE LIMIT - Any liquid or vapor having a temperature higher than one hundred fifty (150) °F (65°C) at the building sewer.

2020.10.6 FATS, WAXES, GREASE OR OILS - Any water or waste containing fats, wax, grease, or oils, whether emulsified or not, in excess of one hundred (100) mg/1 or containing substances which may solidify or become viscous at temperatures between thirty-two (32) and one hundred fifty (150) °F (0 and 65°C).

2020.10.7 HEAVY METALS OR EXCESSIVE CHLORINE DEMAND - Any waters or wastes containing iron, chromium, copper, zinc, and similar objectionable or toxic substances, or wastes exerting an excessive chlorine requirement, to such degree that any such material received in the composite sewage at the sewage treatment works exceeds the limits established for such materials.

2020.10.8 PHENOLS OR ODOR-TASTE-PRODUCING SUBSTANCES - Any waters or wastes containing phenols or other taste- or odor-producing substances in such concentrations exceeding limits which may be established by the District as necessary after treatment of the composite sewage, to meet the

requirements of the State, Federal, or other public agencies of jurisdiction for such discharge to the receiving waters.

2020.10.9 SUSPENDED OR DISSOLVED SOLIDS - Materials which exert or cause unusual concentrations of inert suspended solids (such as, but not limited to, Fullers earth, lime slurries, and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).

2020.10.10 RADIOACTIVE WASTES - Any radioactive wastes or isotopes of such half-life or concentration as may exceed the limits set by State or Federal regulations.

2020.10.11 UNTREATABLE WASTES - Waters or wastes containing substances which are not amenable to treatment or reduction by the sewage treatment processes employed, or are amenable to treatment only to-such a degree that the sewage treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters.

2020.10.12 SURFACE RUNOFF OR GROUNDWATER - Surface runoff or groundwater.

2020.10.13 WATER SOFTENING UNIT WASTES - Any waste discharge resulting from the operation of regenerative-type water softening units.

2020.10.14 ODORIFEROUS SUBSTANCES - Any compound which will produce noxious odor, in the sewers or sewage treatment plant.

2020.10.15 DAMAGING OR HEALTH MENACING SUBSTANCES - Any material or quantity of material which will cause significant damage to any part of the sewerage system or abnormal maintenance or operation costs of any part of the sewerage system or become a nuisance or menace to public health.

2020.10.16 SWIMMING POOLS - It shall be unlawful for any person to discharge the contents of a swimming pool into a sanitary sewer except in the manner specified herein. The rate of out-flow shall not exceed one hundred (100) gallons per minute. Each swimming pool discharging into a sanitary sewer shall be equipped with a fixed air gap approved by the San Bernardino County Department of Building and Safety to preclude any possibility of a backflow of sewage into the swimming pool or piping system.

2020.10.17 INDUSTRIAL WASTEWATER - Any person desiring to discharge industrial wastewater into a public sewer of the District will be required, on request of the District, to submit a letter to the Superintendent presenting information as to the kind and amount of industrial wastewater produced and discharged by the industrial operations producing the wastewater. No industrial wastewater shall be permitted into the sewer system which will cause the District effluent discharge from the sewage treatment facilities to exceed the concentration limits set by the Regional Water Quality Control Board having jurisdiction in accordance with their latest resolution for discharge requirements. No industrial wastewater shall be discharged to the

public sewer system that exceeds the following chemical, physical and/or bacteriological requirements including but not limited to:

2020.10.17.1 Methylene Blue Active Substance concentration of 1.0 mg/l.

2020.10.17.2 Dissolved sulfides concentration of 0.1 mg/l.

2020.10.17.3 Five day Biochemical Oxygen Demand of 700 mg/l.

2020.10.17.4 Total dissolved solids of 500 mg/1 plus the yearly average dissolved solids in the water supply.

2020.10.17.5 Sodium-ion of 100 mg/1 plus yearly average sodium-ion in the water supply.

2020.10.17.6 Chloride-ion of 100 mg/l plus yearly average of the chloride-ion in the water supply.

2020.10.18 PUMPINGS FROM CHEMICAL TOILETS, SEPTIC TANKS, HOLDING TANKS, AND CESSPOOLS OR LEACH PITS - Pumpings from chemical toilets, septic tanks, holding tanks, and cesspools or leach pits, unless terms and conditions of the District are accepted and written permission granted. The discharge of these wastes to the sewerage works of the District shall only be permitted as herein after provided.

2020.10.18.1 A permit must be obtained from the District and the applicable fees paid.

2020.10.18.2 Pumpings shall be discharged into the sewerage works to provide maximum dilution and at a location specified by the District General Manager. The discharge shall be under the continuous supervision of a District employee.

2020.10.18.3 The discharge to the sewerage works shall not exceed a flow rate of 50 gallons per minute.

2020.10.18.4 The total septic tank and cesspool pumpings discharged to the sewerage works of the District shall not exceed 3,000 gallons in any twenty-four (24) hour period.

2020.10.18.5 Preference shall be given to acceptance of waste generated within District boundaries and those from outside the District will be accepted only when capacity to accept wastes has not been exceeded.

2020.10.19 PRIVATE SOURCES OF WATER - Properties utilizing private sources of water may not discharge into the sewage system unless granted a permit and agree to a monthly testing of the private water source. Section VI-A-2 of the January 20, 1977 agreement with the RUNNING SPRINGS COUNTY WATER DISTRICT, for WASTEWATER TRANSPORTATION, TREATMENT AND DISPOSAL, requires the sampling and chemical analysis of samples of all water sources that are disposed of into the

District's Public sewer system. Sampling is required at least every thirty days with tests acceptable to Running Springs County Water District (RSCWD), by a laboratory acceptable to RSCWD, at a time to coordinate with the RSCWD testing program with a copy of the test results to RSCWD.

2020.10.19.1 The use of private sources of water does not benefit the sewer service users of the District as a whole. The cost of the required sampling and testing shall be borne by the owner of the well or other private source of water. To assure compliance with the RSCWD requirements the District will accomplish said testing at the expense of the Owner.

2020.10.19.2 The District shall be allowed reasonable access to private sources of water for sampling in accordance with the current requirements.

2020.10.19.3 The full cost of testing plus a reasonable cost for sampling, as established by the District manager, shall be billed to the Owner of said private sources of water along with the regular billing for sewer service.

2020.20 CONTROL OF PROHIBITED WASTES - If any waters or wastes are discharged, or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in 2030.10 of this policy and which in the judgment of the Superintendent or District Representative may have a deleterious effect upon the sewage works, processes, equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the District may impose one or more of the following:

2020.20.1. Invoke Section 1000.80 of District policy;

2020.20.2. Require pretreatment to an acceptable condition for discharge to the public sewers;

2020.20.3. Require control over the quantities and rates of discharge;

2020.20.4. Require payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges.

2020.30 PRETREATMENT APPROVAL - If the pretreatment or equalization of waste flows is required, the design and installation of the plants and equipment shall be subject to the review and approval of the District and subject to the requirements of all applicable codes, ordinances, laws, and regulations.

2020.40 MAINTENANCE OF FLOW EQUALIZING SYSTEM - Where preliminary treatment or flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.

2020.50 TESTS AND MEASUREMENTS - All measurement, tests, and analyses of the characteristics of waters and wastes to which reference is made in this policy shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association.

2030.10 STATEMENT OF PURPOSE - The purpose of this section shall be to ensure that temporary sewage holding tanks may be installed and utilized under certain defined conditions so as not to create a nuisance or unhealthful condition.

2030.20 PROHIBITION OF SEWAGE HOLDING TANKS - Sewage holding tanks for the confinement of all sewage discharged from a dwelling, business establishment, or other facility, from which human waste may be discharged, are prohibited except where an exemption is granted by the District based upon conditions provided in 2030.30.

2030.30 CONDITIONS FOR AN EXEMPTION - An exemption to 2030.20 may be granted by the District provided the following conditions are met:

2030.30.1 The property for which the exemption is requested is within the boundaries of a district operating sewage treatment facilities, or

2030.30.2 The property for which the exemption is requested is within the boundaries of a sewering entity which has entered into the agreement required by 2050.40.

2030.30.3 The sewering entity of either 2050.30.1 or 2050.30.2 of this section has a specific plan and schedule authorized by its governing board to add sewage collector lines to the holding tank area within a three (3) year period of time and has so certified.

2030.30.4 For an existing dwelling, business establishment, or other facility not otherwise eligible for an exemption, an exemption may be granted by the District, in order to eliminate a hazardous condition or code violation where no other acceptable means of sewage disposal is determined to be practical.

2030.30.5 That an annual permit from the District be applied for and granted contingent upon:

2030.30.5.1 Obtaining all required and/or applicable agreements as per 2050.40 and 2050.50.

2030.30.5.2 Approval by the District that the standards adopted in 2050.70 have been met in a proposal submitted by the property owner for review.

2030.30.5.3 That any required cash bond be posted with the appropriate agency.

2030.40 REQUIRED AGREEMENTS FROM DISTRICT OR SEWERING ENTITY - The following written agreements are required to be satisfactorily completed and signed by a responsible person officially representing the sewering entity, and placed on file with the District prior to issuance of the permit.

2030.40.1 That the property is within the boundaries of a District or sewering entity.

2030.40.2 That the district or sewering entity agrees to receive sewage and waste water from the applicant's holding tank into its sanitary sewer system.

2030.40.3 That the number of sewage holding tanks permitted by the district or sewering entity is not exceeded by the addition of the applicant's proposed sewage holding tank.

2030.40.4 That the district or sewering entity has plans to add sewage collection lines to the holding tank area within a three (3) year period of time.

2030.40.5 That the District shall hold any bond required, utilize said bond to cover expenses to render such service as necessary to eliminate a hazardous condition.

2030.50 Required Agreements from the Property Owner(s) - The following written agreements are required to be satisfactorily completed and signed by the property owner(s), and placed on file with the District prior to issuance of the permit.

2030.50.1 That all sewage of the property shall be discharged to the approved holding tank.

2030.50.2 That a written contract with a septic tank pumper shall be obtained to service the property on a regularly scheduled basis as per 2050.80.

2030.50.3 That in the event the contract with the septic tank pumper is terminated by the pumper, the property owner agrees to notify the District and obtain another contract to achieve compliance with this section.

2030.50.4 That if the property owner fails to correct problems or maintain the system at the proper level of sanitation within forty-eight (48) hours of being given notice of problems or violations of health standards, the property owner agrees to allow the District to enter the property, correct the problem, and to maintain the system at the expense of the property owner.

2030.50.5 That the property owner understands that the appropriate Regional Water Quality Control Board may adopt rules or regulations that would prohibit or curtail the use of holding tanks, thereby rendering the property unavailable for occupancy by the owner until sewers are available and connected, and if such action is taken by any agency outside the control of the District, the property owner shall hold the District harmless for the results of such action.

2030.50.6 That as soon as sewage collection lines are available for service to the property, the owner shall connect his building sewer thereto and abandon his sewage holding tank in accordance with the provisions of 2050.90.

2030.50.7 That if the property is sold, the new property owner must be notified of these arrangements by the seller, including that a permit from the District is required to occupy the property, and that such permits are nontransferable.

2030.60 BONDS - A cash bond of up to one hundred dollars ($100) may be required to be posted with the District to be utilized in the event that that the District is required to correct problem(s) or maintain the system, if after forty-eight (48) hours of being given notice the property owner has failed to satisfactorily act.

2030.70 STANDARDS - The standards for the design, criteria, location, and installation of the sewage holding tank shall be those contained within the Department of Building and Safety's handout titled "Guidelines for Design and Installation of Temporary Sewage Waste Holding Tanks", incorporated herein by reference, and of which three (3) copies are on file in the Office of the Clerk of the Board of Supervisors.

2030.80 CONTRACT WITH A SEPTIC TANK PUMPER - As per 2050.50, a contract with a septic tank pumper shall be placed on file with the District and shall consist of the following:

2030.80.1 A maintenance agreement providing for a minimum of one inspection of the sewage holding tank per month with servicing (pumping) as necessary.

2030.80.2 The pumper shall provide servicing as necessary on an emergency basis.

2030.80.3 That in the event the maintenance contract is cancelled or property ownership changes, the septic tank pumper shall immediately advise the District.

2030.80.4 The Septic Tank Pumper shall (1) have a valid operating permit issued by the County of San Bernardino, and (2) have a valid Trucker's Discharge Permit issued by the District, and (3) shall comply with the Rules and Regulations of the County and the District rules and regulations.

2030.90 ABANDONMENT OF SEWAGE HOLDING TANKS - At such time as the District orders the abandonment of the sewage holding tank or connection is made to sanitary sewers, the permitee operating a sewage holding tank shall abandon his holding tank by having the contents removed from the property by either (1) removing the tank from the property or (2) by backfilling with a material acceptable to the Department of Building and Safety. The abandonment operation shall be conducted under a valid permit from the Department of Building and Safety, who shall notify the District upon the acceptable completion of the abandonment.

2030.100 VIOLATIONS -

2030.100.1 The District Manager or his representative may at any and all reasonable times enter any and all places, property, enclosures, and structures for the purpose of making examinations and investigations to determine whether any provisions of this chapter are being violated.

2030.100.2 It shall be unlawful for any person to have upon his property a sewage holding tank which constitutes either a nuisance, a health hazard, and/or a pollution hazard.

2030.100.3 Every person who violates or fails to comply with any of the provisions of this section or of any order of the District issued pursuant to this section or who procures, aids, abets in any such violation or failure, is guilty of a misdemeanor punishable by a fine not exceeding one thousand dollars ($1,000), or by imprisonment in the County Jail not exceeding one (1) year, or by both.

2030.100.4 The continued existence of any violation of this chapter, or of any order of the District issued pursuant to this section, beyond the time stipulated for compliance with its provisions, constitutes a separate and distinct offense.

2030.100.5 Anything done, maintained, or suffered in violation of any of the provisions of this section is a public nuisance dangerous to health, and may be enjoined or summarily abated in the manner provided by law. Every public office or body lawfully empowered so to do shall abate the nuisance immediately.

2030.100.6 It shall be unlawful for a person to install, operate, or maintain a temporary holding tank without a valid, unrevoked permit to do so from the District.

2030.110 PERMIT FEE - The permit fee for the permit required by the District to install and operate a temporary sewage holding tank shall be as specified in the Schedule of Fees contained in 2080.50.

2050.10 APPLICATION FOR SEWER SERVICE - A property owner or his agent may make application for sewer service at the District office. An application card shall be filled in and signed by the property owner.

2050.20 APPLICATION BY NON-OWNER - A non-property owner may make application for sewer service at the District office, however, in the event of rental of residences, lots or commercial property the owner shall be the party billed for water and sewer services. The owner shall be liable for all services of the District regardless of the occupancy of the premises by tenants.

2050.30 UNDERTAKING OF APPLICANT - Such application will signify the Owner's willingness and intention to comply with this policy and other ordinances or regulations relating to sewer service and to make payment for sewer service required.

2050.40 PAYMENT FOR PREVIOUS SERVICE - An application will not be honored unless all accounts with the District have been paid in full by the Applicant.

2050.50 APPLICATION FOR CONNECTION TO SEWER SYSTEM - A property owner or his agent shall make application for connection to sewer system. Applicant shall give a description of the character of the work proposed to be done, the location, ownership, occupancy, and use of the premises to be served, and the name and address of the person who shall make the connection. The District may require plans, specifications, or drawings and such other information as may be deemed necessary to insure compliance With District's Rules and Regulations. If the District determines that the plans, specifications, drawings, descriptions, or information furnished by the Applicant are in compliance with the District's policy, he shall issue the permit applied for upon payment of the required fees pursuant to Section 10.0 hereof.

2050.60 COMPLIANCE WITH PERMIT - After approval of the application, evidenced by the issuance of a permit, no change shall be made in the location of the sewer, the grade, materials, or other details from those described in the permit or as shown on the plans and specifications for which the permit was issued except with written permission from the District's authorized representatives.

2050.70 AGREEMENT - The Applicant's signature on an application for any permit shall constitute an agreement to comply with all of the provisions terms, and requirements of this Policy, District Ordinances, and other Rules and Regulations of the District, and with the plans and specifications he has filed with his application, if any, together with such corrections or modifications as may be made or permitted by the District. Such agreement shall be binding upon the Applicant and may be altered only by District upon the written request for the alteration from the Applicant.

2050.80 ALL WORK TO BE INSPECTED - All public sewer systems constructed within the District must be inspected by the District or by an inspector acting for the District to insure compliance with all requirements of the District. Twenty-four (24) hour notice shall be given for inspection prior to required inspection.

2050.90 SIZE AND LOCATION - The District reserves the right to determine the size of sewer laterals and their location with respect to the boundaries of the premises to be served. The

laying of Owner's building sewer to point of connection shall not be done until the location of the sewer lateral has been determined and/or approved by the District.

2050.100 RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL SEWER SERVICE CONNECTION - It shall be unlawful to maintain a connection except in conformity with the Uniform Plumbing Code and when property provided with sewer connection is divided, each sewer connection shall be considered as belonging to the lot or parcel of land which it directly enters.

2050.110 CONDEMNED WORK - When any work has been inspected and the work condemned and no certification of satisfactory completion given, a written notice to that effect shall be given instructing the Owner of the premises or the agent of such Owner, to repair the sewer or other work authorized by the permit in accordance with this Policy.

2050.120 LIABILITY OF COSTS - Both the Owner and the person making the connection shall be liable to the District for all fees costs, and expenses incident to the installation and connection of any sewer or other work for which a permit shall be issued. The Owner shall indemnify the District from any loss or damage that may directly or indirectly be occasioned by the work.

2050.130 SEWERS OUTSIDE DISTRICT - Permission shall not be granted to connect any lot or parcel of land outside District to any public sewer in or under the jurisdiction of the District unless an agreement therefore is obtained. The Applicant shall first enter into an agreement in writing whereby he shall bind himself, his heirs, successors, and assigns to abide by all District Rules and Regulations in regard to the manner in which such sewer shall be used, the manner of connecting therewith., and the plumbing and drainage in connection therewith and also shall agree to pay all fees required for securing the permit and a monthly or annual sewer service fee in the amount set by the District for the privilege of using such sewer.

2050.140 ENVIRONMENTAL CONCERNS - The planning process for all projects which may have a significant effect on the environment, involving discretionary decision-making on the part of the District, shall comply with the objectives and guidelines implemented by Resolution No. 74-4-5 on April 5, 1974.

2060.10 SEWER SERVICE WITHIN DISTRICT - The schedule for charges to be collected by the District for Sewer Service within the boundaries of the District are hereby fixed as follows:

TYPE OF SERVICE	SERVICE CHARGE PER MONTH
Residential:	
Each single family dwelling	Basic charge per unit
Each unit in a duplex	per unit $35.00
Apartment Building	per unit $35.00
Commercial, Industrial, Schools and Camps:	
Computed by the number of "equivalent units" as determined by the District Manager subject to the approval Of the Board of Directors	Basic charge per unit

2060.20 SEWER SERVICE OUTSIDE OF THE DISTRICT - The schedule of charges to be collected by the District for sewer service to users outside of the boundaries of the District are hereby fixed as follows:

2060.20.1 Users within an operating district or public entity shall be charged per the basic agreement between the District and the entity.

2060.20.2 Other users shall be charged in accordance with the terms of the individual service agreement with each user.

2060.30 SEWER SERVICE TO TRAILER SEWAGE DISPOSAL STATIONS - At the option of the District Manager, subject to the approval of the Board of Directors: sewer service may be provided to the owner of an approved Trailer Sewer Disposal Station:

2060.30.1 At no charge if the use of the station is offered as a public service, that is, at a nominal or no charge.

2060.30.2 Other owners shall be charged in accordance with the terms of the individual service agreement with the owner.

2060.40 BASIC CHARGE PER UNIT - The basic charge per unit, as applicable to the service charges above, shall be $35.00 per month.

2060.50 MINIMUM MONTHLY CHARGE - The basic monthly charge will be paid each month by each property that has a structural improvement therein and a connection to the Districts sewer system. This charge will be paid regardless of the occupancy of structure. This policy reflects the need for the District to spread the cost of maintaining the Districts sewer system, infrastructure, and costs paid to treat the sewage produced, over all the properties connected to it.

2060.60 BILLING - Sewer service charges for all users shall be charged and payable on a 12 month per year basis whether or not the facilities are occupied. The billing period shall be at the option of the District.

2060.70 DUE DATES - Sewer service charges shall be due and payable at the office of the District on the date of mailing the bill to the property owner or his agent, as designated in the application, and shall be delinquent the 22nd of the month following the close of the billing cycle. Service may be discontinued after a second billing cycle occurs, if payment is not made. Delinquent accounts will have a "PAST DUE" notice on the next month's bill and the date that the past due payment must be made to avoid discontinuance of service.

2060.80 PAYMENT OF BILLS - Bills for sewer service shall be rendered at the end of each billing period. Bills shall be payable upon presentation. Office hours will be maintained for the convenience of customers and the public Office hours will be conspicuously displayed outside the District Office.

2060.90 BILLING OF SERVICE - Separate bills shall be rendered for each service installation.

2060.100 DELINQUENT ACCOUNT LATE CHARGE - Accounts not paid on or before the date in which they become delinquent may be subject to a late charge of $1.50 per month.

2060.110 DELINQUENT ACCOUNT INTEREST CHARGE - Accounts not paid on or before the date in which they become delinquent may be subject to an interest charge of one and one-half (1½%) percent per month on the unpaid balance.

2060.120 OWNER'S GUARANTEE - Excepting those properties where sewer service charges begin on or before January 1, 1977, by order of the Board of Directors, the sewer service charge begins when a building sewer has been connected to the District's sewer system, provided water service is available; otherwise, the sewer service charge shall not begin until water service is available. The person signing the application form for sewer service shall be held liable for sewer service charges until the District is notified in writing to transfer the account to another property owner.

2060.130 BILLS AGAINST PROPERTY - Any and all bills rendered for the use of sewer service shall be deemed to be indebtedness against the property and, at the option of the District, legal action may be taken, making unpaid sewer bills a lien against the property.

2060.140 OWNER-TENANT AGREEMENT - Where the Owner rents his premises to a Tenant. The bill for services will continue to be mailed to the Owner. The Tenant and the Owner may make an agreement regarding payment of the charges and the District may communicate to the Tenant current amount due and accept payment for the property from the Tenant. Said Tenant / Owner agreement does not relieve the owner of the responsibility of unpaid bills on the property.

Sewer Rate Pricing Section 2060.10 Approved by RESOLUTION NO. 2014-12-18 12/18/2014.

ARROWBEAR PARK COUNTY WATER DISTRICT

Rules and Regulations Handbook

POLICY TITLE: Refusal or Discontinuance of Sewer Service & Collections

POLICY NUMBER: 2070 **Approved 7-17-2014**

2070.10 SERVICE REFUSED OR DISCONTINUED - Service may be refused or discontinued to any premise for the following reasons:

2070.10.1 Where apparatus or appliances are in use which might endanger or disturb the service to other consumers.

2070.10.2 For non-compliance with this policy or any other resolution, ordinance or regulation relating to the sewer service.

2070.10.3 To protect the District facilities.

2070.10.4 For non-payment of sewer service fees or charges.

2070.10.5 In addition to discontinuation of sewer service, violation of District Rules and Regulations or Ordinances shall be a misdemeanor, punishable by law.

2070.20 SUIT - All unpaid rates, charges, and penalties herein provided may be collected by suit.

2070.30 COSTS - Defendant shall pay all costs of suit and a reasonable amount for attorney fees as fixed by the court in any judgment rendered in favor of the District.

2070.40 BILLS AGAINST PROPERTY - Any and all bills rendered for the use of sewer service shall be deemed to be indebtedness against the property and, at the option of the District, legal action may be taken, making unpaid sewer service bills a lien against the property.

2070.50 LIENED PROPERTY ACCRUAL OF CHARGES – Monthly charges, penalties, and interest will continue to accrue to date of payment plus attorneys' fees and other costs allowed by law.

2080.10 CONNECTION TO SEWER SYSTEM PERMIT AND INSPECTION FEE - For each connection of a building sewer to the public sewer system, there shall be a combined permit and inspection fee of Twenty eight hundred and fifty dollars ($2,850).

2080.20 MAIN SEWER CONNECTION CHARGE - Ordinance No. 1-75 as adopted 5-2-75 provides for computing and collecting special sewer connection charges for connection to sewer mains and facilities constructed pursuant to special assessment proceedings.

1080.20.1 It is hereby found and determined that it is necessary to reimburse the District for moneys advanced and to establish conditions of equality as to properties either not assessed or, by later occurring facts, deemed to have been under-assessed in the special assessment proceedings conducted by the Arrowbear Park County Water District for the purpose of constructing sewer mains and facilities to serve properties within the assessment districts created therefore when such non-assessed properties are permitted to connect to such sewer mains and facilities. "Non-assessed properties" include, but are not limited to, portions of larger parcels which, at the time of assessment levy, were expected to continue in residential use by a single family but which are thereafter divided or segregated for separate residential use, either alone or in combination with other property, and may include properties which, at the time of the assessment levy, were owned by a governmental entity but which thereafter became privately owned "Non-assessed properties" also include acreage whose later parceling or subdivision results in a larger number of direct connections to such main than originally allocated to the acreage at the time of assessment.

1080.20.2 No permit shall be issued allowing any person to connect, or cause to be connected, any property to any sewer main or facility constructed pursuant to a special assessment proceeding created for the purpose of financing the cost of such main and facility until a special connection charge in an amount computed in the manner herein after provided has been paid to the District for the privilege of so connecting.

1080.20.3 The connection charge provided for by this ordinance shall be computed by the District Manager based upon what the share of the cost of said sewer main and facilities of the connecting property would have been had it been assessed in said proceeding, using the same formula used in the assessment districts for determining the assessments.

1080.20.4 This policy shall in no way effect any obligation which may now or hereafter exist pursuant to any other ordinance of the Arrowbear Park County Water District making connection to the sewer system of the District mandatory or, fixing a connection charge of general application.

1080.20.5 Nothing contained herein shall be construed as requiring the District to maintain any streets or roadways, public or private. The district does not maintain, nor does it take the responsibility for, maintenance of any streets, or roadways, whether existing or which may be added by any developer.

2080.30 PLAN CHECKING REQUIRED - Plans and Specifications for sewerage facilities to be designed and constructed by any person or firm other than the District, where said facilities are to be conveyed to the District, shall be submitted together with all other required documents to the District for plan checking with the required plan checking fee as herein specified. The application for Plan Checking shall be made on the standard form furnished by the District.

Plan Check Fee Schedule -

Main Line Sewer, including Manholes, Cleanouts, Tees

Quantity	Checking Fee
1000' or less	$150 min
1001' – 3000'	$150 + $.12/ft over 1000'.
3001' – 5000'	$390 + $.08/ft over 3000'.
5000' – 7000'	$550 + $.04/ft over 5000'.
7001' & up	$630 + $20/1000' or portion thereof.
Package sewage lift stations	$250 each.
Sewage treatment plants	1.3 percent of construction cost.
Special design lift stations	1.3 percent of construction cost

2080.30.1 Rechecking of plans after plans have been approved, by District Engineer due to design or quantity changes or modification in specifications, shall be performed on a cost basis. Rechecking fee shall be paid prior to approval of changes.

2080.40 INSPECTION REQUIRED - Prior to the commencement of construction of sewage facilities for which plans have been approved, the Owner or his agent shall make an application for construction permit to the District. The fees required for inspection shall accompany said application. The application for construction permit shall be made on the standard form furnished by the District. In addition to the inspection fee listed below, the Owner or his agent shall deposit with the District, along with said application, $250 to cover the cost of any reinspection, approved Saturday, holiday and overtime inspection, and time and mileage when a request is made by the Owner or his agent for inspection and the work is not ready for inspection. The balance of the $250 will be refunded at the time the work is accepted by the District. If the $250 is depleted before the work is completed, the Owner or his agent shall deposit another $250 with the District for this purpose before any more inspection will be performed by the District.

Inspection Fee Schedule –

Main line sewer, including manholes, cleanouts, tees, and laterals.

Quantity	Inspection Fee
1' – 200'	$200 min
201' – 1000'	$200 + $.65/ft over 200'.
1000' & up	$720 + $.50/ft over 1000'.
5000' – 7000'	$550 + $.04/ft over 5000'.
Sewage lift stations	3.5 percent of construction cost
Sewage treatment plants	3.5 percent of construction cost

2080.40.1 REINSPECTION - Where extensive reinspection is required due to test failures, damage, litigation or other causes beyond normal construction, the cost of reinspection shall be paid by the Owner of his agent at the actual cost incurred.

2080.40.2 SATURDAY, HOLIDAY AND OVERTIME INSPECTION - Inspection for work on Saturday and holidays will be provided if inspectors are available and one week advance notification is given by the Owner or his agent. All costs for Saturday, holiday and overtime inspection above straight time salary cost shall be paid by the Owner or his agent in addition to the above inspection fees.

2080.50 FEE FOR DISCHARGE OF PUMPINGS FROM CHEMICAL TOILETS, SEPTIC TANKS, HOLDING TANKS, AND CESSPOOLS OR LEACH PITS TO SEWERAGE WORKS - Prior to discharging pumpings to the District's sewerage works, the discharger shall make an application and pay the applicable fees as set forth in the following fee schedule:

Discharge Fee Schedule –

ANNUAL PERMIT FOR TEMPORARY SEWAGE HOLDING TANK, in accordance with 2040 of these Rules and Regulations is $48.00/year.

TRUCKER'S DISCHARGE PERMIT, in accordance with 2040 of these Rules and Regulations
Initial application fee and first year permit is $25.00.
Annual renewal of permit, if not elapsed is $15.00.

DISCHARGE FEE, per load of 1,500 gallons, or less, payable by the Trucker to the District prior to dumping. Truckers may, with Board Approval, establish an open account payable on a monthly basis.

Under 30-day agreement between property owner and District.	No Charge
Under Temporary Sewage Holding Tank agreement between property owner and District	$5.00

	Under agreement between property owner and District when source is within District Boundary but sewer line is not available.	$5.00
	Under agreement between property owner and District when source is outside of District Boundary, subject to the provisions of 2040.	$25.00

2080.60 OTHER FEES - The various fees and requirements stated herein are only those required by and payable to the Arrowbear Park County Water District. The District will not be responsible for notification of the property owner or contractor of any permit(s), fees, or other requirements of any other agency as may also apply.

2100.10 SCOPE - All sewers, sewage lift stations, treatment facilities and appurtenances to be owned, maintained, and/or operated by the District shall be designed according to the criteria set forth in this section. The same criteria shall hold for systems served but not owned, maintained and/or operated by the District insofar as said criteria may affect the efficiency of the District's system.

2100.20 DESIGN COMPETENCE - All District facilities shall be designed by professional engineers according to accepted practice in the sewerage field.

2100.30 SEWAGE LIFT STATIONS AND INVERTED SIPHONS - Every effort should be made, within economic reason, to avoid sewage lift stations, inverted siphons, and exposed piping. Their use will be allowed only upon approval by the District.

2100.40 OVER SIZING REQUIRED BY DISTRICT - The District may find that the capacity of certain new sewers and pump stations within an area under development should be increased to accommodate existing or future additional development. In such a case, the quantity of additional flow shall be determined by the District's Engineer. The flow resulting from the addition of the developer's and the District Engineer's "computed peak flow" shall be used as the basis of design. The District shall pay for any resulting increase in size or depth.

2100.50 LEGAL ACCESS - Each lot to be served by sewer shall abut a public street or recorded easement containing a sewer, or be provided with permanent legal access to such a sewer. The location of the street, easement, or legal access shall permit gravity flow from the lot to the sewer main.

2100.60 ADOPTION - Criteria for design, technical specifications, and standard drawings for the construction of sewerage facilities shall be as recommended by the District Engineer and approved by the Board of Directors. All documents shall be on file in the office of the District.

2100.70 AVAILABILITY - Suitably bound copies of the subject documents shall be available at the office of the District for sale at prices established by the District Manager. Copies shall be numbered, purchaser's names and addresses recorded, and reasonable effort made to distribute revisions to those holding copies. The District Manager may establish additional charges to cover the costs when revisions are extensive.

2100.80 WORK SCHEDULE SUBMISSION - One week prior to starting construction, the Contractor shall submit to the District, Engineer and Inspector a work schedule which shall describe the sequence, time and method of operation he plans to use on the job. The Engineer reserves the right to alter this schedule where he feels the intent of the contract could not be carried out. It shall be the Contractor's responsibility to up-date this schedule once a month showing work completed and work in progress. The Contractor shall provide the District, Engineer and Inspector copies of this updated schedule.

2100.90 START OF CONSTRUCTION NOTIFICATION - The Contractor shall notify the District, District Engineer, and Inspector one week in advance of when he plans to start construction.

2100.100 DEVIATIONS - Deviations from any of the criteria adopted herein may be permitted upon written request to and approval by the District.

2110.10 FLOWS - The flow used for the design capacity for sewers and sewage lift stations shall be the "computed peak flow," which shall be determined on the basis of projected land use and average daily per capita flow. The average daily per capita flow for the various geographical areas is as follows:

Mountain areas	80 gpcd
Valley and desert areas	100 gpcd

Sewer flows shall be computed from projected land use and population density over the area tributary to the sewer reach under consideration, the following peaking factors shall be applied to the sewer flows as determined above:

Average Flow (mgd)	Peak Factor
0.0 - 0.01	4.0
0.05	3.4
0.10	3.2
0.20	3.0
0.30	2.8
0.50	2.7
0.8	2.6
1.0	2.5
1.5	2.4
2.5	2.3
4.0	2.2
6.0	2.1
10.0	2.0
15.0	1.9
30.0	1.8

Design flows from commercial, industrial, hotels, motels, campgrounds, etc. shall be determined in consultation with the District.

2110.20 CAPACITY FORMULA - Capacity of all sewers shall be determined by the use of the "Manning" formula:

$$Q = A \frac{1.486}{n} r^{2/3} s^{1/2}$$

where: Q = flow capacity cfs
n = coefficient of roughness
r = hydraulic radius
s = slope
A = cross sectional area

2110.30 ROUGHNESS COEFFICIENT - The roughness coefficient used in design shall be n = .013 for all sewers. If any manufacturer claims that the n factor of his pipe should be less, he must submit documented evidence to substantiate his claims. The reliability of such evidence shall be determined by the District.

2110.40 PIPE SIZE - All gravity sewer pipes up to and including 8-inch diameter shall be sized to carry the peak flow when half full. This requirement shall apply regardless of the cross section shape of the sewer. All larger sewer pipes, except those designed as laterals, shall be sized to carry the peak flow when 75% full. This requirement shall apply regardless of the cross section of the sewer. No sewer main with an internal diameter less than 8 inches shall be installed without prior written approval of the District.

2110.50 SEWER SLOPES AND VELOCITIES - The minimum allowable slope is that which will give a velocity of not less than two feet per second when the sewer is flowing half full. The purpose of this requirement is to prevent sewage sedimentation and subsequent generation of corrosive gases. The velocity shall be determined by means of the "Manning Formula": V = [1.485 r 2/3 s 1/2]/n. In sewers of uniform size passing through manholes without a major change in direction or Slope, there shall be no arbitrary drop between inlet and outlet. In sewers which change slope but do not change direction or size, the slopes of the incoming sewers shall be carried through to the outlet of the manhole. Where diameters change, and in junctions involving major direction or slope changes, the various elevations shall be chosen to match water surfaces under average flow conditions at ultimate development of the tributary area (not under maximum flow conditions).

2110.60 MINIMUM SLOPES - Minimum slopes to be used with various pipe sizes are listed below:

Diameter Inches	Slope ft./ft.
6"	0.0060
8”	0.0040
10"	0.0029
12"	0.0022
15"	0.0016
18"	0.0012
21"	0.0010
24"	0.0008

2110.70 EXCEPTIONS TO MINIMUM SLOPES - Where topography limits or prevents the use of minimum slopes as described herein, the District may require an engineer's report. This report shall describe the alternatives and their economies. The report shall also include an evaluation of prospective maintenance and sewer gas problems. Greater minimum slope than those specified may be required where the presence of hydrogen sulfide may be detrimental to and affect the life of the sewer pipe being used.

2110.80 SLOPES IN FORCE MAINS - In force mains a continuous uphill slope shall be provided from the pressure sources to the outlet. The intention is to avoid formation of air pockets.

2110.90 LOCATION - All sewer mains shall be located in public streets or recorded easements such that each lot within a development can be served by gravity flow.

2110.100 CURVED SEWERS - Curvilinear vertical and horizontal alignments will be permitted under the following conditions:

2110.10 No more than one horizontal circular curve and one vertical curve shall be permitted between any two manholes. The curve may be a combination horizontal and vertical, but in no instance, may there be more than one vertical and one horizontal curve between two manholes.

2110.20 At least one end of the curve shall terminate in a manhole.

2110.30 No Sewer on a curvilinear alignment shall be less than 8-inch diameter.

2110.40 The radius of curvature is not less than 125 feet. A shorter radius of curvature may be used upon approval of the District, where shorter than normal length pipe is used.

2110.50 The deflection of joints shall not exceed that recommended by the pipe manufacturer.

2110.110 SEWER UNDER STRUCTURES - No main sewer shall be located beneath a structure except as approved in writing by the District.

2110.120 STRUCTURAL INTEGRITY - Provisions shall be made in all cases to preserve the structural integrity of the pipes, conduits, or structures affected.

2110.130 DEPTH OF SEWER - Permission from the District must be obtained if the following minimum depths cannot be met. In general, the load on the pipe must be considered and adequate precautions taken to protect it either by means of encasement supports or added strength.

Minimum Cover of Pipe for Various Locations

In public streets in pavement	5 feet (service to properties permitting)
In public street parkways	5 feet where possible
Lateral sewer (at curb or edge of pavement)	5 feet
Stream crossing	Below scour line in pipe easement

2110.140 BUILDING LATERALS - A building lateral serving a single family dwelling or equivalent shall be at least 4 inches in inside diameter. Building laterals shall conform to Standard Drawings E-9, E-10 and E-11 and Section 3.13 of the Technical Specifications.

2110.150 SPECIAL SEWER DESIGN CONDITIONS - When it is necessary to construct sewers and appurtenances in areas where a potential erosion hazard exists, individual design considerations shall be given to provide the additional protection to the sewer facilities

to prevent their damage. Special design considerations can be applicable to stream and canyon crossings, parallel construction to stream beds, construction on steep slopes requiring special anchorage and shallow, sewer construction in roadways. Concrete encasements, cut-off walls, special backfill material (soil-cement) and special erosion control facilities may be required.

2110.160 CLEARANCE FROM OTHER UTILITIES - Special care shall be exercised in locating sewer lines near other utilities and especially water lines. Sewer lines shall, wherever possible, be located below water lines and where parallel installations occur, a five-foot separation maintained. Separations and special construction shall conform to Standard Drawing E-1.

2110.170 RESTRICTION ON USE OF ASBESTOS CEMENT SEWER LINES - Asbestos cement sewer pipe shall not be approved for use below an elevation of 4,000 feet above sea level without special authority of the District and then only when special conditions warrant its use.

2120.10 MANHOLE LOCATION AND SPACING - Manholes shall be located at all junctions, all changes in direction (except curved sewers), and all changes in pipe size. Where the distance between manholes required for the foregoing reasons exceeds 350 feet, good judgment should be used in placing intermediate manholes at points of probable sewer intersections, at beginning or end of curves, or lacking other reasons, at approximately equal intervals. In general, the maximum of 350 feet should be observed. Manholes shall conform to Standard Drawings E-4, E-5, or E-6.

2120.20 SHALLOW MANHOLES - Manholes 3 feet or less in depth above the shelf shall be of special design.

2120.30 CLEANOUTS - Dead-end sewers not over 175 feet in length shall terminate in standard manholes or cleanouts. Cleanouts shall be brought to ground surface in a long radius or two 45° angles with a full sewer diameter opening. Cast-iron frame and cover shall be provided. Dead-ends over 175 feet shall terminate in standard manholes unless future extension of said dead-end will include a manhole within 350 feet, in which case a temporary cleanout is permitted. Cleanouts shall conform to Standard Drawing E-8 and Section 4.0 of the Technical Specifications.

2120.40 DROP MANHOLES - Whenever possible, sewers shall be brought into manholes without a drop. Where the invert of an incoming sewer is above the top of an outlet sewer, a drop manhole will be required and shall conform to Standard Drawing E-6 and Section 4.0 of the Technical Specifications.

2120.50 FRAME AND COVER - All manholes and cleanouts shall have cast-iron frames and covers. Frames and covers shall conform to Standard Drawings E.-7 and E-8 and Section 4.0 of the Technical Specifications.

2130.10 GENERAL - Sewage lift stations shall only be utilized where it is impossible to provide gravity flow to interceptor sewers, trunk sewers or other portions of the collection system. The use of sewage lift stations to provide service to ten or less lots or parcels of land will not be permitted. The use of underground factory-built units is desired and the use of reinforced concrete structures is discouraged and masonry block structures are not permitted. Sewage lift stations shall be located in areas accessible to both men and equipment and upon land which legal access is provided and for which a permanent easement or title is recorded. Where structures above ground are required, the structure shall be compatible with the surroundings.

2130.20 CAPACITY - Capacity of the pumps shall be sufficient to handle ultimate peak flows from the tributary area with the largest pump out of service. If areas outside the proposed development may best be sewered to a sewage lift station, the District reserves the right to order over sizing of such facilities and providing reimbursement to the developer for the cost increment of the additional construction. The wet well storage shall be sized to be compatible with pump capacity and to eliminate frequent pump cycling.

2130.30 STANDBY POWER - A standby generator shall be provided where, in the opinion of the District, potential hazard to the health and safety of the people in the immediate area due to overflow is imminent or the normal energy source is subject to outages. The capacity of the generator shall be sufficient to handle peak flows.

2130.40 PUMPS AND MOTORS - At least two pumps or ejectors shall be provided at each lift station. Pump or discharge shall be no less than four inches in diameter. The pump shall be so placed that under normal operating conditions it will operate under a positive head at the suction inlet. The speed of pumps and motors shall be no greater than 1,760 rpm.

A separate sump pump shall be provided in the lift station structure to remove leakage or drainage with the discharge into the wet well above the high water level.

Ejection station shall have two (2) sewage pots, two (2) receiver type compressors and one (1) air storage tank.

2130.50 STRUCTURE - The wet well or manhole shall be completely separated from the main sewage lift station structure. The design of the sewage lift station structure shall be done by qualified engineers. Provisions within this structure shall be made to facilitate removing of pumps, motors and other equipment. Suitable stairways shall be provided for convenient access and all requirements of the State Division of Industrial Safety shall be complied with in the manufacturing of the unit, provisions for access, and for the protection of persons and property from mechanical or electrical equipment.

2130.60 ELECTRICAL EQUIPMENT - All electrical starters, switches, lights, motors, fixtures, controllers, and instruments shall be enclosed and constructed in accordance with the NEC's, and U.L.'s specifications to meet the hazardous conditions anticipated. The Health and Safety Code of the State of California shall also be met. All starters shall be of the magnetic type and shall be provided with hand-off

automatic selector switches. The motor starters shall be operated automatically from a wet well liquid level control. Controls of the air purging type are required. Standby equipment shall be started automatically upon power failure.

2130.70 VENTILATION - Adequate ventilation shall be provided for all pump stations. Where the pump pit is below the ground surface mechanical ventilation is required, so arranged as to effectively ventilate the dry well and also the wet well if screens or mechanical equipment requiring maintenance or inspection is located in the wet well. The ventilation equipment should have a minimum capacity of six turnovers per hour under continuous operation. With intermittent operation, a two-minute turnover should be provided. Equipment shall start automatically with door opening.

2130.80 GATE VALVES - Gate valves shall be placed on suction and discharge lines of each pump. A lever and weight operated swing check valve shall be placed on each discharge line between the gate valve and the pump.

2130.90 AIR INJECTION - An air compressor to inject air into the force main may be required by the District depending upon an analysis of possible sulphide conditions.

2130.100 CATHODIC PROTECTION - Steel fabricated factory units shall be provided with some means of cathodic protection.

2130.110 ALARM - A high water alarm circuit shall be provided to permit transmission of high water level indication over leased telephone lines. The circuit shall be complete to and including terminal point for leased lines at station.

2130.120 DEHUMIDIFIER - An electric dehumidifier shall be provided operating on a refrigeration cycle and automatically controlled by an adjustable humidistat.

2140.10 Plan Preparation - Plans prepared for additions to the District's sewerage system and submitted to the District for approval shall be in substantial form and contain the information as herein set forth.

2140.10.1 Drawings shall be in pencil or ink on paper or in ink on linen.

2140.10.2 The General Notes shall appear once on the first plan and profile sheet.

2140.10.3 Each sheet shall have a title block in the lower right hand corner.

2140.10.4 Each sheet shall have a North arrow.

2140.10.5 A key map having a scale of 1" = 300' or larger shall be shown on the first sheet of each set of drawings. Said key map shall show all sewers, their sizes, manholes and appurtenances in their scaled relation to one another. All roads shall be shown.

2140.10.6 Plan and profile sheets shall have a scale of 1”= 40' horizontal and 1" = 4' vertical, or 1" = 50' horizontal and 1" = 5' vertical, or 1" = 80' horizontal and 1" = 8' vertical. Double plan and profile sheets may be used.

2140.10.7 At least one bench mark shall be shown and/or described on each sheet.

2140.10.8 The profile shall show the size of pipe; the type of pipe; the pipe strength; manhole center location by station; invert; elevation of sewer pipe at manhole center; the existing ground elevation or the proposed finish ground elevation; the grade of pipes in percent; the depth, size, nature and location of all other utilities which cross over or under the sewer; location and nature of special construction such as the encasement or bored casings; and any other information pertinent and necessary to the proper construction and recordation of the sewers.

2140.10.9 Show the tract and lot numbers of all property adjacent to the sewer to be constructed.

2140.10.10 Show all right of way lines, the distance from the centerline of all roads, rights of way, and easements to the center of the sewer.

2140.10.11 Show location of proposed house connections.

2140.10.12 Show exact location of all structures within 20 feet of the sewer centerline.

2140.10.13 Show all water wells within 50 feet of the sewer centerline.

2200.10 GENERAL - Earthwork includes all plant labor, equipment, appliances and materials as required or necessary to clear, grub, excavate, trench, fill, backfill and grade for the construction of all structures, pipe lines, ditches, embankments and graded areas as shown and specified.

2200.20 OBSTRUCTIONS - All trees, shrubs and, brush, including stumps and roots, fences, rock, stones, debris, and all obstructions of whatsoever kind or character, whether natural or artificial, encountered in the construction of the work shall be removed unless otherwise specified on the construction plans or in the special conditions.

In the installation of pipe lines outside of public rights of way or in easements, trees shall not be removed unless otherwise authorized in writing by the Engineer, and all fences, structures and landscaping which are removed or damaged by the Contractor shall be restored to their original condition at the Contractor's expense without any compensation therefore. Any damage done to private property by reason of work on easements shall be the responsibility of the Contractor.

Material that is removed as hereinabove specified, and is not to be incorporated in the improvement being constructed, shall be disposed of away from the construction site at the contractor's expense. The Contractor's attention is directed to the possible existence of pipe and other underground improvements which may or may not be shown on the plans. All reasonable precautions shall be taken to preserve and protect any such improvements whether shown on the plans or not. Where it is necessary to remove and replace or to relocate such improvements in order to prosecute the work, they shall be removed, maintained, and permanently replaced at no expense to the District.

2200.30 EARTHWORK IN CITY, COUNTY, STATE AND RAILROAD RIGHTS-OF-WAY - Earthwork within the rights-of-way of the State Division of Highways, the County Road Department, any City or other governmental agency having jurisdiction, shall be done in accordance with the requirements and the provisions of the permits issued by those agencies for the construction within their respective rights-of-way. Such requirements and provisions, where applicable, shall take precedence and supersede the provisions of these specifications. The requirements of these Technical Specifications shall be the minimum requirement.

2200.40 SAFETY PRECAUTIONS - All excavations shall be performed, protected, and supported as required for safety and in the manner set forth in the operating rules, orders and regulations prescribed by CA OSHA. Barriers shall be placed at each end of all excavations and at such places as may be necessary along excavations to prevent accidents. Lights shall also be placed along excavations from sunset each day to sunrise of the next day until such excavation is entirely refilled.

2200.50 EXCAVATED MATERIAL - Arrangements for disposing of excess excavated material shall be made by the Contractor. Excavated material suitable for backfill shall be stored temporarily in such a manner as will facilitate work under the Contract.

2200.60 SHORING, SHEETING AND BRACING - Where sheet piling, shoring, sheeting, bracing, or other supports are necessary, they shall be furnished, placed, maintained and removed by the Contractor. Sheet piling and other supports shall be withdrawn in such a manner as to prevent additional backfill on pipe lines which might cause overloading. At all times the rules of the CA OSHA with respect to excavation and construction shall be strictly observed.

2200.70 CLEARING AND GRUBBING - Areas, where construction is to be performed, shall be cleared of all trees, shrubs, brush, rubbish, and other objectionable material of any kind which, if left in place, would interfere with the proper performance or completion of the contemplated work, would impair its subsequent use, or form obstructions therein. Trees and other natural growths outside the actual lines of construction operations shall not be destroyed and such measures as are necessary shall be taken by the Contractor for the protection thereof.

Organic material from clearing and grubbing operations will not be permitted for use as excavation backfill.

It shall be the Contractor's responsibility to remove and dispose of all excess material resulting from clearing and grubbing operations at his own expense. The Contractor shall make his own arrangements 'for disposal sites at his own expense, at which said material may be wasted.

2200.80 CONTROL OF WATER - The Contractor shall provide and maintain at all times during construction ample means and devices with which to promptly remove and dispose of all water entering the excavations or other parts of the work. No concrete footings or floors shall be laid in water nor shall water be allowed to rise over them until the concrete or mortar has set at least eight hours. Water shall not be allowed to rise unequally against walls for a period of 28 days. Ground water shall not be allowed to rise around pipe installations until jointing compound in the joints has set.

The Contractor shall dispose of the water from the work in a suitable manner without damage to adjacent property. No water shall be drained into work built or under construction. Water shall be disposed of in such a manner as not to be a menace to the public health.

Dewatering for structures and pipelines shall commence when ground water is first encountered, and shall be continuous until such times as water may be allowed to rise in accordance with the provisions of this Section.

2200.90 PIPE LINE EXCAVATION - Excavation for pipe lines, fittings, valves, and appurtenances shall be open trench to the depth and in the direction necessary for the proper installation of the same as shown on the plans or as otherwise directed by the Engineer, except where another method is specifically called for on the plans or in these specifications.

2200.90.1 LIMIT OF EXCAVATION - Except with specific approval of the Engineer, no more than 400 feet of open trench shall be excavated in advance of laying of pipe. All operations shall be carried out in an orderly fashion. Backfilling

and clean-up work shall be accomplished as sections of the pipe installation are approved. Public travel through the work shall be impeded or obstructed as little as possible. At the end of each working day, there shall be a maximum of 50 feet of open trench excluding manhole excavations for each operation. The remainder of the trench excavated that day shall be backfilled, compacted and the roadway opened to the public.

At the end of each week all trenches, including manhole excavations, shall be backfilled, compacted and the roadway opened to the public on Saturday and Sunday.

2200.90.2 TUNNELING - Tunneling will be permitted only where native earth is of such firmness that it will remain in its original position, without sloughing off, throughout the work of excavation and backfilling; if sloughing occurs, the roof of the tunnel shall be broken down and the trench excavated as an open trench as herein specified.

2200.90.3 TRENCH WIDTH - Banks of open cut trenches shall be kept as nearly vertical as possible. Where necessary in order to maintain the banks nearly vertical, the trench shall be properly sheeted and braced. The overall trench width shall not be more than 16 inches or less than 12 inches wider than the largest outside diameter of the pipe to be laid therein, measured at a point 12 inches above the top of the pipe exclusive of branches. Excavation and trenching shall be true to line so than a clear space of not more than 8 inches or less than 6 inches in width is provided on each side of the largest outside diameter of the pipe in place. For the purpose of this article, the largest outside diameter shall be the outside diameter of the coupling.

2200.90.4 CORRECTION OF FAULTY GRADES - Should the excavation for the pipe line be carried below grade without instruction from the Engineer, it shall be refilled to proper grade with pipe zone material compacted to 90 percent or crushed rock, at the expense of the Contractor. If compaction tests are required, they shall be at the expense of the Contractor.

2200.100 PIPE FOUNDATION AND/OR SUB GRADE

2200.100.1 FOUNDATIONS IN GOOD SOIL - The trench shall have a flat or semi-circular bottom conforming to the grade to which the pipe is to be laid.

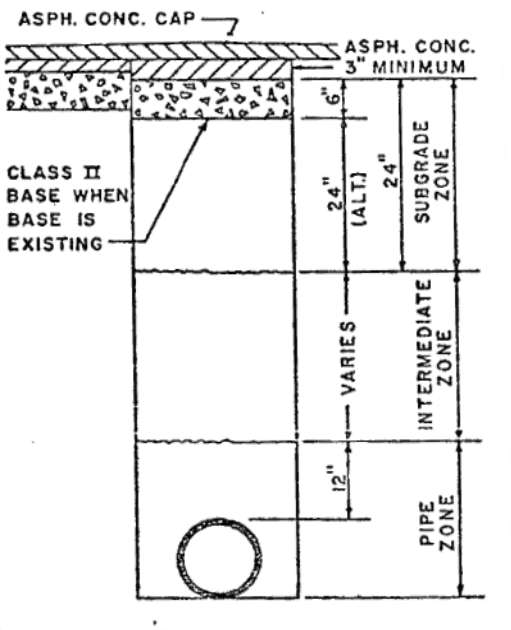
2200.100.2 FOUNDATIONS IN POOR SOIL - All soft, spongy, or unstable material in the bottom of the trench shall be removed and replaced with approved material to a depth as determined in the field by the Engineer. The approved material shall be compacted to 90 percent to provide an unyielding foundation for the pipe. The removal and replacement of material from depths greater than two (2) feet below the grade shown on the plans will be considered as Extra Work.

2200.100.3 FOUNDATIONS IN ROCK - Where rock is encountered, it shall be removed below grade and the trench backfilled with suitable material to provide a compacted earth cushion with a thickness under the pipe of not less than 1/2-inch per inch of nominal diameter of the pine to be installed with a minimum allowable thickness of 6 inches.

2200.110 TRENCH BACKFILL - All trenches shall be backfilled after pipe, fittings, valves, and appurtenances have been installed. Whenever a relative compaction requirement value is specified hereunder, the optimum moisture content and density shall be determined in accordance with the State of California, Division of Highways, Test Method "California 216-F," or ASTM Designations D 1557-70 and D 1556.

All wood and waste material shall be removed from excavation preparatory to backfilling. Backfill material shall be approved in all cases by the Engineer and shall be free of trash, wood, large rock, or other objectionable debris. Backfilling shall include the refilling and compacting of the fill in trenches or excavations up to the sub grade of the street or to the existing ground surface.

2200.110.1 PROCEDURE IN PIPE ZONE - Selected backfill material consisting of granular material free from stone, clods, clay, or other deleterious material shall be placed in the trench simultaneously on each side of the pipe for the full width of the trench in layers of about 6 inches in depth. Granular backfill with a sand equivalent of 30, when tested in accordance with the California Division of Highways, Test Method No. " California 217-H" and having a maximum of 10 percent passing a 200 mesh standard sieve, will be required in the pipe zone and the water densified method shall be used to densify the material in the pipe zone. When the excavated material is not granular as mentioned above, the Contractor shall import, at his own expense, and place a suitable granular backfill material. Particular attention is to be given to the underside of the pipe and fittings to provide a firm bedding support along the full length of the pipe. Care shall be exercised in backfilling to avoid damage to the pipe. The pipe zone shall be considered to extend to 12 inches above the top of pipe.



2200.110.2 PROCEDURE ABOVE PIPE ZONE - From the top of the pipe zone backfill to ground surface, the material for backfill may contain stones ranging in size up to 6 inches in diameter, in quantity not exceeding 40 percent of the volume when said coarse materials are well distributed throughout the finer materials and the specified compaction may be attained.

2200.110.3 COMPACTION IN EASEMENTS - In easements and open terrain where the degree of compaction is less important, the backfill, if sufficiently granular in nature (sand equivalent of 20 or greater), shall be consolidated by a water settling method. If the backfill is not sufficiently granular in nature, the backfill shall be consolidated by an approved method. Backfill in easements and open terrain shall be compacted to 85% relative compaction.

2200.110.4 MECHANICALLY COMPACTED BACKFILL - Mechanically compacted backfill shall be placed in horizontal layers of such depths (not exceeding those specified herein) compatible to the material being placed and the type of equipment being used. All such equipment shall be of a size and type approved by the Engineer. Each layer shall be evenly spread, moistened (or dried, if necessary), and then tamped or rolled until the specified relative compaction has been attained. Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will not result in damage to adjacent ground, existing improvements, or improvements installed under the contract. The Contractor shall make his own determination in this regard. Any damage which results shall be the responsibility of the Contractor and repaired or replaced at the Contractor's expense.

Material for mechanically compacted backfill shall be placed in lifts which, prior to compaction, shall not exceed the depths specified below for the various types of equipment.

- Impact, free-fall, or "stomping" equipment - maximum lift depth of three (3) feet.
- Vibratory smooth-wheel rollers, and vibratory pneumatic-tired rollers - maximum lift depth of two (2) feet.
- Rolling equipment, including sheepsfoot (both vibratory and non-vibratory), grid, smooth-wheel (non-vibratory), pneumatic-tired (non-vibratory), and segmented wheels - maximum lift depth of one (1) foot.
- Hand directed mechanical tampers - maximum lift depth of four (4) inches.

2200.110.5 WATER DENSIFIED BACKFILL- As used in these specifications, flooding shall mean the inundation of backfill with water, puddled with poles or bars to insure saturation of the backfill material for its full depth. Jetting shall be

accomplished by the use of a jet pipe to which a hose is attached carrying a continuous supply of water under pressure. Unless flooding is specified or otherwise authorized by the Engineer, all backfill to be densified by water shall be jetted.

REQUIREMENTS FOR DENSIFICATION BY JETTING - Densification by jetting shall be subject to all of the following requirements:

1. Application of Water

   The Contractor shall apply water in a quantity and at a rate sufficient to thoroughly saturate the entire thickness of the lift being densified. Water for jetting shall be from a continuous supply of water under pressure.

2. Use of Vibration

   Where densities are required which cannot be attained by jetting alone, the Engineer may direct the Contractor to supplement the jetting process with the application of vibrating compacting equipment to the backfill.

3. Lift Thickness

   The lift of backfill shall not exceed that which can be readily densified by the jetting procedure, but in no case shall the undensified lift exceed 10 feet for jetting,

4. Character of Material.

   The material being used with the water settling methods to backfill the trenches in street rights-of-way shall have a sand equivalent of at least 20 when tested in accordance with the State of California Division of Highways Test Method No. "California 217-H" and having a maximum of 10 percent passing a 200 mesh standard sieve. Where the nature of the material excavated from the trench is generally unsuitable for densification with water, the Contractor may, at no cost to the District, import suitable material for jetting, or densify the excavated material by other methods. If water densification methods are employed, the Contractor shall, at his expense, provide a sump and pump to remove the accumulated water from the downstream end of the construction.

5. Damage to Adjacent Improvements

   The Contractor shall make his own determination that the use of flooding or jetting methods will not result in damage to existing improvements. Permission to use such methods in densifying backfill shall not be construed as guarantying or implying that adjacent ground and improvements will be unaffected.

2200.110.6 COMPACTION TEST - Compaction shall be tested in accordance with the methods specified by the State of California Division of Highways Test

Method No. "California 216-F," or ASTM Designations D 1557-70 and D 1556.

Compaction test of the backfill will be required approximately every 300 feet, or more often if tests indicate the need, along the alignment on the main pipeline and, in addition, approximately 20 percent of all laterals within the street rights-of-way. The tests shall be made at varying depths.

The Contractor at his expense shall excavate the holes for all of the tests, backfill the holes and compact this backfill, and pave the surface, if required, after the test.

2200.110.7 EXCESS EXCAVATED MATERIAL - The Contractor shall make the necessary arrangements for and the removal and disposal of all excess or waste material. All costs for the disposal of excess or waste material shall be borne by the Contractor.

It is the intent of these specifications that all surplus material not required for backfill shall be disposed of by the Contractor outside the limits of the public rights-of-way and in accordance with the requirement of the County grading Ordinance or ordinance of any other agencies having jurisdiction at no cost to the District.

Excavated material shall not be deposited on private property unless written permission from the owner thereof is secured by the Contractor. Copies of said written permission, duly signed by the owner of the private property involved, shall be furnished to the Engineer by the Contractor before such material is placed on private property.

2200.110.8 IMPORTED BACKFILL MATERIAL - Whenever the excavated material is unsuitable for backfill, the Contractor shall arrange for and furnish imported backfill material at his own expense. Contractor shall dispose of the excess trench excavation as specified in the preceding section. The backfilling with imported material shall be done in accordance with the methods described.

2200.120 STRUCTURAL EARTHWORK

2200.120.1 STRUCTURAL EXCAVATION - The site shall be cleared of all natural obstructions, pavements, utilities and other items which will interfere with construction. Any method of excavation may be employed which, in the opinion of the Contractor, is considered best. Ground shall not be dug by machinery nearer than 3 inches from any finished sub grade without the express approval of the Engineer. The last three (3) inches shall be removed without disturbing the sub grade. Should the excavation be carried below the lines and grades indicated on the plans, the Contractor shall, at his own expense, refill such excavated space to the proper elevation in accordance with the procedures specified for backfill, or, if under footings, the space shall be filled with concrete. Excavation shall extend a sufficient distance from walls and footings to allow for placing and removal of forms,

installation of services, and for inspection, except where concrete is authorized to be deposited directly against excavated surfaces.

2200.120.2 STRUCTURAL BACKFILLING - After completion of foundation footings and walls, and of other construction below the elevation of the final grade, and prior to backfilling, all forms shall be removed and the excavation shall be cleaned of all debris. Unless otherwise shown, material for backfilling shall consist of excavated material, or imported sand, gravel or other material approved by the Engineer and shall be free of trash, lumber or other debris. Backfill shall be placed in horizontal layers not exceeding nine (9) inches in thickness, and shall have a moisture content such that the required degree of compaction may be obtained. Each layer shall be compacted by hand or machine tampers or by other suitable equipment or means to a relative compaction of at least 90 percent. Dewatering shall be maintained during the placement of compacted clayey backfill.

2200.120.3 STRIPPING - All vegetation, such as roots, brush, heavy sods, heavy growths of grass and all decayed vegetable matter, rubbish, and other unsuitable material within the area of the work, shall be stripped or otherwise removed before fill is started. Surfaces under paved areas, dikes and elsewhere as directed by the Engineer shall be wetted and compacted prior to placing fill.

2200.120.4 GRADING - After stripping has been done, excavation of every description and of whatever substance encountered within the grading limits of the work shall be performed to the lines and grades indicated on the drawings. All suitable excavated material shall be transported to and placed in the fill area within the limits of the work. All excavated materials which are considered unsuitable by the Engineer, and any surplus of excavated material which is not required for fill shall be known as waste and shall be disposed of as directed in Section 2200.110.6 above. During construction, excavation and filling shall be performed in a manner and sequence that will provide drainage at all times. Ditches shall be cut accurately to the cross-sections and grades indicated. Any excessive ditch excavation shall be backfilled to grade either with suitable, thoroughly compacted material, or with suitable stone or cobble to form an adequate paving.

2200.120.5 FILL - Fills or embankments shall be constructed at the locations and to the lines and grades indicated on the plans. Suitable material from excavations may be used for fill. Material shall be placed in horizontal layers of from eight (8) to twelve (12) inches in loose depth for the full width of the cross section and compacted as specified.

For general fill areas, the fill shall be compacted to 90 percent relative compaction.

For roadways and all areas to be paved, the fill shall be compacted, by means of a tamping roller or three-wheel power roller, to at least 90 percent relative compaction.

Dikes and embankments shall be compacted by the use of compaction rollers or three-wheel power rollers to 90 percent relative compaction

Relative compaction shall be as determined in accordance with the State of California, Division of Highways, Test Method No. "California 2I6-F," or ASTM Designations D 1557-70 and D 1556.

2200.120.6 FINISH GRADING - All areas covered by the work, including excavated and filled sections and transition areas, shall be graded uniformly to the elevations shown on the Plans. The finished surface shall be reasonably smooth, compacted, and free from any irregular surface changes. The degree of finish shall be that ordinarily obtainable from either blade-grader or scraper operations. The finished surface shall be not more than 0.2 foot above or below the established grade. Ditches shall be paved to drain readily. The surface of areas to be paved, on which a surface course is to be placed, shall not vary more than 0.05 foot from established grade and approved cross-section.

2200.120.7 COUNTY AND CITY GRADING ORDINANCES - In addition to the requirements herein set forth for structural earthwork, all work shall be in accordance with the requirements of the County grading Ordinance or ordinance of any other agencies having jurisdiction.

2200.130 DRILLING, BLASTING, AND USE OF EXPLOSIVES - All operations, storage and handling of explosives shall be according to provisions of Division II, Part I of the Health and Safety Code, State of California, and shall comply with all State, County and local laws.

SKILLED WORKMEN - Drilling and blasting are to be done only by personnel skilled in rock techniques.

SAFETY - All necessary precautions shall be taken for protection of life and property. Warnings shall be given to nearby property owners that blasting is in progress. Safety mats shall be used to restrict flying particles. The Contractor shall size each "shot" to minimize nuisance and reduce the possibility of damage to local structures.

2200.140 FINAL CLEANUP - After all earthwork operations have been completed, the right-of-way and all other areas shall be dressed smooth and left in a neat and presentable condition to the satisfaction of the Engineer and Owner.

2210.10 GENERAL - Concrete shall be composed of Portland cement, sand, coarse aggregate, water, and admixtures as specified or approved, all well mixed and brought to the proper consistency suitable for the specific conditions of placement and in accordance with the requirements of these specifications.

2210.20 CLASSES OF CONCRETE - All Portland cement used on the work shall be one of the classes described below. Unless otherwise stated, each class shall be used in the locations as listed:

2210.20.1 CLASS I

Compressive Strength - 3000 psi min.

Mix - 6 sack minimum, test required. 7 sack, test not required

Use - Walls, beams, slabs, footings

Equivalent California State Highway Designation

(1973) - Class D (for 7 sack min)

2210.20.2 CLASS II

Compressive Strength - 3000 psi min.

Mix - 6 sack (4.85 cement, 1.15 possolan) Test required.

Use - Walls, beams, slabs, footings (where specified on the plans)

2210.20.3 CLASS III

Compressive Strength - 2500 psi min.

Mix - 6 sack, test not required

Use - Slabs, footings, walls (Where specified)

Equivalent California State Highway Designation (1973) Class A

2210.20.4 CLASS IV

Compressive Strength - 2500 psi min.

Mix - 5 sack, test not required

Use - Paving, cradles, curbs, gutters, sidewalks, thrust blocks, manhole bases, Pipe encasement, or where specified

Equivalent California State Highway Designation (1973) Class B

2210.30 PORTLAND CEMENT - Unless otherwise specified, Portland cement shall be Type I or Type II complying with ASTM Designation C-150, and shall have a total alkali content not exceeding 0.6 percent when calculated as sodium oxide as determined by methods given in ASTM Designation C-114.

2210.40 SAND - Sand shall be a washed natural sand having hard, strong and durable particles and which does not contain more than two (2) percent by weight of such deleterious substances

as clay lumps, shale, schist, alkali, mica, coated grains, or soft and flaky particles. Sand shall be graded uniformly from fine to coarse such that the combined grading of coarse aggregate and sand set forth in paragraph 5 will be met. Not more than three (3) percent shall pass the No. 200 screen as determined by ASTM Designation C-117.

2210.50 COARSE AGGREGATE - Coarse aggregate shall be a clean, hard, fine, grained, uncoated, sound crushed rock, or washed gravel or combination of both. It shall be free from oil, organic matter, or other deleterious substances and shall not contain more than 2 percent by loss of shale or cherty material; and shall show a loss of not more than 10 percent when tested for soundness in sodium sulfate solution in accordance with ASTM Designation C-88. Coarse aggregate shall be graded uniformly from one-quarter inch size to maximum size. The combined grading of coarse and fine aggregate shall fall within the following percentages by weight:

Percentage Passing Sieves

Sieve Size	1-1/2" Max.	1" Max.	3/4" Max.
2"	100		
1-1/2"	90-100	100	
1"	50-86	90-100	100
3/4"	45-75	80-90 90-100	
3/8"	38-55	65-85 60-80	
No.4	30-45	35-50 40-60	
No.8	23-35	25-40 30-45	
No.16	12-27	19-30	20-35
No.30	10-17	12-20	13-23
No.50	4-9 5-10	5-15	
No.100	1-3 1-4	1-5	
No.200	0-2 0-2	0-2	

2210.60 MIXING WATER - Mixing water shall be clean and free from deleterious amounts of acids, alkalis, salts, or organic materials.

2210.70 AIR ENTRAINMENT - Unless otherwise specified or directed by the Engineer, water reducing and plasticizing admixtures shall be used to reduce the required mixing water, for equivalent slump in plain concrete, at least ten (10) percent without entraining air in excess of two (2) percent by volume. If the admixture used entrains more than two (2) percent air, the water reduction shall be an additional two (2) percent of air entrained over two (2) percent, but in no case shall air entrained exceed 5 percent. Admixtures containing more than fifty (50) percent by weight of calcium chloride will not be approved. Acceptable water-reducing and plasticizing admixtures are Maracon and Pozzolith or approved equal. All admixtures shall be used in strict accordance with manufacturer's recommendations.

Pozzolan shall conform to ASTM Designation C-618, except that minimum compressive strength for the lime-reactivity test shall be 1000 psi at seven (7) days. Acceptable possolans are Airox, Colton, or approved equal. No other admixtures shall be used without the Engineer's approval.

2210.80 REINFORCING STEEL - Reinforcing steel shall consist of deformed bars of the size called for on the Plans. Reinforcing steel shall conform to ASTM A615, and shall be either intermediate or hand grade. Deformations shall conform to ASTM A615, A616 and A617. If specified, mill certificates showing conformity with these requirements shall be furnished to the Engineer for each melt if so requested. Wire reinforcement shall conform to ASTM A82.

2210.90 TESTS ON CONCRETE - From each days placing of each class of concrete, at least one set of three standard test cylinders shall be made and cured in accordance with ASTM Designation C-31. The cylinders shall be dated, numbered, and marked to indicate the location from which the sample was taken. The result of the slump test shall be noted on the cylinder. Not more than two cylinders shall be made from any one point or batch of concrete. The average of three cylinders crushed at the required age shall constitute one standard test, except that occasional additional cylinders may be made for crushing at early ages to determine the approximate strength of the concrete for form stripping or other purposes.

Specimens shall be tested in accordance with ASTM Designation C-39.

The standard age of test shall be 28 days.

If more than one in ten laboratory control strength test cylinders for any structure falls below the specified compression strength, the Engineer shall have the right to order a change in proportions or the water content of the concrete for the remaining structures. If the strength of any job cured cylinders falls below the specified compressive strength, assuming they have received protection and curing equivalent to concrete in the structure, the Engineer shall have the right to require condition of, temperature and moisture necessary to secure the required strength and may require tests in accordance with ASTM Designation C-42, or order load tests to be made on the structures so affected if preliminary testing with the Schmidt Impact Hammer indicates the concrete to be defective.

2210.100 MIX DESIGN - Before beginning concrete work, the proper proportions of materials for each class of concrete shall be determined by the Contractor and/or his supplier. The mix design shall be prepared at the Contractor's expense, by a recognized inspection and testing laboratory, approved by the Engineer, and shall show the expected strengths and corresponding slumps, and all ingredient weights and other physical properties necessary to check the design mix. A trial batch shall be made for each class of concrete to be used on the job and from each batch four standard test cylinders shall be cast, cured, and tested, as specified for the job concrete. Certified copies of all laboratory reports shall be sent promptly to the Engineer directly from the testing laboratory stating whether the items reported meet the Specifications. A final report shall be submitted at the completion of all concreting summarizing all findings concerned with concrete used in the project.

If more than one supplier of concrete is used by the Contractor, each supplier shall submit their design mix as described above.

2210.110 JOINT FILLER - Preformed fillers shall be of the type indicated on the plans and shall be installed as indicated on the plans.

2210.120 SHOP DRAWINGS - Placing sheets and bending schedules shall be submitted to the Engineer for approval.

2210.130 WATERSTOPS - Waterstops shall be installed where so indicated on the plans. Waterstops shall be of polyvinyl chloride plastic, "Burke Keylock" Type K4, medium duty or approved equal. Proper care in placing of waterstops in forms shall be exercised so that the center bulb coincides with the construction joint. When concrete is being placed, it shall be properly vibrated to insure density at waterstop location. Waterstops shall be made continuous at splices and intersections (horizontal and/or vertical) by "welding" with a polyvinyl chloride splicing iron.

2210.140 MIXING - Job mixing of structural concrete will not be permitted unless otherwise specified. When allowed, concrete shall be mixed in a batch mixer of approved type which will insure a uniform distribution of the materials throughout the mass, so that the mixture is uniform in color and homogenous. All concrete shall be placed within one hour after water is first added to the batch. The mixer shall be equipped with a suitable charging hopper, a water storage and water measuring device controlled from a case which may be kept locked and so constructed that the water may be discharged only while the mixer is being charged. The entire contents of the mixing drum shall be discharged before recharging. The mixer shall be cleaned at frequent intervals while in use. The volume of mixed materials per batch shall not exceed the rated capacity of the mixer.

Transit mixed concrete shall be batched, mixed, and delivered In accordance with ASTM Designation C-94, except that truck agitators may not be used. All concrete shall be deposited in place not more than 45 Minutes after water is added when the temperature of the concrete exceeds 85°F and not more than 1-1/2 hours after water is added when the temperature of the concrete is less than 85°F. Certified public weighmaster tickets shall be delivered to the Engineer or his representative in the field prior to placing the concrete to which the ticket applies.

2210.150 CONSISTENCY - The quantity of water required for the proper consistency of the concrete shall be determined by the slump test, in accordance with ASTM Designation C-143. Unless otherwise stated, slump allowances shall be as follows:

Vertical Wall Sections, Columns - Maximum 4-inch plus or minus one inch.

Floor Slabs, Beams, and Footings - Maximum 3-inch plus or minus 1/2 inch

2210.160 RETEMPERING - Retempering of concrete which has partially hardened, that is, mixing with or without additional cement, aggregate, or water, will not be permitted.

2210.170 DEPOSITING - Concrete shall not be placed until the forms and reinforcement have been approved by the Engineer. Concrete shall be conveyed from the mixer to the place of final deposit as rapidly as possible by methods which will prevent the separation or loss of

ingredients. It shall be deposited in the forms as nearly as practicable in its final position with lifts not over one and one-half (1-1/2) feet high, so as to maintain a plastic surface approximately horizontal. Concrete shall not be dropped more than eight (8) feet unless a suitable chute or tube is used. Forms for walls, or other sections of considerable height, shall be provided with openings, or other devices shall be used which will permit the concrete to be placed in a manner which will avoid accumulations of hardened concrete on the forms or metal reinforcement. Under no circumstances shall concrete that has partially hardened be deposited in the work. Temporary joints shall not remain exposed for more than 45 minutes before adjacent concrete is placed. Concrete shall be continuously inspected by the inspector who shall be afforded an opportunity to check the forms for accuracy, cleanliness and position of reinforcing before the pour is started.

2210.180 SUB GRADE PREPARATION - Sub grade for slabs over native earth or fill shall be finished to the exact location and section of the bottom of the slab and shall be maintained in a smooth, compacted condition, until concrete is placed. Sub-grade shall be thoroughly moistened but not muddy, at the time concrete is placed.

2210.190 COMPACTING - Concrete during and immediately after depositing shall be thoroughly worked around the reinforcement and embedded fixtures and into corners of the forms. Internal vibrators shall be used for all walls, and self-supporting beams or slabs. Vibrators shall be handled by experienced workmen and care shall be taken to avoid separation of aggregate due to over vibration. At least one vibrator shall be used for each 15 cubic yards per hour of concrete placed. Standby vibrators shall be kept on hand.

2210.200 CONSTRUCTION JOINTS - Concrete in each unit of construction shall be placed continuously, and the Contractor shall not be permitted to begin work on any part unless his facilities and forces are sufficient to complete the unit without interruption. All joints in concrete shall be located as indicated on the drawings and as approved by the Engineer. The Contractor shall submit to the Engineer for approval, drawings marked to show the location and sequence of pours.

All construction joints shall be made as watertight as possible. Waterstops shall be provided where called for on the Plans car where deemed necessary by the Engineer. Where these methods fail, joints shall be grouted under pressure after the concrete has set and forms have been removed.

The surfaces of construction joints in any location shall be thoroughly cleaned and roughened by dry method sandblasting to remove all laitance and expose aggregate solidly embedded in the mortar matrix.

2210.210 BONDING - Before new concrete is deposited on or against concrete which has set, the forms shall be retightened, the surface of the set concrete shall be roughened, thoroughly cleaned of foreign matter and laitance, as specified under Section 2210.200, "Construction Joints," and sprayed with water so that the concrete is saturated but no free water is left on the surface. The new concrete placed in contact with hardened or partially hardened concrete, shall contain an excess of mortar to insure bond. To insure this excess mortar at the juncture of the hardened and newly deposited concrete on vertical and inclined surfaces, the cleaned and saturated surfaces of the hardened concrete shall first be slushed

with a coating of neat cement grout against which the new concrete shall be placed before the grout has attained its initial set. For horizontal surfaces, a layer at least 1 inch thick of cement mortar composed of one (1) part cement and two (2) parts sand shall be placed before depositing the concrete.

2210.220 WATER CURING - Unformed concrete surfaces shall be covered with wet burlap mats as soon as the concrete has sufficiently set, and shall thereafter be kept wet under burlap until backfilled or for fourteen (14) days after the concrete is placed. Where drying conditions are severe, as determined by the Engineer, fog sprays shall be employed to prevent checking of the fresh concrete surface. Immediately following the first leveling, the fog spray shall be applied whenever the concrete surface will absorb moisture and shall be discontinued when the applied moisture is rejected. Fog spraying shall be continued as specified until the finished surface has attained sufficient strength to permit flooding or covering with burlap mats.

Formed surfaces, both interior and exterior, shall be water cured under burlap mats or by water sprays beginning as soon as the forms are stripped. Prior to stripping of forms, the concrete shall be kept moist by the water sprays.

2210.230 CURING COMPOUNDS - With the written approval of the Engineer, concrete surfaces may be cured by curing compounds as defined below. Any concrete curing compound shall be of a nature and composition not deleterious to concrete, and thinned to a working consistency either with a volatile solvent or by emulsification with water. The curing compound shall be of a standard and uniform quality ready for use as shipped by the manufacturer.

Curing compound shall form a continuous, unbroken membrane which shall adhere to moist concrete and which will not disintegrate, check, peel from the surface, nor show signs of such deterioration within thirty (30) days after application under actual working conditions. The compound shall be sufficiently transparent and free from color that there will be no permanent change in the color of the concrete. The compound shall contain, however, a temporary dye of sufficient color to make the membrane clearly visible for a period of at least four hours after application. If the contractor applies a deleterious compound to paint, plaster, gunite, or other surface treatment, he shall thoroughly sand blast the surface to remove all vestiges of the compound.

2210.240 PROTECTION OF CONCRETE CONSTRUCTION - All surfaces shall be protected against injury. During the first seventy two (72) hours after placing, wheeling, working, or walking on the concrete shall not be permitted. All slabs subject to wear shall be covered with a layer of sand or other suitable material as soon as the concrete has set, and either shall be cured by the use of a curing compound or shall be kept wet for not less than fourteen (14) days, or they shall be kept covered for the same period with Sisalcraft paper or other similar tough waterproof paper. All joints between adjacent strips of paper shall be sealed.

No concrete shall be placed during rain and during such weather; all concrete placed within the preceding twelve (12) hours shall be protected with waterproof canvas or other suitable coverings. These shall be provided and kept ready at hand.

All concrete construction shall be protected from excessive loadings.

2210.250 REPAIR AND PATCHING - After removing forms and before the concrete is thoroughly dry, any poor joints, voids, stone pockets or other defective areas and all tie holes shall be patched. Defective areas shall be chipped away to a depth of not less than one (1) inch with the edges perpendicular to the surface. The area to be patched and a space at least six (6) inches wide entirely surrounding it shall be wetted to prevent absorption of water from the patching mortar.

The patch shall be made of the same materials and proportions as used for the concrete, except that the coarse aggregate shall be omitted. The amount of mixing water shall be as little as consistent with the requirements of handling and placing.

The mortar shall be thoroughly compacted into place and screened, leaving the patch slightly higher than the surrounding surface. After being undisturbed for one to two hours to permit initial shrinkage, the patch shall be finished to match the adjoining surface.

Tie holes left by the withdrawal of form, clamp rods or holes left by removal of snap ties shall be filled solid with mortar. For holes passing entirely through the wall, a plunger-type grease gun or other device shall be used to force mortar through the wall, starting at the back face. When the hole is completely filled, the excess mortar shall be struck off with a cloth flush with the surface. Holes not passing entirely through the wall shall be filled with a small tool that will permit packing the hole solid with mortar, any excess mortar being struck off flush with the surface.

2210.260 PLACING REINFORCING STEEL - Reinforcing steel, before being positioned, shall be cleaned thoroughly of mill and rust scale or other coatings that will destroy or reduce the bond. Reinforcement appreciably reduced in section shall be rejected. Where there is delay in depositing the concrete reinforcement shall be reinspected and, when necessary, cleaned.

Reinforcement shall be carefully formed as indicated on the plans. Stirrups and tie bars shall be bent around a pin having a diameter of not less than three times the diameter of the bar. Except where specifically indicated otherwise on the plans, bends for other bars shall be made around a pin having a diameter not less than six bar diameters. All bars shall be bent cold. Reinforcing steel shall not be bent or straightened in a manner that will injure the material. Bars with kinks or bends not shown on the plans shall not be used. Heating of bars will be permitted only when the entire operation is approved by the Engineer.

Reinforcing steel shall be positioned accurately and secured against displacement by using annealed iron wire or suitable clips at intersections and shall be supported by concrete chairs or spacers, or metal hangers.

In slabs, beams and girders, and walls subject to lateral pressure, splices of reinforcement shall not be made at points of maximum stress without the express approval of the Engineer. Splices, where permitted, shall provide sufficient lap to transfer the stress between bars (bond and shear). Adjacent bars shall not be spliced at the same point. The minimum allowable lap at points of maximum .stress shall be 30 times the diameter of the larger bar of the splice, but in no case shall the lap be less than 18 inches. Minimum

allowable lap distances for masonry wall reinforcement shall be 40 times the diameter of the larger bar of the splice, but in no case less than eighteen (18) inches.

2210.270 FORM MATERIAL

2210.270.1 CLASS I - For permanently exposed concrete surfaces where architectural-appearance is important, Class I forms shall be constructed with particular care to assure a high type of architectural finish of uniform texture free from visible irregular ties, patch marks, and discolorations. Forms shall be of synthetic resin bonded plywood specially made for concrete work or non-warping hardboard. The entire surface shall be lightly sanded if necessary.

2210.270.2 CLASS II - This class shall be used for unplastered interior of all rooms and for all surfaces in contact with water such as interior walls of channels and tanks. These forms shall be of hardboard, steel or waterproof synthetic resin bonded plywood specially made for concrete work.

The Contractor shall be permitted to use the most advantageous panel sizes and panel joint location, Class II forms, provided painted concrete surfaces shall be free of all surface imperfections. Neat patches and minor surface imperfections will be permitted in forms for unpainted concrete provided the finished surface conforms to the requirements specified hereunder.

2210.270.3 CLASS III - This class shall be used for formed surfaces not exposed to view such as footings, backfilled walls and pipe trenches. These forms shall be of metal or of smooth planed boards in good condition free from large or loose knots.

2210.280 FORM CONSTRUCTION - Exposed edges of concrete on the outside and inside of structures shall be chamfered or beveled at an angle of 45', such bevel being 1 inch on a side. If so directed by the Engineer, however, the Contractor shall provide square edges for any portion of the work.

All dirt, chips, sawdust, and other foreign matter shall be removed from within the forms before any concrete is deposited therein. Forms previously used shall be thoroughly cleaned of all dirt, mortar, and foreign matter before being used. Before concrete is deposited within the forms all inside surfaces of the forms shall be thoroughly coated with an approved oil.

Bolts, rods, or single wires shall preferably be used for internal ties and if so used shall be so arranged that when the forms are removed, no metal shall be within 1 inch of any surface. Twisted wire ties will not be permitted in the forms for any wall later to be subjected to water pressure. The Contractor shall take due precaution to prevent future leakage or seepage along ties used in all walls which will be subjected to water pressure. Ties used in all such walls must be cut back into the face of the wall at least 1 inch and the resulting holes pointed up with one to three (1:3) mortar.

Temporary openings shall be provided at the base of column and wall forms and at other points where necessary to facilitate cleaning and inspection immediately before depositing concrete.

Forms, bracing and shoring shall be kept in place until their removal is approved by the Engineer and in no case shall removal commence earlier than the following schedule:

Sides of footing and raft ears	1 day
Walls above ground	3 days
Walls below ground	7 days
Columns	10 days
Slabs	14 days
Beams	21 days

Members subject to additional loads during construction shall be adequately reshored to support both member and construction loads in a manner that will protect the member from damage.

2210.290 FINISH OF FORMED SURFACES - All finished or formed surfaces shall conform accurately to the shape, alignment, grades and sections as shown on the plans or prescribed by the Engineer. Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing or roughness of any kind, and shall present a finished, smooth, continuous, hard surface. All sharp angles, where required shall be rounded or beveled.

Where Class I forms are required, the surface of the concrete shall be given the following finish: After wetting the surface, a grout shall be rubbed in using a rubber float or burlap. The grout shall be made by mixing one part of cement and one and one-half (1-1/2) parts of fine sand with sufficient water to give it the consistency of thick paint. After the grout hardens sufficiently, it shall be scraped from the surface with the edge of a steel trowel without disturbing the grout in the air holes. After further drying, the surface shall be rubbed with burlap to remove all surface grout. The entire surface shall be finished to secure a uniform texture.

2210.300 FINISH OF SLABS - Floors and flat roof surfaces where drains are to be provided, all exterior concrete floors, sidewalks and flat surfaces, the Contractor shall be particularly careful to provide an adequate slope to the drains or to suitable points of disposal. The direction of slope and the amount of crowning generally are shown on the plans; otherwise they shall be subject to the approval of the Engineer.

2210.310 WOOD FLOAT FINISH - The forms shall be completely filled with concrete with as little working as possible. All high or low spots exceeding 1/4-inch in ten (10) feet shall be eliminated. The surface shall then be wood floated until it is smooth and free from blemishes.

2210.320 BROOMED FINISH - Surfaces to receive a broomed finish shall be wood floated as specified above, followed by steel troweling. After steel troweling and before initial set, the surface shall then be slightly roughened by means of a broom or a burlap mat to produce an even textured surface finish.

2210.330 INSERTS - Where pipes, castings, or conduits are to pass through the walls, the Contractor shall place such pipes or castings in the forms before pouring the concrete, or in special

cases, with the express consent and approval of the Engineer or as specified herein, he shall build approved boxes in the forms to make openings for subsequent insertion of such pipes, castings, or conduits. To withstand water pressure and to insure water tightness around the openings so formed, the boxes or cores shall be provided with continuous keyways all the way around and shall have a slight flare to facilitate grouting and the escape of entrained air during grouting. The grout shall contain Embeco or similar material and shall be mixed and placed in accordance with the manufacturer's instructions.

Additional reinforcement shall be provided around such openings to meet the approval of the Engineer. The space around pipes, castings, or conduits, as specified, shall be filled by pouring grout under a head of at least 4 inches. The grout shall be poured, rammed, or joggled into place to fill completely the space between the pipes, castings, or conduits, and the sides of the openings so as to obtain the same water tightness as through the wall itself. The grouted castings shall then be water cured. The grouting material so placed shall be surfaced when the forms are removed to give a uniform appearance to the wall if such wall will be exposed to view.

The Contractor shall set accurately and hold in exact position in the forms until the concrete is poured and set, all gate frames, gate thimbles, special castings, channels, or other metal parts that are to be embedded in concrete, and he shall furnish, find, and set accurately all inserts and anchor or other bolts necessary for the attaching of piping, valves, metal sash, and equipment. All nailing blocks, plugs, strips and the like, necessary for the attachment of trim, finish, and similar work and all wires for suspending ceilings will be furnished and placed by the Contractor.

2210.340 GUNITE - When the use of gunite is proposed, the design engineer shall submit his gunite design and specification proposal to the Engineer for approval.

2210.350 PRESTRESSED CONCRETE - When the use of prestressed concrete is proposed, the design engineer shall submit his prestressed concrete design and specification proposal to the Engineer for approval.

2210.360 MISCELLANEOUS CONCRETE MIXES - Miscellaneous concrete mixes shall be as listed below:

Use	Mix
Grout	7 sacks with pea gravel
Mortar	1 part cement, 1/4 part lime putty, 3 parts sand
Grout for filling masonry blocks & for bond beams	1 part cement, 3 parts sand, 2 parts pea gravel

2210.370 COLD WEATHER REQUIREMENTS - Adequate equipment shall be provided for heating the concrete during freezing or near freezing weather. No frozen materials or materials containing ice shall be used. All concrete materials and all reinforcement, forms, fillers and ground which the concrete is to come in contact with shall be free from ice and frost.

Whenever the temperature of the surrounding air is below 40°F, all concrete placed in the forms shall have a temperature of between 70°F and 80°F and adequate means shall be provided for maintaining a temperature of between 50°F and 80°F during the curing period.

The housing, covering, or other protection used in connection with curing shall remain in place and intact at least 24 hours after the artificial heating is discontinued. The use of salt or chemicals for the prevention of freezing is prohibited.

When heating of concrete materials is required, the mixing of water and aggregate shall be heated to not more than 90°F prior to being placed in the mixer so that the temperature of the mixed concrete shall be not less than 70°F nor more than 80°F. Aggregates shall be heated either by steam or by dry heat, and the heating apparatus shall be of a type which will heat the mass uniformly and in such a manner as to preclude the possible occurrence of over-heated areas, or hot spots, which will burn the material. Flame throwers, or other similar direct heating devices will not be allowed.

2220.10 GENERAL - This portion of the work shall include the furnishing and installation of all materials necessary to complete the sewer installation in conformance with the plans and specifications, true to line and grade and free from leaks, cracks, and obstructions. Where choices are allowed, the Contractor shall select such materials and construction methods as will result in a satisfactory completed project. Materials and equipment used in the work shall be new and unused unless otherwise specified. In case a reference is not clear as to which of several grades is desired, the highest quality material shall be used. Materials and strength of pipe shall be as shown on the plans, unless otherwise specified. In case a reference is not clear as to which of the several grades is desired, the highest quality material shall be used. Materials and strength of pipe shall be shown on the plans. Unless two or more materials are approved as equals, the Contractor shall not substitute another material for the one specified.

2220.20 PVC PIPE GRAVITY SEWER PIPE AND FITTINGS - Johns-Manville PVC Gravity Sewer Pipe and Fittings, TRX-ll complying with ASTM D-3034-73 SDR 35, is considered equivalent and is adequate wherever gravity sewers are required. PVC gravity sewer pipe and fittings shall not be used within roadways with less than three feet of cover.

PVC PIPE FORCE MAIN - SDR-PR PVC Pipe SDR (Standard Dimension Ratio)-PR (Pressure Rated) PVC pipe shall be the following material: ASTM Spec D 1784, Type 1, Grade 1, with a hydrostatic design stress of 2,000 psi for water at 73.4°F, designated as PVC 1120. Samples of pipe, physical and chemical data sheets shall be submitted to the engineer for approval and his approval shall be obtained before pipe is purchased. PVC pipe shall have an SDR rating as shown on the drawings. The pipe shall be homogeneous throughout and free from cracks, holes, foreign inclusions or other defects. The pipe shall be as uniform as commercially practical in color.

The pipe shall be shipped with one coupling factory applied. Pipe shall have a ring painted around the uncoupled end in such a manner as to allow field checking of setting depth of pipe in the socket.

Pipe shall be delivered to job site by means which will adequately support it, and not subject it to undue stresses. In particular, the load shall be so supported that the bottom rows of pipe are not damaged by crushing. Pipe shall be unloaded carefully and strung as close to the final point of placement as is practical.

Pipe shall be jointed with solvent welds and the pipe manufacturer shall have an experienced representative on the job for a minimum of one day at the commencement of joining and laying operations.

The workmanship, pipe dimensions and tolerances, outside diameters, wall thickness, eccentricity, sustained pressures, burst pressures, flattening, extrusion quality, marking and all other requirements of Commercial Standards CS 256-63 shall be conformed with in all respects.

The PVC pipe shall bear the National Sanitation Foundation (NSF) seal of approval.

2220.30 PVC FITTINGS - Fittings shall be of the same material as the pipe, and in no case shall have thinner walls than that of the pipe furnished. Where molded fittings are used, they

shall be equal to those produced by the Sloane Manufacturing Company. All fittings shall be made of NSF approved material. A sample of each type fitting shall be submitted for the Engineer's approval. The dry fit of fittings and coupling sockets shall be snug. Building up the joint to overcome a loose fit with multiple layers of filler solvent will not be permitted.

2220.40 PVC COUPLINGS - Couplings shall be of the extruded type, designed to be interference fit for at least one-half of the socket depth. They shall have a beveled entrance to permit the wiping off of the solvents on male end while being installed. The following will be considered the minimum socket depth for PVC couplings:

Size	Socket
6"	5.000
8"	6.000

The wall thickness of the PVC couplings shall be equal to SDR 17 pipe or shall be 0.10 of an inch thick, whichever is greater.

2220.40.1 ELBOWS - Elbows shall be long radius bends with minimum walls equal to that of the pipe joining or shall be 0.10 of an inch thick, whichever is greater. Tapered welding sockets shall be equal to those required for couplings. Standard elbows as manufactured by Sloane Manufacturing Company shall be acceptable, but are subject to special blocking and bedding at no extra cost, unless deep socket adapters have been properly installed.

2220.40.2 TEES - Tees shall be a molded fitting such as made by Sloane Manufacturing Company. A deep socket adapter shall be installed in each outlet by the pipe manufacturer or by the contractor at least 24 hours before field installation. The deep socket adapter shall have a socket depth equal to the coupling.

2220.40.3 DEEP SOCKET ADAPTER - A deep socket adapter is a PVC fitting which is IPS O.D. by PVC deep socket. The socket and wall must be equal to the coupling requirements.

2220.50 PVC WELDING SOLVENTS - PVC welding solvent shall be purchased from the manufacturer of the pipe. The PVC welding solvent shall be compounded to conform with the socket fit and the weather conditions at the time of installation.

2220.60 PVC PIPE LAYING - The pipe, fittings, and valves shall be placed in the trench with care. Under no circumstances shall pipe or other material be dropped or dumped into the trench. The pipe shall not be dragged in a manner which would cause scratching of the pipe surface. An excessive amount of scratching on the surface of the pipe will be considered cause for rejection.

The pipe shall be snaked into the trench, either employing the natural snaking tendency or the pipe shall be laid from one side to the other on alternate lengths.

2220.70 PHYSICAL REQUIREMENTS - The tests contained herein are quality control tests. Pipe meeting these quality control requirements will be acceptable for use in sanitary sewers.

2220.70.1 SOLID WALL PIPE - A 6-inch piece when tested by ASTM 2412-65T shall equal or exceed the following values after 24-hour immersion in a five percent solution of H_2SO_4 and n-Heptain.

Diameter	Minimum EI-LB.IN.	F/Delta Y at 5%
4”	150	150
6”	510	150

The F/Delta Y shall be computed by dividing the load (lb/in) at five (5) percent deflection by the deflection in inches. Pipe shall not fail when deflected 35 percent.

2220.70.2 TESTING OF FLEXIBLE SEWER PIPE - All sections of pipe shall be tested for water tightness after installation has been completed in accordance with Sections 2240 of these specifications.

In addition to the above test, all sections shall be subject to a deflection performance test as follows:

TESTING REQUIRED - All flexible sanitary sewer pipe shall be tested for excessive deflections after backfill has been placed and compacted but before final paving operations.

TESTING DEVICE - The device shall be a ball, cylinder, or other approved shape which will prove the actual diameter of the pipe. It must not change shape or size when subjected to forces from the pipe walls. The diameter of the device shall be equal to 95 percent of the average inside diameter of the pipe in an unloaded condition.

TEST METHOD - The testing device shall be pulled through the completed pipeline. If the device sticks in the pipe at any point, the pipe shall be repaired and retested. For acceptance, the device must pass through the entire section of line between structures in one pass without the use of excessive force.

2220.80 COUPLINGS AND FITTINGS - Couplings and fittings shall be manufactured of materials having equal or superior chemical and physical characteristics as the pipe itself. Each solvent weld type coupling shall be accurately formed so as to have the proper dimension necessary to assure a leak-proof joint. One coupling shall be furnished with each standard length of pipe.

2220.90 INSTALLATION - Pipe and fittings shall be delivered and installed in accordance with the pipe manufacturers’ recommendations. The pipe manufacturer's field manager shall be present during the first day of pipe laying operations to instruct personnel in the installation of the pipe.

2220.100 MANHOLES AND SPECIAL STRUCTURES - An 0-ring coupling and water stop shall be installed at the point of entry and exit of the sewer through manholes and special

structures. The coupling shall be placed so that the flared end will be flush with the outside wall of the structure. No concrete shall be placed past the flared end of the coupling.

2220.110 ALLOWABLE VERTICAL DEFLECTION - The allowable initial (after backfilling and compaction) vertical deflection shall not exceed five percent of the average inside diameter of the pipe in an unloaded condition.

2220.120 MARKING - Each length of pipe shall be marked at least once by the manufacturer with trade name, lot identification, nominal size, the ASTM Specification number and the type and grade.

2220.130 PIPE JOINTS - The Contractor, upon the District's request, shall furnish for approval pipe manufacturer's drawings showing dimensions and manufacturing tolerances of pipe and joint to be used on the work.

2220.140 TESTING FREQUENCY AND FINAL ACCEPTABILITY OF PIPE - The District may call for crushing and hydrostatic testing of up to 0.5 percent of the total pieces of non-metallic pipe of each size to be used in the work. If any of these tests fail to meet the tabulated design strength and/or the listed hydrostatic test, the testing frequency shall be increased so that 2 percent of the total pieces of each size are being tested for bearing and bursting strength. If consistent failures occur, the entire lot of pipe which the samples represent shall be rejected.

Notwithstanding prior factory or yard inspection, the District shall have the right to reject any damaged or defective pipe found on the job which in its opinion will affect the durability of the installation, and the District may order its removal from the work.

2220.150 INSTALLATION OF PIPE LINES - Pipe laying shall proceed up-grade with the spigot ends of bell-and-spigot pipe pointing in the direction of the flow. Each pipe shall be laid true to line and grade and in such manner as to form a close concentric joint with the adjoining pipe, following manufacturer's instructions for the specific jointing method being used.

2220.160 CLEANOUTS -The pipe for the cleanouts shall be of the same size and material as the sewer main. The cleanouts shall be constructed as shown on the District's Standard Drawing No. E-8 and installed at the locations indicated on the plans.

2220.170 TEES - Tees shall be of the same material as the sewer main and the longitudinal barrel of the tee shall be of the same size as the sewer main. Tees of the size called for on the plans shall be installed at approximately the locations shown on the plans. The exact location will be determined in the field by the Engineer to best serve the property in question. A suitable plug shall be provided and installed prior to backfilling operations to provide a watertight joint.

The Contractor shall accurately measure and record the sewer plan station, direction pointing left or right, and depth below existing ground surface of each and every tee connection in the field.

2220.180 BUILDING LATERALS - The building laterals shall be constructed as shown on the District's Standard Drawings E-9, E-10, and E-II. Building laterals of the size called for on

the plans shall be installed at approximately the locations shown on the plans. The exact location may be adjusted in the field by the Engineer to best serve the property in question. A suitable plug shall be provided and installed prior to backfilling operations to provide a watertight joint. The Contractor shall accurately measure and record the sewer plan station, the offset distance left or right of the centerline of the main sewer, and the depth below existing ground surface to the plugged end of the building lateral.

The Contractor shall reference each building lateral connection in the field with a surface marker. The surface marker shall be as specified on the District's Standard Drawing E-9.

2220.190 BEDDING - Unless otherwise called for in the plans and specifications "normal bedding" of pipe in the trench will be satisfactory. Granular bedding material to provide special or normal bedding shall mean coarse granular material acceptable to the Engineer with a maximum particle size of 1/2 inch. Reference is made to Standard Drawing No. E-2.

2220.200 EXCAVATION AND BACKFILL - The Contractor is directed to Section 2200, "Earthwork," of these Specifications for all items pertaining to excavation and backfill.

2220.210 PAVEMENT REMOVAL AND REPLACEMENT - The Contractor is referred to Section 2260, "Removal and Replacement of Paved Surfaces," of these specifications.

2220.220 LEAKAGE TESTS AFTER PAVING MATERIALS Leakage tests shall be in accordance with Section 2240, "Cleaning and Testing," of these specifications.

2220.230 PIPE LINE IN CASING - Concrete Blankets and Conductor Pipe.

2220.230.1 CONCRETE BLANKETS - shall be constructed at the locations shown on the plans and in accordance with the District's Standard Drawing No. E-3. Concrete shall be of Class IV Portland cement concrete.

2220.230.2 EXCAVATION AND BACKFILL - The Contractor is referred to Section 2200, "Earthwork," of these specifications.

2220.230.3 STEEL CONDUCTOR TUBE - Steel conductor tube shall be butt welded of sheets conforming to ASTM Specifications A-283. Conductor tube used shall not have a thickness of less than 1/4 inch. All field joints shall be butt welded in full circumference.

Steel conductor tube of the size and thickness specified on the plans shall be installed in place by jacking methods without the use of water or air at the locations shown on the plans, and to grades required to install the sewer pipes and/or force mains. Should voids or loss of ground occur during jacking operations, said voids shall be filled with grout consisting of a lean mixture of cement and sand.

Pipe lines shall be installed within the conductor tube to the lines and grades shown on the plans. The sewer pipe shall be supported on wood skids in such a manner as to relieve the pipe joints from all load and bearing. The annular space between the conductor tube and pipe shall be filled with sand. The pipe lines shall pass a successful test for leakage as provided in Section 2240, "Cleaning and Testing," of these specifications.

2220.240 CONCRETE CONSTRUCTION - The Contractor is referred to Section 2210, "Concrete Construction," of these specifications.

2220.250 PIPE JOINT DEFLECTIONS - Short lengths of pipe shall be required to make curved alignments of the sewer without exceeding the manufacturer's recommendations for joint deflections.

2230.10 GENERAL - All manholes shall be constructed in conformance with the District's Standard Drawing No. E-4, E-5, or E-6. All such structures shall be built into the sewer lines at the locations shown on the plans. Pipe for future lateral sewer lines shall be built into the structures as shown on the plans, and the outer ends closed with a cap securely fixed in place. The caps shall be so fixed as to be easily removed in the future and shall be watertight.

2230.20 PRECAST MANHOLES - Precast manhole sections will be manufactured in a plant designed for this type of work. All units will conform to the details on the above referenced drawings with eccentric cone top sections. Concrete used in the precast sections shall be manufactured of approved and selected-materials in such, proportions to produce a Class I concrete as per Section 2210, "Concrete Construction," of these specifications, with a minimum compressive strength of 3000 psi. Sections will be compacted by vibration or centrifugal force and cured according to approved practice, either by steam sprinkling, membrane solution or a combination of these methods. Manholes shall conform to ASTM Designation C-47869.

All sections shall be "tongue and grooved" as shown on the standard drawings, with a minimum depth of 3/4 inch. All edges shall be true and even to enable a close fit when sections are placed together. A maximum tolerance of 1/4 inch will be permitted when two sections are placed together in either a lateral or vertical direction.

2230.30 MANHOLE BASE - Manhole bases shall be monolithic construction of Class IV concrete and shall be poured to the size, line, and grade as shown on the standard drawings and plans. Drop manhole bases shall be constructed as detailed on the District's Standard Drawing No. E-6. The Contractor is referred to Section 2210, "Concrete Construction," of these specifications.

In laying the pipe up to structures, no pipe shall be allowed to project beyond the inside of the wall of the structure, and in no case shall the bell of a pipe be built to project beyond the outside of a structure.

A notch or groove conforming to the precast manhole section shall be formed on top of the base section.

2230.40 PRECAST MANHOLE JOINTS - Precast manhole sections shall be tongue and grooved alternately on both ends of the sections and shall be laid with the grooved portion facing up. Each section shall be set so as to enable the manhole to rise vertically above the base.

A concrete waterproof mortar shall be placed on the top of each ring completely covering the groove portion prior to the installation of the next precast section. Excess mortar shall flow out equally on both sides of the joint for the complete circumference of the ring. Finish mortar joint should have a minimum thickness of 1/4 inch.

Mortar shall consist of 1 part by volume of cement and three (3) parts by volume of sand. Mortar shall be mixed in a suitable mixer in a water-tight mixing box. The materials must be thoroughly mixed dry until the mass assumes a uniform color and

then sufficient water added to bring the mixture to a workable consistency. No mortar which has begun to set shall be used and no retempering thereof will be permitted. Mortar shall conform to Section 2210 of these specifications.

2230.50 GRADE RINGS - Precast grade rings shall be used to reach desired height of the manhole cover. Minor adjustments shall be made by the use of "shims" under the frame. Grade rings are not required for manholes constructed in easements unless needed for adjustment to finish grade.

2230.60 MANHOLE STEPS - Manhole ladder steps shall be by Long- Beach Iron Works No. X-407A (revised), or approved equal, and shall be fabricated of wrought iron meeting the requirements of ASTM Specification A207 for Rolled Wrought Iron Shapes and Bars. All bends shall be made hot after which the step shall receive a heavy coat of galvanizing.

2230.70 BRICK MANHOLES - Brick manholes per District Standard E-5 may be used in lieu of precast manholes with prior written approval of the District.

2230.80 CLEANOUTS - Cleanouts shall be constructed as shown on the District's Standard Drawing No. E-8, and in conformance with the notes contained therein.

2230.90 CASTINGS - All castings shall be of tough gray iron free from cracks and swells. The iron shall conform to the requirements of ASTM Standard A159-64T-G3000.

2230.100 MANHOLE FRAMES AND COVERS - Manhole frames and covers to be constructed in easements shall be by Long Beach Iron Works No. X-103D, or approved equal. All other frame and covers shall be by Long Beach Iron Works No. X-106B, or approved equal. Covers shall be diamond tread finish and shall be provided with a "lifting receptacle" per Sanitation District Standard E-7. All frames and covers to be machined to fit (non-rocking).

2230.110 CLEANOUT FRAMES AND COVERS - Cleanout frames and covers shall be Long Beach Iron Works No. X-503B, or approved equal. Cover to be diamond tread and the letter "S" on the nameplate.

2230.120 NAMEPLATE - The nameplate on each and every sanitary sewer manhole cover shall read as follows: "Sanitary Sewer."

2240.10 GENERAL - It is the intent of the plans and specifications that the completed sewer pipes of all types, along with manholes and other appurtenances shall be water tight and clean.

2240.20 INFILTRATION AND EXFILTRATION TEST - Each section of sewer between two successive manholes shall be tested for leakage or, at the option of the Engineer, for infiltration. In general, the leakage test shall be made on all sections of sewer except those where, in the opinion of the Engineer excessive ground water is encountered, the infiltration test shall be made.

Even though a section may have previously passed the leakage or infiltration test, each section of sewer shall be tested subsequent to the last backfill compacting operation in connection therewith; wherein, in the opinion of the Engineer, heavy compaction equipment or any of the operations of the Contractor or others may have damaged or affected the required water tight integrity of the pipe, structure, and appurtenances. The Contractor shall furnish all materials required for the tests and bear all costs in connection therewith. Tests shall be made in the presence of the Engineer.

If the exfiltration or infiltration rate as shown by the tests specified herein is greater than the amount specified, the pipe joints shall be repaired or, if necessary, the pipe shall be removed and relaid by the Contractor at his expense. The sewer will not be considered acceptable until the leakage or infiltration rate, as determined by test, is less than the allowable.

Unless excessive ground water is encountered, each section of sanitary sewer, between two successive structures, shall be tested by closing the lower end of the sewer to be tested and the inlet sewer of the upper structure with plugs or stoppers, and filling the pipe and structure with water to a point four (4) feet above the invert of the open sewer in the upper structure.

Where the difference in elevation between the invert of the upper structure and the invert of the lower structure is more than fifteen (15) feet, an air test per Section 2240.30 hereof shall be used in lieu of the water test.

The total leakage shall be the decrease in volume of water in the upper structure. The leakage shall not exceed one-tenth (0.1) gallons per minute 'per inch of nominal diameter of pipe per 1000 feet of sewer pipe being tested.

If the leakage, as shown by the test, is greater than allowed, the pipe shall be overhauled and, if necessary, replaced and relaid until the joints and pipe shall hold satisfactorily under this test. All tests must be completed before street or trench is resurfaced, unless otherwise directed by the Engineer. The Contractor shall furnish all labor and materials for making the tests required at his own expense.

If, in the construction of a section of the sewer between structures, excessive ground water is encountered, the test for leakage described above shall not be used, but instead, the end of the sewer at the upper structure shall be closed sufficiently to prevent the entrance of water. Pumping of ground water shall be discontinued for at least three days after which the section shall be tested for infiltration. The infiltration shall not exceed one-tenth (0.1) gallons per minute, per inch of diameter, per 1000 feet of main line sewer being tested and

does not include the length of house laterals entering that section. Where any infiltration in excess of this amount is discovered before completion and acceptance of the sewer, the sewer shall be immediately uncovered and the amount of infiltration reduced to a quantity within the specified amount of infiltration before the sewer is accepted, at the expense of the Contractor. Should, however, the infiltration be less than the specified amount, the Contractor shall stop any individual leaks that may be observed when ordered to do so by the Engineer. The Contractor shall furnish all labor, materials, equipment, and water for making the tests required at his own expense. All tests must be completed before street or trench is resurfaced, unless otherwise directed by the Engineer.

2240.30 AIR TESTING - The Contractor shall test all sewers that cannot be tested hydrostatically by means of the air test specified herein, unless otherwise directed by the Engineer. The length of the line tested at one time shall be limited to the length between adjacent manholes.

Air test procedure shall be as follows:

Pressurize the test section to 4.0 psi and hold at 4.0 psi for not less than two minutes. Add air if necessary to keep the pressure at 4.0 psi. Disconnect air supply. When pressure decreases to 3.5 psi, start stopwatch. Determine the time in seconds that is required for the internal pressure to reach 2.5 psi. This time interval shall be greater than time given in the following table. The section of pipe shall not have passed if the time is less than shown.

Sewer Size	Minimum Time in Seconds
4 inches	113
6 inches	170
8 inches	226
10 inches	283
12 inches	340
15 inches	425
18 inches	510
21 inches	595
24 inches	680

When the prevailing ground water is above the sewer being tested, air pressure shall be increased 0.43 psi for each foot the water table is above the flow line of the sewer.

If the test is not passed, the leak shall be found and repaired to the satisfaction of the Engineer.

Building laterals shall be considered part of the lateral to which they are connected and no adjustment of test time shall be allowed to compensate for the smaller diameter of the house sewers.

The pressure gauge used shall be supplied by the Contractor, shall have minimum divisions of 0.10 psi, and shall have an accuracy of 0.04 psi. Accuracy and Calibration of the gauge shall be certified by a reliable testing firm at six month intervals or when requested by the Engineer.

When the air pressure test is used for testing of the pipe, the manholes shall be water tested. Each manhole shall be filled with water 4 feet 0 inches above flow line of the manhole with the inlet and outlet of each manhole plugged. The maximum leakage rate shall be 10 gallons per hour per manhole test to be run for a minimum of 30 minutes.

2240.40 TESTING - FORCE MAIN - After trenches are backfilled and compacted, the force main shall be subjected to a hydrostatic pressure test of the specified operating pressure for the class of pipe to be tested for a period of four hours.

Care shall be taken to expel all air from the pipe line as the line is filled with water for the test. The water necessary to maintain this pressure shall be measured through a meter-or other means satisfactory to the Engineer. The leakage shall be considered as the amount of water entering the pipe during the test, less the measured leakage through the valves and bulkheads. Leakage shall not exceed the rate of twelve (12) gallons per inch of diameter per twenty-four (24) hours per mile of pipe. Any noticeable leaks shall be stopped and any defective pine shall be repaired or replaced with new sections and retested as specified above before final approval and acceptance of the work by the Engineer. All labor, materials, equipment and water for tests, shall be furnished by the Contractor.

2240.50 CLEANING - Before final acceptance of sewer facilities or prior to putting any sewer into service, all sewer facilities shall be visually checked and all foreign objects, materials or obstructions removed from the facilities. If dirt, silt or other materials are found in the facilities, the Engineer may require that the facilities be cleaned by flushing, balling, rodding or other means so that the materials may be removed from the system.

2240.60 PIPE TESTING - Tests of pipe for strength, straightness and durability shall be as required in Section 2220, "Pipe Line Materials and Installation," of these Technical Specifications.

2250.10 GENERAL - The Contractor shall provide erosion control measures as defined herewith on all areas where the natural vegetation has been disturbed by the installation of sanitary facilities. If a ground cover other than natural vegetation has been disturbed, this section does not apply and the Contractor shall replace said ground cover in kind.

2250.20 PREPARATION - After the backfill has been compacted and the pipe line tested, the Contractor shall remove and dispose of rocks and debris from the area to be reseeded. No seeding shall be performed during windy weather or when the ground is too wet or in an untillable condition. The fertilizer and seed shall be spread before the straw cover material is applied. Commercial fertilizer shall not be applied until after the seed has been sown.

2250.30 MATERIAL - Materials shall consist of the following:

2250.30.1 SEED - The seed shall consist of the following mixture: Crested Wheatgrass, 47 percent; Intermediate Wheatgrass, 27 percent; Wimmera Ryegrass, 13 percent; Blando Ryegrass, 13 percent. The seed shall be spread at the rate of 100 pounds per acre and shall be applied by the use of a "Cyclone Seed Sower" or equivalent.

2250.30.2 FERTILIZER - The fertilizer shall be Ammonium Phosphate (16-20-0) spread at the rate of 300 pounds per acre and shall be applied by the use of a "Cyclone Seed Sower" or equal.

2250.30.3 MULCH - After the application of the seed and fertilizer, new straw (stable bedding straw shall not be used) shall be uniformly spread at the approximate rate of four tons per acre. The straw shall then be "mulched" into the ground by the use of a "wire" roller or other approved equipment.

2240.10 PROTECTION FOR STEEP SLOPES - In cases where the grade over the pipe line exceeds twenty-five (25) percent slope the Contractor shall provide additional erosion control measures to stabilize the backfill material. The Contractor shall submit to the District, for their approval, special engineering details of the method to be used.

2260.10 GENERAL - Street pavement and surfaces shall be removed and replaced in all areas of construction excavation in conformance with details shown on the Plans and as specified herein. Resurfacing of existing pavement and surfaces damaged or removed in connection with the construction of the improvements, including all appurtenances, shall conform to the provisions of permits issued by the State of California Division of Highways, the County Road Department under whose jurisdiction the road falls, and/or the City for the work within the rights-of-way of these respective agencies.

2260.20 EXCAVATION AND BACKFILL - The Contractor is directed to Section 2200 of the General Conditions, "Earthwork," of these Specifications, for all items pertaining to excavation and backfilling.

2260.30 PAVEMENT REMOVAL - Street pavement, existing road surfacing, or other surfaced areas shall be removed within the limits of all construction excavations prior to proceeding with excavation operations of any nature. Surplus material shall be removed as provided in Section 2200, "Earthwork," of these specifications. Prior to removal of existing surfacing, pavement cuts shall be made as shown on the plans and as specified herein. All pavement cuts shall be neat and straight along both sides of the trench, and approximately parallel to the alignment of the pipe, to provide an unfractured and level pavement joint for bonding existing surfacing with pavement replacement. Where large irregular surfaces are removed, such trimming or cutting as hereinafter provided shall be parallel with roadway centerline or at right angles to the same. All cut edges shall provide clean, solid, vertical faces, free from all loose material.

2260.30.1 PLANT-MIX SURFACING (ASPHALT CONCRETE PAVEMENT) - Streets and alleys surfaced with asphalt concrete pavement shall be cut at the limits of the trench and/or excavation prior to removal of existing surfacing. Cuts shall be made with pneumatic tools or other approved equipment.

2260.30.2 ROAD-MIXED SURFACING - Streets and alleys surfaced with road-mixed surfacing shall be cut at the limits of the trench and/or excavation prior to removal of existing surfacing. Cuts shall be made with pneumatic tools or other approved equipment.

2260.40 PAVEMENT REPLACEMENT - In all streets or areas in which the surface is removed, broken or damaged by equipment, or in which the ground has caved in or settled, due to the installation of the improvements, the surface shall be restored to the original grade and crown section by the Contractor. In the absence of specific designation on the plans, and, where the street has been improved with roadway surface, base course, curb, sidewalk or gutter, trenches or damaged sections shall be restored with the type of improvement conforming to that which existed at the time the Contractor entered upon the work.

Prior to resurfacing, the existing surfacing shall be removed as provided above. All work shall match the appearance of the existing improvements and finished pavement shall not deviate from existing grade by more than 1/8-inch in 10 feet and shall be free from ruts, depressions, and irregularities.

2260.50 STATE HIGHWAY RIGHT-OF-WAY - Construction of lines within State Highway Rights-of-Way shall be subject to Division of Highway utility encroachment permit, which permit will be obtained by the Contractor. All work done within highway rights-of-way shall conform to the "Terms and Conditions Relating to Utility Encroachments," as issued by the State Division of Highways, and as to details as indicated on the plans.

2260.60 COUNTY ROADS - Construction of lines within County Roads and within "Private Reservations" shall be subject to the San Bernardino County Road Department Excavation Permit, which permit will be obtained by the District.

The Contractor's attention is directed to the requirements of the County Road Department regarding resurfacing of excavations in County Roads. The specifications, policies and procedures of said County Road Department shall supersede all other provisions of this Section within the jurisdiction of the County Road Department, but only if such specifications exceed the requirements of these Standard Specifications. The Contractor shall comply with all requirements of this permit including any payments due for his failure to comply with County Specifications.

2260.70 BASE MATERIAL - Base material shall be furnished, placed, and compacted in the trench excavation when required by the agency having jurisdiction.

2260.80 PLANT-MIX SURFACING (ASPHALT CONCRETE PAVEMENT) - All asphalt concrete surfaces, including but not limited to pavements, curbs, driveways, and sidewalks, which are removed, damaged or broken by the Contractor's installation of improvements under this Contract, shall be replaced and/or reconstructed. All asphalt concrete shall be placed on compacted fills or base material as hereinbefore specified and replacement and/or reconstruction shall be to the same dimensions as existing surfaces unless otherwise stated herein or required by the agency having jurisdiction over the road.

Materials and workmanship for asphalt concrete replacement and/or reconstruction shall conform to the requirements of Section 39 of the State of California Standard Specifications, 1973.

Plant-mix surfacing shall be Type B asphalt concrete conforming to the above mentioned specifications.

Mineral aggregate for Type B asphalt concrete shall conform to the grading specified for 1/2-inch maximum, medium size, as specified in Section 39-2.02 of the above mentioned specifications.

Paving asphalt to be mixed with the mineral aggregate shall be steam-refined asphalt and shall conform to the provisions in Section 92 in the above named specifications with the penetration range of 85-100, 120-150, or 200-300 as specified by the Engineer.

Paint binder shall be grade RS-1 emulsified asphalt unless otherwise designated by the Engineer.

2260.90 ROAD-MIX SURFACING - All road-mix surfaces including but not limited to pavements, curbs, driveways, and sidewalks, which are removed, damaged or broken by the Contractor's installation of improvements under this contract, shall be replaced, and/or

reconstructed. All road-mix surfacing shall be placed on compacted fills or base material as hereinbefore specified and/or reconstruction shall be to the same dimensions as existing surfaces unless otherwise stated herein or required by the agency having jurisdiction over the road. Materials and workmanship for road-mix resurfacing and/or reconstruction shall conform to the requirements of Section 38 of the State of California Standard Specifications, 1959.

Mineral aggregate may be either selected material from the roadway excavation or selected material obtained from other sources. All material shall first meet the approval of the agency involved and the Engineer.

Bituminous binder to be mixed with the mineral aggregate shall be a liquid asphalt, grade SC-800, and shall conform to the provisions in Section 93 in the above named specifications. In no case shall the quantity of bituminous binder be less than five (5) percent of the weight of the dry mineral aggregate.

2260.100 TEMPORARY RESURFACING - The Contractor shall furnish, place, and maintain temporary resurfacing as herein specified over backfill in paved dedicated streets wherever so ordered in writing by the Engineer, or as specified by State, County, or City permits.

Temporary resurfacing shall be placed at the locations and of the thickness required by the permit and/or by the Engineer and shall consist of a cold-mix asphalt concrete. Binder shall be liquid asphalt, grade SC-800.

Temporary resurfacing shall be placed to the grade of existing surfaces and rolled and compacted as soon as the condition of the backfill is considered, by the Engineer, to be suitable to receive such surfacing. The Contractor shall maintain all temporary resurfacing in proper, usable condition until the permanent resurfacing operations are to be commenced. Temporary resurfacing shall be removed and disposed of by the Contractor before permanent resurfacing is placed in conformance with the plans and specifications.

Drawing No.	
E-1	Protection of Domestic Water Lines from Sanitary Sewers
E-2	Sewer Pipe Bedding
E-3	Concrete Blanket
E-4	Precast Manhole
E-5	Brick Manhole
E-6	Drop Manhole
E-7	Manhole Frame and Cover
E-8	Cleanout
E-9	Building Lateral, Type A, B, and C
E-10	Building Lateral, Curbed Streets
E-11	Chimney and Deep Lateral
E-12	Siphon Manhole
E-13	Concrete Anchor and Concrete Cutoff Wall
E-14	Concrete Backfill
E-15	Shallow Manhole
E-16	Concrete Joint for Sewer Pipe
E-17	Force Main Air and Vacuum Valve Assembly

STATE OF CALIFORNIA--HUMAN RELATIONS AGENCY RONALD REAGAN, Governor

DEPARTMENT OF PUBLIC HEALTH

Water Sanitation Section
Room 209 State Building
303 West Third Street
San Bernardino, California 92401

September 6, 1974

TO: ALL CONSULTING ENGINEERS - San Bernardino, Inyo and Mono Counties

The State Department of Health has established uniform statewide requirements on separation of water mains and sanitary sewers. A copy of the requirements entitled "Required Separation Between Water Mains and Sanitary Sewers" is enclosed for your information.

In your planning and design of water systems and sanitary sewers, every effort should be made to assure the basic separation requirements (10 feet horizontal, 3 feet vertical) are met. In exceptional situations where the separation is not feasible, special construction practices have been included which provide the required public health protection to the water supply system.

Please review the requirements and incorporate them in your plans and specifications. Other methods of special construction may be considered. If you feel that you have satisfactory alternate construction methods, please review them with this office for approval prior to construction.

If you have any questions regarding the requirements, please contact this office.

Very truly yours,

C. E. Anderson

C. E. Anderson
District Engineer

CEA:ol

Enclosure

SUPERSEDES E-1
DATED 1-3-75

(5 PAGES TOTAL)

	ARROWBEAR PARK COUNTY WATER DISTRICT	
	PROTECTION OF DOMESTIC WATER LINES FROM SANITARY SEWERS	
	APPROVAL Donald L. Jenkins 1-30-75 DISTRICT ENGINEER DATE	DRAWING NUMBER E-1
REVISED		

REQUIRED SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS
(10 Feet Horizontal and 3 Feet Vertical)

I. PUBLIC HEALTH REASONS

Sanitary sewers frequently leak and saturate the surrounding soil with sewage. Water mains cannot always be relied upon to have continuous positive pressure therein and can be contaminated by a nearby leaking sewer. To install new water mains or to repair breaks in existing mains in sewage contaminated areas is a serious public health hazard. Hazards also can result if a nearby existing sewer is broken in the course of installing or repairing a water main; this can allow sewage to enter the water main trench or the water main. Water main failures will likely result in failure of any sewer located above or too near the water main.

A community with its buried water mains and sanitary sewers in close proximity is extremely vulnerable to waterborne disease outbreaks in the event of earthquake or man-made disasters that would cause simultaneous fractures to these conduits.

Any case in which both a water main and sewer fail in close proximity is extremely hazardous to the water consumers. There can be no dollar value set on the reduction of such hazards. All practical steps must be taken to avoid them.

II. BASIC SEPARATION REQUIRMENTS

Water mains and sewers should be separated as far as is reasonable in both the horizontal and vertical directions with sewers always lower than water mains.

Parallel Construction: The horizontal distance between pressure water mains and sewers shall be at least 10 feet.

Perpendicular Construction (crossing): Pressure water mains shall be at least three feet above sanitary sewers where these lines must cross.

III. EXCEPTIONS TO BASIC SEPARATION REQUIREMENTS

Certain local conditions of topography, available space, etc. may create a situation where there is no alternative but to install water mains or sewer lines at less than the required separation. In such cases, more rigid construction requirements must be met as specified in Section IV below subject to the special provisions and restrictions given in Section V.

The basic separation requirements apply to sewers of 24" diameter or less. Larger sewers may create special hazards because of flow volumes and type of joints used. Each installation of sewers larger than 24" diameter must be reviewed in advance to determine if the separation and protection provided to nearby water mains is adequate.

IV. SPECIAL CONSTRUCTION REQUIREMENTS

The special construction requirements necessary for sewers or water mains where the minimum required separation cannot be maintained are given in Attachment No. 1. There are three situations encountered in the field:

Case 1 - New sewer - Existing water main
Case 2 - New water main - Existing sewer
Case 3 - New water main and new sewer

For Case 1 and 3 the special construction requirements apply to the sewer. For Case 2 the special requirements may apply to either or both the water main and sewer.

The special construction requirements shall apply to house laterals that cross above a pressure water main but not to those house laterals that cross below a pressure water main.

The special construction requirements given are for the normal conditions found with sewage collection lines and water distribution mains. More stringent requirements may be necessary for special circumstances such as water mains buried deeper than normal, unstable soil conditions, high ground water, etc. These situations must be reviewed with the Health Department in advance.

The special provisions and restrictions given in Section V must be followed.

V. SPECIAL PROVISIONS AND RESTRICTIONS

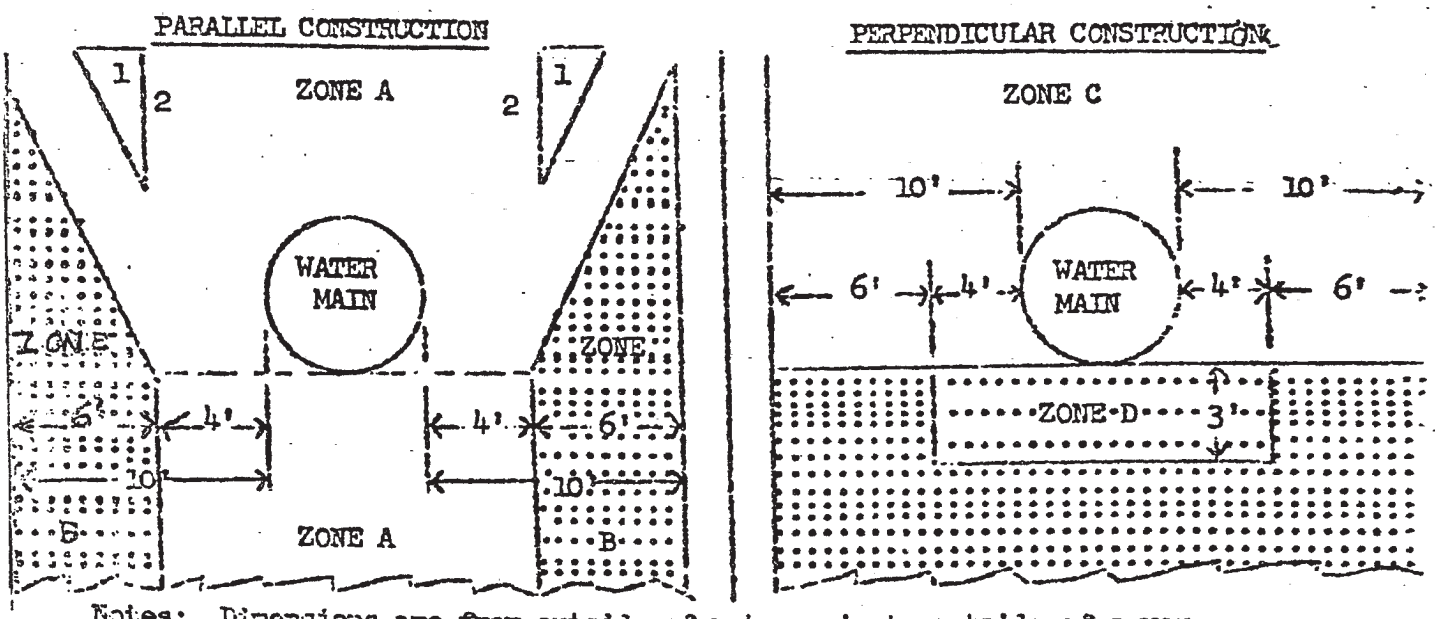
1. Sewer force mains are not permitted to be constructed over water mains. Force mains constructed parallel to water mains must have the required separation as given in Section II regardless of construction. When sewer force mains must cross under water mains, special approval of the Health Department is required in advance.

2. Construction of any sanitary sewers within 25 feet horizontal distance of low head water mains shall be reviewed and approved by the Health Department in advance. (Low head water mains are defined in the State Health Department Policy as any water main which has less than 5 psi at any time at any point in the main.)

3. Where a sewer must cross over a water main, it should cross at a 90° angle if possible and the length of sewer pipe shall be centered on the water main so the sewer joints are the maximum distance from the water main.

4. In pressure testing new water mains and/or sewers, special attention should be given to those areas where the lines are in close proximity.

SPECIAL CONSTRUCTION REQUIREMENTS
Where Required Separation Cannot Be Maintained



Notes: Dimensions are from outside of water main to outside of sewer.
Explanation of compression and mechanical joints and reinforced concrete encasement on page 4.

CASE 1 and 3: NEW SEWER BEING INSTALLED

Zone	Special Construction Required for Sewer
A.	Sewer lines will not be permitted in this zone without special permission from the Department of Health.
B.	Extra-strength vitrified clay pipe with compression joints; or concrete pipe with reinforced concrete collars around the joints, which joints shall have a minimum thickness of six inches and a minimum distance along the pipe of six inches on either side of the joint; or rubber gasket reinforced concrete pipe; or rubber gasketed asbestos-cement pipe; or rubber gasketed plastic pipe; or cast iron pipe with compression joints.
C. or D.	Class 150 or heavier cast-iron pipe with hot dip bituminous coating and approved mechanical joints; or any sewer pipe within a continuous steel casing, which casing shall have a thickness of not less than one-fourth inch and with all voids between sewer pipe and casing pressure grouted with sand-cement grout.

(Continued on page 4)

If an existing sewer is located within Zone A, B, C, or D of a proposed water main, the following special requirements apply.

Zone

A. No water mains shall be constructed without special permission from the Department of Health.

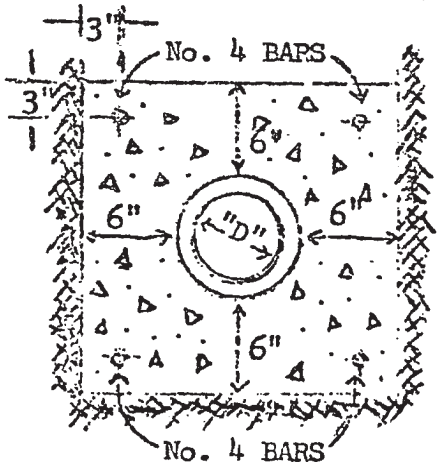
B. If the sewer does not meet the Zone B requirements given above the water main shall be of Class 200 pipe or equivalent.

C. No water mains shall be constructed without special permission from the Department of Health. If permission is granted, the sewer shall be encased with reinforced concrete and the water main shall be of Class 200 pipe or equivalent.

D. The sewer shall be encased with reinforced concrete.

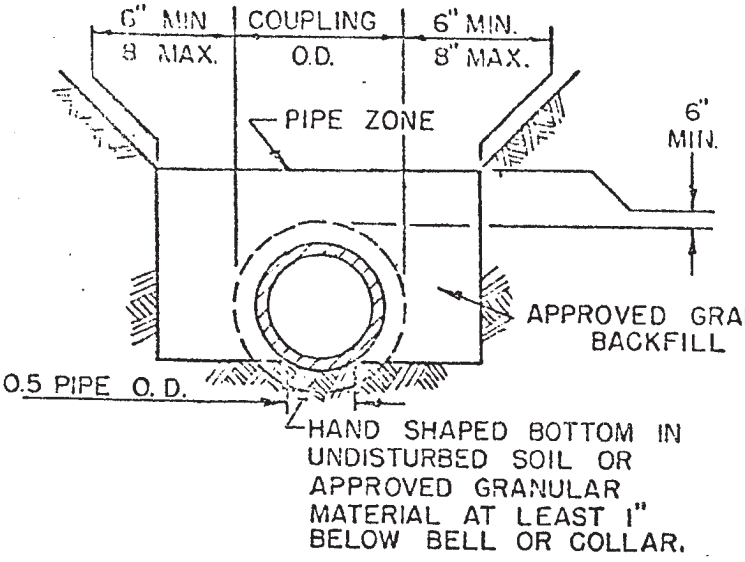
Definitions:

1. Compression joints are rubber ring or gasket joints.
2. Mechanical joints are bolted joints.
3. Acceptable reinforced concrete encasement is as follows:



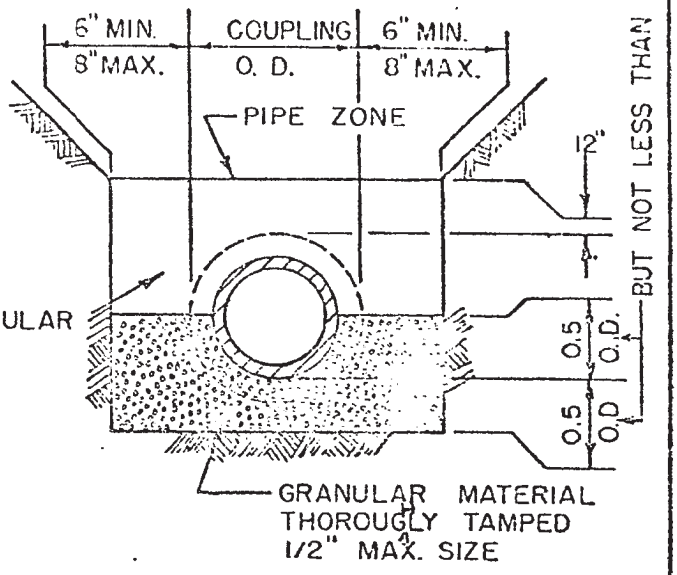
Concrete shall be Class B (California Department of Transportation Standard Specifications, Section 90, current issue) or equivalent.

May 1974



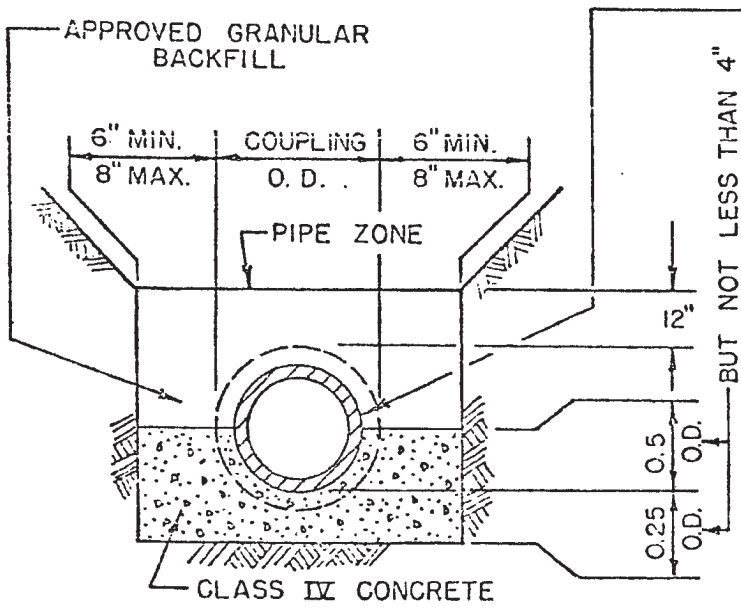
NORMAL BEDDING

(LOAD FACTOR = 1.5)



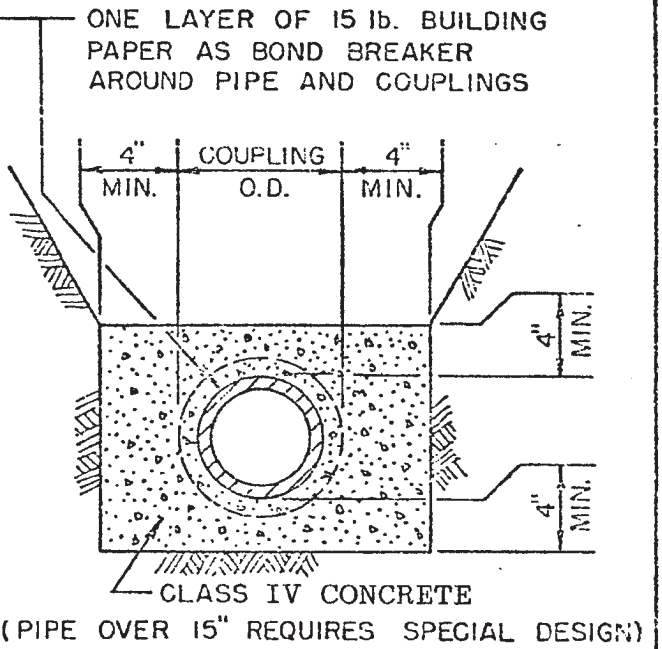
SPECIAL BEDDING

(LOAD FACTOR = 1.9)



CONCRETE CRADLE

(LOAD FACTOR = 3.0)



(PIPE OVER 15" REQUIRES SPECIAL DESIGN)

CONCRETE ENCASEMENT

(LOAD FACTOR = 4.5)

NOTE:
ALL BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS.

TECH. SPEC. REFERENCE:

CONCRETE	—	SECTION 2.0
BEDDING	—	SECTION 3.14

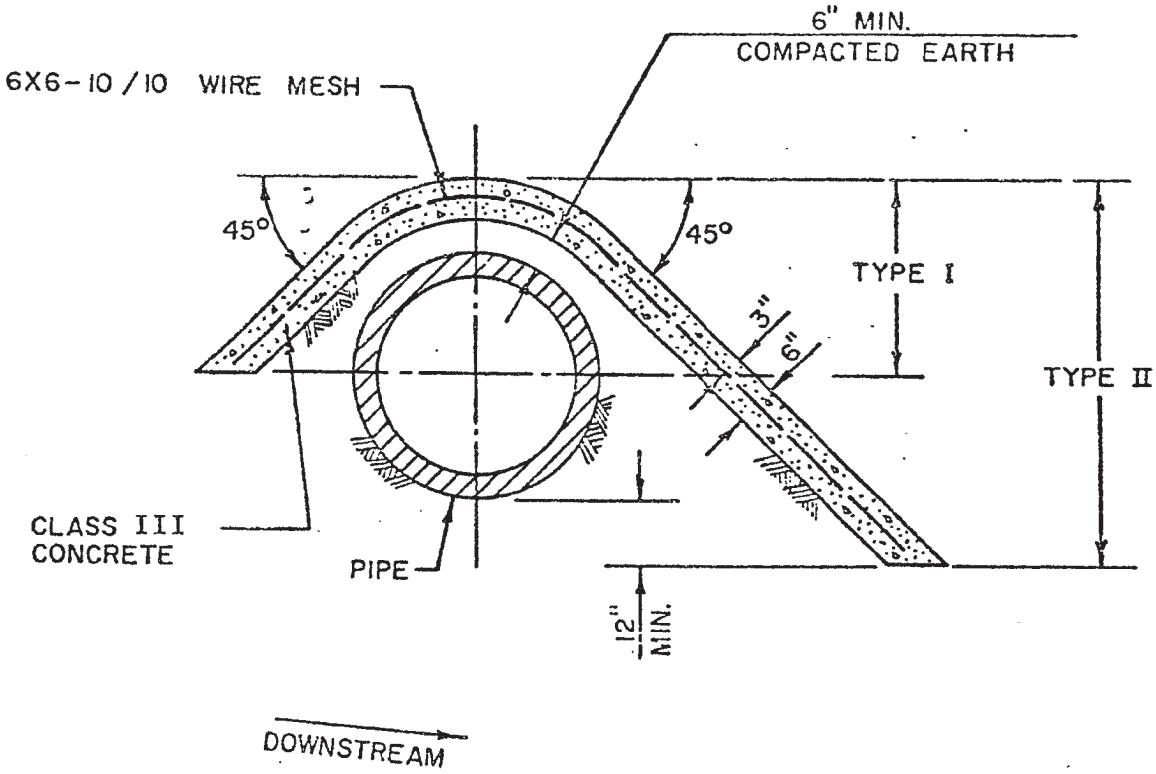
REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

SEWER PIPE BEDDING

APPROVAL
Ronald A. Julius
DISTRICT ENGINEER
1-3-75
DATE

DRAWING NUMBER
E-- 2



NOTES:

1. THE DOWNSTREAM TOE OF TYPE I CONCRETE BLANKET ENDS AT THE CENTERLINE OF PIPE AS SHOWN ABOVE.

2. THE DOWNSTREAM TOE OF TYPE II CONCRETE BLANKET ENDS 12" BELOW THE BOTTOM OF PIPE AS SHOWN ABOVE.

TECH. SPEC. REFERENCE:
CONCRETE —— SECTION 2.0
CONC. BLANKET – SECTION 5.0

ARROWBEAR PARK
COUNTY WATER DISTRICT

SANITARY SEWER
CONCRETE BLANKET

APPROVAL
Arnold A. Julius 1-3-75
DISTRICT ENGINEER DATE

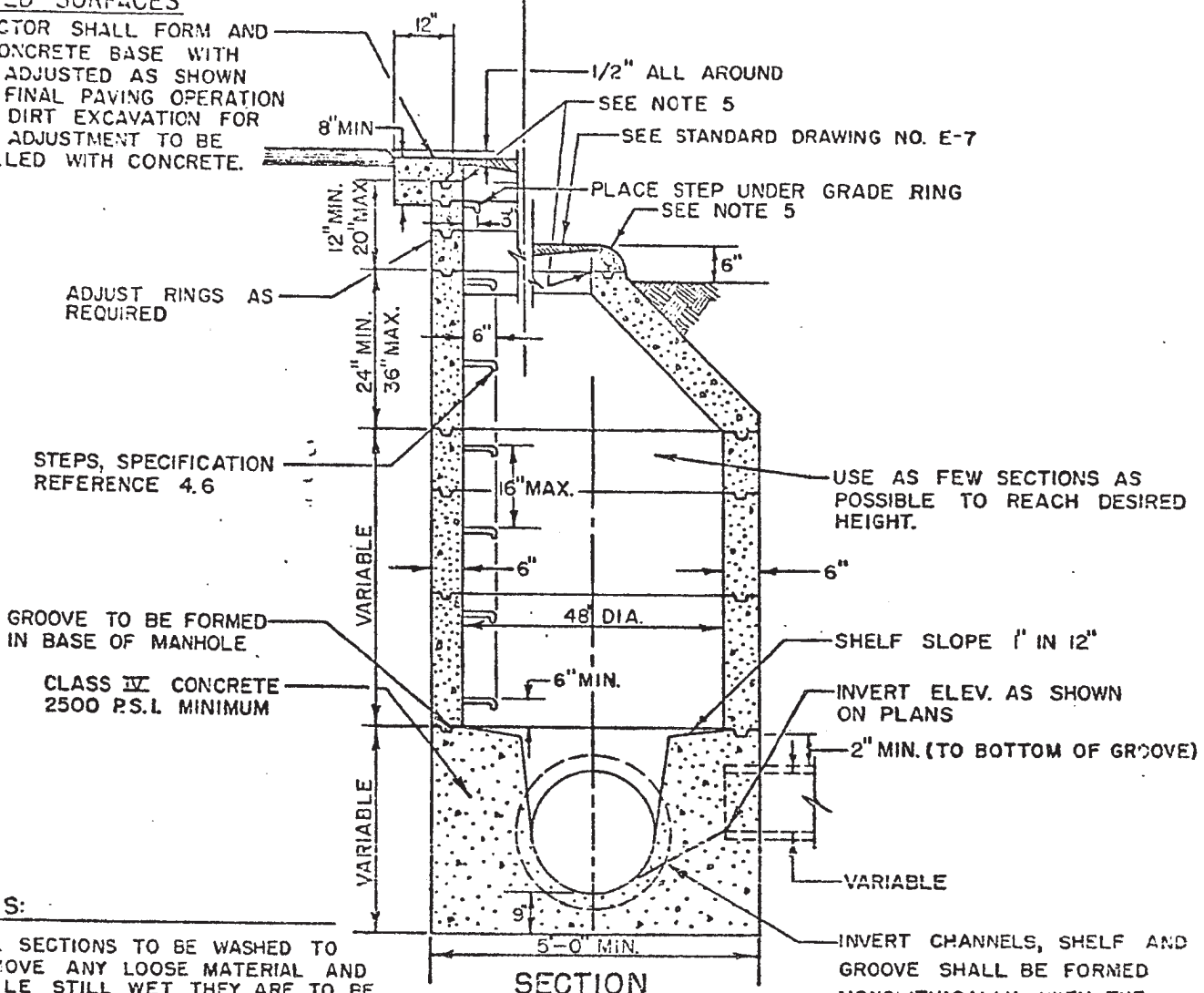
DRAWING NUMBER
E-- 3

REVISED

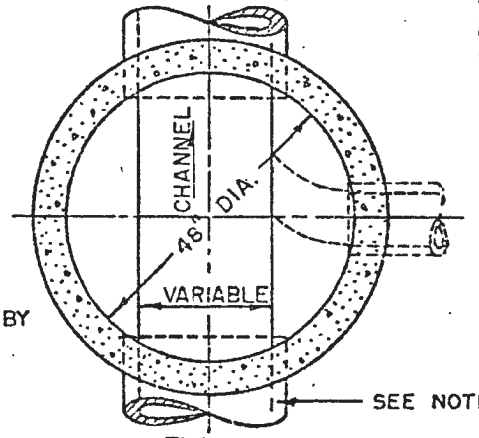
DETAIL FOR MANHOLES IN PAVED SURFACES

CONTRACTOR SHALL FORM AND POUR CONCRETE BASE WITH COVER ADJUSTED AS SHOWN AFTER FINAL PAVING OPERATION ENTIRE DIRT EXCAVATION FOR FRAME ADJUSTMENT TO BE BACKFILLED WITH CONCRETE.

DETAIL FOR MANHOLES IN EASEMENTS



SECTION



PLAN

NOTES:

1. ALL SECTIONS TO BE WASHED TO REMOVE ANY LOOSE MATERIAL AND WHILE STILL WET THEY ARE TO BE SET IN 1:3 MORTAR TRIMMED SMOOTH INSIDE AND OUTSIDE INCLUDING FRAME, EXCEPT IN NOTE 4.
2. CONCRETE FOR MANHOLE SECTIONS 3000 P.S.I. MIN.
3. PROVIDE FLEXIBLE JOINT IN ALL SEWER PIPES OUTSIDE OF MANHOLE BUT WITHIN 12" OF CONCRETE BASE.
4. IF 4" REINFORCED CONCRETE SECTIONS ARE USED THE CONTRACTOR SHALL ANCHOR FRAME TO CONCRETE SECTIONS BY THE USE OF EPOXY OR OTHER METHOD AS APPROVED BY THE ENGINEER.
5. MORTAR AROUND AND UNDER FRAME SHALL HAVE A MIX IN ACCORDANCE WITH THE SPECIFICATIONS AND SHALL BE CURED BY "HUNTS" COMPOUND OR APPROVED EQUAL.

TECH. SPEC. REFERENCE:
CONCRETE — SECTION 2.0
MANHOLE — SECTION 4.0

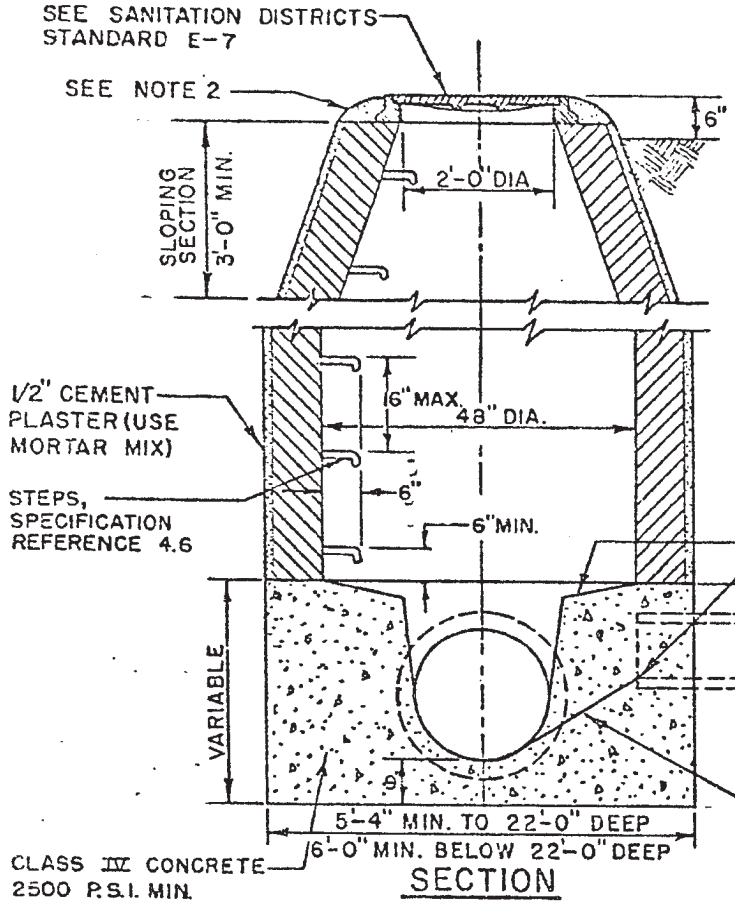
REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

SANITARY SEWER
PRECAST MANHOLE

APPROVAL
Donald G. Jacobs
DISTRICT ENGINEER
1-3-75
DATE

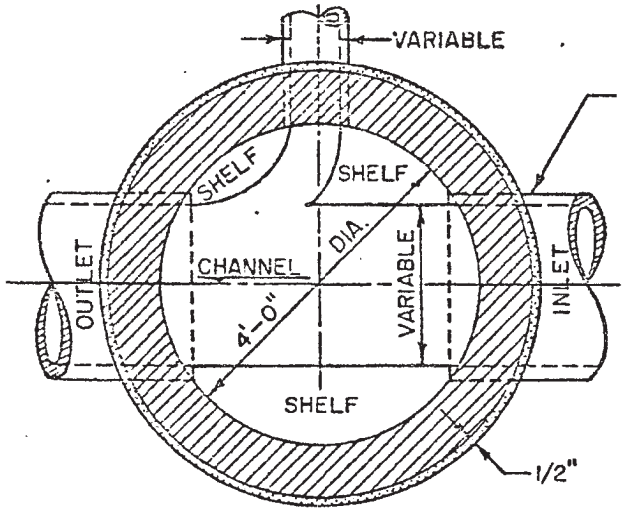
DRAWING NUMBER
E-4



SECTION

NOTES:

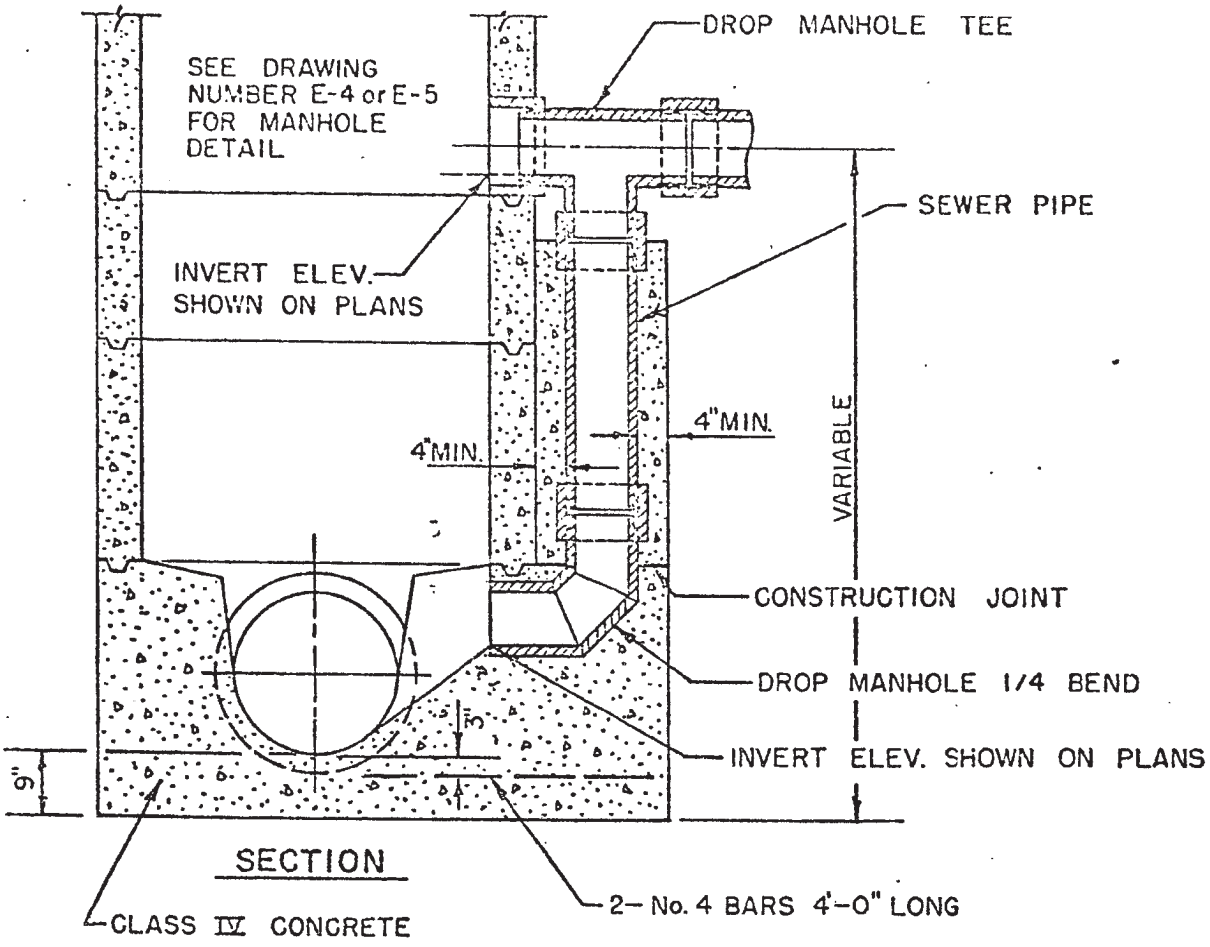
1. PROVIDE FLEXIBLE JOINT IN ALL SEWER PIPES OUTSIDE OF MANHOLE BUT WITHIN 12" OF CONCRETE BASE.
2. MORTAR AROUND & UNDER FRAME SHALL HAVE A MIX IN ACCORDANCE WITH THE SPECIFICATIONS AND SHALL BE CURED BY "HUNTS" COMPOUND OR APPROVED EQUAL.
3. BRICKWORK SHALL BE 8" THICK TO A DEPTH OF 22'-0". BRICKWORK SHALL BE 12" THICK BELOW DEPTH OF 22'-0"

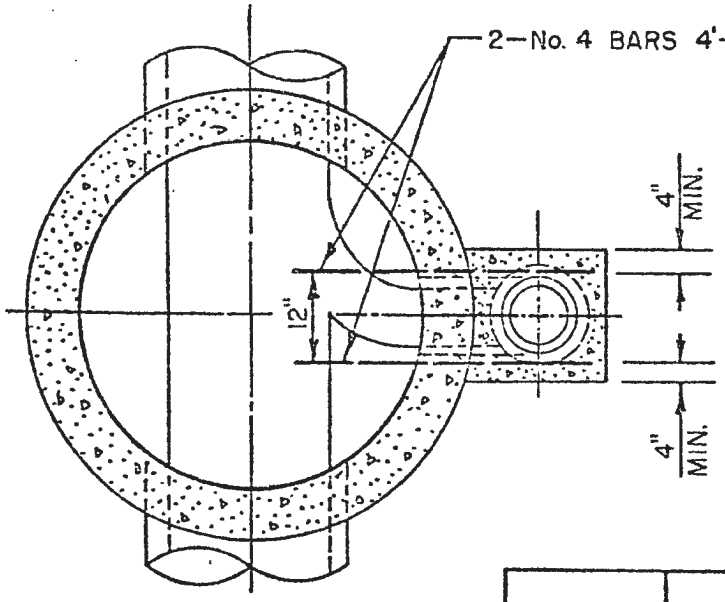


PLAN

TECH. SPEC. REFERENCE:
CONCRETE — SECTION 2.0
MANHOLE — SECTION 4.0

	ARROWBEAR PARK COUNTY WATER DISTRICT
	SANITARY SEWER BRICK MANHOLE
	APPROVAL Ronald W. Julius DISTRICT ENGINEER 1-3-75 DATE
REVISED	DRAWING NUMBER E-5





NOTE:
FOUNDATION FOR DROP SECTION SHALL BE POURED MONOLITHICALLY WITH MANHOLE BASE.

TECH. SPEC. REFERENCE
CONCRETE SECTION 2.0
MANHOLE SECTION 4.0

REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

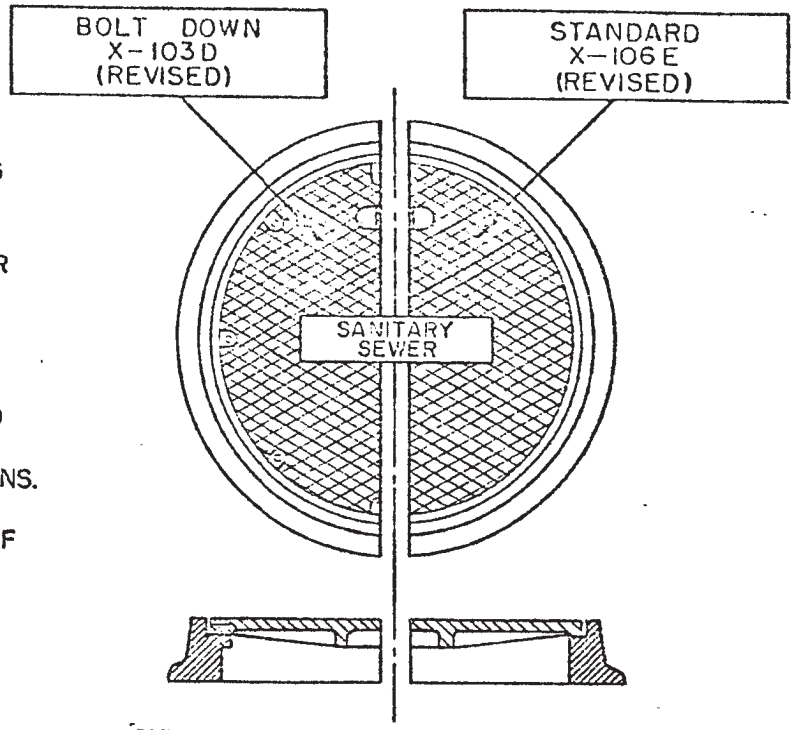
SANITARY SEWER
DROP MANHOLE

APPROVAL
DISTRICT ENGINEER
1-3-75
DATE

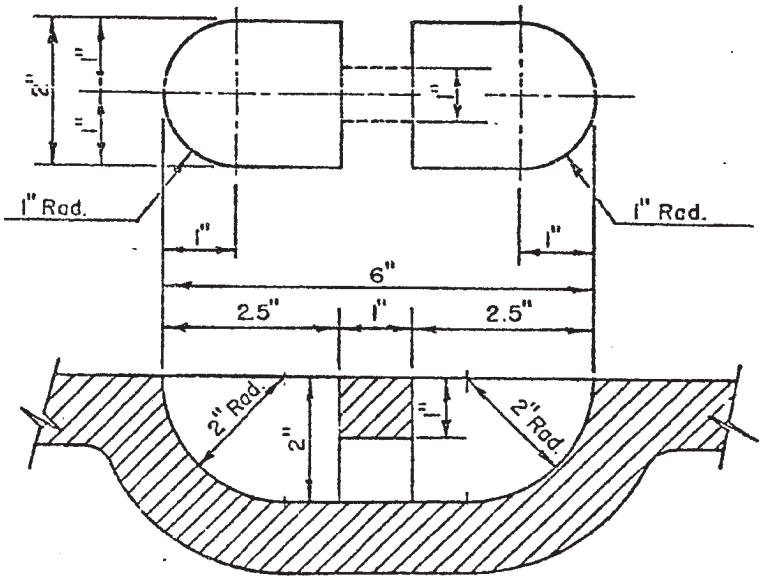
DRAWING NUMBER
E-- 6

NOTES:

1. FRAME AND COVER SHALL BE LONG BEACH IRON WORKS INC. X-105E AND X-103D OR APPROVED EQUAL WITH LIFTING DEVICE CAST COVER AS PER DETAIL SHOWN BELOW. COVER SHALL BE DIAMOND TREAD WITH NAME LETTERED AS SHOWN.
2. BOLT-DOWN COVERS ARE REQUIRED IN SOME LOCATIONS AND ARE DENOTED THUSLY —⊙— ON THE PLANS.
3. THE CONTRACTOR, AT THE TIME OF COMPLETION, SHALL FURNISH THE DISTRICT WITH A "HOOK" LIFTING TOOL AS APPROVED BY DISTRICT.



FRAME AND COVER DETAIL



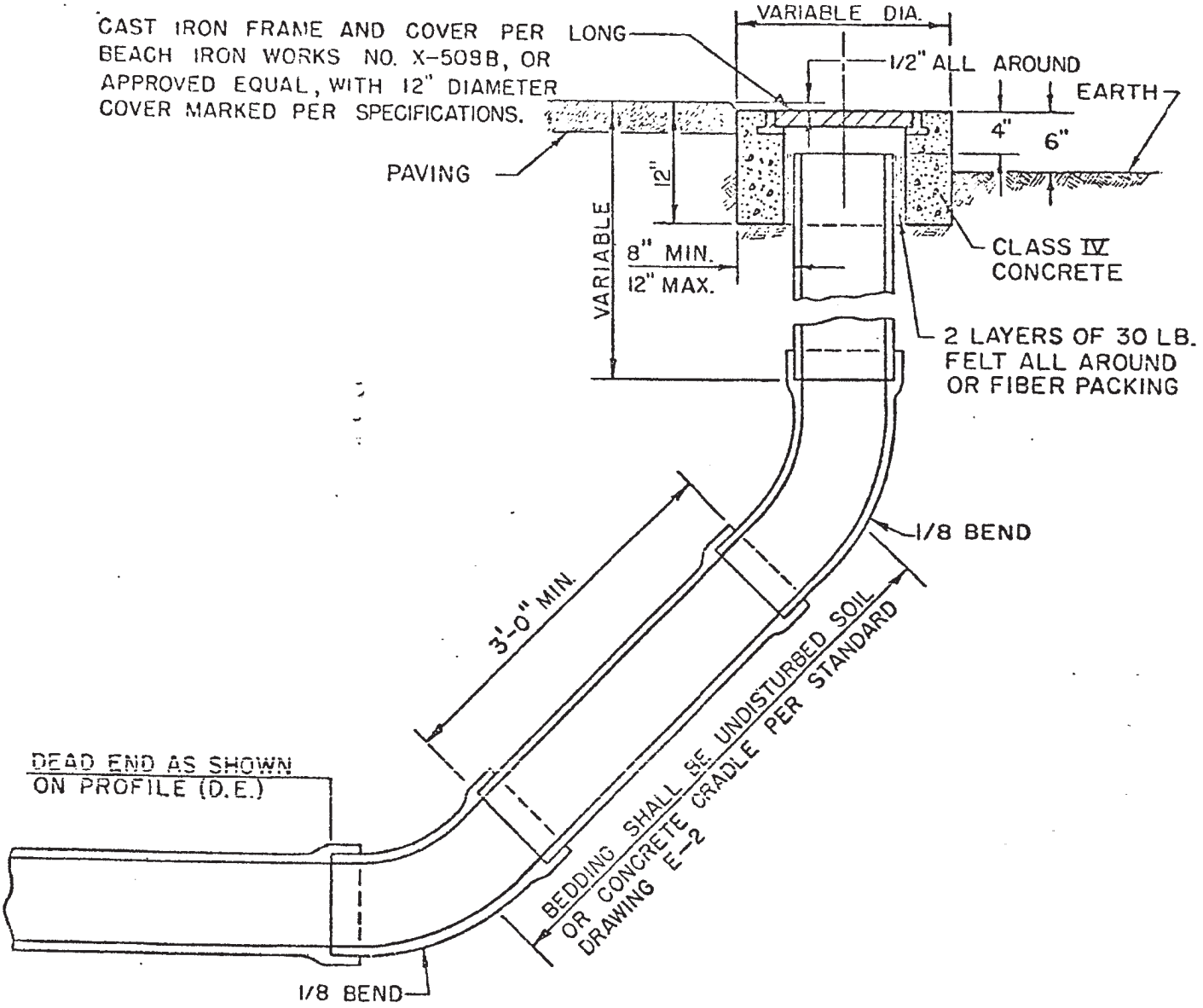
LIFTING RECEPTACLE DETAIL

TECH. SPEC. REFERENCE:
SECTION 4.9

	ARROWBEAR PARK COUNTY WATER DISTRICT
	SANITARY SEWER MANHOLE FRAME AND COVER
REVISED	APPROVAL Ronald A. Juline DISTRICT ENGINEER — DATE 13 75 — DRAWING NUMBER E-7

DETAIL FOR CLEANOUTS IN PAVED SURFACES

DETAIL FOR CLEANOUTS IN EASEMENTS



NOTE:
CLEAN-OUT LINE TO BE OF THE SAME MATERIAL & SIZE AS SEWER MAIN. THE SEWER MAIN SHALL BE LAID FOR THE FULL LENGTH & DEPTH SHOWN ON THE PLAN & PROFILE TO THE STATION MARKED DEAD END (D.E.). THE TRENCH FOR A DEAD END SHALL BE EXCAVATED ONLY TO SUBGRADE WHICH IS THE BOTTOM OF THE SLOPING PIPE AND FITTINGS. SHOULD THE EXCAVATION FOR ANY REASON BE CARRIED BELOW SUBGRADE, IT SHALL BE REFILLED TO SUBGRADE WITH ROCK OR GRAVEL WHICH SHALL BE TAMPED UNTIL FIRM AND UNYIELDING. SHOULD A FIRM AND UNYIELDING FOUNDATION BE UNOBTAINABLE BY THIS METHOD A CONCRETE PIPE CRADLE SHALL BE USED.

TECH. SPEC. REFERENCE
CONCRETE SECTION 2.0
CLEANOUT SECTION 3.11 & 4.9

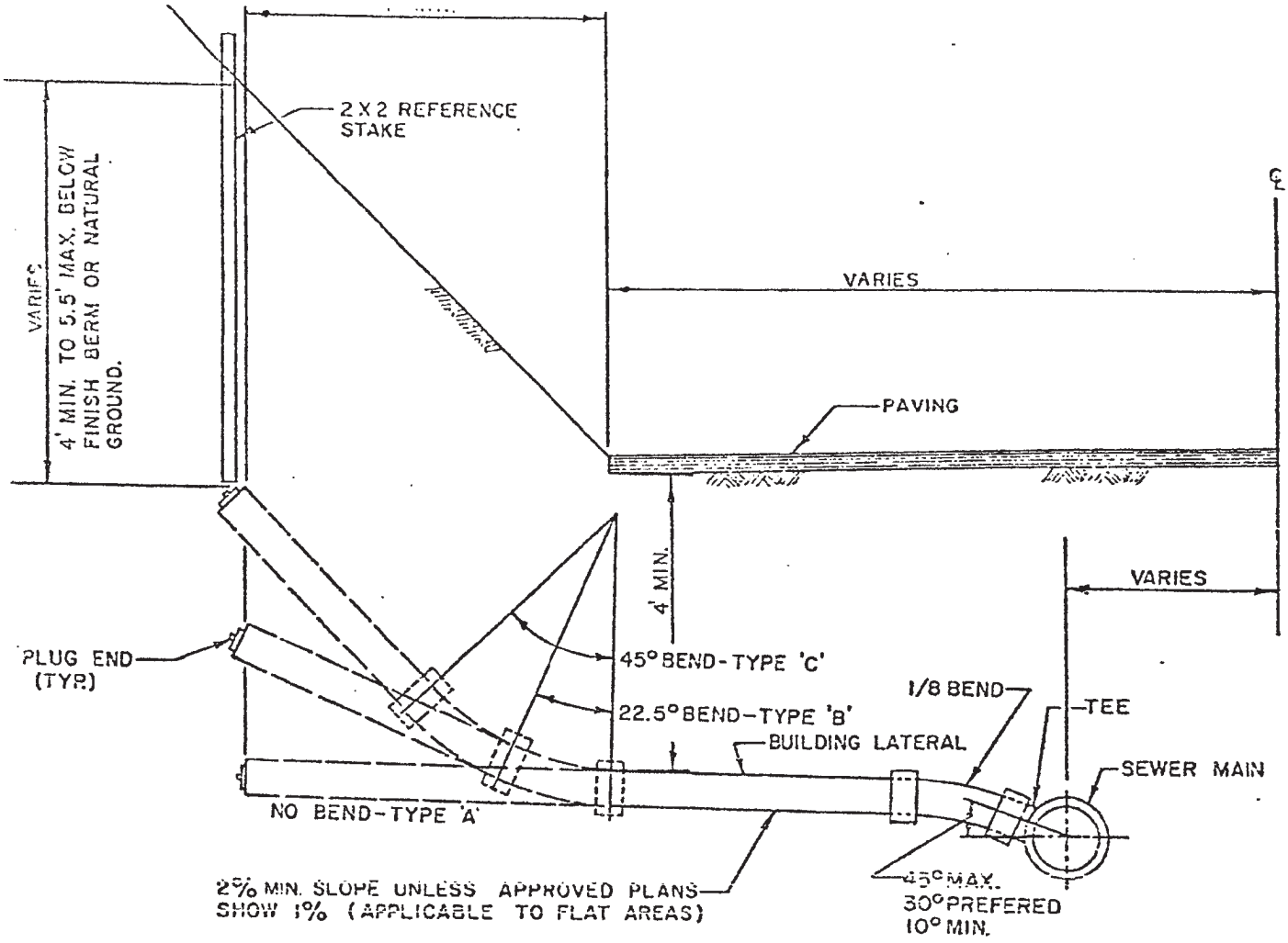
REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

SANITARY SEWER
CLEANOUT

APPROVAL
Arnold A. Jahn
DISTRICT ENGINEER
1-3-75
DATE

DRAWING NUMBER
E-- 8



NOTES:

1. 4" PIPE FOR SINGLE DWELLINGS. 6" MIN. FOR ALL OTHER LATERALS.
2. LATERAL LOCATIONS SHALL BE MEASURED AT RIGHT ANGLES TO STREET CENTERLINE FROM THE CENTERLINE OF THE NEAREST DOWNSTREAM MANHOLE COVER
3. WHENEVER DEPTH OF COVER OVER LATERAL IS LESS THAN 4'-0", SPECIAL BEDDING OR CONCRETE CRADLE PER STANDARD DRAWING NO. E-2 SHALL BE USED.
4. CONTRACTOR SHALL ACCURATELY MEASURE AND RECORD THE SEWER PLAN STATION, THE OFFSET DISTANCE LEFT OR RIGHT OF THE MAIN SEWER, AND THE DEPTH BELOW EXISTING GROUND SURFACE TO THE PLUGGED END OF THE BUILDING LATERAL.
5. CONTRACTOR SHALL REFERENCE EACH LATERAL IN THE FIELD WITH A SURFACE MARKER. MARKER SHALL BE 2 X 2 REDWOOD STAKE PLACED AT TIME OF BACKFILLING. MARKER SHALL BE VERTICAL AND CUT OFF 6" ABOVE GRADE.
6. MAXIMUM LENGTH OF PIPE SECTIONS SHALL NOT EXCEED 6'-6".

TECH. SPEC. REFERENCE
SECTION 3.13

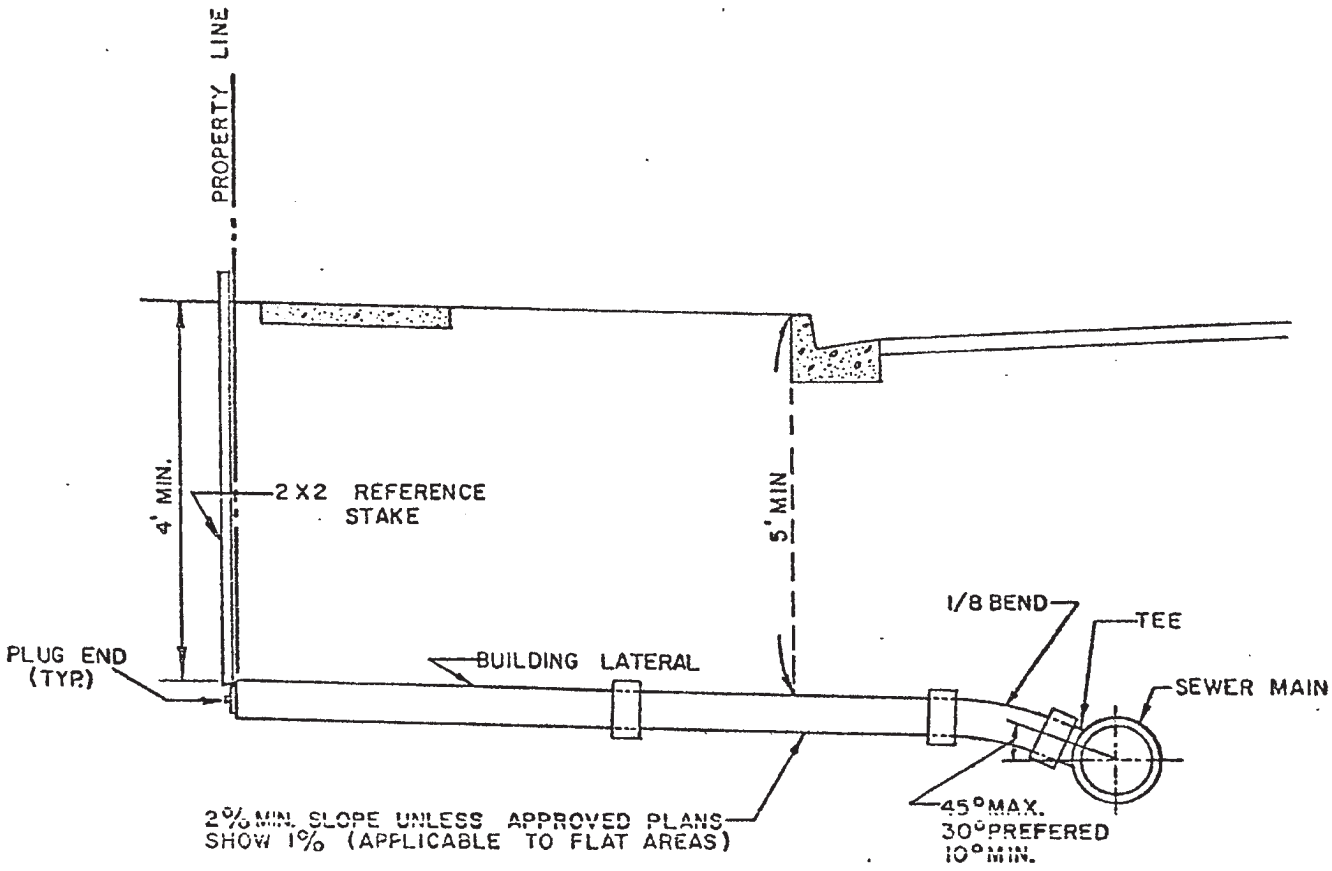
REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

SANITARY SEWER
BUILDING LATERAL
TYPE A, B AND C

APPROVAL
Ronald C. Julius 1-3-75
DISTRICT ENGINEER DATE

DRAWING NUMBER
E- 9



NOTES:

1. 4" PIPE FOR SINGLE DWELLINGS. 6" MIN. FOR ALL OTHER LATERALS.
2. LATERAL LOCATIONS SHALL BE MEASURED AT RIGHT ANGLES TO STREET CENTERLINE FROM THE CENTERLINE OF THE NEAREST DOWNSTREAM MANHOLE COVER.
3. WHENEVER DEPTH OF COVER OVER LATERAL IS LESS THAN 4'-0", SPECIAL BEDDING OR CONCRETE CRADLE PER STANDARD DRAWING NO. E-2 SHALL BE USED.
4. CONTRACTOR SHALL ACCURATELY MEASURE AND RECORD THE SEWER PLAN STATION, THE OFFSET DISTANCE LEFT OR RIGHT OF THE MAIN SEWER, AND THE DEPTH BELOW EXISTING GROUND SURFACE TO THE PLUGGED END OF THE BUILDING LATERAL.
5. CONTRACTOR SHALL REFERENCE EACH LATERAL IN THE FIELD WITH A SURFACE MARKER. MARKER SHALL BE 2 X 2 REDWOOD STAKE PLACED AT TIME OF BACKFILLING. MARKER SHALL BE VERTICAL AND CUT OFF 6" ABOVE GRADE.
6. MAXIMUM LENGTH OF PIPE SECTIONS SHALL NOT EXCEED 6'-6".

TECH. SPEC. REFERENCE
SECTION 3.13

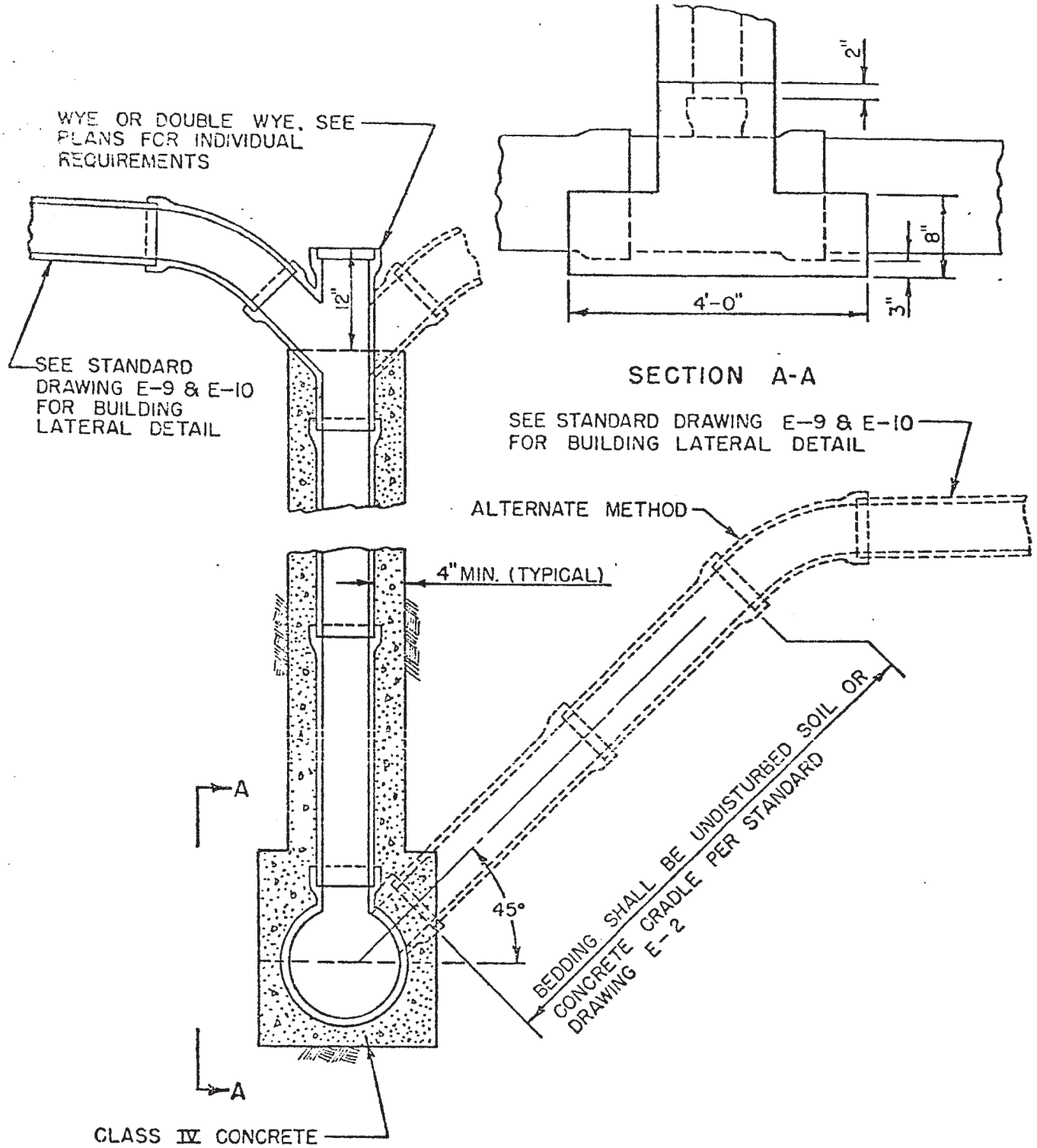
REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

SANITARY SEWER
BUILDING LATERAL
CURBED STREETS

APPROVAL Harold A. Johnson 1-3-75
DISTRICT ENGINEER DATE

DRAWING NUMBER
E-10



NOTE:
SEE CONSTRUCTION DRAWINGS FOR LOCATION AND SIZE OF LATERALS AND CHIMNEYS.

TECH. SPEC. REFERENCE
CONCRETE — SECTION 2.0
LATERALS — SECTION 3.13

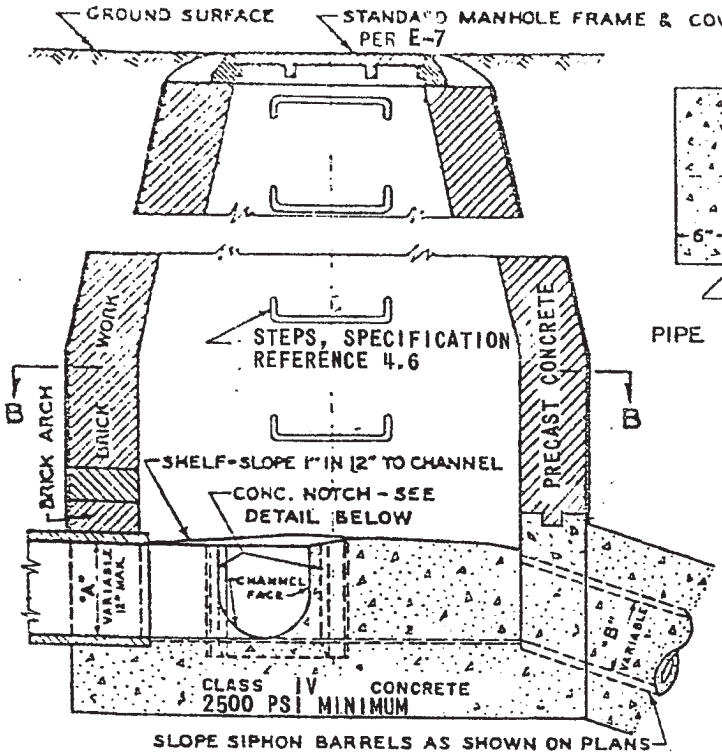
REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

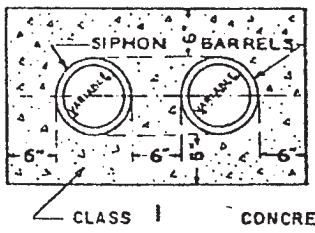
SANITARY SEWER
CHIMNEY AND
DEEP LATERAL

APPROVAL
Ronald A. Julius 1-3-75
DISTRICT ENGINEER DATE

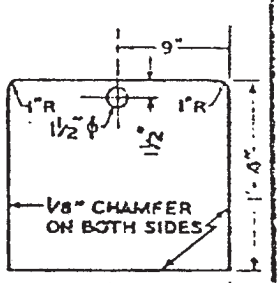
DRAWING NUMBER
E-11



SECTION A-A



PIPE ENCASEMENT DETAIL



3/8" ALUMINUM PLATE ALLOY 6061-T6 OR APPROVED EQUAL

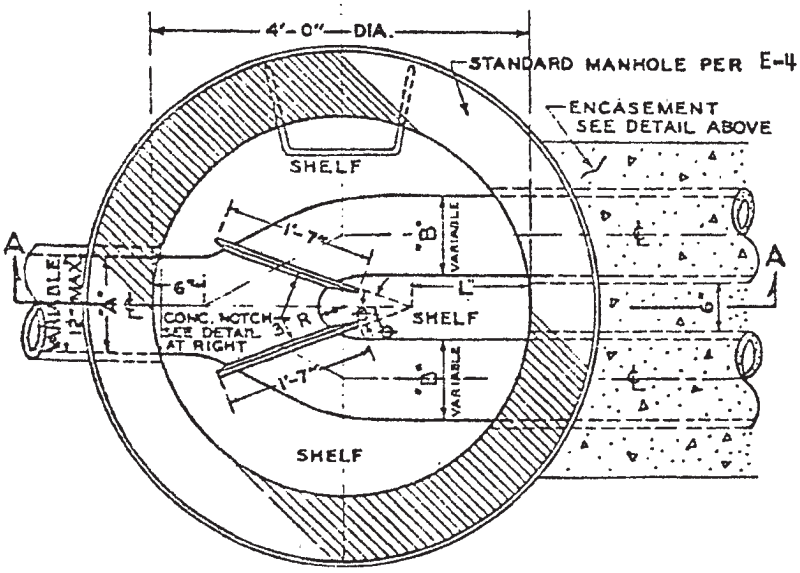
ALUMINUM GATE DETAIL

NOTES

1. FOR OTHER MANHOLE DETAILS SEE PLAN NO

E-4	PRECAST MANHOLE
E-5	BRICK MANHOLE
E-6	DROP MANHOLE
E-7	MANHOLE FRAME AND COVER

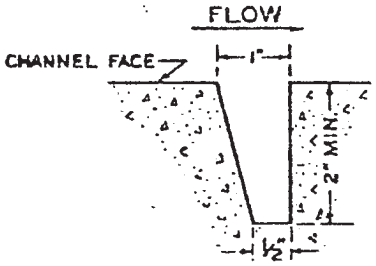
2. ENCASE SIPHON ONLY TO THE EXTENT SHOWN ON PLANS.
3. PROVIDE ONE ALUMINUM GATE WITH EACH SIPHON MANHOLE.
4. THE DOWNSTREAM LEGS OF SIPHON BARRELS SHALL NOT EXCEED A GRADE OF +30.00%. WITHOUT DISTRICT APPROVAL.



SECTIONAL PLAN B-B

TABLE OF DIMENSIONS

A	B	L	θ
8"	4"	1'-0½"	13°
8"	6"	1'-0½"	13°
10"	8"	1'-0½"	13°
10"	10"	1'-3¼"	20°
12"	10"	1'-3¼"	20°
12"	12"	1'-6⅞"	30°



CROSS SECTION OF NOTCH SIDES AND BOTTOM

TECH. SPEC. REFERENCE:
CONCRETE — SECTION 2.0
MANHOLE — SECTION 4.0

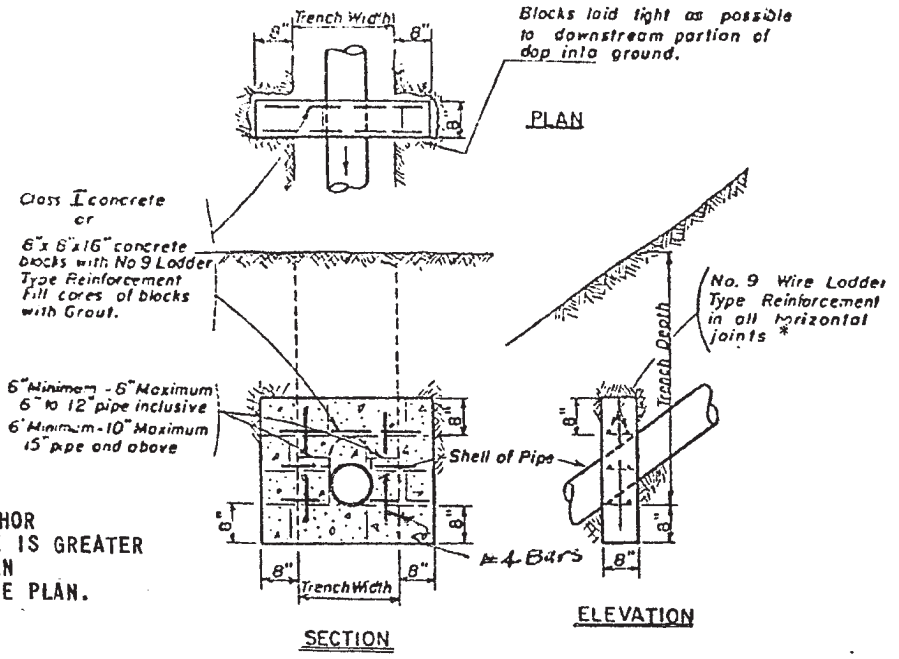
REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

SANITARY SEWER
SIPHON MANHOLE

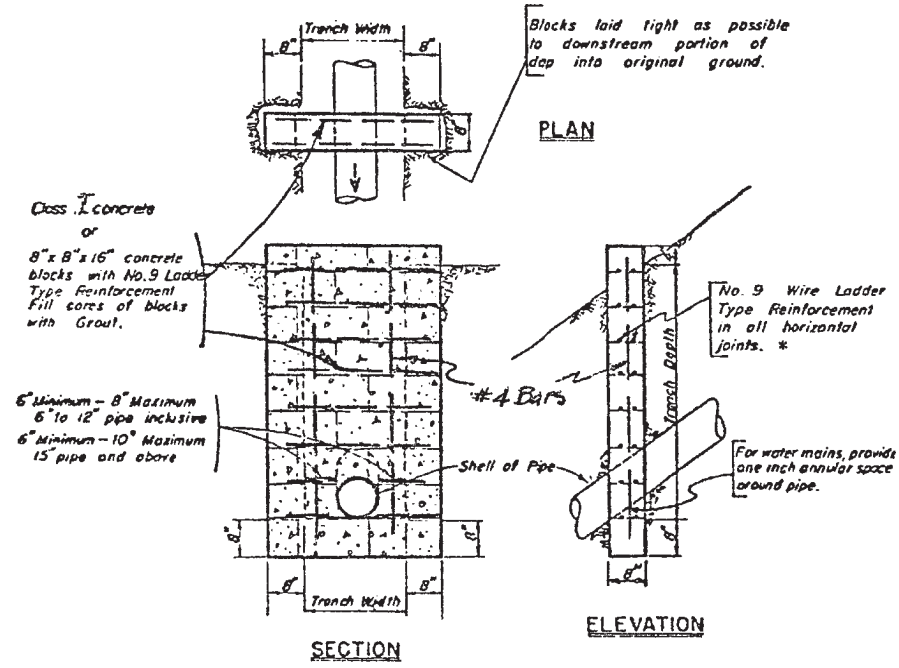
APPROVAL Ronald D. Julian 1-3-75
DISTRICT ENGINEER DATE

DRAWING NUMBER
E-12



USE CONCRETE ANCHOR WHEN SEWER GRADE IS GREATER THAN 30%, OR WHEN DESIGNATED ON THE PLAN.

CONCRETE ANCHOR

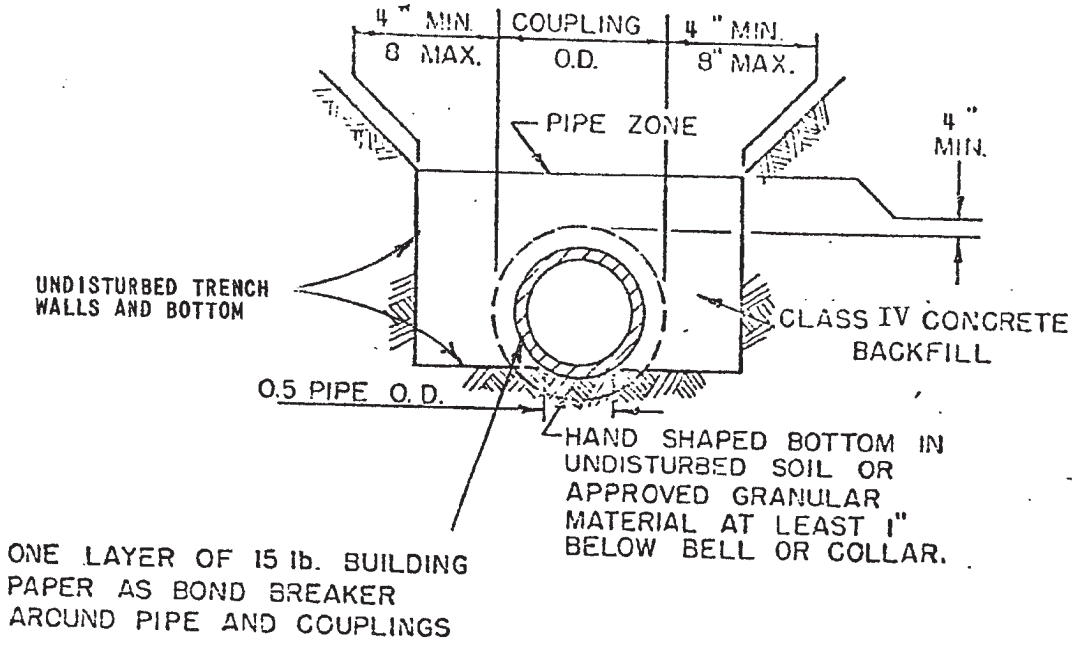


CONCRETE CUTOFF WALL

*USE #4 BARS HORIZONTALLY AT 12" MAX. WHEN POURED OF CONCRETE.

TECH. SPEC. REFERENCE
CONCRETE - SECTION 2.0

REVISED	ARROWBEAR PARK COUNTY WATER DISTRICT SANITARY SEWER CONCRETE ANCHOR CONCRETE CUTOFF WALL APPROVAL Arnold Jones 1-3-75 DISTRICT ENGINEER DATE DRAWING NUMBER E-13



NOTE:
ALL BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS.

TECH. SPEC. REFERENCE:
CONCRETE — SECTION 2.0
BEDDING — SECTION 3.14

REVISED

ARROWBEAR PARK
COUNTY WATER DISTRICT

SANITARY SEWER
CONCRETE BACKFILL

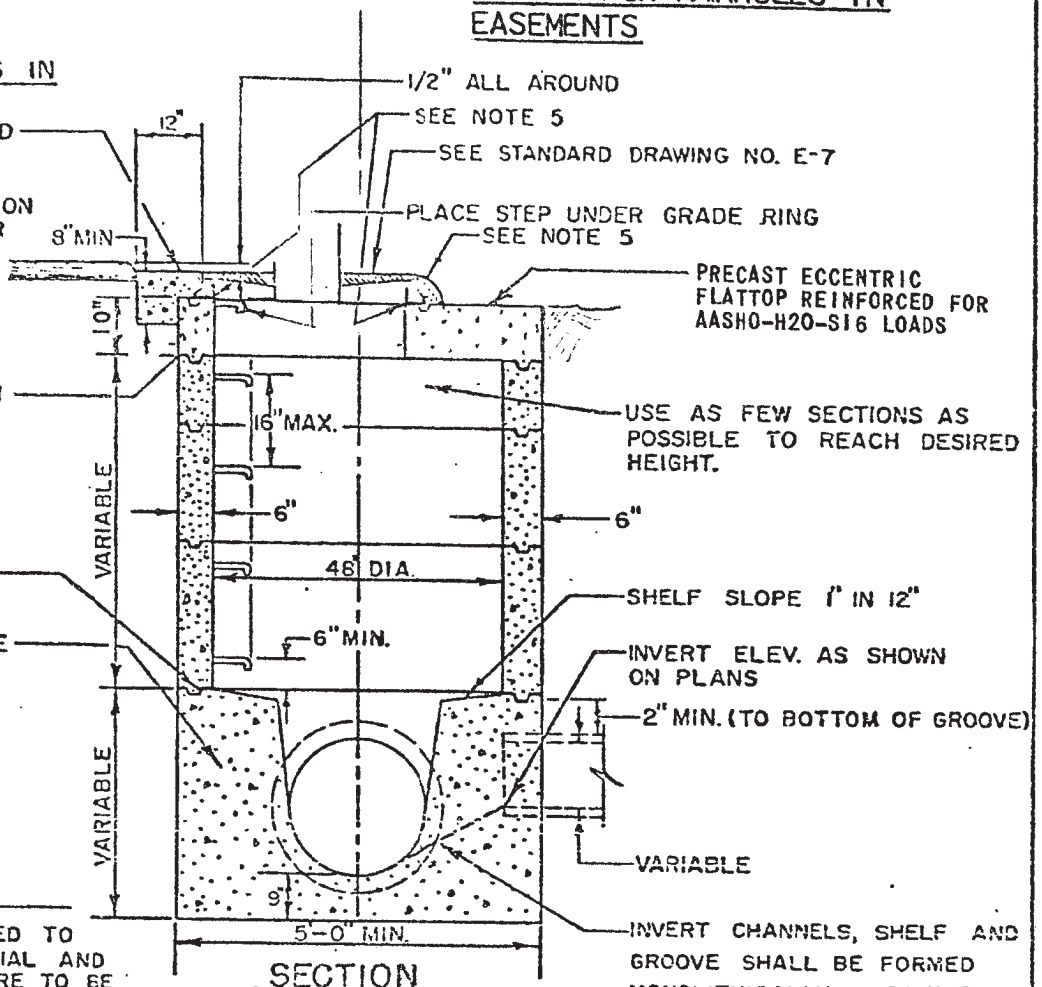
APPROVAL
DISTRICT ENGINEER
1-3-75
DATE

DRAWING NUMBER
E-14

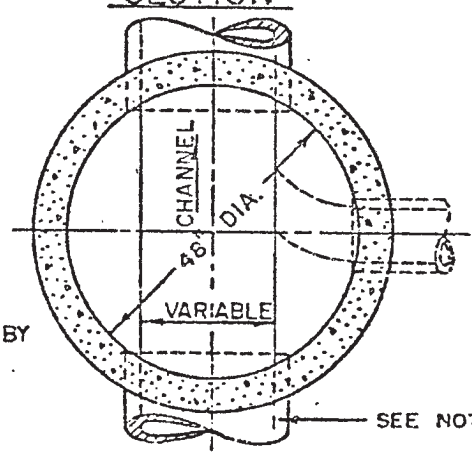
DETAIL FOR MANHOLES IN EASEMENTS

DETAIL FOR MANHOLES IN PAVED SURFACES

CONTRACTOR SHALL FORM AND POUR CONCRETE BASE WITH COVER ADJUSTED AS SHOWN AFTER FINAL PAVING OPERATION ENTIRE DIRT EXCAVATION FOR FRAME ADJUSTMENT TO BE BACKFILLED WITH CONCRETE.



SECTION



PLAN

NOTES:

1. ALL SECTIONS TO BE WASHED TO REMOVE ANY LOOSE MATERIAL AND WHILE STILL WET THEY ARE TO BE SET IN 1:3 MORTAR TRIMMED SMOOTH INSIDE AND OUTSIDE INCLUDING FRAME, EXCEPT IN NOTE 4.
2. CONCRETE FOR MANHOLE SECTIONS 3000 P.S.I. MIN.
3. PROVIDE FLEXIBLE JOINT IN ALL SEWER PIPES OUTSIDE OF MANHOLE BUT WITHIN 12" OF CONCRETE BASE.
4. IF 4" REINFORCED CONCRETE SECTIONS ARE USED THE CONTRACTOR SHALL ANCHOR FRAME TO CONCRETE SECTIONS BY THE USE OF EPOXY OR OTHER METHOD AS APPROVED BY THE ENGINEER.
5. MORTAR AROUND AND UNDER FRAME SHALL HAVE A MIX IN ACCORDANCE WITH THE SPECIFICATIONS AND SHALL BE CURED BY "HUNTS" COMPOUND OR APPROVED EQUAL.
6. USE SHALLOW MANHOLE FOR DEPTHS OF 6 FEET OR LESS FROM TOP OF COVER TO FLOWLINE OF MAIN SEWER.

TECH. SPEC. REFERENCE:

CONCRETE	—	SECTION 2.0
MANHOLE	—	SECTION 4.0

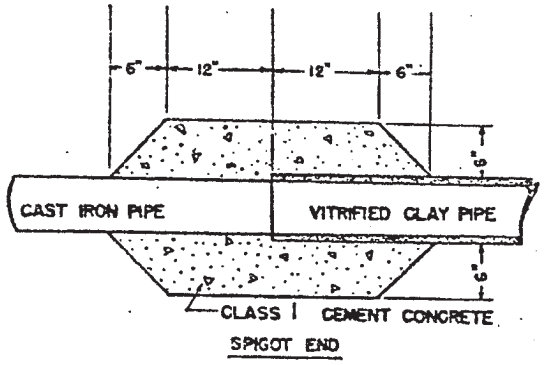
REVISED

ARROWBEAR PARK COUNTY WATER DISTRICT

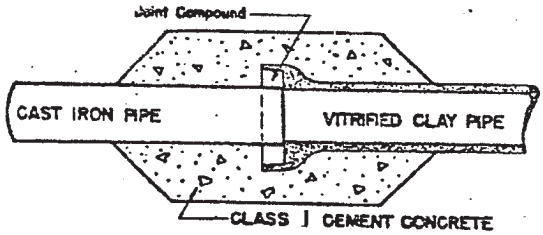
SANITARY SEWER
SHALLOW MANHOLE

APPROVAL
DISTRICT ENGINEER — DATE 1-3-75

DRAWING NUMBER
E-15



SPIGOT END



BELL END

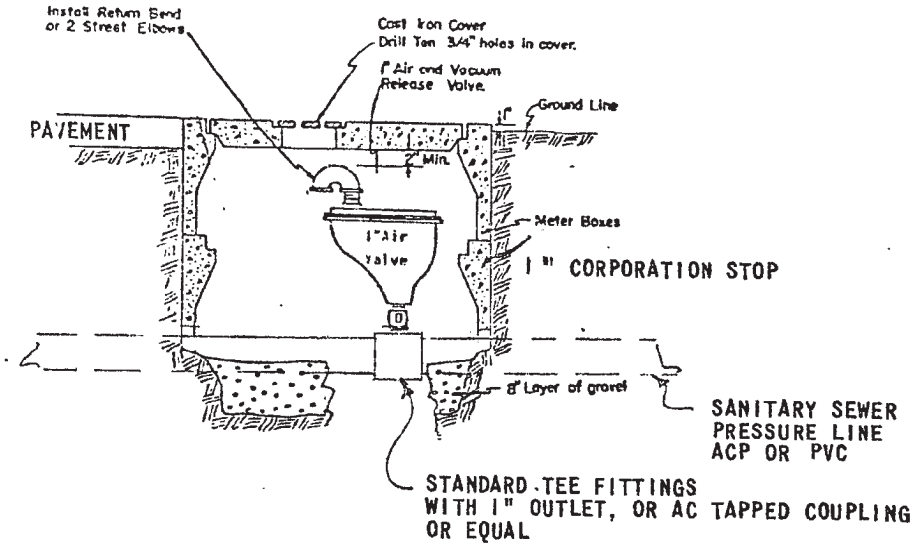
NOTES :

1. TYPES OF PIPE SHOWN ARE EXAMPLES ONLY.

SHOW AS-BUILT ON PLANS (Legend on plans)
WITH SEWER LINE STATION —

TECH. SPEC. REFERENCE:
CONCRETE — SECTION 2.0

	ARROWBEAR PARK COUNTY WATER DISTRICT
	CONCRETE JOINT FOR SEWER PIPE
	APPROVAL Arnold A. Jolius 1-3-75 DISTRICT ENGINEER DATE
REVISED	DRAWING NUMBER E- 16



NOTES

1. VAULT AND LID - BROOKS PRODUCTS SERIES 65. USE NO. 65-S (C.I.), CONCRETE COVER W/C.I. LID WHEN NOT EXPOSED TO TRAFFIC. IN TRAFFIC AREAS USE NO. 65-TR, STEEL COVER W/C.I. LID. DRILL TEN 3/4" HOLES IN LIDS.
2. CORPORATION STOPS SHALL BE MUELLER H-10012 OR APPROVED EQUAL.
3. AIR AND VACUUM VALVES SHALL BE APCO SERIES 140, 1" NO. 142, 2" NO. 144 OR APPROVED EQUAL.
4. SIZE OF FITTINGS AND VALVES SHALL CONFORM TO THE SIZE OF THE AIR AND VACUUM VALVE. A 1" SIZE IS ILLUSTRATED.
5. INSTALL AT HIGH POINT IN LINE.
6. IF VAULT MUST BE INSTALLED OTHER THAN OVER THE PRESSURE LINE, SUBSTITUTE A CORPORATION STOP WITH 90° TAIL PIECE MUELLER H-15020 FOR THE H-10012. INSTALL 1" SEAMLESS COPPER WATER TUBING, TYPE K, SOFT TEMPER OR APPROVED EQUAL, RISING AT 1/4" PER FT. MIN. TO A CURB VALVE MUELLER H 15175 OR APPROVED EQUAL. MOUNT AIR AND VACUUM VALVE ON CURB VALVE WITH STREET ELBOW. SUPPORT ASSEMBLY ON AN 8" X 8" X 16" CONCRETE BLOCK.

	ARROWBEAR PARK COUNTY WATER DISTRICT
	SANITARY SEWER FORCE MAIN AIR AND VACUUM VALVE ASSEMBLY
REVISED	APPROVAL Arnold A. Jahns DISTRICT ENGINEER — 1-3-75 DATE — DRAWING NUMBER E-17

OPERATIONS & MAINTENANCE PROGRAM

This section describes the actions the Arrowbear Park County Water District will take to address short and long term maintenance of its sanitary sewer collection system. A copy of the District's Sanitary Sewer System is included within this Element.

I. Routine Preventative Operation and Maintenance Activities

Routine preventative maintenance actives are conducted by District staff to prevent the failure of and prolong the life of critical and non-critical sanitary sewer infrastructure. Activities are conducted based on the following policies:

1. Preventative maintenance operations and activities are conducted as follows:
   - Daily sight inspections of the two district siphons.
   - Monthly inspections of the collection system.
   - Routine cleaning of trouble spots.
   - Entire system is evaluated by inspection and resulting cleaning, with CCTV inspection as necessary every five years.
   - Inspect, clean 10 manholes annually.
   - Inspect and clean known flat-flow collection lines at least every two years.

2. Preventative maintenance operations and activities are prioritized based on the following factors:

   a. Areas with historical or potential FOG issues.
   b. Areas with known condition issues.
   c. All siphons.
   d. No known issues.

3. Preventative maintenance operations and activities begin at the highest elevation in the system and work down. Mains are cleaned manhole to manhole, capturing as much debris as is practicable, with the remaining debris being flushed into the evaporation and treatment ponds at the Running Springs Water District Treatment Facility.

   District O&M staff utilizes a Jetter trailer to perform preventative maintenance operations and activities. This equipment is capable of handling up to an 8" diameter pipe, and performs by delivering a continuous stream of water that removes all unwanted material within the system.

4. O&M staff utilize a daily sewer log that records the involved crew member's names, the date of the activities, the area that the activities are taking place,

and the distance and direction of the maintenance activities. These daily logs are kept in a binder at the District headquarters.

II. Rehabilitation and Replacement Plan

In 2006 the District performed a focused, system wide sewer cleaning and CCTV inspection program. Some isolated deficiencies in pipes and joints were noted. These were separated into Major and Minor categories. The major deficiencies have been repaired. The District continues to work on the minor deficiencies. These do not have potential SSO ramifications.

III. Sanitary Sewer Systems Operations and Maintenance Training

All District staff involved in sanitary sewer O&M activities receive training annually and as new hires. This training consists of formal and informal elements, as listed below:

1. On-the-Job Training
   District O&M staff consists of a General Manager, Field Operations Supervisor/Sewer Department Chief Operator and Servicepersons. The majority of craft or skill-related training occurs when new employees work closely with more experienced staff to become familiar with Arrowbear County Water District facilities.

2. Operational Training
   The Field Operations Supervisor/Sewer Department Chief Operator directs O&M activities during normal and high-flow events. Current operational training for staff occurs through one-on-one mentoring at the supervisory level.

3. Safety Training
   Monthly Safety training that meets OSHA personnel safety and awareness requirements (e.g. Confined Space Entries, Lockout/Tagout, etc.) is routinely provided to O&M staff. O&M staff also receives training provided by the California Rural Water Association and California Water Environment Association. Training sessions are documented.

4. Training for Contractors
   Contractors are required to prepare and submit an Access Request and receive approval from the General Manager prior to accessing and performing work at any Arrowbear Park County Water District facility. The Access Request process is used to accomplish the following:

   - Inform contractors of unanticipated hazards that may limit the work to certain times or days.
   - Review all safety-related exposures.

- Schedule special shutdowns or lockout/tagout activities to be performed by District O&M staff, which will allow the specific work to proceed.
- Determine the types of training or certifications which the Contractors must demonstrate prior to starting the job.

The Access Request process requires contractors to state time and dates of intended work, equipment to be used, anticipated safety hazards, and mitigation measures. Some work assignments require a detailed work plan from the contractor (confined space work or work adjacent to or in live sewage flows).

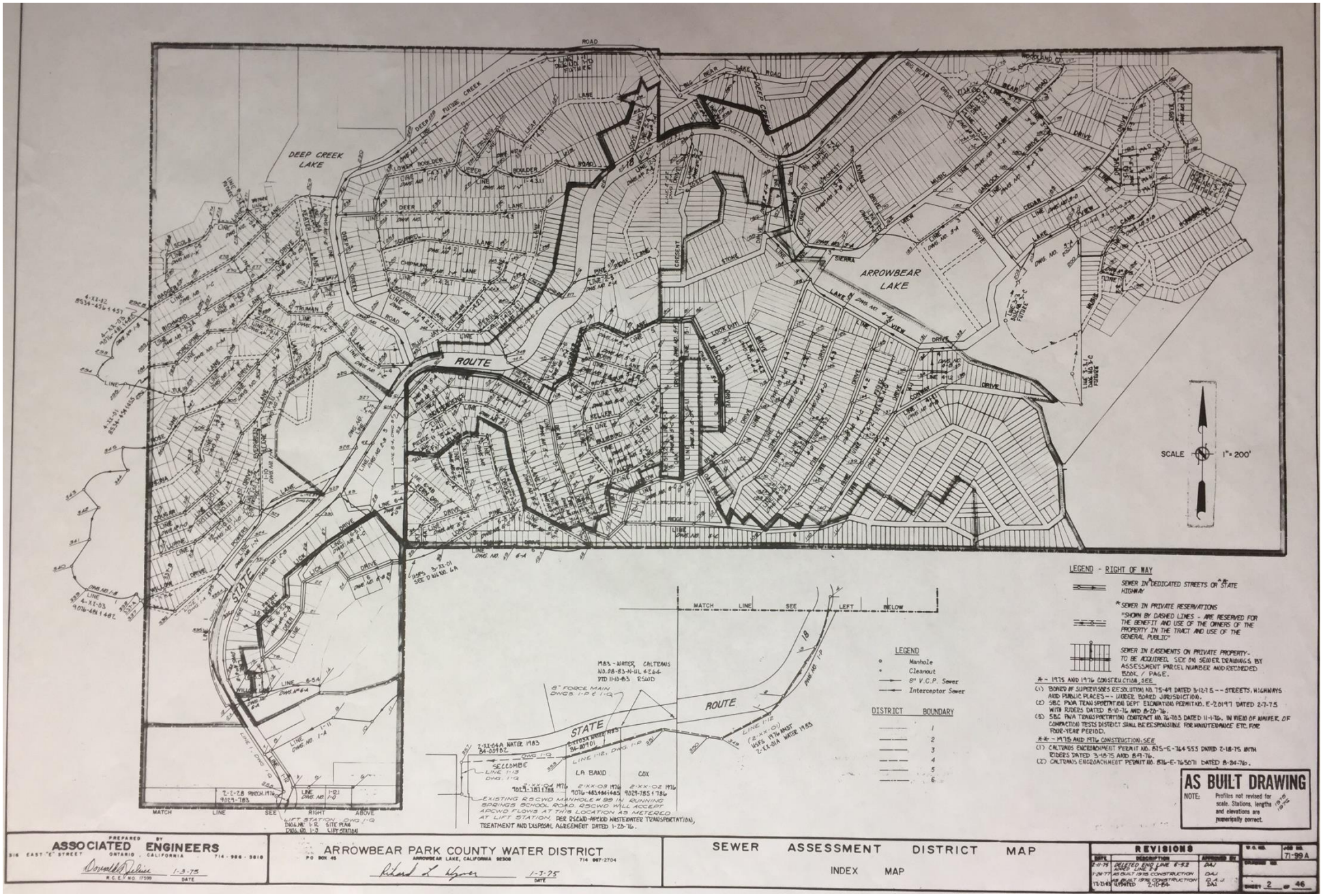
IV. Equipment and replacement parts inventories, including critical replacement parts

The District maintains the following equipment and replacement parts inventories at the Public Works Yard for response to O&M and SSOER:

a. Jetting trailer.
b. Dedicated spill response trailer.
c. Pump with diversion capabilities.
d. Generator.
e. Shop vacuum.
f. Gas detection equipment.
g. Replacement pipe, clamps, and parts.
h. A stock of clean-up supplies that includes sand bags and absorbent material.

An informal agreement with the Running Springs Water District and the San Bernardino CSA-79 Special District provides additional equipment or replacement parts should they be necessary in response to emergency O&M activities.

Any required non-emergency rehabilitation or replacement work of sanitary sewer infrastructure within the District would be generally handled by in-house staff but may be contracted out.



PREPARED BY
ASSOCIATED ENGINEERS
316 EAST "E" STREET ONTARIO, CALIFORNIA 714-986-9818
Donald Dalton 1-3-75
R.C.E. NO. 17599 DATE

ARROWBEAR PARK COUNTY WATER DISTRICT
P.O. BOX 45 ARROWBEAR LAKE, CALIFORNIA 92305 714 867-2704
Richard L. Upson 1-3-75
DATE

SEWER ASSESSMENT DISTRICT MAP
INDEX MAP

REVISIONS		
DATE	DESCRIPTION	APPROVED BY
2-1-75	DELETED END LINE 6-53 ADDED LINE 3-4	DAJ
1-24-77	AS BUILT 1975 CONSTRUCTION	DAJ
12-13-78	AS BUILT 1976 CONSTRUCTION UPDATED 2-10-84	DAJ

W.O. NO. 71-99A
DRAWING NO.
SHEET 2 OF 46

Appendix E

EMERGENCY RESPONSE PLAN (ERP)

I. SSO EMERGENCY RESPONSE PLAN (PROCEDURES)

This section describes the actions the Arrowbear Park County Water District (District) will take in cooperation with the SWRCB to address discharges of sanitary sewer pollutants to surface water bodies from the wastewater collection system.

A. Receipt of Information Regarding a Sewer Overflow

An overflow may be detected by residents, District employees, or by others. District office staff is responsible for receiving phone calls from the public of possible sewer overflows from the wastewater collection system, and for responding to the calls.

Telephone calls from the public reporting sanitary sewer overflows are received by the District's Administrative Assistant during regular office hours and by an automated answering service during other hours that instructs the caller to report a sewer emergency to the 24 hour on call emergency phone ((909) 255-4324), answered by the District on-call maintenance staff. This emergency phone number is also on file with the Sheriff Department, and calls are forwarded to District on-call maintenance staff. The emergency phone line is available 24-hour a day, 365 days a year.

1. The call receiver shall obtain all relevant information available regarding the overflow including:
    a. Time and date call was received;
    b. Specific location and description of facility;
    c. Description of problem;
    d. Time the overflow was noticed by the caller;
    e. Callers name and phone number;
    f. Observations by the caller (e.g. odor, duration, amount);
    g. Other relevant information that will enable the responding investigator and crews, if required, to quickly locate, assess and stop the overflow; and
    h. Any information that is requested on the "Sanitary Sewer Overflow Report Form" (attached) that may help in responding to the overflow.
2. If received during ***regular business hours***, the call receiver then records the overflow information on the SSO Report Form (attached) and notifies the District's General Manager and/or the Field Operations Supervisor who will direct staff to respond and investigate the spill location with the spill response trailer and initiate mitigation,

containment, bypass, and/or blockage relief followed by cleanup. If received ***outside of regular business hours***, the on-call staff then records the overflow information on the SSO Report Form (attached) and notifies the District's General Manager and/or the Field Operations Supervisor and then investigates the spill location with the spill response trailer and initiates mitigation, containment, bypass, and/or blockage relief followed by cleanup. As needed, this responder may call off duty personnel to assist.

3. If spill is larger than 1,000 gallons, may imminently and substantially endanger human health or cause a fish kill, then the California Office of Emergency Services (Cal OES) at (800) 852-7550 must be notified by the discharger immediately (and no later than within 2-hours of becoming aware of the discharge), in accordance with California Code Section 13271.
4. For discharges of sewage that result in a discharge to a drainage channel or a surface water body the discharger shall immediately (and no later than within 2-hours of becoming aware of the discharge), notify California Office of Emergency Services (Cal OES) at (800) 852-7550, County Environmental Health with jurisdiction over the affected water bodies, and the SWRCB. No later than 24-hours after becoming aware of the discharge the discharger must submit to the SWRCB a certification that California Office of Emergency Services (Cal OES) and County Environmental Health with jurisdiction over the affected water bodies have been notified of the discharge.
5. Sewer overflows detected by any personnel in the course of their normal duties shall be reported immediately to the District General Manager. Maintenance personnel should record all relevant overflow information and dispatch a sewer investigator and additional response crews, as needed.
6. The SSO Report Form - SWRCB (attached) will be completed by District General Manager, with assistance from the Field Operations Supervisor and responding District maintenance personnel, within 24-hours of the spill confirmation. The District General Manager is responsible for completing, updating, and signing the final Overflow Report and submittal of the spill report to the SWRCB via the California Integrated Water Quality System (CIWQS) website.

B. Dispatch of Appropriate Crews to Site of Sewer Overflow

Failure of any element within the wastewater collection system that threatens to cause or causes a sewer overflow will trigger an immediate response to isolate and correct the problem. Crews and equipment shall be available to respond to any sewer overflow immediately. Also, additional resources are to be "on-call" should they be needed.

1. Dispatching Crews

- The District General Manager will receive notification of sewer overflows and dispatch the appropriate crews and resources as required.
- District operations staff shall notify the District General Manager regarding sewer overflows and field crew locations.

2. Additional Resources
    - The District General Manager or the Field Operations Supervisor/Chief Wastewater Operator will receive and shall convey to appropriate parties requests for additional personnel, materials, supplies, and equipment from crews working at the site of a sewer overflow.
3. Preliminary Assessment of Damage to Public and Private Property
    - The response crews should use discretion in assisting the property owner/occupant as reasonably as they can. The response crew may enter private property for the purpose of assessing damage. Photographs or video, if possible, should be taken of the outdoor area of the sewer overflow and impacted area in order to thoroughly document the nature and extent of impacts and are to be included for filing with the overflow report.
4. Coordination with Hazardous Materials Response
    - Upon arrival at the scene of a sewer overflow, should a suspicious substance (e.g. oil sheen, foamy residue) be found in the area, or should a suspicious odor (e.g. gasoline) not common to the sewer system be detected, the response crew should immediately contact the San Bernardino County Department of Environmental Health (SBCDEH), the Arrowbear Lake Fire Department, or the Sheriff Department to take over the scene. **Remember that any vehicle engine, portable pump, or open flame (e.g. cigarette lighter) can provide the ignition for an explosion or fire if flammable fluids or vapors are present. Keep a safe distance, and apply caution until assistance arrives.**
    - Upon arrival of the SBCDEH, the Arrowbear Lake Fire Department, or the District maintenance crew will take direction from the person with the lead authority from that team. Only when that authority determines that it is safe and appropriate can the maintenance crew proceed, under the guidance of the SSOERP, with the containment, clean up, and correction.

C. Overflow Containment, Clean-up, and Correction

Spills of various volumes may result from blocked sewers, pipe failures, or mechanical malfunctions among other natural or man-made causes. The

District is constantly on alert and should be ready to respond upon notification and confirmation of an overflow.

Specific actions are to be performed by crews during a sewer overflow. The objectives of these actions are:

- To protect the public health, environment, and property from sewage overflows and to restore the surrounding area back to normal as soon as possible;
- To establish perimeters and control zones with appropriate traffic cones, barricades, vehicles, or use of natural topography (e.g. hills or berms);
- To promptly notify the California Office of Emergency Services (Cal OES) at (800) 852-7550, County Environmental Health with jurisdiction over the affected water bodies, and the SWRCB of preliminary overflow information and potential impacts;
- To contain the sewer overflow to the maximum extent possible, including preventing the discharge from entering into surface waters; and
- To minimize the Arrowbear Park Water District exposure to any regulatory agency penalties and fines.

Under most circumstances the District will handle all initial response actions with its own maintenance staff. **An important issue with respect to an emergency response is to ensure that the temporary actions necessary to divert flows and repair the problem do not produce a problem elsewhere in the system.**

Based on the initial response evaluation circumstances may arise when the District could benefit from the support of private-sector assistance and may choose to use private contractors as needed to meet the response needs.

1. Responsibilities of Response Crew Upon Arrival

   It is the responsibility of the first personnel who arrive at the site of a sewer overflow to protect the health and safety of the public by mitigating the impact of the overflow to the maximum extent possible. Should the overflow not be the responsibility of the District, but there is imminent danger to public health, public or private property, or to surface waters of the U.S., then prudent emergency action should be taken until the responsible party assumes control. Upon arrival at a sewer overflow the response crew shall do the following:

   - Determine the cause of the overflow (e.g. sewer line blockage, sewer line break, or pump station failure);
   - Identify and request, if necessary, assistance or additional resources to correct the overflow or to assist in the determination of the cause;

- Determine if private property is impacted. If yes, the San Bernardino County Department of Environmental Health (SBCDEH) shall be advised. SBCDEH may be contacted at (909) 387-4608 during business hours and (800) 472-2376 after hours.
- Take immediate steps to stop the overflow (e.g. relieve pipeline blockage, manually operate pump station controls, repair pipe). Extraordinary steps may be considered where overflows from private property threatens public health and safety (e.g. an overflow running off of private property into the public right-of-way); and
- Request additional personnel, materials, supplies, or equipment that will expedite and minimize the impact of the overflow.
- Establish traffic control based on the latest Edition of the WATCH Manual.

2. Initial Measures for Containment

   Operations staff will initiate measures to contain the overflowing sewage and recover, where possible, sewage that has already been discharged. These actions should always minimize impacts to the public health and the environment.

   - Determine the immediate destination of the overflow (e.g. Public Right of Way or waters of the U.S.);
   - Identify and request the necessary materials and equipment to contain or isolate the overflow if not readily available;
   - Take immediate steps to contain the overflow (e.g. block or bag storm drain inlets, recover through use of vacuum truck, divert to downstream manhole);

3. Additional Measures Under Potentially Prolonged Overflow Conditions

   In the event of a prolonged sewer line blockage or a sewer line collapse a determination should be made to set up a portable by-pass pumping operation around the obstruction.

   - Appropriate measures shall be taken to determine the proper size and number of pumps required to effectively handle the sewage overflow.
   - Continuation or periodic monitoring of the by-pass pumping operation shall be implemented as required.
   - Regulatory agency issues shall be addressed in conjunction with emergency repairs.

4. Cleanup

Sewer overflow sites are to be thoroughly cleaned after an overflow. No readily identified residue (e.g. sewage solids, papers, rags, plastics, rubber products) is to remain.

- The overflow site is to be secured to prevent contact by members of the public until the site has been thoroughly cleaned. Posting if required should be undertaken pursuant to Section IV.
- The area of discharge is to be cleaned of any sewage. Solids and debris are to be vacuumed, swept, raked, picked up, and transported for proper disposal.
- Where appropriate, the overflow site is to be disinfected and deodorized.
- Where sewage has resulted in ponding the pond should be vacuumed dry and the residue disposed of in accordance with applicable regulations and policies.
- If a ponded area contains sewage that cannot be vacuumed dry it may be treated with bleach and absorbent material and swept up.
- Use of portable aerators may be required where complete recovery of sewage is not practical and where severe oxygen depletion in existing surface water is expected.

D. Customer Satisfaction

The District General Manager shall follow-up in person or by telephone with the citizen(s) reporting the overflow. The cause of the overflow and its resolution will be disclosed.

II. PUBLIC ADVISORY PROCEDURE

This section describes the actions The District should take in cooperation with the SWRCB to limit public access to areas potentially impacted by un-permitted discharges of pollutants to surface water bodies from the wastewater collection system.

A. Temporary Signage

The District has primary responsibility for determining when to post notices of polluted surface water bodies or ground waters that result from uncontrolled wastewater discharges from its facilities. The postings do not necessarily prohibit use of recreational areas unless posted otherwise, but provide warning of potential public health risks due to sewage contamination.

B. Other public Notification

Should the posting of surface water bodies or ground waters subjected to a sewer overflow be deemed necessary by the District General Manager, he/she shall also determine the need for further public notification through

the use of pre-scripted notices made available to the printed or electronic news media for immediate publication or airing, or by other measures (e.g. front door hangers)

Contact the District General Manager with regard to press releases and the distribution of other information to the public.

III. REPORTING/RECORD KEEPING

This section requires Enrollees to meet the MRP requirements listed in Section G of the SSS WDR. The MRP requires certain overflow information be reported to the CIWQS database online.

A. SSO Categories

1. Category 1 - All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system that resulted in a discharge to a drainage channel and/or surface water.
2. Category 2 - All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system of a volume equal to or greater than 1,000 gallons that did not reach surface water.
3. Category 3 - All discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system of a volume less than 1,000 gallons that did not reach surface water
4. Private Lateral Sewage Discharges (the District's lateral ends at the property line or right-of-way line) – Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

B. SSO Reporting Timeframes

1. Category 1 SSOs – All SSOs that meet the above criteria for Category 1 SSOs must be reported as soon as: (1) the Enrollee has knowledge of the discharge, (2) reporting is possible, and (3) reporting can be provided without substantially impeding cleanup or other emergency measures. Initial reporting of Category 1 SSOs must be reported to the Online SSO System as soon as possible but no later than 3 business days after the Enrollee is made aware of the SSO. Minimum information that must be contained in the 3-day report must include all information identified in section 9 below, except for item 9.K. A final certified report must be completed through the Online SSO System, within 15 calendar days of the conclusion of SSO response and remediation. Additional information may be added to the certified report, in the form of an attachment, at any time.

   The above reporting requirements do not preclude other emergency notification requirements and timeframes mandated by other regulatory agencies (local County Health Officers, local Director of Environmental Health, Regional Water Boards, or Cal OES) or State law.

2. Category 2 SSOs - All SSOs that meet the above criteria for Category 2, submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.
3. Category 3 SSOs - All SSOs that meet the above criteria for Category 3, submit certified report within 30 calendar days of the end of month in which SSO the occurred. SSOs must be reported to the Online SSO Database within 30 days after the end of the calendar month in which the SSO occurs (e.g. all SSOs occurring in the month of January must be entered into the database by March 1st).
4. Private Lateral Sewage Discharges - All sewage discharges that meet the above criteria for Private Lateral sewage discharges may be reported to the Online SSO Database based upon the Enrollee's discretion. If a Private Lateral sewage discharge is recorded in the SSO Database, the Enrollee must identify the sewage discharge as occurring and caused by a private lateral, and a responsible party (other than the Enrollee) should be identified, if known.
5. "No Spill" Certification - If there are no SSOs during the calendar month, the Enrollee will provide, within 30 days after the end of each calendar month, a statement through the Online SSO Database certifying that there were no SSOs for the designated month.
6. Collection System Questionnaire - Update and certify every 12 months.
7. In the event that the SSO Online Database is not available, the enrollee must fax all required information to the appropriate Regional Water Board office in accordance with the time schedules identified above. In such event, the Enrollee must also enter all required information into the Online SSO Database as soon as practical.

C. SSO On-line Reporting Information

The discharger shall report monthly through the California Integrated Water Quality System Project (CIWQS) website www.waterboards.ca.gov all SSOs.

At a minimum, the following mandatory information must be included prior to finalizing and certifying an SSO report for each category of SSO:

Category 2 SSOs:

A. Location of SSO by entering GPS coordinates;

B. Applicable Regional Water Board, i.e. identify the region in which the SSO occurred;

C. County where SSO occurred;

D. Whether or not the SSO entered a drainage channel and/or surface water;

E. Whether or not the SSO was discharged to a storm drain pipe that was not fully captured and returned to the sanitary sewer system;
F. Estimated SSO volume in gallons;
G. SSO source (manhole, cleanout, etc.);
H. SSO cause (mainline blockage, roots, etc.);
I. Time of SSO notification or discovery;
J. Estimated operator arrival time;
K. SSO destination;
L. Estimated SSO end time; and
M. SSO Certification. Upon SSO Certification, the SSO Database will issue a Final SSO Identification (ID) Number.

Private Lateral Sewage Discharges:

All information listed above (if applicable and known), as well as;

A. Identification of sewage discharge as a private lateral sewage discharge; and
B. Responsible party contact information (if known).

Category 1 SSOs:

All information listed for Category 2 SSOs, as well as;

A. Estimated SSO volume that reached surface water, drainage channel, or not recovered from a storm drain;
B. Estimated SSO amount recovered;
C. Response and corrective action taken;
D. If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA must be selected.
E. Parameters that samples were analyzed for (if applicable);
F. Identification of whether or not health warnings were posted;
G. Beaches impacted (if applicable). If no beach was impacted, NA must be selected;
H. Whether or not there is an ongoing investigation;
I. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
J. Cal OES control number (if applicable);
K. Date Cal OES was called (if applicable);

L. Time Cal OES was called (if applicable);

M. Identification of whether or not County Health Officers were called;

N. Date County Health Officer was called (if applicable); and

O. Time County Health Officer was called (if applicable).

If there are no sanitary sewer overflows for the month a statement certifying such will be provided through the CIWQS on-line reporting system. Sanitary sewer overflow summary reports and certification statements shall be submitted via the CIWQS system by the 30th day of the month following the spill reporting period.

D. Trend Report

Once a spill has occurred at the same location of a previous spill, whether or not due to the same suspected cause, steps need to be taken to prevent the overflow from recurring and a schedule must be developed to implement a plan of action.

E. Record Keeping

The discharger shall retain records of all SSOs, including, but not limited to:

A. All original strip chart recordings for continuous monitoring instrumentation;

B. Service call records and complaint logs of calls received by the discharger;

C. Spill Calls;

D. Hard copies of all e-mails and internet reports;

E. Spill records including location of overflow and impacted receiving water if any (street address and GPS coordinates);

F. Copies of all SSO reports;

G. An estimate of the volume of the overflow;

H. A description of the sewer system component from which the release occurred (e.g. manhole, constructed overflow pipe, crack in pipe);

I. The estimated date and time when the overflow began and when it stopped;

J. The cause or suspected cause of the overflow;

K. Steps that have been and will be taken to prevent the overflow from recurring and a schedule to implement those steps;

L. Work orders from the previous 3 years that are associated with responses and investigations of system problems related to sanitary sewer overflows;

M. A list and description of complaints from customers or others from the previous 3 years; and

N. Documentation of performance and implementation measures for the previous 3 years.

IV. FOLLOW-UP PROCEDURES

Following the spill response, clean-up, and reporting, additional actions may be required to ensure that similar spills do not occur in the future. These actions can include, but are not limited to, the following:

Response by the District

- Issuance of enforcement action to the responsible party.

Coordinated response through the District

- Coordination of enforcement action with other agencies (SBCDEH, SWRCB).
- Video Recording of Sanitary Sewer Main.
- Repair or reconstruction of Sanitary Sewer Main.
- Monitoring and testing.

VII. DISTRIBUTION AND MAINTENANCE OF SSOERP

A. Submittal and Availability of SSOERP

Copies of the SSO ERP and any amendments or updates will be distributed to the State Water Resources Control Board. All other personnel who may become incidentally involved in responding to overflows will be familiar with the SSO ERP.

B. Review and Update of SSOERP

The SSO ERP will be reviewed annually and amended as appropriate. The District shall also update the SSO ERP with the issuance of a revised or new state waste discharge permit.

C. Training

Relevant training programs, reading materials, and videocassette tapes or DVDs that could assist response crews in executing their duties and responsibilities in confirming overflows, identifying their causes, and resolving them will be made available by the Arrowbear Park County Water District. Periodic field drills of the overflow response procedures will be addressed and could be executed in conjunction with other periodic emergency preparedness drills.

SSO Report Form

Use this form to enter sanitary sewer overflow data for submittal into the State Water Resources Control Board CIWQS SSO Online Database.

Date of SSO spill: _____

Identify the SSO spill type and enter below:

- **SSO Category 1** – All discharges of sewage resulting from a failure in District's sanitary sewer system that resulted in a discharge to a drainage channel and/or surface water.
- **SSO Category 2** – All discharges of sewage resulting from a failure in District's sanitary sewer system of a volume equal to or greater than 1,000 gallons that did not reach surface water.
- **SSO Category 3** – All discharges of sewage resulting from a failure in District's sanitary sewer system of a volume less than 1,000 gallons that did not reach surface water.

Was there a discharge to surface water or a drainage channel that is tributary to surface water?

Yes ☐ No ☐

Was there a discharge to a storm drain pipe that was "NOT" fully captured & returned to the sanitary sewer system?

Yes ☐ No ☐

If you answered no to both questions above, was it ≥ 1,000 gallons?

Yes ☐ No ☐

If yes, the SSO is a Category 2. If NO, the SSO is a Category 3.

SSO spill type (Check one): ☐ Category 1 ☐ Category 2 ☐ Category 3

Name *(person completing this form)*:_____ Phone:_____

Exact spill location: _____

Latitude:_____ Longitude:_____

Spill location description: _____

_____

_____

Date/time spill was first discovered or reported to APCWD:

Date:_____ Time:_____:___ am/pm

Estimated spill start date/time: Date:_____ Time:_____:____ am/pm

Estimated operator arrival date/time: Date:_____ Time:_____:____ am/pm

Estimated spill end date/time: Date:_____ Time:_____:____ am/pm

Final spill destination *(Check all that apply)*:

☐ Building/Structure ☐ Street Curb/Gutter ☐ Paved Surface ☐ Unpaved Surface
☐ Storm Drain ☐ Surface Water ☐ Drainage Channel
☐ Storm Water Infiltration/Retention Structure/Field ☐ Other *(specify)*: _____

Did spill discharge to land? *(Includes discharges directly 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)* ☐ Yes ☐ No

If Yes, estimated spill volume discharged to land:_____ gallons

Estimated spill volume recovered from discharge to land: *(Do not include water used for clean up):*

_____ gallons

Did spill reach storm drain? ☐ Yes ☐ No

If Yes, estimated spill volume that reached storm drain:_____gallons Estimated spill volume

recovered from storm drain:_____ gallons

Did spill reach drainage channel? ☐ Yes ☐ No

If Yes, estimated spill volume that reached discharge channel:_____ gallons

Estimated spill volume recovered from drainage channel:_____ gallons

Methods used to estimate spill volumes *(Check all that apply.)*:

☐ Eyeball Method ☐ Calculations from Spill Dimensions ☐ Duration and Flow Rate
☐ Open Channel Spill Estimation ☐ Drop Bucket Method ☐ Calculations Based on Pipe Size
☐ Flow from Vent or Pick Holes ☐ Flow around Manhole Cover ☐ Flow from Manhole w/o a Cover

Number of spill appearance points: _____

Spill appearance point *(Check all that apply. See next page for complete list)*:

☐ Gravity Mainline ☐ Inside Building or Structure ☐ Manhole
☐ Other Sewer System Structure *(specify)*: _____

Spill cause *(Check all that apply. See next page for complete list)*:

☐ Debris - General ☐ Debris – Rags ☐ Root Intrusion ☐ Debris from Construction
☐ Construction Diversion Failure ☐ Collection System Maintenance Caused Spill/Damage
☐ Damage by Others Not Related to Collection System ☐ Other *(specify)* _____

Where did failure occur? *(Check all that apply)*:

☐ Gravity Mainline ☐ Manhole ☐ Inside Building or Structure ☐ Other *(specify)*: _____

Was this spill associated with a storm event? ☐ Yes ☐ No

Diameter of sewer pipe at the point of blockage or failure:_____ inches

Material of sewer pipe at the point of blockage or failure: _____

Estimated age of sewer asset at the point of blockage or failure:_____ years

Spill response activities *(Check all that apply)*:

☐ Cleaned-up ☐ Contained All or Portion of Spill ☐ Mitigated Effects of Spill ☐ Restored Flow
☐ Returned All of Spill to Sanitary Sewer System ☐ Other Enforcement Agency Notified
☐ Other *(specify):* _____

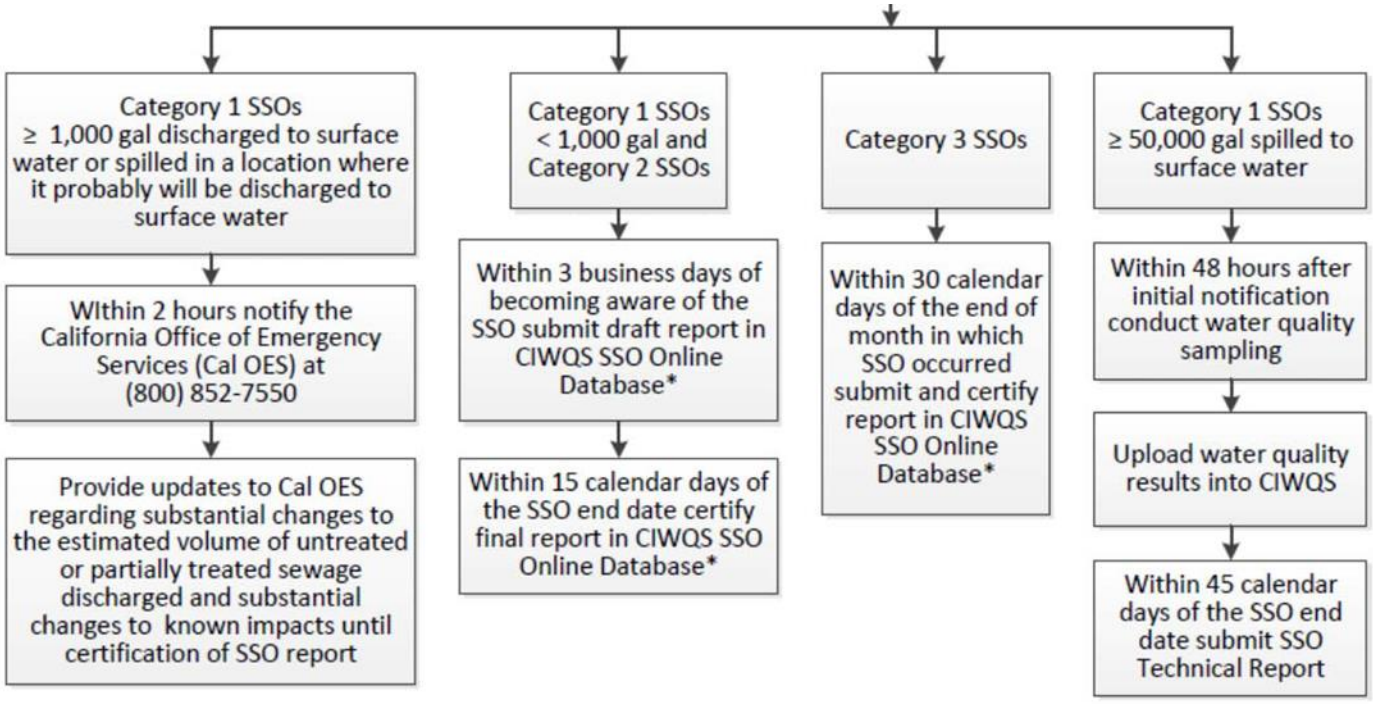
Spill response estimated completion date/time:Date:_____ Time:_____:_____ am/pm

Spill corrective action taken: *(Check all that apply. See next page for complete list):*

☐ Added Sewer to Preventive Maintenance Program ☐ Adjusted Schedule/Method of Preventive Maintenance ☐ Inspected Sewer Using CCTV to Determine Cause ☐ Plan Rehabilitation or Replacement of Sewer ☐ Repaired Facilities or Replaced Defect ☐ Other *(specify)* _____

Cal OES Control Number *(required for Category 1 SSOs)*: _____

Cal OES Called Date/Time *(required for Category 1 SSOs)*: Date:_____Time:____:_____ am/pm



CIWQS SSO Online Database Dropdown Lists:

Spill Appearance Point

Force Main
Gravity Mainline
Inside Building or Structure
Lateral Clean-Out
Lower Lateral
Manhole
Other Sewer System Structure
Pump Station
Upper Lateral

Spill Cause

Air relief valve (ARV) Failure
Blow-off Valve (BOV) Failure
Construction Diversion Failure
CS Maintenance Caused Spill/ Damage
Damage by Others Not Related to CS
Construction/ Maintenance (specify type below)
Debris from Construction
Debris from Lateral
Debris-General
Debris- Rags
Flow Exceeded Capacity (Separate CS only)
Grease Deposition (FOG)
Inappropriate Discharge to CS
Natural Disaster
Non-Dispersibles
Operator Error
Other (specify)
Pipe Structural Problem/ Failure Installation
Pump Station Failure- Controls
Pump Station Failure- Mechanical
Pump station Failure- Lower
Rainfall Exceeded Design, Inflow and Infiltration (Separate CS Only)
Root Intrusion
Siphon Failure
Surcharged Pipe (Combined CS Only)
Vandalism

Where Did Failure Occur

Air Relief Valve (ARV)
Blow- off Valve (BOV)
Force Main
Gravity Mainline
Lower Lateral (Public)
Manhole
Other (specify below)
Pump Station- Controls
Pump Station- Mechanical
Pump Station- Power
Siphon
Upper Lateral (public)

Spill Response Activities

Cleaned-Up
Mitigated Effects of Spill
Contained All or Portion of Spill
Other (specify below)
Restored Flow
Returned All of Spill to Sanitary Sewer System
Property Owner Notified
Other Enforcement Agency Notified

Spill Corrective Action Taken

Added Sewer to Preventative Maintenance Program
Adjusted Schedule/ Method of Preventative Maintenance
Enforcement Action Against FOG Source
Inspected Sewer Using CCTV to Determine Cause
Other (specify below)
Plan Rehabilitation or Replacement of Sewer
Repaired Facilities or Replaced Defect

SPILL VOLUME WORKSHEET

The purpose of this worksheet is to capture the data and method(s) used in estimating the volume of an SSO. Since there are many variables and often unknown values involved, this calculation is just an estimate. Additionally, it is useful to use more than one method, if possible, to validate your estimate.

The following methods and tools are the approved methods in the SOP CS-103 *SSO Response*. Check all methods and tools that you used:

- ☐ Eyeball Estimate Method
- ☐ Measured Volume Method
- ☐ Duration and Flow Rate Method (Account for diurnal flow pattern for long duration)
- ☐ USD SSO Flow Rate Estimating Tool
- ☐ Other (explain) i.e.; estimated daily use per capita upstream or meter @ Pump Station.

Eyeball Estimate Method - Imagine a bucket(s) or barrel(s) of water tipped over.

Size of bucket(s) or barrel(s)	How many of this Size?	Multiplier	Estimated
1 gal. water jug			
5 gal. bucket			
32 gal. trash can			
55 gal drum			
Total Volume Estimated Using Eyeball Method			

Measured Volume Method (this may take several calculation as may have to break down the odd shaped spill to rectangles, circles, and polygons) It is important when guessing depth to measure, if possible in several locations and use an average depth. Use the SSO Volume Estimate by Area Work Sheet, if necessary, to sketch the shapes and show your work.

1. Draw a sketch of the spill on the SSO Volume Estimate by Area Work Sheet,
2. Draw shapes and dimensions used on your sketch
3. Use correct formula for various shapes

Rectangle	L x W x D
Circle	3.14 x R^2 x D
Polygons see reference chart	Show formula used

Duration and Flow Rate Method worksheet:

Start Date and Time	1.
End Date and time	2.
Total time elapsed of SSO event (subtract line 1 from line 2. Show time in minutes)	3.
Average flow rate GPM (account for diurnal pattern)	4.
Total volume estimate using duration and flow rate method (Line 3 x Line 4)	5.

SSO Volume by Area Estimation worksheet

Surface: ☐ Asphalt ☐ Concrete ☐ Dirt ☐ Landscape ☐ Inside Building Other _____

(Draw / Sketch outline of Spill 'Footprint' and attach photos)

Breakdown the 'Footprint' into Recognizable Shapes and Determine Dimensions of Each Shape.

Area #1_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #2_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #3_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #4_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #5_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #6_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #1 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #2 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #3 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #4 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #5 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #6 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Total Volume:

#1_____, #2_____, #3_____, #4_____, #5_____, #6_____=_____*cu ft

_____ *cu ft x 7.48 gallons =_____ **gallons Spilled.**

CONVERSIONS

** To convert inches into feet: Divide the inches by 12.

Example: 27" / 12 = 2.25' Or Use Chart A

Example: 1 ¾" = ? 1" (0.08') + ¾" (0.06') = 0.14'

** One Cubic Foot = 7.48 gallons of liquid.

Chart A

Conversion: Inches	to	Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'

GEOMETRY

For the purposes of this work sheet, the unit of measurement will be in feet for formula examples. Area is two-dimensional - represented in square feet. (Length x Width)

Volume is three-dimensional - represented in cubic feet. (Length x Width x depth) or (Diameter Squared) D^2 x 0.785 x depth.

A Note about Depth

Wet Stain on a Concrete Surface - For a stain on concrete, use 0.0026'. This number is 1/32" converted to feet. For a stain on asphalt use 0.0013' (1/64"). A known amount of water (one gallon) was poured onto both asphalt and concrete surfaces. Once the Area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. 1/32" was the most consistently accurate depth on concrete and 1/64" for asphalt. This process was repeated several times.

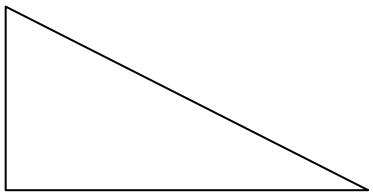
Sewage "Ponding" or Contained – Measure actual depth of standing sewage whenever possible. When depth varies, measure several (representative) points, determine the average and use that number in your formula to determine volume.

Area/Volume Formulas

Area is two dimensional and is represented as Square Feet (Sq. Ft.) Volume is three dimensional and is represented as Cubic Feet (Cu. Ft.) One Cubic Foot = 7.48 gallons.

AREA/VOLUME OF A RECTANGLE OR SQUARE

Formula: Length x Width x Depth = Volume in Cubic Feet



AREA/VOLUME OF A RIGHT TRIANGLE

Base x Height x 0.5 x Depth = Volume in Cubic Feet

Base (45') x Height (10') x 0.5 x Depth (.05') x 7.48 gallons/cubic foot = 84 gallons

For Isosceles Triangles (two sides are equal lengths), break it down into two Right Triangles and compute area as you would for the Right Triangle above.

AREA/VOLUME OF A CIRCLE/CYLINDER

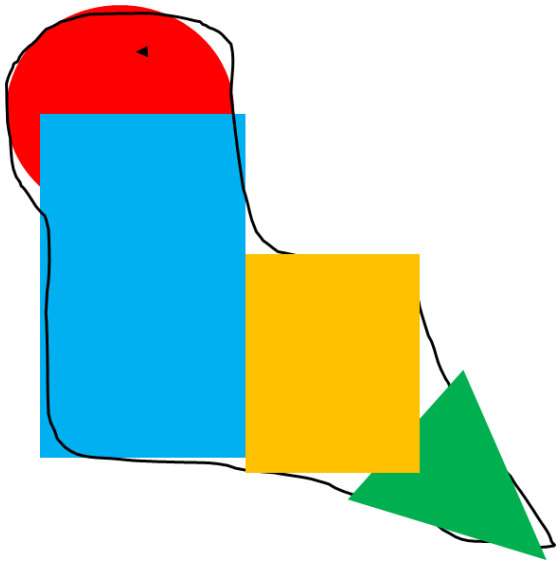
D^2 x 0.785 x d

Diameter Squared x 0.785 x Depth = Volume in cubic feet.

Diameter = Any straight line segment that passes through the center of a circle, the measurement across the widest part of a circle.

Example: 27' x 27' x 0.785 x 0.03 = 17.17 cubic feet

Cubic feet x 7.48 gallons/cubic feet = 128 gallons



AREA/VOLUME OF SPILL

Find the geometric shapes within the shape. If this was the shape of your spill, break it down, as best you can, with the shapes we know.

1. Determine the volumes of each shape.

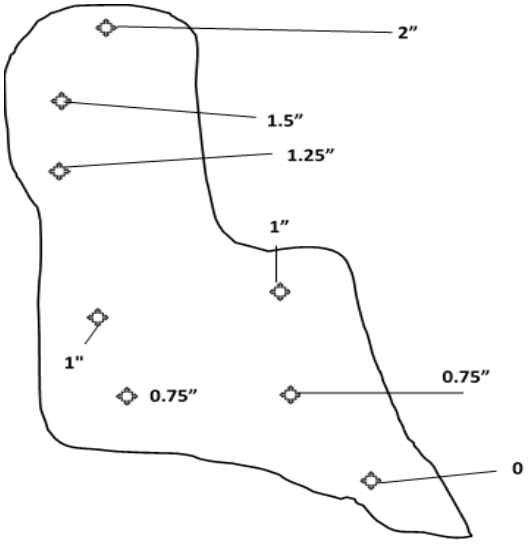
In this example, after the volume of the circle is determined, multiply it by 55% (+/-) so that the overlap area won't be counted twice.

If the spill depth is of varying depths, take several measurements at different depths and find the average

2" + 1.5" + 1.25" + 1" + 1" + 0.75" + 0.75" + 0 = 8.25"

8.25" / 8 measurements = 1.03" **Average Depth = 1.03"**

2. Add all the volumes to determine total spill volume.



If the spill affects a dry, unimproved area such as a field or dirt parking lot, determine the Area of the wetted ground in the same manner as you would on a hard surface. Using a round-point shovel, dig down into the soil until you find dry soil. Do this in several locations within the wetted area and measure the depth of the wet soil. Average the measurement/thickness of the wet soil and determine the average depth of the wet soil.

NOTE: This can be used in a (Dry) dirt or grassy area that is not regularly irrigated like a field or a dirt parking lot. ***Wet weather would make this method ineffective.***

SSO Report Form

Use this form to enter sanitary sewer overflow data for submittal into the State Water Resources Control Board CIWQS SSO Online Database.

Date of SSO spill: _____

Identify the SSO spill type and enter below:

- **SSO Category 1** – All discharges of sewage resulting from a failure in District's sanitary sewer system that resulted in a discharge to a drainage channel and/or surface water.
- **SSO Category 2** – All discharges of sewage resulting from a failure in District's sanitary sewer system of a volume equal to or greater than 1,000 gallons that did not reach surface water.
- **SSO Category 3** – All discharges of sewage resulting from a failure in District's sanitary sewer system of a volume less than 1,000 gallons that did not reach surface water.

Was there a discharge to surface water or a drainage channel that is tributary to surface water?

Yes ☐ No ☐

Was there a discharge to a storm drain pipe that was "NOT" fully captured & returned to the sanitary sewer system?

Yes ☐ No ☐

If you answered no to both questions above, was it ≥ 1,000 gallons?

Yes ☐ No ☐

If yes, the SSO is a Category 2. If NO, the SSO is a Category 3.

SSO spill type (Check one): ☐ Category 1 ☐ Category 2 ☐ Category 3

Name *(person completing this form)*:_____ Phone:_____

Exact spill location: _____

Latitude:_____ Longitude:_____

Spill location description: _____

_____

_____

Date/time spill was first discovered or reported to APCWD:

Date:_____ Time:_____:___ am/pm

Estimated spill start date/time: Date:_____ Time:_____:____ am/pm

Estimated operator arrival date/time: Date:_____ Time:_____:____ am/pm

Estimated spill end date/time: Date:_____ Time:_____:____ am/pm

Final spill destination *(Check all that apply)*:

☐ Building/Structure ☐ Street Curb/Gutter ☐ Paved Surface ☐ Unpaved Surface
☐ Storm Drain ☐ Surface Water ☐ Drainage Channel
☐ Storm Water Infiltration/Retention Structure/Field ☐ Other *(specify)*: _____

Did spill discharge to land? *(Includes discharges directly 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)* ☐ Yes ☐ No

If Yes, estimated spill volume discharged to land:_____ gallons

Estimated spill volume recovered from discharge to land: *(Do not include water used for clean up):*

_____ gallons

Did spill reach storm drain? ☐ Yes ☐ No

If Yes, estimated spill volume that reached storm drain:_____gallons Estimated spill volume

recovered from storm drain:_____ gallons

Did spill reach drainage channel? ☐ Yes ☐ No

If Yes, estimated spill volume that reached discharge channel:_____ gallons

Estimated spill volume recovered from drainage channel:_____ gallons

Methods used to estimate spill volumes *(Check all that apply.)*:

☐ Eyeball Method ☐ Calculations from Spill Dimensions ☐ Duration and Flow Rate
☐ Open Channel Spill Estimation ☐ Drop Bucket Method ☐ Calculations Based on Pipe Size
☐ Flow from Vent or Pick Holes ☐ Flow around Manhole Cover ☐ Flow from Manhole w/o a Cover

Number of spill appearance points: _____

Spill appearance point *(Check all that apply. See next page for complete list)*:

☐ Gravity Mainline ☐ Inside Building or Structure ☐ Manhole
☐ Other Sewer System Structure *(specify)*: _____

Spill cause *(Check all that apply. See next page for complete list)*:

☐ Debris - General ☐ Debris – Rags ☐ Root Intrusion ☐ Debris from Construction
☐ Construction Diversion Failure ☐ Collection System Maintenance Caused Spill/Damage
☐ Damage by Others Not Related to Collection System ☐ Other *(specify)* _____

Where did failure occur? *(Check all that apply)*:

☐ Gravity Mainline ☐ Manhole ☐ Inside Building or Structure ☐ Other *(specify)*: _____

Was this spill associated with a storm event? ☐ Yes ☐ No Diameter of sewer pipe at the point of

blockage or failure:_____ inches

Material of sewer pipe at the point of blockage or failure: _____

Estimated age of sewer asset at the point of blockage or failure:_____ years

Spill response activities *(Check all that apply)*:

☐ Cleaned-up ☐ Contained All or Portion of Spill ☐ Mitigated Effects of Spill ☐ Restored Flow
☐ Returned All of Spill to Sanitary Sewer System ☐ Other Enforcement Agency Notified
☐ Other *(specify):* _____

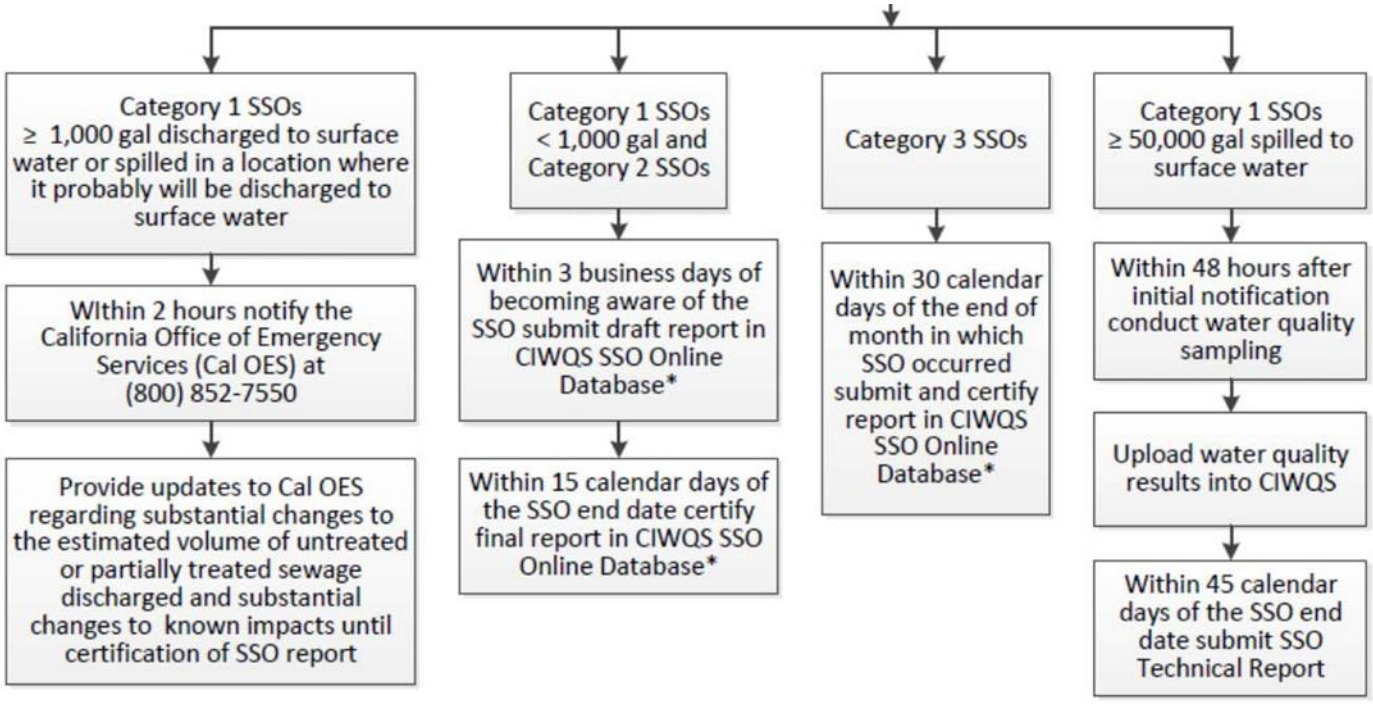
Spill response estimated completion date/time:Date:_____ Time:_____:_____ am/pm

Spill corrective action taken: *(Check all that apply. See next page for complete list):*

☐ Added Sewer to Preventive Maintenance Program ☐ Adjusted Schedule/Method of Preventive Maintenance ☐ Inspected Sewer Using CCTV to Determine Cause ☐ Plan Rehabilitation or Replacement of Sewer ☐ Repaired Facilities or Replaced Defect ☐ Other *(specify)* _____

Cal OES Control Number *(required for Category 1 SSOs)*: _____

Cal OES Called Date/Time *(required for Category 1 SSOs)*: Date:_____Time:____:_____ am/pm



CIWQS SSO Online Database Dropdown Lists:

Spill Appearance Point

Force Main
Gravity Mainline
Inside Building or Structure
Lateral Clean-Out
Lower Lateral
Manhole
Other Sewer System Structure
Pump Station
Upper Lateral

Spill Cause

Air relief valve (ARV) Failure
Blow-off Valve (BOV) Failure
Construction Diversion Failure
CS Maintenance Caused Spill/ Damage
Damage by Others Not Related to CS
Construction/ Maintenance (specify type below)
Debris from Construction
Debris from Lateral
Debris-General
Debris- Rags
Flow Exceeded Capacity (Separate CS only)
Grease Deposition (FOG)
Inappropriate Discharge to CS
Natural Disaster
Non-Dispersibles
Operator Error
Other (specify)
Pipe Structural Problem/ Failure Installation
Pump Station Failure- Controls
Pump Station Failure- Mechanical
Pump station Failure- Lower
Rainfall Exceeded Design, Inflow and Infiltration (Separate CS Only)
Root Intrusion
Siphon Failure
Surcharged Pipe (Combined CS Only)
Vandalism

Where Did Failure Occur

Air Relief Valve (ARV)
Blow- off Valve (BOV)
Force Main
Gravity Mainline
Lower Lateral (Public)
Manhole
Other (specify below)
Pump Station- Controls
Pump Station- Mechanical
Pump Station- Power
Siphon
Upper Lateral (public)

Spill Response Activities

Cleaned-Up
Mitigated Effects of Spill
Contained All or Portion of Spill
Other (specify below)
Restored Flow
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32 gal. trash can			
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Total Volume Estimated Using Eyeball Method			

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3. Use correct formula for various shapes

Rectangle	L x W x D
Circle	3.14 x R^2 x D
Polygons see reference chart	Show formula used

Duration and Flow Rate Method worksheet:

Start Date and Time	1.
End Date and time	2.
Total time elapsed of SSO event (subtract line 1 from line 2. Show time in minutes)	3.
Average flow rate GPM (account for diurnal pattern)	4.
Total volume estimate using duration and flow rate method (Line 3 x Line 4)	5.

SSO Volume by Area Estimation worksheet

Surface: ☐ Asphalt ☐ Concrete ☐ Dirt ☐ Landscape ☐ Inside Building Other _____

(Draw / Sketch outline of Spill 'Footprint' and attach photos)

Breakdown the 'Footprint' into Recognizable Shapes and Determine Dimensions of Each Shape.

Area #1_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #2_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #3_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #4_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #5_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #6_____% Wet _____

Stain. Depth1_____ Depth2_____ Depth3_____ Depth4_____ Depth5_____ Depth6 _____

Area #1 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #2 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #3 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #4 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #5 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Area #6 Square Feet:_____x % Wet_____=_____ Sq/Ft

Ave Depth:_____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume:_____Cu/Ft

Total Volume:

#1_____, #2_____, #3_____, #4_____, #5_____, #6_____=_____*cu ft

_____ *cu ft x 7.48 gallons =_____ **gallons Spilled.**

CONVERSIONS

** To convert inches into feet: Divide the inches by 12.

Example: 27" / 12 = 2.25' Or Use Chart A

Example: 1 ¾" = ? 1" (0.08') + ¾" (0.06') = 0.14'

** One Cubic Foot = 7.48 gallons of liquid.

Chart A

Conversion: Inches	to	Feet
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1"	=	0.08'
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GEOMETRY

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Wet Stain on a Concrete Surface - For a stain on concrete, use 0.0026'. This number is 1/32" converted to feet. For a stain on asphalt use 0.0013' (1/64"). A known amount of water (one gallon) was poured onto both asphalt and concrete surfaces. Once the Area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. 1/32" was the most consistently accurate depth on concrete and 1/64" for asphalt. This process was repeated several times.

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Area/Volume Formulas

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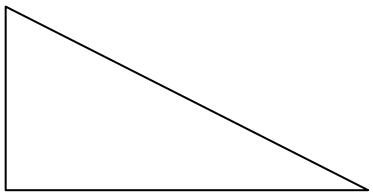
AREA/VOLUME OF A RECTANGLE OR SQUARE

Formula: Length x Width x Depth = Volume in Cubic Feet



AREA/VOLUME OF A RIGHT TRIANGLE

Base x Height x 0.5 x Depth = Volume in Cubic Feet

Base (45') x Height (10') x 0.5 x Depth (.05') x 7.48 gallons/cubic foot = 84 gallons

For Isosceles Triangles (two sides are equal lengths), break it down into two Right Triangles and compute area as you would for the Right Triangle above.

AREA/VOLUME OF A CIRCLE/CYLINDER

D^2 x 0.785 x d

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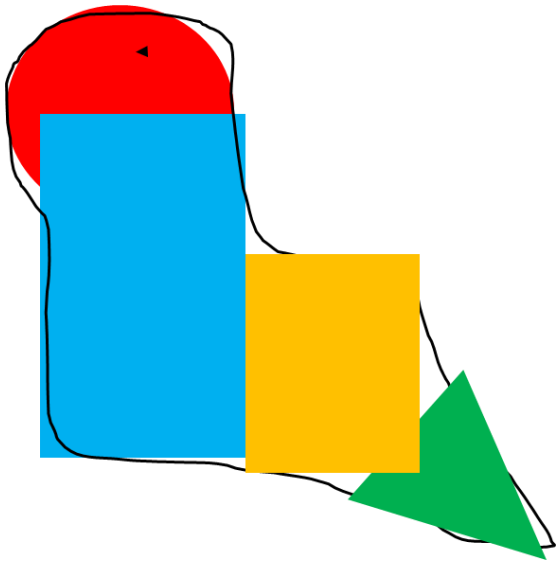
Example: 27' x 27' x 0.785 x 0.03 = 17.17 cubic feet

Cubic feet x 7.48 gallons/cubic feet = 128 gallons



AREA/VOLUME OF SPILL

Find the geometric shapes within the shape. If this was the shape of your spill, break it down, as best you can, with the shapes we know.

1. Determine the volumes of each shape.

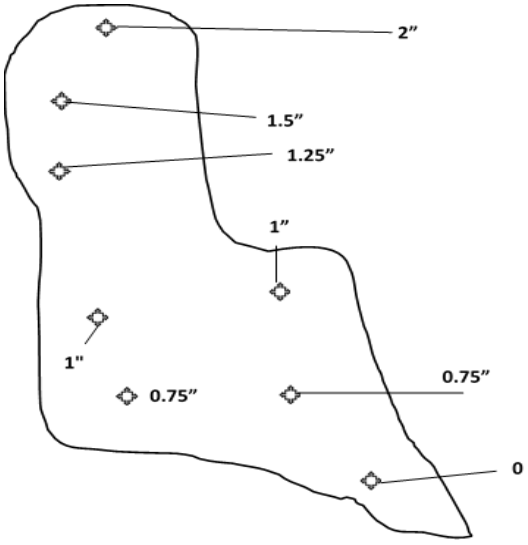
In this example, after the volume of the circle is determined, multiply it by 55% (+/-) so that the overlap area won't be counted twice.

If the spill depth is of varying depths, take several measurements at different depths and find the average

2" + 1.5" + 1.25" + 1" + 1" + 0.75" + 0.75" + 0 = 8.25"

8.25" / 8 measurements = 1.03" **Average Depth = 1.03"**

2. Add all the volumes to determine total spill volume.



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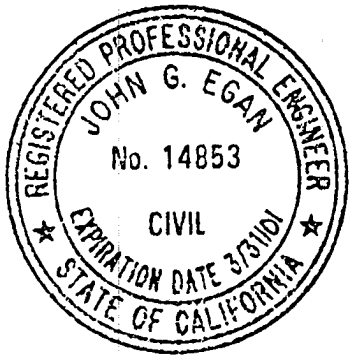
NOTE: This can be used in a (Dry) dirt or grassy area that is not regularly irrigated like a field or a dirt parking lot. ***Wet weather would make this method ineffective.***

SEWER MASTER PLAN

ARROWBEAR PARK
COUNTY WATER DISTRICT

NOVEMBER 1998



JOHN EGAN AND ASSOCIATES, INC.
CONSULTING ENGINEERS

TABLE OF CONTENTS

FIGURES AND TABLES

SECTION 1

EXECUTIVE SUMMARY

Abbreviations

Shown below is a list of abbreviations or shortened form which may be utilized in the report.

ADF	average daily flow
CSA	County Service Area
District	Arrowbear Park County Water District
FT	feet
GPCPD	gallons per capita per day
GPD	gallons per day
GPM	gallons per minute
HP	horsepower
MG	million gallons
MGD	million gallons per day
PDF	peak-day flow
PVC	polyvinyl chloride
RPM	revolutions per minute
RSWD	Running Springs Water District
RWQCB	State Regional Water Quality Control Board

Section 2 - Introduction and System Description

The Arrowbear Park County Water District is located in the San Bernardino Mountains, approximately 15 miles northeast of the City of San Bernardino. Formed in 1954 by acquisition of a small mutual water company and expanded twice since that time, it provides water and sewer service to the Community of Arrowbear Lake. Terrain in the District varies widely from a low of 5900 feet to a high of 6680 feet. Currently serving 940 connections, occupancy, as with many mountain communities, is low, estimated to be 40 percent full-time currently. Sewer construction was completed in 1975 as a result of a requirement by the State of California Regional Water Quality Control Board, with wastewater delivered to the nearby Running Springs Water District for treatment. System consists largely of eight-inch, gravity sewers which contains two siphons. System also contains a lift station and force main for delivery to RSWD.

Section 3 - Wastewater Flows

Flow information concerning wastewater generated in the District results from measurement at the District's lift station where it is discharged to the force main to RSWD. Average daily flow, that is, flow for the entire year, divided by 365 days, increased from approximately 44,000 gpd in 1996 to 105,000 in 1997 and declined to 80,000 in fiscal year 1997-98. Peak-day flow was found to be approximately double

ADF with the highest flow recorded during this period of 179,000 gpd in February 1998, a month when 23 inches of rainfall was received in the District.

Combining the average daily flow with the number of connections results in flow per connection ranging from 47 to 111 gpd. However, with an adjustment made for full-time occupancy of 50 percent, the average flow per full-time connection is close to 200 gpd, which was therefore utilized in the report for planning purposes in the subdivided area.

For an area annexed in 1987, basically the north one-half of Sections 33 and 34, approximately 607 acres, a different approach was utilized with a flow of 20 gpd per acre used and a peaking factor of 3.5.

Section 4 - High Maintenance Features

High maintenance features in the District consist of two inverted siphons which require monitoring and cleaning regularly, a very flat grade sewer in State Highway 18 designated as the number one maintenance problem in the District, and the lift station.

The problem sewer in State Highway 18 is located between a branch of Deep Creek and Dove Lane, a length of approximately 850 linear feet, which is believed to be very flat, or perhaps even have a sag. Cleaning is required regularly, hampered by inability to locate an intermediate manhole.

The lift station requires the most attention with daily monitoring of the mechanical equipment, pumping equipment maintenance and replacement, and electrical energy for pump operation. The biggest maintenance cost for the District is payment to RSWD for the District's portion of treatment, totaling $88,500 in 1997-1998.

Section 5 - Lift Station Operation and Modifications

Existing equipment at the lift station consists of two, 25-horsepower, 400-gpm pumps located in a belowground wet well which receives flow from throughout the District. Electrical operating cost for the pump station was $8,700 in 1997-1998. A review of the electrical usage indicates a seemingly high usage.

Proposed improvements for the lift station include an enclosure for the wet well and electrical panels, construction of an emergency overflow to the San Bernardino County CSA 79 wet well. Variable speed operation was investigated but found not to be cost effective.

Section 6 - Service to Unsewered Areas

The subdivided area of the District is largely sewered with the exception with the southeast corner bordered by Ridge Road and Deer Lick Drive. Also not sewered is the 1987 annexation which consists of six large, virtually undeveloped, parcels. The only improvement consists of a conference center on one of the parcels.

A plan of sewering these areas is presented. For the Ridge Road area, sewering would be accomplished by construction of collection sewers in the road right-of-way, though construction would be somewhat difficult and rather expensive due to the rocky nature of the area. For the annexation area, Deep Creek provides an impediment between the north half of Sections 33 and 34 and the balance of the District in which the collector system is located. If sewered, it is thought likely that collection would be made to the southeast corner and southwest corner of Section 34 and the wastewater then transported to the District's system by lift station/force main and by gravity sewer. Alternative for the southeast corner of Section 34 would be delivery to the CSA 79 sewer. Alternative for the entire annexation area could be onsite wastewater disposal if RWQCB criteria can be met.

For the southeast corner, Ridge Road area, estimated cost including construction, engineering, and finance is $473,350, or approximately $2,250 per lot for the 210 lots involved.

In the annexation area, construction cost estimate as derived was $244,375 for the area at the southeast corner of Section 34, and $275,425 for the southwest corner system. These costs exclude any amount for collection sewers beyond what would be considered District facilities.

Section 7 - Projected Flows and System Capacity

Increased flow sources for the District include construction on unbuilt lots in the southeast corner as well as fill-in of other areas, development and sewering of the 1987 annexation area, and increased full-time occupancy of current residences. The number of connections within the subdivided area is projected to increase one percent per year, aggregating to a 25 percent increase by the year 2020. Projected flows for this growth, as well as from the annexed are provided in five-year increments. Total flow, then, is projected to increase from the recent ADF of 80,000 to 118,000 gpd from the subdivided area, and 130,000 gpd with sewered development in the annexed area. Peak-day flow, then, would increase from nearly 180,000 gpd experienced recently, to 281,000 gpd for the same year 2020 development.

Capacity of critical elements in the District's system was reviewed. These consist of collection sewers, the inverted siphons, and the lift station/force main. All were found to be adequate for projected flows with the exception of the flat sewer reach in Highway 18, which is already a problem. The additional sewered development of the southeast corner near Ridge Road and from the southeast corner of Section 34, would all be delivered to that sewer, further compounding the existing problem.

Section 8 - Review of Sewer System Finances and Improvement Projects

Monthly user charge for the current connections is ~~$13.75~~ 14.60 per EDU. New connections pay a connection capacity charge of $1,650. Also providing income for operation and maintenance uses for the District are standby charges of $30 per parcel or per acre, totaling $79,000 for 1998-1999.

Analysis was made of sewer fund operations with the finding that for 1996-1997 and 1997-1998, the fund operated at a deficit. Including non-operating depreciation expense, ± $70,000 per year, the results of course considerably worsen and extended the deficit to 1995-1996, and therefore needs to be a priority of the District.

System improvement projects required or proposed for budgeting in the next two years include that of a pump station enclosure and overflow connection to CSA 79, totaling approximately $15,000 to $20,000. Additionally, the RSWD is proposing expansion of the sludge digester and its Lift Station No. 2 with the District's share being $27,000 and $35,000, respectively. To address the District's identified number one maintenance problem, a flat sewer in Highway 18, requires initially video logging and location and extension of the "lost" manhole. Estimated cost for this phase is $2,000 to $4,000. As the extent or type of problem is unknown, no amount is estimated for addressing the problem.

SSMP PROGRAM AUDITS

Internal audits to identify the progress of the implementation of the SSMP and evaluate its effectiveness (including any corrective measures needed) are required on a periodic basis. Audits shall be conducted every two years at a minimum with the results kept on file.

The DISTRICT's plan is to conduct the internal audit in conjunction with the annual review and update of the SSMP. In addition to identifying and correcting deficiencies (or specifying the schedule for such correct), the audit will review effectiveness of implementing the SSMP elements using the performance measures listed in Section IX of the Order. The audit will also include a qualitative evaluation of the overall effectiveness of implementing the SSMP elements. Lastly, it will describe improvements to the collection system completed during the past 2 years and those proposed for the upcoming 2 year period.

The audit will cover the 2 year period, and be submitted to the Regional Water Board by March 15 of the year following the calendar year for which the analysis was completed. The attached form will be used to perform the DISTRICT's audit.

Sewer System Management Plan
Annual Audit Report

Name of Agency	Arrowbear Park County Water District
Date of Audit	
Name of Auditor(s)	

System Overview	
Miles of Gravity Sewer Mains	12.0
Miles of Force Mains	.5
Total Miles of all Sewer Lines	12.5
Number of Pump Stations	1
Number of Private Sewer Mains, Excluding Laterals	0
Population Served	
Current Average Monthly Single-Family Residential Sewer Rate	

I. GOALS

1. Are the goals stated in the SSMP still appropriate and accurate? YES/NO

2. If you answered NO to question 1, describe the content and schedule for updates.

   Notes/Comments:

II. ORGANIZATION

Reference Material

- Organization Chart
- Phone List

3. Is the SSMP up-to-date with agency organization and staffing contact information? YES/NO

4. If you answered NO to question 3, describe content and schedule for updates.

Notes/Comments:

III. LEGAL AUTHORITY

Reference Material

- Ordinances
- Enforcement Actions

5. Does the SSMP contain up-to-date information about your agency's legal authority? YES / NO

6. Does your agency have sufficient legal authority to control sewer use and maintenance? YES / NO

7. If you answered NO to questions 5 or 6, describe content and schedule for changes.

   Notes/Comments:

IV. OPERATION AND MAINTENANCE

A. Collection System Maps

Reference Material

- Sanitary Sewer System Maps

8. Does the SSMP contain up-to-date information about your agency's maps? YES / NO

9. Are your agency's collection system maps complete, up-to-date, and sufficiently detailed? YES / NO

10. If you answered NO to questions 8 or 9, describe content and schedule for changes.

    Notes/Comments:

B. Resources and Budget

Reference Material

- Current Capital Improvement Plan (CIP)
- Current Operating Budget

11. Does the SSMP contain up-to-date information about your agency's resources and budget? YES / NO

12. Are your agency's resources and budget sufficient to support effective sewer system management? YES / NO

13. Do your agency's planning efforts support long-term goals? YES / NO

14. If you answered NO to questions 11, 12 or 13, describe content and schedule for necessary changes.

    Notes/Comments:

C. Preventative Maintenance

Reference Material

- Cleaning Schedule
- List or Map of Hot Spots
- Work Orders
- Service Call Data
- Customer Feedback

15. Does the SSMP contain up-to-date information about your agency's preventative maintenance program? YES / NO

16. Are you agency's preventative maintenance activities sufficient and effective in reducing and preventing SSOs and blockages? YES / NO

17. If you answered NO to questions 15 or 16, describe content and schedule for necessary changes.

    Notes/Comments:

D. REHABILITATION AND REPLACEMENT PLAN

18. Does the SSMP contain up-to-date information about your agency's rehabilitation and replacement plan? YES / NO

19. Is your agency's rehabilitation and replacement plan effective in locating, identifying, and addressing deficiencies? YES / NO

20. If you answered NO to questions 18 or 19, describe content and schedule for necessary changes.

    Notes/Comments:

E. EQUIPMENT AND REPLACEMENT PARTS INVENTORIES

21. Does the SSMP contain up-to-date information about equipment and replacement parts inventories? YES / NO

22. Are contingency equipment and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance? YES / NO

23. If you answered NO to questions 21 or 22, describe content and schedule for necessary changes.

    Notes/Comments:

F. TRAINING

24. Does the SSMP contain up-to-date information about your agency's training expectations and programs? YES / NO

25. Do supervisors believe that their staff is sufficiently trained? YES / NO

26. Are staff satisfied with the training opportunities and support offered to them? YES / NO

27. If you answered NO to questions 24, 25 or 26, describe content and schedule for necessary changes.

Notes/Comments:

V. DESIGN AND PERFORMANCE PROVISIONS

Reference Material

- Design and Construction Standards
- Ordinances

28. Does the SSMP contain up-to-date information about your agency's design and construction standards? YES / NO

29. Are design and construction standards, as well as standards for inspection and testing of new and rehabilitated facilities sufficiently comprehensive and up-to-date? YES / NO

30. If you answered NO to questions 28 or 29, describe content and schedule for necessary changes.

Notes/Comments:

VI. OVERFLOW EMERGENCY RESPONSE PLAN

Reference Material

- Data Submitted to CIWQS
- Service Call Data

31. Does the SSMP contain an up-to-date version of your agency's Overflow Emergency Response Plan? YES / NO

Considering the information in Table 1, is the Overflow Emergency Response Plan effective in handling SSOs? YES / NO

32. If you answered NO to questions 31 or 32, describe content and schedule for necessary changes.

Notes/Comments:

Table 1. Annual SSO Statistics

Indicator	**YR _____**	**YR _____**	**YR _____**	**YR _____**
Number of SSOs (total)				
Wet season SSOs*				
Dry season SSOs*				
Number of SSOs (by volume range)				
< 10 gal				
10 – 99 gal				
100 – 999 gal				
1000 – 9,999 gal				
≥ 10,000 gal				
Total SSO volume				
Volume reaching waters of the State				
Volume not contained but not reaching waters of the State				
Volume recovered				
Net volume (total minus recovered)				
Number of SSOs per 100 miles of sewer per Year				
Volume of SSOs per 100 miles of sewer per Year				
Total volume conveyed to treatment facilities (million gallons)				
Total volume SSO / total volume conveyed, gallons / million gallons				
Number of SSOs (by cause)				
Blockages				
Roots				
Grease				
Debris				
Debris from laterals				
Animal carcass				
Construction debris				
Multiple causes				
Infrastructure failure				
Inflow & Infiltration				
Natural disaster				
Flow capacity deficiency				
Bypass				
Cause unknown				
Average emergency response time (minutes)				
Business hours				
Non-business hours				
Number of locations with multiple SSOs				

*Wet season is defined as November-April, dry season May-October. Seasonal categorization does not necessarily reflect weather conditions at time of SSO.

VII. FOG CONTROL PROGRAM

Reference Material

- List or Map of FOG Sources in Service Area
- List or Map of Hotspots
- Data Submitted to CIWQS
- Service Call Data

Table 2. FOG Control Statistics

	YR _____	YR _____	YR _____	YR _____
Number of SSOs caused by FOG				
Planned cleaning (LF)				
Unplanned cleaning (LF)				
Ratio of planned to unplanned cleaning				
Number of FOG inspections completed				

33. Does the SSMP contain up-to-date information about your agency's FOG control program? YES / NO

34. Considering the information in Table 2, is the current FOG program effective in documenting and controlling FOG sources? YES / NO

35. If you answered NO to questions 33 or 34, describe content and schedule for necessary changes.

    Notes/Comments:

VIII. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLANS

Reference Material

- CIP
- SSO Data

	YR _____	YR _____	YR _____	YR _____
Number of SSOs caused by capacity limitations				

36. Does the SSMP contain up-to-date information about your agency's capacity assessment? YES / NO

37. Has your agency completed a capacity assessment and identified and addressed any hydraulic deficiencies in the system? YES / NO

38. If you answered NO to questions 33 or 34, describe content and schedule for necessary changes.

Notes/Comments:

IX. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

39. Does the SSMP contain up-to-date information about your agency's data collection and organization? YES / NO

40. Is your agency's data collection and organization sufficient to evaluate the effectiveness of your SSMP? YES / NO

41. If you answered NO to questions 39 or 40, describe content and schedule for necessary changes.

Notes/Comments:

X. SSMP PROGRAM AUDITS

42. Will this SSMP audit be submitted with the annual report to the Regional Water Board by March 15? YES / NO

XI. COMMUNICATION PROGRAM

Reference Material

- Website
- Other communication such as mailings, newspaper ads, or other outreach
- Customer Feedback

43. Does the SSMP contain up-to-date information about your agency's public outreach activities? YES / NO

44. Does the SSMP contain up-to-date information about your agency's communications with satellite and tributary agencies? YES / NO

45. Has your agency effectively communicated with the public and other agencies about the SSMP, and addressed feedback? YES / NO

46. If you answered NO to questions 43, 44 or 45, describe content and schedule for necessary changes.

    Notes/Comments:

COMMUNICATION PROGRAM

This section describes how the Arrowbear Park County Water District (District) will communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The primary customers are residential and commercial. The communication system will provide the public the opportunity to provide input to the District as the program is developed and implemented.

A. Resources with which Communication from the Public on the SSMP can be Solicited and Input

The District will utilize a number of resources to communicate with the public regarding the development, implementation, and performance of its SSMP. Those resources will include the use of newsletters, billing inserts, public meetings, and the District's web-site.

B. Stakeholders Whom Should be Involved Throughout Each Phase of the SSMP

Stakeholders with whom the District has identified as potentially interested in the development, implementation, and performance of its SSMP are identified below:

Stakeholder Group	Potential Issues of Interest
District Board	SSMP progress, costs, public impacts, communication program
Engineering consultants	Design standards, capital programs, consulting opportunities
Internal District or County Departments	FOG program, design standards, emergency response plans
Regulators – SWRCB / County Health Dept.	Emergency Response Plan, SSMP program audits
Restaurants	FOG program issues

The above list is not meant to be all-inclusive, nor suggest outreach to all of the listed groups is required. It is intended to provide a starting point to consider targeted outreach.

C. Identification of Ways in Which Stakeholder Input can be Provided

Stakeholder input regarding the development, implementation, and performance of the SSMP will be handled through the District's Board of Directors and the District General Manager. Stakeholders will be encouraged to submit verbal, written, and e-mailed comments. It will be the duty of District General Manager to ensure prompt response to those comments.

D. Identification of all Tributary and/or Satellite Systems

There are no systems Tributary and/or Satellite to the District.