

SEWER SYSTEM MANAGEMENT PLAN

Volume II

FOR

SAN BERNARDINO COUNTY COUNTY SERVICE AREAS

CSA 42 Oro Grande
CSA 53B Fawnskin
CSA 64 Spring Valley Lake
CSA 70 GH Glen Helen
CSA 70 S-3 Lytle Creek
CSA 70 S-7 Lenwood
CSA 70 SP-2 High Country
CSA 79 Green Valley Lake
CSA 82 Trona

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LIST OF ACRONYMS

BMP	Best Management Practice
CCTV	Closed-Circuit Television
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan or Program and/or Project
CIWQS	California Integrated Water Quality System
CMMIS	Computerized Maintenance Management Information System
CWEA	California Water Environment Association
CSA	County Service Area
Event ID	A unique Identifier Assigned by CIWQS Database
FOG	Fats, Oils, and Grease
FROG	Roots, Fats, Oils, and Grease
FSE	Food Service Establishments
General Order	SWRCB Order No. 2022-0103-DWQ adopted December, 2022
GIS	Geographical Information System
I/I	Inflow / Infiltration
LRO	Legally Responsible Official
MGD	million gallons per day
MRP	Monitoring and Reporting Program 2013-0058 EXEC
O&M	Operation and Maintenance
R&R	Rehabilitation and Replacement



RWQCB	Regional Water Quality Control Board
SCADA	Supervisory Control and Data Acquisition
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
TOC	Table of Contents
WDID	Waste Discharge Identification Number
WDR	Waste Discharge Requirements also referred to as General Waste Discharge Requirements (GWDR)
WSD	Water & Sanitation Division
WWTP	Wastewater Treatment Plant

TERMS

Best Management Practices: The Best Management Practices [BMP] is a developed industry standard related to the operation and maintenance of grease interceptors/grease-trap and housekeeping operations associated with food preparation and cleanup at restaurants and other food service facilities. BMPs are not just guidelines for FSEs; they are enforceable when a FSE fails to implement one or more of the listed BMPs.

Blockage: Partially or fully blocked wastewater, preventing flow through a sewer pipeline. The blockage can be caused by debris in the sewer, grease buildup, root intrusion, or a partial or full collapse of the pipeline. If not caught in time, the blockage may cause an overflow. This is also called a stoppage.

California Water Environment Association (CWEA): CWEA is an association of 8,000-plus professionals in the wastewater industry. CWEA is committed to keeping California's water clean. CWEA trains and certifies wastewater professionals, disseminates technical information, and promotes sound policies to benefit society through protection and enhancement of the water environment. CWEA offers services at the state level and locally through 17 geographical local sections. Through their on-line bookstore, CWEA offers technical references for sewer system operation and maintenance. Website: <http://www.cwea.org/>.

Computerized Maintenance Management System (CMMS): is also known as Enterprise Asset Management and Computerized Maintenance Management Information System (CMMIS). A CMMS software package maintains a computer database of information about an organization's maintenance operations, i.e. CMMIS - computerized maintenance management information system. This information is intended to help maintenance workers do their jobs more effectively and to help management make informed decisions. CMMS data may also be used to verify regulatory compliance.

Collection System: Generic term for any system of pipes or sewer lines used to convey wastewater to a treatment facility.

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.

Enrollee: The legal public entity that owns a sanitary sewer system, as defined by the WDR, which has submitted a complete and approved application for coverage under the WDR. This is also called a sewer system agency or wastewater collection system agency.

Event ID: A unique identifier assigned by the SSO database to each reported SSO or private lateral sewage discharge.

Fats, Oils and Grease (FOG): Fats, oils, and grease that are discharged into the sanitary sewer collection system by Food Service Establishments (FSE), homes, apartments and other sources. FOG is a major cause of blockages leading to increased maintenance and sometimes spills. Grease can harden and cause floating "turtles" inside manholes and wet-wells that are hard to break down. These can easily clog pipe openings and cause serious problems if they make their way through the system.

Fats, Roots, Oils and Grease (FROG): Fats, oils, and grease that are discharged into the sanitary sewer collection system by FSEs attach to downstream roots that are protruding from lateral connections, pipe joints, manholes, etc., creating a more rock-solid blockage due to the combination of FOG and Roots that will lead to increased maintenance and sometimes spills.

Geographical Information System (GIS): A database linked with mapping, which includes various layers of information used by government officials. Examples of information found on a GIS can include a sewer map; sewer features such as pipe location, diameter, material, condition, last date cleaned or repaired. The GIS also typically contains base information such as streets and parcels.

Infiltration: The entry of groundwater into a sewer system, including service connections. Infiltration occurs through defects in the piping network including defective or cracked pipes, pipe joints, and through defects in manhole walls and joints.

Inflow: Stormwater runoff entry into a sewer system from such sources as roof leaders, cellars, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, around manhole covers that are not properly sealed to the top of manholes or through holes in the covers, and cross connections from storm sewer systems and catch basins. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than seepage of groundwater into the sewer.

Lateral: The portion of sewer that connects the waste plumbing from a home or business with the sewer main pipeline in the street. Some sewer system agencies own or maintain a portion of the lateral.

a) Upper Lateral: Portion of lateral from building to property line (or easement line), usually privately owned and maintained.

b) Lower Lateral: Portion of lateral from property line (or easement line) to sewer mainline in the street or easement. This portion of the lateral is sometimes privately owned and maintained and sometimes publicly owned

and maintained.

Legally Responsible Official: The person with authority to ensure compliance, authority over management of the entire sewer system, and authorized to make managerial decisions governing operations, capital improvements, and ensuring long-term environmental compliance.

Miles of Gravity Sewer: Amount of gravity sewer lines/pipes in an Enrollee's sanitary sewer system, expressed in miles.

Miles of Laterals: Amount of laterals in an Enrollee's sanitary sewer system, which the Enrollee is responsible for maintaining, expressed in miles.

Miles of Pressure Sewer: Amount of pressurized sewer lines/pipes in an Enrollee's sanitary sewer system, expressed in miles, also referred to as Force Mains.

Monitoring and Reporting Program: The Monitoring and Reporting Program established in the WDR that establishes monitoring, record keeping, reporting and public notification requirements for the WDR.

Overflow Emergency Response Plan: Identifies measures to protect public health and the environment. A plan must include the following: notification procedure, appropriate response plan, regulatory notification procedures, employee training plan, procedures to address emergency operations, a program that ensures all reasonable steps are taken to contain and prevent discharges.

Percent Reached Surface Water: Volume of sewage discharged from a sanitary sewer system or private lateral or collection system that reached surface water divided by the total volume of sewage discharged.

Percent Recovered: Volume of sewage discharged that was captured and returned to the sanitary sewer system or private lateral or collection system divided by the total volume of sewage discharged.

Private Lateral: That portion of the lateral that is owned and maintained by the private property owner that it serves. Based on an individual agency's ordinance, this may just be the upper lateral or can include the lower lateral.

Private Lateral Sewage Discharge (PLSD): Sewage discharges that are caused by blockages or other problems within privately owned laterals or collection systems which are tributary to the reporting Enrollee's sanitary sewer system. Reports of these events are submitted by Enrollees on a voluntary basis but are not their responsibility. This type of sewage discharge is the responsibility of the private lateral or collection system owner.

Rehabilitation and Replacement Plan (also referred to as a Capital Improvement Plan):

Identifies and prioritizes system deficiencies and implements short-term and long-term rehabilitation actions to address each deficiency.

Sanitary Sewer Overflow (SSO): The Statewide WDR defines an SSO as any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system, including overflows or releases that reach waters of the United States, overflows or releases that *do not* reach water of the United States, and backups into buildings and/or private property caused by conditions within the publicly owned portion of the sewer system.

Sanitary Sewer Overflow Categories:

Category 1: A spill of any volume of sewage from or caused by a sanitary sewer system regulated under the General Order that results in discharge to: a surface water, including a surface water body that contains no flow or volume of water; or a drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.

Category 2: A spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water.

Category 3: A spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water.

Category 4: A spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water.

Sanitary Sewer System: Any system of gravity sewer pipelines, pump stations, force mains, or other facilities upstream of the headwork's of a wastewater treatment plant. The sanitary sewer system is used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities are considered to be part of the sanitary sewer system and discharges into these temporary storage facilities are not to be considered spills.

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.

Sewage Lift Station: Lift stations are facilities designed to move raw sewage from a lower elevation to a higher elevation through pipes or pumps. Key elements of sewer lift stations include a receiving well (wet-well), often equipped with a bar screen or grinding pump to remove coarse materials; pumps and piping with associated valves; motors; a power supply system; an equipment control and alarm system; and an odor control system and ventilation system. The lift stations are equipped with redundant alarms and backup equipment to eliminate the potential for failures of mechanical and/or electrical equipment and appurtenances. Prime use of a lift station is inside a WWTP (screw pumps) or when two different elevations of a collection system join and sewage needs to be lifted and deposited back into a gravity pipe line simply feet away.

Sewer Pipe Blockage Control Program: Program that includes: public education program; plan and schedule for the disposal of FOG; legal authority to prohibit FOG related discharges; requirement to install grease removal devices; authority to inspect grease producing facilities; identification of sanitary sewer system sections subject to FOG blockages and the establishment of a cleaning schedule for each section; development and implementation of source control measures for all sources of FOG.

Sewer System Management Plan (SSMP): A series of written site specific programs that address how a collection system owner/operator conducts their daily business as is outlined in the WDR. Each SSMP is unique for an individual discharger. The plan includes provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis. The plan must also contain a spill response plan. Certification is offered by technically qualified and experienced persons and provides a useful cost effective means for ensuring that SSMPs are developed and implemented appropriately.

Spill: Generic term referring to any sewage discharge (i.e., spill or private lateral sewage discharge) resulting from a failure in a sanitary sewer system or privately owned lateral or collection system.

SSO Database: Online reporting system developed, hosted, and maintained by the State Water Resources Control Board for compliance with the Monitoring and Reporting Program contained in Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WQO No. 2022-0103-DWQ).

Storm Drainpipe: For the purposes of complying with the Statewide Sanitary Sewer Order, any pipe that is part of a municipal separate storm sewer system used for collecting or conveying storm water.

System Evaluation and Capacity Assurance Plan: A required component of an agency's

SSMP and is an important part of any agency's overall Capital Improvement Plan that provides 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.

Total Volume Reached Surface Water: Amount of sewage discharged from a sanitary sewer system or private lateral or collection system that reaches a surface water.

Total Volume Recovered: Amount of sewage discharged that was captured and returned to the sanitary sewer system or private lateral or collection system.

WDID: Waste Discharge Identification number which is a unique identifier assigned by the State Water Board to each Enrollee for regulatory record and data management purposes.

WDR – Waste Discharge Requirements: A WDR is an authorization to discharge waste with certain conditions, which can be issued on an individual basis or to a group of dischargers. The Statewide General WDR for Sanitary Sewer Systems was adopted by the SWCRB and will be implemented by the Regional Water Boards and SWRCB.

INTRODUCTION – SSMP VOLUME II

This is the second installation for all of the County Service Area Sewer System Management Plans. This volume contains general information required by each SSMP for the CSAs listed on the cover page of this document. The below Sections and Appendices apply to each individual CSA's SSMP.

SECTION 1 – GOALS AND INTRODUCTION

(SEE SSMP VOLUME I)

SECTION 2 – ORGANIZATION

REGULATORY REQUIREMENTS FOR ORGANIZATION ELEMENT

The General Order requirements for the Organization element of the SSMP are as follows:

The Plan must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organization chart or similar narrative documentation that includes:

- 1. The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;*
- 2. The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;*
- 3. Organizational lines of authority; and*
- 4. Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county health officer, county environmental health agency, and State Office of Emergency Services.)*

ORGANIZATION DISCUSSION

This section describes the Department's organization and chain of communication. The Department maintains a sustainable staffing level to sufficiently operate and maintain the sanitary sewer system and to provide for mitigating all impacts associated with any SSO that may occur.

Legally Responsible Official

Section 5.1 of the General Order requires that the County designate at least one Legally Responsible Official (LRO). The LRO should have knowledge and expertise of the enrolled sanitary sewer system and is authorized to serve as a duly authorize representative. The LRO must have responsibility over management of the entire sanitary sewer system and must be authorized to make managerial decisions that govern the operation of the sanitary sewer system, including having the explicit or implicit duty of making major capital improvement recommendations to ensure long-term environmental compliance. The LRO must:

- Possess a recognized degree or certificate related to O&M of sanitary systems.
- Have professional training and experience related to the management of sanitary sewer systems, demonstrated through extensive knowledge, training, and experience.

The LRO is responsible for electronically certifying, on the county's behalf, all applications, reports, the SSMP and corresponding updates, and other information submitted electronically into the online California Integrated Water Quality System (CIWQS) Sanitary Sewer Database. The Department Division Manager, Greg Snyder, is the LRO, and is responsible for the execution of compliance actions required under this General Order.

The LRO may designate one or more individuals as a Data Submitter for reporting spill data. The LRO shall authorize the designation of Data Submitter(s) through the online CIWQS database. The LRO shall submit any changes to its Data Submitter(s), and/or change in the Data Submitter contact information, to the State Water Board within 30 calendar days of the change, by emailing ciwqs@waterboards.ca.gov and copying the appropriate Regional water Board as provided in Attachment F of the General Order. If the Division Manager is not available, the County has established two Data Submitters to handle the duties of the authorized representative. The Data Submitter includes two Department Supervisors.

The names and contact information for the individuals referenced in this subsection are summarized in Table 2-1.

Table 2-1. Contact Information of County Staff				
Role	Name	Title	Phone Number	Email
Legally Responsible Official	Greg Snyder	Division Manager	760-955-9885	Gregory.snyder@sdd.sbcounty.gov
Data Submitter	Chris Bishop	Department Supervisor	760-261-6032	chris.bishop@sdd.sbcounty.gov
Data Submitter	Lisa Green	Department Supervisor	909-386-8883	Lisa.green@sdd.sbcounty.gov

Organizational Chart

The names of the responsible and authorized representatives are outlined in the Department's Organizational Chart (**Appendix A**).

Description of General Responsibilities

This section details key positions within the Department including a description of roles and responsibilities.

Director of the Special Districts Department

The Director of the Special Districts Department reports directly to the County Administrative Officer and is responsible for administering and managing all functions of the San Bernardino County (County) Board Governed Special Districts. The major duties of the Director include, but are not limited to the following:

- Directs and coordinates all the activities of the Department to ensure that staff, engineers, legal and financial consultants, and district commissioners understand and work toward the same objectives as approved by the Board.
- Provides assistance and direction to staff regarding all Board-governed districts in technical, administrative, and financial matters involving district operations.
- Maintains liaisons with county, state, and regional entities to ensure the understanding of new laws, regulations, and rules. Prepares and delivers oral and written presentations to these entities clearly stating the Department's position.
- Directs, monitors, and controls the financial operation of all Board-governed districts, county service areas, and zones. Establishes procedures to assure positive financial controls over the Department, Board-governed districts, federal grants, and state subventions.

- Analyzes and/or directs studies to analyze new projects, considering the immediate and long range impact and cost. Recommends project adoption, and modification or cancellation.
- Reviews all Board-governed district, CSA, and zone budgets to define plans, projects, tax rates, possible problems, and solutions.
- Obtains formal approval from the Board on new policies, contracts, annexations, budgets, and other policy changes affecting the Board-governed districts.
- Directs management/performance audits to evaluate district effectiveness. Reviews results with district executives and makes appropriate changes and/or recommendations.
- Works effectively with advisory commissions and community groups. Meets with citizens regarding complaints, problems, and suggestions; and explains district actions and policies.

Division Manager

Under general direction from the Department Director, plans, organizes and directs the administrative and financial operations of the Department's Divisions. The Division Manager is responsible, through subordinate management and supervisory staff, for directing Department administrative, fiscal, regional, and water and sanitation operations.

- Reviews and evaluates the effectiveness of all administrative, financial, and informational systems within the Department and establishes procedures to ensure reporting compliance with local, State, and federal laws, rules, and regulations; advises the Director on the consequences of both proposed and implemented policy decisions.
- As a member of the management team, participates in the development and implementation of policies regarding operation, management, and administration; potential new programs; administrative and financial plan objectives including major financial plans such as capital expenditures; recommends fees and policies for various services based on cost experience, projected trends and objectives; plans, organizes and administers the Department's annual budget.
- Reviews all board-governed districts' budgets to define district plans, projects, tax rates, possible problems, and solutions.
- Prepares necessary reports as required.
- Provides vacation and temporary relief for the Director as required.
- Supervises and administers field operations for sanitation districts.

- Supervises operations and maintenance personnel; determines daily work schedules; evaluates performance; participates in hiring of personnel and determining disciplinary actions.
- Assists in researching and preparing contracts as needed for required services, recommends changes to contracts as required.
- Manages emergency situations pertaining to wastewater; coordinates all repairs and reporting.
- Attends advisory commission meetings and other public meetings as necessary.
- Prepares and coordinates programs for operational control and systems monitoring.
- Conducts and prepares a variety of studies and technical reports; maintains records and logs; composes correspondences to the general public.
- Coordinates the development of various fiscal procedures; facilitates district purchases; recommends changes and monitors the districts' budgets.
- Coordinates construction projects associated with sanitation systems; inspects and assists as required. Coordinates with engineers and outside consultants on district activities and projects.
- Develops written procedures to implement adopted policies; and designs or improves operational forms.

Water and Sanitation Supervisor

Under the direction of the Division Manager, plans, organizes, directs, and supervises maintenance, construction, and repair of wastewater sewer pipelines, manholes, cleanouts, sewer pump and/or lift stations and related equipment, and assists in the operation and maintenance of wastewater treatment plants for various sanitation districts.

- Directly responsible for personnel safety in compliance with safety regulations; supervises and maintains strict safety standards; routinely inspects wastewater collection systems and wastewater treatment plant facilities for safety hazards and violations. Participates on the Safety Committee.
- Plans, assigns, schedules, supervises and evaluates employees in the operation and maintenance of wastewater collection systems and wastewater treatment plants including the construction and repair of wastewater apparatuses such as sewer lines, man holes, cleanouts and pump and/or lift stations; provides adequate staff training and expert instruction in general operations and maintenance.
- Maintains operating efficiencies for solids handling, primary treatment, oxidation processes, and secondary and tertiary treatment processes. Develops and

implements methods for improving plant efficiency.

- Directs all emergency sanitary sewer overflow (SSO) notification and procedural activities, logistics and procurement preparation tasks, and emergency evaluation for mitigation of all SSO events. Follows up with all regulatory agencies and is the direct California Integrated Water Quality System (CIWQS) Data Submitter.
- Supervises all general routine preventive maintenance activities such as, but not limited to: sewer cleaning, televising, inspection, and smoke testing. Supervises the activities of sewer safety inspections on all pumps and/or lift stations and supervises other relevant and routine wastewater collection system duties as required.
- Supervises employees in the performance of chemical, bacteriological, and biological tests as related to the standards of water quality monitoring and analysis of unusual or complex water quality control problems.
- Maintains records, reports, and correspondence regarding the operation and maintenance of wastewater collection systems and treatment plants, and is responsible for insuring that the quality of effluent satisfies discharge requirements established by regulatory agencies.
- Supervises and assists in the routine maintenance and repair of equipment, tools, and vehicles necessary to insure efficient and effective operations.
- Maintains effective public relations through contacts with the general public and others who desire to observe wastewater collection systems and plant operations. Maintains contacts with vendors, engineers, suppliers and maintenance personnel of other organizations.
- Insures that the wastewater collection system's sewer pumps and/or lift stations and treatment plants are maintained in a clean and orderly manner through constant inspection.
- Participates in meetings with engineers to discuss design criteria for wastewater collection systems and treatment plant facilities and/or equipment.
- Responsible for ensuring that all sewage collection sampling procedures are adhered to.
- Provides up-dates on all procedural requirements and chain-of-custody operation.
- Analyzes treatment plant operations, processes and maintenance, making modifications or recommendations on procedures, techniques or treatment processes when necessary.
- Inspects and locates existing and newly constructed wastewater lines and takes water samples as required by the State of California.

- Assists the Division Manager with establishing priorities for current and future projects; provides on- going budget input.
- Orders supplies and equipment; prepares estimates of equipment and materials needed to perform work in the construction, maintenance, and repair of wastewater facilities; compiles budget information.
- Inventories fixed assets, tools, and equipment.
- Maintains a current safety and emergency on-call/call-back program and performs on-call/call- back duty as required.
- Provides temporary and vacation relief for the Division Manager as required.

Operator Grade IV

Under the direction of the Water and Sanitation Supervisor, plans, organizes, directs, and supervises the maintenance, construction, and repair of wastewater sewer pipelines, manholes, cleanouts, sewer pumps and/or lift stations and related equipment, and assists in the operation and maintenance of wastewater treatment plants for various sanitation districts.

- Directly responsible for personnel safety in compliance with safety regulations; supervises and maintains strict safety standards; routinely inspects wastewater collection systems and wastewater treatment plant facilities for safety hazards and violations.
- Assigns, schedules, supervises and evaluates employees in the operation and maintenance of wastewater collection systems and wastewater treatment plants including the construction and repair of wastewater apparatuses such as sewer lines, man holes, cleanouts and pumps/lift stations; provides adequate staff training and instruction on specific operations and maintenance.
- Responsible for solids handling, primary treatment, oxidation processes, secondary and tertiary treatment.
- Performs notification and response on all SSO emergencies.
- Supervises all general routine preventive maintenance activities such as, but not limited to: sewer cleaning, televising, and sewer inspection, smoke testing. Supervises safety inspections on pumps/lift stations and all other relevant and routine wastewater collection system duties as required.
- Supervises employees in the performance of chemical, bacteriological, and biological tests as related to the standards of water quality monitoring and analysis of unusual water quality control problems.
- Maintains records, reports, and correspondence regarding the operation and maintenance of wastewater collection systems and treatment plants. Directly

responsible for insuring that the quality of effluent satisfies discharge requirements established by regulatory agencies.

- Supervises and/or provides the necessary training of staff in the routine maintenance and repair of equipment, tools, and vehicles necessary to insure efficient and effective operation.
- Directly supervises and provides the necessary training of staff in the collection of sewage sampling procedures, up-dates all procedural requirements, and supervises chain-of-custody procedures.
- Maintains effective public relations through contacts with the general public and others who desire to observe wastewater collection system operations and plant operations. Maintains contacts with vendors, engineers, suppliers, and maintenance personnel of various other organizations.
- Insures that wastewater collection system sewer pumps/lift stations and treatment plants are maintained in a clean and orderly manner through constant inspection.
- Participates in meetings with engineers to discuss wastewater collection systems and treatment plant facilities and/or equipment.
- Analyzes treatment plant operations, processes, and maintenance; making modifications or recommendations on procedures, techniques or treatment processes when necessary.
- Inspects and locates existing and newly constructed wastewater lines; takes water samples as required by the State of California.
- Assists the Water and Sanitation Supervisor with establishing priorities for current and future projects; provides budget input when required.
- Orders supplies and equipment; prepares estimates of equipment and materials needed to perform work in the construction, maintenance, and repair of wastewater facilities.
- Conducts the inventory counts of fixed assets, tools, and equipment.
- Participates in emergency on-call procedures in accordance with established district policies.
- Provides temporary vacation relief for the Water and Sanitation Supervisor as required.

Maintenance Worker III/Operator Grade III

Under the direction of the Water and Sanitation Supervisor, supervises and provides assistance to subordinates in the operation and maintenance of a wastewater collection systems and wastewater treatment plants; and performs related duties as required.

- Responsible for personnel safety and compliance with all current safety regulations.
- Operates or acts as lead operator in the operation and maintenance of one or more wastewater collection systems and/or wastewater treatment plants.
- Evaluates operations to insure optimum efficiency and makes adjustments or recommendations to processes when required.
- May inspect or assign others to inspect wastewater collection systems including all wastewater pumps/lift stations to assure proper operation.
- Prepares technical operating procedures and instructions for efficient operations including sampling and testing procedures.
- Performs the necessary training of staff for the collection of sewage sampling, adheres to procedural requirements and chain-of-custody requirements.
- Prepares records and reports on operations such as the type of treatment, volume of wastewater treated, data on the amount of disinfectant used per day, and meteorological data such as temperature, rainfall, and wind direction.
- Participates in meetings with engineers relative to the design of equipment necessary to the operation of wastewater collection systems and wastewater treatment plants.
- Keeps data/information on each piece of equipment with emphasis on unusual incidents and faulty operation procedures.
- Supervises and/or assists with emergency SSO notifications and procedures. Supervises general routine preventive maintenance such as, but not limited to: sewer cleaning, televising, sewer inspection, smoke testing, safety inspections on all pumps/lift stations, and performs all other relevant and routine wastewater collection system duties as required.
- Assures that all wastewater collection systems, wastewater treatment plants, and related facilities are maintained in a clean, neat, and orderly manner.
- Participates in emergency on-call in accordance with established Department policies.
- Provides vacation and temporary relief duty when required.
- Assists in preparing and assigning work performance evaluations and training.
- Provides input into routine work schedules.

Electrical Specialist/Tech 1

Under the general direction of the Water and Sanitation Supervisor, supervises and provides assistance to staff in the operation and maintenance of wastewater collection

systems and wastewater treatment plants as required.

- Responsible for personnel safety and compliance with all current safety regulations.
- Performs skilled electrical installation/repairs/trouble shooting on tasks/activities related to high voltage, low voltage, SCADA, telemetry, phone installation, alarms, and site monitoring.
- Maintains data on each piece of electrical equipment.
- Monitors mechanical equipment with emphasis on preventive maintenance and all unusual incidents related to faulty operation.
- Maintains the fleet of portable generators for utilization at sewer facilities as required.
- May act as a lead operator during the operation and maintenance of one or more wastewater collection systems and/or wastewater treatment plants.
- Participates in meetings with engineers relative to the design/installation of electrical systems, monitoring systems, and mechanical equipment systems as necessary for the safe and reliable operations of all wastewater collection systems and wastewater treatment plants.
- May evaluate the operation of electrical assets to insure optimum efficiency and to make adjustments or recommendations when required.
- May inspect or assign others to inspect wastewater collection systems, including all wastewater pumps/lift stations to assure proper operation.
- May prepare technical operating procedures and instructions for efficient operation, including sampling and testing procedures.
- May perform activities related to the collection of sewage sampling, adhering to procedural requirements and chain-of-custody requirements.
- May supervise/assist with emergency SSO notification and procedures.
- Participates in emergency on-call procedures in accordance with established district policies.
- Provides vacation and temporary relief duty when required.
- Assists with preparing and assigning work performance evaluations and training.
- Provides input into routine work schedules.

Maintenance Worker II/Operator Grade II

Under general supervision of a Maintenance Worker III/Operator Grade III, assists in the operation and maintenance of wastewater collection systems and wastewater treatment plants; and performs related duties as required.

- Responsible for personnel safety and compliance with all current safety regulations.
- In the absence of a Maintenance Worker III/Operator Grade III, operator acts as lead worker in the operation and maintenance of one or more wastewater collection systems and/or wastewater treatment plants.
- Makes repairs or adjustments to operating equipment at wastewater collection systems and/or wastewater treatment plants
- Prepares and maintains necessary data, records, and reports.
- Performs activities related to the collection of sewage sampling, and adheres to procedural requirements and chain-of-custody requirements.
- Operates and checks the operation of all equipment/unit process equipment such as sewer pumps/lift stations, pumps, motors, blowers, odor scrubbers, manholes, cleanouts, drywells/wet- wells, vaults, and other related equipment, including: headworks, primary and secondary clarification, biological units, chlorination, and solids processing equipment.
- Performs assigned skilled labor and clerical work incidental to wastewater collection systems and wastewater treatment plants.
- Compiles the necessary information for the purchase of spare parts, preventive maintenance replacement parts/accessories, chemicals, vendor services, repairs, adjustments and supplies.
- Read's meters and gauges; regulates flow of raw and treated wastewater between various units of the treatment process.
- Supervises or assists in the cleaning of odor scrubbers, manholes, cleanouts, drywells/wet-wells, vaults, tanks, and other equipment as required to maintain wastewater collection systems, wastewater treatment plants, and facility grounds in clean and sanitary condition.
- Participates in emergency on-call procedures in accordance with established district policies.
- Maintains effective public relations.
- Performs vacation and temporary relief duty when required.
- Assists during emergency SSO notification procedures. Performs general routine preventive maintenance such as, but not limited to: sewer cleaning, televising, smoke testing, and performing safety inspections on all pumps/lift stations and all other routine wastewater collection system duties as required.
- Assists Department staff in various work assignments.

Maintenance Worker I / Operator Grade I

Under direct supervision of a Maintenance Worker II/Operator Grade II, assists in the operation and maintenance of wastewater collection systems and/or wastewater treatment plants, and performs related duties as required.

- Responsible for personnel safety and compliance with all current safety regulations.
- May be responsible for the operation and maintenance duties of one or more wastewater collection systems and/or wastewater treatment plants.
- Makes minor repairs or adjustments to operating equipment on wastewater collection systems and/or wastewater treatment plants.
- Prepares and maintains necessary data, records, logs and reports.
- Operates and checks the operation of all equipment/unit process equipment such as sewer pumps/lift stations, pumps, motors, blowers, odor scrubbers, manholes, cleanouts, drywells/wet- wells, vaults and other related equipment, including: headworks, primary and secondary clarification, biological units, chlorination and solids processing equipment.
- Performs semi-skilled labor and clerical work incidental to wastewater collection systems and/or wastewater treatment plants.
- Compiles the necessary information for the purchase of spare parts, preventive maintenance replacement parts/accessories, chemicals, vendor services, repairs, adjustments, and supplies.
- Reads meters and gauges; regulates flow of raw and treated wastewater between various units of the treatment process.
- Performs cleaning of odor scrubbers, manholes, cleanouts, drywells/wet-wells, vaults, tanks and other equipment as required to maintain wastewater collection systems and/or wastewater treatment plants and grounds in a clean and sanitary condition.
- Participates in emergency on-call procedures in accordance with established Department policies.
- Maintains effective public relations.
- Assists during emergency SSO procedures and tasks. Performs general routine preventive maintenance such as, but not limited to: sewer cleaning and televising, sewer inspection, smoke testing, and safety inspections on all pumps/lift stations.
- Assists Department staff in various work assignments.

Maintenance Worker I (trainee) / Operator in Training (OIT) / Public Service Employee (PSE)

Under the direct supervision of a Maintenance Worker III or II/Operator Grade III or II, assists in the operation and maintenance of wastewater collection systems and/or wastewater treatment plants, and performs related duties as required.

- Responsible for personnel safety and compliance with all current safety regulations.
- Assists in the operation and maintenance duties of one or more wastewater collection systems and/or wastewater treatment plants.
- Makes minor repairs or minor adjustments to operating equipment at wastewater collection systems and/or wastewater treatment plants with the permission and oversight of lead personnel.
- Prepares and maintains necessary data, records, logs and reports.
- Operates and checks the operation of all equipment/unit process equipment such as sewer pumps/lift stations, pumps, motors, blowers, odor scrubbers, manholes, cleanouts, drywells/wet- wells, vaults, and other related equipment, including: headworks, primary and secondary clarification, biological units, chlorination, and solids processing equipment.
- Performs assigned labor and clerical work incidental to wastewater collection systems and/or wastewater treatment plants.
- Reads meters and gauges; regulates flow of raw and treated wastewater between various units of the treatment process.
- Performs cleaning of odor scrubbers, manholes, cleanouts, drywells/wet-wells, vaults, tanks and other equipment as required to maintain wastewater collection systems and/or wastewater treatment plants and grounds in a clean and sanitary condition.
- May participate in emergency on-call procedures in accordance with established Department policies.
- Maintains effective public relations.
- Assists during emergency SSO procedures and tasks. Performs general routine preventive maintenance such as, but not limited to: sewer cleaning and televising, sewer inspection, smoke testing, and safety inspections on all pumps/lift stations, and all other routine wastewater collection system duties as required.
- Assists Department staff in various work assignments.

Regulatory Compliance Specialist

Under administrative direction, the Regulatory Compliance Specialist: reviews, prepares, submits and evaluates regulatory permits and provides supervision over environmental management and compliance programs in conformance with

intergovernmental regulations; reviews, analyzes and evaluates local, state, federal and regulatory requirements as related to wastewater facilities; assists in governmental reporting activities; performs related duties as assigned. Duties include but are not limited to the following:

- Supervises, assists, reviews, evaluates and submits all regulatory permits required for all wastewater collection systems and/or wastewater treatment plants.
- Delegates, trains, assigns, supervises, and evaluates the work of professional and administrative staff involved in environmental quality.
- Performs field inspections at facilities and project sites; and conducts special studies and surveys.
- Plans, organizes, assists, and oversees future programs and projects to ensure permitting and compliance issues are addressed.
- Acts as the agency liaison with local, regional, and state regulatory officials in environmental matters; lobbies on behalf of the District's interests and participates in meetings and fact-finding processes; tracks, reviews and analyzes environmental quality requirements and pending legislation.
- Prepares technical reports, correspondence and other written materials; may develop, design and produce charts, graphs, map spreadsheets, including analysis and interpretation.
- Maintains, organizes and manages all correspondence, reports, and related material for permits.
- Oversees program budget expenditures.
- Reviews, comments, and notifies appropriate personnel of new proposed regulations and legislation affecting wastewater collection systems, wastewater treatment plants, and electric operations.
- Meets with staff and outside agencies to coordinate permitting and regulatory compliance issues.
- Ensures that the safety program and goals are carried out.

Legally Responsible Official & Data Submitter

A Legally Responsible Official (LRO) is any individual authorized to enter and certify data into the online sanitary sewer overflow database on behalf of an agency enrolled under Statewide General Waste Discharge Requirements for sanitary sewer systems (WQO No. 2022-0103-DWQ). The LRO in all wastewater collection system matters is the Director of the Special Districts Department. The Director is also authorized to, or delegates authorized staff to, submit raw data into the CIWQS database program. A Data Submitter is any individual authorized by an LRO to enter data into the online

sanitary sewer overflow database on behalf of an agency enrolled under Statewide WDR for Sanitary Sewer Systems.

Key responsibilities and delegation practices include the following:

- The Deputy Director is authorized to act in the Director's absence.
- The Operations Manager is authorized, and has the responsibility, to execute certification of all electronic spill reports that are submitted to the SWRCB.
- The Director may delegate the authority to submit all spill reports to the Deputy Director and/or the Operations Manager, including reports submitted to the appropriate governmental agencies.
- The Deputy Director may delegate the authority to submit raw data into the CIWQS Database Program to a registered Data Submitter within the Department.
- The Water and Sanitation Supervisor is authorized as the Data Submitter for all spill reports submitted to the SWRCB.

RESPONSIBILITY OF SSMP IMPLEMENTATION

The LRO is responsible for implementing and maintaining all elements of this SSMP.

CHAIN OF COMMUNICATION

The Department has developed a flowchart depicting the chain of communication for responding to and reporting SSOs, including official notification that an SSO event is occurring to reporting the event to the appropriate regulatory agencies, and mitigating the SSO. In addition, the Department has provided contact information for the responsible parties. Refer to **Appendix S** for details and contact information, including the flow chart.

CUSTOMER COMPLAINT PROTOCOL

The following steps are followed upon a receipt of a complaint:

1. Date and Time of the Complaint
2. Full Name, Home & Business and/or Cell Phone Number(s), and Physical address of the complainant
3. Location of the incident/emergency, all Cross Streets, Nearest Highway, Thomas Guide Page, etc.
4. Brief description of the Incident/Emergency: i.e.- SSO, M/H Cover off, Sewer Backup, Sewer Odor, etc.
5. Ask what Time the caller observed and/or noticed the Incident/Emergency

6. Would they like a Return Call of the Final Deposition of their Complaint
7. Complete the required Service Order [S.O.] fields.
8. Enter data into the Receipt of Sanitary Sewer System's Complaint Log (**Appendix O**).

Refer to **Appendix N** for the Receipt of Complaint and refer to the Customer Complaint - Deposition Protocol for the handling of all sewer related complaints during normal business hours, and after normal business hours including holidays and weekends.

SECTION 3 – LEGAL AUTHORITY

(SEE SSMP VOLUME I)

SECTION 4 – OPERATION AND MAINTENANCE PROGRAM

(SEE SSMP VOLUME I)

SECTION 5 – DESIGN AND PERFORMANCE PROVISIONS

REGULATORY REQUIREMENTS FOR PERFORMANCE PROVISIONS ELEMENT

The General Order requirements for Design and Performance Provisions element of the SSMP are as follows:

The Plan must include the following items as appropriate and applicable to the Enrollee's system:

1. *Updated Design Criteria and construction Standards and Specifications – Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria.*
2. *Procedures and Standards – Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and*

rehabilitated system pipelines, pumps, and other equipment and appurtenances.

DESIGN, CONSTRUCTION AND SPECIFICATION STANDARDS

The Department requires that all new sanitary sewer systems, as well as the rehabilitation and repair of existing facilities, be designed and constructed in accordance with the November 13, 2012 San Bernardino County Special Districts Department's Standards for Sanitary Sewers (**Appendix D**). The standards address hydraulic capacity for both pipes and lift stations in Sections 1. 2 (Sewers and Appurtenances) and 1.5 (Sewage Lift Stations) of Division C, Design Criteria and Plan Preparation Sewers.

INSPECTION AND TESTING STANDARDS

The Department's inspection and testing standards for new sewers, including rehabilitation and repair projects, are outlined in the November 13, 2012 San Bernardino County Special Districts Department's Standards for Sanitary Sewers, Division D, Section 6, entitled "Cleaning and Testing" (**Appendix D**).

SECTION 6 – SPILL EMERGENCY RESPONSE PLAN

REGULATORY REQUIREMENTS FOR SPILL EMERGENCY RESPONSE PLAN ELEMENT

The General Order requirements for Spill Emergency Response Plan element of the SSMP are as follows:

The SSMP must include an up to date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;*
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;*
- Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;*
- Ensure that appropriate staff and contractors implement the Spill Emergency*

Response Plan and are appropriately trained;

- *Address emergency system operations, traffic control and other necessary response activities;*
- *Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;*
- *Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;*
- *Remove sewage from the drainage conveyance system;*
- *Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;*
- *Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;*
- *Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;*
- *Conduct post-spill assessments of spill response activities;*
- *Document and report spill events as required in this General Order; and*
- *Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.*

SUMMARY OF WASTEWATER SPILL RESPONSE AND REPORTING PROCEDURES PLAN

Spill Classification

A spill is defined as discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a spill under this General Order if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State. The notification, monitoring, and reporting requirements vary based on the category of the spill. The four categories of spills with requirements established by the General Order include:

- *Category 1 Spill: A spill of any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:*
 - *A surface water, including a surface water body that contains no flow or volume of water; or*

- *A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.*
 - *Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.*
 - *A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.*
- *Category 2 Spill: A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.*
 - *A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.*
- *Category 3 Spill: A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.*
 - *A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.*
- *Category 4 Spill: A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.*
 - *A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.*

Notification

Should an SSO occur, the Department can be notified through a direct emergency phone number: (800) 554-0565 (**Appendix B**). If a spill occurs after regular working hours, and weekends or holidays, the notification procedure is implemented according to the Emergency Reporting Procedure (**Appendix G**).

Procedure

The Department's policy regarding SSOs includes the following: respond to all SSOs according to procedure within the District, whether on public property or within easements on private property; and take all necessary steps to prevent and mitigate SSOs from reaching storm drains, flood control channels or waters of the State. SSO response procedures shall be in accordance with the WDR. On February 2, 2002, the Department developed and implemented a written procedure to respond to all SSOs, titled "Wastewater Spill Response and Reporting Procedure" (**Appendix G**). These procedures are regularly updated and annually reviewed by the Department. The Wastewater Spill Response and Reporting Procedure was last updated in May of 2025.

Notification to Regulatory Agencies

The Department is required to provide spill documentation and notification of all SSOs to public agencies and officials, refer to the "Sanitary Sewer Overflows Reporting Procedures" (**Appendix B**). For reference, a sample spill report form is provided in **Appendix H** of this report.

Reporting Procedure Plan

In an SSO event, the Department performs the requirements of the Monitoring and Reporting Plan (MRP) which includes reporting data into the CIWQS database online. The Department's reporting forms are consistent with the data fields presented in the database.

Staff Training

Refer to **SECTION 4** of this report titled "**Training Program**" for staff training requirements.

Emergency Operations

The Department has an active Wastewater Spill Response and Reporting Procedure for the Department's various CSAs, addressing emergencies and SSOs. All reports of SSOs are immediately addressed including after-hours, weekends, and holidays. Appropriately trained on-call staff respond to and mitigate such emergencies. A portion of the service contract dollar amount is dedicated for operations activities, including emergency spill response. The Department utilizes evacuator type cleaning

trucks, high velocity jetters, portable pumps, CCTV camera equipment, mechanical rodders, and other specialized sewer maintenance equipment. The Department carries inventory to replace parts and materials as needed. The Department maintains a computerized maintenance management information system (CMMIS) to track distribution, re-order parts and inventory, materials, and to track and control part/material inventory as it's distributed and/or used.

Impact Mitigation

In addition to the Spill Response Procedure previously discussed, the Department utilizes containment, control, and clean-up techniques to mitigate adverse impacts on the environment that may result from an SSO. Refer to page 9-10 of the "Wastewater Spill Response and Reporting Procedure" document as detailed in **Appendix G** of this report.

SECTIONS 7 – SEWER PIPE BLOCKAGE CONTROL PROGRAM

REGULATORY REQUIREMENTS FOR SEWER PIPE BLOCKAGE CONTROL PROGRAM ELEMENT

The General Order requirements for the Sewer Pipe Blockage Control Program element of the SSMP are as follows:

The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed.

The procedures must include, at minimum:

- An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;*
- A plan and schedule for the disposal of pipe-blocking substances 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 substances generated within a sanitary sewer system service area;*
- The legal authority to prohibit discharges to the system and identify*

measures to prevent spills and blockages;

- Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;*
- Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;*
- An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and*
- Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.*

SUMMARY OF SEWER PIPE BLOCKAGE CONTROL PROGRAM

A summary of the sewer pipe blockage control program (i.e., FOG Program) is provided in the following subsections.

Sewer Pipe Blockage Control Program

The Department's Water and Sanitation Division directs the operational functions, construction, and capital improvement programs for nine (9) County Service Areas. Additionally, the Division provides contract service operation, maintenance, and management for multiple agency's sanitary sewer system facilities and collection systems. The Department's Sewer Pipe Blockage Control Program addresses all mandatory SSMP provisions as outlined in Attachment D, Section 7 Sewer Pipe Blockage Control Program of the General Order.

The Department's Sewer Pipe Blockage Control Program helps reduce the amount of fats, oils and grease (FOG) discharged into the sanitary sewer system, by including:

- A. The Legal Authority (An Ordinance for Regulating the Use and Construction of Public Wastewater Facilities, Ordinance No. SD-80-9), adopted on December 31, 1980 by ordinance of the Board of Supervisors for San Bernardino County.
- B. Enforcement of compliance through the San Bernardino County, Department of Building and Safety with regard to Source Control. The Department of Building and Safety utilizes "Appendix H" of the Uniform Plumbing Code titled

"Recommended Procedures for Design, Construction, and Installation of Commercial Kitchen Grease Interceptors." The Department inspector ensures compliance with all FOG related design standards for grease removal devices/structures and ensures that all operation and maintenance requirements are implemented and practiced.

- C. Best Management Practices (BMP) requirements: provided to all businesses that can, or have the potential to, produce FOG; includes record keeping and reporting requirements.
- D. Authority of Department inspectors to inspect grease producing facilities and have the authority to inspect and enforce the Sewer Pipe Blockage Control Program.
- E. Identification of all sanitary sewer system pipeline sections subject to the accumulation of FOG that can produce blockages, establishing a cleaning and maintenance schedule for each sewer pipeline section.
- F. Development and implementation of source control measures for all sources of FOG discharged into the sanitary sewer system for each sewer pipeline section identified.
- G. Implementation of a plan and schedule for a public education outreach program that promotes proper disposal of FOG.

Background

Discharges of FOG produced from animal and vegetable sources can create sewer pipeline stoppages, resulting in sanitary sewer overflows. The main sources of FOG discharge are from the restaurant industry and similar facilities (e.g. cafeterias, penal institutions, schools, campgrounds, ski resorts, colleges, commercial kitchens, and universities with food services). Collectively, these sources are referred to as Food Service Establishments (FSEs). Concerns related to residential FOG disposal practices should be addressed through public outreach using educational information related to the proper disposal of FOG. FOG discharges may be a result of poor housekeeping practices at restaurants and poorly informed decisions by residential users. The results are the same, SSOs.

Discharges of hot or warm FOG to the sewer leads to problems with sewer flow stoppage or blockage. FOG accumulates on the upper surfaces of sewer pipelines due to the floating and non-mixing properties of FOG in water. FOG deposits on the upper surfaces of a sewer pipeline are created during high flows and from FOG obstructions downstream that restrict sewer flow, causing water levels to rise.

Grease interceptors use gravity and detention time to separate FOG and solids from the

wastewater discharge by allowing solids to be collected through settling, with floatable FOG continuing through plumbing configurations, retaining fluids in the upper layers of the interceptor (See Figure 7-1 below). The use of biological or chemical agents in grease interceptors to liquefy FOG prior to discharge is problematic. Bacteria and enzymes react by reducing long-chain fatty acids into small-chain molecules. A bacteriological system would need 24-72 hours to completely aerobically metabolize FOG to carbon dioxide and water. Grease interceptors using gravity for separation have about 30–120 minutes of detention time. The result of bacterial or enzymatic product usage is a liquefaction or emulsification of FOG in the interceptor. Liquefied FOG is subsequently discharged into the sewer where any further degradation of the FOG by the bacteria or enzyme is prevented due to the dilution of the material and/or other interferences in the receiving sewage. The liquefied FOG begins to adhere to sewer pipeline interior walls, depleting the oxygen content of the wastewater due to the natural microbes present in wastewater, creating odor problems.

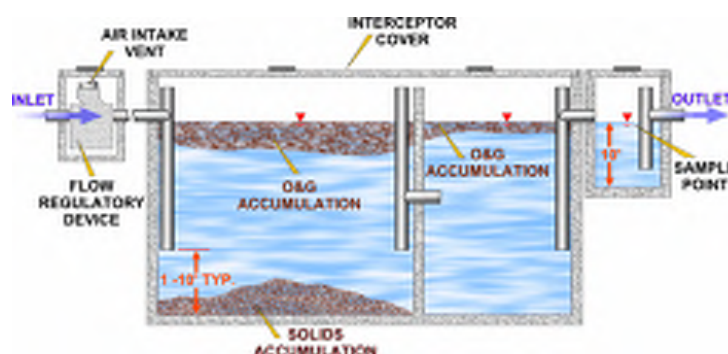


Figure 7-1 Standard Grease Interceptor

Grease Traps use gravity and extremely short detention times to separate FOG and solids from wastewater discharge. It allows solids to settle and be collected with floatable FOG attaching to removable baffles that are required to be cleaned daily. The clear water continues under the baffles and goes through the plumbing configurations (See Figure 7-1a below). The use of biological or chemical agents in grease traps to liquefy FOG prior to discharge is problematic. Grease traps using gravity for separation have approximately 1-10 minutes of detention time based upon size. The result of bacterial or enzymatic product usage is a liquefaction or emulsification of FOG in the trap. Liquefied FOG is subsequently discharged into the sewer where any further degradation of the FOG by the bacteria or enzyme is prevented due to the dilution of the material and other interference in the receiving sewage. The liquefied FOG begins to adhere to sewer pipeline interior walls, depleting the oxygen content of the

wastewater due to the natural microbes present in wastewater, creating odor problems.

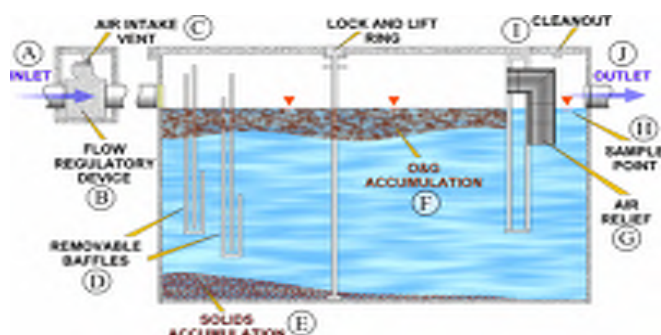


Figure 7-1a. Standard Grease Trap

The Department's Sewer Pipe Blockage Control Program utilizes a three-pronged approach to managing FOG:

1. Pollution Prevention: Development of industry standard BMPs combined with on-site inspections to verify implementation;
2. Treatment: Installation and maintenance of grease interceptors utilizing gravity for separation which prevents excess amounts of FOG from entering the sewer collection system; and
3. Inspection & Public Outreach: Implementation and compliance with on-site inspections, performed to verify proper grease management practices, maintenance of grease interceptors/traps and proper legal disposal of FOG (including disposal manifest). Educational materials are available for both the restaurant community and residential homeowners describing the hazards associated with improper disposal of FOG.

Non-compliance with BMPs or wastewater treatment requirements will result in penalties ranging from written warnings to the suspension of wastewater discharge privileges.

Sewer Pipe Blockage Control Program Elements

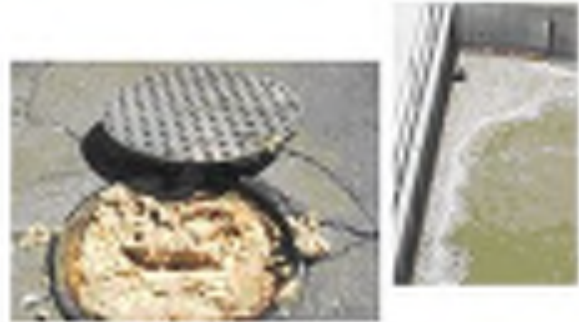
The Department utilizes the following control, tracking, educational, and enforcement techniques to minimize discharges of FOG to sanitary sewer systems.

1. Site inspections
2. Compliance tracking
3. Public educational outreach

4. Sanitary sewer system cleaning and assessments
5. Sanitary sewer system and sewer lateral CCTV inspection
6. Department enforcement actions
7. Training (Department and Contractor personnel)

Site Inspections

Inspections of FSEs enable the Department to determine which sites are problematic to the District's sanitary sewer system. The Department is responsible for inspecting all restaurants and other similar facilities within the District. All FSEs will be inspected at minimum of once annually.



Additional inspections are performed based on compliance history, type of restaurant, whether or not a grease interceptor is on site, complaint history, sewer pipeline stoppage history, and/or SSO history.



The above photos illustrate a completely plugged grease interceptor chamber. Failure to maintain grease interceptors will result in this level of grease buildup and subsequent wastewater overflow. Site inspections are used to ensure proper maintenance and to keep log history of the results. Results are tracked and maintained manually.

Inspections reveal what, if any, bacterial, enzymatic, or chemical agents are used to dissolve, emulsify or suspend FOG. The bacterial, enzymatic, or chemical agents may be found in products used for cleaning silverware, pots and pans, drain cleaning, and floor cleaning. Some products are specifically designed as a grease interceptor additive and are used to liquefy FOG in grease interceptors, promising that interceptors will never need pumping. These types of bacterial, enzymatic, and chemical agents are strictly prohibited.

Site inspections will also evaluate the grease interceptor for performance and integrity.

The Department uses the "25 Percent Rule" when determining the efficiency of FOG removal by an interceptor. The 25 Percent Rule simply states that when the operational fluid capacity has been reduced by more than 25 Percent, the interceptor is no longer capable of removing FOG at its designed rate and therefore needs to be serviced. The performance will also be affected by missing elbows, mid-wall tees, and/or influent extensions that may be too long. The integrity of the interceptor is often affected by anaerobic conditions that generate sulfide gas, causing corrosion of the concrete surfaces. Once concrete begins to corrode, plumbing connections are affected and, in some cases, the structural integrity of the interceptor is compromised.

The Department works closely with the San Bernardino County Department of Environmental Health Services (EHS) to share information collected during restaurant inspections. Department inspectors share information obtained during inspections so that Health and Safety Code violations may be identified. When violations are observed, EHS is contacted so that the area inspector can respond and take appropriate enforcement actions.

Site Inspection Procedures

FOG inspections are conducted in a prescribed manner to ensure uniformity and fairness when evaluating compliance with the Department's Sewer Pipe Blockage Control Program and Regulations for Sewer Service.

The following procedural guidelines for FOG inspections have been established to ensure a thorough and consistent approach:

1. FOG is tracked with hardcopy files that are manually catalogued.
2. A "Service Order" must be requested for each separate FSE facility inspection planned for the day.
3. Upon arrival of the inspection site, inform FSE Management that an inspection of the Grease Interceptor (GI) or Grease Trap (GT) will occur. Present your Business card and County ID. (Reminder: every FSE has varying business hours and, depending on the FSE clientele, it may be extremely difficult to inspect the site safely. Observe the less frequented times of the FSE and schedule your inspections around that time frame)
4. Plan for "Traffic & Pedestrian Control." Most Grease Interceptors are located in traffic/parking/drive-thru/walkway areas. Most GTs are located inside the FSE near the sink & floor drain areas.
5. Set-up Traffic & Pedestrian Control monitoring equipment, PPE, and clean-up equipment.
6. Remove manhole covers individually (start with 1st chamber), take photos of

each individual cell and monitoring instrument to document and identify any potential maintenance problem(s). Visually inspect floatable buildup. Probe surface layer to determine the depth of floatable FOG. Visually determine if the inlet "T" or elbow is in place on both the inlet and outlet of the 1st chamber. Note the level of solids, free water, and FOG layer. Take digital temperature readings at all inlets and at the body of the interceptor cell and/or grease trap. Re- install the manhole covers upon completion of the inspection.

7. Document findings on the "FSE Inspection Report."
8. Repeat steps# 6-7 at each up-stream grease interceptor manhole.
9. If the GI has an inspection (sample box) cover or manhole, repeat the above procedures.
10. Complete all documentation on the "FSE Inspection Report."
11. Complete the "Service Order" as required.
12. Complete a "Correction Notice" as indicated.
13. Utilize the Department's scheduling and time management software (i.e. Microsoft Outlook), flag all "Correction Notice" due dates and all regularly scheduled cleaning intervals for District's FSEs. Be sure to cc: Division Manager, WAS Supervisor, Regulatory Compliance Specialist, MWIII, and Clerical support with a reminder so that the location will not be overlooked due to scheduled vacations/sick days.
14. All data, service orders, reports, letters, photos, copies of correction notices, etc. are manually catalogued. Up-date all hard-copy binders and turn in all service orders/backup documentation to the office.
15. Follow-up on all flagged "Correction Notices," their due dates, and all regularly scheduled cleaning intervals for FSEs.
16. Request a "Service Order" for each separate FSE follow-up facility inspection.
17. If a FSE has not complied within the assigned time frame re-issue a second Correction Notice. List all original corrective action requirements from the first notice and indicate on the top right portion of the notice that a "Second" notice has been issued. A new deadline for corrective action must be issued for the FSE.

Note: If the second notice requires critical action then immediate corrective action is paramount to the integrity of the collection system; EHS and Code Enforcement must be contacted to assist in the enforcement action. All contact with these agencies must be documented.

- a) The recommended "normal" grease interceptor/trap cleaning frequency is a 3 month interval. It can only be extended to 4 month interval if it has been

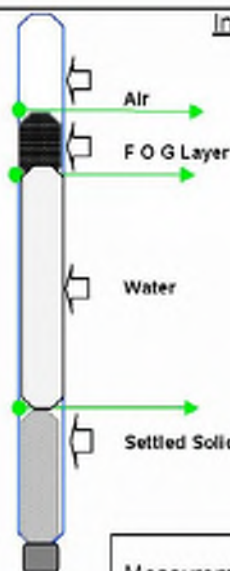
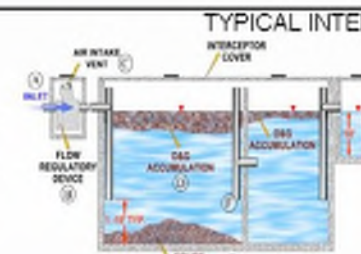
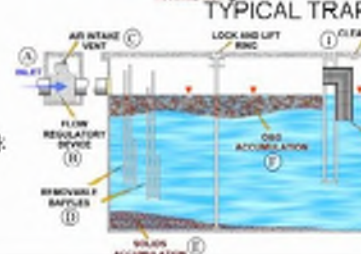
demonstrated that FOG has not been detrimental to the downstream collection system, has not created odors, and has not created Hydrogen Sulfide (H₂S) damage to the grease interceptor or trap structure.

- b) The maximum accumulation of solids, semi-solids, and floaters (FOG) is 25% of the entire volume of the grease interceptor/trap.
- c) Each FSE grease interceptor/trap should be internally inspected at a minimum of twice annually. If each consecutive inspection is observed to be uneventful (full compliance with the wastewater Ordinance) and the FSE is continuing to provide/fax up-dated manifest documentation of the FSE grease interceptor/trap cleaning history then there should be no further inspections required in that calendar year.
- d) When an FSE is observed to be in Non-Compliance during grease interceptor/trap inspections and/or in violation of the Ordinance, then follow-up inspections are warranted and necessary.
- e) Per Department Ordinance: a maximum water temperature of **150** degrees Fahrenheit is acceptable when performing the internal inspection of a grease interceptor/trap where the use of an inferred heat gun is used to determine the internal water temperature at inlet "T", middle section and outlet to determine the overall temperature inside of the structure. If an FSE is observed to be in Non- Compliance based on water temperature during inspection of the kitchen or preparations-area, it is required to determine the source of elevated temperature. When the high water temperature source has been located and observed to be in Non-Compliance with the Department's wastewater Ordinance then follow-up inspections are warranted and necessary. A correction notice must be issued to control the elevated temperature, and reduce the temperature to an acceptable range.
- f) Cleaning requirements for all grease interceptors/traps require that the entire structure is 100% emptied of all content. Example #1: a 750gal grease interceptor manifest shall indicate that 750 gals were pumped/removed and legally disposed of; listing the location and facility where the waste was delivered. Example #2: a 5,500gal grease interceptor manifest will indicate that 5,500 gals were pumped/removed. Note: this may require multiple manifests if multiple trucks were used for the cleaning/removal process.

A standard FSE Inspection Report must be used when documenting the findings, recommendations, and/or requirements determined during an inspection. A copy of the standard FSE Inspection Report is shown on Figure 7-2. A copy of the Correction Notice is shown on Figure 7-3.

Inspections will also focus on the FSE's FOG Control BMPs (e.g. grease handling and disposal methods). Excellent BMPs will allow FSEs to reduce dependence upon treatment alone and can help reduce the overall costs of complying with the Sewer Pipe Blockage Control Program. Inspectors using professional judgment during inspections will decrease the time necessary for completing inspections and for determining compliance/non-compliance. Tools such as the "Dipstick" (See Figure 7-4) can be useful for compliance decisions however many times it's not necessary when determining compliance according to the adopted wastewater Ordinance or BMP requirements.

Figure 7-2: Standard FSE Inspection Report

FSE Inspection Report													
District:		Tract #:		Inspection Date:									
Permit #:				Site Inspector:									
FSE Name:				QA/QC Reviewed by:				Date:					
FSE Address:				Arrival Time:		am		pm					
FSE Phone #:				Departure:		am		pm					
FSE Contact Person:				Total time Charged:		hrs		min.					
FSE Contact on Site:				Photos taken:				Yes No					
				photo file #:		/							
FSE Access Denied:				Yes No									
GPS Location: N		-		-		-		-					
GPS Location: W		-		-		-		-					
Water Temperature:				1st:		2nd:		Exceeds Ordinance:					
				3rd:		4th:		Yes No					
								Gasket/Sealed:					
								Yes No					
								Bolted/Secured:					
								Yes No					
Interceptor / Trap size:								(Gallons)					
Interceptor / Trap Liquid Depth:								(Inches)					
BMP Compliance [Document details]:													
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><u>Interceptor Layer Levels</u></p>  </div> <div style="width: 65%;"> <p><u>TYPICAL INTERCEPTOR</u></p>  <p><u>TYPICAL TRAP</u></p>  </div> </div>													
Measurements				#1 Cell		#2 Cell		#3 Cell		#4 Cell		Inspection	
Total Hyd. Depth {A}:				in.		in.		in.		in.		in.	
FOG Layer {B}:				in.		in.		in.		in.		in.	
Settled Solids {C}:				in.		in.		in.		in.		in.	
A F S (A-B+C) {D}:				in.		in.		in.		in.		in.	
% AFS + (AFS / A) X 100 =				%		%		%		%		%	

[FSE] Food Service Establishment
 [AFS] Accumulated Fog + Solids
 Per AN Ordinance: Maximum water temperature 150 degrees Fahrenheit

Figure 7-2 Standard FSE Inspection Report

Figure 7-3: Correction Notice

“GREASE INTERCEPTOR /GREASE TRAP INSPECTION”
Correction Notice Informational Sheet

FOR THE INFORMATION OF THE OWNER, TENANT OR MANAGER OF THE FOOD SERVICE ESTABLISHMENT [FSE] LOCATED AT: _____

COUNTY OF SAN BERNARDINO, CITY, TOWN OR UNINCORPORATED AREA: _____

CSA DISTRICT / ASSESSMENT DISTRICT: _____

DATE / TIME NOTICE ISSUED: _____ AM _____ PM

COMPLIANCE TIME FRAME: 24 HOURS / 5 DAYS / 15 DAYS / 30 DAYS / 60 DAYS / 90 DAYS

ISSUING REPRESENTATIVE: _____

SIGNATURE: _____ DATE: _____

[SIGNATURE OF: OWNER, OWNER'S AGENT, MANAGER, TENANT AND DATE RECEIVED]

A "GREASE INTERCEPTOR / GREASE TRAP INSPECTION" WAS PERFORMED AT THE ABOVE LISTED FOOD SERVICE ESTABLISHMENT [FSE]. A FIELD INVESTIGATION AND TESTING HAS DETERMINED THAT A PLUMBING VIOLATION WAS OBSERVED AND DOCUMENTED ON THE ABOVE LISTED FSE. CORRECTIVE ACTION IS REQUIRED. CONFORMANCE WITH THE DISTRICTS RULES & REGULATIONS, AN ORDINANCE AND THE UNIFORM PLUMBING CODE IS REQUIRED. THE SECTION ADDRESSING THE CONCERNS IS QUOTED FOR YOUR INFORMATION. THE SECTION[S] THAT APPLIES TO THE FSE IS IDENTIFIED BY A CHECK MARK.

VIOLATIONS OBSERVED:

- ☐ **HIGH TEMPERATURE LIMIT** - Any liquid or vapor having a temperature higher than 150 degrees F (66 degrees C) at the Building Sewer.
- ☐ **FATS, WAXES, GREASE OR OILS** - Any liquid or other waste containing fats, wax, grease, or oils, in excess of 100 mg/l, whether emulsified or not, or containing substances which may solidify or become viscous at temperatures between 32 degrees F and 150 degrees F (0 degrees C and 65 degrees C).
- ☐ **GREASE / TRAP AND SAND INTERCEPTORS AND SEPARATORS** - Require the Owner to install, maintain, and use Grease and Sand Interceptors and Separators as specified in Sections 708, 710, 711, and 712 of the Uniform Plumbing Code, as modified and superseded by District Ordinance or these Sewer Rules and Regulations.

Brief description of correction needed:

Additional information attached (circle attachment): **CORRECTION NOTICE** **PHOTOGRAPHS** **MAP**

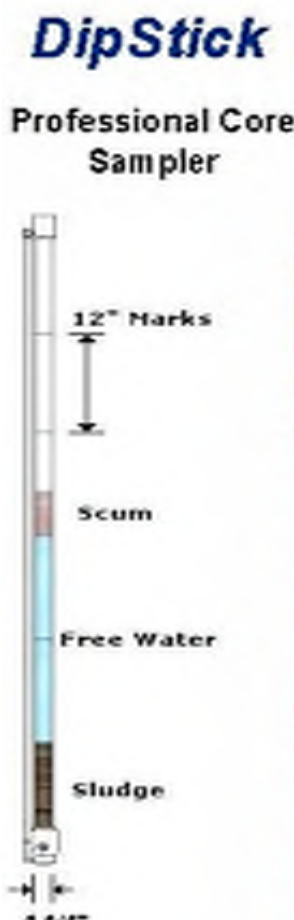
COPIES

Figure 7-3 Correction Notice

Figure 7-3a – Correction Notice 12-20608-104 rev. 11/04

<h2 style="text-align: center;">CORRECTION NOTICE</h2> <p> County of San Bernardino Special Districts Department Water & Sanitation Division 12402 Industrial Blvd. D-6 Victorville, CA 92395 (760) 955-9885 (800) 554-0565 </p>								
Permit # 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Date:</td> <td style="padding: 2px;">Time:</td> <td style="padding: 2px;">Insp.</td> </tr> <tr> <td style="padding: 2px;">Lot/Dic.</td> <td style="padding: 2px;">Tract:</td> <td style="padding: 2px;">CSA</td> </tr> </table>	Date:	Time:	Insp.	Lot/Dic.	Tract:	CSA	
Date:	Time:	Insp.						
Lot/Dic.	Tract:	CSA						
Property Owner: _____ Property Address: _____ _____ Description of corrections needed: _____ _____ _____ _____ _____ _____								
<div style="border: 1px solid black; padding: 5px;"> <p>When corrections are completed reinspection will be required. An absolute minimum of 24hr notice must be given before reinspection. After the third inspection, an additional reinspection fee will be required. A date & time for reinspection will be assigned by district staff.</p> </div>		Chain of Custody White - File (fax to office and staple to permit) Yellow - Inspector Pink - Homeowner/Contractor						
<small>12-20608-104 Rev. 11/04</small>								

Figure 7-4: Interceptor Profiling Tool



DipStick
Professional Core Sampler

12" Marks

Scum

Free Water

Sludge

1 1/4"

applications:

- Grease Interceptors/Traps
- Septic Tanks
- Clarifiers

features:

- Corrosion resistant machined aluminum and impact resistant resin construction
- Cutting edge technology and design ensures true core sample
- No more "artful" sampling...get a sample that is repeatable and defensible
- Replaceable wear tip
- Available in standard 18 foot (2 piece) and custom sizes
- Available accessories include cleaning brush and carrying case

benefits:

- Inspect with confidence
- Accurately determine amount of sludge and scum (FOG)
- Repeatable Accuracy
- Defensible Readings
- Minimal Training Required
- Easy to use:
 - Dip
 - Pull actuator
 - Remove
 - Read

Figure 7-4 Interceptor Profiling Tool

Public Education and Outreach

The Department uses inspectors or designated representatives as principle education and outreach staff to contact the restaurant community and residents. During the inspection of an FSE, an inspector will use the opportunity to inform and educate the owner, manager, or resident about the various laws and regulations that affect their business. The inspectors also provide useful information related to grease interceptor/trap design, maintenance, and recommend vendors that can assist the FSEs with maintaining pre-treatment equipment. Topics include:

1. Product usage and substitution;
2. Good housekeeping practices;
3. Grease interceptor/trap evaluation;
4. Pertinent Ordinance requirements; and
5. Department wastewater discharge permits

The Department's website can also be used as a tool to disseminate Sewer Pipe Blockage Control Program information: <http://www.specialdistricts.org>.

Best Management Practices

The Department has developed standard BMPs related to the operation and maintenance of grease interceptors/traps, including housekeeping operations associated with food preparation and cleanup at restaurants and other food service facilities. BMPs are not just guidelines for FSEs; they are enforceable procedures when an FSE fails to implement one or more of the listed BMPs. FOG can severely damage a facility's drain line system as well as the sanitary sewer system. FOG collects and eventually hardens on the inside of the sewer pipelines, preventing water from flowing, and will eventually cause blockages.

Blockages in sewer pipelines can create SSOs which allow raw sewage to flow onto streets and into storm drains, lakes, creeks, streams, homes, and businesses. BMPs are outlined as in the following subsections.

Food Prep Areas

The best way to prevent FOG related blockages in sewer pipelines is to keep the FOG out of drain line systems. The below list of BMPs will help prolong the lifecycle of drain-line systems and reduce the inconveniences and costs of drain-line system blockages.

- **Do not** put grease or fryer oil down any sink or floor drain.
- **Do not** dispose of food or food scraps in sinks.

- **Do not** pour bleach directly down ANY drain. Bleach when used improperly dewater grease, making it as hard as concrete.
- **Do not** take out sink strainers or drain covers. Empty scraps into trash, not down the drain.
- **Do not** use cleaning chemicals improperly. Follow instructions on all labels for your safety as well as the safety of the environment.
- **Scrape** all solid food waste into the garbage.
- **Encourage** staff to be conservative about the use of FOG in food preparation and serving.
- **Follow** all instructions contained on cleaning chemical labels.
- **Use** paper towels to soak up oil and grease under fryer baskets and to wipe down work areas. Dispose of the paper towels into the proper trash receptacles.
- **Eliminate** the use of garbage disposals and grinders. (Reminder: neither of these devices can be directly connected to a grease interceptor/trap)
- **Check** all sinks and floor drains for strainers and covers and ensure they are in place and in good working order.
- **Ensure** that cooking screens and floor mats are cleaned by a reputable cleaning service and not washed off over a floor drain. Ensure documentation is maintained for all cleaning cycles.
- **Be Knowledgeable** regarding the location, operation, and maintenance schedules of all FOG control devices.
- **Ensure** that used fryer oil and all other waste oil/fats are secured in the appropriate covered/sealed recycling container.
- Maintain all required grease removal devices (i.e. grease traps or interceptors) in good working order at all times.

Interceptor and Grease Trap Maintenance

BMPs for controlling FOG also include maintenance on all required grease removal devices. The approved technology for removing FOG is a gravity interceptor or grease trap (referred to hereafter as treatment unit). For the treatment unit (TU) to work effectively, it must be cleaned periodically to ensure adequate detention time (the time water remains in the TU before passing through to the sewer). Ensuring adequate detention time is accomplished first by proper "sizing" when the TU is first installed and secondly by maintaining the TU so that 75% or more of the design capacity is available when in use. Grease interceptors are inspected on an annual basis (more often if necessary) and evaluated against accepted engineering standards regarding the TU's condition and the ability to remove FOG. The following BMPs are required by FSEs when an on-site treatment unit is in place.

- Contract with an approved grease waste hauler to completely clean all chambers (cells) of the interceptor including the sample box (if one exists).
- **Establish** a routine interceptor/trap cleaning schedule and adjust the schedule based upon the condition of the interceptor/trap after routine service. A minimum of 75% available capacity must be maintained at all times.
- **Observe** the interceptor/trap cleaning periodically to ensure the waste hauler is performing the job accurately and completely. This also provides an opportunity to view the internal plumbing to ensure that it is in proper working order and complies with Department standards.
- **Do not** use any emulsifying agents in the interceptor/trap that may inhibit the interceptor/trap from separating floatables and solids from the final effluent.
- **Keep Records** on-site for a minimum of three (3) years to document all interceptor/trap service events for a Department inspector's review.

Sewer Line Cleaning and Assessments

The Department's collection system maintenance information, which is pertinent to the effective implementation of a Sewer Pipe Blockage Control Program, will be effectively communicated to ensure a timely response and prioritization of FSE inspections, minimizing the occurrence of FOG related problems and SSOs.

Line cleaning and pump station performance information is used to determine system integrity. A two-inch thick deposit of FOG on the sidewalls of an eight- inch sewer pipeline can lead to an SSO in a very short period of time. Scheduled collection system cleaning through the Department can prevent most SSOs from occurring. In addition to routine cleaning, the Department focuses on sewer service areas with known problem areas/sections. Typically, additional cleanings are scheduled for sewer pipelines with a history of excessive roots, grease, debris, or all three.

When heavy or excessive FOG is found, a report will be generated and submitted to Department inspectors for investigation.

Sewer and Lateral CCTV Inspections

One of the most powerful tools for predictive and preventative maintenance is the use of closed circuit television (CCTV). CCTV allows for the inspection of and visual documentation of potential problems. CCTV allows for several different types of documentation and storage, including DVD, VHS, still photos, and printed reports. CCTV inspections identify problems or



potential problems that can be corrected through capital improvement projects or immediate emergency repairs. As shown in the photo above right, grease had begun to build on the upper portion of the pipe in two locations of the sewer pipeline and posed a significant threat for creating a blockage or SSO in the near future if the pipeline wasn't serviced immediately.

CCTV inspections can be used to inspect existing collection system conditions including, but not limited to: deterioration, protrusions, illegal connections, dye testing and flow studies, capacity, monitoring, line sags, integrity, inflow and infiltration, cross connections, cross boring, and to inspect newly installed sewer pipelines to ensure proper installation. Since CCTV inspections record real-time events/conditions, the CCTV records can be used as evidence in enforcement actions when necessary.

Enforcement

It is prohibited by the federal Clean Water Act, 40 CFR 403.5(b)(3) for a discharger of wastewater to cause a sewer pipeline obstruction or blockage. To adequately protect wastewater collection systems, the Department has adopted an Ordinance for Sewer Service that contains language prohibiting the discharge of wastewater that obstructs or interferes with the operation of sewer collection systems. Language is also included that limits the total concentration of oil and grease to 100 mg/L with requirements to install grease interceptors/traps as determined by the Department.

The owner of the Publicly Owned Treatment Plant is generally considered the "Control Authority" by federal and state statutes and is required to adopt a wastewater Ordinance that meets certain requirements that provide the legal authority to inspect, monitor, and control the quality of wastewater discharges. In order for the enforcement action(s) to be successful, a firm foundation of court admissible evidence must be obtained. This evidence must be objective and devoid of personal opinions.

The use of CCTV evidence is a critical component of an enforcement action taken against a user for causing a sewer pipeline blockage and/or SSO. In addition to the CCTV evidence, inspections are performed at neighboring FSEs to evaluate and investigate the cause(s) of sewer pipeline blockages and/or SSOs. Once evidence is collected, the information is reviewed and an enforcement strategy is developed using compliance procedures adopted by the Department.

Grease Interceptor Requirements – New and Tenant Improvement Projects

The Uniform Plumbing Code and San Bernardino County Department of Building and Safety requirements include provisions for adequately determining the need for treating FSE wastewater. In general, an interceptor/trap is required for all FSEs that

prepare food onsite. Formulas used in determining adequate sizing of grease interceptors/traps are based upon the most current edition of the Uniform Plumbing Code standards and specifications. For new construction and tenant improvement projects, this action is accomplished through the Department's plan check processes. Occupancy permits cannot be obtained if the user has not agreed to the all conditions for service including required wastewater treatment and monitoring.

If an existing restaurant or similar facility has been proven to be the cause of a sewer pipeline blockage and/or SSO, and does not have an adequately sized grease interceptor/trap, then the user is required to install an appropriately sized grease interceptor within 90 business days. If the existing FSE has a grease interceptor/trap but the device is poorly maintained or is inadequately sized to treat the type and volume of wastewater from the facility, then the user will be required to replace the existing grease removal device with one that is adequately sized and designed for its intended application.

Any FSE that is found responsible for a sewer pipeline blockage and/or SSO, will be assessed and invoiced for all costs of cleanup and repairs or services necessary to mitigate and remove the blockage and/or SSO. The costs associated with the cleanup and/or repairs will be tracked by opening a work order and charging all associated costs to the work order. After the work order has been completed the FSE will be invoiced for total costs associated with the event. If the invoice has not been satisfied by the specified date, then legal actions may be taken, including sanitary sewer system disconnection.

Training

The knowledge, skills, and abilities needed to perform inspections related to the Sewer Pipe Blockage Control Program require training to stay current with updated information in the areas of technology, BMP updates, regulatory changes, etc. This training includes:

1. Laws and regulations;
2. BMPs;
3. New technology and equipment;
4. Inspection practices; and
5. Enforcement actions

Roles and Responsibilities

The Department is responsible for implementing the provisions described in the Sewer

Pipe Blockage Control Program. Additionally, Department staff will review and update the Sewer Pipe Blockage Control Program, legal authority documents, and public outreach materials as needed or required.

Summary

Department inspectors and sewer collection system staff work together closely to find, investigate, and correct problems caused by FOG discharge into District sanitary sewer systems. Preventative steps that the Department may initiate include: FOG treatment requirements prior to discharge (grease interceptors and traps); on-site inspections of FSEs; educational outreach in the form of BMP awareness; and non-compliance enforcement actions. Additionally, scheduled sewer pipeline maintenance and CCTV technology is employed to identify potential problem areas, helping to prioritize on-site inspections and sewer pipeline cleaning efforts.

The Sewer Pipe Blockage Control Program is a critical component of the Sewer System Management Plan. An effective Sewer Pipe Blockage Control Program will reduce the occurrence of FOG related SSOs. Enlisting the services and resources of the other County Departments and the California Regional Water Quality Control Board will also enhance the performance of the Department's Sewer Pipe Blockage Control Program.

Figure 7-5: FOG Source Reporting Form

Special Districts Department
Water & Sanitation

FATS, OILS & GREASE [FOG] SOURCE REPORTING FORM

Incident No. _____

Date of Incident: _____ District / Agency: _____

W&S FOG Program

Residential / Food Service Establishment [FSE]: Yes No - Industrial Establishment: Yes No
(circle correct title)

Grease Interceptor/Trap on site: Yes No

Site Info

Name: _____ FSE/Industrial Title: _____

Address: _____

City: _____ Zip Code: _____ CIWQS SSO ID# _____

Map coordinates: _____ GPS coordinates: _____

M/H Number [nearest D/S]: _____ Photos Taken: Yes No

1. Does this location have a history of grease blockages? Yes No

If yes, _____

2. Date of last incident? _____

Additional info attached: Line History Service Order[s] FOG Inspection[s] Code Enforcement actions

Additional info available: _____

Send notifications to:
W&S FOG Program attn: FOG Program Inspector, Steve Clark, Regulatory Compliance Specialist
P.O. 5004
Victorville, CA 92393-5004

W&S FOG Program Inspector

Date received by W&S crew: _____

Received by: _____

Investigation Details

Investigation completed by: _____ Date: _____

SECTION 8 – SYSTEM EVALUATION, CAPACITY ASSURANCE AND CAPITAL IMPROVEMENTS

(SEE SSMP VOLUME I)

SECTION 9 – MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

(SEE SSMP VOLUME I)

County Service Area 64 (Volume II)
Spring Valley Lake
San Bernardino County Special District Department
Sewer System Management Plan Change Log

Date	SSMP Element/Section	Page No.	Description of Change/Revision Made	Change Authorized By:
3/23/17	Cover Page	N/A	Update date of SSMP	
3/23/17	Table of Contents	iii	Update Appendix K to reference 2013-0058-EXEC	
8/29/17	Table of Contents	iii	Deleted Appendix L and adjusted subsequent Appendices accordingly	
3/23/17	Acronyms	1	Update MRP acronym	
3/23/17	Acronyms	2	Added SS WDR acronym	
3/23/17	Terms	6	Updated and Added sanitary sewer overflow categories	
3/23/17	Section 2, Organizational Structure	10	Added paragraph regarding the legal responsible official	
3/23/17	Section 6, Overflow Emergency Response Plan	24	Updated date of Wastewater Spill Response and Reporting Procedure to March 6, 2017	
3/23/17	Section 6, Overflow Emergency Response Plan	24	Added Reporting Procedure Plan paragraph	
3/23/17	Section 6, Overflow Emergency Response Plan	24	Updated first sentence of Emergency Operations paragraph for more generic description	
3/23/17	Appendix A	N/A	Organization Chart: Replaced previous organization chart with Department's current chart dated February, 10 2017	
5/11/17	Appendix B	N/A	Wastewater Spill Response and Reporting Procedures: updated version replaced 1/25/11 version	
3/23/17	Appendix F	N/A	Deleted equipment purchase log as requested by Department	
3/23/17	Appendix G	N/A	Emergency Reporting Procedure: Replaced previous reporting procedure and responsibilities with	

Date	SSMP Element/Section	Page No.	Description of Change/Revision Made	Change Authorized By:
			Department's current procedure dated March 6, 2017	
3/23/17	Appendix H	1	Spill Report Forms: Recommend to update SSO categories	
3/23/17	Appendix H	2-4	Spill Report Forms: Recommend to update staff and respective positions	
3/23/17	Appendix K	N/A	Replaced MRP 2006-003 with WQ 2013-0058-EXEC	
8/29/17	Appendix L	N/A	Deleted Appendix L, CIQWS Documents and adjusted subsequent Appendices accordingly	
May 2025	Elements I – XI, Appendices	1 – 46	All Elements and necessary appendices were updated to comply with the new General Order issued in December of 2022.	G. Snyder

SECTION 10 – INTERNAL AUDITS

(SEE SSMP VOLUME I)

SECTION 11 – COMMUNICATION PROGRAM

REGULATORY REQUIREMENTS FOR COMMUNICATION PROGRAM ELEMENT

The General Order requirements for Communication Program element of the SSMP are as follows:

The Plan must include procedures for the Enrollee to communicate with:

- *The public for:*
 - *Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and*
 - *The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.*
- *Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for system operation, maintenance, and capital improvement-related activities.*

COMMUNICATION PROGRAM DISCUSSION

The Department's Division Manager will provide interested parties with status updates on SSMP component implementation, and will consider comments from sewer system users and other interested parties.

Any action taken on future updates of the SSMP will be advertised in meeting agendas and the public/interested parties will be given the opportunity to provide written and/or oral comments at these meetings. As a public service, any modifications to the SSMP will be communicated through the use of multiple media outlets including, but not limited to: newspaper, radio, television, or the Department's internet website.

The County's website is an effective communication channel for providing alerts and news to the public. The Department will use the Special Districts website (<https://specialdistricts.sbcounty.gov/water-sanitation/service-districts/>) to communicate if a spill or discharge enters a drinking water source or results in closures to public areas.

Any additional inquiries filtered through the County's website including operation,



maintenances, and capital improvement-related information for owners and operators of neighboring systems with interconnections to the CSA 64 system. Refer to **Appendix P** and **Appendix Q** for customer relations information.

APPENDIX A: ORGANIZATION CHART



**San Bernardino County
Department of Public Works
Special Districts
Water and Sanitation Division**



**OFFICE STAFF
04/23/25**

**NOEL CASTILLO
Director**

**DAVID DOUBLET
Assistant Director**

**DARREN MEEKA
Deputy Director**

**GREG SNYDER
Division Manager**

**CHRIS BISHOP
Water and Sanitation
Supervisor**

See field org chart

**LISA GREEN
Water and Sanitation
Supervisor**

See field org chart

**RUBEN GOMEZ
Water Quality Specialist**

**JARED BEYELER
Administrative Supervisor**

**CELIA MIRANDA
Staff Analyst II**

**DAVID CROCKER
Regulatory Compliance
Specialist**

**PEGGY SMOTHERS
OA III**

**VACANT
USA
(Development Services)**

**EZBY CHIVICHON
USA
(Development Services)**

**JANINE VALENZUELA
Administrative
Secretary II**

**BOBBI SAMANO
Staff Analyst II**

**SONIA DE LA CRUZ
USA**

**TIFFANY JACKSON
USA**

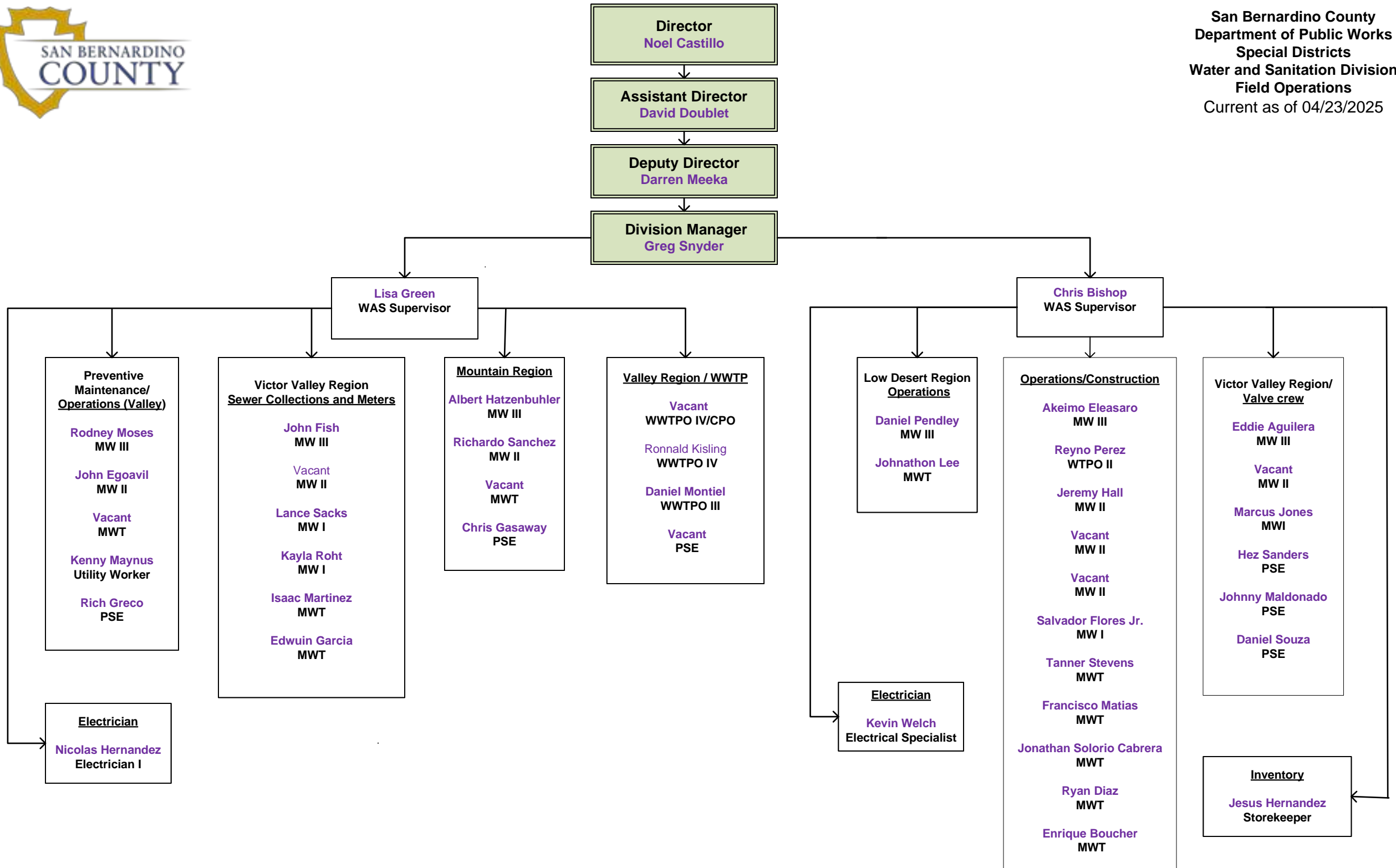
**ANABEL CHAVEZ
USA**

**CANDY HERNDON
USA**

**ANGELICA CARRILLO
USA**

**MELINA BELMONT-MEZA
PSE**

**VACANT
PSE**



APPENDIX B: SANITARY SEWER OVERFLOW (SSO) REPORTING PROCEDURES



**COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
WATER AND SANITATION DIVISION**



**WASTEWATER SPILL RESPONSE
AND
REPORTING PROCEDURES**

EMPLOYEE EDITION

REVISED MAY 14, 2025

Water and Sanitation Division

Mission Statement

Protection of public health and the water environment through the proper collection, treatment and disposal of domestic and commercial wastewater.

Special Districts Department

Mission Statement

The Special Districts Department works to ensure safe, healthy, and enjoyable communities by providing customizable programs and municipal services for those who work, play, and stay in San Bernardino County.

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ATTACHMENTS

1. REPORTING PROCEDURES AND RESPONSIBILITIES DURING EMERGENCIES [MEMO]
2. EXAMPLES OF SPILL CALCULATIONS [EXCEL FILE TEMPLATE]
3. CLAIM FOR DAMAGES [FORM]
4. BACKWATER VALVE NOTICE BLANK [FORM]& DIAGRAM
5. SEWER LINE REPAIR REQUEST BLANK [FORM]
6. SBC W&S SPILL REPORT BLANKD [FORM]
7. EXAMPLE OF A SBC W&S SPILL REPORT
8. EXAMPLE REGIONAL BOARD SPILL REPORT
9. EXAMPLE HAZARDOUS MATERIALS SPILL REPORT (CEMA)
10. CIWQS – SSO DATA BASE FORMS, MAP & REQUIREMENTS
11. SBC W&S SPILL FLOW CHART
12. SEWAGE WARNING SIGN [PHOTO]
13. ORGANIZATIONAL CHART
14. RADIO & PAGER CALL SHEET SBC SPECIAL DISTRICTS DEPARTMENT
15. REGIONAL BOUNDARIES
16. VIEW OF A TYPICAL WASTEWATER COLLECTION SYSTEM [SKETCHES]
17. SDD – STANDARD DRAWINGS FOR SANITARY SEWERS
18. SWRCB MONITORING & REPORTING PROGRAM NO. WQ 2013-0058-EXEC WDR FOR SSS
19. SWRCB STATEWIDE GENERAL WDR FOR SSS PAGE “1 OF 20 ONLY”
20. SANITARY SEWER OVERFLOW PROGRAM “GLOSSARY OF TERMS

PURPOSE

- TO COMPLY WITH REGULATORY REQUIREMENTS
- PROVIDE A STANDARD RESPONSE PROCEDURE FOR THE SPECIAL DISTRICTS DEPARTMENT
- A CONCISE NOTIFICATION REPORTING PROCEDURE
- UNIFORMITY IN RESPONDING, MITIGATING AND REPORTING

GOALS

- PROTECT THE PUBLIC HEALTH, THE ENVIRONMENT AND BENEFICIAL USES OF RECEIVING WATERS.
- MITIGATE ANY ADVERSE IMPACTS ON THE PUBLIC AND ENVIRONMENT
- TIMELY RESPONSE
- PROFESSIONALISM AT ALL TIMES
- CORRECTIVE ACTIONS
- *PREVENTION OF FUTURE OCCURANCES*



DEFINITION OF A SANITARY SEWER OVERFLOW [S.S.O.]

A SANITARY SEWER OVERFLOW [S.S.O.] - 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.

EXAMPLES: A PIPELINE BLOCKAGE, HYDRAULIC OVERLOADING OF PIPELINES [TAXED CONDITION] OR PUMP STATIONS AND OR EQUIPMENT MALFUNCTIONS.

REFERENCES

1. HEALTH AND SAFETY CODE. SECTION 5410-5416, 5460-5464
2. CALIFORNIA CODE OF REGULATIONS, TITLE 23, SECTION 2250
3. WATER CODE, SECTION 1050-1062, 13260-13274 [PORTER COLOGNE ACT 13271]
4. WATER CODE, SECTION 13300-13308, 13350-13351, 13370-13389
5. CALIFORNIA FISH AND GAME CODE, SECTION 5650-5656
6. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, [SANTA ANA REGION] Order No.R8-2002-12 (NPDES No. CAS 618036) Waste Discharge Requirements for San Bernardino County Flood Control District. Area Wide Urban Storm Water Runoff [SBC MS4 Permit]
7. STATE WATER RESOURCES CONTROL BOARD, Order NO. WQ 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.
8. STATE WATER RESOURCES CONTROL BOARD, Monitoring and Reporting Program NO. WQ 2013-0058-Exec, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.
9. STATE WATER RESOURCES CONTROL BOARD, Monitoring and Reporting Program NO. WQ 2022-0103-DWQ Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems

CONTACTING AGENCIES

SEE REPORTING PROCEDURES AND RESPONSIBILITIES DURING EMERGENCIES [MEMO].

MEDIA RELATIONS

WHEN A SEWAGE SPILL OCCURS AND MEDIA PERSONNEL ARRIVE AT THE SPILL SITE, REFER THE MEDIA REPRESENTATIVE TO THE **DISTRICT OFFICE**. ALL EMPLOYEES ARE, AS ALWAYS, EXPECTED TO BE POLITE, COURTEOUS AND PROFESSIONAL.

RESPONSIBILITY

IT IS OUR RESPONSIBILITY AS CARETAKERS FOR THE SANITARY SEWER COLLECTION SYSTEMS, TREATMENT FACILITIES AND EFFLUENT DISPOSAL SITES, TO ENSURE THAT ALL SYSTEMS OPERATE CORRECTLY.

WE ARE REQUIRED TO PROTECT PUBLIC HEALTH, THE ENVIRONMENT AND PUBLIC AND PRIVATE PROPERTY FROM SANITARY SEWER OVERFLOWS. WE ARE CHARGED WITH RESTORING THE AFFECTED AREA, AND RETURNING THEM TO THEIR NORMAL STATE AS SOON AS POSSIBLE.

IT IS OUR LEGAL RESPONSIBILITY TO REPORT ALL SANITARY SEWER OVERFLOWS TO THE PROPER REPORTING AGENCIES. REPORTING SPILLS IS MANDATED BY, FEDERAL, STATE AND LOCAL [San Bernardino County] LAWS AND REGULATIONS.

IT IS OUR DUTY TO USE ALL THE APPROPRIATE RESOURCES THAT ARE AVAILABLE, TO MITIGATE ALL SANITARY SEWER OVERFLOWS. WE ARE HELD ACCOUNTABLE TO MAKE EVERY HONEST EFFORT TO CONTAIN, CONTROL AND CLEAN-UP AFTER ALL SANITARY SEWER OVERFLOWS.

IT IS OUR RESPONSIBILITY TO ENSURE THAT AFTER A SANITARY SEWER OVERFLOW HAS OCCURRED, THAT ALL MEASURES ARE TAKEN TO PREVENT [CORRECTIVE ACTIONS] ANY FUTURE OCCURENCE AT THE AFFECTED SITE.

“NOTE” MANAGEMENT MUST BE NOTIFIED IMMEDIATELY OF ANY SPILLS OR THE POTENTIAL FOR A SPILL. THIS NOTIFICATION MUST BE DONE SEVEN [7] DAYS A WEEK, TWENTY-FOUR [24] HOURS A DAY. * *

A W & S SUPERVISOR MUST RESPOND TO ALL CATEGORY 1, 2 & 3 SPILL LOCATIONS.

*** * SEE EMERGENCY REPORTING PROCEDURES [ATTACHMENT]**

SANITARY SEWER OVERFLOW REPORTING

SSO CATEGORIES:

- Category 1 -** is any volume of sewage from or caused by a sanitary sewer system regulated under the General Order that results in a discharge to:
- A surface water, including a surface water body that contains no flow or volume;
 - A drainage conveyance system that discharges surface waters when the sewage is not fully captured and returned to the sewer system;
 - Any spill volume not recovered is considered discharged to surface water unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility;
 - A spill from an Agency owned and/or operated lateral that discharges to a surface water is a category 1 spill **[2 HOUR REPORTING WINDOW TO OES]**
- Category 2 -** is a spill of 1,000 gallons or greater from or caused by a sanitary sewer system regulated under this general Order that does not discharge to a surface water.
- A spill of 1,000 gallons out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 2 spill
- Category 3 -** is a spill of 50 gallons and less than 1,000 gallons from or caused by a sanitary sewer system regulated under this general Order that does not discharge to a surface water.
- A spill of 50 gallons and less than 1,000 gallons that spill out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.
- Category 4 -** is a spill of less than 50 gallons from or caused by a sanitary sewer system regulated under this general Order that does not discharge to a surface water.
- A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill..

***Refer to: STATE WATER RESOURCES CONTROL BOARD,
Monitoring and Reporting Program NO. WQ 2022-0103-DWQ,
Statewide Waste Discharge Requirements General Order for Sanitary
Sewer Systems for detailed information on reporting a spill.***



SPILL RESPONSE PROCEDURES

1. MAKE AN ASSESSMENT OF THE SPILL, AND WHAT IS NEEDED TO CONTAIN, CONTROL AND MAKE THE WORK AREA SAFE. *[NOTE YOUR TIME OF ARRIVAL] [IF SPILL OCCURS AFTER REGULAR WORKING HOURS, OR WEEKENDS & HOLIDAYS, FOLLOW THE EMERGENCY REPORTING PROCEDURES MEMO]*
A. IF SEWAGE HAS ENTERED, OR HAS THE POTENTIAL TO ENTER ANY RECEIVING WATERS OR DRY WATERWAYS, [SBC MS4 PERMIT] EMPHASIZE THIS IN STEP 2.
2. CONTACT THE OFFICE IMMEDIATELY AFTER YOUR ASSESSMENT; EXPLAIN WHAT IS NEEDED TO MITIGATE THE SITUATION. *[PUMP TRUCK, COMBO TRUCK [VACTOR OR CAMEL] AND MECHANICAL RODDER, EXTRA EMPLOYEES, BYPASS PUMP, SANDBAGS, ETC...]*
3. MAKE YOUR **WORK AREA SAFE**. UTILIZE YOUR PERSONAL PROTECTIVE EQUIPMENT *[PPE]*, THEN WORK ON CONTAINING / CONTROLLING THE SPILL. *[CONTAINMENT DETAILS ON PAGE 8, CONTROL DETAILS ON PAGE 9]*
4. IF A BUILDING OR STRUCTURE IS FLOODING WITH SEWAGE, DUE TO A PROBLEM IN SEWER LINES, LOCATE THE HOUSE CONNECTION CLEAN OUT CAP, REMOVE CAP TO MITIGATE THE DAMAGE TO THE BUILDING OR STRUCTURE.
5. IF A DIGITAL CAMERA IS AVAILABLE, PHOTOGRAPH THE AFFECTED AREA. IF NO CAMERA IS ON SITE **REQUEST THAT A CAMERA IS BROUGHT OUT TO THE LOCATION.**
6. SAMPLING: THE SAMPLING OF SEWAGE MAY BE REQUIRED. CONTACT THE W & S SUPERVISOR FOR FURTHER DETAILS. *[SAMPLING DETAILS ON PAGE 10]*
7. BEGIN THE NECESSARY STEPS TO RELIEVE THE STOPPAGE. ALWAYS USE A TRAP. IF THE HOUSE CONNECTION CLEAN OUT CAP WAS REMOVED, DON'T FORGET TO RE-INSTALL CAP. *[NOTE THE TIME THE SPILL WAS RELIEVED, AND THE CAUSE OF THE STOPPAGE]*
8. PERFORM A ROUGH ESTIMATE ON THE GALLONAGE OF THE SPILL. *[TAKE ALL NECESSARY MEASUREMENTS, FLOW DEPTHS, DISTANCES, SIZE OF POOLING WATER, ETC.]*
9. NOTIFY THE OFFICE IF ANY SCHOOL *[PUBLIC OR PRIVATE]* IS IN THE VICINITY OF THE AFFECTED SPILL AREA. THE OFFICE WILL CONTACT THE SCHOOL AND INFORM THEM OF THE CURRENT SITUATION.
10. POST AREA WITH THE PROPER WARNING SIGNAGE *[IF INSTRUCTED]*
11. CONTINUE TO THOROUGHLY PROOF *[CLEAN]* THE MAINLINE SEWER, FROM STRUCTURE TO STRUCTURE.
12. AFTER THE MAINLINE SEWER HAS BEEN PROOFED *[CLEANED]*, INSPECT THE DOWNSTREAM STRUCTURE *[S]* TO ENSURE THAT NO OTHER PROBLEMS WILL OCCUR.
13. PERFORM CLEAN-UP MEASURES. *[ENSURE THAT ALL **LIQUID** AND **SOLIDS** ARE REMOVED FROM THE AFFECTED AREA, INCLUDING WASHDOWN WATER]* *[CLEAN UP DETAILS ON PAGE 9]*
14. IF DAMAGE TO PRIVATE PROPERTY HAS OCCURRED *[OR A CUSTOMER HAS MADE A CLAIM FOR DAMAGE]*, **DO NOT ATTEMPT TO PERFORM ANY CLEAN-UP WORK UNTIL THE AREA HAS BEEN PHOTOGRAPHED, AND THE W&S SUPERVISOR OR DESIGNEE IS ON SITE.**
15. CCTV THE LINE SECTION[S] IMMEDIATELY FOLLOWING THE PROOFING *[CLEANING]* PROCESS. *[IF CCTV UNIT IS AVAILABLE]* IF LINE IS IN NEED OF REPAIR, COMPLETE **"SEWER LINE REPAIR REQUEST FORM"**.
16. COMPLETE THE SPILL REPORT FORM AND ALL OTHER DOCUMENTS RELATED TO THE INCIDENT. IF A SPILL OCCURRED INSIDE A BUILDING OR STRUCTURE, ISSUE A BACKWATER VALVE NOTICE TO THE RESIDENT/PROPERTY OWNER. A COMPLETE SSO REPORT MUST BE SUBMITTED TO CIWQS ONLINE WITHIN 15 CALENDAR DAYS AFTER THE EVENT.
17. **"NOTE" ENTER SPILL DATA INTO CIWQS SSO DATA BASE WITHIN [3]BUSINESS DAYS"**

CONTAINMENT

CONTAINMENT OF A SEWAGE SPILL IS A VERY CRITICAL ELEMENT. WE ARE REQUIRED UNDER NUMEROUS LAWS AND REGULATIONS TO MAKE CONTAINMENT FOR ALL SEWAGE SPILLS. THERE ARE MANY VARIABLES IN CONTAINING A SPILL; EXAMPLES ARE LOGISTICS, INCLEMENT WEATHER, TRAFFIC CONTROL ISSUES AND MANY OTHERS.

MOST SPILL SITES WILL HAVE MANY OF THE SAME RECOGNIZABLE VARIABLES SUCH AS: NATURAL LOW AREAS, BERMS, CURBS, STORM DRAIN BASINS, CULVERTS, VACANT LOTS, FIELDS, EXCAVATIONS, BASEMENTS, ETC.

USE THESE VARIABLES TO YOUR ADVANTAGE WHILE PERFORMING THE CONTAINMENT PROCEDURES.

NORMAL CONTAINMENT EQUIPMENT AND MATERIALS:

1. SANDBAGS
2. PLASTIC SHEETING [VISQUENE], RUBBER SHEETING
3. BOOMS
4. PLUGS [FOR STORM DRAINS OUTLETS]
5. FIRE HOSE [S]
6. DIRT, SAND, CINDERS
7. COLD PATCH [BAGED ASPHALT]
8. PLYWOOD
9. COMBO TRUCK, PUMPER TRUCK, TRACTOR/BACKHOE

CONTAINMENT TECHNIQUES ARE USUALLY SIMILAR IN MOST SPILL SITUATIONS, EITHER YOU NEED TO DIRECT THE SPILL IN A PLANNED SAFE DIRECTION, OR YOU WANT THE SPILL TO STAY IN A PARTICULAR AREA.

THE MOST COMMONLY USED DEVICE IS A SANDBAG. SANDBAGS ARE A GREAT AID IN DIRECTING OR HOLDING A SPILL. THE USE OF PLASTIC SHEETING IN CONJUNCTION WITH SANDBAGS PRODUCES A BETTER SEAL FOR SEEPAGE REDUCTION. **[A SUPPLY OF EMPTY SANDBAGS MUST BE KEPT ON ALL VEHICLES]**

IDEAS ON CONTAINMENT, IF FEASIBLE, DIVERT THE SPILL INTO A VACANT LOT OR FIELD WITH THE USE OF SANDBAGS OR A DIRT BERM. AFTER DIRECTING THE FLOW TO A HOLDING AREA THEN CONTAIN THE SPILL BY WAY OF BERMS.

[DIGING IS DISCOURAGED, REMEMBER, THERE ARE SHALLOW UNDERGROUND UTILITIES AND WE DON'T NEED TO ADD TO THE ONGOING EMERGENCY]

IF A STORM DRAIN BASIN IS AVAILABLE, USE THE BASIN AS A CONTAINMENT PIT. BLOCK OFF THE STORM DRAIN OUTLET WITH PLYWOOD, PLUGS, SANDBAGS, ETC. [SBC MS4 PERMIT]

A CULVERT PIPE UNDER SOME CIRCUMSTANCES MAYBE USED AS A SPILL STORAGE AREA [DEPENDING ON THE AMOUNT OF FLOW]

ALWAYS CHECK TO SEE IF THE SPILL CAN BE DIVERTED INTO A LOWER ELEVATED M/H STRUCTURE.

CONTROL

CONTROL OF A SEWAGE SPILL IS NORMALLY OBTAINED BY CLEARING THE PIPELINE BLOCKAGE BY HYDRO FLUSHING OR RODDING. IF THESE METHODS FAIL, SET UP A PORTABLE BYPASS PUMPING STATION [TRAILER MOUNTED PUMP] OR THE USE OF PUMP TRUCK [S] [CAMEL]. TEMPORARY INGROUND OR ABOVE GROUND BYPASS PIPING, EITHER GRAVITY FEED OR PRESSURIZED. AND OTHER VARIOUS METHODS, ETC.

CLEAN-UP

CLEANING UP AFTER A SPILL IS A TOUGH JOB. WE ARE REQUIRED TO REMOVE THE LIQUID AND SOLID DEBRIS FROM EVERY SPILL SITE. BEFORE THE AREA IS CLEANED, IT IS ADVISABLE TO PHOTOGRAPH THE AFFECTED AREA. THIS INCLUDES ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY. AFTER THE CLEAN-UP WORK HAS BEEN COMPLETED, RE-PHOTOGRAPH THE AFFECTED AREA.

A SEWAGE SAMPLE MAY ALSO BE REQUESTED FROM A SPILL LOCATION, CHECK WITH YOUR OFFICE BEFORE DISPOSING OF THE REMOVED LIQUIDS. *[SEE SAMPLING ON PAGE 10]*

GENERAL CLEAN-UP PROCEDURES:

1. SPILLAGE ON PAVED STREET: SWEEP AND VACUUM UP SEWAGE AND DEBRIS. WASHDOWN THE STREET WITH CLEAN WATER AND REMOVE WASHDOWN WATER. DO NOT ALLOW THE WASHDOWN TO FLOW INTO RECEIVING WATERS. [SBC MS4 PERMIT]
2. SPILLAGE ON UNIMPROVED ROADS, VACANT LOTS, DRY WATERWAYS, PRIVATE PROPERTY, ETC. REMOVE ALL LIQUID AND SOLIDS BY MEANS OF A TRASH PUMP, OR VCOMBO TRUCK [VACTOR OR CAMEL], WASHDOWN SURFACE AREA [IF PERMISSIBLE] AND REMOVE WASHDOWN WATER, RAKE AREA.
3. SPILLAGE INSIDE A BUILDING OR STRUCTURE, DO NOT ATTEMPT ANY CLEANING UNLESS A W&S SUPERVISOR OR DESIGNEE IS ON SITE. [*TAKE PHOTOGRAPHS, DOCUMENT ANY DAMAGE BEFORE CLEAN-UP BEGINS*] MOP, SQUEEGEE AND WET VAC SURFACES. FLUSH SURFACES WITH CLEAN WATER, RE-MOP AND WET VAC. ISSUE A BACKWATER VALVE NOTICE TO THE RESIDENT.

AFTER THE CLEAN-UP WORK HAS BEEN COMPLETED, **RE-PHOTOGRAPH THE AFFECTED AREA.**

SAMPLING PROCEDURES

WHEN SEWAGE ENTERS INTO RECEIVING WATERS [LAKES, STREAMS, CREEKS, POOLS, ETC.]

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT MUST BE NOTIFIED UNDER THE

NPDES No. CAS 618036, AREA WIDE URBAN STORM WATER RUNOFF [SBC MS4 PERMIT].

BACTERIOLOGICAL SAMPLING MUST BE PERFORMED. THE SAMPLES MUST BE TAKEN FROM THREE DIFFERENT SITES:

SITE [1] UPSTREAM OF ENTRY POINT

SITE [2] JUST BELOW ENTRY POINT

SITE [3] DISTANCE DOWNSTREAM OF ENTRY POINT

THE INDIVIDUAL SAMPLING POINTS WILL BE ON A CASE-BY-CASE BASIS. THE SAMPLES WILL BE TESTED FOR THE FOLLOWING:

[1] TOTAL COLIFORM

[2] FECAL COLIFORM

[3] FECAL STREP

IN MOST CASES, THE OPERATIONS DIVISION WILL PERFORM ALL THE REQUIRED SAMPLING PROCEDURES. WHEN THE OPERATIONS DIVISION IS UNAVAILABLE TO PERFORM THE REQUIRED SAMPLING PROCEDURES, *[NOTIFY THE OFFICE AND W&S SUPERVISOR]* FOR FURTHER INSTRUCTIONS ON HOW AND WHERE TO COLLECT THE SAMPLES.

CORRECTIVE ACTIONS

1. MANAGEMENT, W&S SUPERVISOR WILL EVALUATE EVERY SPILL OCCURRENCE.
2. EACH LINE SEGMENT WILL BE INSPECTED BY CCTV. THE CCTV INSPECTION WILL BE DONE IN A TIMELY MANNER. ALL "SEWER LINE REPAIR REQUEST FORMS" WILL BE REVIEWED/ PROCESSED.
3. EACH SPILL LOCATION WILL HAVE AN ASSIGNED PREVENTIVE MAINTENANCE SCHEDULE. THE TYPE OF SCHEDULED CLEANING WILL BE DETERMINED BY THE CONDITIONS FOUND THROUGH THE CCTV INSPECTION.
4. ALL SPILL LOCATIONS WILL HAVE FOLLOW-UP CCTV INSPECTIONS PERFORMED. EACH INSPECTION WILL BE SCHEDULED AT THREE-MONTH INTERVALS TO DETERMINE THE EFFECTIVENESS OF THE SCHEDULED CLEANING. ADJUSTMENTS OF THE SCHEDULED CLEANING WILL BE MADE WHEN NECESSARY.
5. DETAILS OF EACH SPILL WILL BE REVIEWED TO HELP IDENTIFY AND RECOMMEND ANY NECESSARY IMPROVEMENTS TO THE SPILL RESPONSE AND NOTIFICATION PROCEDURE. **ALL W&S EMPLOYEES WILL BE BRIEFED ON ALL SSO OCCURRENCES.**
6. DEFINE AND RECOMMEND NECESSARY FOLLOW-UP ACTIONS SUCH AS, SEWER REPAIR OR SYSTEM UP GRADE THROUGH CAPITOL IMPROVEMENTS.



STORM DRAINS
LEAD STRAIGHT TO THE OCEAN
MAKE THE CONNECTION

APPENDIX C: AN ORDINANCE



APPENDIX C:

AN ORDINANCE

REGULATING THE USE AND CONSTRUCTION
OF PUBLIC WASTEWATER FACILITIES

December 31, 1980

SPECIAL DISTRICTS DEPARTMENT
SAN BERNARDINO COUNTY

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ORDINANCE

REGULATING THE USE AND CONSTRUCTION
OF PUBLIC WASTEWATER FACILITIES

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ORDINANCE NO. SD 80-9

AN ORDINANCE OF NAMED SPECIAL DISTRICTS AND COUNTY SERVICE
AREAS REGULATING THE CONSTRUCTION AND USE OF PUBLIC
WASTEWATER FACILITIES

The Board of Supervisors of the County of San Bernardino, State of California, acting in its capacity as the governing body of the special districts and county service areas named in Section 1.1 of this ordinance, all of which are located entirely within the boundaries of the County of San Bernardino, does ordain as follows:

SECTION 1.0
GENERAL PROVISIONS

1.1 - ORDINANCE IN FORCE - From and after the effective date of this ordinance, it shall be in full force and effect within the following sanitation districts and county service areas, including all improvement areas and zones therein:

Lake Arrowhead Sanitation District
Crestline Sanitation District
County Service Area 42
County Service Area 48
County Service Area 53
County Service Area 56
County Service Area 63
County Service Area 64
County Service Area 70
County Service Area 72
County Service Area 79
County Service Area 82

1.2 - AUTHORITY - The county service areas named in Section 1.1 hereof were formed and presently exist pursuant to the provisions of the County Service Area Law, being Chapter 2.2 of Part 2 of Division 2 of Title 3 of the California Government Code, commencing with Section 25210.1 thereof. The sanitation districts named in Section 1.1 hereof were formed and presently exist pursuant to the provisions of the county sanitation district act, being Chapter 3 of Part 3 of Division 5 of the California Health and Safety Code, commencing with Section 4700 thereof.

1.3 - GENERAL STATEMENT OF POLICY - The general policy of the District is to acquire, maintain and operate adequate Wastewater Systems to serve the present needs of the District and to provide for future needs.

1.3.1 - ANNEXATIONS - Territory may be annexed to the District subject to such proceedings and conditions as may be imposed or permitted by applicable laws. Conditions to annexation may require the payment of fees and the transfer of facilities to the District or to other agencies.

1.3.2 - FEES - The Board may impose and collect fees and charges for services which the District renders or makes available.

1.3.3 - SALE OF BY-PRODUCTS - The District may sell or otherwise dispose of water, treated or reclaimed wastewater or any other by-product of District operations to private individuals, corporations, or public entities.

1.3.4 - NO LIABILITY - The District and its officers, agents and employees shall, to the extent permitted by law, incur no liability for actions taken to enforce any of the provisions of this ordinance.

1.4 - SCOPE - This is an ordinance regulating within the District boundaries the use and construction of public wastewater facilities, the installation and connection of building sewers, and the discharge of wastes into the public wastewater systems, and providing penalties for violation thereof, as ordained and enacted by the Board.

This ordinance supercedes and replaces all prior and existing ordinances, rules, resolutions, and schedules regulating the use and construction of public wastewater facilities and their appurtenances within the District to which this ordinance is applicable. Except as provided in Section 5.0 hereof, all such ordinances, rules, resolutions and schedules shall be, and the same are, hereby repealed and rescinded and made of no further force or effect.

1.5 - DEFINITIONS - The meaning of terms used in this ordinance shall be as defined in the Uniform Plumbing Code except as specifically modified herein, or as inconsistent with the definitions contained herein or with the context thereof. The following definitions shall prevail in the event of any inconsistency with or omission from the Uniform Plumbing Code definitions:

1.5.01 - APPLICANT - The person making application hereunder, who shall be the owner of the premises involved or his agent authorized as such in writing, or a plumber or contractor licensed as such by the State of California.

1.5.02 - BOARD - The Board of Supervisors of the County of San Bernardino, State of California, acting in its capacity as the governing body of the District.

1.5.03 - BUILDING SEWER - That portion of sewer from the building sewer drain to the Public Sewer, including the sewer lateral and the cleanout.

1.5.04 - COMMISSION - An Advisory Commission of the District appointed by the Board in accordance with its policies.

1.5.05 - CONTRACTOR - An individual, firm, corporation, partnership, or association duly licensed by the State of California to perform the type of work to be done under the permit, contract or agreement.

1.5.06 - COST - The cost of labor, material, transportation, supervision, engineering, and all other necessary overhead expenses.

1.5.07 - COUNTY - The County of San Bernardino, State of California.

1.5.08 - DISTRICT - Any county service area, improvement zone, or sanitation district which has adopted this ordinance and for which the Board is the governing body. Also, textual reference to "The District", shall mean the county service area, improvement zone or sanitation district which is administering or enforcing this ordinance.

1.5.09 - DISTRICT ENGINEER - The Engineer appointed by the Board to support the District.

1.5.10 - DISTRICT MANAGER - The person employed or appointed to act as manager for the District.

1.5.11 - EQUIVALENT DWELLING UNITS (EDU) - The number of Equivalent Dwelling Units fixed and established for all the various classifications of types and uses of property by the Rules and Regulations of the District, as such classifications may be duly revised from time to time.

1.5.12 - FIXTURE UNIT EQUIVALENTS - The fixture unit equivalent prescribed by the Uniform Plumbing Code or substantially equivalent provisions in subsequent plumbing codes adopted by the Board.

1.5.13 - GARBAGE - Solid wastes from the preparation, cooking, and dispensing of food, and from the handling, storage and sale of produce.

1.5.14 - INSPECTOR - An authorized District representative who performs inspection duties.

1.5.15 - OWNER - The person or persons in whose name the legal title to property appears by deed duly recorded in the County Recorder's Office.. Also, a person holding property pursuant to a Term Special Use or other permit issued by a governmental entity.

1.5.16 - PERMIT - Any written authorization required pursuant to this ordinance or any other rule or regulation of the Board.

1.5.17 - PERSON - One or more individuals of either sex, or a company or other legal entity, including the heirs, assigns and successors in interest thereof.

1.5.18 - PUBLIC SEWER - That portion of a sewer which is a common sewer owned or directly controlled by the District. It does not include any portion of a building sewer.

1.5.19 - SEWAGE - Any liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.

1.5.20 - SEWER SYSTEM - Integrated facilities for collecting, transporting, pumping, treating and disposing of sewage, which are owned or directly controlled by the District.

1.5.21 - SEWER - A pipe or conduit for carrying sewage.

1.5.22 - SPECIAL DISTRICTS DEPARTMENT - The department authorized by the Board to provide extended services to special districts functioning in the County.

1.5.23 - SPECIAL DISTRICTS DIRECTOR - The person appointed by the Board to act as Director for the Special Districts Department.

1.5.24 - UNIFORM PLUMBING CODE - The Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials and as adopted by the County as its plumbing code.

1.5.25 - USER - The person or persons owning or controlling property or improvements to which the sewer facilities of the District are connected or available.

1.5.26 - WASTEWATER FACILITIES - Any facility for the transportation, treatment, or disposal of sewage.

1.6 - PUBLIC SEWER REQUIREMENTS

1.6.1 - USE OF PUBLIC SEWERS - Use of public sewers shall be as specified in General Regulations of the Uniform Plumbing Code and in the provisions of this Ordinance and the rules and regulations adopted pursuant hereto.

1.6.2 - OCCUPANCY PROHIBITED - No building, industrial facility or other structure which is within District boundaries shall be occupied until the Owner has complied with the provisions of this Ordinance, all rules and regulations of the District, the Uniform Plumbing Code, and all other applicable County, State, or Federal Requirements.

1.6.3 - SEWER CONNECTION REQUIRED - The Owner of each house, building, or property within the District in which plumbing fixtures are installed and which abuts a street or easement in which there is located a Public Sewer, is required at the Owner's expense to connect said house, building or property with said sewer, in accordance with the provisions of this Ordinance and within the time specified in an official notice to connect, served on or provided to the Owner by the District. This provision shall apply unless the nearest building of the affected property is more than two hundred (200) feet from said sewer.

1.6.4 - EXEMPTIONS - Notwithstanding Section 1.6.3 hereof, no connection to a sewer system shall be required where a waiver or exemption from such connection has been duly granted by the Special Districts Director pursuant to Section 1.12.10 of this Ordinance or by the executive officer or governing body of a regional water quality control board of the State of California pursuant to applicable law.

1.7 - PRIVATE SEWAGE DISPOSAL SYSTEM REQUIREMENTS - Where a public sewer is not available, or where connection to a Public Sewer is not required under the provisions of Section 1.6 hereof, the Building Sewer of each house, building or property within the District in which plumbing fixtures are installed shall be connected to a private sewage disposal system complying with the design policies and codes of the Department of Environmental Health Services, the provisions of the Uniform Plumbing Code and with all applicable County, State or Federal policies, procedures and requirements.

1.8 - BUILDING SEWER AND CONNECTION REQUIREMENTS

1.8.01 - PERMIT - No person shall make a connection to any Public Sewer without first obtaining a written Permit therefor from the District and paying all fees connected therewith. Application for a Permit shall be made on a form furnished by the District. The Permit application shall be accompanied or supplemented by such plans, specifications, and other pertinent information as may be required by the District Manager.

1.8.02 - INSPECTION - The Building Sewer and its connection to an existing sewer shall be inspected by the Inspector and if he finds it to be satisfactory, he shall affix an approval tag to the connection.

1.8.03 - RULES AND REGULATIONS - The Board may adopt rules and regulations with respect to Building Sewers and to sewer system connections, including but not limited to: permit, connection and inspection fees; procedures for installation; notices; testing; and other related matters.

1.8.04 - INDEPENDENT SYSTEMS - The sewage drainage system of each new building and of new work installed in any existing building shall be separate and independent from that of any other building and when feasible, every building shall have an independent connection with a public or private sewer.

1.8.05 - EXISTING BUILDING SEWERS - Existing Building Sewers may be used to connect new buildings to the Sewer System only when they are found by the District to satisfy the District's then current specifications and construction methods. If an existing Building Sewer is not to be used after demolition of a building, the Building Sewer must be disconnected at the property line and the Building Sewer remaining between the property line and the Public Sewer must be capped at the property line. Disconnection and capping after demolition is subject to inspection and approval by the District.

1.8.06 - BACKWATER VALVE REQUIRED - The District may require the installation of an approved backwater valve as specified in the Uniform Plumbing Code or as deemed necessary by the District to protect the Owner's property.

1.8.07 - GRAVITY FLOW NOT POSSIBLE - In all buildings in which any building sewer drain is too low to permit gravity flow to the Public Sewer, sewage carried by such building drain shall be discharged to the Sewer System only by a means approved by the District and at the Owner's expense.

1.8.08 - 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 sewer drain which in turn is connected directly or indirectly to a Public Sewer.

1.8.09 - SPECIAL CONNECTIONS - Swimming pools, spas and therapy pools may connect to the Public Sewer only pursuant to a special Permit issued by the District. Building and Safety shall notify the District and assure that the Owner has obtained a Permit from the District prior to issuing a construction permit for the pool or spa. All such connections shall be inspected and approved by the District prior to use. Discharge into the Public Sewer from such facilities shall be made only at such times as may be specified by the special connection Permit.

1.8.10 - AUTHORIZATION FOR CONNECTION - The connection of the building sewer to the Public Sewer shall conform to the requirements of the District, shall be under District jurisdiction, and shall be made only by an insured Contractor or by the Owner or by the Owner's duly authorized agent.

If a sewer lateral is not available to the property, the District shall install a 'wye' or 'tee' and the Contractor or Owner shall then connect the building sewer to the 'wye' or 'tee'. The District may charge a fee for the installation of the 'wye' or 'tee'.

1.8.11 - BUILDING SEWER MAINTENANCE - The user shall bear the burden and all expenses related to maintenance and repair or replacement of the Building Sewer.

1.9 - PUBLIC SEWER CONSTRUCTION REQUIREMENTS

1.9.01 - APPROVAL - No person shall construct or extend a Public Sewer without first obtaining written approval from the District and paying all fees connected therewith.

This provision does not apply to the construction of sewers and appurtenances under contracts entered into with the District and on its account. Design and construction of a Public Sewer system or any portion thereof shall be in accordance with the Design Criteria and Technical Specifications of the District.

1.9.02 - BONDING OF IMPROVEMENTS - A Faithful Performance Bond, or a cash deposit, when required by Section 1.902.1 hereof or by other applicable law, shall be furnished by the Owner to the District. The bond or deposit shall be for not less than one hundred ten (110) percent of the construction estimates as approved by the District Engineer and the District Manager and shall guarantee the completion of construction of those sewerage facilities proposed. The bond or deposit shall be accompanied by and shall secure the performance of an agreement to the same effect between the Owner and the District. The bond and agreement shall bear the same date.

1.9.02.1 - WHEN REQUIRED - A performance bond or cash deposit will be required when any of the following conditions exist:

- a. The Owner or developer has requested a letter to be sent to the State Real Estate Commission for issuance of final Real Estate report.
- b. Future improvements to the Sewer System will be dependent on portions of the System for which the construction permit application has been made.
- c. Completion of the proposed facilities is necessary to comply with or to avoid the violation of a law, regulation or order of a governmental agency of competent jurisdiction.

1.9.02.2 - BOND AND AGREEMENT FORMS - The bond and the agreement shall be in a form approved by the County Counsel.

1.9.03 - LIABILITY - The District and its officers, agents, independent contractors, consultants, 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 hold District and its officers, agents, independent contractors, consultants, and employees harmless from any liability imposed by law upon District or its officers, agents, independent contractors, consultants, or employees, including all costs, 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 or damage which may develop therein.

1.9.04 - FEASIBILITY OF SUBDIVISION SERVICE - An Applicant or developer wishing to determine if sewer service is available and feasible for a subdivision within the District, shall furnish to the Special Districts Department tentative maps showing lot sizes, street layout, and elevations based upon USGS datum, proposed points of connection to the District's sewers, proposed pump stations and flow data based upon the design criteria of the District. Upon receipt of the appropriate fee as prescribed by the District rules and regulations, the District Engineer and Manager will review the map and the Special Districts Department will inform the applicant or developer by letter if sewer service is available and feasible and under what conditions, such as oversizing, buy in cost or modification of District facilities.

1.9.05 - PUBLIC SEWER EXTENSIONS - Public sewer extensions to serve one or more parcels of land may be made by and at the expense of the Owner or Owners of said land. The Owner or his Engineer shall follow the same procedure for public sewer extensions as are outlined in Section 1.9.04 hereof.

1.9.06 - PRIOR EXTENSION CONTRIBUTION - When an Owner makes an application for sewer service to a lot, parcel, tract, or subdivision to which Public Sewers are already available, he shall pay to the District his proportionate share of the cost of said Public Sewer, to the extent that such payment has not already been made. Proportionate share shall be computed by the District from the actual cost to the District or other person making the original Public Sewer extension on the basis of front footage benefit accruing to the newly served property.

1.9.07 - COST OF OVERSIZED MAINS - The developer or Applicant shall bear the cost of any oversizing of the main sewer lines for his property which may be deemed necessary by the District to serve present or future developments.

1.9.08 - REFUNDS - When Public Sewer extensions are made and paid for by a developer or Applicant and such sewer extension may be of benefit to another person in the future, said developer or Applicant may enter into a refund agreement with the District. Said refund agreement shall provide for refund payment from Public Sewer connection charges collected by the District from the new developer or Applicant. The refund shall be computed on the basis of actual cost to the person making the original Public Sewer extension per front foot benefited or equivalent assessment as determined by the District. All refund agreements shall become null and void ten years from the date first written.

1.9.09 - PLANS AND SPECIFICATIONS - The Applicant, his engineer or other Person proposing the construction of a Public Sewer within the District, will prepare plans and specifications for construction of said Sewer in accordance with the District's Design Criteria and Technical Specifications. Four (4) sets of plans and specifications, a subdivision map indicating sewer easements, and water system plans, where applicable, shall be submitted to the Special Districts Department for approval. This submittal will not relieve the Applicant or other Person constructing Public Sewer facilities from compliance with all other requirements imposed by Federal, State, County, or Local agencies.

1.9.10 - PLAN CHECK - The Special Districts Department will send two copies of the plans to the District Engineer and one copy to the District Manager. After consultation with the District Manager, the District Engineer will review the sewer plans for compliance with the District's requirements. The Special Districts Department will approve such plans provided the following conditions have been met:

1. The District Engineer has signed the plans certifying that they comply with District Rules and Regulations and/or Standards for Design Criteria or both if applicable, and are in conformance with master sewerage plans for the area.
2. The District Manager has signed the plans certifying that he has reviewed the plans and agrees that the District can maintain the proposed system.
3. The Applicant has paid the appropriate plan checking fee prescribed by the District Rules and Regulations.

1.9.11 - CONSTRUCTION - The Applicant will construct facilities in accordance with the approved plans and specifications and construction methods as set forth by the District Rules and Regulations. After approval of construction plans and specifications, a five (5) working day advance notice to the District Engineer is required prior to the start of construction. All construction shall be performed by a Contractor.

1.9.12 - INSPECTION - All construction work shall be inspected by an Inspector to insure compliance with all requirements of the District. No construction shall be covered at any point until it has been inspected and accepted by the District Engineer. The costs of such inspection shall be prepaid to the Special Districts Department by the Applicant in the form of inspection fees, the amount of which shall be prescribed by the Rules and Regulations of the District.

1.9.13 - ACCEPTANCE OF FACILITIES - Before the District will accept sewers and/or appurtenances into its maintained Sewer System, the Applicant shall provide to the District, at the Applicant's expense, the following documents:

1. Recorded Notice of Completion and evidence that the sewer work has been paid for and completed.
2. One set of reproducible "as-built" plans (mylar or linen), plus five (5) sets of prints, which show exact locations, depths and descriptions of all facilities.
3. Original recorded easement documents for Public Sewers not in public property, public right-of-way, or not dedicated to appropriate public use by a recorded subdivision or tract map.
4. Original Grant Deed transferring to the District title to those facilities which are to become part of the Public Sewer.
5. District Engineer's signature on the as-builts certifying that facilities were installed according to plans and specifications.
6. Two operation and maintenance manuals for each pump station and unit of mechanical equipment.

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

1. Applicant shall prepare and obtain the execution of such documents conveying easements as may be needed for the construction and location of all Public Sewers which do not lie within public roads, are not shown on recorded tracts, land divisions, or are on private property. Required easements shall be delineated on the plans and the recorded data shall be shown on the "as-built" plans. The Applicant shall submit duly executed documents to the Special Districts Department for acceptance and recording. All District sewer easements shall be at least ten feet in width unless otherwise approved by the District.
2. The District Engineer and District Manager shall review easement documents with descriptions as part of the plan review.
3. No structures or improvements will be allowed upon an easement dedicated to the District. The District will not be responsible for any damage to any such unauthorized structures or improvements.

1.10 - DISTRICT RULES AND REGULATIONS

1.10.1 - PUBLIC SEWER SYSTEM USE - Rules and Regulations as adopted by the Board shall: govern the quantity and quality of permissible discharges to the Sewer System; provide limitations and prohibitions as to specified wastes such as grease, oil and sand; require Grease and Sand Interceptors and Separators as specified in Sections 708, 710, 711, and 712 of the Uniform Plumbing Code (or as modified and superseded by the District's Rules and Regulations); govern maintenance of flow equalizing systems; regulate swimming pool discharges; and prescribe tests. The determination as to whether a discharge is permissible may require an acceptable analysis or test of the discharge as evidence that the discharged waste will not adversely affect the Sewer System. The cost of any such analysis or test shall be borne by the User.

1.10.2 - SERVICE REFUSED - The District may refuse or terminate service for noncompliance with its Ordinance or Rules and Regulations, including the non-payment of fees.

1.11 - PERMIT AND FEE REQUIREMENTS

1.11.1 - PERMIT - No Person shall uncover, make any connection with or opening into, use, alter, or disturb any Public Sewer or perform any work on any Public Sewer without first obtaining a written permit or written authorization therefor from the District. This provision shall not apply to a duly authorized representative of the District.

1.11.2 - PERMIT PROCEDURE - The Board shall adopt procedures for application and approval of Permits. Such procedures shall be contained in the Rules and Regulations of the District. Each Permit shall specifically state the obligations, liabilities and responsibilities of the permittee, and the expiration date, if any, of the Permit.

1.11.3 - DURATION OF PERMIT - Permits issued pursuant to this Section shall expire at the time set by the Rules and Regulations of the District, not to exceed six (6) months, and shall then be of no further force or effect. Fees paid under any permit are not subject to refund or credit in the event that a permit expires without completion of its entitlement.

1.11.4 - STREET EXCAVATION PERMIT - A separate permit must be secured from the agency having jurisdiction over any public street or right-of-way in which an Owner or Contractor intends to make an alteration or excavation in carrying out any work authorized or required by the District.

1.11.5 - CONNECTION PERMIT - No sewer connection Permit will be issued by the District until all fees related thereto have been paid and until the County Transportation Department Excavation Permit or State Highway Encroachment Permit, or both as required, are issued. A Connection Permit is authorization only to uncover and connect to the sewer lateral or to the 'wye' or 'tee' installed by the District. It is not authorization to uncover, disturb, or otherwise alter any portion of the Public Sewer.

1.11.6 - FEES - The Board shall by resolution prescribe and modify fees and charges for Permits, construction, inspection, plan checking, feasibility studies, environmental reports, standby capacity, collection expenses, variances, connections, buy-in, use and availability of sewer facilities and for such other services as may be provided by the District. All annexations or new developments within the District shall pay all applicable fees as determined and prescribed by the Districts' Rules and Regulations. The fees and charges, as so prescribed and modified, are hereby deemed incorporated into the Rules and Regulations of the District.

1.12 - VIOLATION, ENFORCEMENT, AND POLICING

1.12.01 - VIOLATIONS UNLAWFUL - It is unlawful for any Person to connect, construct, install, provide, maintain, or use any other means of sewage disposal from any building in the area served by sewers of said District except as provided in this Ordinance. Any Person violating this provision shall be subject to the penalties provided by law.

1.12.02 - PROTECTION FROM DAMAGE - No Person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the District Sewer System. Any Person violating this provision shall be subject to the penalties provided by law.

1.12.03 - INVESTIGATION POWERS - Each duly authorized employee and representative of the District shall carry evidence establishing his position as such 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, easurement, sampling, testing or otherwise performing such duties as may be necessary in the enforcement of the provisions of this Ordinance and the Rules and Regulations of the District. If such entry is refused, the District shall have recourse to every remedy provided by law to secure entry. No person shall represent himself to be an employee or representative of the District except as authorized to do so by the District Manager.

1.12.04 - VIOLATION - Any Person found to be violating any provision of this or any other Ordinance, Rule, or Regulation of the District shall be served by the District with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. Said time limit shall be more than seven working days. The offender shall, within the period of time stated in such notice, permanently cease all violations. Whenever a violation creates an emergency or hazard, the notice of violation may be oral, followed by a written notice as soon as reasonably possible and may require immediate correction. Each Person shall be held strictly responsible under the provisions of this or any other Ordinance, Rule or Regulation of the District for his own acts and for any and all authorized acts of his agents or employees as well. Upon being notified by the District or authorized representative of any violation of this ordinance, the Person having charge of the property, facility or work causing the violation shall immediately cease and desist from such violation and shall cause the commencement of such measures and procedures as may be necessary to correct the violation within the time specified by the District. If the violation or hazard is not ceased during the length of time specified, the District may cause the violation or hazard to be corrected and collect from the owner the cost thereof.

1.12.05 - PUBLIC NUISANCE - Continued habitation of any building or continued operation of any industrial facility in violation of the provisions of this or any other Ordinance, Rule or Regulation of the District is hereby declared to be a public nuisance. The 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.

1.12.06 - DISCONNECTION - As an alternative method of civil enforcement of the provisions of this or any other Ordinance, Rule or Regulation of the District, the District may disconnect the User from the Public Sewer. Upon disconnection, the District shall estimate the cost of disconnection from and reconnection to the Sewer. The User shall deposit that amount with the District plus the full amount of any delinquent fees and charges before such User is reconnected to the Sewer. The District shall refund or credit any part of such deposit remaining after payment of all costs of disconnection and reconnection and shall bill the User for any related costs in excess of the deposit. Notice of intent to disconnect shall be provided pursuant to Section 1.12.04 hereof, and neither the District or any of its employees or agents shall be held accountable for any damage which may occur to person or property during or because of disconnection.

1.12.07 - ABATEMENT - During any period of disconnection from an authorized sewage disposal system, habitation of affected premises by humans shall constitute a public nuisance, whereupon the District shall cause proceedings to be brought for the abatement of such nuisance. This provision shall not apply to any premises which are not required by this Ordinance to be connected to a sewage disposal system. In the event such proceedings are brought and as a condition to authorizing connection or reconnection, the Owner or User shall pay to the District reasonable attorney fees and the costs associated with said proceedings.

1.12.08 - LIABILITY FOR VIOLATION - Any Person violating any of the provisions of any Ordinance, Rule or Regulation of the District shall be liable to the District for all expense, loss and damage accruing to the District by reason of such violation. This provision may be enforced in addition to any other remedy provided by law to the District because of such violation.

1.12.09 - CIVIL ENFORCEMENT ONLY - The District hereby declares that the foregoing procedures are established as a means of civil enforcement of the terms and conditions of its Ordinances, Rules or Regulations, and not to effect a forfeiture.

1.12.10 - VARIANCE - When any Person, by reason of special circumstances, is of the opinion that a variance is necessary or that any provision of any Ordinance, Rule, or Regulation of the District is unjust or inequitable as applied to his facilities or property, and that such special circumstances make his facilities or property different from any other properties which are subject to the provision complained of, that Person may make written application to the Director, Special Districts Department, stating the special circumstances, citing the provision complained of, and requesting suspension or modification of that provision as applied to his facilities or property. If the Special Districts Director makes findings in accord with the required allegations of the application, he may suspend or modify the provision complained of, as applied to such facilities or property, to be effective as of the date of the application and continuing to a specified date or during the period of the special circumstances, as limited by Section 1.12.12 hereof. All persons found to be in such special circumstances shall be treated equally upon application for a suspension or modification hereunder. Any affected Person may appeal the decision to the Administrator, Environmental Public Works Agency, and thence to the Board, if such Person is in disagreement with the decision of the Administrator. The decision of the Board shall be final for all purposes.

1.12.11 - RELIEF ON OWN MOTION - The Board may, on its own motion after making the requisite findings, determine that by reason of special circumstances a provision of a District Ordinance, Rule or Regulation should be suspended or modified as applied to a particular facility or property, and may by resolution so suspend or modify such provision for a specified period or during the period of special circumstances as limited by Section 1.12.12 hereof.

1.12.12 - VARIANCE LIMITATIONS - No variance granted pursuant to Sections 1.12.10 or 1.12.11 shall be valid for a period in excess of five years, nor shall any such variance modify a fee established by the District.

1.13 - PENALTIES AND USE OF CITATION

1.13.1 - GENERAL PENALTY FOR VIOLATION - Any Person violating any of the provisions of this Ordinance and failing to correct such violation within the time allowed therefor, shall be guilty of a misdemeanor. Any Person convicted of a violation of any provision of this Ordinance, unless otherwise specifically provided in this Ordinance, shall be punishable by a fine of not more than five hundred dollars (\$500.00) or by imprisonment in the County Jail for a period of not more than six (6) months, or by both such fine and imprisonment.

1.13.2 - CONTINUING VIOLATIONS - Each Person who violates any provision of this Ordinance shall be guilty of a separate offense for each and every day during any portion of which such violation is committed, continued, or permitted by such Person and shall be punished accordingly.

1.13.3 - ACTS INCLUDING CAUSING, AIDING AND ABETTING - Whenever in this Ordinance any act or omission is made unlawful, it shall also be unlawful to cause, permit, aid or abet such act or omission, and shall be punishable in the same manner as is the principal act or omission.

1.13.4 - AUTHORIZATION TO ARREST - Pursuant to the provisions of Section 836.5 of the Penal Code, the District Manager and any Inspector are hereby authorized to arrest any Person who violates any provision of this Ordinance in the presence of such officer, and to issue notices to appear pursuant to Section 1.13.5 hereof in connection with any arrest authorized hereby.

1.13.5 - USE OF CITATION -

- a. If any Person is arrested for a violation of any provision of this Ordinance, the violation of which is herein declared to be punishable as a misdemeanor, and such Person is not immediately taken before a magistrate, as more fully set forth in the Penal Code of the State 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.
- b. The time specified in the notice to appear must be at least five (5) days after such arrest.
- c. 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.

- d. 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 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.
- e. 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 judgement, 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 of 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 1464 of the Penal Code.

- f. No warrant shall be issued 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, or appear for arraignment, trial or judgement, or to comply with the terms and provisions of the judgement, as required by law.
- g. 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.
- h. 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.

SECTION 2.0
CRITERIA FOR DESIGN OF
SEWERS, SEWAGE LIFT STATIONS, AND APPURTENANCES

The necessary criteria, standard drawings, design criteria, and technical specifications for public sewers, sewage lift stations, and appurtenances shall be adopted by resolution of the Board of Supervisors from time to time as necessity dictates. A copy of each current resolution as adopted shall be on file in the office of the District and in the office of the Clerk of the Board and shall be available in each office for public inspection.

SECTION 3.0
STANDARD FORMS AND DOCUMENTS

Standard forms and documents for use in the business and activity of the District may be approved by the Special Districts Department as necessity dictates, and a copy of each approved form and document shall be on file in the office of the District and at the Special Districts Department, and shall be available for public inspection.

SECTION 4.0
VALIDITY

This Ordinance and the various parts, sentences, paragraphs, sections, and clauses hereof are hereby declared to be severable. If any such part, sentence, paragraph, section, or clause is adjudged unconstitutional or invalid, the remainder of this Ordinance shall not be affected thereby. The Board hereby declares that it would have passed this Ordinance and each part hereof regardless of the fact that one or more parts hereof might be declared unconstitutional or invalid.

SECTION 5.0
INTERIM RULE VALIDITY

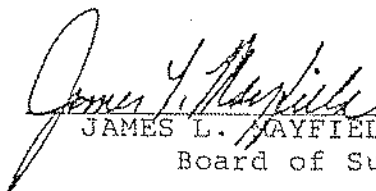
Notwithstanding, any express or implied provision of this Ordinance to the contrary, the Rules, resolutions, and schedules of fees and charges which are in effect in and for the District when this Ordinance becomes operative shall remain in full force and effect until specifically replaced or re-enacted by the Board. Insofar as practicable, where such existing rules, resolutions and schedules make reference to a provision of an ordinance, rule, resolution or schedule which has been superseded by this Ordinance, such reference shall be deemed to be made to the provision of this Ordinance which has substantial equivalency.

SECTION 6.0
PUBLICATION

This Ordinance shall take effect thirty (30) days after the date of its adoption (and prior to the expiration of fifteen (15) days from its passage shall be published once in the San Bernardino Sun, a newspaper of general circulation, printed and published in the County of San Bernardino, State of California, together with the names of the members of the Board voting for and against the same.)

ATTEST:

ANDREE DISHAROON, Clerk
of the Board of Supervisors


JAMES L. MAYFIELD, Chairman
Board of Supervisors

Andree Disharoon

STATE OF CALIFORNIA)

COUNTY OF SAN BERNARDINO)

I, ANDREE DISHAROON, Clerk of the Board of Supervisors of the County of San Bernardino, State of California, hereby certify that at a regular meeting of the Board of Supervisors of said County and State, held on the 1st day of December, 1980, at which McElwain, Hansberger, Townsend, Hammock and McElwain were present and the following vote, to wit:

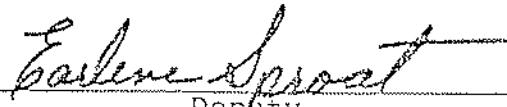
AYES: SUPERVISORS McElwain, Hansberger, Townsend, Hammock and
Mayfield

NOES: SUPERVISORS None

ABSENT: SUPERVISORS None

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Board of Supervisors this 1st day of December, 1980.

ANDREE DISHAROON, Clerk of the
Board of Supervisors of the
County of San Bernardino, State
of California


Deputy

ORDINANCE

REGULATING THE USE AND CONSTRUCTION OF PUBLIC WASTEWATER FACILITIES

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ORDINANCE NO. SD 80-9

AN ORDINANCE OF NAMED SPECIAL DISTRICTS AND COUNTY SERVICE AREAS REGULATING THE CONSTRUCTION AND USE OF PUBLIC WASTEWATER FACILITIES.

The Board of Supervisors of the County of San Bernardino, State of California, acting in its capacity as the governing body of the Special Districts and County Service Areas named in Section 1.1 of this ordinance, all of which are located entirely within the boundaries of the County of San Bernardino, does ordain as follows:

SECTION 1.0 GENERAL PROVISIONS

1.1 - ORDINANCE IN FORCE — From and after the effective date of this ordinance, it shall be in full force and effect within the following Sanitation Districts and County Service Areas, including all Improvement Areas and Zones therein:

Lake Arrowhead Sanitation District
Crestline Sanitation District
County Service Area 42
County Service Area 48
County Service Area 53
County Service Area 56
County Service Area 63
County Service Area 64
County Service Area 70
County Service Area 72
County Service Area 79
County Service Area 82

1.2 - AUTHORITY — The County Service Areas named in Section 1.1 hereof were formed and presently exist pursuant to the provisions of the County Service Area Law, being Chapter 2.2 of Part 2 of Division 2 of Title 3 of the California Government Code, commencing with Section 25210.1 thereof. The sanitation districts named in Section 1.1 hereof were formed and presently exist pursuant to the provisions of the County Sanitation District Act, being Chapter 3 of Part 3 of Division 5 of the California Health and Safety Code, commencing with Section 4700 thereof.

1.3 - GENERAL STATEMENT OF POLICY — The general policy of the District is to acquire, maintain and operate adequate Wastewater Systems to serve the present needs of the District and to provide for future needs.

1.3.1 - ANNEXATIONS — Territory may be annexed to the District subject to such proceedings and conditions as may be imposed or permitted by applicable laws. Conditions to annexation may require the payment of fees and the transfer of facilities to the District or to other agencies.

1.3.2 - FEES — The Board may impose and collect fees and charges for services which the District renders or makes available.

1.3.3 - SALE OF BY-PRODUCTS — The District may sell or otherwise dispose of water, treated or reclaimed wastewater or any other by-product of District operations to private individuals, corporations, or public entities.

1.3.4 - NO LIABILITY — The District and its officers, agents and employees shall, to the extent permitted by law, incur no liability for actions taken to enforce any of the provisions of this ordinance.

1.4 - SCOPE — This is an ordinance regulating within the District boundaries the use and construction of public wastewater facilities, the installation and connection of building sewers, and the discharge of wastes into the public wastewater systems, and providing penalties for violation thereof, as ordained and enacted by the Board.

This ordinance supercedes and replaces all prior and existing ordinances, rules, resolutions, and schedules regulating the use and construction of public wastewater facilities and their appurtenances within the District to which this ordinance is applicable. Except as provided in Section 5.0 hereof, all such ordinances, rules, resolutions and schedules shall be, and the same are, hereby repealed and rescinded and made of no further force or effect.

1.5 - DEFINITIONS — The meaning of terms used in this ordinance shall be as defined in the Uniform Plumbing Code except as specifically modified herein, or as inconsistent with the definitions contained herein or with the context thereof. The following definitions shall prevail in the event of any inconsistency with or omission from the Uniform Plumbing Code definitions:

1.5.01 - APPLICANT — The person making application hereunder, who shall be the owner of the premises involved or his agent authorized as such in writing, or a plumber or contractor licensed as such by the State of California.

1.5.02 - BOARD — The Board of Supervisors of the County of San Bernardino, State of California, acting in its capacity as the governing body of the District.

1.5.03 - BUILDING SEWER — That portion of sewer from the building sewer drain to the public sewer, including the sewer lateral and the cleanout.

1.5.04 - COMMISSION — An Advisory Commission of the District appointed by the Board in accordance with its policies.

1.5.05 - CONTRACTOR — An individual, firm, corporation, partnership, or association duly licensed by the State of California to perform the type of work to be done under the permit, contract or agreement.

1.5.06 - COST — The cost of labor, material, transportation, supervision, engineering, and all other necessary overhead expenses.

1.5.07 - COUNTY — The County of San Bernardino, State of California.

1.5.08 - DISTRICT — Any County Service Area, Improvement Zone, or Sanitation District which has adopted this ordinance and for which the Board is the governing body. Also, textual reference to "The District," shall mean the County Service Area, Improvement Zone or Sanitation District which is administering or enforcing this ordinance.

1.5.09 - DISTRICT ENGINEER — The Engineer appointed by the Board to support the District.

1.5.10 - DISTRICT MANAGER — The person employed or appointed to act as manager for the District.

1.5.11 - EQUIVALENT DWELLING UNITS (EDU) — The number of equivalent dwelling units fixed and established for all the various classifications of types and uses of property by the Rules and Regulations of the District, as such classifications may be duly revised from time to time.

1.5.12 - FIXTURE UNIT EQUIVALENTS — The fixture unit equivalent prescribed by the Uniform Plumbing Code or substantially equivalent provisions in subsequent plumbing codes adopted by the Board.

1.5.13 - GARBAGE — Solid wastes from the preparation, cooking, and dispensing of food, and from the handling, storage and sale of produce.

1.5.14 - INSPECTOR — An authorized District representative who performs inspection duties.

1.5.15 - OWNER — The person or persons in whose name the legal title to property appears by deed duly recorded in the County Recorder's Office. Also, a person holding property pursuant to a Term Special Use or other permit issued by a governmental entity.

1.5.16 - PERMIT — Any written authorization required pursuant to this ordinance or any other rule or regulation of the Board.

1.5.17 - PERSON — One or more individuals of either sex, or a company or other legal entity, including the heirs, assigns and successors in interest thereof.

1.5.18 - PUBLIC SEWER — That portion of a sewer which is a common sewer owned or directly controlled by the District. It does not include any portion of a building sewer.

1.5.19 - SEWAGE — Any liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.

1.5.20 - SEWER SYSTEM — Integrated facilities for collecting, transporting, pumping, treating and disposing of sewage, which are owned or directly controlled by the District.

1.5.21 - SEWER — A pipe or conduit for carrying sewage.

1.5.22 - SPECIAL DISTRICTS DEPARTMENT — The department authorized by the Board to provide extended services to special districts functioning in the County.

1.5.23 - SPECIAL DISTRICTS DIRECTOR — The person appointed by the Board to act as Director for the Special Districts Department.

1.5.24 - UNIFORM PLUMBING CODE — The Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials and as adopted by the County as its plumbing code.

1.5.25 - USER — The person or persons owning or controlling property or improvements to which the sewer facilities of the District are connected or available.

1.5.26 - WASTEWATER FACILITIES — Any facility for the transportation, treatment, or disposal of sewage.

1.6 - PUBLIC SEWER REQUIREMENTS.

1.6.1 - USE OF PUBLIC SEWERS — Use of public sewers shall be as specified in General Regulations of the Uniform Plumbing Code and in the provisions of this ordinance and the rules and regulations adopted pursuant hereto.

1.6.2 - OCCUPANCY PROHIBITED — No building, industrial facility or other structure which is within District boundaries shall be occupied until the owner has complied with the provisions of this ordinance, all rules and regulations of the District, the Uniform Plumbing Code, and all other applicable County, State, or Federal requirements.

1.6.3 - SEWER CONNECTION REQUIRED — The owner of each house, building, or property within the District in which plumbing fixtures are installed and which abuts a street or easement in which there is located a public sewer, is required at the owner's expense to connect said house, building or property with said sewer, in accordance with the provisions of this ordinance and within the time specified in an official notice to connect, served on or provided to the owner by the District. This provision shall apply unless the nearest building of the affected property is more than two hundred (200) feet from said sewer.

1.6.4 - EXEMPTIONS — Notwithstanding Section 1.6.3 hereof, no connection to a sewer system shall be required where a waiver or exemption from such connection has been duly granted by the Special Districts Director pursuant to Section 1.12.10 of this Ordinance or by the executive officer or governing body of a regional water quality control board of the State of California pursuant to applicable law.

1.7 - PRIVATE SEWAGE DISPOSAL SYSTEM REQUIREMENTS — Where a public sewer is not available, or where connection to a public sewer is not required under the provisions of Section 1.6 hereof, the building sewer of each house, building or property within the District in which plumbing fixtures are installed shall be connected to a private sewage disposal system complying with the design policies and codes of the Department of Environmental Health Services, the provisions of the Uniform Plumbing Code and with all applicable County, State or Federal policies, procedures and requirements.

1.8 - BUILDING SEWER AND CONNECTION REQUIREMENTS.

1.8.01 - PERMIT — No person shall make a connection to any public sewer without first obtaining a written permit therefor from the District and paying all fees connected therewith. Application for a permit shall be made on a form furnished by the District. The permit application shall be accompanied or supplemented by such plans, specifications, and other pertinent information as may be required by the District Manager.

1.8.02 - INSPECTION — The building sewer and its connection to an existing sewer shall be inspected by the Inspector and if he finds it to be satisfactory, he shall affix an approval tag to the connection.

1.8.03 - RULES AND REGULATIONS — The Board may adopt rules and regulations with respect to building sewers and to sewer system connections, including but not limited to: permit, connection and inspection fees; procedures for installation; notices; testing; and other related matters.

1.8.04 - INDEPENDENT SYSTEMS — The sewage drainage system of each new building and of new work installed in any existing building shall be separate and independent from that of any other building and when feasible, every building shall have an independent connection with a public or private sewer.

1.8.05 - EXISTING BUILDING SEWERS — Existing building sewers may be used to connect new buildings to the sewer system only when they are found by the District to satisfy the District's then current specifications and construction methods. If an existing building sewer is not to be used after demolition of a building, the building sewer must be disconnected at the property line and the building sewer remaining between the property line and the public sewer must be capped at the property line. Disconnection and capping after demolition is subject to inspection and approval by the District.

1.8.06 - BACKWATER VALVE REQUIRED — The District may require the installation of an approved backwater valve as specified in the Uniform Plumbing Code or as deemed necessary by the District to protect the owner's property.

1.8.07 - GRAVITY FLOW NOT POSSIBLE — In all buildings in which any building sewer drain is too low to permit gravity flow to the public sewer, sewage carried by such building drain shall be discharged to the sewer system only by a means approved by the District and at the owner's expense.

1.8.08 - 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 sewer drain which in turn is connected directly or indirectly to a public sewer.

1.8.09 - SPECIAL CONNECTIONS — Swimming pools, spas and therapy pools may connect to the public sewer only pursuant to a special permit issued by the District. Building and Safety shall notify the District and assure that the owner has obtained a permit from the District prior to issuing a construction permit for the pool or spa. All such connections shall be inspected and approved by the District prior to use. Discharge into the public sewer from such facilities shall be made only at such times as may be specified by the special connection permit.

1.8.10 - AUTHORIZATION FOR CONNECTION — The connection of the building sewer to the public sewer shall conform to the requirements of the District, shall be under District jurisdiction, and shall be made only by an insured contractor or by the owner or by the owner's duly authorized agent.

If a sewer lateral is not available to the property, the District shall install a "wye" or "tee" and the contractor or owner shall then connect the building sewer to the "wye" or "tee." The District may charge a fee for the installation of the "wye" or "tee."

1.8.11 - BUILDING SEWER MAINTENANCE — The user shall bear the burden and all expenses related to maintenance and repair or replacement of the building sewer.

1.9 - PUBLIC SEWER CONSTRUCTION REQUIREMENTS.

1.9.01 - APPROVAL — No person shall construct or extend a public sewer without first obtaining written approval from the District and paying all fees connected therewith. This provision does not apply to the construction of sewers and appurtenances under contracts entered into with the District and on its account. Design and construction of a public sewer system or any portion thereof shall be in accordance with the Design Criteria and Technical Specifications of the District.

1.9.02 - BONDING OF IMPROVEMENTS — A Faithful Performance Bond, or a cash deposit, when required by Section 1.902.1 hereof or by other applicable law, shall be furnished by the owner to the District. The bond or deposit shall be for not less than one hundred ten (110) percent of the construction estimates as approved by the District Engineer and the District Manager and shall guarantee the completion of construction of those sewerage facilities proposed. The bond or deposit shall be accompanied by and shall secure the performance of an agreement to the same effect between the owner and the District. The bond and agreement shall bear the same date.

1.9.02.1 - WHEN REQUIRED — A performance bond or cash deposit will be required when any of the following conditions exist:

- (a) The owner or developer has requested a letter to be sent to the State Real Estate Commission for issuance of final real estate report.
- (b) Future improvements to the sewer system will be dependent on portions of the system for which the construction permit application has been made.
- (c) Completion of the proposed facilities is necessary to comply with or to avoid the violation of a law, regulation or order of a governmental agency of competent jurisdiction.

1.9.02.2 - BOND AND AGREEMENT FORMS — The bond and the agreement shall be in a form approved by the County Counsel.

1.9.03 - LIABILITY — The District and its officers, agents, independent contractors, consultants, 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 hold District and its officers, agents, independent contractors, consultants, and employees harmless from any liability imposed by law upon District or its officers, agents, independent contractors, consultants, or employees, including all costs, 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 or damage which may develop therein.

1.9.04 - FEASIBILITY OF SUBDIVISION SERVICE — An applicant or developer wishing to determine if sewer service is available and feasible for a subdivision within the District, shall furnish to the Special Districts Department tentative maps showing lot sizes, street layout, and elevations based upon USGS datum, proposed points of connection to the District's sewers, proposed pump stations and flow data based upon the design criteria of the District. Upon receipt of the appropriate fee as prescribed by the District rules and regulations, the District Engineer and Manager will review the map and the Special Districts Department will inform the applicant or developer by letter if sewer service is available and feasible and under what conditions, such as oversizing, buy in cost or modification of District facilities.

1.9.05 - PUBLIC SEWER EXTENSIONS — Public sewer extensions to serve one or more parcels of land may be made by and at the expense of the owner or owners of said land. The owner or his engineer shall follow the same procedure for public sewer extensions as are outlined in Section 1.9.04 hereof.

1.9.06 - PRIOR EXTENSION CONTRIBUTION — When an owner makes an application for sewer service to a lot, parcel, tract, or subdivision to which public sewers are already available, he shall pay to the District his proportionate share of the cost of said public sewer, to the extent that such payment has not already been made. Proportionate share shall be computed by the District from the actual cost to the District or other person making the original public sewer extension on the basis of front footage benefit accruing to the newly served property.

1.9.07 - COST OF OVERSIZED MAINS — The developer or applicant shall bear the cost of any oversizing of the main sewer lines for his property which may be deemed necessary by the District to serve present or future developments.

1.9.08 - REFUNDS — When public sewer extensions are made and paid for by a developer or applicant and such sewer extension may be of benefit to another person in the future, said developer or applicant may enter into a refund agreement with the district. Said refund agreement shall provide for refund payment from public sewer connection charges collected by the District from the new developer or applicant. The refund shall be computed on the basis of actual cost to the person making the original public sewer extension per front foot benefited or equivalent assessment as determined by the District. All refund agreements shall become null and void ten years from the date first written.

1.9.09 - PLANS AND SPECIFICATIONS — The applicant, his engineer or other person proposing the construction of a public sewer within the District, will prepare plans and specifications for construction of said sewer in accordance with the District's Design Criteria and Technical Specifications. Four (4) sets of plans and specifications, a subdivision map indicating sewer easements, and water system plans, where applicable, shall be submitted to the Special Districts Department for approval. This submittal will not relieve the applicant or other person constructing public sewer facilities from compliance with all other requirements imposed by Federal, State, County or local agencies.

1.9.10 - PLAN CHECK — The Special Districts Department will send two copies of the plans to the District Engineer and one copy to the District Manager. After consultation with the District Manager, the District Engineer will review the sewer plans for compliance with the District's requirements. The Special Districts Department will approve such plans provided the following conditions have been met:

1. The District Engineer has signed the plans certifying that they comply with District rules and regulations and/or standards for Design Criteria or both if applicable, and are in conformance with master sewerage plans for the area.
2. The District Manager has signed the plans certifying that he has reviewed the plans and agrees that the District can maintain the proposed system.
3. The applicant has paid the appropriate plan checking fee prescribed by the District Rules and Regulations.

1.9.11 - CONSTRUCTION — The applicant will construct facilities in accordance with the approved plans and specifications and construction methods as set forth by the District Rules and Regulations. After approval of construction plans and specifications, a five (5) working day advance notice to the District Engineer is required prior to the start of construction. All construction shall be performed by a contractor.

1.9.12 - INSPECTION — All construction work shall be inspected by an inspector to insure compliance with all requirements of the District. No construction shall be covered at any point until it has been inspected and accepted by the District Engineer. The costs of such inspection shall be prepaid to the Special Districts Department by the applicant in the form of inspection fees, the amount of which shall be prescribed by the rules and regulations of the District.

1.9.13 - ACCEPTANCE OF FACILITIES — Before the District will accept sewers and/or appurtenances into its maintained sewer system, the applicant shall provide to the District, at the applicant's expense, the following documents:

1. Recorded Notice of Completion and evidence that the sewer work has been paid for and completed.
2. One set of reproducible "as-built" plans (mylar or linen), plus five (5) sets of prints, which show exact locations, depths and descriptions of all facilities.
3. Original recorded easement documents for public sewers not in public property, public right-of-way, or not dedicated to appropriate public use by a recorded subdivision or tract map.
4. Original grant deed transferring to the District title to those facilities which are to become part of the public sewer.
5. District Engineer's signature on the as-builts certifying that facilities were installed according to plans and specifications.
6. Two operation and maintenance manuals for each pump station and unit of mechanical equipment.

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

1. Applicant shall prepare and obtain the execution of such documents conveying easements as may be needed for the construction and location of all public sewers which do not lie within public roads, are not shown on recorded tracts, land divisions, or are on private property. Required easements shall be delineated on the plans and the recorded data shall be shown on the "as-built" plans. The applicant shall submit duly executed documents to the Special Districts Department for acceptance and recording. All District sewer easements shall be at least ten feet in width unless otherwise approved by the District.
2. The District Engineer and District Manager shall review easement documents with descriptions as part of the plan review.
3. No structures or improvements will be allowed upon an easement dedicated to the District. The District will not be responsible for any damage to any such unauthorized structures or improvements.

1.10 - DISTRICT RULES AND REGULATIONS.

1.10.1 - PUBLIC SEWER SYSTEM USE — Rules and regulations as adopted by the Board shall: govern the quantity and quality of permissible discharges to the sewer

system; provide limitations and prohibitions as to specified wastes such as grease, oil and sand; require grease and sand interceptors and separators as specified in Sections 708, 710, 711, and 712 of the Uniform Plumbing Code (or as modified and superseded by the District's rules and regulations); govern maintenance of flow equalizing systems; regulate swimming pool discharges; and prescribe tests. The determination as to whether a discharge is permissible may require an acceptable analysis or test of the discharge as evidence that the discharged waste will not adversely affect the sewer system. The cost of any such analysis or test shall be borne by the user.

1.10.2 - SERVICE REFUSED — The District may refuse or terminate service for noncompliance with its ordinance or rules and regulations, including the nonpayment of fees.

1.11 - PERMIT AND FEE REQUIREMENTS.

1.11.1 - PERMIT — No person shall uncover, make any connection with or opening into, use, alter, or disturb any public sewer or perform any work on any public sewer without first obtaining a written permit or written authorization therefor from the District. This provision shall not apply to a duly authorized representative of the District.

1.11.2 - PERMIT PROCEDURE — The Board shall adopt procedures for application and approval of permits. Such procedures shall be contained in the rules and regulations of the District. Each permit shall specifically state the obligations, liabilities and responsibilities of the permittee, and the expiration date, if any, of the permit.

1.11.3 - DURATION OF PERMIT — Permits issued pursuant to this section shall expire at the time set by the rules and regulations of the District, not to exceed six (6) months, and shall then be of no further force or effect. Fees paid under any permit are not subject to refund or credit in the event that a permit expires without completion of its entitlement.

1.11.4 - STREET EXCAVATION PERMIT — A separate permit must be secured from the agency having jurisdiction over any public street or right-of-way in which an owner or contractor intends to make an alteration or excavation in carrying out any work authorized or required by the District.

1.11.5 - CONNECTION PERMIT — No sewer connection permit will be issued by the District until all fees related thereto have been paid and until the County Transportation Department Excavation Permit or State Highway Encroachment Permit, or both as required, are issued. A Connection Permit is authorization only to uncover and connect to the sewer lateral or to the "wye" or "tee" installed by the District. It is not authorization to uncover, disturb, or otherwise alter any portion of the public sewer.

1.11.6 - FEES — The Board shall by resolution prescribe and modify fees and charges for permits, construction, inspection, plan checking, feasibility studies, environmental reports, standby capacity, collection expenses, variances, connections, buy-in, use and availability of sewer facilities and for such other services as may be provided by the District. All annexations or new developments within the District shall pay all applicable fees as determined and prescribed by the District's rules and regulations. The fees and charges, as so prescribed and modified, are hereby deemed incorporated into the rules and regulations of the District.

1.12 - VIOLATION, ENFORCEMENT, AND POLICING.

1.12.01 - VIOLATIONS UNLAWFUL — It is unlawful for any person to connect, construct, install, provide, maintain, or use any other means of sewage disposal from any building in the area served by sewers of said District except as provided in this ordinance. Any person violating this provision shall be subject to the penalties provided by law.

1.12.02 - PROTECTION FROM DAMAGE — No person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the District sewer system. Any person violating this provision shall be subject to the penalties provided by law.

1.12.03 - INVESTIGATION POWERS — Each duly authorized employee and representative of the District shall carry evidence establishing his position as such 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, reinspection, observation, assurance, sampling, testing or otherwise performing such duties as may be necessary in the enforcement of the provisions of this ordinance and the rules and regulations of the District. If such entry is refused, the District shall have recourse to every remedy provided by law to secure entry. No person shall represent himself to be an employee or representative of the District except as authorized to do so by the District Manager.

1.12.04 - VIOLATION — Any person found to be violating any provision of this or any other ordinance, rule, or regulation of the District shall be served by the District with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. Said time limit shall be more than seven working days. The offender shall, within the period of time stated in such notice, permanently cease all violations. Whenever a violation creates an emergency or hazard, the notice of violation may be oral, followed by a written notice as soon as reasonably possible and may require immediate correction. Each person shall be held strictly responsible under the provisions of this or any other ordinance, rule or regulation of the District for his own acts and for any and all authorized acts of his agents or employees as well. Upon being notified by the District or authorized representative of any violation of this ordinance, the person having charge of the property, facility or work causing the violation shall immediately cease and desist from such violation and shall cause the commencement of such measures and procedures as may be necessary to correct the violation within the time specified by the District. If the violation or hazard is not ceased during the length of time specified, the District may cause the violation or hazard to be corrected and collect from the owner the cost thereof.

1.12.05 - PUBLIC NUISANCE — Continued habitation of any building or continued operation of any industrial facility in violation of the provisions of this or any other ordinance, rule or regulation of the District is hereby declared to be a public nuisance. The 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.

1.12.06 - DISCONNECTION — As an alternative method of civil enforcement of the provisions of this or any other ordinance, rule or regulation of the District, the District may disconnect the user from the public sewer. Upon disconnection, the District shall estimate the cost of disconnection from and reconnection to the sewer. The user shall deposit that amount with the District plus the full amount of any delinquent fees and charges before such user is reconnected to the sewer. The District shall refund or credit any part of such deposit remaining after payment of all costs of disconnection and reconnection and shall bill the user for any related costs in excess of the deposit. Notice of intent to disconnect shall be provided pursuant to Section 1.12.04 hereof, and neither the District or any of its employees or agents shall be held accountable for any damage which may occur to person or property during or because of disconnection.

1.12.07 - ABATEMENT — During any period of disconnection from an authorized sewage disposal system, habitation of affected premises by humans shall constitute a public nuisance, whereupon the District shall cause proceedings to be brought for the abatement of such nuisance. This provision shall not apply to any premises which are not required by this ordinance to be connected to a sewage disposal system. In the event such proceedings are brought and as a condition to authorizing connection or reconnection, the owner or user shall pay to the District reasonable attorney fees and the costs associated with said proceedings.

1.12.08 - LIABILITY FOR VIOLATION — Any person violating any of the provisions of any ordinance, rule or regulation of the District shall be liable to the District for all expense, loss and damage accruing to the District by reason of such violation. This provision may be enforced in addition to any other remedy provided by law to the District because of such violation.

1.12.09 - CIVIL ENFORCEMENT ONLY — The District hereby declares that the foregoing procedures are established as a means of civil enforcement of the terms and conditions of its ordinances, rules or regulations, and not to effect a forfeiture.

1.12.10 - VARIANCE — When any person, by reason of special circumstances, is of the opinion that a variance is necessary or that any provision of any ordinance, rule, or regulation of the District is unjust or inequitable as applied to his facilities or property, and that such special circumstances make his facilities or property different from any other properties which are subject to the provision complained of, that person may make written application to the Director, Special Districts Department, stating the special circumstances, citing the provision complained of, and requesting suspension or modification of that provision as applied to his facilities or property. If the Special Districts Director makes findings in accord with the required allegations of the application, he may suspend or modify the provision complained of, as applied to such facilities or property, to be effective as of the date of the application and continuing to a specified date or during the period of the special circumstances, as limited by Section 1.12.12 hereof. All persons found to be in such special circumstances shall be treated equally upon application for a suspension or modification hereunder. Any affected person may appeal the decision to the Administrator, Environmental Public Works Agency, and thence to the Board, if such person is in disagreement with the decision of the Administrator. The decision of the Board shall be final for all purposes.

1.12.11 - RELIEF ON OWN MOTION — The Board may, on its own motion after making the requisite findings, determine that by reason of special circumstances a provision of a District ordinance, rule or regulation should be suspended or modified as applied to a particular facility or property, and may by resolution so suspend or modify such provision for a specified period or during the period of special circumstances as limited by Section 1.12.12 hereof.

1.12.12 - VARIANCE LIMITATIONS — No variance granted pursuant to Sections 1.12.10 or 1.12.11 shall be valid for a period in excess of five years, nor shall any such variance modify a fee established by the District.

1.13 - PENALTIES AND USE OF CITATION.

1.13.1 - GENERAL PENALTY FOR VIOLATION — Any person violating any of the provisions of this ordinance and failing to correct such violation within the time allowed therefor, shall be guilty of a misdemeanor. Any person convicted of a violation of any provision of this ordinance, unless otherwise specifically provided in this ordinance, shall be punishable by a fine of not more than five hundred dollars (\$500.00) or by imprisonment in the County Jail for a period of not more than six (6) months, or by both such fine and imprisonment.

1.13.2 - CONTINUING VIOLATIONS — Each person who violates any provision of this ordinance shall be guilty of a separate offense for each and every day during any portion of which such violation is committed, continued, or permitted by such person and shall be punished accordingly.

1.13.3 - ACTS INCLUDING CAUSING, AIDING AND ABETTING — Whenever in this ordinance any act or omission is made unlawful, it shall also be unlawful to cause, permit, aid or abet such act or omission, and shall be punishable in the same manner as is the principal act or omission.

1.13.4 - AUTHORIZATION TO ARREST — Pursuant to the provisions of Section 833.6 of the Penal Code, the District Manager and any Inspector are hereby authorized to arrest any person who violates any provision of this ordinance in the presence of such officer, and to issue notices to appear pursuant to Section 1.13.5 hereof in connection with any arrest authorized hereby.

1.13.5 - USE OF CITATION —

a. If any person is arrested for a violation of any provision of this ordinance, the violation of which is herein declared to be punishable as a misdemeanor, and such person is not immediately taken before a magistrate, as more fully set forth in the Penal Code of the State 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.

b. The time specified in the notice to appear must be at least five (5) days after such arrest.

c. 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.

d. 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 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.

e. 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 of 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 1464 of the Penal Code.

f. No warrant shall be issued 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, or appear for arraignment, trial or judgment, or to comply with the terms and provisions of the judgment, as required by law.

g. 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 (20) days after his failure to appear as promised.

h. 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.

SECTION 2.0

CRITERIA FOR DESIGN OF SEWERS, SEWAGE LIFT STATIONS, AND APPURTENANCES

The necessary criteria, standard drawings, design criteria, and technical specifications for public sewers, sewage lift stations, and appurtenances shall be adopted by resolution of the Board of Supervisors from time to time as necessity dictates. A copy of each current resolution as adopted shall be on file in the office of the District and in the office of the Clerk of the Board and shall be available in each office for public inspection.

SECTION 3.0

STANDARD FORMS AND DOCUMENTS

Standard forms and documents for use in the business and activity of the District may be approved by the Special Districts Department as necessity dictates, and a copy of each approved form and document shall be on file in the office of the District and at the Special Districts Department, and shall be available for public inspection.

SECTION 4.0 VALIDITY

This ordinance and the various parts, sentences, paragraphs, sections, and clauses hereof are hereby declared to be severable. If any such part, sentence, paragraph, section, or clause is adjudged unconstitutional or invalid, the remainder of this ordinance shall not be affected thereby. The Board hereby declares that it would have passed this ordinance and each part hereof regardless of the fact that one or more parts hereof might be declared unconstitutional or invalid.

SECTION 5.0

INTERIM RULE VALIDITY

Notwithstanding, any express or implied provision of this ordinance to the contrary, the rules, resolutions, and schedules of fees and charges which are in effect in and for the District when this ordinance becomes operative shall remain in full force and effect until specifically replaced or re-enacted by the Board. Insofar as practicable, where such existing rules, resolutions and schedules make reference to a provision of an ordinance, rule, resolution or schedule which has been superseded by this ordinance, such reference shall be deemed to be made to the provision of this ordinance which has substantial equivalency.

SECTION 6.0 PUBLICATION

This ordinance shall take effect thirty (30) days after the date of its adoption (and prior to the expiration of fifteen (15) days from its passage shall be published once in the San Bernardino Sun, a newspaper of general circulation, printed and published in the County of San Bernardino, State of California, together with the names of the members of the Board voting for and against the same).

JAMES L. MAYFIELD, Chairman
Board of Supervisors

ATTEST:

ANDREE DISHAROON, Clerk of
the Board of Supervisors

STATE OF CALIFORNIA }
COUNTY OF SAN BERNARDINO } ss.

I, ANDREE DISHAROON, Clerk of the Board of Supervisors of the County of San Bernardino, State of California, hereby certify that at a regular meeting of the Board of Supervisors of said County and State, held on the 1st day of December, 1980, at which meeting were present Supervisors James L. Mayfield, Chairman; Cal McElwain; Dennis Hansberger; Robert O. Townsend; Bob Hammock; and the Clerk, the foregoing ordinance was passed and adopted by the following vote, to wit:

AYES: Supervisors McElwain, Hansberger, Townsend, Hammock, Mayfield.

NOES: None.

ABSENT: None.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Board of Supervisors this 1st day of December, 1980.

ANDREE DISHAROON,
Clerk of the Board of Supervisors
of the County of San Bernardino,
State of California.

APPENDIX D: STANDARDS FOR SANITARY SEWERS



**COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT**



STANDARDS FOR SANITARY SEWER

**DIVISION "C"
DESIGN CRITERIA AND PLAN PREPARATION**

**DIVISION "D"
GENERAL CONDITIONS
TECHNICAL SPECIFICATIONS**

**DIVISION "E"
STANDARD DRAWINGS**

November 13, 2012

COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT

STANDARDS FOR
SANITARY SEWERS

BOARD OF SUPERVISORS

Gary Ovitt, Chairman
Brad Mitzelfelt
Josie Gonzales
Neil Derry
Paul Biane

SPECIAL DISTRICTS DEPARTMENT

Review by Special Districts
Department of the Environmental
Improvement Agency, County of
San Bernardino

Board of Supervisors

Special Districts Department

Approved as to form this _____ day of _____, 2009

County Counsel _____
Deputy County Counsel

August 13, 2012

COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT

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DESIGN CRITERIA AND
PLAN PREPARATION SEWERS

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COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT

DESIGN CRITERIA AND PLAN PREPARATION SEWERS

The following requirements pertain to the design and preparation of plans for construction of the various components to the sewerage system.

1.1 GENERAL

1.1.01 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.** All additions to the District's system shall be plan checked and inspected by the District.

1.1.02 Design Competence. - All District facilities shall be designed by professional engineers according to accepted practice in the sewerage field. The design engineer shall arrange for a pre-design meeting with the District Engineer to review the proposed project.

1.1.03 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.

1.1.04 Legal Access. - Each lot to be served by sewer shall abut a public street or sewer, shall abut a public street or recorded easement containing a sewer, or be provided with permanent legal access to such a sewer. The easement shall be clear of permanent structures, such as building eaves, roof lines, and large trees. Temporary construction easements of adequate size shall also be provided. The location of the street, easement, or legal access shall permit gravity flow from the lot to the sewer main. Deviations from any of the criteria adopted herein may be permitted upon written request to and approval by the District.

1.2 SEWERS AND APPURTENANCES.

1.2.01 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 flow per capita for the various geographical areas 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	2.0
15	1.9
30	1.8

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

1.2.02 Formula. - Capacity of all sewers shall be determined by the use of the "Mannings" formula:

$$Q = A \frac{1,486}{n} r^{2/3} s^{1/2}$$

where: Q = flow capacity - cfs
n = coefficient of roughness 0.013
r = hydraulic radius
s = slope
A = cross sectional area

1.2.03 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.

1.2.04 Pipe Size. - All gravity feed sewer pipe up to and including eight (8) inch diameter shall be sized to carry the peak flow when fifty percent (50%) full. This requirement shall apply regardless of the cross section shape of the sewer. All larger sewer pipe, except those designed as laterals, shall be sized to carry the peak flow when seventy-five (75%) full. This requirement shall apply regardless of the cross-section of the sewer. No sewer main with an internal diameter less than eight (8) inches shall be installed without prior written approval of the District.

1.2.05 Sewer Slopes and Velocities. - The minimum allowable slope is that which will give a velocity of not less than two (2) feet per second when the sewer is flowing fifty percent (50%) 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 "Mannings Formula."

$$V = \frac{1,486}{n} r^{2/3} s^{1/2}$$

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).

1.2.06 Minimum Slopes. - The minimum slopes to be used with various pipe sizes are listed herein and shall be used when necessary to prevent long reaches of deep sewer mains. The design engineer shall strive for minimum slopes of 0.008 to 0.01 feet per foot in order to maintain a cleaning velocity.

Diameter inches	Minimum 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

1.2.07 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 in Section 1.2.06 hereof may be

required where the presence of hydrogen sulfide may be detrimental to and affect the life of the sewer pipe being used.

1.2.08 Slopes in Force Mains. - In force mains a continuous uphill slope shall be provided from the sources to the outlet. Combination air and vacuum valves shall be provided where high points cannot be avoided.

1.2.09 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, and the services shall be extended according the Standard Drawings No. E-9 and E-10.

1.2.10 Curved Sewers. - Curvilinear vertical and horizontal alignment on sewer mains for new developments shall be avoided unless approved by the District review. If curvilinear sewers are permitted the following conditions must be met:

- (a) No more than one (1) horizontal circular curve and one (1) vertical curve shall be permitted between any two (2) manholes. The curve may be a combination horizontal and vertical, but in no instance may there be more than one (1) vertical and one (1) horizontal curve between two (2) manholes.
- (b) At least one (1) end of the curve shall terminate in a manhole.
- (c) No sewer on a curvilinear alignment shall be less than eight (8) inch diameter.
- (d) The radius of curvature is not less than one hundred and twenty-five (125) feet. A shorter radius of curvature may be used upon approval of the District, where shorter than normal depth pipe is used.
- (e) The deflection of joints shall not exceed that recommended by the pipe manufacturer.

1.2.11 Sewer Under Structures. - No main sewer shall be located beneath a structure except as approved in writing by the District

1.2.12 Structural Integrity. - Provisions shall be made in all cases to preserve the structural integrity of the pipes, conduits, or structures affected.

1.2.13 Depth of Sewer. - Permission from the District must be obtained if the following minimum depths may not 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): 4 feet

In recorded easements, not subject to vehicular traffic...3 feet

Stream crossing: Standard drawings: No. E-13.

1.2.14 Sewer laterals. - A sewer lateral serving a single Family dwelling or equivalent shall be at least four inches in diameter, if the length of the lateral is one hundred feet or longer, a minimum of six inch diameter will be required. Sewer laterals shall conform to Section 3.15 of the Technical Specifications and Standard Drawings: E-9 Thu. E- 13 and Section 3.15 of the Technical Specifications. Sewer laterals in waterways, easements, and deep cuts should have the house service brought to a minimum depth of five (5) feet.

1.2.15 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 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, cutoff walls (Standard Drawing No. E-20), special backfill materials (soil cement), and special erosion - control facilities may be required.

1.2.16 Clearance From Other Utilities. - Special care shall be exercised in locating sewer lines near other utilities, especially water lines. Sewer lines shall, wherever possible, be located three (3) feet below water lines and where parallel installations occur, a ten (10) foot horizontal separation shall be maintained. Separations and special construction shall conform to Standard Drawing No. E-1.

1.2.17 Use of Asbestos- Cement Sewer Pipes. Due to the carcinogenic properties of asbestos fibers. Asbestos Cement pipe shall not be used in sanitary sewer systems.

1.3 OVERSIZING 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 "Computer peak flow" shall be used as the basis of design. The District shall pay for any resulting increase in size or depth according to Section 1.9.07 of the District's Ordinance.

1.4 MANHOLES AND CLEANOUTS.

1.4.0 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 three hundred (300) feet. Good judgment should be used in placing intermediate man hole at points of probable sewer intersections, at beginning or end of curves, or lacking other reasons, at approximately equal intervals. In general, the space between Manholes is a maximum of three hundred (300) feet... In areas where slopes equal or exceed twenty five percent (25%) manhole spacing shall not exceed one hundred (100) feet. Good judgment should be used in the location of manholes along water courses. Manholes should not be placed directly in the water courses. Manholes can be either coated concrete or polymer based structures and shall conform to Standard Drawing No. E-2 thru E-6.

1.4.02 Shallow Manholes. - Manholes three (3) feet or less in depth above the shelf shall be of special design.

1.4.03 Cleanouts. - Dead-end sewers not over one hundred and seventy-five (175) feet in length shall terminate in standard manholes or cleanouts. Cleanouts shall be brought to ground surface in a long radius or two (2) forty-five degree (45) angles with a full sewer diameter opening. Cast iron frame and cover shall be provided. Dead ends over one hundred and seventy-five (175) feet shall terminate in standard manholes unless future extension of said dead end will include a manhole within three hundred and fifty (350) feet, in which case a temporary cleanout is permitted. Cleanouts shall conform to Standard Drawing No. E-14 and E-15 and Section 4.0 of the Technical Specifications.

1.4.03.1 Abandoning Existing Sewer Stub- Existing sewer stubs to be abandoned shall be approved by District Engineer.

1.4.03.2 Grease Interceptor- A Grease interceptor shall be required for any business having the potential of producing grease. Size of the interceptor will be approved by the District Engineer.

1.4.03.3 Oil/Sand Interceptor- An oil/sand interceptor shall be installed for any business having the potential of producing oil and sand waste. Size of interceptor shall be approved by the District Engineer.

1.4.04 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 No. E-4 and Section 4.0 of the Technical Specifications.

1.4.05 Manhole Trap. - A special type manhole trap may be required to provide a means to prevent debris from clogging the sewer. The manhole trap shall conform to Section 4.0 of the Technical Specifications.

1.4.06 Frame and Covers. - All manholes and cleanouts, except the manhole trap in 1.4.05, shall have cast iron frames and covers. All frame and covers shall be provided with stainless steel fasteners recessed into the cover for locking the cover in place. The tap shall be drilled through the frame for easy cleaning. In no case shall the diameter of a manhole be less than twenty four (24) inches, inside diameter.

1.5 SEWAGE LIFT STATIONS.

1.5.01 General. - Sewage lift stations shall only be utilized where it is impossible to provide gravity flow to interceptor sewers, or other portions of the collection system. The use of sewage lift stations to provide service to ten (10) or fewer lots or parcels of land will not be permitted. The use of underground, factory built units is desired; below ground use of reinforced concrete construction 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 to 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, an alternate flow path shall be provided for wet well maintenance.

1.5.02 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 oversizing of such facilities and provide 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.

1.5.03 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. Capacity of the generator shall be sufficient to handle peak flows.

1.5.04 Pumps and Motors. - At least two (2) pumps or sewage ejectors shall be provided at each lift station. Pump or discharge shall be no less than four (4) 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 seventeen hundred and sixty (1,760) rpm, and the pump shaft shall not be supported by the motor shaft.

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.

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

1.5.05 Structure. - The wet well or manhole shall be completely separated from the main sewage lift station structure. The sewage lift station structure shall be designed by qualified engineers. Provisions within this structure shall be made to facilitate removing of pumps, motors and other equipment. Suitable stairways or ladders 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.

1.5.06 Electrical Equipment.

(a) All electrical starters, switches, lights, motors, fixtures, controllers and instruments shall be enclosed and constructed in accordance with the National Board of Fire Underwriter's Specifications to meet the hazardous conditions anticipated. The Health and Safety Code of the State of California shall also be met.

(b) All starters shall be of the magnetic type and shall be provided with hand, off or, automatic (HOA) selector switches.

(c) The motor starters shall be operated automatically from a wet well liquid level control. Controls of the sonic level type are required.

(d) Standby equipment shall be started automatically upon power failure.

1.5.07 Miscellaneous Requirements.

(a) Adequate ventilation shall be provided for all pump stations. Where the pump pit is below the ground surface, mechanical ventilation is required to effectively ventilate the dry well and also the wet well if screens or mechanical equipment requiring maintenance or inspection are located in the wet well. The ventilation equipment should have a minimum capacity of six (6) turnovers per hour under continuous operation. With intermittent operation, a two (2) minute turnover should be provided. Equipment shall start automatically with door opening.

(b) 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.

(c) An air compressor, to inject air into the force main, may be required by the District, depending upon an analysis of possible sulfide conditions.

(d) Steel fabricated, factory units shall be provided with some means of cathodic protection.

(e) A high water alarm circuit shall be provided to permit transmission of high water level indication over leased telephone lines. The circuits shall be complete to and including terminal point for leased lines at station. A local alarm light and or horn may be required by the District.

(f) An electric dehumidifier shall be provided, which is to operate on a refrigeration cycle and is automatically controlled by and adjustable humidistat, and has a thermostatically controlled heater to complement the dehumidifier.

1.6 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.

1.6.01 - Drawings shall be ink on mylar, sheet size shall be 36-inch by 24-inch with standard District title block. FINAL drawings shall be placed in AutoCAD electronic format, copied and given to the District for archiving.

1.6.02 - The General Notes shall appear once on the first plan and profile sheet. All required certifications and approvals also appear on the first sheet.

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

1.6.04 - Each sheet shall have a "North" arrow, where applicable.

1.6.05 - A key map having a scale of 1 inch = 500 feet 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.

1.6.06 - Plan and profile sheets shall have a scale of 1 inch = 40 feet horizontal and 1 inch = 4 feet vertical. Or 1 inch = 50 feet horizontal and 1 inch = 5 feet vertical. Double plan and profile sheets may be used.

1.6.07 - At least one (1) bench mark shall be shown and/or described on each sheet.

1.6.08 - 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 and proposed finished 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 of bored casings; and any other information pertinent and necessary to the proper construction and recordation of the sewers.

1.6.09 - The plans shall show the tract and lot numbers of all property adjacent to the sewer to be constructed.

1.6.10 - The plans shall 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.

1.6.11 - The plans shall show exact location of proposed house connections.

1.6.12 - The plans shall show exact location of all structures within twenty (20) feet of the sewer centerline and shall show all water wells within fifty (50) feet of the sewer centerline.

1.7 TECHNICAL SPECIFICATIONS.

The District's Technical Specifications shall be utilized in the design of sewer facilities. Technical Specifications are in Division "D" of the District's adopted policies.

1.8 STANDARD DRAWINGS.

The District's Standard Drawings shall be utilized in the design of sewer facilities. Standard Drawings are shown in Division "E" of the District's adopted policies.

COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT

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SPECIAL DISTRICTS DEPARTMENT

GENERAL CONDITIONS

1.0 DEFINITIONS.

Whenever any word or expression defined in this section, or pronoun used in its stead, occurs in these Contractual Documents, it shall have, and is mutually agreed to have, the following meaning:

ABANDONMENT - A procedure whereby a structure or facility is left "as is" and not utilized for the purpose intended.

ADDENDA - Additions to the Contractual Documents

ADDENDUM - An addition to the Contractual Documents.

AGREEMENT, CONTRACT - These words are used synonymously to indicate a document expressing the terms under which "The Work" will be accomplished and remuneration will be made, that is in concurrence with all parties concerned.

ARCHITECT - Where "Engineer" is used in these specifications, it shall also mean Architect.

ASSIGN - To transfer.

BID, PROPOSAL - These words are used synonymously to indicate the document that states the conditions under which a contractor will accomplish "The Work"

CITY STREET - A secondary roadway for vehicular traffic, other than a County road or State highway.

CONDEMNED MATERIAL - Those items of material that are unfit for use or service.

CONTRACT - See "AGREEMENT."

CONTRACTOR - The party entering into an agreement with the Owner, who will accomplish "The Work" stipulated in the Contract.

CONTRACTUAL DOCUMENTS - The documents of or pertaining to the Contract, such as: Specifications, Bonds, Addenda, Drawings, and the Agreement.

CONTRACTUAL DRAWINGS - The Drawings of or pertaining to the Contract.

COUNTY ROAD - A primary or secondary roadway for vehicular traffic that is under the jurisdiction of and maintained by the County government within which it lies.

DISTRICT - The political subdivision which "The Work" is to be accomplished. Sometimes used synonymously with "Owner" and "Local Public Agency"

EMERGENCY - That period of time when action is imperative and where the normal channels of procedure could cause delay, thereby creating a condition of danger to life or property.

ENGINEER - That person or firm that represents the Owner on engineering matters related to "The Work." The Engineer shall be the supervisor and direct the construction of "The Work" under the Contract.

GUARANTEE - Giving security for the carrying out of assurances.

GUARANTY - A bond or security given to guarantee fulfillment of an obligation.

INSPECTOR - Personnel appointed by the Engineer to inspect construction of "The Work" for engineering and technical completeness. An inspector shall be limited to the particular duties entrusted to him.

LOCAL PUBLIC AGENCY - Generally, an organization established for the benefit of community betterment, sometimes used synonymously with "Owner" and "District."

OR EQUAL - Where used with brand names or specific manufactured products, shall mean the named commodity is a standard of quality. Items of equal quality may be substituted. However, the decision as to what constitutes "or equal" is the responsibility of the Engineer. Approval in writing from the Engineer must be obtained prior to making any substitutions.

OWNER - The person, group, political or governmental body for whom "The Work" is to be accomplished. Sometimes used synonymously with "District" or "Local Public Agency."

PROJECT AREA - The real extent within which "The Work" will be accomplished.

SPECIAL DISTRICTS DEPARTMENT - A division of County government responsible for the administration of County Special Districts.

SPECIFICATIONS - Portions of the Contractual Documents delineating descriptions, particulars and terms of the Contract as well as details for completeness of "The Work" not shown on the Contractual Drawings.

SUBCONTRACTOR - A contractor to whom the Contractor has assigned a portion of "The Work" for completion.

SURETY - The security for payment or for the performance of work, and the company or organization that underwrites such bonds or security.

SUPERINTENDENT - Any authorized representative designated in writing by the Contractor, who shall have the authority to represent and act for the Contractor.

SUPERINTENDENT OF STREETS, DISTRICTS OR SEWERS

- The title, "Superintendent," when followed by Streets, Districts, etc., shall designate the duly authorized person who can act for the Owner.

THE CONTRACT - That agreement or contract that relates particularly with "The Work" described in these Contractual Documents.

THE WORK - That which is to be accomplished by the Contractor to make the contents of the Contractual Documents a reality.

WRITTEN NOTICE SERVED - When written instruments have been delivered in person by the originator's courier, or posted to the U.S. Mail by Certified Mail.

2.0 BONDS

2.1 FAITHFUL PERFORMANCE BOND.

As a part of the execution of this Contract, the Contractor shall furnish a bond of a surety company acceptable to the Owner conditioned upon the faithful performance of all covenants and stipulations under this Contract. The amount of the bond shall be one hundred percent (100%) of the total Contract price, as this sum is set forth in the agreement.

2.2 MATERIAL AND LABOR BOND.

As a part of the execution of this Contract, the Contractor shall furnish a bond of a surety company acceptable to the Owner in a sum not less than one hundred percent (100%) of the total Contract price as this sum is set forth in the agreement, for the payment in full of all person, companies, or corporations who perform labor upon or furnish materials to be used in the work under this Contract, in accordance with the provisions of Sections 4200 to 4208, inclusive (Chapter 2, Division 5), of the Governmental Code of the State of California, and any acts amendatory thereof.

2.3 BIDDER'S GUARANTY.

All bids shall be accompanied by cash, cashier's check, certified check or bidder's bond, made payable to the Owner for an amount equal to at least ten percent (10%) of the amount of the bid.

2.4 NOTIFICATION OF SURETY COMPANIES.

The surety companies shall familiarize themselves with all of the conditions and provisions of this Contract, and they shall waive the right of special notification of any change or modification of this Contract or of extension of time, or of decreased or increased work, or of the cancellation of the Contract, or of any other act or acts by the Owner or its authorized agents under the terms of this Contract; and failure to so notify the aforesaid surety companies of such changes shall in no way relieve the surety companies of their obligation under this Contract.

2.5 SPECIAL BONDS.

Where the Owner may require special bonds because of the nature of the work, the method of financing, or special legal requirements, they are described in the "Special Conditions" of these specifications.

3.0 INSURANCE.

3.1 PUBLIC AND AUTOMOBILE LIABILITY AND PROPERTY DAMAGE INSURANCE.

The Contractor shall maintain and furnish the County with evidence of insurance of combined single limit liability insurance covering bodily injury and property damage in an amount not less than \$1,000,000 or the equivalent thereof. Said insurance must contain an endorsement that; County of San Bernardino, San Bernardino County Flood Control District and all Board-governed Special District are named as additional insured's. Said Automobile and Public Liability insurance and property damage shall be maintained by the Contractor in full force and effect during the entire period of performance under this contract.

3.2 BUILDER'S RISK "ALL-RISK" INSURANCE.

Before commencement of the work, the Contractor will submit written evidence that he has obtained for the period of the Contract, Builder's Risk "All-Risk" Completed Value Insurance Coverage, including earthquake, upon the entire project which is the subject of this Contract and including completed work and work in progress. Such insurance shall include as Additional Named Insured's: the Owner; the Engineer and his consultants; and each of their officers, employees and agents; and any other persons with an insurable interest designated by the Owner as an Additional Named Insured.

Such insurance may have a deductible clause but not to exceed \$1,000.00 on general coverage and a deductible clause not to exceed \$5,000.00 on earthquake and flood coverage.

3.3 WORKER'S COMPENSATION INSURANCE.

The Contractor shall maintain adequate Worker's Compensation Insurance under the laws of the State of California for all labor employed by him or by any subcontractor under him who may come within the protection of such Worker's Compensation laws of the State of California, and shall provide, where practicable, employer's general liability insurance for the benefit of his employees and the employees of any subcontractor under him, not protected by such compensation laws, and proof of such insurance satisfactory to the owner shall be given by filing certificates of such insurance with the Owner in form satisfactory to said owner. If such insurance is underwritten by any agency other than the State Compensation Fund, such agency shall be a company authorized to do business in the State of California.

3.4 LIMIT OF LIABILITY.

Nothing herein contained shall be construed as limiting in any way the extent to which the Contractor may be held responsible for payment of damages to persons or property resulting from his operations or the operations of any subcontractor under him.

3.5 CANCELLATION OF INSURANCE.

Each of the policies of insurance provided for in the sections above shall contain a clause substantially in the following words:

It is hereby understood and agreed that this policy may not be canceled nor the amount of the coverage thereof be reduced until thirty (30) days after receipt by the Owner of a WRITTEN NOTICE of such cancellation or reduction in coverage, as evidenced by receipt of a registered letter.

3.6 EVIDENCE AND PAYMENT OF INSURANCE.

The Contractor shall at the time of the execution of the Contract present the original policies of insurance required or present a certificate of an insurance company showing the issuance of such insurance. No work shall begin until the certificates are delivered to and approved by the Owner.

The payments for all insurance policies shall be borne by the Contractor and shall be included in the bid and/or Contract amount.

3.7 ADDITIONAL INSURANCE.

The Contractor's attention is directed to the "Special Conditions" of these specifications for additions or modifications to the insurance requirements of this section.

4.0 PERMITS AND LAW OBSERVANCES.

4.1 PERMITS.

The Owner will obtain and pay for building, plumbing, electrical, encroachment and other permits necessary for the construction of the work herein set forth. The Contractor shall obtain and pay for all licenses required by cities, County of San Bernardino, or State laws.

The Contractor doing the work shall be licensed in California in accordance with appropriate classifications listed in the latest addition of "CONTRACTOR'S LICENSE LAW AND REFERENCE BOOK."

4.2 REGULATIONS.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the Drawings and Specifications are at variance therewith, he shall promptly notify the Engineer in writing and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

4.3 OBSERVANCE OF LABOR CODE AND OTHER LAWS.

The Contractor shall inform himself as to Sections 1735, 1771, 1773, 1774, 1775, 1776, 1777, 1777.5, 1777.6, 1810, 1812, 1813, 1814, 1815, 1816, and 1850 of the Labor Code of the State of California, and shall comply with these and with all other applicable laws. In accordance with Section 1770 of the Labor Code, the Owner has ascertained the prevailing wages applicable to the work to be done as set forth in these Specifications.

5.0 ASSIGNMENTS, SUBCONTRACTS.

5.1 ASSIGNMENT.

The Contractor shall not assign, transfer, convey or otherwise dispose of this Contract, or of his right, title or interest in or to the same or any part thereof, without the previous consent in writing of the Owner: and he shall not assign by power of attorney, or otherwise, any of the moneys to become due and payable under the Contract, unless by and with the like consent signified in like manner. If the Contractor shall, without such previous consent, assign, transfer, convey or otherwise dispose of the Contract, or of his right, title, or interest therein, or any of the moneys to become due under the Contract to any other person, company, or other corporation, the Contract may, at the option of the Owner, be terminated and revoked, and the Owner shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the Contractor, and to his assignee or transferee. No right under the Contract, nor any right to any money to become due hereunder, shall be asserted against the Owner in the law or equity by reason of any so-called assignment of the Contract, or any part thereof, or by reason of the assignment of any moneys to become due hereunder, unless authorized as aforesaid by the written consent of the owner.

5.2 LIMITATIONS CONCERNING SUBCONTRACTORS.

(a) Reference is hereby made to the provisions of Chapter 2 of Division 5, Title 1 of the Government Code of the State of California (commencing at Section 4100), which are incorporated herein and made a part hereof by reference.

(b) A copy of each subcontract, if in writing, or if not in writing, then a written statement signed by the Contractor, giving the name of the subcontractor, and the terms and conditions of such subcontract shall be filed with the Engineer before the subcontractor begins work. Each subcontract shall contain a reference to the Agreement between the Owner and the Contractor, and the terms of that Agreement and all parts thereof shall be made a part of such subcontract insofar as applicable to the work covered thereby. Each subcontract shall provide for its annulment by the Contractor at the order of the Engineer, if, in the Engineer's opinion, the subcontractor fails to comply with the requirements of the principal Contract insofar as the same may be applicable to the work. Nothing herein contained shall create any contractual relation between any subcontractor of any liability or obligation hereunder.

(c) The Contractor hereby agrees to reimburse the District for costs incurred by the awarding authority in the substitution of subcontractors. Where a hearing is held pursuant to the provisions of Chapter 2, Division 5, Title 1, of the Government Code (commencing with Section 4100) by the awarding authority or a duly appointed hearing officer, the Clerk of the Board of Supervisors shall prepare and certify a statement of all costs incurred by the District for investigation and conduct of the hearing, including the costs of any hearing officer or shorthand reporter.

The statement shall then be sent to the General Contractor who shall reimburse the District for such costs. If not paid separately, such reimbursement may be deducted from any money due and owing the General Contractor prior to the acceptance of the project.

6.0 RESPONSIBILITIES AND RIGHTS OF THE CONTRACTOR

6.1 LEGAL ADDRESS OF CONTRACTOR.

Both the address given in the proposal and the Contractor's office in the vicinity of the work are hereby designated as places to either of which drawings, samples, notices, letters, or other articles of communication to the Contractor may be mailed or delivered. The delivery at either of these places of any such thing from the Owner or its agents to the Contractor shall be deemed sufficient service thereof upon the Contractor, and the date of such service shall be the date of such delivery. The address named in proposal may be changed at any time by notice in writing from the Contractor to the Owner. Nothing herein contained shall be deemed to preclude or render inoperative the service of any drawing, sample, notice, letter or other article of communication to or upon the Contractor personally.

6.2 OFFICE OF CONTRACTOR AT SITE.

During the performance of this Contract, the Contractor shall maintain a suitable office at the site of the work which shall be the headquarters of a representative authorized to receive drawings, instructions, or other communications or articles from the Owner or its agents; and any such thing given to the said representative or delivered at the Contractor's office at the site of the Work in his absence shall be deemed to have been given to the Contractor.

6.3 COOPERATION WITH OWNER OR ENGINEER.

Contractor shall comply with all orders of the Owner or Engineer in regard to maintaining an adequate progress, but neither the making of such demands nor the failure of the Owner or Engineer to make such demands shall relieve the Contractor of his obligation to secure the quality of equipment and/or material and/or performance of work and the rate of delivery of said equipment and/or materials and/or completion of work as stipulated in the Contract, and the Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, equipment, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation.

6.4 EXAMINATION OF SITE AND DOCUMENTS.

Contractor acknowledges that he has examined the Special Conditions, General Conditions, and Drawings, has visited and examined the delivery route(s) and the installation site for equipment and/or materials which he has agreed to supply herein, and/or the work site upon which he has agreed to perform herein and is familiar with local conditions which may effect his manufacture and delivery of said equipment and/or materials: he will make no claims or additional compensation over and above the quotations set forth in the Bidding Documents because of difficulties, real or anticipated.

6.5 ATTENTION TO WORK.

The Contractor shall at all times diligently pursue the work to completion and shall give his personal attention to and shall supervise the work to the end that it shall be prosecuted faithfully; and when he is not personally present on the work, he shall at all reasonable times be represented by a competent superintendent who shall receive and obey all instructions or orders given under this Contract, and who shall have full authority to execute the same, and to supply materials, tools and labor without delay, and who shall be the local representative of the Contractor and shall be liable for the faithful observance of any instructions delivered to him or to his authorized representative.

6.6 TIME AND ORDER OF PERFORMANCE

Time is of the essence to this Contract ("time" is defined herein as the time(s) specified by the bidder in the Bidding Documents within which he could perform if awarded the Contract and if there be no such specific designation, "time" shall be the time for completion designated in the Proposal herein). The contractor shall at all times employ such force, equipment, plant, materials, and/or tools as will be sufficient in the opinion of the Engineer, to complete the performance of the Contract and every part thereof within the time limit(s) fixed by the Contract. If, in the opinion of the Engineer, the

Contractor should fail to employ sufficient force, equipment, plant, materials and tools, or to maintain adequate progress toward meeting the said time limit(s), he may, after such failure, be required to increase the efficiency, capacity, or character of his equipment, or to modify his plans and procedures in such manner and to such extent as the Engineer may direct. No extension of time shall be made for ordinary delays and accidents, and the occurrence of such shall not relieve the Contractor from the necessity of maintaining the required progress. In case of an extension by the Engineer of the time for the completion of the Contract as hereinafter provided, a revised schedule of progress may be prescribed by the Owner in accordance with such extension of time.

6.7 LIABILITY OF CONTRACTOR.

The Contractor shall do all of the work and furnish all labor, materials, tools, and appliances, except as otherwise herein expressly stipulated, necessary or proper for performing and completing the work herein required in the manner and within the time herein specified. The mention of any specific duty or liability impose upon the Contractor shall not be construed as a limitation or restriction of any general liability or duty imposed upon the Contractor by this Contract, or the reference to any specific duty or liability being made herein merely for the purpose of explanation.

The right of general supervision by the Owner shall not make the Contractor an agent of the Owner, and the liability of the Contractor for all damages to persons or to public or private property, arising from the Contractor's execution of the work, shall not be lessened because of such general supervision.

The Contractor shall assume the defense of, and indemnify and save harmless the Owner and each and every employee and agent thereof from all suits, actions, damages, or claims of every name and description, to which the Owner may be subjected or put by reason of injury to persons or property in the execution of the work or resulting from negligence or carelessness on the part of the Contractor, his employees or agents, in the delivery of materials and supplies; or by or on account of any act or omission of the Contractor, his employees or agents; including any failure to fulfill the terms of all laws and regulations which apply to this Contract; and the Owner shall have the right to estimate the amount of such damage, to pay the same, and the amount so paid for such damage shall be deducted from the money due the Contractor under this Contract; or the whole or so much of the money due or to become due the Contractor under this Contract as may be considered necessary by the Owner, shall be retained by the Owner until such suits or claims for damages shall have been settled or otherwise disposed of, and satisfactory evidence to the effect furnished to the Owner.

6.8 RISK OF LOSS.

Until by the formal acceptance by the Owner of the performance of the Contractor hereunder either by furnishing equipment and/or materials or by performance of work, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the no execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of that which he is to provide or complete hereunder, occasioned by any of the above causes before completion and acceptance and shall bear the expense thereof, except for such injuries or damages as are occasioned by acts of the Federal government and the public enemy. In case of suspension of work from any cause whatsoever, the Contractor shall be responsible for all equipment and/or materials then upon the Owner's property and shall properly store them, if necessary, and shall erect temporary structures where necessary in so doing. Nothing in this Contract shall be considered as vesting in the Contractor any right of property in materials used after they have been attached or affixed to the work or the soil upon owner's real property, but all such materials shall, upon being so attached or so affixed, become the property of the Owner.

6.9 PROTECTION OF PERSONS AND PROPERTY.

The Contractor shall furnish such watchmen, guards, fences, warning signs, walks, and lights as shall be necessary and shall take all other necessary precautions to prevent damage or injury to persons and property.

All fences, buildings, shrubs, lawns, gardens and other property in the vicinity of the work shall be protected by the Contractor; and if they are injured or destroyed, they and any other property injured by the Contractor, his employees or agents shall be restored to a condition as good as when he entered upon the work, and without cost to the Owner or other private property owners. All trees along the work which are not to be removed shall be protected from injury. If so required by the Owner or Engineer, the trunks of trees shall be covered with burlap or stakes shall be driven around them for complete protection.

6.10 REMOVING OBSTRUCTIONS AND MAINTENANCE OF EXISTING IMPROVEMENTS.

When the work hereunder involves performance upon Owner's property, and when the proper completion of the said work requires their temporary or permanent removal, the Contractor shall, at his own expense, remove, and without delay, temporarily or permanently replace or relocate in a workmanlike manner and to the satisfaction of the Owner and of any other person or agency having jurisdiction, all water pipes, gas pipes, drainage lines, irrigation lines, sewer lines, pipelines, conduits, culverts, roads, driveways, fences, bridges, railroad tracks, wires, poles, towers, retaining walls, buildings, curbs, gutters, concrete walks, trees, shrubs, lawns, and all other improvements of whatsoever character not required by law to be removed by the owner thereof; and all such improvements temporarily removed shall be maintained until permanently replaced, all at the Contractor's expense.

Where the work is to be constructed in or adjacent to areas which have been improved by lawns, trees shrubs, or gardens, the Contractor shall remove such trees or plants as may be necessary for the prosecution of the work and give them proper care and attention until the work has been satisfactorily completed, after which the Contractor shall replace them in as nearly the original condition and location as is reasonably possible. Where it is necessary to deposit the excavated materials on lawns during the process of construction, the Contractor shall first lay burlap or canvas on the lawn to prevent contact between the excavated material and the lawn.

Unless otherwise indicated on the Drawings, General or Special Conditions, or unless otherwise cared for by the owner of a public utility or franchise, all water, gas, oil, or irrigation lines, lighting, power, telephone conduits or wires, or sewer lines, structures, house connections in place, and all other surface or subsurface structures or lines shall not be disturbed, disconnected, damaged by him during the progress of the work; provided, that should the Contractor in the performance of the work disturb, disconnect, or damage any of the above, all expenses, of whatever nature, arising thereof, shall be borne by the Contractor.

6.11 PROTECTION OF OWNER AGAINST PATENT CLAIMS.

All fees, royalties, or claims for any patented invention, article, or method that may be used upon or in any manner connected with the work under this Contract shall be included in the price bid for the work, and the Contractor and his sureties shall protect and hold the Owner together with all of its officers, agents, servants, and employees, harmless against any and all demands made for such fees or claims brought or made by the holders of any invention or patent; and before the final payment is made on the account of this Contract, the Contractor shall, if requested by the Engineer, furnish acceptable proof of a proper release from all such fees or claims.

Should the Contractor, his agents, servants, or employees or any of them, be enjoined from furnishing or using any invention, article, material or appliances supplied or required to be supplied or used under this Contract, the Contractor shall promptly substitute other articles, materials, or appliances in lieu thereof, of equal efficiency, quality, finish, suitability and market value, and satisfactory in all respects to the Engineer. Or in the event that the Engineer elects, in lieu of such substitution, to have supplied, and to retain and use, any such invention, article, material or appliance, as may by this Contract be required to be supplied, in that event, the Contractor shall pay such royalties and secure valid licenses as may be requisite and necessary for the Owner, its officers, agents, servants and employees, or any of them to use such invention, article, material or appliance without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should the Contractor neglect or refuse to make the substitution promptly, or to pay such royalties and secure such licenses as may be necessary; then in that event, the Engineer shall have the right to make such substitution or the Owner may pay such royalties and secure such licenses and charge the cost thereof against any money due the Contractor from the Owner or recover the amount thereof from him and his sureties even though final payment under this Contract may have been made.

6.12 LAWS AND REGULATIONS.

The Contractor shall keep himself fully informed of all laws, ordinances, and regulations in any manner affecting those engaged or employed on the Contract work, or in any way affecting the conduct of the Contract work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency should be discovered in this Contract, or in the Special or General Conditions or Drawings herein referred to, in relation to any such law, ordinance, regulation, order, or decree the Contractor shall forthwith report the same in writing to the Owner or the Engineer. He shall at all times himself observe and comply with and shall cause all his agents and employees to observe and comply with all such applicable laws, ordinances, regulations, orders and decrees in effect or which may become effective before completion of this Contract; and shall protect and indemnify the Owner and its officers and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by himself, by his employee or by a subcontractor. Except as otherwise explicitly provided elsewhere in the Special Conditions, General Conditions or Drawings, all permits necessary to the prosecution of the Contract work shall be secured by the Owner. All licenses necessary to the prosecution of this Contract work shall be secured by the Contractor at his own expense and he shall pay all taxes properly assessed against his equipment or property used or required.

6.13 PROTECTION OF CONTRACTOR'S WORK AND PROPERTY.

The Contractor shall protect his work, supplies, and materials from damage due to the nature of the work, the action of the elements, trespassers, or any cause whatsoever, until the completion and acceptance of the work. Neither the Owner nor any of its agents assumes any responsibility for collecting indemnity from any person or persons causing damage to the work of the Contractor.

6.14 PUBLIC UTILITIES, FRANCHISES, PIPES AND CONDUITS.

Before entering upon the work to be done under these specifications, the Contractor shall ascertain the existence, location and ownership of all public utility structures, main pipelines and main-line conduits situated within the streets, public ways or rights of way on or in which the work is to be done.

Attention is directed to possible existence of underground facilities not known to the Owner or in a location different from that which is shown on the plans.

In case it shall be necessary to remove any telephone, telegraph or electric power transmission poles, gas pipes, water pipes, sewer pipes, electrical conduits or underground structures of any character, or any portion thereof or their agents or superintendents, upon proper application of the Contractor, shall be notified by the authorized official, to remove same within a specified time, and the Contractor shall not interfere with said structures until the time specified in the said notice have expired. In case any utility service line is cut by the Contractor, it shall be restored without delay at the sole expense of the Contractor.

Right is reserved to municipal corporations, County authorities, and to water, sewer, gas, telephone, telegraph and electric power transmission utilities, to enter upon any public highway or road for the purpose of making repairs and changes that have become necessary by reason of the improvement itself.

6.15 BLASTING.

When the use of explosives is necessary for the prosecution of the work, the Contractor shall use the utmost care not to endanger life or property. All explosives shall be stored in a secure manner in compliance with all State, County and municipal laws, ordinances, and regulations, and all such storage places shall be clearly marked "DANGEROUS - EXPLOSIVES."

6.16 MAINTENANCE OF TRAFFIC.

The Contractor shall so conduct his operations as to cause the least possible obstruction and inconvenience to public traffic. Unless in the Special Provisions other existing streets are stipulated to be used as detours, all traffic shall be permitted to pass through the work.

Residents along the road or street shall be provided passage as far as practicable. Convenient access to driveways, houses and buildings along the line of work must be maintained at all times. Temporary approaches to, and crossing of, intersection streets shall be provided and kept in good condition. During excavation and grading operations, no driveways shall be closed or made inaccessible more than twenty-four (24) hours.

The Contractor shall furnish, erect and maintain such fences, barriers, lights, signs, including "Street Closed" signs, and flagmen as are necessary to give adequate warning to the public at all times that there is construction under way and of any dangerous conditions to be encountered as a result thereof. All warning signs, lights and devices shall be in conformance with the "Manual of Warning Signs, Lights and Devices for Use in Performance of Work upon Highways" issued by the Department of Public Works, State of California, dated 1975. In no case shall the spacing between lights be more than fifty (50) feet along the length of any trench adjacent to or within the boundary of a thoroughfare. No material or other obstruction shall be placed within fifteen (15) feet of fire hydrants.

All safety orders, rules and recommendations of the Division of Industrial Safety of the Department of Industrial Relations of the State of California applicable to the work to be done under this Contract shall be obeyed and enforced by the Contractor. The Contractor shall comply with all applicable regulations of the Owner.

6.17 CONSTRUCTION UTILITIES.

The Contractor shall be responsible for providing for, and in behalf of, his work under this Contract, all necessary utilities such as special connections to water supply, telephone, power lines, fences, roads, flagmen, suitable storage places, etc.

6.18 APPROVAL OF CONTRACTOR'S PLANS.

The approval by the Engineer of any drawings or any method of work proposed by the Contractor in accordance with paragraph 8.6 shall not relieve the Contractor of any of his responsibility for any errors therein and shall not be regarded as an assumption of risk or liability by the Owner or any officer or employee thereof, and the Contractor shall have no claim under this Contract on account of the failure or partial failure or inefficiency of any plan or method so approved. Such approval shall be considered to mean merely that the Engineer has no objection to the Contractor's using, upon his own full responsibility, the plan or method proposed.

6.19 SUGGESTIONS TO CONTRACTOR.

Any plan or method of work suggested by the Engineer, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Engineer and the Owner shall assume no responsibility therefore.

6.20 TERMINATION OF UNSATISFACTORY SUBCONTRACTORS.

Should any subcontractor fail to perform in a satisfactory manner the work undertaken by him, such subcontract shall be terminated immediately by the Contractor upon written notice from the Engineer.

6.21 PERPETUATION OF SURVEY MONUMENTS AND PROPERTY CORNER STAKES.

The Contractor shall be responsible for preserving all existing survey monuments and property corner stakes within the limits of construction. Prior to the commencement of construction, Contractor shall secure the services of a licensed land surveyor or registered civil engineer to make reference ties to all survey monuments that may be destroyed in the process of construction. One copy of these ties shall be delivered to the office of the County Surveyor before construction begins. Any such survey monuments and/or property corner stakes removed, disturbed or destroyed shall be replaced by the licensed land surveyor or registered civil engineer, at the Contractor's expense, after construction is complete in a reasonable time.

6.22 SURVEYS.

Unless otherwise specified, the Owner will furnish all land surveys and establish all base lines for location the principal component parts of the work, together with a suitable number of bench marks adjacent to the work. From the information provided by the Owner, the Contractor shall develop and make all detail surveys needed for construction, such as slope stakes, batter boards, stakes for pile locations and other working points, lines and elevations. In the case of sewer and water lines to be laid on grade, the Owner will furnish an offset grade line and cut sheets.

The Contractor shall carefully preserve bench marks, reference points and stakes and, in the case of destruction, will be charged with the resulting expense of replacement. The Contractor shall be responsible for any mistakes that may be caused by their loss or disturbance.

6.23 REMOVAL OF CONDEMNED MATERIALS AND STRUCTURES.

The Contractor shall remove from the site of the work, without delay, all rejected and condemned materials or structures of any kind brought to or incorporated in the work, and upon his failure to do so, or to make satisfactory progress in so doing, within forty-eight (48) hour after the service of a written notice from the Engineer, the condemned material or work may be removed by the Owner and the cost of such removal shall be taken out of the money that may be due or may become due the Contractor on account of or by virtue of this Contract. No such rejected or condemned material shall again be offered for use by the Contractor under this Contract.

6.24 PROOF OF COMPLIANCE WITH CONTRACT.

In order that the Engineer may determine whether the Contractor has complied with the requirements of this Contract not readily enforceable through inspection and tests of the work and materials, the Contractor shall at any time when requested, submit to the Engineer properly authenticated documents or other satisfactory proofs as to his compliance with such requirement.

6.25 ERRORS AND OMISSIONS.

If the Contractor, in the course of the work, finds any errors or omissions in plans or in the layout as given by survey points and instructions, or if he finds any discrepancy between the plans and the physical conditions of the locality, he shall promptly verify the same with the Engineer and the Engineer's decision shall be final. Any work done after such discovery will be done at the Contractor's risk.

6.26 COOPERATION.

The Contractor shall cooperate with all other contractors who may be performing work in behalf of the Owner and workmen who may be employed by the Owner on any work in the vicinity of the work to be done under this Contract; and he shall so conduct his operations as to interfere to the least possible extent with the work of such contractors or workmen. He shall make good promptly, at his own expense, any injury or damage that may be sustained by other contractors or employees of the Owner at his hands.

Any differences or conflict which may arise between the Contractor and other contractors, or between the Contractor and workmen of the Owner in regard to their work, shall be adjusted and determined by the Engineer.

If the work of the Contractor is delayed because of any acts or omissions of any other contractor or of the Owner, the Contractor shall on that account have no claim against the Owner other than for an extension of time.

6.27 HIRING AND DISMISSAL OF EMPLOYEES.

The Contractor shall employ only such foremen, mechanics and labors as are competent and skilled in their respective lines of work, and whenever the Engineer shall notify the Contractor that any man on the work is, in his opinion, incompetent, unfaithful, intemperate, or disorderly, or refuses to carry out the provisions of this Contract, or uses threatening or abusive language to any person on the work representing the Owner, or is otherwise unsatisfactory, such man shall be discharged immediately from the work and shall not be re-employed upon it except with the consent of the Engineer.

The Contractor shall comply with all existing State and Federal laws and County and municipal ordinances and regulations limiting or controlling the work in any manner.

6.28 WAGES OF EMPLOYEES.

The Owner has ascertained the general prevailing rates of wages applicable to the work to be performed under this Contract. These are set forth in Section 1 Procedural Legal Documents:

The Contractor shall forfeit to the Owner, as a penalty, twenty-five dollars (\$25.00) for each calendar day, or portion thereof, for each work-man paid less than the said stipulated prevailing rates for any work done under this contract by him or by any subcontractor under him, in violation of the California Labor Code. Nothing herein shall preclude employment of properly indentured apprentices in accordance with Section 1777.5 of said Labor Code.

6.29 CLEANING UP.

The Contractor shall not allow the site of the work to become littered with trash and waste material, but shall maintain the same in a neat and orderly condition throughout the construction period. The Engineer shall have the right to determine what is or is not waste material or rubbish and the place and manner of disposal.

On or before the completion of the work, the Contractor shall, without charge therefore, carefully clean out all pits, pipes, chambers or conduits and shall tear down and remove all temporary structures from any of the grounds which he has occupied and leave them in first-class condition.

6.30 GUARANTY.

The Contractor shall guarantee that all materials and equipment furnished will be new unless otherwise specified and shall guarantee the work performed for a period of two (2) years from the date of Substantial Completion. The Contractor warrants and guarantees for a period of two (2) years from the date of Substantial Completion of the system that the completed system is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reasons of such defects including the repairs of any damage to other parts of the system resulting from such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period provided, however, that in case of and emergency, where, in the opinion of the Owner, delay would cause serious loss or damage, repairs may be made without notice being sent to the Contractor, and the Contractor shall pay the costs thereof.

6.31 NOTIFICATION OF OWNER, ENGINEER AND INSPECTOR.

The Contractor shall notify the Owner, Engineer and Inspector one (1) week in advance of when he plans to start construction. At that time or any such time prior to that as may be specified by the Engineer, the Contractor shall submit a schedule of his work showing principal operations and their estimated starting dates. When inspections or engineering judgments become necessary as set forth in these Specifications, the Contractor shall give at least twenty-four (24) hours notice.

6.32 SAFETY.

In accordance with generally accepted construction practices, the Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.

The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.

6.33 PRECONSTRUCTION CONFERENCE.

A pre-construction conference shall be held prior to the commencement of construction of the work herein defined and all understandings, interpretations and agreements reached at said conference shall be reduced to writing by the Engineer and mailed to all parties attending said pre-construction conference. The understanding, interpretations and agreements set forth herein shall hereinafter be considered as a part of the Contract Documents.

7.0 RESPONSIBILITIES AND RIGHTS OF THE OWNER.

7.1 SPECIAL DISTRICTS DEPARTMENT.

The Special Districts Department shall mean the representative agency of the Owner and shall represent the Owner within the provisions of these specifications.

7.2 AUTHORITY OF THE ENGINEER.

All work done under this Contract shall be done in a workmanlike manner and shall be performed to the reasonable satisfaction of the Engineer, who shall have general supervision of all work included hereunder. To prevent disputes and litigation, the Engineer shall in all cases determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this Contract; and shall decide all questions relative to the true construction, meaning, and intent of the Specifications and Drawings; shall decide all questions which may arise relative to the classifications and measurements of quantities and materials and the fulfillment of this Contract; and shall have the power to reject or condemn all work or materials which does not conform to the terms of this Contract. His estimate and decision in all matters shall be a condition precedent to the right of the Contractor to receive, demand, or claim any money or other compensation under this agreement and a condition precedent to any liability on the part of the Owner to the Contractor on account of this Contract. Whenever the Engineer shall be unable to act, in consequence of absence or other cause, then such engineer as the Engineer or Owner shall designate, shall perform any and all of the duties and be vested with any or all of the

powers herein given to the Engineer. Decision of the Engineer as provided herein shall be set forth in writing with copies to Contractor and Owner.

The Engineer shall have no power to waive the obligation of the Contract for the performance of work and/or furnishing by the Contractor of the equipment and/or material conforming to the Special Conditions, General Conditions and Drawings.

7.3 INSPECTION.

The Engineer and his representative shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and for inspection.

If the Specifications, the Engineer's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection, and if the inspection is by another authority than the Engineer, of the date fixed for such inspection. Inspections by the Engineer shall be promptly made, and where practicable, at the source of supply. If any work should be covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination and be properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Engineer, and, if so ordered, the work must be uncovered by the Contractor. If such work is found to be in accordance with Contract Documents, the Contractor shall pay such costs.

Properly authorized and accredited inspectors shall be considered to be the representatives of the Engineer limited to the duties and powers entrusted to them. It will be their duty to inspect material and workmanship of those portions of the work to which they are assigned, either individually or collectively, under instructions of the Engineer and to report any and all deviations from the Drawings, Specifications, and other Contract Provisions which may come to their notice. Any inspector may be considered to have the right to order the work entrusted to his supervision stopped, if in his opinion such action becomes necessary, until the Engineer is notified and has determined and ordered that the work may proceed in due fulfillment of all Contract requirements.

In accordance with generally accepted construction practices, the Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.

The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.

7.4 SURVEYS.

Unless otherwise specified, the Owner will furnish all land surveys and establish all base lines for locating the principal component parts of the work together with a suitable number of bench marks adjacent to the work. From the information provided by the Owner, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines and elevations. In the case of sewer and water lines to be laid on grade, the Owner will furnish an offset grade line and cut sheets.

7.5 RIGHTS OF WAY.

The Owner will provide all rights of way and easements in or beneath which pipes and other structures will be constructed by the Contractor under this Contract.

7.6 RETENTION OF IMPERFECT WORK.

If any portion of the work done or material furnished under this Contract shall prove defective and not in accordance with the Specifications and Drawings, and if the imperfection in the same shall not be of sufficient magnitude or importance to make the work dangerous or undesirable, the Engineer shall have the right and authority to retain such work, with the written approval of the Owner, instead of requiring the imperfect work to be removed and reconstructed; but he shall then make deductions therefore in the payments due or to become due the Contractor as may be just and reasonable.

7.7 CHANGES IN THE WORK.

Refer to Section 10.7.

7.8 ADDITIONAL DRAWINGS BY OWNER.

The Drawings made as part of this Contract at the time of its execution are intended to be fairly comprehensive and to indicate in more or less detail the scope of the work. In addition to these Drawings, however, the Engineer will furnish such additional drawings from time to time during the progress of the work as are necessary to make clear or to define in greater detail the intent of the Specifications and Contract Drawings, and the Contractor shall make his work conform to all such drawings.

7.9 ADDITIONAL AND EMERGENCY PROTECTION.

Whenever, in the opinion of the Engineer, the Contractor has not taken sufficient precautions for the safety of the public or the protection of the works to be constructed under this Contract, or of adjacent structures or property which may be injured by the progresses of construction on account of such neglect; and whenever, in the opinion of the Engineer, an emergency shall arise and immediate action shall be considered necessary in order to protect public or private, personal or property interest, then and in that event, the Engineer, with or without notice to the Contractor, may provide suitable protection to the said interests by causing such work to be done and such material to be furnished as shall provide such protection as the Engineer may consider necessary and adequate.

The cost and expense of such work and materials so furnished shall be borne by the Contractor and if the same shall not be paid on presentation of the bills therefore, then such costs shall be deducted from any amounts due or to become due the Contractor.

The performance of such emergency work under the direction of the Engineer shall in no way relieve the Contractor from any damages which may occur during or after such precaution has been taken by the Engineer.

7.10 SUSPENSION OF CONTRACT.

(a) If the equipment and/or material to be furnished or the work to be performed by the Contractor under the Contract shall be abandoned by the Contractor, or if the Contractor shall make a general assignment for the benefit of his creditors or be adjudicated a bankrupt, or if a Receiver of his property or business be appointed by a court of competent jurisdiction, or if his Contract shall be assigned by him otherwise than hereinabove specified, or if, at any time, the Owner or Engineer shall be of the opinion that the performance of the Contract is unnecessarily or unreasonably delayed, or that the Contractor is willfully violating any of the conditions or covenants of the Contract, or of the Specifications, or is executing the same in bad faith or not in accordance with the terms thereof, or if the terms of the Contract be not fully completed within the time named in the Contract for its completion or within the time to which the completion of the Contract may have been extended, as hereinabove provided, the Engineer acting in behalf of the Owner may, by written notice, instruct the Contractor to suspend the operation of all or any part of the Contract, and the Contractor shall do so and shall resume the same only upon written instruction by the Engineer.

(b) Upon such suspension of the Contract, the Owner may procure the equipment and/or materials, and/or performance of the work necessary to fulfill the contract requirements in such manner as it may deem proper. In so doing, the Owner may take possession of and use any of the materials, plant, tools, equipment, supplies, and property of every kind which may be provided by the Contractor upon the Owner's property for the purposes of his work. The Owner may procure other equipment and/or materials and provide labor for the completion of the same, or contract therefore, and charge the expense of completion by either method to the Contractor.

These charges shall be deducted from such moneys as may be due or may at any time hereafter become due the Contractor under and by virtue of this Contract or any part thereof. In case such expense shall exceed the amount which would have been due the Contractor under the Contract if the same had been completed by him, the Contractor shall pay the amount of such excess to the Owner; and in case such expense shall be less than the amount which would have been payable under this Contract if the same had been completed by the Contractor, he shall have no claim to the difference, except to the extent as may be necessary, in the opinion of the Engineer, to reimburse the Contractor or the Contractor's sureties for any expense properly incurred for plant, camp, equipment, materials, supplies, and labor devoted to the prosecution of the work of which the Owner shall have received the benefits and which shall not have been otherwise paid for by the Owner. In computing such expense so far as it shall relate to plant and equipment taken over by the Owner, and the salvage value of such plant and equipment at completion of the work shall be deducted from the depreciated value thereof at the time taken over by the Owner, and the difference shall be considered as an expense. Evidence of such expense, satisfactory to the Engineer, shall be required, and all necessary estimates and appraisements shall be made by him. When any particular part of the work is performed by the Owner, by contract or otherwise, under the provisions of this section, the Contractor shall continue the remainder of the

work in conformity with the terms of his Contract and in such manner as in nowise to hinder or interfere with the persons or workmen employed, as above provided, by the Owner, by contract or otherwise, to do any part of the work or to complete the same under the provisions of this section.

(c) To determine if there has been such noncompliance with the Contract as to warrant its suspension or the procurement of the material elsewhere by the Owner as herein provided, the decision of the Engineer shall be final. Suspension of the Contract of any portion thereof shall operate only to terminate the right of the Contractor to proceed with the furnishing of equipment and/or material, or performing the work covered by the Contract or the suspended portions thereof. All other stipulations of the Contract, shall be and remain in full force and effect after such suspension and until the Contract shall have been completed and final payment or final adjustment of accounts made.

7.11 ADDITIONAL SURETY.

If, during the continuance of the Contract, any of the sureties upon the performance bond, in the opinion of the Engineer, are or become insufficient, the Engineer may require additional sufficient sureties, which the Contractor shall furnish to the satisfaction of the Engineer within fifteen (15) days after notice, and in default thereof the Contract may be suspended with the same force and effect as provided in the above section.

7.12 USE OF COMPLETED PORTIONS.

The owner shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions as may not have expired; but such taking possession and use shall not be deemed an acceptance of the work not completed in accordance with the Contract Documents.

8.0 WORKMANSHIP, MATERIALS AND EQUIPMENT.

8.1 GENERAL QUALITY.

Materials and equipment shall be new and of a quality equal to that specified or approved. Mechanical or electrical equipment shall be the products of manufacturers of established good reputations regularly engaged in the fabrication of such equipment. Unless otherwise noted, any equipment offered shall be current modifications which have been in successful regular operation under comparable conditions for a period of at least two (2) years. This time requirement, however, does not apply to minor details not to thoroughly demonstrated improvements in design of in material of construction. Work shall be done and completed in a thorough and workmanlike manner.

8.2 QUALITY IN ABSENCE OF DETAILED SPECIFICATIONS.

Whenever under this Contract it is provided that the Contractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable in the market from firms of established good reputation, or if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind required, with due consideration of the use to which they are to be put. In general, the work performed shall be in full conformity and harmony with the intent to secure the best standard of construction and equipment of the work as a whole or in part.

8.3 MATERIALS AND EQUIPMENT SPECIFIED BY NAME.

Whenever any material or equipment is indicated or specified by patent or proprietary name or by the name of the manufacturer, such specification shall be considered as followed by the words, "or approved equal." The Contractor may offer any material or equipment which shall be equal in every respect to that specified provided, however, that written approval first is obtained from the Engineer.

8.4 SOURCE OF MATERIALS.

Only unmanufactured materials produced in the United States, and only manufactured materials made in the United States substantially all from material produced in the United States, shall be employed in the performance of this Contract, in accordance with the provisions of Section 4300 through 4305 and of Section 4330 through 4334 (Articles 1 and 2, Chapter 4,

Division 5) of the Government Code of the State of California and any acts amendatory thereof except to the extent, if any, that such provisions may be superseded by any law or treaty of the United States.

8.5 STORAGE OF MATERIALS.

Materials shall be so stored as to insure the preservation of their quality and fitness for the work. They shall be so located and disposed that prompt and proper inspection thereof may be made.

8.6 DRAWINGS, SAMPLES AND TESTS.

As soon as possible after execution of the Contract, the Contractor shall submit to the Engineer, in sextuple, sufficient information including, if necessary, assembly and detail drawings to demonstrate fully that the equipment and materials to be furnished comply with the provisions and intent of the Specifications and Drawings. If the information thus submitted indicates the equipment or material is acceptable, the Engineer will return three (3) copies stamped with his approval; otherwise one copy will be returned with an explanation of why the equipment or material is unsatisfactory. The Contractor shall have no claim for damages or extension of time on account of any delay due to the revision of drawings or rejection of material. Fabrication or other work performed in advance of approval shall be done entirely at the Contractor's risk. After approval of equipment or material, the Contractor shall not deviate in any way from the design and Specifications given, without the written notice by the Engineer.

When requested by the Engineer, sample of test specimens of the materials to be used or offered for use in connection with the work shall be prepared at the expense of the Contractor and furnished by him in such quantities and sizes as may be required for proper examinations and tests, with all freight charges prepaid and with information as to their sources.

All samples shall be submitted before shipment and in ample time to permit the making of proper tests, analysis, or examination before the time at which it is desired to incorporate the material into the work. All tests of materials furnished by the contractor shall be made by the Engineer in accordance with recognized standard practice. No material shall be used in the work unless or until it has been approved by the Engineer. Samples will be secured and tested whenever necessary to determine the quality of the material.

8.7 OPERATING AND MAINTENANCE INSTRUCTIONS.

Before final acceptance of the work, the Contractor shall deliver to the Engineer suitable operating instructions covering each piece of equipment assembly. Instructions shall be bound together with suitable cover and furnished in triplicate.

8.8 FIELD TESTS, ADJUSTMENTS AND OPERATIONS.

After the work is completed, the Contractor, as necessary shall arrange during the succeeding thirty (30) day period for the presence of the manufactures of all the various pieces of equipment and parts of installation, or other qualified persons. The Contractor shall make such changes, adjustments, or replacements of equipment as may be required to make the same comply with the Specifications, or to replace any defective parts or material.

8.9 COMPLIANCE WITH STATE SAFETY CODE.

All necessary machinery guards, railings and other protective devices shall be provided as specified by the State Division of Industrial Safety.

8.10 EQUIPMENT AND METHODS.

The work under this Contract shall be prosecuted with all materials, tools, machinery, apparatus, and labor and by such methods as are necessary to complete execution of everything described, shown or reasonably implied. If at any time before the beginning or during the progress of the work, any part of the Contractor's plant, or equipment or any of his methods of execution of the work, appear to the Engineer to be unsafe, inefficient or inadequate to insure the required quality or rate of progress of the work, he may order the Contractor to increase or improve his facilities or methods, and the Contractor shall comply promptly with such orders; but neither compliance with such orders nor failure of the Engineer to issue such orders shall relieve the Contractor from his obligation to secure the degree of safety, the quality of the work, and the rate or progress required of the Contractor. The Contractor alone shall be responsible for the safety, adequacy, and efficiency of his plant, equipment and methods.

9.0 COMPLETION DATE, TIME EXTENSIONS, DELAYS.

9.1 TIME OF COMPLETION.

Unless otherwise provided in this Contract, the Contractor shall commence construction of the work within ten (10) days after the Owner's written Notice to Proceed and shall complete the same within the time specified in the Proposal, it being expressly understood and agreed that the time of beginning, rate of progress and time of completion of the work are essential conditions under this Contract.

No material shall be delivered and no on-site work shall be commenced under the Contract until the Contractor has been given such written notice. It is understood and agreed by the Contractor that his performance hereunder must be coordinated by the Owner with other work in progress in the immediate vicinity, that unavoidable delays may occur and that the time schedules set forth on the bidding documents shall be subject to adjustment by the Owner, all at no additional cost to the Owner.

9.2 AVOIDABLE DELAYS.

Avoidable delays in the prosecution or completion of the work shall include all delays which might have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor.

Delays in the prosecution of parts of the work, which may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the work nor the completion of the whole work within the time herein specified, reasonable loss of time resulting from the necessity of submitting plans to the Engineer for approval and from the making of surveys, measurements, and inspections, and such interruptions of the work on account of reasonable interference of the other contractors employed by the Owner, which do not necessarily prevent the completion of the whole work within the time herein specified, will be considered by the Owner as avoidable delays within the meaning of this Contract.

9.3 UNAVOIDABLE DELAYS.

Unavoidable delays in the prosecution or completion of the work under this contract shall include all delays which may result from or are caused by acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, labor disputes, shortages of materials and freight embargoes. Orders issued by the Owner changing the amount of work to be done, the quality of material to be furnished or the manner in which the work is to be prosecuted, and the unforeseen delays in the completion of the work of other contractors under contract with the Owner will be considered unavoidable delays, so far as they necessarily interfere with the Contractor's completion of the whole of the work. Delays due to extreme weather conditions will be regarded as unavoidable delays.

9.4 NOTICE OF DELAYS.

Whenever the contractor foresees any delay in the prosecution of the work, and in any event within fifteen (15) days of the occurrence of any delay which the Contractor regards as unavoidable, he shall notify the Engineer in writing of the probability of the occurrence of such delay and its occurrence or continuance of the delay or, if this cannot be considered unavoidable or avoidable, how long it continues, and to what extent the prosecution and completion of the work are to be delayed thereby.

After the completion of any part or the whole of the work, the Engineer, in estimating the amount due the Contractor will assume that any and all delays which have occurred in its prosecution and completion have been avoidable delays, except such delays as shall have been called to the attention of the Engineer at the time of their occurrence and found by him to have been unavoidable. The Contractor will make no claims that any delay not called to the attention of the Engineer at the time of its occurrence has been an unavoidable delay. The Engineer shall ascertain the facts and the extent of the delay and his findings thereon shall be final and conclusive.

9.5 EXTENSION OF TIME.

Should any delays occur which the Engineer may consider unavoidable, as herein defined, the Contractor shall, pursuant to his application, be allowed an extension of time, beyond the time herein set forth, proportional to said delay shall not be enforced against the Contractor by the Owner during an extension of time granted because of unavoidable delay or delays.

9.6 UNFAVORABLE WEATHER AND OTHER CONDITIONS.

During unfavorable weather and other conditions, the Contractor shall pursue only such portions of the work as shall not be damaged thereby. No portions of the work whose satisfactory quality of efficiency will be affected by any unfavorable conditions shall be constructed while these conditions exist unless, by special means or precautions approved by the Engineer, the Contractor shall be able to overcome them.

9.7 SATURDAY, SUNDAY, HOLIDAY AND NIGHT WORK.

No work shall be done between the hours of 7:00 p.m. and 6:00 a.m. nor on Saturdays, Sundays or legal holidays except such work as is necessary for the proper care and protection of the work already performed, or except in case of emergency, and in any case only with the written notice of the Engineer.

9.8 HOURS OF LABOR.

Eight (8) hours of labor shall constitute a legal day's work, and the Contractor or any subcontractor shall not require or permit more than eight (8) hours of labor in a day, or forty (40) hours per week from any person employed by him in the performance of the work under this Contract. The Contractor shall forfeit to the Owner, as a penalty, the sum of twenty-five dollars (\$25.00) for each workman employed in the execution of the Contract by him or by any subcontractor, for each calendar day during which such laborer, workman, or mechanic is required or permitted to labor more than eight (8) hours in violation of the provisions of Section 1810 to 1816, inclusive (Article 3, Chapter 1, Part 7, Division 2) of the Labor Code of California and any acts amendatory thereof.

9.9 PENALTY CLAUSE.

Pursuant to the provisions of Government Code Section 53067.85 in case all the work called for under the Contract in all parts and requirements is not finished or completed within the number of calendar days as set forth in the proposals, the Contractor shall forfeit and pay to the Owner a specified sum of money, to be deducted from any payments due or to become due to the Contractor. A prearranged conference prior to award of the Contract will be held to fix the amount of this penalty.

It is further agreed that in case the work called for under the Contract is not finished and completed in all parts and requirements within the number of calendar days specified, the Board of Supervisors shall have the right to increase the number of calendar days or not, as they may deem best to serve the interest of the Owner, and if they decide to increase the said number of calendar days, they shall further have the right to charge to the Contractor, his heirs, assigns or sureties or to deduct from the final payment for the work all or any part, as they may deem proper of the actual cost of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the Contract and which accrue during the period of such extension, except that cost of final surveys and preparation of final estimate shall not be included in such charges. If the Board elects to grant the extension of the time under this paragraph, the penalty clause as above set forth will not apply to the time as granted in the time extension.

10.0 PAYMENT

10.1 CERTIFICATION BY ENGINEER.

All payments under this Contract shall be made upon the presentation of certificates in writing from the Engineer and shall show that the work covered by the payments has been done and the payments therefore are due in accordance with this Contract.

10.2 PROGRESS ESTIMATES AND PAYMENTS.

The engineer shall, within the first ten (10) days of each month, make an estimate of the value of the work performed in accordance with this contract during the previous calendar month.

The first estimate shall be of the value of the work done and of materials, proposed and suitable for permanent incorporation in the work, delivered and suitably and safely stored at the site of the work since performance of this Contract, and every subsequent estimate, except the final estimate, shall be of the value of the work done and materials delivered and suitably stored at the site of the work since the last preceding estimate was made: provided, however that should the Contractor fail to adhere to the program of completion fixed in this contract, the

Engineer shall deduct from the next and all subsequent estimates the full calculated accruing amount of liquidated damages to the date of said estimate, until such time as the compliance with the program has been restored: and provided that materials so delivered and estimated shall not be removed from the site of the work prior to its completion without the written consent of the Engineer.

The estimates shall be signed by the Engineer and after approval, the Owner shall pay or cause to be paid to the Contractor in the manner provided by law, an amount equal to ninety percent (90%) of the estimated value of the work performed and of the value of the materials furnished and delivered and unused, such materials to be those which are proposed and suitable for permanent incorporation in the work.

Progress payments will be processed and payment made within thirty (30) days of receipt by the Owner of a satisfactory progress payment request.

The Owner may at any time refuse progress payments until satisfactory labor, material and lien releases have been signed by laborers, subcontractors and material men and delivered to the Engineer.

10.3 ACCEPTANCE.

The Owner by written notice will accept the work when the whole shall have been completed satisfactorily, as determined by the Engineer. The Contractor shall notify the Engineer by written notice, of the completion of the work, whereupon the Engineer shall promptly, by personal inspection, satisfy himself as to the actual completion of the work in accordance with the terms of the Contract, and shall thereupon recommend acceptance to the Owner.

Neither the acceptance by the Owner or its Engineer or any of its employees, nor any order, measurements, or certificates by the Engineer, nor any payment of money by the Owner or any of its offices, nor any payment for or acceptance of the whole or any part of the work by the Engineer or the Owner, nor any extension of time, nor any possession taken by the Owner or its employees shall operate as a waiver of any power herein provided; nor shall any waiver of any breach of this Contract be held to be a waiver of any other subsequent breach.

10.4 FINAL PAYMENT TERMINATES OWNER'S LIABILITY

No claim shall be made or be filed and neither the Owner nor any employee of the Owner nor any of its agents shall be liable or held to pay any money, except as specifically provided in the Contract. The acceptance by the Contractor of the final payment aforesaid shall operate as, and shall be a release to the Owner, the Board of Supervisors, and each member of the Board and their agents, from all claim by and liability to the Contractor for any act or neglect of the Owner or of any person relating to or affecting the work, except the claim against the Owner for the remainder, if any there be, of the amounts kept or retained as provided in the section herein involving unpaid claims.

10.5 FINAL ESTIMATE AND PAYMENT.

The Engineer shall, as soon as practicable after the final acceptance of the work done under this Contract, make a final estimate of the amount of work done there under and the value thereof.

Such final estimate shall be signed by the Engineer, and after approval, the Owner shall pay or cause to be paid the Contractor in the manner provided by law, the entire sum so found to be due hereunder, after deducting there from all previous payments and such other lawful amounts as the terms of this Contract prescribe.

In no case will final payment be made in less than thirty-five (35) days after the completion of the work and its acceptance by the Owner.

The final payment may be deferred until satisfactory labor, materials and lien releases have been delivered by Contractor to the Engineer.

10.6 DELAYED PAYMENTS.

Should any payment due the Contractor or any estimate be delayed through default of the Owner beyond the time stipulated, such delay shall not constitute a breach of Contract or be the basis for a claim for damages.

10.7 CHANGES IN WORK.

The owner reserves the right to make such alteration, deviations, additions to, or omissions from the Plans and Specifications, including the right to increase or decrease the quantity of any item or portion of the work or to omit any item or portion of the work, as may be deemed by the Engineer to be necessary or advisable and to require such extra work as may be determined by the Engineer to be required for the proper completion or construction of the whole work contemplated.

Any such changes will be set forth in a Contract Change Order which will specify, in addition to the work to be done in connection with the change made, adjustment of Contract time, if any and the basis of compensation for such work. A Contract Change Order will not become effective until approved by the Owner and Engineer.

Should the Contractor disagree with any terms or conditions set forth in an approved Contract Change Order which he has not executed, he shall submit a written notice to the Engineer within fifteen (15) days after the receipt of such approved Contract Change Order. The notice shall state the points of disagreement, and, if possible, the Contract specification references, quantities, and costs involved. If a written notice is not submitted, payment will be made as set forth in the approved Contract Change Order and such payment shall constitute full compensation for all work included therein or required thereby.

10.8 EXTRA WORK.

New and unforeseen work will be classed as extra work when it is determined by the Engineer that such work is not covered by any of the various items, except that changes of lump-sum items shall be considered extra work. In the event portions of such work are determined by the Engineer to be covered by some of the various items for which there is a bid price or combinations of such items, the remaining portion of such work will be classed as extra work. The Contractor shall do such extra work and furnish labor, material and equipment there for upon receipt of an approved Contract Change Order or other written order of the Engineer. He shall not be entitled to payment for such extra work.

10.9 INCREASE, DECREASE, AND ELIMINATION OF CONTRACT ITEMS.

When changes increase or decrease estimated pay quantities of any item of work by twenty-five percent (25%) or less, payment will be made for the quantity of work of said item performed at the Contract unit price there for and no additional adjustment compensation will be allowed. Should the total pay quantity of any item of work required under the Contract exceed the Engineer's Estimate there for by more than twenty-five (25%), work in excess of one hundred and twenty-five percent (125%) of such Estimate shall be paid for on the basis of force-account of by adjusting the Contract unit price at the option of the Engineer.

Should the total pay quantity of any item of work required under the Contract be less than seventy-five percent (75%) of the Engineer's Estimate there for, the quantity of said item performed will be paid for by adjusting the Contract unit price or on the basis of force-account at the option of the Engineer.

Should any Contract item of work be eliminated in its entirety, no compensation will be made in any case for loss of anticipated profits.

10.10 PAYMENT FOR EXTRA WORK.

Payment for extra work will be made by (1) force-account, or (2) agreed to by the Contractor and the Engineer (Lump Sum). When extra work is to be paid for on a force-account basis, compensation will be determined as follows:

(a) **LABOR** - The actual wages paid to the workmen, including foremen, used in the actual and direct performance of the work.

(b) **LABOR SURCHARGE** - To the actual wages will be added the cost of Workman's Compensation, insurance premiums, State Unemployment, Federal Social Security payments, health and welfare, pension, vacation and other payments made to or on behalf of the workmen.

(c) **SUBSISTENCE AND TRAVEL ALLOWANCE**- Subsistence and travel allowance paid to such workmen as required by collective bargaining agreements.

(d) **MATERIALS** - Only materials furnished by the Contractor and necessarily used in the performance of the work will be paid for. The cost of such materials will be the cost to the purchaser from the supplier thereof. If the materials are obtained from a supply or source owned wholly or in part by the purchaser, payment therefore will not exceed the current wholesale price for such materials delivered to the job site.

(e) **EQUIPMENT** - The Contractor will be paid for the use of the equipment at established rental rates in the area. The rental rates shall include the cost of fuel; oil; lubrication; supplies; small tools; necessary attachments; repairs and maintenance of any kind; depreciation; storage; insurance; and all incidentals. Rental time will not be allowed while equipment is inoperative due to breakdown.

(f) **OTHER EXPENSES AND PROFITS** - Fifteen percent (15%) of the sums of items (a), (b), (c), (d), and (e), shall be considered as covering all other expenses and profits.

10.11 EXTRA WORK RECORDS.

The Contractor shall maintain his records in such a manner as to provide a clear distinction between the direct costs of extra

work paid for on a force-account basis and the costs of other operations.

The Contractor shall furnish the Engineer daily report sheets of each day's work paid for on a force-account basis no later than seven (7) days following the performance of said work. The daily report sheets shall itemize the materials use and shall cover the direct cost of labor and the charges for equipment rental. The daily report sheets shall provide names or identification and classifications of workmen, the hourly rate of pay and hours worked and also the size and type of equipment and hours operated.

Material charges shall be substantiated by valid copies of vendor's invoices.

When these daily extra work reports are agreed upon and signed by both parties, they shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit by the Owner.

The Contractor's cost records pertaining to work paid for on a force-account basis shall be open to inspection or audit by representatives of the Owner during the life of the Contract and for a period of not less than three (3) years after the date of acceptance.

10.12 NOTICE OF POTENTIAL CLAIM.

The Contractor shall not be entitled to the payment of any additional compensation for any cause, including any act, or failure to act, by the Engineer, or the happening of any event, thing or occurrence, unless he shall have given the Engineer due written notice of potential claim as hereinafter specified.

The written notice of potential claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved, and insofar as possible, the amount of potential claim. The said notice as above required must have been given to the Engineer prior to the time that the Contractor shall have performed the work giving rise to the potential claim for additional compensation, if based on an act of failure to act by the Engineer, or in all other cases within fifteen (15) days after the happening of the event, thing or occurrence giving rise to the potential claim.

When the Contractor considers that any changes ordered involve extra work, he shall immediately notify the Engineer in writing and subsequently keep him informed as to when and where extra work is to be performed and shall make claim for compensation therefore each month not later than the first day of the month following that in which the work claimed to be extra work was performed, and he shall submit records as outlined in Section 10.11 of these General Conditions.

All such claims, in the absence of an approved Contract Change Order, shall state the date of the Engineer's written order and the date of approval by the Owner authorizing the work on which the claim is made.

11.0 CONFLICT.

11.1 CONTROLLING CONTRACTUAL DOCUMENTS.

If there be a conflict between Contractual Drawings and the Specifications, the provisions of the Specifications shall control.

An addendum can modify any of the Contractual Documents and shall control.

11.2 CONTROLLING PARTS OF THE SPECIFICATIONS.

In case of conflict between the Special Conditions and the General Conditions or between the Special Conditions and the Technical Specifications, the Special Conditions shall control in each case. If there is a conflict between the General Conditions and the Technical Specifications, the Technical Specifications shall control.

COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT

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COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT

**PREFACE TO THE
TECHNICAL SPECIFICATIONS SEWERS**

**1. SUPPLEMENTAL DEFINITIONS TO THE
TECHNICAL SPECIFICATIONS.**

Whenever in these Technical Specifications the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as defined in the Ordinance and Rules and Regulations of the District which regulate the use and construction of sewerage facilities. These supplemental definitions shall apply only to interpretation of these Technical Specifications.

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 covering alterations, amendments or extensions to the Contract and include Contract change orders.

PLANS - The official project plans, profiles, typical 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.

CONTRACTOR - The individual, partnership, corporation, joint venture or other legal entity 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 Permittee shall be construed to be the Contractor.

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

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 District.

2. WORK SCHEDULE.

One (1) week prior to starting construction, the Contractor shall submit to the District, Engineer and Inspector a written work schedule which shall describe the sequence, time and method of operation that he plans to use on the job. The Contractor shall also provide a mobilization schedule, pipe installation schedule, pipe installation crews, and repair and cleaning crews. The Engineer reserves the right to require the Contractor to schedule the work forces necessary to repair damage due to the construction and restore the area of work to its original condition upon completion of any portion of the pipeline installation. The Engineer reserves the right to alter the schedule to permit the possible activation of certain sewers prior to the completion of the work.

The Contractor shall update 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.

3. NOTIFICATION.

The Contractor shall notify the District, Engineer and Inspector one (1) week in advance of when he plans to start construction. The Contractor shall immediately notify all involved agencies when intermittent construction, end of construction, or stoppage in construction occurs. Minimum of 48 hours notice

4. SAFETY REQUIREMENTS.

All construction and design shall comply in full with all pertinent provisions of current safety laws and codes of OSHA and other Federal, State and Municipal regulatory agencies.

5. REFERENCED STANDARDS AND SPECIFICATIONS.

All references to other standards and specifications in these Technical Specifications shall imply the latest revision thereto.

6. CONNECTIONS TO EXISTING SYSTEMS.

Sewer construction shall start a minimum of five (5) feet from any existing sewer or manhole. The closing section shall not be installed until all mains and manholes have been cleaned, tested and tentatively accepted, in writing by the District.

**COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
TECHNICAL SPECIFICATIONS**

**SECTION 1
EARTHWORK**

1.1 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 shown and specified.

1.2 OBSTRUCTIONS.

All shrubs and brush, 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.

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 and/or repaired to the satisfaction of the Engineer as soon as that portion of the work is installed, at the Contractor's expense without any compensation there-for. Any damage done to private property by reason of work on easements shall be the responsibility of the Contractor.

The Contractor shall restore all areas and objects that were damaged or disrupted due to construction activities, to the condition which existed prior to construction. Said restoration shall be completed by the Contractor as a continuing follow-up of any portion of pipe-line construction.

Material that is removed as specified herein 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. All improvements necessary to prosecute the work, shall be removed, maintained and permanently replaced at no expense to the District.

1.3 EARTHWORK IN CITY, COUNTY, STATE AND RAILROAD RIGHTS OF WAY.

Earthwork within the rights of way of the State of California, Department of Transportation, County Road Department, and City or other governmental agency having jurisdiction, shall be done in accordance with the requirements and 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.

1.4 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 the Division of Industrial Safety of the Department of Industrial Relations of the State of California. Barriers shall be placed at each end of all excavations and at such places as may be necessary along excavations, from sunset each day to sunrise of the next day until such excavation is entirely refilled. The contractor shall submit to the Engineer for approval a safety barrier and traffic control plan prior to construction.

1.5 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.

1.6 SHORING, SHEETING AND BRACING.

Sheet piling, shoring, sheeting, bracing, or other supports, where necessary, 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, rules of the Division of Industrial Safety of the Department on Industrial Safety of the Department of Industrial Relations of the State of California, with respect to excavations and construction, shall be strictly observed.

In advance of any excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall submit for acceptance of the Owner, or by a registered civil or structural engineer employed by the Owner, to whom the authority to accept has been delegated, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer. Nothing herein contained shall be deemed to allow the use of shoring, sloping, or protective system less effective than that required by the Construction Safety Orders of the State Division of Industrial Safety. Shoring shall be in compliance with Section 6707 of Chapter 9, Part 1, Division 5 of the Labor Code of the State of California.

Nothing contained in this specification shall be construed to impose tort liability on the Owner, Engineer, or any of their employees.

Section 6500 of the Labor Code requires a permit for trenches five (5) feet or more in depth. **The Owner will not issue a permit for trenching operations under this Contract.** The Contractor, prior to beginning construction, shall obtain from the State Division of Industrial Safety, a permit authorizing said construction.

1.7 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, at his own expense, to remove and dispose of all excess material resulting from clearing and grubbing operations. The Contractor shall make his own arrangements for disposal sites, where said material may be wasted.

1.8 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 (8) hours. Water shall not be allowed to rise unequally against walls for a period of twenty-eight (28) days. Groundwater shall not be allowed to rise around pipe installations until jointing compound in the joints has set.

The Contractor shall dispose of 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 public health. Contaminated waters, which require special handling, treatment or disposal methods, or that necessitate disposal away from the construction site will be at the Contractor's expense.

Dewatering for structures and pipe lines shall commence when groundwater 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.

1.9 PIPELINE EXCAVATION.

1.9.01 Excavation. - Excavation for pipelines, 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 in the plans or in these specifications.

1.9.02 Limit of Excavation. - Except with specific approval of the Engineer, no more than four hundred (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. 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, Sunday, and holidays.

The Contractor shall make the necessary arrangements for, and shall remove and dispose of all excess waste material from the site of the work as portions of the pipe line and appurtenances are installed.

1.9.03 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.

1.9.04 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 over-all trench width shall not be more than sixteen (16) inches or less than twelve (12) inches wider than the largest outside diameter of the pipe to be laid therein, measured at a point twelve (12) inches above the top of the pipe exclusive of the branches. Excavation and trenching shall be true to line so that a clear space of not more than eight (8) inches or less than six (6) inches in width is provided on each side of the largest outside diameter of the pipe in place. For the purpose of this section, the largest outside diameter shall be the outside diameter of the coupling.

1.9.05 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 ninety percent (90%) or crushed rock, at the expense of the Contractor. If compaction tests are required, they shall be at the expense of the Contractor.

1.10 PIPE FOUNDATION AND/OR SUBGRADE.

1.10.01 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.

1.10.02 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 ninety percent (90%) 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.

1.10.03 Foundation 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 one-half (1/2) inch per inch of nominal diameter of the pipe to be installed, with a minimum allowable thickness of six (6) inches.

1.11 TRENCH BACKFILL.

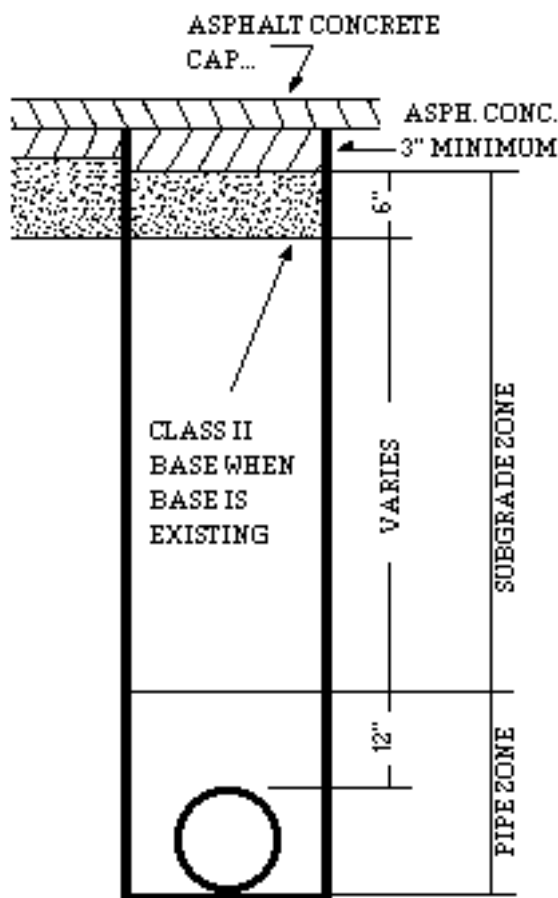
1.11.01 General. - All trenches shall be backfilled after pipe, fittings, valves and appurtenances have been installed. Whenever a relative compaction requirement value is specified hereunder, the optimum moisture content and density shall be determined in accordance with the State of California, Department of Transportation, Test Method No. California 216 or ASTM D1557.

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 street or to the existing ground surface.

1.11.02 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 six (6) inches in depth. Granular backfill with a minimum sand equivalent of 30, when tested in accordance with the California Department of Transportation, test Method No. California 217, will be required in the pipe zone, and the water densification 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 their 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 twelve (12) inches above the top of the pipe.

1.11.03 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 six (6) inches in diameter, in quantity not exceeding forty percent (40%) of the volume when said coarse materials are well distributed throughout the finer materials and the specified compaction may be attained.

1.11.04 Compaction Above Pipe Zone. - Where it is important that the backfill be made safe for vehicular traffic of for the support of structures, the backfill shall be compacted to the densities indicated below in conformance with approved compaction methods.



Sub grade Zone. - This zone is between the sub grade of the aggregate base or the surfacing, and the pipe zone. Backfill in this zone shall be compacted to ninety percent (90%) relative compaction except the upper six (6) inches which shall be compacted to ninety-five percent (95%) relative compaction.

1.11.05 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 densification method. If the backfill is not sufficiently granular in nature, the backfill shall be consolidated by a method approved by the Engineer. Backfill in easements and open terrain shall be compacted to eighty-five percent (90%) relative compaction.

1.11.06 Mechanically Compacted Backfill. - Mechanically compacted backfill shall be placed in horizontal layers of depths 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 shall be repaired or replaced at the Contractor's expense.

1.11.07 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.

1.11.08 Requirements for Densification by Jetting. - Densification by jetting shall be subject to all of the following requirements:

(a) 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.

(b) 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.

(c) Lift Thickness. - The lift of the backfill shall not exceed that which can be readily densified by the jetting procedure, but in no case shall the undensified lift exceed ten (10) feet for jetting.

(d) 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, Department of Transportation Test Method No. California 217. 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.

(e) 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 guaranteeing or implying that adjacent ground and improvements will be unaffected.

1.11.09 Compaction Test. - Compaction shall be tested in accordance with the methods specified by the State of California Department of Transportation Method No. California 216, or ASTM D1557.

Compaction test of the backfill will be required approximately every three hundred (300) feet, or more often if tests indicate the need, along the alignment on the main pipe line and, in addition, of approximately twenty percent (20%) 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.

1.11.10 Excess Excavated Material. - The Contractor shall make the necessary arrangements for and shall remove and dispose of all excess of waste material. All costs for the disposal of excess of 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 requirements of the County Code, Title 6, Division 8, 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.

1.11.11 Imported Backfill Material. - Whenever the excavated material is unsuitable for backfill, the Contractor shall arrange for and furnish imported backfill material per Sections 1.11.02 and 1.11.08 (d) of this specification, at his own expense. He shall dispose of the excess trench excavation as specified in the preceding paragraph. The backfilling with imported material shall be done in accordance with the methods described.

1.11.12 Completion of Cleanup. - The Contractor shall restore all areas and objects that were damaged or disrupted due to construction activities to a condition equal to that prior to construction. All fences, walls, shrubs, sprinkler systems, substructures or any other improvement removed or disturbed by the Contractor during construction, shall be replaced and/or repaired to the satisfaction of the Engineer immediately as that portion of the pipe line is installed, at the Contractor's expense. Said restoration shall be completed by the Contractor as an immediate follow-up to any portion of the pipe line installation.

1.12 STRUCTURAL EARTHWORK.

1.12.01 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 three (3) inches from any finished subgrade without the express approval of the Engineer. The last three (3) inches shall be removed without disturbing the subgrade. 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.

1.12.02 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 or imported sand, gravel, or other material approved by the Engineer, and shall be free of lumps, hard material exceeding six (6) inches in greatest dimension, 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 ninety percent (90%). Dewatering shall be maintained during the placement of compacted, clayey backfill.

1.12.03 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 work, shall be stripped or otherwise removed before fill is started.

1.12.04 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 1.11.10 of this specification. 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.

Surfaces under paved areas, dikes and elsewhere as directed by the Engineer, shall be wetted and compacted prior to placing fill.

1.12.05 Fill. - Fills or embankment shall be constructed at the locations and to the lines and grades indicate on the plans. Suitable material from excavations may be used for fill. Material shall be placed in horizontal layers 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 ninety percent (90%) 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 ninety percent (90%) relative compaction.

Dikes and embankments shall be compacted by the use of compaction rollers or three-wheel power rollers to ninety percent (90%) compaction.

Relative compaction shall be as determined in accordance with the State of California Department of Transportation, Test Method No. California 215, or ASTM D1557.

1.12.06 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 not be more than two-tenths (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 five-hundredths (0.05) foot from established grade and approved cross section.

1.12.07 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 Code, Title 6, Division 8, or ordinance of any other agencies having jurisdiction.

1.13 DRILLING AND BLASTING.

1.13.01 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.

1.13.02 Skilled workmen. - Drilling and blasting are to be done only by personnel skilled in rock techniques.

1.13.03 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.

1.14 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.

COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
TECHNICAL SPECIFICATIONS

SECTION 2
CONCRETE CONSTRUCTION

2.1 SCOPE.

The Contractor shall furnish all labor, equipment, materials and appliances necessary to complete construction of Portland cement concrete as shown on the drawings and as specified herein.

2.2 COMPOSITION.

Concrete shall be composed of Portland cement, sand, coarse aggregate, waste, 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 this specification.

2.3 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:

- (a) **Class I.** - Compressive Strength - 3,000 psi min.

Mix - 6-sack minimum test required (Type II cement)
7-sack, Test not required, (trial batch)

Uses: Walls, beams, slabs, footings. Class I. is Equivalent to California State Department of Transportation, Class D (for 7-sack mix).

- (b) **Class II.** - Compressive Strength - 3,000 psi min.

Mix - 6 -sack minimum, test required (Type V cement)

Uses: Walls, beams, slabs, footings. Class II is (Where specified.) Equivalent to California State Department of Transportation, Class D.

- (c) **Class III.** - Compressive Strength - 2,500 psi min.

Mix - 6-sack, test not required.

Uses: Slabs, footings, walls (where specified). Class III. is Equivalent to California State Department of Transportation, Class A.

- (d) **Class IV.** - Compressive Strength - 2,500 psi min.

Mix - 5-sack, test not required.

Uses: Paving, cradles, curbs, gutters, sidewalks, thrust blocks, manhole bases, pipe easements, or where specified. Class IV is Equivalent to California State Department of Transportation, Class B.

2.4 PORTLAND CEMENT.

Unless otherwise specified, Portland Cement shall be Type I, Type II, or Type V, complying with ASTM C 150, and shall have a total alkali content not exceeding six-tenths percent (0.6%) when calculated as sodium oxide as determined by methods given in ASTM C 114. There shall not be a change of brand of cement during course of work without prior written approval of the Engineer.

2.5 SAND.

Sand shall be a washed natural sand having hard, strong, and durable particles, and which does not contain more than two percent (2%) by weight or 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 2.6 will be met. Not more than three percent (3%) shall pass the No. 200 screen as determined by ASTM C 117.

2.6 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 two percent (2%) by weight of shale or cherty material; and shall show a loss of not more than ten percent (10%) when tested for soundness in sodium sulfate solution in accordance with ASTM C 88. Coarse aggregate shall be graded uniformly from one-quarter (1/4) 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 In. Max.	1 In. Max.	3/4 In. Max.
2 Inch	100	-	-
1- 1/2 Inch	90-100	100	-
1 Inch	50-86	90-100	100
3/4 Inch	45-75	80-90	90-100
3/8 Inch	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

2.7 MIXING WATER.

Mixing water shall be clean and free from deleterious amounts of acids, alkalies, salts or organic materials.

2.8 ADMIXTURES.

Unless otherwise specified or directed by the Engineer, water-reducing admixtures shall be used to reduce the required mixing water, for equivalent slump in plain concrete, at least ten percent (10%). If the admixture used entrains more than two percent (2%) air, the water reduction shall be an additional two percent (2%) for each percent of air entrained over two percent (2%), but in no case shall air entrained exceed five percent (5%).

Air-entraining admixtures shall be included in the mix design. The combined admixtures shall entrain five percent (5%) plus or minus one percent (1%). Acceptable admixtures are those manufactured by Master Builders, Superior Concrete Emulsions and Sika Chemical Corporation. Admixtures containing calcium chloride will not be approved.

2.9 OTHER ADMIXTURES.

No other admixtures shall be used without the Engineer's approval.

2.10 REINFORCING STEEL.

Reinforcing steel shall consist of deformed bars of the size called for in the drawings. Reinforcing steel shall conform to ASTM A 615, and shall be either Grade 40 or Grade 60. Deformations shall conform to ASTM A 615. If specified, mill

certificates shall be furnished to the Engineer for each melt if so requested. Wire reinforcement shall conform to ASTM A 82. Placing sheets and bending schedules shall be submitted to the Engineer before placing.

2.11 TEST ON CONCRETE.

Test cylinders of all concrete shall be made in accordance with ASTM C 31 and C 39. A minimum of three (3) cylinders per each one hundred (100) cubic yards of concrete or portion thereof shall be made. One (1) cylinder shall be tested at seven (7) days and one (1) cylinder at twenty-eight (28) days. If test cylinders fail to indicate required strength as specified, cores shall be taken as required by the Engineer and tested in accordance with ASTM C 42, all at Contractor's expense.

If more than one in ten (1 in 10) laboratory control strength test cylinders or any structure fall below the specified compressive 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 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 new mix design with trial batch necessary to secure the required strength and may require tests in accordance with ASTM C 42, or order load tests to be made on the structures so affected.

2.12 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 Class I, II and III concrete to be used on the job, and from each batch, four (4) 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 (1) supplier of concrete is used by the Contractor, each shall submit his mix design as described above. When concrete is used for architectural work, only one (1) supplier will be allowed.

2.13 JOINT FILLER.

Preformed fillers shall be of the type indicated on the drawings and shall be as indicated on the drawings.

2.14 WATERSTOPS.

Waterstops shall be installed where so indicated on the drawings. Waterstops shall be of polyvinyl chloride plastic, "Burke Vinylok" type RB 316-4, 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 water stops location. Waterstops shall be made continuous at splices and intersections (horizontal and/or vertical) by "welding" with a polyvinyl chloride splicing iron.

2.15 MIXING.

(a) 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 homogeneous. All concrete shall be placed within one (1) hour after water is first added to the batch. The mixer shall be equipped with a suitable charging hopper, 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 or 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.

(b) Transit-mixed concrete shall be batched, mixed and delivered in accordance with ASTM C 94, except that truck agitators may not be used. All concrete shall be deposited in place not more than forty-five (45) minutes after water is added when the temperature of the concrete exceeds 85 Degrees 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.

2.16 CONSISTENCY.

The quantity of water required for proper consistency of the concrete shall be determined by the slump test, in accordance with ASTM C 143. Unless otherwise stated, slump allowances shall be as follows:

Vertical Wall Sections, Columns. - Maximum four (4) inches (+ -) one (1) inch.

Floor Slabs, Beams, Footings. - Maximum three (3) inches (+ -) one-half (1/2) inch.

2.17 RETEMPERING.

Retempering of concrete which has partially hardened: that is, mixing with or without additional cement, aggregate, or water, will not be permitted.

2.18 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 of 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 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 forty-five (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 placing is started. Concrete shall not be placed in the forms unless the Engineer has been notified twenty-four (24) hours in advance of concrete placement.

2.19 SUBGRADE PREPARATION.

Subgrade for slabs over native earth or fill shall be finished to exact location and section of bottom of slab and shall be maintained in a smooth, compacted condition, until concrete is placed. Subgrade shall be thoroughly moistened but not muddy, at time concrete is placed.

2.20 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 (1) vibrator shall be used for each fifteen (15) cubic yards per hour of concrete placed. Standby vibrators shall be kept on hand.

2.21 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. A waterstop shall be provided where called for on the drawings or where deemed necessary by the Engineer. Where these methods fail, the joint shall be grouted under pressure after the concrete has set and forms have been removed.

The surface 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.

2.22 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 2.21 "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 one (1) inch thick of cement mortar composed of one (1) part cement and two (2) parts sand shall be placed before depositing the concrete.

2.23 CURING.

(a) Water Curing. - Uniformed concrete surfaces shall be covered with wet burlap mats as soon as the concrete has sufficiently set, and shall thereafter be kept wet under wet 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 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.

(b) Curing Compounds. - With the approval of the Engineer, concrete surfaces may be cured by curing compound 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 neither 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 (4) hours after application. If the Contractor applies a deleterious compound to paint, plaster, gunite, or other surface treatment, the surface shall be thoroughly sandblasted to remove all vestiges of the compound at the Contractor's expense.

2.24 PROTECTION OF CONCRETE CONSTRUCTION.

All surfaces shall be protected against injury. wheeling, working, or walking on the concrete shall not be permitted during the first seventy-two (72) hours after placing. 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 shall either be cured by the use of a curing compound or shall be kept wet for not less than fourteen (14) days, or shall be kept covered for the same period with Sisalcraft paper or other similar tough water proof 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 coverings shall be provided and kept ready at hand.

All concrete construction shall be protected from excessive loadings.

2.25 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 with a space of at least six (6) inches wide entirely surrounding it shall be wetted to prevent adsorption 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 and white Portland cement substituted for a part of gray Portland cement. 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 slightly higher than the surrounding surface. After being undisturbed for one to two (1 to 2) 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.

2.26 PLACING REINFORCING STEEL.

Reinforcing steel, before being positioned, shall be cleaned thoroughly of mill and rust scale or other coating that will destroy or reduce the bond. Reinforcement appreciably reduced in section shall be rejected. Where there is delay in deposition the concrete, reinforcement shall be re-inspected and when necessary, cleaned.

Reinforcement shall be carefully formed as indicated on the drawings. Stirrups and tie bars shall be bent around a pin having a diameter of not less than three (3) times the diameter of the bar. Except where specifically indicated otherwise on the drawings, bends for other bars shall be made around a pin having a diameter of not less than six (6) 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 drawings 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 thirty (30) times the diameter of the larger bar of the splice, but in no case shall the lap be less than eighteen (18) inches.

2.27 FORM MATERIAL.

The following classification shall be used for all concrete form work:

Class I. - For permanent 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 irregularities, patch marks and discoloration's. 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.

Class II. - For un-plastered 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 will be permitted to use the most advantageous panel sizes and panel joint locations. Class II forms for 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.

Class III. - 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.

2.28 FORM CONSTRUCTION.

Exposed edges of concrete on the outside of structures and all those in the inside of structures shall be chamfered or beveled at an angle of 45 degrees, bevel being one (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 one (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 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 one (1) inch and the resulting holes pointed up with one to three (1:3) mortar.

Temporary openings shall be provided at the base of the column and wall forms and at other points where necessary to facilitate cleaning and inspection before depositing concrete.

Forms, bracing and shores shall be kept in place until removal is approved by the Engineer and in no case shall removal commence earlier than the following schedule:

Sides of footings and rafters	1	days
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 shored to support both member and construction loads in a manner that will protect member from damage.

2.29 FINISH OF FORMED SURFACES.

All finished or formed surfaces shall conform accurately to the shape, alignment, grades and sections as shown on the drawings 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.

In case of floor and flat roof surfaces where drains are provided, all exterior concrete floor, sidewalk and flat surfaces, the Contractor shall be particularly careful to provide and 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 drawings, otherwise they shall be subject to the approval of the Engineer.

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 (1) 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.

2.30 FINISH OF SLABS.

(a) **Wood Float Finish.** - The forms shall be completely filled with concrete with as little working as possible. All high or low spots exceeding one-fourth (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.

(b) **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.

2.31 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, 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 watertightness around the openings so formed, the boxes or

cores shall be provided with continuous keyways all the way around, and shall have a slight flair to facilitate grouting and the escape of entrapped air during grouting. The grout shall contain Embeco or similar material and shall be mixed and placed in accordance with manufacture's instruction.

Additional reinforcement shall be provided around such openings, if large, to meet the approval to the Engineer. The pipes, castings, or conduits, as specified, shall be grouted in place by pouring in grout under a head of at least four (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 watertightness 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 shall furnish 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 to the attachment of trim, finish, and similar work, and all wires for suspending ceilings will be furnished and placed by the Contractor.

2.32 GUNITE.

When the Contractor elects or the Engineer specifies the use of gunite, the Contractor shall furnish and install such gunite according to the special technical provisions of the specifications.

2.33 PRESTRESSED CONCRETE.

When prestressed construction is specified by the Engineer, or is submitted as an acceptable alternate by the Contractor, it shall be according to the special technical provisions of these specifications.

2.34 MISCELLANEOUS CONCRETE MIXES.

Miscellaneous concrete mixes shall be as listed as follows:

Use	28 - day Strength	Mix
Grout	2,000	Seven (7) sack Portland cement with pea gravel.
Mortar	1,800	One (1) part Portland cement, one-fourth (1/4) to one half (1/2) part hydrated lime or lime putty, aggregate not less than two and one-fourth (2 1/4) and not more than three (3) times the sum of the volumes of the cement and lime used.
Coarse grout for filling masonry blocks and for bond beams	2,000	One (1) part Portland cement to which may be added not more than one-tenth (1/10) part hydrated lime or lime putty, and two (2) to three (3) parts sand, and not more than two (2) parts pea gravel.

2.35 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 degrees F, all concrete placed in the forms shall have a temperature between 70 degrees F and 80 degrees F and an adequate means shall be provided for maintaining a temperature between 50 degrees F and 80 degrees F during the curing period.

The housing, covering or other protection used in connection with curing, shall remain in place and intact at least twenty-four (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 degrees F prior to being placed in the mixer, so that the temperature of the mixed concrete shall not be less than 70 degrees F not more than 80 degrees 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 areas, or hot spots, which will burn the material. Flame throwers, or other, similar direct heating devices will not be allowed.

COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
TECHNICAL SPECIFICATIONS

**SECTION 3
PIPELINE MATERIALS
AND SPECIFICATIONS**

3.1 GENERAL.

This portion of the work shall include the furnishing and 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 two (2) or more materials are approved as equals, the Contractor shall not substitute another material for the one specified.

3.2 VITRIFIED CLAY PIPE (VCP) AND CLAY FITTINGS

3.2.01 Materials. - Vitrified Clay Pipe (VCP) and Clay Fittings shall be extra strength, durable, first quality, well-burned clay pipe in accordance with the Western Regional Standards of the National Clay Pipe Institute. Crushing strength shall be determined by the three (3) edge bearing method of ASTM C 301, and hydrostatic testing shall be at ten (10) psi as described in the Clay Pipe Engineering Handbook.

Each pipe and fitting shall be marked with the name of the manufacturer or his trademark.

The Engineer or Inspector may reject any pipe or fitting which contain excessive dimensional distortion as defined by the West Coast Standards of the National Clay Pipe Institute, foreign matter fused into the pipe, breaks which would affect the watertightness of the pipe and cracks which extend through the entire thickness of the pipe barrel.

3.2.02 COMPRESSION JOINT FOR VCP.

(a) Molded Compression joint. - When molded compression-type joints are used to join VCP, the joint shall be manufactured in accordance with ASTM C 425. The joints shall be "Wedge-Lock," Speed Seal," or approved equal.

(b) Mechanical Compression Joint. - When mechanical compression-type joints are used to join VCP, the joint shall be manufactured in accordance with ASTM C 594, "Test Condition II." The joint shall be as manufactured by Mission Clay Products Corp., "Band-Seal Type II Mainline Joint," with a stainless steel shear ring, or approved equal.

3.2.03 Hot-pour Joints. - Hot-pour joints will not be permitted.

3.3 ASBESTOS-CEMENT SEWER PIPE (ACP). - Due to the carcinogenic properties of asbestos fibers. Asbestos Cement pipe shall not be used in sanitary sewer systems.

3.4 REINFORCED PLASTIC MORTAR PIPE (RPM).

(Not permitted)

3.5 CAST-IRON PIPE (CIP) SEWER MAIN AND LATERAL.

All cast-iron pipe shall be Class 22, Class 23, or Class 24, manufactured in accordance with American National Standards Institute, Inc. Standards ANSI Specification A 21.6 and Federal Specification WW-P-421. Cast-iron pipe may, at the Contractor's option have mechanical joints or be jointed by the use of one hundred twenty-five (125) pound ANSI flanges or Victaulic-type couplings. Where flexibility of joints is a factor, such as at connection between inside and outside piping, a flexible-type joint such as Victaulic-type couplings shall be used.

3.5.01 Flanged Joints. - Bolts, nuts and washers for flanged joints shall conform to the recommendations of the pipe manufacturer and shall be uniformly tightened. Ring gaskets shall be one-sixteenth (1/16) inch rubber or neoprene lubricated and installed in accordance with the manufacturer's recommendations.

3.5.02 Mechanical Joints. - Mechanical joints shall consist of a stuffing box into which an endless rubber ring is compressed by a follower gland. The gasket must be fully confined and under constant compression. Mechanical-joint pipe shall be installed in accordance with manufacturer's recommendations. Gasket shall conform to American National Standards Institute Specification A 21,11.

3.5.03 Victaulic-type Couplings. - Cast-iron pipe for Victaulic-type couplings shall have either grooved or

shouldered ends. An endless rubber gasket of C-shaped cross section shall be used in each coupling. Couplings shall be installed in accordance with manufacturer's recommendations.

3.6 POLYVINYL CHLORIDE (PVC) SEWER MAIN AND LATERAL.

3.6.01 Scope. - Polyvinyl Chloride (PVC) sewer pipe material for sizes up to and including twelve (12) inch diameter pipe.

3.6.02 Material. - Pipe and fittings shall be made from PVC compound as defined in ASTM D 1784. Pipe and fittings shall meet the requirements of ASTM D 3034 with the following exception:

All pipe and fittings shall have rubber joints capable of withstanding an internal pressure conforming to pipe manufacturer's recommendations. The rubber ring shall be made of a natural or synthetic rubber base compound, conforming to the requirement of ASTM D 1869. The compound shall be resistant to acids, alkalies, solvents and greases encountered in sanitary sewers. Solvent weld connections will be allowed only for end caps, repairs, saddles, and factory-fabricated fittings.

The pipe shall have a minimum "pipe stiffness" of $F/Y=46$ measured at five percent (5%) deflection.

This pipe stiffness shall be measured in accordance with ASTM Designation D 2412, Test for External Loading Properties of Plastic Pipe by Parallel-Plate loading. The pipe shall have a maximum Standard Dimension Ratio (SDR) of thirty-five (35).

3.6.03 Fittings. - All fittings and accessories shall be as manufactured and furnished by the pipe suppliers or approved equal.

3.6.04 Installation. - Pipe and fittings shall be delivered and installed in accordance with the pipe manufacturer's recommendation and ASTM D 21321, except only Class I, II, and III embedment materials will be considered suitable for PVC installations. PVC sewer pipe shall not be installed where soil conditions preclude a firm stable trench wall.

3.6.05 Connections to Concrete Structures. - Connections to concrete structures, such as manhole bases, shall be watertight. An asbestos-cement connection coupling, as approved by the Engineer, shall be precast directly into the manhole base so that the PVC sewer pipe is not in contact with the concrete, thus providing a flexible joint.

3.6.06 Allowable Vertical Deflection. - The allowable initial (after backfilling and compaction) vertical deflection shall not exceed five percent (5%) of the average inside diameter of the pipe in an unloaded condition.

Due to the flexible characteristics of PVC pipe, the Contractor may have to exceed the specification requirements for backfill material and minimum depths on rigid pipes. Any additional costs incurred for the installation of flexible pipe shall be borne by the Contractor.

3.6.07 Testing. - Testing shall be done in accordance with Sections 3.8 and 6.0 of these specifications.

3.6.08 Marking. - Each length of pipe shall be marked at least once by the manufacturer, with trade name, lot identification, nominal size, the ASTM number, and the type and grade.

3.7 ACRYLONITRILE BUTADIENE STYRENE (ABS) SEWER MAIN AND LATERAL.

3.7.01 Scope. - Acrylonitrile butadiene styrene (ABS) truss pipe as herein specified is defined as an internally braced, double-wall pipe for use in gravity sanitary sewers. Six (6) inch diameter and smaller shall be solid-wall pipe.

3.7.02 Material. - Truss sewer pipe shall be manufactured by extruding ABS thermoplastic into a truss with inner and outer walls connected by webs.

The pipe and joints shall conform to the requirements of ASTM D 2680.

3.7.03 Joints. - Chemically welded joints shall be made in conformance with the pipe manufacturer's recommendations. Both a primer and a cement shall be of the composition recommended by the manufacturer. The primer and cement shall be of the composition recommended by the pipe manufacturer.

3.7.04 Physical Requirements. - The tests contained herein are quality-control tests. Pipe meeting these quality-control requirements will be acceptable for use in sanitary sewers.

(a) Truss Pipe. - A six (6) inch long piece, when tested by ASTM D 2412, shall equal or exceed the following values even after twenty-four (24) hours immersion in five percent (5%) solutions by weight of H₂SO₄ (Sulfuric Acid) when deflection reaches five percent (5%):

Nominal Diameter (Inches)	Minimum Diameter (Inches)	Minimum EL-Lb./In.	F/Y Lb/SqIn.
8	7.75	2,400	200
10	9.75	4,600	200
12	11.75	8,100	200
15	14.75	15,900	200

The F/Y shall be computed by dividing the load in (Lbs./In.) at five percent (5%) by the deflection in inches. Pipe shall not fail when deflected ten percent (10%).

(b) Solid Wall Pipe. - Pipe and joints shall confirm to ASTM 2751-75. The pipe shall have a maximum Standard Dimension Ratio of thirty-five (35).

3.7.05 Couplings and Fittings. - Couplings and fittings shall be manufactured or 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 (1) coupling shall be furnished with each standard length of pipe.

3.7.06 Installation. - Pipe and fittings shall be delivered and installed in accordance with the pipe manufacturer's 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.

3.7.07 Manholes and Special Structures. - An O-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.

3.7.08 Allowable Vertical Deflection. - The allowable initial (after backfilling and compaction) vertical deflection shall not exceed five percent (5%) of the average inside diameter of the pipe in an unloaded condition.

3.7.09 Marking. - Each length of pipe shall be marked at least once by the manufacturer, with trade name, lot identification, nominal size, the ASTM number, and the type and grade.

3.9.02 PVC Fittings.

(a) **General.** - 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 made of NSF-approved material.

Samples of each type of 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 shall not be permitted.

(b) **PVC Couplings.** - Couplings shall be of the extruded type, designed to be interference fit for at least one-half (1/2) 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 (Inches)	Socket Depth (Inches)
6	5.000
8	6.000

The wall thickness of the PVC couplings shall be equal to SDR 17 pipe or shall be one-tenth (1/10) of an inch thick, whichever is greater.

(c) **Elbows.** - Elbows shall be long radius bends with minimum walls equal to that of the pipe joining or shall be one-tenth (1/10) of an inch thick, whichever is greater. Tapered-welding sockets shall be equal to those required for couplings. Standard elbows, as manufactured by NSF Standards, shall be acceptable but are subject to special blocking and bedding at no extra cost, unless deep-socket adapters have been properly installed.

(d) **Tees.** - Tees shall be a molded fitting with NSF approval. A deep-socket adapter shall be installed in each outlet by the pipe manufacturer or by the Contractor at least twenty-four (24) hours before field installation. The deep-socket adapter shall have a socket depth and wall equal to the coupling.

3.9.03 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.

3.9.04 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 that 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.

3.10 PIPE JOINTS.

Upon the District's request, the Contractor shall furnish for approval, the pipe manufacturer's drawings showing dimensions and manufacturing tolerances of pipe and joint to be used on the work.

3.11 TESTING FREQUENCY AND FINAL ACCEPTABILITY OF PIPE.

The District may call for crushing and hydrostatic testing of up to one-half percent (0.5%) of the total pieces of nonmetallic 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 two percent (2%) 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.

3.12 INSTALLATION OF PIPELINES.

Pipe laying shall proceed upgrade 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 joining method being used. All pipe and fittings shall be placed in the trench with care.

3.13 Cleanouts.

The pipe for the cleanout 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.

3.14 Tees.

Tees shall be of the same materials 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 in 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 service the property in question. A suitable plug shall be provided and installed prior to backfilling operations to provide a watertight joint.

The Contractor shall reference each tee connection in the field with a surface marker. The surface marker shall be as specified on the District's Standard Drawing No. E-9 or No. E-10.

3.15 Sewer Laterals.

The sewer laterals shall be constructed as shown on the District's Standard Drawings No. E-9, No. E-10, and No. E-11.

Sewer laterals 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 service the property in question. A suitable plug shall be provided and installed prior to backfilling operation to provide a watertight joint. Sewer lateral and building sewer pipe material shall be as specified in Section 3, "Pipe Line Materials and Installation," of these specifications.

The Contractor shall reference each sewer lateral connection point in the field with a surface marker. The surface marker shall be as specified on the District's Standard Drawing No. E-9 and E-10.

Sewer laterals in waterways, easement, and deep cuts should have the house sewer service brought to a minimum depth of five (5) feet. Sewer laterals in waterways will be constructed of cast iron exclusively, cast iron construction will extend up and out of the waterway ten (10) feet, or to the One-Hundred Year (100) flood level.

3.16 Bedding.

Unless otherwise called for in the plans and specifications, "normal 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-18.

Plastic pipe shall be bedded as shown in the following table:

Type of Pipe	Depth of Cover in Feet	Bedding Required
traffic	less than 4	Concrete blanket per Standard Drawing E-19 for or Special Design
Solid Wall (ABS and PVC) 4-Inch to 15-Inch size	4 to 17	Crushed rock bedding to spring line of pipe
	17 to 30	Concrete cradle per Standard Drawing E-18
	Greater than 30	Special Design

traffic	Less than 4	Concrete blanket per Standard Drawing E-19 for or Special Design
ABS composite 8-Inch or larger	4 or 9	Normal bedding per Standard Drawing E-18
or		
ABS solid wall 4-Inch to 6-inch diameter	9 to 20	Crushed rock bedding to spring line
	20 to 30	Encasement per Standard Drawing E-18 or
	Greater than 30	Special Design

3.17 Excavation and Backfill.

The Contractor is directed to section 1, "Earthwork," of these specifications for all items pertaining to excavation and backfill.

3.18 Pavement Removal and Replacement.

The Contractor is referred to Section 8, "Removal and Replacement of Paved Surfaces," of these specifications.

3.19 Leakage Tests.

Leakage tests shall be in accordance with Section 6, "Cleaning and Testing," of these specifications.

3.20 Pipeline in Casing.

The Contractor is referred to Section 5, "Concrete Blankets and Conductor Pipe," of these specifications.

3.21 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.

3.22 Grease Interceptors.

Need for and sizing of, will be determined through the "Feasibility Study" process for new installations. In all installations, clear visibility, from above, of both the inlet and outlet pipes will be provided for by incorporating standard manhole ring and covers in the design. Sizing may be recommended by the "Feasibility Study" but will be set by San Bernardino County, Department of Environmental Health Services.

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SECTION 4 MANHOLES AND CLEANOUTS

4.1 GENERAL

All manholes shall be constructed in conformance with the District's Standard Drawing No. E-18, No. E-2, 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.

4.2 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 section shall be manufactured of approved and selected materials in such proportions as per Section 2, "Concrete Construction," of these specifications, with a minimum compressive strength of 3000 psi. Sections will be compacted by vibration or centrifugal force and steam, sprinkling, membrane solution or a combination of these methods. Manholes shall conform with ASTM C 478.

4.2a PREFABRICATED ABS MANHOLES.

Prefabricated ABS manholes will be manufactured in a plant designed for this type of work. All units will confirm to the details on the above-referenced drawings. Installation will be per manufactures recommendations. Bedding will be Class 1: angular, 1/2 to 3/4 inch maximum size, well graded crushed stone, coal, slag, cinders or crushed shells (ASTM D 2321 allows the use of such large sizes in not consistent with the requirements for uniform haunching and embedment, particularly for small pipe).

4.3 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 E-2. The Contractor is referred to Section 2, "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. Flexible joints shall be provided in all sewer pipes outside of manholes, but within twelve (12) inches of concrete base. If required by district engineer.

A notch or groove confirming to the precast manhole section shall be formed on top of the base section.

4.4 PRECAST MANHOLE JOINTS.

Precast manhole sections shall be tongue and groove alternately on both ends of the sections, and shall be laid with the grooved portion facing up. Each section shall be set 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 grooved 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 one-fourth (1/4) inch.

Mortar shall consist of one (1) part by volume of cement and three parts by volume of sand. Mortar shall be mixed in a suitable mixer in a watertight mixing box. The materials must be thoroughly mixed dry until the mass assumes a uniform color and then sufficient water should be 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 2.34 of these specifications.

4.5 GRADE RINGS.

Precast grade rings shall be used to reach desired height of the manhole cover ref. drawing E-2. A maximum vertical adjustment using grade rings is twenty (20) inches, adjustments greater than this require the replacement of a barrel section. Minor adjustment to the ring and cover 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.

4.51 HIGH DENSITY POLYETHYLENE GRADE RINGS

High density polyethylene grade rings used in lieu of precast concrete ring must be approved by the district engineer before installation. The adjustment rings shall be manufactured from polyethylene plastic as ASTM Specification D-4976. The material properties shall be tested and qualified for use per the ASTM test method referenced in the above ASTM standard. The annular space between the rings and cone basin, the rings, and the rings and cover frame shall be sealed utilizing an approved butyl sealant. All adjustment for matching road grade shall be made utilizing a molded and indexed slope ring.

4.6 MANHOLE STEPS.

Manhole steps will not be allowed except for manholes constructed within the City of Big Bear Lake where steps are required

4.7 BRICK MANHOLES. Brick manholes are not acceptable for new construction.

4.8 CLEANOUTS.

Cleanouts shall be constructed as shown on the District's Standard Drawing No. E-15, and in conformance with the notes contained therein.

4.9 CASTINGS.

All castings shall be of tough gray iron, free from cracks and swells. The iron shall conform to the requirements of ASTM A 48, Class 30.

4.9.01 Manhole Frames and Covers. - Manhole frames and covers to be constructed in easements shall be Long Beach Iron Works No. X 103 D, or approved equal. All other frame and covers shall be Long Beach Iron Works No. X-106E, or approved equal. In no case shall the diameter of a manhole be less than twenty four (24) inches, inside diameter.

Covers shall be diamond tread finish and shall be provided with a "lifting receptacle" per District's Standard Drawing No. E-5. All frames and covers are to be machined to fit (non-rocking).

4.9.02 Cleanout Frames and Covers. - Cleanout frames and covers shall be Long Beach Iron Works No. X-508B, or approved equal. Covers shall be diamond tread with the letter "S" stamped or integrally cast into the cover.

4.9.03 Nameplate. - The nameplate on each and every sanitary sewer manhole cover shall read as follows: "Sanitary Sewer."

4.9.04 Bolt-Down Frames and Covers. - Manhole frames and covers shall be drilled to match. Covers shall be counter bored to accept standard socket wrench and permit bolt heads to be flush with cover.

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SECTION 5
CONCRETE BLANKETS AND
CONDUCTOR PIPE

5.1 CONCRETE BLANKET.

5.1.01 General. - Concrete blankets shall be constructed at the locations shown on the plans and in accordance with the District's Standard Drawing No. E-19. Concrete shall be of Class IV Portland cement concrete.

5.2 EXCAVATION AND BACKFILL.

The Contractor is referred to Section 1, "Earthwork," of these specifications.

5.3 STEEL CONDUCTOR TUBE.

5.3.01 Materials. - Steel conductor tube shall be butt welded of sheets conforming to ASTM A 283. Conductor tube used shall not have a thickness of less than one-fourth (1/4) inch. All field joints shall be butt welded in full circumference.

5.3.02 Installation. - 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.

Pipes lines shall be installed within the conductor tube to the lines and grades shown on the plans. The sewer pipe shall be supported on lined steel casing insulators with plastic runners or skids. The size, type, spacing installation and manufacture of these insulators shall be per the manufacturer's recommendations and specifications. 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 6, "Cleaning and Testing," of these specifications.

5.4 CONCRETE CONSTRUCTION.

The Contractor is referred to Section 2, "Concrete Construction," of these specifications.

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SECTION 6
CLEANING AND TESTING

6.1 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 watertight and clean.

6.2 INFILTRATION AND EXFILTRATION TEST.

Each section of sewer between two (2) 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, and upon approval and acceptance of necessary soils tests; wherein, in the opinion of the Engineer, heavy compaction of the Contractor or others may have damaged or affected the required watertight 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 re-laid by the Contractor at his expense. The sewer will not be considered acceptable until the leakage or infiltration rate, as determined by the test, is less than the allowable.

Air testing described in Section 6.3 may be used in lieu of water testing when approved by the District.

Exfiltration Test (water test)

Unless excessive ground water is encountered, each section of sanitary sewer, between two (2) 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 feet, an air test per Section 6.3 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 four-tenths (0.40) gallons per two (2) hour test period per inch of nominal diameter of pipe per one hundred (100) 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 re-laid 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.

Infiltration Test

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 (3) days after which the section shall be tested for infiltration. The infiltration shall not exceed four-tenths (0.40) gallons per two (2) hour test period per inch of diameter, per one hundred (100) 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 test required, at his own expense. All tests must be completed before street or trench is resurfaced, unless otherwise directed by the Engineer.

6.3 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 four (4) psi and hold at four (4) psi for not less than two (2) minutes. Add air if necessary to keep the pressure at four (4) psi. Disconnect air supply. When pressure decreases to three and one-half (3.5) psi, start stopwatch. Determine the time in seconds that is required for the internal pressure to reach two and one-half (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. Release air from the opposite end of the section.

Sewer Size (in Inches)	Minimum Time (in Seconds)	Minutes & Sec.
4	113	1-53
6	170	2-50
8	226	3-46
10	283	4-43
12	340	5-40
15	425	7-5
18	510	8-30
21	595	9-55
24	680	11-20

When the prevailing ground water is above the sewer being tested, air pressure shall be increased forty-three hundredths (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.

Sewer Building laterals shall be considered part of the MAIN sewer 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 sewer lateral.

The pressure gauge used shall be supplied by the Contractor, shall have minimum divisions of one-tenth (0.10) psi, and shall have an accuracy of four hundredths (0.04) psi. Accuracy and calibration of the gauge shall be certified by a reliable testing firm at six (6) 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 four (4) feet above flow line of the manhole with the inlet and outlet of each manhole plugged. The maximum leakage rate shall be ten (10) gallons per hour per manhole test to be run for a minimum of thirty (30) minutes.

6.4 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 (4) 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 by 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 pipe 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.

6.5 CLEANING.

Prior to putting any sewer into service, or before final acceptance, 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, 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.

6.6 PIPE TESTING.

Tests of pipe for strength, straightness and durability shall be as required in Section 3, "Pipe Line Materials and Installation," of these specifications.

6.7 TESTING OF FLEXIBLE SEWER PIPE.

All sections of pipe shall be tested for water-tightness in accordance with Sections 6.2 and 6.3 of these specifications, after installation has been completed.

Prior to the above test, all sections shall be subject to a deflection performance test as follows:

All flexible sanitary sewer pipe (PVC and ABS, etc.) shall be tested for excessive deflections after back-fill has been placed and compacted but before leak testing and final paving operations.

A rigid mandrel, with a circular cross section having a diameter of at least ninety-five percent (95%) of the specified average inside diameter, shall be pulled through the pipe by hand. The minimum length of the circular portion of the mandrel shall be equal to the nominal diameter of the pipe. Obstructions encountered by the mandrel shall be corrected by the Contractor. All material, equipment and labor to perform the test shall be provided by the Contractor at no cost to the Owner.

The testing device shall be pulled through the completed pipe lines. 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.

6.8 TELEVISION INSPECTION.

For projects that exceed 5,000 lineal feet of main line pipe, television inspection shall be performed as described herein:

All newly installed commercial 6" and larger sewer laterals will have a television inspection performed.

The Contractor shall secure the services of a firm or agency for viewing and recording on video tape, newly installed sewer

pipelines. The total length of pipeline to be inspected by television shall be one hundred percent (100%).

Any defective pipe detected by the television inspection shall be removed and replaced by the Contractor, and an additional section of the sewer main between manholes shall be added to the total length of pipeline to be tested. Television testing shall include (1) a verbal tape describing the condition of the pipe inspected at various locations along the pipeline and (2) a digital readout of the locations of all laterals or tees.

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SECTION 7
EROSION CONTROL SEEDING

7.1 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.

7.2 PREPARATION.

After the backfill has been compacted and the pipeline 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.

7.3 MATERIAL.

Materials shall consist of the following:

7.3.01 Seed. - The seed shall consist of the following mixture: Crested Wheatgrass, forty-seven percent (47%); Intermediate Wheatgrass, twenty-seven percent (27%); Wimmera Ryegrass, thirteen percent (13%); Blando Ryegrass, thirteen percent (13%). The seed shall be spread at the rate of one hundred (100) pounds per acre and shall be applied by the use of a "Cyclone Seed Sower" or equal.

7.3.02 Fertilizer. - The fertilizer shall be Ammonium Phosphate (16-20-0) spread at the rate of three hundred (300)

pounds per acre and shall be applied by the use of a "Cyclone Seed Sower" or equal.

7.3.03 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 (4) tons per acre. The straw shall then be "mulched" into the ground by the use of a "wire" roller or other approved equipment.

7.4 PROTECTION FOR STEEP SLOPES.

In cases where the grade over the pipeline exceeds twenty-five percent (25%) slope, the Contractor shall provide additional erosion-control measures to stabilize the backfill material. The Contractor shall submit to the District for its approval, special engineering details of the method to be used.

7.5 LATERALS & OFF-SITE SEWER INSTALLATIONS.

Off-Site (private) sewers may be handled as in Sections 7.1 through 7.4. Alternatively laterals and or Off-Site sewers exceeding twenty-five percent (25%) slope, or in areas judged by the District to require additional erosion protection will be handled as follows. Ref. Standard Drawing E-18.

7.5.01 Cut-Off Walls. - Cut-Off walls can be constructed of scrap lumber or masonry block. Cut-Off walls are to be installed in a transverse direction across trenches as they are backfilled. The walls must be flush with the finished grade and extend downward into the trench seven and one half (7 1/2) inches below the finished grade.

7.5.01 Jute. - Jute covering will be laid over all disturbed soil areas and pinned down with appropriate fasteners.

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SECTION 8
REMOVAL AND REPLACEMENT OF
PAVED SURFACES

8.1 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 construction of improvements, including all appurtenances, shall conform to the provisions of permits issued by the State of California Department of Transportation, the County Transportation Department under whose jurisdiction the road falls, and/or the city for the work within the rights of way of these respective agencies.

8.2 EXCAVATION AND BACKFILL.

The Contractor is directed to Section 1, "Earthwork," of these specifications, for all items pertaining to excavation and backfilling.

8.3 PAVEMENT REMOVAL.

8.3.01 General. - 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 1, "Earthwork," in 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 to 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.

8.3.02 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.

8.3.03 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.

8.4 REPLACEMENT.

8.4.01 General. - 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 absence or 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 or 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 one-eighth (1/8) inch in ten (10) feet and shall be free from ruts, depressions and irregularities.

8.4.02 State Highway Right of Way. - Construction of sewer lines within State Highway right of way shall be subject to Department of Transportation utility encroachment permit, which will be provided by the District. All work done within highway rights of way shall conform to the "Terms and Conditions Relating to Utility Encroachments," as issued by the State Department of Transportation, and as to details as indicated on the plans.

8.4.03 County Roads. The Contractor's attention is directed to the requirements of the County Transportation department regarding resurfacing of excavations in County roads. The specification, policies and procedures of said County Transportation Department shall supersede all other provisions of this Section within the jurisdiction of the County Transportation Department, but only if such specifications exceed the requirements of these specifications.

8.4.04 Base Material. - Base material shall be furnished, placed and compacted in the trench excavation when required by the agency having jurisdiction.

8.4.05 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 improvement under this contract, shall be replaced and/or reconstructed. All asphalt-concrete shall be placed on compacted fills or base material as herein before 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 Department of Transportation Standard Specifications.

Plant-mix surfacing shall be Type B asphalt-concrete and shall conform to the grading specified for one half (1/2) inch maximum, medium size, as specified in Section 39 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 viscosity range of AR 1,000, 2,000 or 4,000 as specified by the Engineer.

Paint binder shall be grade RS-1 emulsified asphalt unless otherwise designated by the Engineer.

8.4.06 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 herein before 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 road-mix resurfacing and/or reconstruction shall conform to the requirements of Section 38 of the State Department of Transportation Standard Specifications.

Mineral aggregate may be either selected material from the roadway excavation of 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%) by weight of the dry mineral aggregate.

8.4.07 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, grade SC-800 or approved equal.

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.

APPENDIX E: SAMPLE CLEANING RECORDS AND TV FIELD DATA LOG

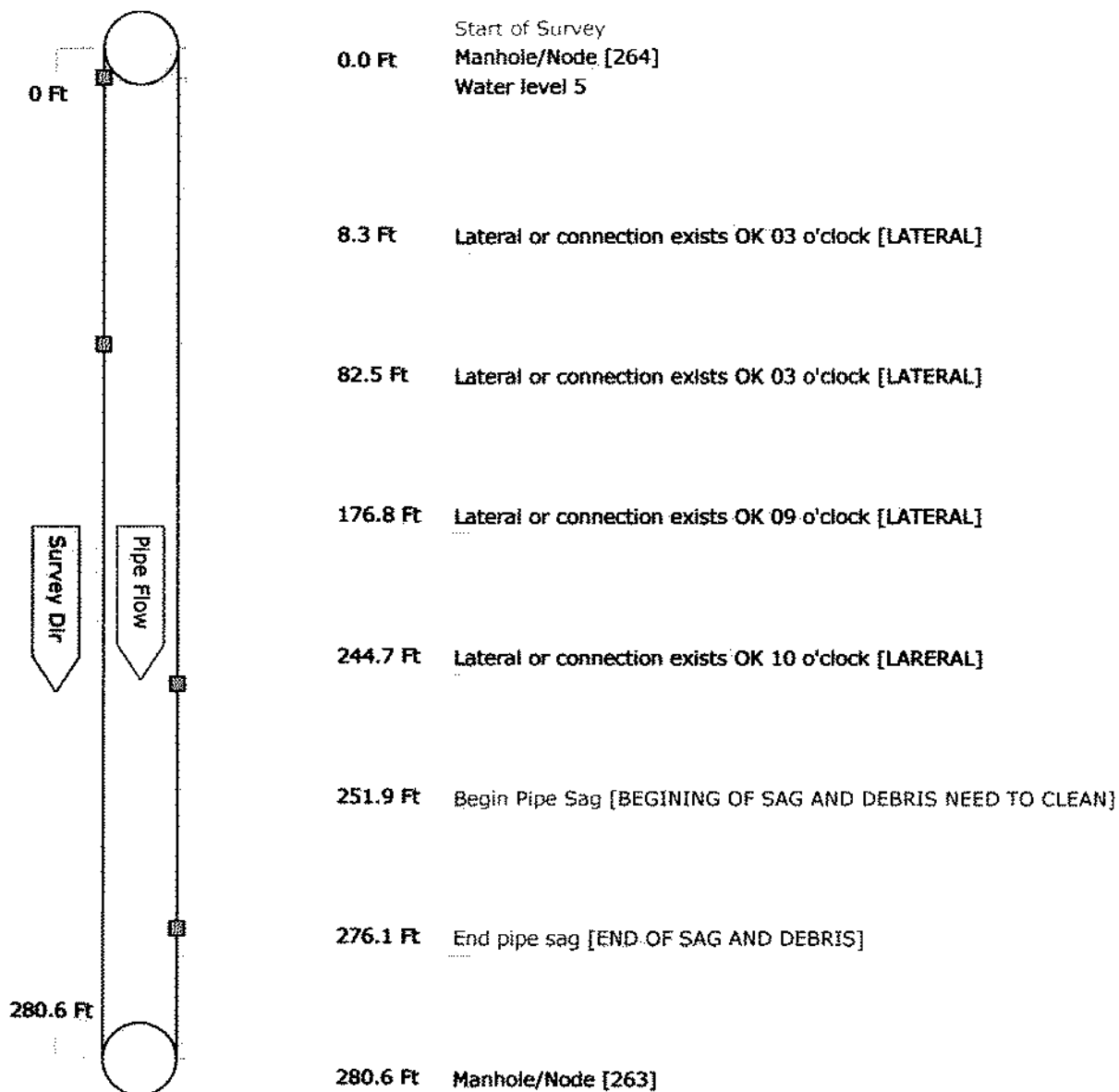


Pipe Graphic Report of PLR 264

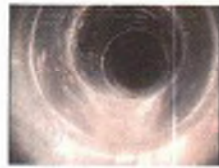
X

for 53B

Work Order		Contract		Vkdeo		Setup		1	
Facility		Operator J Green		Van Ref 20500		Surveyed On		07/21/2010	
Street Name		Canyon rd		City		F System			
Location type		Road carriageway							
Surface		Hotmix road							
Survey purpose		Random survey of pipes and things				Weather			
Pipe Use		Sanitary		Schedule length		From 264		Depth 4.11 Ft	
Shape		Circular		Size by 8 ins		To 263		Depth Ft	
Material		Concrete reinforced ABS		Joint spacing 20.0 Ft		Direction Downstream			
Lining				Year laid		Pre-clean N		Last cleaned	
General note						Structural		Service Constructional	
Location note intersection of Canyon and Chinook						Miscellaneous		Hydraulic	



Work Order		Setup 1
Video	Survey Date	07/21/2010
Path to picture files	C:\FLEX6\Snap\CSA 53B\	
Path to video files	C:\FLEX6\Movies\CSA 53B\	
Path to media files	C:\FLEX6\Media\CSA 53B\	



Video Index Count 8.3 Ft

Code Lateral or connection exists OK

Remarks LATERAL

File Name 389.jpg **Date** 07/21/2010 **Size** 282,305



Video Index Count 82.5 Ft

Code Lateral or connection exists OK

Remarks LATERAL

File Name 390.jpg **Date** 07/21/2010 **Size** 312,562

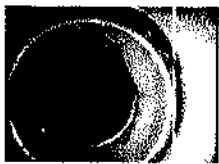


Video Index Count 176.8 Ft

Code Lateral or connection exists OK

Remarks LATERAL

File Name 391.jpg **Date** 07/21/2010 **Size** 310,001

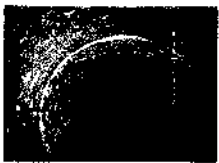


Video Index Count 244.7 Ft

Code Lateral or connection exists OK

Remarks LARERAL

File Name 392.jpg **Date** 07/21/2010 **Size** 304,690



Video Index Count 251.9 Ft

Code Begin Pipe Sag

Remarks BEGINING OF SAG AND DEBRIS NEED TO CLEAN

File Name 393.jpg **Date** 07/21/2010 **Size** 344,346

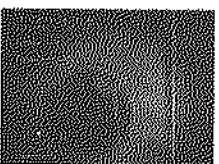


Video Index Count 276.1 Ft

Code End pipe sag

Remarks END OF SAG AND DEBRIS

File Name 394.jpg **Date** 07/21/2010 **Size** 341,652



Video Index Count 280.6 Ft

Code

Remarks

File Name 395.jpg **Date** 07/21/2010 **Size**

Tabular Report of PLR 264
X
for 53B

Work Order	Contract	Video	Setup 1
Facility	Operator J Green	Van Ref 20500	Surveyed On 07/21/2010
Street Name Canyon rd		City F System	
Location type Road carriageway			
Surface Hotmix road			
Survey purpose Random survey of pipes and things		Weather	
Pipe Use Sanitary	Sched length	From 264	Depth 4.11 Ft
Shape Circular	Size by 8 ins	To 263	Depth Ft
Material Concrete reinforced ABS	Joint Spacing 20.00 Ft	Direction Down	
Lining	Year laid	Pre-clean N	Last Cleaned
General note		Structural	Service
Location note intersection of Canyon and Chinook		Miscellaneous	Constructional
		Hydraulic	

Video	Count	CD	Code	Sev	Fr	To	Value	Remarks
	0.0		ST					Start of Survey
	0.0		MH					Manhole/Node
	0.0		WL				5	Water level
	8.3		LO		03			Lateral or connection exists OK
	82.5		LO		03			Lateral or connection exists OK
	176.8		LO		09			Lateral or connection exists OK
	244.7		LO		10			Lateral or connection exists OK
	251.9		DS					Begin Pipe Sag
	276.1		DF					End pipe sag
	280.6		MH					Manhole/Node

280.6 Ft Total Length Surveyed
Scores

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe

< SURVEY REPORT >						< Page Number : 1 >	
Date : 21 Jul 2010			Time : 10:38				
Contractor County of San	Contract No	Job No	Drainage Area Fawnskin	Div	Dist 53B	Pipe L. Ref 264	X
Location Canyon rd			City F System				
Start Manhole No. : 264			Depth : 4.11		Total Length :		
Finish Manhole No. : 263			Depth :		Svyed Length : 280.6		
Use Sanitary	Direction DN/STREAM	Size in	Shape Circular	Material Concrete	Lining	Yr Laid	Pipe L. 20
Tape No	V. Model	Comments					
Purpose Random	Weather	Location Road	Further Information intersection of Canyon and Chinook				

< DETAIL >				< Page Number : 1 >	
Digit	Ph.	Dist	CD Code	Other Details	

0.0	ST	Start of Survey
0.0	MH	Manhole/Node 264
0.0	WL	Water level is now %
8.3	LO	Lateral or connection exists OK at 03o/c to o/c LATERAL
82.5	LO	Lateral or connection exists OK at 03o/c to o/c LATERAL
176.8	LO	Lateral or connection exists OK at 09o/c to o/c LATERAL
244.7	LO	Lateral or connection exists OK at 10o/c to o/c LATERAL
251.9	DS	Begin Pipe Sag BEGINING OF SAG AND DEBRIS NEED TO CLEAN
276.1	DF	End pipe sag END OF SAG AND DEBRIS
280.6	MH	Manhole/Node 263

< SUMMARY >				< Page Number : 1 >	
St Mh No. : 264		Fh Mh No. : 263		Svyed Length : 280.6	
SOME MAJOR defects in this length :			Deformations : NO		
Breaks/Holes	Multi/Long/Circ Fractures	Heavy/Medium Encrustation	Gusher/Runner Infiltration	Mass Roots	Obstructions
NO	NO	NO	NO	NO	NO
Faulty Junctions/Connections : NO					
< END OF SUMMARY >					

CCTV Defects by Inspection Report

Printed on 08/16/2010

Client	53B	Work Order	
Project	F System	Project Start	07/19/2010
Location		Start Tape	UOM Ft
			Setups 1
Database	C:\FLEX6\DATA\CSA 53B.MDB		

Setup	Manholes			Structural conditions							Service Conditions							Misc	
	From Manhole	To Manhole	Surveyed length	Break in pipe	Collapse	Cracks	Fracture	Deformation	Displaced joints	Open joints	Defective Laterals	Roots	Grease	Encrustation & Scale	Silt	Infiltration	Obstruction	Line Deviations	Water Level +20%
1	264	263	280.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	Totals			0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

CCTV Surveys List for 53B

Number of surveys in this list is 48 as of Monday, August 16, 2010

Unit of measure: ft

Setup Date	Street	Start MH	Finish MH	Dir	Size Inch	Pre Clean	Vld Cassette	Scheduled Surveyed Length Length
1 7/21/2010	Canyon rd	264	263	D		N		280.6
2 7/21/2010	Canyon rd	263	262	D		N		253.2
3 7/21/2010	Canyon rd	262	257	D		N		151.5
4 7/21/2010	DEERTAIL	284	CO 77	U		N		146.1
5 7/21/2010	DEERTAIL	284	283	D		N		183.2
6 7/21/2010	DEERTAIL	283	282	D		N		108.7
7 7/21/2010	FLICKER	282	CO 76	U		N		99.6
8 7/21/2010	FLICKER	282	281	D		N		148.0
9 7/21/2010	FLICKER	281	280	D		N		172.5
10 7/21/2010	FLICKER	280	279	D		N		259.3
11 7/22/2010	FLICKER	279	260	D		N		175.3
12 7/22/2010	FLICKER	259	260	U		N		106.6
13 7/22/2010	FLICKER	260	261	U		N		43.3
14 7/22/2010	FLICKER	259	258	D		N		223.0
15 7/22/2010	FLICKER	258	257	D		N		222.0
16 7/22/2010	FLICKER	257	245	D		N		274.6
17 7/22/2010	FAWWNSKIN DR	248	247	D		N		165.9
18 7/22/2010	FAWWNSKIN DR	247	246	D		N		178.7
19 7/22/2010	FAWWNSKIN DR-CANYON	246	245	D		N		252.2
20 7/22/2010	FAWWNSKIN DR-CANYON	245	244	D		N		166.4
21 7/22/2010	FAWWNSKIN DR-CANYON	244	243	D		N		211.5
22 7/23/2010	CANYON RD	243	242	D		N		170.7
23 7/23/2010	CANYON RD	242	241	D		N		215.2
24 7/23/2010	CANYON RD	241	240	D		N		44.7
25 7/23/2010	CANYON RD	241	340	U		N		241.8
26 7/23/2010	CANYON RD	241	240	D		Y		236.5
27 7/26/2010	CANYON RD	244	243	D		Y		226.8

Setup Date	Street	Start MH	Finish MH	Dir	Size inch	Pre Clean	Vid Cassette	Scheduled Length	Surveyed Length
28 7/26/2010	cluster pines	240	239	D		Y			262.2
29 7/26/2010	cluster pines	239	238-A	D		Y			218.9
30 7/27/2010	ESMT	238-A	238	D		N			268.6
31 7/27/2010	Easement	238	237	D		N		298.7	298.7
32 7/27/2010	Easement	224	237	D		N		214.4	156.0
33 7/27/2010	Easement	237	224	U		N		214.4	54.4
34 7/27/2010	Easement	224	CO65	U		N			5.0
35 7/27/2010	CLUSTER PINES	224	233	D		N			138.2
36 7/27/2010	CLUSTER PINES	233	222	D		N			154.3
37 7/27/2010	CLUSTER PINES	222	221	D		N			330.4
38 7/27/2010	CLUSTER PINES	221	PUMP STA WETWELL	D		N			75.7
39 8/2/2010	FAWNSKIN RD	252-D	CO-68	U		N			69.7
40 8/2/2010	FAWNSKIN RD	252-D	252-C	D		N			172.8
41 8/2/2010	FAWNSKIN RD	252-C	252-B	D		N			348.1
42 8/2/2010	FAWNSKIN RD	252-B	252-A	D		N			55.3
43 8/3/2010	FAWNSKIN RD	252-B	252-A	D		N			198.9
44 8/3/2010	FAWNSKIN RD	252-A	252	D		N			360.1
45 8/3/2010	FAWNSKIN RD	252	251	D		N			152.9
46 8/3/2010	FAWNSKIN RD	251	250	D		N			254.3
47 8/3/2010	FAWNSKIN RD	250	249	D		N			169.1
48 8/3/2010	FAWNSKIN RD	249	248	D		N			274.1

Total Scheduled Length 727.5

Total Length Surveyed

8,977.6

Setup	Date	Time	Operator	Van ID	Key	W	Neighborhood	District	Road	Place	Upstream	Downstream
20	07/22/2010	2:56:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	FAWNNSKIN	FAWNNSKIN	245	244
21	07/22/2010	3:08:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	FAWNNSKIN	FAWNNSKIN	244	243
22	07/23/2010	1:59:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	CANYON RD	FAWNNSKIN	243	242
23	07/23/2010	2:12:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	CANYON RD	FAWNNSKIN	242	241
24	07/23/2010	2:33:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	CANYON RD	FAWNNSKIN	241	240
25	07/23/2010	4:57:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	CANYON RD	FAWNNSKIN	340	241
26	07/23/2010	5:19:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	CANYON RD	FAWNNSKIN	241	240
27	07/26/2010	11:46:00 AM	J GREEN	20500	JAW		F SYSTEM	53B	CANYON RD	FAWNNSKIN	244	243
28	07/28/2010	2:22:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	cluster pines	FAWNNSKIN	240	239
29	07/28/2010	3:47:00 PM	J GREEN	20500	JAW		F SYSTEM	53B	cluster pines	FAWNNSKIN	239	238-A
30	07/27/2010	9:34:00 AM	L SACKS	20500	JAW		CLUSTER PINES	53-B	ESMT	FAWNNSKIN	238-A	238
31	07/27/2010	10:02:00 AM	L SACKS	20500	JAW		Fawnakin	CSA 53B	Easement	Cluster Pines	238	237
32	07/27/2010	10:28:00 AM	L SACKS	20500	JAW		Fawnakin	CSA 53B	Easement	Cluster Pines	224	237
33	07/27/2010	12:00:00 PM	L SACKS	20500	JAW		Fawnakin	CSA 53B	Easement	Cluster Pines	224	237
34	07/27/2010	12:16:00 PM	L SACKS	20500	JAW		Fawnakin	CSA 53B	Easement	Cluster Pines	CO55	224
35	07/27/2010	12:34:00 PM	L SACKS	20500	JAW		CLUSTER PINES	53-B	CLUSTER PINES	FAWNNSKIN	224	233
36	07/27/2010	12:53:00 PM	L SACKS	20500	JAW		CLUSTER PINES	53-B	CLUSTER PINES	FAWNNSKIN	233	222
37	07/27/2010	1:35:00 PM	L SACKS	20500	JAW		CLUSTER PINES	53-B	CLUSTER PINES	FAWNNSKIN	222	221
38	07/27/2010	1:57:00 PM	L SACKS	20500	JAW		CLUSTER PINES	53-B	CLUSTER PINES	FAWNNSKIN	221	PUMP STA
39	08/02/2010	12:05:00 PM	L SACKS	20500	JAW		FAWNNSKIN	53-B	FAWNNSKIN RD	BIG BEAR	CO-68	252-D

Setup	Date	Time	Operator	Van ID	Key	W	Neighborhood	District	Road	Place	Upstream	Downstream
40	08/02/2010	1:22:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	252-D	252-C
41	08/02/2010	1:37:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	252-C	252-B
42	08/02/2010	2:31:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	252-B	252-A
43	08/03/2010	12:07:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	252-B	252-A
44	08/03/2010	12:26:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	252-A	252
45	08/03/2010	1:26:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	252	251
46	08/03/2010	1:49:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	251	250
47	08/03/2010	2:33:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	250	249
48	08/03/2010	2:46:00 PM	L SACKS	20500	JAW		FAWNSKIN	53-B	FAWNSKIN RD	BIG BEAR	249	248

APPENDIX F: EMERGENCY VEHICLES AND EQUIPMENT



Month/Year: _____ Water & Sanitation Division

[illegible]

* If equipped

VEHICLE INFORMATION			
Equip#	Location:	License #	Vehicle Description
2301	LCN		24 Ford Escape 4x4
2700	64	1331383	09 Ford Escape
2703	64	1419522	14 Ford Explorer
2711	SDD	1419523	14 Ford Explorer
2763	SDD	1652813	23 Ford Explorer
2764	SDD	1652812	23 Ford Explorer
5164	LCN	1460065	15 Nissan Frontier 4x4
5169	64	1460062	15 Nissan Frontier 4x4
5170	64	1460063	15 Nissan Frontier 4x4
5172	64	1460064	15 Nissan Frontier 4x4
5175	64	1460061	15 Nissan Frontier 4x4
5207	64	1419519	14 Ford F150
5209	LCN	1245258	07 F150 4X PU
5481	LCN	1220588	06 F150 4X PU
5537	70J Office	1535615	18 Ford Explorer
5538	64	1535405	18 F350 4x Util
5539	CG	1535406	18 F350 4x Util
5547	64	1302631	08 F Ranger 4X
5851	CG	1076368	00 F250 4X Util
5880	LCN	1153742	03 Chev Sil 1T
5888	LCN	1553741	03 Chev Sil 3/4
5935	W3	1407316	13 F250 4X
5936	53B	1139093	03 F350 4X Sno
5940	W3	1407317	13 F250 4X
6079	64	1177001	04 GMC Envoy
6090	LCN	1177191	04 Explorer
6095	64	1220406	04 Explorer
7014	79	1185126	04 F350 4X Sno
7183	LCN	1139067	02 F750 Gang
8781	64	1220451	05 Freight Flat
15004	64	1460057	15 F550/ New Jetter
15013	64	1460017	16 Ford F550
15099	64	1521943	17 Ford F350
15107	64	1521944	17 Ford F550
15109	64	1521945	17 Ford F550
15110	64	1491094	16 Ford F550
15118	64	1419848	14 Ford F250
15133	64	1521979	17 F550/ Box Truck
15348	64	1387128	12 F250 4X
15350	LCN	1387129	12 F250 4X

15351	64	1387261	12 F250 4X
15533	64	1549738	19 Ford F150 4X
15515	64	1595333	20 Ford F150 4X
15516	64	1595337	20 Ford F150 4X
15550	LCN	1652824	23 Ford F150 4X
15551	64	1652823	23 Ford F150 4X
15552	64	1652831	23 Ford F150 4X
15712	CG	1549856	19 Ford F350 4X Utility
15800	LCN	1599333	20 Ford F350 4X Utility
15821	64	1652826	23 F350 4X Utility
15822	64	1652835	23 F350 4X Utility
15823	64	1652834	23 F350 4X Utility
15830	LCN	1672709	23 F350 4X Utility
15832	64	1672710	23 F350 4X Utility
15865	70J	1675500	23 F550 4X Crane
20015	64	1379033	12 Aries CCTV
20500	64	1153707	03 GMC Old TV Van
21930	LCN	1220452	06 Ster Pump
21932	LCN	49932	97 Ford Camel
28041	64	115571	04 Ster 10yd
28500	64	1257597	06 Freight.6yd
33961	LCN	SE567521	09 6" Global Pu
34019	LCN	1479122	16 Towmaster Trailer
34971	64	1225791	06 Zieman Trail
34976	64	124413	07 Roller Trail
34993	64	1153608	02 vac/press washer
34996	64	E322815	84 SECA Trail
34999	LCN	1153707	02 Jetter
35007	64	1387260	10 Twamco trailer
35093	64	1340224	Rodder Box
35121	64	952843	01 Zieman Trail
35122	64	110909	01 Enclosed Tra
35123	64	1153670	03 Zieman Trail
35202	64	1209348	05 Carson Trail
35203	LCN	SE545732	06 Godwin 4" Pump
35204	LCN	1460072	15 Godwin Pump
35206	64	1225799	07 Carson Trail
35207	64	SE566465	07 Lite Tower
35211	64	1354026	Flemming Trailer
35212	LCN	SE566466	07 Lite Tower
35214	64	1400276	12 Well CCTV
35217	64	1419858	13 Large Ditch Witch
35218	64	1420093	14 Valve trailer
35219	70J	1490892	17 Small Ditch Witch

35910	64	317696	80 Off. Trailer
38000	LCN	1378762	Water Buffalo
38211	64	1354026	Small White Trailer
49300	64	N/A	10 Excavator
49926	64	SE613389	02 CAT Bkhoe
49927	64	SE613501	05 JD Ldr/Scra
49928	64	SE545740	06 JD Bkhoe
49930	64	SE645560	2015 JCB Bkhoe
55024	64	SE452417	95 Essex Mixer
55026	64	020922Y	99 Whit. Mixer
55027	64	SE566494	07 Da Forklift
55028	LCN	SE566493	08 Da Forklift
57075	64	1333982	09 Int. Vactor
57448	W3	SE567520	09 CAT 450E
57915	64	1340213	09 Temco Sweeper
58098	LC TP	N/A	JD Skid Steer
58099	64	1353969	10 Freight Pump
68017	64	SE545715	06 Asph Roller
71208	64		25 Freightliner Xbroom
80000	64	1491174	Sulair tow behind
Generators		License #	
91004	64	1185188	04Cat 300kw
91010	64	1220428	05 Gen 150kw
91021	64	1321088	09 IR/150kw
91043	S3	N/A	09 Gen 125kw
91050	53B	N/A	07 Gen 100kw
91051	53B	N/A	03 Gen 60kw
91052	S3	N/A	03 Gen (Stat)
91054	CG	N/A	09 Gen (Stat)
91056	53B	N/A	05 Gen 135kw
91066	70J	N/A	12 Gen 500kw
91071	Prado	N/A	12 Kohler Gen
91092	64	N/A	08 Gen 40kw
91104	64	N/A	Cummins Gen
91248	64	N/A	Onan Gen
G091005	W3	1220429	05 Gen 200kw
G091006	64	1220426	05 Gen 30kw
G091252	LCN	N/A	05 Gen 600kw
G091253	64	N/A	01 Cat 300kw
G091254	64	N/A	05 Gen (Sta)
GO91248	B/D AP	N/A	99 Generac
No #	LCN	N/A	Arrowboard
No #	64	N/A	Arrowboard

APPENDIX G: WASTEWATER SPILL RESPONSE AND REPORTING PROCEDURES





INTEROFFICE MEMO

DATE: May 1, 2025 (REVISED)

PHONE: (760) 955-9885

FROM: LISA GREEN
WAS Supervisor

MAIL CODE: 0450

TO: GREG SNYDER
CHRIS BISHOP
LISA GREEN

SUBJECT: EMERGENCY REPORTING PROCEDURES AND RESPONSIBILITIES FOR
LAHONTAN REGION
COUNTY SERVICE AREA 70, IMPROVEMENT ZONE SP-2 – HIGH COUNTRY
COUNTY SERVICE AREA 42 – ORO GRANDE
COUNTY SERVICE AREA 64 – SPRING VALEY LAKE
COUNTY SERVICE AREA 70S7 - LENWOOD
COUNTY SERVICE AREA 82 – TRONA
ALL CONTRACTUAL FACILITIES THAT W&S PROVIDES SEWER SERVICES

NOTE: THIS REPORTING PROCEDURE SUPERSEDES ALL PREVIOUS REPORTING INSTRUCTIONS

The following procedures will be implemented when a Sanitary Sewer Overflow [SSO] occurs and sewage flows or threatens to flow into the community from public (District) wastewater facilities & Conveyance systems.

NOTE: Field Staff, W&S Supervisors, Managers or other responsible employees acting in their capacity will initiate the standard emergency response procedures necessary to curtail the overflow or stoppage.

The first employee with knowledge of the SSO will contact the following:

1. **Lisa Green**, Water & Sanitation Supervisor

Office: (909) 386-8883
Fax: (909) 386-8839
Home: (909) 844-5110
Cell: (760) 954-3263

If Lisa Green is not available, contact:

2. **Chris Bishop**, Water & Sanitation Supervisor

Office: (760) 261-6032
Fax: (909) 386-8839
Home: (760) 963-2015
Cell: (909) 269-1094

If Chris Bishop is not available, contact:

Greg Snyder, Division Manager

Office: (909) 386-8886
Fax: (909) 386-8839
Home: (951) 956-0411
Cell: (909) 501-8259

NOTE: The Water and Sanitation Supervisor or Manager will initiate & perform the Emergency Notification Procedures and provide all vital information to the following agencies:

Lahontan Regional Water Quality Control Board – Victorville Office: (760) 241-6583
Fax: (760) 241-7308

Jan Zimmerman, Supervising Engineering Geologist
South Lahontan Watersheds Division

THREE NOTIFICATION CALLS WERE REQUIRED (CALIFORNIA OFFICE OF EMERGENCE SERVICES, REGIONAL WATER CONTROL BOARDS, AND LOCAL HEALTH DEPARTMENT). REQUIRED NOTIFICATION HAS BEEN CHANGED TO CALL OFFICE OF EMERGENCY SERVICES (CAL OES) ONLY SINCE CAL OES NOTIFIES THE REGIONAL WATER QUALITY CONTROL BOARDS AND LOCAL HEALTH DEPARTMENTS WHEN A SPILL IS RECEIVED.

The Water and Sanitation Division and/or Special Districts Department will maintain daily contact with the Local Regional Quality Control Board and State Health Department in the reporting of bacteriological results.

CATEGORY 1 – “2” HOUR NOTIFICATION TIME FRAME “MAXIMUM” TO OES
CATEGORY 2 – WITHIN TWO HOURS NOTIFICATION OF 1,000 GALLONS OR GREATER
CATEGORY 3 - NO CALL REQUIRED
CATEGORY 4 - NEW CATEGORY ADDED NO CALL REQUIRED

State Office of Emergency Services Office: (800) 852-7550 (All of California)
or (916) 845-8911

The Department of Fish and Game requires written notification within 14 days of the incident at the following address:

Department of Fish and Game – Region 6 Office: (909) 484-0167
3602 Inland Empire Blvd.
Ontario, CA 91764

Mohave River Fish Hatchery Office: (909) 484-0167

State Health Department Office: (909) 383-4328
Wei H. Chang, District Engineer (909) 383-4328
Jarrett Hamud, Associate Sanitary Engineer (909) 383-4320

Department of Public Health Office: (909) 387-5159
Division of Environmental Health Services Cell: (909) 454-4449
Kristian Alsolor, Division Chief Fax: (909) 387-4323
Emergency After Hours and Weekends (800) 442-2283

Office of Emergency Services (County) Office: (909) 356-3998
Eric Fyvie, Manager Fax: (909) 356-3965

Emergency Dispatch Center (County) Office: (909) 356-3805
Alisha Johnson, Manager

Department of Water Resources (Southern) Office: (661) 944-8600
California Control Center Fax: (661) 944-1790
Operations at Castaic
Jose Lopez, Sr. Operator

Curtis Green, Operations Supervisor

Clinical Laboratory
Isabel Navarro

Office: (909) 825-7693
Fax: (909) 825-7696

Regional Parks
Beahta Davis, Director

Office: (909) 387-2886

UTILITIES – Emergency Contact Numbers:

Underground Service Alert (USA)
Southern California Edison
Southern California Gas Company
Southwest Gas
Telephone: Contel/GTE
(For repair crew, local “USA” does their locations)
Verizon
Directory Assistance
800 Listings

811
(800) 655-4555
(800) 427-2200
(800) 443-8093
611

(800) 483-2000
411
(800) 555-1212



INTEROFFICE MEMO

DATE: May 1, 2025 (REVISED)

PHONE: (760) 955-9885

FROM: LISA GREEN
WAS Supervisor

MAIL CODE: 0450

TO: GREG SNYDER
CHRIS BISHOP
LISA GREEN

SUBJECT: EMERGENCY REPORTING PROCEDURES AND RESPONSIBILITIES FOR SANTA ANA REGION
COUNTY SERVICE AREA 70S3 – LYTLE CREEK
COUNTY SERVICE AREA 70 GH- GLEN HELEN
COUNTY SERVICE AREA 53B -FAWSKIN
GLEN HELEN REHABILITATION CENTER (SHERIFF'S ACADEMY)
ALL CONTRACTUAL FACILITIES THAT WATER AND SANITATION PROVIDES
SEWER SERVICES

NOTE: THIS REPORTING PROCEDURE SUPERSEDES ALL PREVIOUS REPORTING INSTRUCTIONS
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Home: (760) 963-2015
Cell: (909) 269-1094

If Chris Bishop is not available, contact:

3. **Greg Snyder**, Division Manager

Office: (909) 386-8886
Fax: (909) 386-8839
Home: (951) 956--0411
Cell: (909) 501-8259

NOTE: The Water and Sanitation Supervisor or Manager will initiate & perform the Emergency Notification Procedures and provide all vital information to the following agencies:

Santa Ana Regional Water Quality Control Board Office: (951) 782-4130

Chuck Griffin, Chief of Surveillance and Enforcement Office: (951) 782-4996
After hours and weekends (Office of Emergency Services) Office: (800) 852-7550

THREE NOTIFICATION CALLS WERE REQUIRED (CALIFORNIA OFFICE OF EMERGENCE SERVICES, REGIONAL WATER CONTROL BOARDS, AND LOCAL HEALTH DEPARTMENT). REQUIRED NOTIFICATION HAS BEEN CHANGED TO CALL OFFICE OF EMERGENCY SERVICES (CAL OES) ONLY SINCE CAL OES NOTIFIES THE REGIONAL WATER QUALITY CONTROL BOARDS AND LOCAL HEALTH DEPARTMENTS WHEN A SPILL IS RECEIVED.

The Water and Sanitation Division and/or Special Districts Department will maintain daily contact with the Local Regional Quality Control Board and State Health Department in the reporting of bacteriological results.

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CATEGORY 4 - NEW CATEGORY ADDED NO CALL REQUIRED

State Office of Emergency Services Office: (800) 852-7550 (All of California)
Or (916) 845-8911

The Department of Fish and Game requires written notification within 14 days of the incident at the following address:

Department of Fish and Game – Region 6 Office: (909) 484-0167
3602 Inland Empire Blvd.
Ontario, CA 91764

Fontana Water Company
Seth Zielke, Director of Operations Office Emergency: (909) 428-8746
Office: (909) 822-2201

West San Bernardino County Water District
John Thiel, General Manager Office: (909) 875-1804
Linda Jadeski, Assistant General Manager Fax: (909) 875-1849

City of Rialto
Answering Service
Mike Orena, Director of Public Worker Office: (909) 421-7279
NOTE: (Water Services Controlled by Veloia)

State Health Department Office: (909) 383-4328
Wei H. Chang, District Engineer (909) 383-4328
Jarrett Hamud, Associate Sanitary Engineer (909) 383-4308

Department of Public Health Office: (909) 387-5159
Division of Environmental Health Services Cell: (909) 454-4449
Kristian Alsolor, Division Chief Fax: (909) 387-4323

Emergency After Hours and Weekends

(800) 442-2283

United States Forest Service
Lytle Creek Ranger Station
Dispatch Center
Mike Nobles, District Ranger

Office: (909) 382-2851
(909) 382-2752
(909) 383-5654
Office: (909) 382-2860

Office of Emergency Services (County)
Eric Fyvie, Manager

Office: (909) 356-3998
Fax: (909) 356-3965

Emergency Dispatch Center (County)
Alisha Johnson, Manager

Office: (909) 356-3805

Clinical Laboratory
Isabel Navarro

Office: (909) 825-7693
Fax: (909) 825-7696

Big Bear Municipal Water District
Jared Cheek, General Manager

Office: (909) 866-5796
Fax: (909) 866-6485

BBARWA
David Lawrence, General Manager

Office Emergency: (909) 261-6645
Office: (909) 584-4018

UTILITIES – Emergency Contact Numbers:

Underground Service Alert (USA)
Southern California Edison
Southern California Gas Company
Southwest Gas
Telephone: Contel/GTE
(For repair crew, local “USA” does their locations)
Verizon
Directory Assistance
800 Listings

811
(800) 655-4555
(800) 427-2200
(800) 443-8093
611
(800) 483-2000
411
(800) 555-1212

APPENDIX H: SPILL REPORT FORM



COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
WATER & SANITATION DIVISION

SECTION 1 OF 6

SPILL REPORT
FACTS SHEET

DATE OF SPILL _____ / _____ / _____ County : San Bernardino County
SPILL REPORT NUMBER _____ Region: LAHONTAN / SANTA ANA / COLORADO [circle one]
LOCATION OF SPILL _____
NEAREST CROSS STREET _____
THOMAS MAP GUIDE _____ G P S. COORDINATES: _____

SSO IDENTIFICATION [ID] NUMBER: _____ SSO CATEGORIES: 1 / 2 / PLSD [circle one]

PRIVATE SPILL RESPONSIBLE PARTY INFO:

DISTRICT _____ EASEMENT _____ Y / N
UPSTREAM M/H / C/O _____ **DOWNSTREAM M/H / C/O** _____
MAP NUMBER _____ DIA. OF PIPE _____

TIME CALL RECEIVED _____ PHOTOGRAPHS TAKEN _____ Y / N
TIME ARRIVED _____ SEWAGE SAMPLE TAKEN _____ Y / N
TOTAL TIME FOR RESPONSE _____ PRIVATE PROPERTY DAMAGED _____ Y / N
TIME SPILL CONTAINED _____ BACKWATER VALVE NOTICE **ISSUED** _____ Y / N
TIME SPILL OVER _____ CAUSE OF SPILL 1 _____
TOTAL DURATION OF SPILL _____ 2 _____

TOTAL AMOUNT RECOVERED _____ [GALLONS]
TOTAL AMOUNT BY-PASSED _____ [by: pumper truck, combo truck, by-pass, other]
TOTAL AMOUNT REACHING _____ [LOCATION OF AFFECTED WATERWAY]
RECEIVING WATERS _____
TOTAL AMOUNT OF SPILL >>> _____ [GALLONS]

If SSO entered any of the following [Circle applicable item[s]]: 1] Drainage Channel, 2] Surface Waters, 3] Discharge into an S/D pipe and was not fully recovered, 4] Discharge into an S/D pipe and was fully recovered.

CREW LEADER _____ CREW [S] _____ / _____ / _____

W & S SUPERVISOR NOTIFIED Y / N
TIME NOTIFIED _____ DATE NOTIFIED _____

BRIEF REPORT ON MITIGATION, CLEAN UP METHODS, PRIVATE PROPERTY DAMAGE, ETC..

**COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
WATER & SANITATION DIVISION**

SECTION 2 OF 6

LAHONTAN REGION

**SPILL REPORT
NOTIFICATION SHEET**

DATE _____/_____/_____
DATE OF SPILL _____/_____/_____
SPILL REPORT NUMBER _____
NAME OF PERSON CONTACTING LISTED AGENCY [S] _____
O E S CONTROL NUMBER: _____

DURATION OF SPILL _____
RECEIVING WATERS Y / N

AGENCY [S]	DATE NOTIFIED	TIME NOTIFIED	CONTACT PERSON / MESSAGE LEFT
1) LISA GREEN W& S SUPERVISOR			
2) CHRIS BISHOP W& S SUPERVISOR			
3) GREG SNYDER DIVISION MANAGER			
4) LAHONTAN REGIONAL BOARD			
5) CALIFORNIA OFFICE OF EMERGENCY SERVICES			
6) CRESTLINE LAKE ARROWHEAD WATER AGENCY			
7) CA DEPARTMENT OF FISH AND GAME			
8) CA DEPARTMENT OF HEALTH SERVICES			
9) SBC DEPARTMENT OF HEALTH SERVICES			
10) CA DEPARTMENT OF WATER RESOURCES			
11) SBC FLOOD CONTROL DISTRICT [SBC MS4 PERMIT]			
12) CALIFORNIA INTEGRATED WATER QUALITY SYSTEM (CIWQS)			
13)			
14)			

NOTES _____

SPILL CALCULATIONS: [DETAILED REPORT ON ESTIMATED GALLONAGE]

COUNTY OF SAN BERNARDINO

SPECIAL DISTRICTS DEPARTMENT

WATER & SANITATION DIVISION

SECTION 3 OF 6

SANTA ANA REGION

SPILL REPORT NOTIFICATION SHEET

DATE _____/_____/_____
DATE OF SPILL _____/_____/_____
SPILL REPORT NUMBER _____
DURATION OF SPILL _____
RECEIVING WATERS Y / N
NAME OF PERSON CONTACTING LISTED AGENCY [S] _____
O E S CONTROL NUMBER: _____

AGENCY [S]	DATE NOTIFIED	TIME NOTIFIED	CONTACT PERSON / MESSAGE LEFT
1) LISA GREEN W& S SUPERVISOR			
2) CHRIS BISHOP W& S SUPERVISOR			
3) GREG SNYDER DIVISION MANAGER			
4) SANTA ANA REGIONAL BOARD			
5) FONTANA WATER COMPANY			
6) CITY OF RIALTO			
7) WEST SAN BERNARDINO COUNTY WATER DISTRICT			
8) CALIFORNIA OFFICE OF EMERGENCY SERVICES			
9) CALIFORNIA DEPARTMENT OF HEALTH SERVICES			
10) DEPARTMENT OF PUBLIC HEALTH			
11) UNITED STATES FOREST SERVICE – LYTLE CREEK			
12) DEPARTMENT OF HEALTH SERVICES-COUNTY			
13) CA DEPARTMENT OF WATER RESOURCES			
14) CA DEPARTMENT OF FISH AND GAME			
15) SBC FLOOD CONTROL DISTRICT [SBC MS4 PERMIT]			
16) BIG BEAR WATER DISTRICT [CSA 53B ONLY]			
17) BBARWA [CSA 53B ONLY]			
18) CALIFORNIA INTEGRATED WATER QUALITY SYSTEM (CIWQS)			
19)			

NOTES _____

SPILL CALCULATIONS: [DETAILED REPORT ON ESTIMATED GALLONAGE]

**COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
WATER & SANITATION DIVISION**

SECTION 4 OF 6

COLORADO REGION

**SPILL REPORT
NOTIFICATION SHEET**

DATE ____/____/____
DATE OF SPILL ____/____/____
SPILL REPORT NUMBER _____
NAME OF PERSON CONTACTING LISTED AGENCY [S] _____
O E S CONTROL NUMBER: _____

DURATION OF SPILL _____
RECEIVING WATERS Y / N

AGENCY [S]	DATE NOTIFIED	TIME NOTIFIED	CONTACT PERSON / MESSAGE LEFT
1) LISA GREEN W& S SUPERVISOR			
2) CHRIS BISHOP W& S SUPERVISOR			
3) GREG SNYDER DIVISION MANAGER			
4) REGIONAL PARKS REPRESENTATIVE			
5) COLORADO REGIONAL BOARD			
6) CALIFORNIA OFFICE OF EMERGENCY SERVICES			
7) CALIFORNIA DEPARTMENT OF HEALTH SERVICES			
8) DEPARTMENT OF PUBLIC HEALTH			
9) DEPARTMENT OF HEALTH SERVICES-COUNTY			
10) CA DEPARTMENT OF WATER RESOURCES			
11) CA DEPARTMENT OF FISH AND GAME			
12) SBC FLOOD CONTROL DISTRICT [SBC MS4 PERMIT]			
13) CALIFORNIA INTEGRATED WATER QUALITY SYSTEM (CIWQS)			
14)			

NOTES _____

SPILL CALCULATIONS: [DETAILED REPORT ON ESTIMATED GALLONAGE]

**COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
WATER & SANITATION DIVISION**

SECTION 5 OF 6

**SPILL REPORT
CORRECTIVE ACTION SHEET**

DATE _____/_____/_____
 DATE OF SPILL _____/_____/_____
 SPILL REPORT NUMBER _____
 LOCATION _____
 DISTRICT _____
 UPSTREAM M/H _____ DOWNSTREAM M/H _____
 LINE SEGMENT NUMBER _____

PREVIOUS CCTV RECORDS:	Y / N	DETAILS:
PRESENT CCTV RECORDS:	Y / N	DETAILS:

PREVIOUS MAINTENANCE:	Y / N	DETAILS:
SCHEDULED MAINTENANCE:		

CURRENT SCHEDULED MAINTENANCE	Y / N	DETAILS:
NEXT SCHEDULED DATE:		
SCHEDULED AT _____ INTERVALS		

SEWER MAINLINE REPAIR	Y / N	DETAILS:
G P S. COORDINATES OF REPAIR[s]:		
REPAIR PERFORMED BY MAINTENANCE STAFF, OR BY CONTRACTOR?		
NAME OF CONTRACTOR:		PHONE NUMBER:
JOB SITE FOREMAN:		COMPETENT PERSON:
DETAILED DESCRIPTION OF REPAIR / EXCAVATION WORK / BYPASS INFORMATION ETC.		

EMPLOYEE [S] - TIME REGULAR HOURS> _____	OVER TIME HOURS> _____
EQUIPMENT - TIME REGULAR HOURS> _____	OVER TIME HOURS> _____
PERMIT[S] Y / N COST Y / N AMOUNT> _____	

TOTAL COST>>>>>

Total Coliforms	L6]				
-----------------	-----	--	--	--	--

C:san bernardino spill report blank revised 5-26-2010

APPENDIX I: BOARD ORDER NO. 2022-0103



STATE WATER RESOURCES CONTROL BOARD
1001 I Street, Sacramento, California 95814
ORDER WQ 2022-0103-DWQ
STATEWIDE WASTE DISCHARGE REQUIREMENTS
GENERAL ORDER FOR SANITARY SEWER SYSTEMS

This Order was adopted by the State Water Resources Control Board on December 6, 2022.

This Order shall become effective **180 days after the Adoption Date of this General Order**, on June 5, 2023.

The Enrollee shall comply with the requirements of this Order upon the Effective Date of this General Order.

This General 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, protect the Enrollee from liability under federal, state, or local laws, nor create a vested right for the Enrollee to continue the discharge of waste.

CERTIFICATION

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the State Water Board on December 6, 2022.

AYE: Chair E. Joaquin Esquivel
 Vice Chair Dorene D'Adamo
 Board Member Sean Maguire
 Board Member Laurel Firestone
 Board Member Nichole Morgan

NAY: None

ABSENT: None

ABSTAIN: None

 for

Jeanine Townsend
Clerk to the Board

STATEWIDE SANITARY SEWER SYSTEMS GENERAL ORDER

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STATEWIDE SANITARY SEWER SYSTEMS GENERAL ORDER

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STATEWIDE SANITARY SEWER SYSTEMS GENERAL ORDER

1. INTRODUCTION

This General Order regulates sanitary sewer systems designed to convey sewage. For the purpose of this Order, a sanitary sewer system includes, but is not limited to, pipes, valves, pump stations, manholes, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a wastewater treatment plant headworks. A sanitary sewer system includes:

- Laterals owned and/or operated by the Enrollee;
- Satellite sewer systems; and/or
- Temporary conveyance and storage facilities, including but not limited to temporary piping, vaults, construction trenches, wet wells, impoundments, tanks and diversion structures.

Sewage is untreated or partially treated domestic, municipal, commercial and/or industrial waste (including sewage sludge), and any mixture of these wastes with inflow or infiltration of stormwater or groundwater, conveyed in a sanitary sewer system. Sewage contains high levels of suspended solids, non-digested organic waste, pathogenic bacteria, viruses, toxic pollutants, nutrients, oxygen-demanding organic compounds, oils, grease, pharmaceuticals, and other harmful pollutants.

For the purpose of this General Order, a spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Sewage and its associated wastewater spilled from a sanitary sewer system may threaten public health, beneficial uses of waters of the State, and the environment.

This General Order serves as statewide waste discharge requirements and supersedes the previous State Water Resources Control Board (State Water Board) Order 2006-0003-DWQ and amendments thereafter. All sections and attachments of this General Order are enforceable by the State Water Board and Regional Water Quality Control Boards (Regional Water Boards). Through this General Order, the State Water Board requires an Enrollee to:

- Comply with federal and state prohibitions of discharge of sewage to waters of the State, including federal waters of the United States;
- Comply with specifications, and notification, monitoring, reporting and recordkeeping requirements in this General Order that implement the federal Clean Water Act, the California Water Code (Water Code), water quality control plans (including Regional Water Board Basin Plans) and policies;
- Proactively operate and maintain resilient sanitary sewer systems to prevent spills;
- Eliminate discharges of sewage to waters of the State through effective implementation of a Sewer System Management Plan;
- Monitor, track, and analyze spills for ongoing system-specific performance improvements; and
- Report noncompliance with this General Order per reporting requirements.

STATEWIDE SANITARY SEWER SYSTEMS GENERAL ORDER

An Enrollee is a public, private, or other non-governmental entity that has obtained approval for regulatory coverage under this General Order, including:

- A state agency, municipality, special district, or other public entity that owns and/or operates one or more sanitary sewer systems:
 - greater than one (1) mile in length (each individual sanitary sewer system);
 - one (1) mile or less in length where the State Water Board or a Regional Water Board requires regulatory coverage under this Order; or
- A federal agency, private company, or other non-governmental entity that owns and/or operates a sanitary sewer system of any size where the State Water Board or a Regional Water Board requires regulatory coverage under this Order in response to a history of spills, proximity to surface water, or other factors supporting regulatory coverage.

For the purpose of this Order, a sanitary sewer system includes only systems owned and/or operated by the Enrollee.

2. REGULATORY COVERAGE AND APPLICATION REQUIREMENTS

2.1. Requirements for Continuation of Existing Regulatory Coverage

To continue regulatory coverage from previous Order 2006-0003-DWQ under this General Order, **within the 60-days-prior-to the Effective Date of this General Order**, the Legally Responsible Official of an existing Enrollee shall electronically certify the Continuation of Existing Regulatory Coverage form in the online California Integrated Water Quality System (CIWQS) Sanitary Sewer System Database. The Legally Responsible Official will receive an automated CIWQS-issued Notice of Applicability email, confirming continuation of regulatory coverage under this General Order. All regulatory coverage under previous Order 2006-0003-DWQ will cease on the Effective Date of this Order.

An Enrollee continuing existing regulatory coverage is not required to submit a new application package or pay an application fee for enrollment under this General Order. The annual fee due date for continued regulatory coverage from previous Order 2006-0003-DWQ to this General Order remains unchanged.

A previous Enrollee of Order 2006-0003-DWQ that fails to certify the Continuation of Existing Regulatory Coverage form in the online CIWQS database by the Effective Date of this Order is considered a New Applicant, and will not have regulatory coverage for its sanitary sewer system(s) until:

- A new application package for system(s) enrollment is submitted per section 2.2 (Requirements for New Regulatory Coverage) below; and
- The new application package is approved per section 2.2.2 (Approval of Application Package (For New Applicants Only)).

2.2. Requirements for New Regulatory Coverage

No later than 60 days prior to commencing and/or assuming operation and maintenance responsibilities of a sanitary sewer system, a duly authorized representative that

STATEWIDE SANITARY SEWER SYSTEMS GENERAL ORDER

maintains legal authority over the public or private sanitary sewer system is required to enroll under this General Order by submitting a complete application package as specified below and as provided in Attachment B (Application for Enrollment Form) of this General Order.

Unless required by a Regional Water Board, a public agency that owns a combined sewer system subject to the Combined Sewer Overflow Control Policy (33 U.S. Code § 1342(q)), is not required to enroll, under this Order, the portions of its sanitary sewer system(s) that collects combined sanitary wastewater and stormwater.

2.2.1. Application Package Requirements

The Application for Enrollment package for new applicants must include the following items:

- **Application for Enrollment Form.** The form in Attachment B of this General Order must be completed, signed, and certified by a Legally Responsible Official, in accordance with section 5.1 (Designation of a Legally Responsible Official) of this General Order. If an electronic Application for Enrollment form is available at the time of application, a new applicant shall submit its application form electronically; and
- **Application Fee.** A fee payable to the “State Water Resources Control Board” in accordance with the Fee Schedule in the California Code of Regulations, Title 23, section 2200, or subsequent fee regulations updates.

The application fee for this General Order is based on the sanitary sewer system’s threat to water quality and complexity designations of category 2C or 3C, which is assigned based on the population served by the system. The current Fee Schedule for sanitary sewer systems is listed under subdivision (a)(2) at the following website: [Fee Schedule](https://www.waterboards.ca.gov/resources/fees/water_quality/) (https://www.waterboards.ca.gov/resources/fees/water_quality/).

2.2.2. Approval of Application Package (For New Applicants Only)

The Deputy Director of the State Water Board, Division of Water Quality (Deputy Director) will consider approval of each complete Application for Enrollment package. The Deputy Director will issue a Notice of Applicability letter which serves as approved regulatory coverage for the new Enrollee.

If the submitted application package is not complete in accordance with section 2.2.1 (Application Package Requirements) of this General Order, the Deputy Director will send a response letter to the applicant outlining the application deficiencies. The applicant will have 60 days from the date of the response letter to correct the application deficiencies and submit the identified items necessary to complete the application package to the State Water Board.

2.2.3. Electronic Reporting Account for New Enrollee

Within 30 days after the date of the Approval of Complete Application Package for System Enrollment, a duly authorized representative for the Enrollee shall obtain a CIWQS Sanitary Sewer System Database user account by clicking the “User Registration” button and following the directions on the [CIWQS Login Page](#)

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(<https://ciwqs.waterboards.ca.gov>). If additional assistance is needed to establish an online CIWQS user account, contact State Water Board staff by email at CIWQS@waterboards.ca.gov. The online user account will provide the Enrollee secure access to the online CIWQS database for electronic reporting.

2.3. Regulatory Coverage Transfer

Regulatory coverage under this General Order is not transferable to any person or party except after an existing Enrollee submits a written request for a regulatory coverage transfer to the Deputy Director, at least 60 days in advance of any proposed system ownership transfer. The written request must include a written agreement between the existing Enrollee and the new Enrollee containing:

- Acknowledgement that the transfer of ownership is solely of an existing system with an existing waste discharge identification (WDID) number;
- The specific ownership transfer date in which the responsibility and regulatory coverage transfer between the existing Enrollee and the new Enrollee becomes effective; and
- Acknowledgement that the existing Enrollee is liable for violations occurring up to the ownership transfer date and that the new Enrollee is liable for violations occurring on and after the ownership transfer date.

The Deputy Director will consider approval of the written request. If approved, the Deputy Director will issue a Notice of Applicability letter which serves as an approved transfer of regulatory coverage to the new Enrollee.

3. FINDINGS

3.1. Legal Authorities

3.1.1. Federal and State Regulatory Authority

The objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of the waters of the United States (33 U.S.C. 1251). The Water Code authorizes the State Water Board to implement the Clean Water Act in the State and to protect the quality of all waters of the State (Water Code sections 13000 and 13160).

3.1.2. Discharge of Sewage

A discharge of untreated or partially treated sewage is a discharge of waste as defined in Water Code section 13050(d) that could affect the quality of waters of the State and is subject to regulation by waste discharge requirements issued pursuant to Water Code section 13263 and Chapter 9, Division 3, Title 23 of the California Code of Regulations. A discharge of sewage may pollute and alter the quality of the waters of the State to a degree that unreasonably affects the beneficial uses of the receiving water body or facilities that serve those beneficial uses (Water Code section 13050(l)(1)).

3.1.3 Water Boards Authority to Require Technical Reports, Monitoring, and Reporting

Water Code sections 13267 and 13383 authorize the Regional Water Boards and the State Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. Water Code section 13267(b), authorizes the Regional Water Boards to “require any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region... or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of water within its region shall furnish, under penalty of perjury, technical or monitoring reports which the regional board requires...In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports.” Water Code section 13267(f) authorizes the State Water Board to require this information if it consults with the Regional Water Boards and determines that it will not duplicate the efforts of the Regional Water Boards. The State Water Board has consulted with the Regional Water Boards and made this determination.

The technical and monitoring reports required by this General Order and Attachment E (Notification, Monitoring, Reporting and Recordkeeping Requirements) are necessary to evaluate and ensure compliance with this General Order. The effort to develop required technical reports will vary depending on the system size and complexity and the needs of the specific technical report. The burden and cost of these reports are reasonable and consistent with the interest of the state in protecting water quality, which is the primary purpose of requiring the reports.

Water Code section 13383(a) authorizes the Water Boards to “establish monitoring, inspection, entry, reporting, and recordkeeping requirements... for any person who discharges, or proposes to discharge, to navigable waters, any person who introduces pollutants into a publicly owned treatment works, any person who owns or operates, or proposes to own or operate, a publicly owned treatment works or other treatment works treating domestic sewage, or any person who uses or disposes, or proposes to use or dispose, of sewage sludge.” Section 13383(b) continues, “the state board or the regional boards may require any person subject to this section to establish and maintain monitoring equipment or methods, including, where appropriate, biological monitoring methods, sample effluent as prescribed, and provide other information as may be reasonably required.”

Reporting of spills from privately owned sewer laterals and systems pursuant to section 5.15 (Voluntary Reporting of Spills from Privately-Owned Sewer Laterals and/or Private Sanitary Sewer Systems) of this General Order is authorized by Water Code section 13225(c) and encouraged by the State Water Board, wherein a local agency may investigate and report on any technical factors involved in water quality control provided the burden including costs of such reports bears a reasonable relationship to the need for the report and the benefits to be obtained therefrom. The burden of reporting private spills under section 5.15 (Voluntary Reporting of Spills from Privately-Owned Sewer Laterals and/or Private Sanitary Sewer Systems) is minimal and is outweighed by the benefit of providing Regional Water Boards an opportunity to respond to these spills

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when an Enrollee, which in many cases has a contractual relationship with the owner of the private system, has knowledge of the spills.

3.1.4. Water Board Authority to Prescribe General Waste Discharge Requirements

Water Code section 13263(i) provides that the State Water Board may prescribe general waste discharge requirements 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 waste discharge requirements than individual waste discharge requirements.

Since 2006, the State Water Board has been regulating over 1,100 publicly owned sanitary sewer systems (See section 3.1.5 (Previous Statewide General Waste Discharge Requirements) of this General Order). California also has a large unknown number of unregulated privately owned sanitary sewer systems. All waste conveyed in publicly owned and privately owned sanitary sewer systems (as defined in this General Order) is comprised of untreated or partially treated domestic waste and/or industrial waste. Generally, sanitary sewer systems are designed and operated to convey waste by gravity or under pressure; system-specific design elements and system-specific operations do not change the common nature of the waste, the common threat to public health, or the common impacts on water quality. Spills of waste from a sanitary sewer system prior to reaching the ultimate downstream treatment facility are unauthorized and enforceable by the State Water Board and/or a Regional Water Board. Therefore, spills from sanitary sewer systems are more appropriately regulated under general waste discharge requirements.

As specified in Water Code sections 13263(a) and 13241, the implementation of requirements set forth in this Order is for 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 Regional Water Board and take into account the environmental characteristics of sewer service areas and 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, costs associated with compliance with these requirements, the need for developing housing within California, and the need to protect sources of drinking water and other water supplies.

3.1.5. Previous Statewide General Waste Discharge Requirements

On May 2, 2006, the State Water Board adopted Order 2006-0003-DWQ serving as Waste Discharge Requirements pursuant to Article 4, Chapter 4, Division 7 of the Water Code (commencing with section 13260) for inadvertent discharges to waters of the State. Order 2006-0003-DWQ prohibited discharges of untreated or partially treated sewage. Order 2006-0003-DWQ also required system-specific management, operation, and maintenance of publicly owned sewer systems greater than one mile in length.

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To decrease the impacts on human health and the environment caused by sewage spills, the previous Order required enrollees to develop a rehabilitation and replacement plan that identifies system deficiencies and prioritizes short-term and long-term rehabilitation actions. The previous Order also required enrollees to:

1. Maintain information that can be used to establish and prioritize appropriate Sewer System Management Plan activities; and
2. Implement a proactive approach to reduce spills.

The previous Order required Sewer System Management Plan elements for “the proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management.”

On July 30, 2013, the State Water Board amended General Order 2006-0003-DWQ with Order WQ 2013-0058-EXEC, Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

Many enrollees of Order 2006-0003-DWQ have already implemented proactive measures to reduce sewage spills. Other enrollees, however, still need technical assistance and funding to improve sanitary sewer system operation and maintenance for the reduction of sewage spills.

3.1.6. Existing Memorandum of Agreement with California Water Environment Association

The California Water Environment Association is a nonprofit organization dedicated to providing water industry certifications, training, and networking opportunities. The Association’s Technical Certification Program provides accredited sanitary sewer system operator certification for collection system operators and maintenance workers.

On February 10, 2016, the State Water Board entered into a collaborative agreement with the Association titled *Memorandum of Agreement Between the California State Water Resources Control Board and the California Water Environment Association - Training Regarding Requirements Set Forth in Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*. The Memorandum sets forth collaborative training necessary for regulated sanitary sewer system personnel to operate and maintain a well operating system and ensure full compliance with statewide sewer system regulations.

On March 15, 2018, the State Water Board and the California Water Environment Association amended the existing Memorandum of Agreement to include collaborative outreach and expand training needs associated with further updates to Water Board regulations for sanitary sewer systems. The State Water Board encourages further Agreement updates as necessary to support improved sewer system operations and the professionalism of collection system operators.

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3.2. General

3.2.1. Waters of the State

Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state as defined in Water Code section 13050(e), and are inclusive of waters of the United States.

3.2.2. Sanitary Sewer System Spill Threats to Public Health and Beneficial Uses

Sewage contains high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease and other pollutants. Sewage spills may cause a public nuisance, particularly when sewage is discharged to areas with high public exposure such as streets and surface waters used for drinking, irrigation, fishing, recreation, or other public consumption or contact uses.

More specifically, sanitary sewer spills may:

- Adversely affect aquatic life and/or threaten water quality when reaching receiving waters;
- Inadvertently release trash, including plastics;
- Impair the recreational use and aesthetic enjoyment of surface waters by polluting surface water or groundwater;
- Threaten public health through direct public exposure to bacteria, viruses, intestinal parasites, and other microorganisms that can cause serious illness such as gastroenteritis, hepatitis, cryptosporidiosis, and giardiasis;
- Negatively impact ecological receptors and biota within surface waters; and
- Cause nuisance including odors, closure of beaches and recreational areas, and property damage.

Sanitary sewer system spills may pollute receiving waters and threaten beneficial uses of surface water and groundwater. Potentially threatened beneficial uses include, but are not limited to the following (with associated acronym representations as included in statewide water quality control plans and Regional Water Boards' Basin Plans):

- Municipal and Domestic Supply (MUN)
- Water Contact Recreation (REC-1) and Non-Contact Water Recreation (REC-2)
- Cold Freshwater Habitat (COLD)
- Warm Freshwater Habitat (WARM)
- Native American Culture (CUL)
- Wildlife Habitat (WILD)
- Rare, Threatened, or Endangered Species (RARE)
- Spawning, Reproduction, and/or Early Development (SPWN)
- Wetland Habitat (WET)
- Agricultural Supply (AGR)
- Estuarine Habitat (EST)

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- Commercial and Sport Fishing (COMM)
- Subsistence Fishing (SUB)
- Tribal Tradition and Culture (CUL)
- Tribal Subsistence Fishing (T-SUB)
- Aquaculture (AQUA)
- Marine Habitat (MAR)
- Preservation of Biological Habitats of Special Significance (BIOL)
- Migration of Aquatic Organisms (MIGR)
- Shellfish Harvesting (SHELL)
- Industrial Process Supply (PROC)
- Industrial Service Supply (IND)
- Hydropower Generation (POW)
- Navigation (NAV)
- Flood Peak Attenuation/Flood Water Storage (FLD)
- Water Quality Enhancement (WQE)
- Fresh Water Replenishment (FRSH)
- Groundwater Recharge (GWR)
- Inland Saline Water Habitat (SAL)

3.2.3. Proactive Sanitary Sewer System Management to Eliminate Spill Causes

Finding 3 of the previous Order, 2006-0003-DWQ, states: “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 [sanitary sewer overflow]. 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.”

Many spills are preventable through proactive attention on sanitary sewer system management using the best practices and technologies available to address major causes of spills, including but not limited to:

- Blockages from sources including but not limited to:
 - Fats, oils and grease;
 - Tree roots;
 - Rags, wipes and other paper, cloth and plastic products; and
 - Sediment and debris.
- Sewer system damage and exceedance of sewer system hydraulic capacity from identified system-specific environmental, and climate-change impacts, including but not limited to:

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- Sea level rise impacts including flooding, coastal erosion, seawater intrusion, tidal inundation and submerged lands;
- Increased surface water flows due to higher intensity rain events;
- Flooding;
- Wildfires and wildfire induced impacts;
- Earthquake induced damage;
- Landslides; and
- Subsidence.
- Infrastructure deficiencies and failures, including but not limited to:
 - Pump station mechanical failures;
 - System age;
 - Construction material failures;
 - Manhole cover failures;
 - Structural failures; and
 - Lack of proper operation and maintenance.
- Insufficient system capacity (temporary or sustained), due to factors including but not limited to:
 - Excessive and/or increased storm or groundwater inflow/infiltration;
 - Insufficient capacity due to population increase and/or new connections from industrial, commercial and other system users; and
 - Stormwater capture projects utilizing a sanitary sewer system to convey stormwater to treatment facilities for reuse.
- Community impacts, including but not limited to:
 - Power outages;
 - Vandalism; and
 - Contractor-caused or other third party-caused damages.

3.2.4. Underground Sanitary Sewer System Leakage

Portions of some sanitary sewer systems may leak, causing underground exfiltration (exiting) of sewage from the system. Exfiltrated sewage that remains in the underground infrastructure trench and/or the soil matrix, and that does not discharge into waters of the State (surface water or groundwater) may not threaten beneficial uses.

Underground exfiltrated sewage may threaten beneficial uses if discharged to waters of the State. Exfiltrated sewage that discharges to groundwater may impact beneficial uses of groundwater and pollute groundwater supply. Additionally, if in close proximity, exfiltrated sewage may enter into a compromised underground drainage conveyance system that discharges into a water of the United States, or into groundwater that is hydrologically connected to (feeds into) a water of the United States, thus potentially causing: (1) a Clean Water Act violation, (2) threat and impact to beneficial uses, and/or (3) surface water pollution.

3.2.5. Proactive Sanitary Sewer System Management to Reduce Inflow and Infiltration

Excessive inflow (stormwater entering) and infiltration (groundwater seepage entering) to sanitary sewer systems is preventable through proactive sewer system management using the best practices and technologies available. The efficiency of the downstream wastewater treatment processes is dependent on the performance of the sanitary sewer system. When the structural integrity of a sanitary sewer system deteriorates, high volumes of inflow and infiltration can enter the sewer system. High levels of inflow and infiltration increase the hydraulic load on the downstream treatment plant, which can reduce treatment efficiency, lead to bypassing a portion of the treatment process, cause illegal discharge of partially treated effluent, or in extreme situations make biological treatment facilities inoperable (e.g., wash out the biological organisms that treat the waste).

3.3. Water Quality Control Plans, Policies and Resolutions

The nine Regional Water Boards have adopted region-specific water quality control plans (commonly referred to as Basin Plans) that designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives. The State Water Board has adopted statewide water quality control plans, policies and resolutions establishing statewide water quality objectives, implementation programs and initiatives.

3.3.1. State Water Board Antidegradation Policy

On October 28, 1968, the State Water Board adopted Resolution 68-16, titled Statement of Policy with Respect to Maintaining High Quality of Waters in California, which incorporates the federal antidegradation policy. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings.

The continued prohibition of sewage discharges from sanitary sewer systems into waters of the State aligns with Resolution 68-16. A sewage discharge from sanitary sewers to waters of the State is prohibited by this Order. Therefore, this Order does not allow degradation of waters of the State. In addition, this Order: (1) further expands the existing prohibition of sewage discharges to include waters of the State, in addition to waters of the United States as provided in previous Order 2006-0003-DWQ, and (2) enhances the ability for Water Board enforcement of violations of the established prohibitions.

3.3.2. State Water Board Sources of Drinking Water Policy

On May 19, 1988, the State Water Board adopted Resolution 88-63 (amended on February 1, 2006), titled Sources of Drinking Water, establishing state policy that all waters of the State, with certain exceptions, are suitable or potentially suitable for municipal or domestic supply.

3.3.3. State Water Board Cost of Compliance Resolution

On September 24, 2013, the State Water Board adopted Resolution 2013-0029, titled Directing Actions in Response to Efforts by Stakeholders on Reducing Costs of

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Compliance While Maintaining Water Quality Protection. Through this resolution, the State Water Board committed to continued stakeholder engagement in identifying and implementing measures to reduce costs of compliance with regulatory orders while maintaining water quality protection and improving regulatory program outcomes.

3.3.4. State Water Board Human Right to Water Resolution

On February 16, 2016, the State Water Board adopted Resolution 2016-0010, titled Adopting the Human Right to Water as a Core Value and Directing its Implementation in Water Board Programs and Activities, addressing the human right to water as a core value and directing Water Board programs to implement requirements to support safe drinking water for all Californians.

On November 16, 2021, the State Water Board adopted Resolution 2021-0050 titled Condemning Racism, Xenophobia, Bigotry, and Racial Injustice, and Strengthening Commitment to Racial Equity, Diversity, Inclusion, Access, and Anti-racism. Among other actions, through Resolution 2021-0050, the State Water Board, in summary as corresponding to this General Order, reaffirms its commitment to its Human Right to Water resolution, upholding that every human being in California deserves safe, clean, affordable, and accessible water for human consumption, cooking, and sanitation purposes. Resolution 2021-0050 provides the State Water Board commitment to:

- Protect public health and beneficial uses of waterbodies in all communities, including communities disproportionately burdened by wastes discharge of waste to land and surface water;
- Restore impaired surface waterbodies and degraded aquifers; and
- Promote multi-benefit water quality projects.

Through Resolution 2021-0050, the State Water Board also commits to expanding implementation of its Climate Change Resolution to address the disproportionate effects of extreme hydrologic conditions and sea-level rise on Black, Indigenous, and people of color communities, prioritizing:

- The right to safe, clean, affordable, and accessible drinking water and sanitation;
- Sustainable management and protection of local groundwater resources;
- Healthy watersheds; and
- Access to surface waterbodies that support subsistence fishing.

On June 7, 2022, the State Water Board adopted a Resolution, titled Authorizing the Executive Director or Designee to Enter into One or More Multi-Year Contracts Up to a Combined Sum of \$4,000,000 for a Statewide Wastewater Needs Assessment, supporting the equitable access to sanitation for all Californians and implementation of Resolutions 2016-0010 and 2021-0050.

This General Order supports the State Water Board priority in collecting a comprehensive set of data for California's wastewater systems, including sanitary sewer systems. Data reported per the requirements of this Order will be used with data from other Water Boards' programs, to further develop criteria and create a statewide risk

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framework to prioritize critical funding and infrastructure investments for California's most vulnerable populations, including disadvantaged or severely disadvantaged communities with inadequate or failing sanitation systems and threatened access to healthy drinking water supplies.

3.3.5. State Water Board Open Data Resolution

On July 10, 2018, the State Water Board adopted Resolution 2018-0032, titled Adopting Principles of Open Data as a Core Value and Directing Programs and Activities to Implement Strategic Actions to Improve Data Accessibility and Associated Innovation, directing regulatory programs to assure all monitoring and reporting requirements support the State Water Boards' Open Data Initiative.

3.3.6. State Water Board Response to Climate Change

On March 7, 2017, the State Water Board adopted Resolution 2017-0012, titled Comprehensive Response to Climate Change, requiring a proactive response to climate change in all California Water Board actions, with the intent to embed climate change consideration into all programs and activities.

3.4. California Environmental Quality Act

The adoption of this Order is an action to reissue general waste discharge requirements that is exempt from the California Environmental Quality Act (Public Resources Code section 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., Title 14, section 15308). In addition, the action to adopt this Order is exempt from CEQA pursuant to Cal. Code Regs., Title 14, section 15301, to the extent that it applies to existing sanitary sewer collection systems that constitute "existing facilities" as that term is used in sections 15301 and 15302, to the extent that it results in the repair or replacement of existing systems involving negligible or no expansion of capacity.

3.5. State Water Board Funding Assistance for Compliance with Water Board Water Quality Orders

The State Water Board, Division of Financial Assistance administers the implementation of the State Water Board financial assistance programs, per Board-adopted funding policies. Among other funding areas, the Division administers loan and grant funding for the planning and construction of wastewater and water recycling facilities per funding program-specific policies and guidelines. Applicants may apply for Clean Water State Revolving Fund low-interest loan, Small Community Wastewater grant funding assistance, and other funding available at the time of application, for some of the costs associated with complying with this General Order.

Funding applicants may obtain further information regarding current funding opportunities, and Division of Financial Assistance staff contact information at the following website: [Financial Assistance Funding - Grants and Loans | California State Water Resources Control Board](https://www.waterboards.ca.gov/water_issues/programs/grants_loans/).

(https://www.waterboards.ca.gov/water_issues/programs/grants_loans/)

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Section 13477.6 of the Water Code authorizes the Small Community Grant Fund. The Small Community Grant Fund allows the State Water Board to provide grant funding assistance to small, disadvantaged communities and small severely disadvantaged communities that may not otherwise be able to afford a loan or similar financing for projects to comply with requirements of this General Order. The State Water Board also considers loan forgiveness on a disadvantaged community-specific basis.

For disadvantaged communities' wastewater needs, the State Water Board places priority on the funding of projects that address:

- Public health;
- Violations of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permits;
- Providing sewer system service to existing septic tank owners; and
- High priority public health and water quality concerns identified by a Regional Water Board.

3.6. Notification to Interested Parties

On January 31, 2022, the State Water Board notified interested parties and persons of its intent to reissue Sanitary Sewer Systems General Order 2006-0003-DWQ by issuing a draft General Order for a 60-day public comment period. State Water Board staff conducted extensive stakeholder outreach and encouraged public participation in the adoption process for this General Order. On March 15, 2022, the State Water Board held a public meeting to hear and consider oral public comments. The State Water Board considered all public comments prior to adopting this General Order.

THEREFORE, IT IS HEREBY ORDERED, that pursuant to Water Code sections 13263, 13267, and 13383 this General Order supersedes Order 2006-0003-DWQ, Order WQ 2013-0058-EXEC, and any amendments made to these Orders thereafter, except for enforcement purposes and to meet the provisions contained in Division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, the Enrollee shall comply with the requirements in this Order.

4. PROHIBITIONS

4.1 Discharge of Sewage from a Sanitary Sewer System

Any discharge from a sanitary sewer system that has the potential to discharge to surface waters of the State is prohibited unless it is promptly cleaned up and reported as required in this General Order.

4.2 Discharge of Sewage to Waters of the State

Any discharge from a sanitary sewer system, discharged directly or indirectly through a drainage conveyance system or other route, to waters of the State is prohibited.

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4.3. Discharge of Sewage Creating a Nuisance

Any discharge from a sanitary sewer system that creates a nuisance or condition of pollution as defined in Water Code section 13050(m) is prohibited.

5. SPECIFICATIONS

5.1. Designation of a Legally Responsible Official

The Enrollee shall designate a Legally Responsible Official that has authority to ensure the enrolled sanitary sewer system(s) complies with this Order, and is authorized to serve as a duly authorized representative. The Legally Responsible Official must have responsibility over management of the Enrollee's entire sanitary sewer system, and must be authorized to make managerial decisions that govern the operation of the sanitary sewer system, including having the explicit or implicit duty of making major capital improvement recommendations to ensure long-term environmental compliance. The Legally Responsible Official must have or have direct authority over individuals that:

- Possess a recognized degree or certificate related to operations and maintenance of sanitary sewer systems, and/or
- Have professional training and experience related to the management of sanitary sewer systems, demonstrated through extensive knowledge, training and experience.

For example, a sewer system superintendent or manager, an operations manager, a public utilities manager or director, or a district engineer may be designated as a Legally Responsible Official.

The Legally Responsible Official shall complete the electronic [CIWQS "User Registration" form](https://ciwqs.waterboards.ca.gov/ciwqs/newUser.jsp) (<https://ciwqs.waterboards.ca.gov/ciwqs/newUser.jsp>). A Legally Responsible Official that represents multiple enrolled systems shall complete the electronic CIWQS "User Registration" form for each system.

The Enrollee shall submit any change to its Legally Responsible Official, and/or change in contact information, to the State Water Board within 30 calendar days of the change by emailing ciwqs@waterboards.ca.gov and copying the appropriate Regional Water Board as provided in Attachment F (Regional Water Quality Control Board Contact Information) of this General Order.

5.2. Sewer System Management Plan Development and Implementation

To facilitate adequate local funding and management of its sanitary sewer system(s), the Enrollee shall develop and implement an updated Sewer System Management Plan. The scale and complexity of the Sewer System Management Plan, and specific elements of the Plan, must match the size, scale and complexity of the Enrollee's sanitary sewer system(s). The Sewer System Management Plan must address, at minimum, the required Plan elements in Attachment D (Sewer System Management Plan – Required Elements) of this General Order. To be effective, the Sewer System Management Plan must include procedures for the management, operation, and maintenance of the sanitary sewer system(s). The procedures must: (1) incorporate the

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prioritization of system repairs and maintenance to proactively prevent spills, and (2) address the implementation of current standard industry practices through available equipment, technologies, and strategies.

For an existing Enrollee under Order 2006-0003-DWQ that has certified its Continuation of Existing Regulatory Coverage, per section 2.1 (Requirements for Continuation of Existing Regulatory Coverage) of this General Order:

Within six (6) months of the Adoption Date of this General Order:

- The Legally Responsible Official shall upload the Enrollee's existing Sewer System Management Plan to the online CIWQS Sanitary Sewer System Database.

For a new Enrollee:

Within twelve (12) months of the Application for Enrollment approval date:

- The governing entity of the new Enrollee shall approve its Sewer System Management Plan; and
- The Legally Responsible Official shall certify and upload its Sewer System Management Plan to the online CIWQS Sanitary Sewer System Database.

5.3. Certification of Sewer System Management Plan and Plan Updates

The Legally Responsible Official shall certify and upload its Sewer System Management Plan and all subsequent updates to the online CIWQS Sanitary Sewer System Database.

5.4. Sewer System Management Plan Audits

The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit must be conducted for the period after the end of the Enrollee's last required audit period. **Within six months after the end of the required 3-year audit period**, the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 (Sewer System Management Plan Audit Reporting Requirements) of Attachment E1 of this General Order.

Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff.

The internal audit shall be appropriately scaled to the size of the system(s) and the number of spills. The Enrollee's sewer system operators must be involved in completing the audit. At minimum, the audit must:

- Evaluate the implementation and effectiveness of the Enrollee's Sewer System Management Plan in preventing spills;
- Evaluate the Enrollee's compliance with this General Order;
- Identify Sewer System Management Plan deficiencies in addressing ongoing spills and discharges to waters of the State; and

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- Identify necessary modifications to the Sewer System Management Plan to correct deficiencies.

The Enrollee shall submit a complete audit report that includes:

- Audit findings and recommended corrective actions;
- A statement that sewer system operators' input on the audit findings has been considered; and
- A proposed schedule for the Enrollee to address the identified deficiencies.

A new Enrollee of this General Order (that did not have a sanitary sewer system enrolled in the previous State Water Board Order 2006-0003-DWQ) shall conduct its first internal Sewer System Management Plan audit for the time period between the date of submittal of its certified Sewer System Management Plan and the third subsequent December 31st date. The audit report must be submitted into the online CIWQS Sanitary Sewer System Database **by July 1 of the following calendar year.**

See the following tables for clarification:

Initial Audit Period and Audit Due Date for New Enrollees

	Audit Period	Audit Due Date
New Enrollee	Certified Sewer System Management Plan Submittal Date through the third subsequent December 31 st date	July 1 st date after audit period
<i>Example</i>	<i>Certified Sewer System Management Plan Submittal Date of August 2, 2025 Audit Period of August 2, 2025 through December 31, 2027</i>	<i>July 1, 2028</i>

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Initial Audit Period for Transition from 2-Year Audit Required in Previous Order 2006-0003-DWQ to 3-Year Audit Required in this General Order

	Audit Period	Audit Due Date
An Enrollee previously regulated by Order 2006-003-DWQ	A 3-year period starting from the end of last required 2-year Audit Period	Within six months after end of 3-year Audit Period
<i>Example</i>	<i>Last required Audit Period start date of August 2, 2021; Audit Period of August 2, 2021 through August 1, 2024</i>	<i>February 1, 2025</i>

Three-Year Ongoing Audit Period

	Audit Period	Audit Due Date
Each Enrollee	A 3-year period starting from the end of last required Audit Period	Within six months after end of 3-year Audit Period

5.5. Six-Year Sewer System Management Plan Update

At a minimum, the Enrollee shall update its Sewer System Management Plan every six (6) years after the date of its last Plan Update due date. (For an Enrollee previously regulated by Order 2006-0003-DWQ, the six-year period shall commence on the due date identified in section 3.11 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this Order. The Updated Sewer System Management Plan must include:

- Elements required in Attachment D (Sewer System Management Plan – Required Elements) of this Order;
- Summary of revisions included in the Plan update based on internal audit findings; and
- Other sewer system management-related changes.

The Enrollee's governing entity shall approve the updated Plan. The Legally Responsible Official shall upload and certify the approved updated Plan in the online CIWQS Sanitary Sewer System Database in accordance with section 3.11 (Sewer System Management Plan Reporting Requirements) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order. During the time period in between Plan updates, the Enrollee shall continuously document changes to its Sewer System Management Plan in a change log attached to the Plan.

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5.6. System Resilience

The Enrollee shall include and implement system-specific procedures in its Sewer System Management Plan to proactively prioritize: (1) operation and maintenance, (2) condition assessments, and (3) repair and rehabilitation, to address ongoing system resilience, as specified in Attachment D (Sewer System Management Plan – Required Elements) of this General Order.

5.7. Allocation of Resources

The Enrollee shall:

- Establish and maintain a means to manage all necessary revenues and expenditures related to the sanitary sewer system; and
- Allocate the necessary resources to its sewer system management program for:
 - Compliance with this General Order,
 - Full implementation of its updated Sewer System Management Plan,
 - System operation, maintenance, and repair, and
 - Spill responses.

5.8. Designation of Data Submitters

The Legally Responsible Official may designate one or more individuals as a Data Submitter for reporting of spill data. The Legally Responsible Official shall authorize the designation of Data Submitter(s) through the online [CIWQS database](https://ciwqs.waterboards.ca.gov) (<https://ciwqs.waterboards.ca.gov>) prior to the individuals establishing a [CIWQS user account](https://ciwqs.waterboards.ca.gov/ciwqs/newUser.jsp) (<https://ciwqs.waterboards.ca.gov/ciwqs/newUser.jsp>) and entering spill data into the online CIWQS Sanitary Sewer System Database.

The Legally Responsible Official shall submit any change to its Data Submitter(s), and/or change in Data Submitter contact information, to the State Water Board within 30 calendar days of the change, by emailing ciwqs@waterboards.ca.gov and copying the appropriate Regional Water Board as provided in Attachment F (Regional Water Quality Control Board Contact Information) of this General Order.

5.9. Reporting Certification

The Legally Responsible Official shall electronically certify, on the Enrollee's behalf, all applications, reports, the Sewer System Management Plan(s) and corresponding updates, and other information submitted electronically into the online CIWQS Sanitary Sewer System Database, as follows:

"I certify under penalty of perjury under the laws of the State of California that the electronically submitted information was prepared under my direction or supervision. Based on my inquiry of the person(s) directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete, and complies with the Statewide Sanitary Sewer Systems General Order. I am aware that there are significant penalties for submitting false information."

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Hardcopy submittals to the State Water Board must be accompanied by the above certification statement.

5.10. System Capacity

The Enrollee shall maintain the system capacity necessary to convey: (1) base flows during dry weather conditions, and (2) wet weather peak flows consistent with designated local historic storms. Design storms must take into account system-specific stormwater contributions via inflow and infiltration, and location-specific depth of groundwater and storm frequencies. The Enrollee shall implement capital improvements to provide adequate hydraulic capacity to:

- Meet or exceed the design criteria as defined in the Enrollee's System Evaluation and Capacity Assurance element of its Sewer System Management Plan; and
- Prevent system capacity-related spills, and adverse impacts to the treatment efficiency of downstream wastewater treatment facilities.

5.11. System Performance Analysis

The Enrollee shall include a running 10-year system performance analysis in its Annual Report. The analysis must include two CIWQS-generated graphs presenting the following information:

Graph 1 – Total Spill Volume per Year:

X axis: A 10-year period which includes the current calendar year and the nine previous calendar years;

Y axis: The total spill volume, per Spill Category, for each calendar year.

Graph 2 – Total Number of Spills per Year:

X axis: A 10-year period which includes the current calendar year and the nine previous calendar years;

Y axis: The total number of spills, per Spill Category, for each calendar year.

The current calendar year is the calendar year covered in the Annual Report.

The Enrollee shall generate the graphs in CIWQS, using the existing data in the online CIWQS Sanitary Sewer System Database at the following graph generation link: (https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_operation_report).

5.12. Spill Emergency Response Plan and Remedial Actions

For Existing Enrollees (with regulatory coverage under Order 2006-0003-DWQ):

Within six (6) months of the Adoption Date of this General Order, the Enrollee shall update and implement its Spill Emergency Response Plan, per Attachment D, section 6 (Spill Emergency Response Plan) of this General Order.

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For New Enrollees:

Within six (6) months of the Application for Enrollment approval date, the Enrollee shall develop and implement a Spill Emergency Response Plan, per Attachment D, section 6 (Spill Emergency Response Plan) of this General Order.

The Enrollee shall certify, in its Annual Report, that its Spill Emergency Response Plan is up to date.

The Spill Emergency Response Plan shall include measures to protect public health and the environment. The Enrollee shall respond to spills from its system(s) in a timely manner that minimizes water quality impacts and nuisance by:

- Immediately stopping the spill and preventing/minimizing a discharge to waters of the State;
- Intercepting sewage flows to prevent/minimize spill volume discharged into waters of the State;
- Thoroughly recovering, cleaning up and disposing of sewage and wash down water; and
- Cleaning publicly accessible areas while preventing toxic discharges to waters of the State.

5.13. Notification, Monitoring, Reporting and Recordkeeping Requirements

The Enrollee shall comply with notification, monitoring, reporting, and recordkeeping requirements in Attachment E1 of this General Order.

5.13.1. Spill Categories

Individual spill notification, monitoring and reporting must be in accordance with the following spill categories:

- **Category 1 Spill**

A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:

- A surface water, including a surface water body that contains no flow or volume of water; or
- A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.

Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.

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A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

- **Category 2 Spill**

A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.

- **Category 3 Spill**

A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.

- **Category 4 Spill**

A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.

A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.

5.13.2. Annual Report

The Enrollee shall submit an Annual Report (previously termed as Collection System Questionnaire in Order 2006-0003-DWQ) as specified in section 3.9 (Annual Report) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

For new Enrollees: Within 30 days of obtaining a CIWQS account, a new Enrollee shall submit its initial Annual Report, as specified in section 3.9 (Annual Report) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

5.14. Electronic Sanitary Sewer System Service Area Boundary Map

For continuing enrollees, starting on July 1, 2025, and no later than December 31, 2025:

For new enrollees – no earlier than July 1, 2025, or within 12 months of the Application for Enrollment approval date, whichever date is later:

The Legally Responsible Official shall submit, to the State Water Board, geospatial data detailing the locations of the Enrollee's sanitary sewer system service area boundary, per the required content and specifications in section 3.8 (Electronic Sanitary Sewer System Service Area Boundary Map) of Attachment E1 of this General Order, for each system identified by a WDID number.

An Enrollee of a disadvantaged community that may need assistance developing an electronic map to comply with this requirement, may contact State Water Board staff for assistance at SanitarySewer@waterboards.ca.gov.

5.15. Voluntary Reporting of Spills from Privately-Owned Sewer Laterals and/or Private Sanitary Sewer Systems

Within 24 hours of becoming aware of a spill (as described below) from a private sewer lateral or private sanitary sewer system that is not owned/operated by the Enrollee, the Enrollee is encouraged to report the following observations to the online CIWQS Sanitary Sewer System Database at the following link:

<https://ciwqs.waterboards.ca.gov>:

- A spill equal or greater than 1,000 gallons that discharges (or has a potential to discharge) to a water of the State, or a drainage conveyance system that discharges to waters of the State; **or**
- Any volume of sewage that discharges (or has a potential to discharge) to surface waters.

In the CIWQS module, the Enrollee is encouraged to identify:

- Time of observation;
- Description of general spill location (for example, street name and cross street names);
- Estimated volume of spill;
- If known, general description of spill destination (for example, flowing into drainage channel, flowing directly into a creek, etc.); and
- If known, name of private system owner/operator.

The CIWQS database will make the name and contact information of the entity voluntarily reporting a private spill, accessible to State and Regional Water Board staff only. The CIWQS database will only make information regarding the actual spill, accessible to the public.

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5.16. Voluntary Notification of Spills from Privately-Owned Laterals and/or Systems to the California Office of Emergency Services

Upon observing or acquiring knowledge of any of the following from a private sewer lateral or private sanitary sewer system that is not owned/operated by the Enrollee, the Enrollee is encouraged to notify the California Office of Emergency Services (as provided by Health and Safety Code section 5410 et. seq. and Water Code section 13271), or inform the responsible party that State law requires such notification to the Office of Emergency Services by any person that causes or allows a sewage discharge to waters of the State:

- A spill equal to 1,000 gallons or more that discharges (or has a potential to discharge) to waters of the State, or a drainage conveyance system that discharges to waters of the State; or
- A spill of any volume to surface waters.

5.17. Unintended Failure to Report

If an Enrollee becomes aware that they unintentionally failed to submit relevant facts in any report required in this General Order, the Enrollee shall promptly notify Regional Water Board and State Water Board staff. Regional Water Board contact information is included in Attachment F of this Order. State Water Board staff shall be contacted by email at SanitarySewer@waterboards.ca.gov for assistance in formally amending the corresponding report(s) in the online CIWQS Sanitary Sewer System Database.

5.18. Duty to Report to Water Boards

In accordance with Water Code section 13267 and/or section 13383, upon request by the State Water Board Executive Director (or designee) or a Regional Water Board Executive Officer (or designee), the Enrollee shall provide the requested information which the State or Regional Water Board deems necessary to determine compliance with this General Order.

5.19. Operation and Maintenance

To prevent discharges to the environment, the Enrollee shall maintain in good working order, and operate as designed, any facility or treatment and control system designed to contain sewage and convey it to a treatment plant.

6. PROVISIONS

6.1. Enforcement Provisions

The following enforcement provisions are based on existing federal and state regulations, laws and policies, including the federal Clean Water Act, the state Water Code and the State Water Board Enforcement Policy.

6.1.1. Enforceability of Clean Water Act and Water Code Violations

Noncompliance with requirements of this General Order or discharging sewage without enrolling in this General Order constitutes a violation of the Water Code and a potential

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violation of the Clean Water Act and is grounds for an enforcement action by the State Water Board or the applicable Regional Water Board. Failure to comply with the notification, monitoring, inspection, entry, reporting, and recordkeeping requirements may subject the Enrollee to administrative civil liabilities of up to \$10,000 a day per violation pursuant to Water Code section 13385; up to \$1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement. Discharging waste not in compliance with the requirements of this General Order or the Clean Water Act may subject the Enrollee to administrative civil liabilities up to \$10,000 a day per violation and additional liability up to \$10 per gallon of discharge not cleaned up after the first 1,000 gallons of discharge; up to \$5,000 a day per violation pursuant to Water Code section 13350 or up to \$20 per gallon of waste discharged; or referral to the Attorney General for judicial civil enforcement.

6.1.2. Monetary Penalties

The Water Code provides the State and Regional Water Boards the authority to pursue formal enforcement actions, including imposing administrative liability and civil monetary penalties, for non-compliance with the requirements of this General Order and violations of the Clean Water Act.

6.1.3. Falsifying or Failure to Report

The Water Code provides that any person failing or refusing to furnish technical or monitoring program reports, as required under this General Order, or falsifying any information provided in the technical or monitoring reports is subject to administrative liability and civil monetary penalties. Any person who knowingly fails or refuses to furnish technical or monitoring program reports or falsifies any information provided in reports required by this General Order is subject to criminal penalties.

6.1.4. Severability of General Order

The provisions of this General Order are severable; 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.

6.1.5. Indirect Discharges

In the event that a spill enters into a drainage conveyance system, the Enrollee shall take all feasible steps to prevent discharge of sewage into waters of the State by blocking or redirecting the flow in the drainage conveyance system, removing the sewage from the drainage conveyance system, and cleaning the system in a manner that does not inadvertently impact beneficial uses of the receiving water body.

6.1.6. Water Boards' Considerations for Discretionary Enforcement

Consistent with the State Water Board Enforcement Policy, when considering Water Code section 13327 factors, the State Water Board or a Regional Water Board may consider the Enrollee's efforts to contain, control, clean up, and mitigate spills. In assessing the factors, the State Water Board or the applicable Regional Water Board will consider:

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- The Enrollee's compliance with this General Order with a focus on compliance with reporting requirements;
- The Enrollee's provision of adequate funding to implement the requirements of this General Order;
- The Enrollee's compliance with providing a complete and updated Sewer System Management Plan;
- The Enrollee's compliance with implementing its Sewer System Management Plan;
- The overall effectiveness of the Enrollee's Sewer System Management Plan with respect to:
 - System management, operation, and maintenance,
 - Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent spills (e.g. adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow, etc.),
 - Preventive maintenance (including cleaning, root grinding, and fats, oils, and grease control) and source control measures,
 - Implementation of backup equipment,
 - Inflow and infiltration prevention and control,
 - Appropriate sanitary sewer system capacity to prevent spills, and
 - The Enrollee's responsiveness to stop and mitigate the impact of the discharge;
- The Enrollee's compliance with identifying the cause of the spill;
- The Enrollee's use of available information and observations to accurately estimate the spill volume and identify the affected or potentially affected receiving waters;
- The Enrollee's thoroughness of cleaning up sewage in drainage conveyance systems after the spill(s);
- The Enrollee's use of water quality and biological monitoring and assessment to determine the short-term and long-term impacts to beneficial uses and the environment;
- The Enrollee's follow up actions to improve system performance;
- The Enrollee's implementation of feasible alternatives to prevent spills, such as:
 - Use of temporary storage or waste retention,
 - Reduction of system inflow and infiltration,
 - Collection and hauling of waste to a treatment facility,
 - Prevention of and/ or containment of spills due to a design storm event identified in the Enrollee's Sewer System Management Plan,

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- Implementation of available equipment, technologies, strategies, and recommended industry practices for maintaining and managing sewer systems to prevent spills, and contain and eliminate discharges to waters of the State; and
- The spill duration and factors beyond the reasonable control of the Enrollee causing the event.

6.1.7. Enforcement Discretion Based on Reporting Compliance

Consistent with the State Water Board Enforcement Policy, the State Water Board or a Regional Water Board may consider the Enrollee's efforts to comply with spill reporting requirements when determining compliance with Water Code section 13267 and section 13383. When assessing Water Code section 13227 factors, the State Water Board or the applicable Regional Water Board will consider:

- The Enrollee's diligence to comply with all reporting requirements in this General Order;
- The use of best available information for the Enrollee's reporting of spill start date and start time in which the release of sewage from the sanitary sewer system initiated;
- The Enrollee's reporting of spill end date, and end time to be the date and time in which the release of sewage from the sanitary sewer system was stopped;
- The Enrollee's diligence to accurately estimate and report spill volumes;
- The Enrollee's subsequent verification and/or updates to initial Draft Spill Reports in accordance with this General Order; and
- The Enrollee's timely certification of required spill reports.

Consistent with Water Code section 13267 and section 13383, the State Water Board or a Regional Water Board may require an Enrollee to report the results of a condition assessment of a specified portion of the Enrollee's sanitary sewer system.

6.2. Other Regional Water Board Orders

It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with federal and state regulations. This Order will not be interpreted or applied:

- In a manner inconsistent with the federal Clean Water Act;
- To authorize a spill or discharge that is illegal under either the Clean Water Act, the Water Code, and/or an applicable Basin Plan prohibition or water quality standard;
- To prohibit a Regional Water Board from issuing an individual National Pollutant Discharge Elimination System (NPDES) permit or individual waste discharge requirements superseding an Enrollee's regulatory coverage under this General Order for a sanitary sewer system authorized under the Clean Water Act or Water Code;

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- To supersede any more specific or more stringent waste discharge requirements or enforcement orders issued by a Regional Water Board; or
- To supersede any more specific or more stringent state or federal requirements in existing regulation, an administrative/judicial order, or Consent Decree.

6.3. Sewer System Management Plan Availability

The Enrollee's updated Sewer System Management Plan must be maintained for public inspection at the Enrollee's offices and facilities and must be available to the public through CIWQS and/or on the Enrollee's website, in accordance with section 3.8 (Sewer System Management Plan Reporting Requirements) of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

6.4. Entry and Inspection

6.4.1. Entry and Availability of Information

The Enrollee shall allow State and Regional Water Board staff, upon presentation of credentials and other documents as may be required by law, to:

- Enter upon the Enrollee's premises where a regulated facility or activity is located or conducted, or where records are kept under the requirements of this General Order;
- Have access to and reproduce any records required to be maintained by this General Order;
- Inspect any facility and/or equipment (including monitoring and control equipment), practices, or operations required in this General Order; and
- Sample or monitor substances or parameters for assuring compliance with this General Order, or as otherwise authorized by the Water Code.

6.4.2. Pre-Inspection Questionnaire

The Enrollee shall provide pre-inspection information to State and Regional Water Board staff through the completion of a Pre-Inspection Questionnaire provided by Water Board staff.

ATTACHMENT A - DEFINITIONS

Annual Report

An Annual Report (previously termed as Collection System Questionnaire in Order 2006-0003-DWQ) is a mandatory report in which the Enrollee provides a calendar-year update of its efforts to prevent spills.

Basin Plan

A Basin Plan is a water quality control plan specific to a Regional Water Quality Control Board (Regional Water Board), that serves as regulations to: (1) define and designate beneficial uses of surface and groundwaters, (2) establish water quality objectives for protection of beneficial uses, and (3) provide implementation measures.

Beneficial Uses

The term “Beneficial Uses” is a Water Code term, defined as the uses of the waters of the State that may be protected against water quality degradation. Examples of beneficial uses include but are not limited to, municipal, domestic, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

California Integrated Water Quality System (CIWQS)

CIWQS is the statewide database that provides for mandatory electronic reporting as required in State and Regional Water Board-issued waste discharge requirements.

Data Submitter

A Data Submitter is an individual designated and authorized by the Enrollee's Legally Responsible Official to enter spill data into the online CIWQS Sanitary Sewer System Database. A Data Submitter does not have the authority of a Legally Responsible Official to certify reporting entered into the online CIWQS Sanitary Sewer System Database.

Disadvantaged Community

A disadvantaged community is a community with a median household income of less than eighty percent (80%) of the statewide annual median household income.

For the purpose of this General Order, there is no differentiation between a small and large disadvantaged community.

Drainage Conveyance System

A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater and non-stormwater flows.

Enrollee

An Enrollee is a public, private, or other non-governmental entity that has obtained approval for regulatory coverage under this General Order, including:

- A state agency, municipality, special district, or other public entity that owns and/or operates one or more sanitary sewer systems:
 - greater than one (1) mile in length (each individual sanitary sewer system);
 - one mile or less in length where the State Water Resources Control Board or a Regional Water Quality Control Board requires regulatory coverage under this Order, or
- A federal agency, private company, or other non-governmental entity that owns and/or operates a sanitary sewer system of any size where the State Water Resources Control Board or a Regional Water Quality Control Board requires regulatory coverage under this Order in response to a history of spills, proximity to surface water, or other factors supporting regulatory coverage.

Environmentally Sensitive Area

An environmentally sensitive area is a designated agricultural and/or wildlife area identified to need special natural landscape protection due to its wildlife or historical value.

Exfiltration

Exfiltration is the underground exiting of sewage from a sanitary sewer system through cracks, offset or separated joints, or failed infrastructure due to corrosion or other factors.

Flood Control Channel

A flood control channel is a channel used to convey stormwater and non-stormwater flows through and from areas for flood management purposes.

Governing Entity

A governing entity includes but is not limited to the following:

- A publicly elected governing board, council, or commission of a municipal agency;
- A Department or Division director of a federal or state agency that is not governed by a board;
- A governing board or commission of an organization or association; and
- A private system owner/manager that is not governed by a board.

Hydrologically Connected

Two waterbodies are hydrologically connected when one waterbody flows, or has the potential to flow, into the other waterbody. For the purpose of this General Order, groundwater is hydrologically connected to a surface water when the groundwater feeds into the surface water. (The surface waterbody in this example is termed a gaining stream as it gains flow from surrounding groundwater.)



Lateral (including Lower and Upper Lateral)

A lateral is an underground segment of smaller diameter pipe that transports sewage from a customer's building or property (residential, commercial, or industrial) to the Enrollee's main sewer line in a street or easement. Upper and lower lateral boundary definitions are subject to local jurisdictional codes and ordinances, or private system ownership.

A lower lateral is the portion of the lateral located between the sanitary sewer system main, and either the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations.

An upper lateral is the portion of the lateral from the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations, to the building or property.

Legally Responsible Official

A Legally Responsible Official is an official representative, designated by the Enrollee, with authority to sign and certify submitted information and documents required by this General Order.

Nuisance

For the purpose of this General Order, a nuisance, as defined in Water Code section 13050(m), is anything that meets all of the following requirements:

- 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;
- 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; and
- Occurs during, or as a result of, the treatment or disposal of wastes.

Private Sewer Lateral

A private sewer lateral is the privately-owned lateral that transports sewage from private property(ies) into a sanitary sewer system.

Private Sanitary Sewer System

A private sanitary sewer system is a sanitary sewer system of any size that is owned and/or operated by a private individual, company, corporation, or organization. A private sanitary sewer system may or may not connect into a publicly owned sanitary sewer system.

Potential to Discharge, Potential Discharge

Potential to Discharge, or Potential Discharge, means any exiting of sewage from a sanitary sewer system which can reasonably be expected to discharge into a water of the State based on the size of the sewage spill, proximity to a drainage conveyance system, and the nature of the surrounding environment.

Receiving Water

A receiving water is a water of the State that receives a discharge of waste.

Resilience

Resilience is the ability to recover from or adjust to adversity or change, and grow from disruptions. Resilience can be built through planning, preparing for, mitigating, and adapting to changing conditions.

Sanitary Sewer System

A sanitary sewer system is a system that is designed to convey sewage, including but not limited to, pipes, manholes, pump stations, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a wastewater treatment plant headworks, including:

- Laterals owned and/or operated by the Enrollee;
- Satellite sewer systems; and/or
- Temporary conveyance and storage facilities, including but not limited to temporary piping, vaults, construction trenches, wet wells, impoundments, tanks and diversion structures.

For purpose of this Order, sanitary sewer systems include only systems owned and/or operated by the Enrollee.

Satellite Sewer System

A satellite sewer system is a portion of a sanitary sewer system owned or operated by a different owner than the owner of the downstream wastewater treatment facility ultimately treating the sewage.

Sewer System Management Plan

A sewer system management plan is a living document an Enrollee develops and implements to effectively manage its sanitary sewer system(s) in accordance with this General Order.

Sewage

Sewage, and its associated wastewater, is untreated or partially treated domestic, municipal, commercial and/or industrial waste (including sewage sludge), and any mixture of these wastes with inflow or infiltration of stormwater or groundwater, conveyed in a sanitary sewer system.

Spill

A spill is a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a spill under this General Order if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

Training

Training is in-house or external education and guidance needed that provides the knowledge, skills, and abilities to comply with this General Order.

Wash Down Water

Wash down water is water used to clean a spill area.

Waste

Waste, as defined in Water Code section 13050(d), includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

Waste Discharge Identification Number (WDID)

A waste discharge identification number (WDID) identifies each individual sanitary sewer system enrolled under this General Order. A WDID number is assigned to each enrolled system upon an Enrollee's approved regulatory coverage.

Waters of the State

Waters of the State are surface waters or groundwater within boundaries of the state as defined in Water Code section 13050(e), in which the State and Regional Water Boards have authority to protect beneficial uses. Waters of the State include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes and pools, wetlands, sloughs, and estuaries, regardless of flow or whether water exists during dry conditions. Waters of the State include waters of the United States.

Waters of the United States

Waters of the United States are surface waters or waterbodies that are subject to federal jurisdiction in accordance with the Clean Water Act.

Water Quality Objective

A water quality objective is the limit or maximum amount of pollutant, waste constituent or characteristic, or parameter level established in statewide water quality control plans and Regional Water Boards' Basin Plans, for the reasonable protection of beneficial uses of surface waters and groundwater and the prevention of nuisance.

ATTACHMENT B – APPLICATION FOR ENROLLMENT

1. Enrollment Status: (Mark only one item)

☐ New Enrollee

☐ New Enrollee with previous regulatory coverage under Order 2006-0003-DWQ
(that failed to certify continuation of coverage in CIWQS per Order 2022-XXXX-DWQ)

Existing WDID Number: _____

2. Applicant Information:

Legally Responsible Official Submitting Application

First and Last Name: _____

Title: _____

Phone: _____

Email: _____

System Owner/Operator Name: _____

Mailing Address: _____

City, State, Zip: _____

County: _____

Sanitary Sewer System Name: _____

Regional Water Quality Control Board(s): _____

Signature and Date: _____

3. Applicant Type (Check one):

☐ City ☐ County ☐ State ☐ Federal ☐ Special District

☐ Government Combination ☐ Private ☐ Other Non-governmental Entity

4. Wastewater Treatment Plant Receiving Sanitary Sewer System Waste:

Wastewater Treatment Plant Permittee: _____

WDID No.: _____

5. Billing Information

Billing Address: _____

City, State, Zip: _____

Billing Contact Person and Title: _____

Phone and Email Address: _____

6. Application Fee:

The application fee, as required by Water Code section 13260, is based on the daily population served by the sanitary sewer system. See updated [Fee Schedule](https://www.waterboards.ca.gov/resources/fees/water_quality/).
(https://www.waterboards.ca.gov/resources/fees/water_quality/)

Check one of the following and enter fee amount:

☐ Population Served < 50,000 – Total Fee submitted: \$ _____

☐ Population Served ≥ 50,000 – Total Fee submitted: \$ _____

Make the fee payment payable to the State Water Resources Control Board and mail the complete application package to:

State Water Resources Control Board, Accounting Office

P. O. Box 1888

Sacramento, CA 95812-1888

Attention: Statewide Sanitary Sewer System Program

7. Application Submittal Certification

I certify under penalty of perjury under the laws of the State of California that to the best of my knowledge and belief, the information in the submitted application package is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Print Name: _____

Title: _____

Signature: _____ Date: _____

ATTACHMENT C - NOTICE OF TERMINATION

1. Enrollee Information

Enrollee Name: _____

WDID No: _____

Legally Responsible Official Requesting Termination of Coverage: _____

First and Last Name: _____

Title:

Phone: _____

Email:

Mailing Address: _____

City, State, Zip: _____

County: _____

Sanitary Sewer System Name(s) or Unique Identifier(s): _____

Regional Water Quality Control Board(s): _____

Signature and Date: _____

2. Basis of Termination

Explanation of termination, including subsequent regulatory coverage and subsequent owner/operator of enrolled sanitary sewer system, as applicable:

[illegible]

3. Regulatory Coverage Termination Certification

I certify under penalty of perjury under the laws of the State of California that to the best of my knowledge: 1) the sanitary sewer system I officially represent is not required to be regulated under the Statewide Waste Discharge Requirements for Sanitary Sewer Systems Order 2022-XXXX-DWQ, and 2) the information submitted in this Notice of Termination is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I understand that the submittal of this Notice of Termination does not release sanitary sewer system agencies from liability for any violations of the Clean Water Act.

Print Name: _____

Title: _____

Signature: _____ Date: _____

For State Water Board Use Only

☐ Approved for Termination

☐ Denied and Returned to Enrollee

Deputy Director of Water Quality Signature: _____

Date: _____ Notice of Termination Effective Date: _____

ATTACHMENT D – SEWER SYSTEM MANAGEMENT PLAN – REQUIRED ELEMENTS

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ATTACHMENT D – SEWER SYSTEM MANAGEMENT PLAN – REQUIRED ELEMENTS

A Sewer System Management Plan (Plan) is a living planning document that documents ongoing local sewer system management program activities, procedures, and decision-making – at the scale necessary to address the size and complexity of the subject sanitary sewer system(s). This Plan may incorporate other programs and other plans by reference, to address short-term and long-term system resilience through:

- Proactive planning and decision-making;
- Local government ordinances;
- Updated operations and maintenance activities and procedures;
- Implementation of capital improvements;
- Sufficient local budget to support staff resources, contractors, equipment, and training; and
- Updated training of staff and contractors.

The Enrollee's development, update, and implementation of a Sewer System Management Plan addressing the requirements of this Attachment is an enforceable component of this General Order. As specified in Provision 6.1 (Enforcement Provisions) of this General Order, consistent with the Water Code and the State Water Board Enforcement Policy, the State Water Board or a Regional Water Board may consider the Enrollee's efforts in implementing an effective Sewer System Management Plan to prevent, contain, control, and mitigate spills when considering Water Code section 13327 factors to determine necessary enforcement of this General Order.

This Attachment includes the following required elements that the Enrollee shall address in its Plan and subsequent updates. The Enrollee shall identify any requirement in this Attachment that is not applicable to the Enrollee's sewer system and shall explain in its Plan why the requirement is not applicable.

1. SEWER SYSTEM MANAGEMENT PLAN GOAL AND INTRODUCTION

The goal of the Sewer System Management Plan (Plan) is to provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee's sanitary sewer system(s), (2) reduce and prevent spills, and (3) contain and mitigate spills that do occur.

The Plan must include a narrative Introduction section that discusses the following items:

1.1. Regulatory Context

The Plan Introduction section must provide a general description of the local sewer system management program and discuss Plan implementation and updates.

1.2. Sewer System Management Plan Update Schedule

The Plan Introduction section must include a schedule for the Enrollee to update the Plan, including the schedule for conducting internal audits. The schedule must include milestones for incorporation of activities addressing prevention of sewer spills.

1.3. Sewer System Asset Overview

The Plan Introduction section must provide a description of the Enrollee-owned assets and service area, including but not limited to:

- Location, including county(ies);
- Service area boundary;
- Population and community served;
- System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons;
- Structures diverting stormwater to the sewer system;
- Data management systems;
- Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals;
- Estimated number or percent of residential, commercial, and industrial service connections; and
- Unique service boundary conditions and challenge(s).

Additionally, the Plan Introduction section must provide reference to the Enrollee's up-to-date map of its sanitary sewer system, as required in section 4.1 (Updated Map of Sanitary Sewer System) of this Attachment.

2. ORGANIZATION

The Plan must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organization chart or similar narrative documentation that includes:

- The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;
- The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;
- Organizational lines of authority; and
- Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county

health officer, county environmental health agency, and State Office of Emergency Services.)

3. LEGAL AUTHORITY

The Plan must include copies or an electronic link to the Enrollee's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority to:

- Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages;
- Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure;
- Require that sewer system components and connections be properly designed and constructed;
- Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee;
- Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and
- Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

4. OPERATION AND MAINTENANCE PROGRAM

The Plan must include the items listed below that are appropriate and applicable to the Enrollee's system.

4.1. Updated Map of Sanitary Sewer System

An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries.

4.2. Preventive Operation and Maintenance Activities

A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors.

The scheduling system must include:

- Inspection and maintenance activities;

- Higher-frequency inspections and maintenance of known problem areas, including areas with tree root problems;
- Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.

The data collection system must document data from system inspection and maintenance activities, including system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.

4.3. Training

In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:

- The requirements of this General Order;
- The Enrollee's Spill Emergency Response Plan procedures and practice drills;
- Skilled estimation of spill volume for field operators; and
- Electronic CIWQS reporting procedures for staff submitting data.

4.4. Equipment Inventory

An inventory of sewer system equipment, including the identification of critical replacement and spare parts.

5. DESIGN AND PERFORMANCE PROVISIONS

The Plan must include the following items as appropriate and applicable to the Enrollee's system:

5.1. Updated Design Criteria and Construction Standards and Specifications

Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria.

5.2. Procedures and Standards

Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

6. SPILL EMERGENCY RESPONSE PLAN

The Plan must include an up to date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;
- Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;
- Address emergency system operations, traffic control and other necessary response activities;
- Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
- Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;
- Remove sewage from the drainage conveyance system;
- Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
- Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;
- Conduct post-spill assessments of spill response activities;
- Document and report spill events as required in this General Order; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

7. SEWER PIPE BLOCKAGE CONTROL PROGRAM

The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed.

The procedures must include, at minimum:

- An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;
- A plan and schedule for the disposal of pipe-blocking substances 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 substances generated within a sanitary sewer system service area;
- The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;
- Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;
- Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;
- An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and
- Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.

8. SYSTEM EVALUATION, CAPACITY ASSURANCE AND CAPITAL IMPROVEMENTS

The Plan must include procedures and activities for:

- Routine evaluation and assessment of system conditions;
- Capacity assessment and design criteria;
- Prioritization of corrective actions; and
- A capital improvement plan.

8.1 System Evaluation and Condition Assessment

The Plan must include procedures to:

- Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;

- Identify and justify the amount (percentage) of its system for its condition to be assessed each year;
- Prioritize the condition assessment of system areas that:
 - Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
 - Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;
 - Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;
- Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;
- Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;
- Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and
- Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.

8.2. Capacity Assessment and Design Criteria

The Plan must include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:

- Dry-weather peak flow conditions that cause or contributes to spill events;
- The appropriate design storm(s) or wet weather events that causes or contributes to spill events;
- The capacity of key system components; and
- Identify the major sources that contribute to the peak flows associated with sewer spills.

The capacity assessment must consider:

- Data from existing system condition assessments, system inspections, system audits, spill history, and other available information;
- Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions;

- Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;
- Increases of erosive forces in canyons and streams near underground and above-ground system components due to larger and/or higher-intensity storm events;
- Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and
- Necessary redundancy in pumping and storage capacities.

8.3. Prioritization of Corrective Action

The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.

8.4. Capital Improvement Plan

The capital improvement plan must include the following items:

- Project schedules including completion dates for all portions of the capital improvement program;
- Internal and external project funding sources for each project; and
- Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.

9. MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS

The Plan must include an Adaptive Management section that addresses Plan-implementation effectiveness and the steps for necessary Plan improvement, including:

- Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities;
- Monitoring the implementation and measuring the effectiveness of each Plan Element;
- Assessing the success of the preventive operation and maintenance activities;
- Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and
- Identifying and illustrating spill trends, including spill frequency, locations and estimated volumes.

10. INTERNAL AUDITS

The Plan shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of this General Order.

11. COMMUNICATION PROGRAM

The Plan must include procedures for the Enrollee to communicate with:

- The public for:
 - Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and
 - The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.
- Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for:
 - System operation, maintenance, and capital improvement-related activities.

**ATTACHMENT E1 – NOTIFICATION, MONITORING, REPORTING AND
RECORDKEEPING REQUIREMENTS**

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ATTACHMENT E1– NOTIFICATION, MONITORING, REPORTING AND RECORDKEEPING REQUIREMENTS

The Notification Requirements (section 1), Spill-specific Monitoring Requirements (section 2), Reporting Requirements (section 3) and Recordkeeping Requirements (section 4) in this Attachment are pursuant to Water Code section 13267 and section 13383, and are an enforceable component of this General Order. For the purpose of this General Order, the term:

- Notification means the notifying of appropriate parties of a spill event or other activity.
- Spill-specific Monitoring means the gathering of information and data for a specific spill event to be reported or kept as records.
- Reporting means the reporting of information and data into the online California Integrated Water Quality System (CIWQS) Sanitary Sewer System Database.
- Recordkeeping means the maintaining of information and data in an official records storage system.

Failure to comply with the notification, monitoring, reporting and recordkeeping requirements in this General Order may subject the Enrollee to civil liabilities of up to \$10,000 a day per violation pursuant to Water Code section 13385; up to \$1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement.

Water Code section 13193 et seq. requires the Regional Water Quality Control Boards (Regional Water Boards) and the State Water Resources Control Board (State Water Board) to collect sanitary sewer spill information for each spill event and make this information available to the public. Sanitary sewer spill information for each spill event includes but is not limited to: Enrollee contact information for each spill event, spill cause, estimated spill volume and factors used for estimation, location, date, time, duration, amount discharged to waters of the State, response and corrective action(s) taken.

1. NOTIFICATION REQUIREMENTS

1.1. Notification of Spills of 1,000 Gallons or Greater to the California Office of Emergency Services

Per Water Code section 13271, for a spill that discharges in or on any waters of the State, or discharges or is deposited where it is, or probably will be, discharged in or on any waters of the State, the Enrollee shall notify the California Office of Emergency Services and obtain a California Office of Emergency Services Control Number as soon as possible **but no later than two (2) hours** after:

- The Enrollee has knowledge of the spill; and
- Notification can be provided without substantially impeding cleanup or other emergency measures.

The notification requirements in this section apply to individual spills of 1,000 gallons or greater, from an Enrollee-owned and/or operated laterals, to a water of the State.

1.2. Spill Notification Information

The Enrollee shall provide the following spill information to the California Office of Emergency Services before receiving a Control Number, as applicable:

- Name and phone number of the person notifying the California Office of Emergency Services;
- Estimated spill volume (gallons);
- Estimated spill rate from the system (gallons per minute);
- Estimated discharge rate (gallons per minute) directly into waters of the State or indirectly into a drainage conveyance system;
- Spill incident description:
 - Brief narrative of the spill event, and
 - Spill incident location (address, city, and zip code) and closest cross streets and/or landmarks;
- Name and phone number of contact person on-scene;
- Date and time the Enrollee was informed of the spill event;
- Name of sanitary sewer system causing the spill;
- Spill cause or suspected cause (if known);
- Amount of spill contained;
- Name of receiving water body receiving or potentially receiving discharge; and
- Description of water body impact and/ or potential impact to beneficial uses.

1.3. Notification of Spill Report Updates

Following the initial notification to the California Office of Emergency Services and until such time that the Enrollee certifies the spill report in the online CIWQS Sanitary Sewer System Database, the Enrollee shall provide updates to the California Office of Emergency Services regarding substantial changes to:

- Estimated spill volume (increase or decrease in gallons initially estimated);
- Estimated discharge volume discharged directly into waters of the State or indirectly into a drainage conveyance system (increase or decrease in gallons initially estimated); and
- Additional impact(s) to the receiving water(s) and beneficial uses.

2. SPILL-SPECIFIC MONITORING REQUIREMENTS

2.1 Spill Location and Spread

The Enrollee shall visually assess the spill location(s) and spread using photography, global positioning system (GPS), and other best available tools. The Enrollee shall document the critical spill locations, including:

- Photography and GPS coordinates for:
 - The system location where spill originated.
For multiple appearance points of a single spill event, the points closest to the spill origin.
- Photography for:
 - Drainage conveyance system entry locations,
 - The location(s) of discharge into surface waters, as applicable,
 - Extent of spill spread, and
 - The location(s) of clean up.

2.2 Spill Volume Estimation

To assess the approximate spill magnitude and spread, the Enrollee shall estimate the total spill volume using updated volume estimation techniques, calculations, and documentation for electronic reporting. The Enrollee shall update its notification and reporting of estimated spill volume (which includes spill volume recovered) as further information is gathered during and after a spill event.

2.3. Receiving Water Monitoring

2.3.1. Receiving Water Visual Observations

Through visual observations and use of best available spill volume-estimating techniques and field calculation techniques, the Enrollee shall gather and document the following information for spills discharging to surface waters:

- Estimated spill travel time to the receiving water;
- For spills entering a drainage conveyance system, estimated spill travel time from the point of entry into the drainage conveyance system to the point of discharge into the receiving water;
- Estimated spill volume entering the receiving water; and
- Photography of:
 - Waterbody bank erosion,
 - Floating matter,
 - Water surface sheen (potentially from oil and grease),

- Discoloration of receiving water, and
- Impact to the receiving water.

2.3.2. Receiving Water – Water Quality Sampling and Analysis

For sewage spills in which an estimated 50,000 gallons or greater are discharged into a surface water, the Enrollee shall conduct the following water quality sampling no later than **18 hours** after the Enrollee's knowledge of a potential discharge to a surface water:

- Collect one water sample, each day of the duration of the spill, at:
 - The DCS-001 location as described in section 2.3.4 (Receiving Water Sampling Locations) of this Attachment, if sewage discharges to a surface water via a drainage conveyance system; and/or
 - Each of the three receiving water sampling locations in section 2.3.4 (Receiving Water Sampling Locations) of this Attachment;

If the receiving water has no flow during the duration of the spill, the Enrollee must report "No Sampling Due To No Flow" for its receiving water sampling locations.

The Enrollee shall analyze the collected receiving water samples for the following constituents per section 2.3.3 (Water Quality Analysis Specifications) of this Attachment:

- Ammonia, and
- Appropriate bacterial indicator(s) per the applicable Basin Plan water quality objectives, including one or more of the following, unless directed otherwise by the Regional Water Board:
 - Total Coliform Bacteria
 - Fecal Coliform Bacteria
 - *E-coli*
 - Enterococcus

Dependent on the receiving water(s), sampling of bacterial indicators shall be sufficient to determine post-spill (after the spill) compliance with the water quality objectives and bacterial standards of the California Ocean Plan or the California Inland Surface Water Enclosed Bays, and Estuaries Plan, including the frequency and/or number of post-spill receiving water samples as may be specified in the applicable plans.

The Enrollee shall collect and analyze additional samples as required by the applicable Regional Water Board Executive Officer or designee.

2.3.3. Water Quality Analysis Specifications

Spill monitoring must be representative of the monitored activity (40 Code of Federal Regulations section 122.41(j)(1)).

Sufficiently Sensitive Methods

Sample analysis must be conducted according to sufficiently sensitive test methods approved under 40 Code of Federal Regulations Part 136 for the sample analysis of pollutants. For the purposes of this General Order, a method is sufficiently sensitive when the minimum level of the analytical method approved under 40 Code of Federal Regulations Part 136 is at or below the receiving water pollutant criteria.

Environmental Laboratory Accreditation Program-Accredited Laboratories

The analysis of water quality samples required per this General Order must be performed by a laboratory that has accreditation pursuant to Article 3 (commencing with section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. (Water Code section 13176(a).) The State Water Board accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

2.3.4. Receiving Water Sampling Locations

The Enrollee shall collect receiving water samples at the following locations.

Sampling of Flow in Drainage Conveyance System (DCS) Prior to Discharge

Sampling Location	Sampling Location Description
DCS-001	A point in a drainage conveyance system before the drainage conveyance system flow discharges into a receiving water.

Receiving Surface Water Sampling (RSW)¹

Sampling Location	Sampling Location Description
RSW-001 Point of Discharge	A point in the receiving water where sewage initially enters the receiving water.
RSW-001U: Upstream of Point of Discharge	A point in the receiving water, upstream of the point of sewage discharge, to capture ambient conditions absent of sewage discharge impacts.

Sampling Location	Sampling Location Description
RSW-001D: Downstream of Point of Discharge	A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water.

¹ The Enrollee must use its best professional judgment to determine the upstream and downstream distances based on receiving water flow, accessibility to upstream/downstream waterbody banks, and size of visible sewage plume.

2.4. Safety and Access Exceptions

If the Enrollee encounters access restrictions or unsafe conditions that prevents its compliance with spill response requirements or monitoring requirements in this General Order, the Enrollee shall provide documentation of access restrictions and/or safety hazards in the corresponding required report.

3. REPORTING REQUIREMENTS

All reporting required in this General Order must be submitted electronically to the online [CIWQS Sanitary Sewer System Database](https://ciwqs.waterboards.ca.gov) (<https://ciwqs.waterboards.ca.gov>), unless specified otherwise in this General Order. Electronic reporting may solely be conducted by a Legally Responsible Official or Data Submitter(s) previously designated by the Legally Responsible Official, as required in section 5.8 (Designation of Data Submitters) of this General Order.

The Enrollee shall report any information that is protected by the Homeland Security Act, by email to SanitarySewer@waterboards.ca.gov, with a brief explanation of the protection provided by the Homeland Security Act for the subject report to be protected from unauthorized disclosure and/or public access, and for official Water Board regulatory purposes only.

3.1. Reporting Requirements for Individual Category 1 Spill Reporting

3.1.1. Draft Spill Report for Category 1 Spills

Within three (3) business days of the Enrollee's knowledge of a Category 1 spill, the Enrollee shall submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database.

The Draft Spill Report must, at minimum, include the following items:

1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the Enrollee was notified of, or self-discovered, the spill;
4. Operator arrival time;

5. Estimated spill start date and time;
6. Date and time the Enrollee notified the California Office of Emergency Services, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated;
 - If a single spill 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 spill appearance point explanation field;
8. Estimated total spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
 - Description of the drainage conveyance system transporting the spill;
 - Photographs of the drainage conveyance system entry location(s);
 - Estimated spill volume fully recovered from the drainage conveyance system;
 - Estimated spill volume remaining within the drainage conveyance system;
11. Description and photographs of all discharge point(s) into the surface water;
12. Estimated spill volume that discharged to surface waters; and
13. Estimated total spill volume recovered.

3.1.2. Certified Spill Report for Category 1 Spills

Within 15 calendar days of the spill end date, the Enrollee shall submit a Certified Spill Report for Category 1 spills, to the online CIWQS Sanitary Sewer System Database. Upon completion of the Certified Spill Report, the online CIWQS Sanitary Sewer System Database will issue a final spill event identification number.

The Certified Spill Report must, at minimum, include the following mandatory information in addition to all information in the Draft Spill Report per section 3.1.1 (Draft Spill Report for Category 1 Spills) above:

1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;
2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
 - The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
 - The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;

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4. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
5. System failure location (for example, main, lateral, pump station, etc.);
6. Description of the pipe material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion;
14. Name and type of receiving water body(s);
15. Description of the water body(s), including but not limited to:
 - Observed impacts on aquatic life,
 - Public closure, restricted public access, temporary restricted use, and/or posted health warnings due to spill,
 - Responsible entity for closing/restricting use of water body, and
 - Number of days closed/restricted as a result of the spill.
16. Whether or not the spill was located within 1,000 feet of a municipal surface water intake; and
17. If water quality samples were collected, identify sample locations and the parameters the water quality samples were analyzed for. If no samples were taken, Not Applicable shall be selected.

3.1.3. Spill Technical Report for Individual Category 1 Spill in which 50,000 Gallons or Greater Discharged into a Surface Water

For any spill in which 50,000 gallons or greater discharged into a surface water, **within 45 calendar days** of the spill end date, the Enrollee shall submit a Spill Technical Report to the online CIWQS Sanitary Sewer System Database. The Spill Technical Report, at minimum, must include the following information:

1. Spill causes and circumstances, including at minimum:
 - Complete and detailed explanation of how and when the spill was discovered;

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- Photographs illustrating the spill origin, the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post-cleanup site conditions;
 - Diagram showing the spill failure point, appearance point(s), the spill flow path, and ultimate destinations;
 - Detailed description of the methodology employed, and available data used to calculate the discharge volume and, if applicable, the recovered spill volume;
 - Detailed description of the spill cause(s);
 - Description of the pipe material, and estimated age of the pipe material, at the failure location;
 - Description of the impact of the spill;
 - Copy of original field crew records used to document the spill; and
 - Historical maintenance records for the failure location.
2. Enrollee's response to the spill:
- Chronological narrative description of all actions taken by the Enrollee to terminate the spill;
 - Explanation of how the Sewer System Management Plan Spill Emergency Response Plan was implemented to respond to and mitigate the spill; and
 - Final corrective action(s) completed and a schedule for planned corrective actions, including:
 - Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable,
 - Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences, and
 - Necessary modifications to the Emergency Spill Response Plan to incorporate lessons learned in responding to and mitigating the spill.
3. Water Quality Monitoring, including at minimum:
- Description of all water quality sampling activities conducted;
 - List of pollutant and parameters monitored, sampled and analyzed; as required in section 2.3 (Receiving Water Monitoring) of this Attachment;
 - Laboratory results, including laboratory reports;
 - Detailed location map illustrating all water quality sampling points; and
 - Other regulatory agencies receiving sample results (if applicable).
4. Evaluation of spill impact(s), including a description of short-term and long-term impact(s) to beneficial uses of the surface water.

3.1.4. Amended Certified Spill Reports for Individual Category 1 Spills

The Enrollee shall update or add additional information to a Certified Spill Report within **90 calendar days** of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The Enrollee shall certify the amended report.

After **90 calendar days**, the Enrollee shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

3.2. Reporting Requirements for Individual Category 2 Spill Reporting

3.2.1. Draft Spill Report for Category 2 Spills

Within three (3) business days of the Enrollee's knowledge of a Category 2 spill, the Enrollee shall submit a Draft Spill Report to the online CIWQS Sanitary Sewer System Database.

The Draft Spill Report must, at minimum, include the following items:

1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the Enrollee was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Date and time the Enrollee notified the California Office of Emergency Services, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated;

If a single spill 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 spill appearance point explanation field;

8. Estimated total spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
 - Description of the drainage conveyance system transporting the spill;
 - Photographs of the drainage conveyance system entry location(s);
 - Estimated spill volume fully recovered from the drainage conveyance system;
 - Estimated spill volume remaining within the drainage conveyance system;

- Estimated spill volume discharged to a groundwater infiltration basin or facility, if applicable; and

11. Estimated total spill volume recovered.

3.2.2. Certified Spill Report for Category 2 Spills

Within 15 calendar days of the spill end date, the Enrollee shall submit a Certified Spill Report for the Category 2 spill, to the online [CIWQS Sanitary Sewer System Database](https://ciwqs.waterboards.ca.gov) (<https://ciwqs.waterboards.ca.gov>). Upon completion of the Certified Spill Report, the online CIWQS Sanitary Sewer System Database will issue a final spill event identification number.

The Certified Spill Report must, at minimum, include the following mandatory information in addition to all information in the Draft Spill Report per section 3.2.1 (Draft Spill Report for Category 2 Spills) above:

1. Description of the spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;
2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
 - The methodology, assumptions and type of data relied upon, such as supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
 - The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;
4. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
5. System failure location (for example, main, pump station, etc.);
6. Description of the pipe/infrastructure material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion; and

14. Whether or not the spill was located within 1,000 feet of a municipal surface water intake.

3.2.3. Amended Certified Spill Reports for Individual Category 2 Spills

The Enrollee shall update or add additional information to a Certified Spill Report within **90 calendar days** of the spill end date by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The Enrollee shall certify the amended report.

After **90 calendar days**, the Enrollee shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the Amended Spill Report due date.

3.3. Monthly Certified Spill Reporting for Category 3 Spills

The Enrollee shall report and certify all Category 3 spills to the online CIWQS Sanitary Sewer System Database within 30 calendar days after the end of the month in which the spills occurred. (For example, all Category 3 spills occurring in the month of February shall be reported and certified by March 30th). After the Legally Responsible Official certifies the spills, the online CIWQS Sanitary Sewer System Database will issue a spill event identification number for each spill.

The monthly reporting of all Category 3 spills must include the following items for each spill:

1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions;
2. Spill location name;
3. Date and time the Enrollee was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Description, photographs, and GPS coordinates where the spill originated:
 - If a single spill 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 spill appearance point explanation field;
7. Estimated total spill volume exiting the system;
8. Description and photographs of the extent of the spill and spill boundaries;
9. Did the spill reach a drainage conveyance system? If Yes:
 - Description of the drainage conveyance system transporting the spill;
 - Photographs of the drainage conveyance system entry locations(s);
 - Estimated spill volume fully recovered from the drainage conveyance system; and

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- Estimated spill volume discharged to a groundwater infiltration basis or facility, if applicable.
- 10. Estimated total spill volume recovered;
- 11. Description of the spill event destination(s), including GPS coordinates, if available, that represent the full spread and reaches of the spill;
- 12. Spill end date and time;
- 13. Description of how the spill volume estimations were calculated, including, at minimum:
 - The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
 - The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time;
- 14. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
- 15. System failure location (for example, main, pump station, etc.);
- 16. Description of the pipe/infrastructure material, and estimated age of the pipe/infrastructure material, at the failure location;
- 17. Description of the impact of the spill;
- 18. Whether or not the spill was associated with a storm event;
- 19. Description of spill response activities including description of immediate spill containment and cleanup efforts;
- 20. Description of spill corrective actions, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of the major milestones for those steps; including, at minimum:
 - Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable, and
 - Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill event location, including:
 - Adjusted schedule/method of preventive maintenance,
 - Planned rehabilitation or replacement of sanitary sewer asset,
 - Inspected, repaired asset(s), or replaced defective asset(s),
 - Capital improvements,
 - Documentation verifying immediately implemented system modifications and operating/maintenance modifications,
 - Description of spill response activities,

- Spill response completion date, and
- Ongoing investigation efforts, and expected completion date of investigation to determine the full cause of spill;

21. Detailed narrative of investigation and investigation findings of cause of spill.

3.4. Monthly Certified Spill Reporting for Category 4 Spills

The Enrollee shall report and certify the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, within 30 calendar days after the end of the month in which the spills occurred.

3.5. Amended Certified Spill Reports for Category 3 Spills

Within 90 calendar days of the certified Spill Report due date, the Enrollee may update or add additional information to a certified Spill Report by amending the report or by adding an attachment to the Spill Report in the online CIWQS Sanitary Sewer System Database. The Enrollee shall certify the amended report.

After 90 calendar days, the Legally Responsible Official shall contact the State Water Board at SanitarySewer@waterboards.ca.gov to request to amend a certified Spill Report. The Legally Responsible Official shall submit justification for why the additional information was not reported within the 90-day timeframe for amending the certified Spill Report, as provided above.

3.6. Annual Certified Spill Reporting of Category 4 and/or Lateral Spills

For all Category 4 spills and spills from its owned and/or operated laterals that are caused by a failure or blockage in the lateral and that do not discharge to a surface water, the Enrollee shall:

- Maintain records per section 4.4. of this Attachment;
The Enrollee shall provide records upon request by State Water Board or Regional Water Board staff.
- Annually upload and certify a report, in an appropriate digital format, of all recordkeeping of spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occurred.

A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.

3.7. Monthly Certification of “No-Spills” or “Category 4 Spills” and/or “Non-Category 1 Lateral Spills”

If either (1) no spills occur during a calendar month or (2) only Category 4, and/or Enrollee-owned and/or operated lateral spills (that do not discharge to a surface water) occur during a calendar month, the Enrollee shall certify, within 30 calendar days after

the end of each calendar month, either a “No-Spill” certification statement, or a “Category 4 Spills” and/or “Non-Category 1 Lateral Spills” certification statement, in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 and/or Non-Category 1 Lateral Spills that will be reported annually (per section 3.6 of this Attachment) for the designated month.

If a spill starts in one calendar month and ends in a subsequent calendar month, and the Enrollee has no further spills of any category, in the subsequent calendar month, the Enrollee shall certify “no-spills” for the subsequent calendar month.

If the Enrollee has no spills from its systems during a calendar month, but the Enrollee voluntarily reported a spill from a private lateral or a private system, the Enrollee shall certify “no-spills” for that calendar month.

If the Enrollee has spills from its owned and/or operated laterals during a calendar month, the Enrollee shall not certify “no spills” for that calendar month.

3.8. Electronic Sanitary Sewer System Service Area Boundary Map

The Legally Responsible Official shall submit, to the State Water Board, an up-to-date electronic spatial map of its sewer system service area boundaries. The map must be in accordance with section 5.14 (Electronic Sanitary Sewer System Service Area Boundary Map) of this General Order and the specification provided on the statewide Sanitary Sewer Systems program website. The map must include the location of wastewater treatment facility(ies) that treats the sewer system waste, if in the same sewer service boundary.

By the Effective Date of this General Order, specifications for the electronic sanitary sewer service area boundary map format will be provided on the statewide Sanitary Sewer Systems Order program website.

3.9. Annual Report (Previously termed as Collection System Questionnaire in General Order 2006-0003-DWQ)

A new Enrollee shall complete and submit its first certified Annual Report into the online CIWQS Sanitary Sewer System Database, **within 30 days of obtaining a CIWQS account**; Subsequent Annual Reports are due by April 1 of each year.

All enrollees shall update their previous year’s Annual Report, **by April 1 of each year after the Effective Date of this General Order**, for each calendar year (January 1 through December 31).

The Annual Report must be entered directly into the online CIWQS Sanitary Sewer System Database. The Enrollee’s Legally Responsible Official shall certify the Annual Report as instructed in CIWQS;

The Annual Report must address, and update as applicable, the following items:

- Population served;

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- Updated sewer system service area boundary map, if service area boundary has changed from original map submitted per section 5.14 (Electronic Sanitary Sewer System Service Area Boundary Map) of this General Order;
- Number of system operation and maintenance staff:
 - Entry level (less than two years of experience),
 - Journey level (greater than two years of experience),
 - Supervisory level, and
 - Managerial level;
- Number of operation and maintenance staff certified as a certified collection system operator by the California Water Environmental Association (CWEA), with:
 - Corresponding number of certified collection system operator grade levels (Grade I, II, III, IV, and V);
- System information:
 - Miles of system gravity and force mains,
 - Number of upper and lower service laterals connected to system,
 - Estimated number of upper and lower laterals owned and/or operated by the Enrollee,
 - Portion of laterals that is Enrollee's responsibility,
 - Average age the major components of system infrastructure,
 - Number and age of pump stations, and
 - Estimated total miles of the system pipeline not accessible for maintenance;
- Name and location of the treatment plant(s) receiving sanitary sewer system's waste;
- Name of satellite sewer system tributaries;
- Number of system's gravity sewer above or underground crossings of water bodies throughout system;
- Number of force main (pressurized pipe) above or underground crossings of water bodies throughout system;
- Number of siphons used to convey waste throughout the sewer system;
- Miles of sewer system cleaned;
- Miles of sewer system video inspected, or comparable (i.e., video closed-circuit television or alternative inspection methods);
- System Performance Evaluation as specified in section 5.11 (System Performance Analysis) of this General Order;
- Major spill causes (for example, root intrusion, grease deposition);

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- System infrastructure failure points (for example, main, pump station, lateral, etc.);
- Ongoing spill investigations; and
- Actions taken to address system deficiencies.

3.10. Sewer System Management Plan Audit Reporting Requirements

The Enrollee shall submit its Sewer System Management Plan Audit and other pertinent audit information, in accordance with section 5.4 (Sewer System Management Plan Audits) of this General Order, to the online CIWQS Sanitary Sewer System Database **by six (6) months after the end of the 3-year audit period.**

If a Sewer System Management Plan Audit is not conducted as required: the Enrollee shall:

- Update the online CIWQS Sanitary Sewer System Database and select the justification for not conducting the Audit; and
- Notify its corresponding Regional Water Board (see Attachment F (Regional Water Quality Control Board Contact Information)) of the justification for the lapsed requirements.

The Enrollee's reporting of a justification for not conducting a timely Audit does not justify non-compliance with this General Order. The Enrollee shall:

- Submit the late Audit as required in this General Order; and
- Comply with subsequent Audit requirements and due dates corresponding with the original audit cycle.

3.11. Sewer System Management Plan Reporting Requirements

For an Existing Enrollee previously regulated by Order 2006-0003-DWQ: **Within every six (6) years after the required due date of its last Plan Update**, the Legally Responsible Official shall upload and certify a local governing entity-approved Sewer System Management Plan Update to the online CIWQS Sanitary Sewer System Database. If the electronic document format or size capacity prevents the electronic upload of the Plan, the Legally Responsible Official shall report an electronic link to its updated Sewer System Management Plan posted on its own website.

Order 2006-0003-DWQ required each enrollee to develop its initial Sewer System Management Plan per the following schedule, with required Plan updates at a frequency of 5-years thereafter:

Systems serving populations: Greater than 100,000: May 2, 2009

Between 100,000 and 10,000: August 2, 2009

Between 10,000 and 2,500: May 2, 2010

Less than 2,500: August 2, 2010

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This Order carries forth the previously-required Plan Update schedule per Order 2006-0003-DWQ. Per the six-year Plan Update frequency required in this Order, the Enrollee shall upload and certify its first Plan Update, to the online CIWQS Sanitary Sewer System Database by the following due dates, with subsequent Plan Updates at the frequency of six years thereafter:

Systems serving populations: Greater than 100,000: May 2, 2025

Between 100,000 and 10,000: August 2, 2025

Between 10,000 and 2,500: May 2, 2026

Less than 2,500: August 2, 2026

For a New Enrollee: **Within twelve (12) months of its Application for Enrollment Approval date**, the Legally Responsible Official of a new Enrollee shall upload and certify a local governing entity-approved Sewer System Management Plan to the online CIWQS Sanitary Sewer System Database. If electronic document format or size capacity prevents the electronic upload of the Plan, the Legally Responsible Official shall report an electronic link to its Sewer System Management Plan posted on its own website. The due date for subsequent 6-year Plan updates, is six (6) years from the submittal due date of the new Enrollee's first Sewer System Management Plan.

4. RECORDKEEPING REQUIREMENTS

The Enrollee shall maintain records to document compliance with the provisions of this General Order, and previous General Order 2006-0003-DWQ as applicable, for each sanitary sewer system owned, including any required records generated by an Enrollee's contractor(s).

4.1. Recordkeeping Time Period

The Enrollee shall maintain records of documents required in this Attachment, including records collected for compliance with this General Order, and records collected in accordance with previous General Order 2006-0003-DWQ, for five (5) years.

4.2. Availability of Documents

The Enrollee shall make the records required in this General Order readily available, either electronic or hard copies, for review by Water Board staff during onsite inspections or through an information request.

4.3. Spill Reports

The Enrollee shall maintain records for each of the following spill-related events and activities:

- Spill event complaint, including but not limited to records documenting how the Enrollee responded to notifications of spills. Each complaint record must, at a minimum, include the following information:
 - Date, time, and method of notification,

- Date and time the complainant first noticed the spill, if available,
- Narrative description of the complaint, including any information the caller provided regarding whether the spill has reached surface waters or a drainage conveyance system, if available,
- Complainant's contact information, if available, and
- Final resolution of the complaint;
- Records documenting the steps and/or remedial action(s) undertaken by the Enrollee, using all available information, to comply with this General Order, and previous General Order 2006-0003-DWQ as applicable;
- Records documenting how estimate(s) of volume(s) and, if applicable, volume(s) of spill recovered were calculated;
- All California Office of Emergency Services notification records, as applicable; and
- Records, in accordance with the Monitoring Requirements in this Attachment.

4.4. Recordkeeping of Category 4 Spills and Non-Category 1 Lateral Spills

An Enrollee must maintain the following records for each individual Category 4 spill and for each individual non-Category 1 Enrollee-owned and/or operated lateral spill, and report in accordance to section 3.6 (Annual Certified Spill Reporting of Category 4 and/or Lateral Spills) of this Attachment.

Recordkeeping of Individual Category 4 Spill Information:

1. Contact information: Name and telephone number of Enrollee contact person to respond to spill-specific questions;
2. Spill location name;
3. Description and GPS coordinates for the system location where the spill originated;
4. Did the spill reach a drainage conveyance system? If Yes:
 - Description of drainage conveyance system location,
 - Estimated spill volume fully recovered within the drainage conveyance system, and
 - Estimated spill volume remaining within the drainage conveyance system;
5. Estimated total spill volume exiting the sanitary sewer system;
6. Spill date and start time;
7. Spill cause(s) (for example, root intrusion, grease deposition, etc.);
8. System failure location (for example, main, pump station, etc.);
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of how the volume estimation was calculated, including, at minimum:

- The methodology and type of data relied upon, including supervisory control and data acquisition (SCADA) records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
- The methodology and type of data relied upon to estimate the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time;

11. Description of implemented system modifications and operating/maintenance modifications.

Recordkeeping of Individual Lateral Spill Information:

1. Date and time the Enrollee was notified of, or self-discovered, the spill;
2. Location of individual spill;
3. Estimated individual spill volume;
4. Spill cause(s) (for example, root intrusion, grease deposition, etc.); and
5. Description of how the volume estimations were calculated.

Total Annual Spill Information:

1. Estimated total annual spill volume;
2. Description of spill corrective actions, including at minimum:
 - Local regulatory enforcement action taken against the sewer lateral owner in response to a spill, as applicable, and
 - System operation, maintenance and program modifications implemented to prevent repeated spill occurrences at the same spill location.

4.5. Sewer System Telemetry Records

The Enrollee shall maintain the following sewer system telemetry records if used to document compliance with this General Order, and previous General Order 2006-0003-DWQ as applicable, including spill volume estimates:

- Supervisory control and data acquisition (SCADA) system(s);
- Alarm system(s);
- Flow monitoring device(s) or other instrument(s) used to estimate sewage flow rates, and/or volumes;
- Computerized maintenance management system records; and
- Asset management-related records.

4.6. Sewer System Management Plan Implementation Records

The Enrollee shall maintain records documenting the Enrollee's implementation of its Sewer System Management Plan, including documents supporting its Sewer System Management Plan audits, corrections, modifications, and updates to the Sewer System Management Plan.

4.7. Audit Records

The Enrollee shall maintain, at minimum, the following records pertaining to its Sewer System Management Plan audits, and other internal audits:

- Completed audit documents and findings;
- Name and contact information of staff and/or consultants that conducted or involved in the audit; and
- Follow-up actions based on audit findings.

4.8. Equipment Records

The Enrollee shall maintain a log of all owned and leased sewer system cleaning, operational, maintenance, construction, and rehabilitation equipment.

4.9. Work Orders

The Enrollee shall maintain record of work orders for operations and maintenance projects.

ATTACHMENT E2 – SUMMARY OF NOTIFICATION, MONITORING AND REPORTING REQUIREMENTS

This Attachment provides a summary of notification, monitoring and reporting requirements, by spill category, and for Enrollee-owned and/or operated laterals as required in Attachment E1 of this General Order, for quick reference purposes only.

Table E2-1

Spill Category 1: Spills to Surface Waters

Spill Requirement	Due	Method
Notification	<p>Within two (2) hours of the Enrollee's knowledge of a Category 1 spill of 1,000 gallons or greater, discharging or threatening to discharge to surface waters:</p> <p>Notify the California Office of Emergency Services and obtain a notification control number.</p>	<p>California Office of Emergency Services at: (800) 852-7550</p> <p>(Section 1 of Attachment E1)</p>
Monitoring	<ul style="list-style-type: none"> Conduct spill-specific monitoring; Conduct water quality sampling of the receiving water within 18 hours of initial knowledge of spill of 50,000 gallons or greater to surface waters. 	<p>(Section 2 of Attachment E1)</p>
Reporting	<ul style="list-style-type: none"> Submit Draft Spill Report within three (3) business days of the Enrollee's knowledge of the spill; Submit Certified Spill Report within 15 calendar days of the spill end date; Submit Technical Report within 45 calendar days after the spill end date for a Category 1 spill in which 50,000 gallons or greater discharged to surface waters; and Submit Amended Spill Report within 90 calendar days after the spill end date. 	<p>(Section 3.1 of Attachment E1)</p>

Table E2-2**Spill Category 2: Spills of 1,000 Gallons or Greater That Do Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	<p>Within two (2) hours of the Enrollee's knowledge of a Category 2 spill of 1,000 gallons or greater, discharging or threatening to discharge to waters of the State:</p> <p>Notify California Office of Emergency Services and obtain a notification control number.</p>	<p>California Office of Emergency Services at: (800) 852-7550</p> <p>(Section 1 of Attachment E1)</p>
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1)
Reporting	<ul style="list-style-type: none"> • Submit Draft Spill Report within three (3) business days of the Enrollee's knowledge of the spill; • Submit Certified Spill Report within 15 calendar days of the spill end date; and • Submit Amended Spill Report within 90 calendar days after the spill end date. 	(Section 3.2 of Attachment E1)

Table E2-3**Spill Category 3: Spills of Equal or Greater than 50 Gallons and Less than 1,000 Gallons That Does Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	Not Applicable	Not Applicable
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1)
Reporting	<ul style="list-style-type: none"> Submit monthly Certified Spill Report to the online CIWQS Sanitary Sewer System Database within 30 calendars days after the end of the month in which the spills occur; and Submit Amended Spill Reports within 90 calendar days after the Certified Spill Report due date. 	(Section 3.3 and 3.5 of Attachment E1)

Table E2-4**Spill Category 4: Spills Less Than 50 Gallons That Do Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	Not Applicable	Not Applicable
Monitoring	Conduct spill-specific monitoring.	(Section 2 of Attachment E1)
Reporting	<ul style="list-style-type: none"> If, during any calendar month, Category 4 spills occur, certify monthly, the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills into the online CIWQS Sanitary Sewer System Database, within 30 days after the end of the calendar month in which the spills occurred. Upload and certify a report, in an acceptable digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur. 	(Section 3.4, 3.6, 3.7 and 4.4 of Attachment E1)

Table E2-5**Enrollee Owned and/or Operated Lateral Spills That Do Not Discharge to Surface Waters**

Spill Requirements	Due	Method
Notification	<p>Within two (2) hours of the Enrollee's knowledge of a spill of 1,000 gallons or greater, from an enrollee-owned and/or operated lateral, discharging or threatening to discharge to waters of the State:</p> <p>Notify California Office of Emergency Services and obtain a notification control number.</p> <p>Not applicable to a spill of less than 1,000 gallons.</p>	<p>California Office of Emergency Services at: (800) 852-7550</p> <p>(Section 1 of Attachment E1)</p>
Monitoring	Conduct visual monitoring.	(Section 2 of Attachment E1)
Reporting	<ul style="list-style-type: none"> • Upload and certify a report, in an acceptable digital format, of all lateral spills (that do not discharge to a surface water) to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur. • Report a lateral spill of any volume that discharges to a surface water as a Category 1 spill. 	(Sections 3.6, 3.7 and 4.4 of Attachment E1)

ATTACHMENT F – REGIONAL WATER QUALITY CONTROL BOARD CONTACT INFORMATION

This Attachment provides a map, list of counties, and contact information to assist the Enrollee in identifying the corresponding Regional Water Quality Control Board office, for all Regional Water Board notification requirements in this General Order.



Region 1 -- North Coast Regional Water Quality Control Board:

Del Norte, Glenn, Humboldt, Lake, Marin, Mendocino, Modoc, Siskiyou, Sonoma, and Trinity counties.

RB1SpillReporting@waterboards.ca.gov or (707) 576-2220

Region 2 -- San Francisco Bay Regional Water Quality Control Board:

Alameda, Contra Costa, San Francisco, Santa Clara (Northern most part of Morgan Hill), San Mateo, Marin, Sonoma, Napa, Solano counties.

RB2SpillReports@waterboards.ca.gov or (510) 622-2369

Region 3 -- Central Coast Regional Water Quality Control Board:

Santa Clara (most of Morgan Hill), San Mateo (Southern portion), Santa Cruz, San Benito, Monterey, Kern (small portions), San Luis Obispo, Santa Barbara, Ventura (Northern portion) counties.

CentralCoast@waterboards.ca.gov or (805) 549-3147

Region 4 -- Los Angeles Regional Water Quality Control Board:

Los Angeles, Ventura counties (small portions of Kern and Santa Barbara counties).

rb4-ssswdr@waterboards.ca.gov or (213) 576-6600

Region 5 -- Central Valley Regional Water Quality Control Board:

Rancho Cordova (Sacramento) Office: Colusa, Lake, Sutter, Yuba, Sierra, Nevada, Placer, Yolo, Napa, (North East), Solano (West), Sacramento, El Dorado, Amador, Calaveras, San Joaquin, Contra Costa (East), Stanislaus, Tuolumne counties.

RB5sSpillReporting@waterboards.ca.gov or (916) 464-3291

Fresno Office: Fresno, Kern, Kings, Madera, Mariposa, Merced, and Tulare counties, and small portions of San Benito and San Luis Obispo counties.

RB5fSpillReporting@waterboards.ca.gov or (559) 445-5116

Redding Office: Butte, Glen, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Tehama counties.

RB5rSpillReporting@waterboards.ca.gov or (530) 224-4845

Region 6 -- Lahontan Regional Water Quality Control Board:

Lake Tahoe Office: Alpine, Modoc (East), Lassen (East side and Eagle Lake), Sierra, Nevada, Placer, El Dorado counties.

RB6sSpillReporting@waterboards.ca.gov or (530) 542-5400

Victorville Office: Mono, Inyo, Kern (East), San Bernardino, Los Angeles (North East corner) counties.

RB6vSpillReporting@waterboards.ca.gov or (760) 241-6583

Region 7 -- Colorado River Basin Regional Water Quality Control Board:

Imperial county and portions of San Bernardino, Riverside, San Diego counties.

RB7SpillReporting@waterboards.ca.gov or (760) 346-7491

Region 8 -- Santa Ana Regional Water Quality Control Board:

Orange, Riverside, San Bernardino counties.

RB8SpillReporting@waterboards.ca.gov or (951) 782-4130

Region 9 -- San Diego Regional Water Quality Control Board:

San Diego county and portions of Orange and Riverside counties.

RB9Spill_Report@waterboards.ca.gov or (619) 516-1990

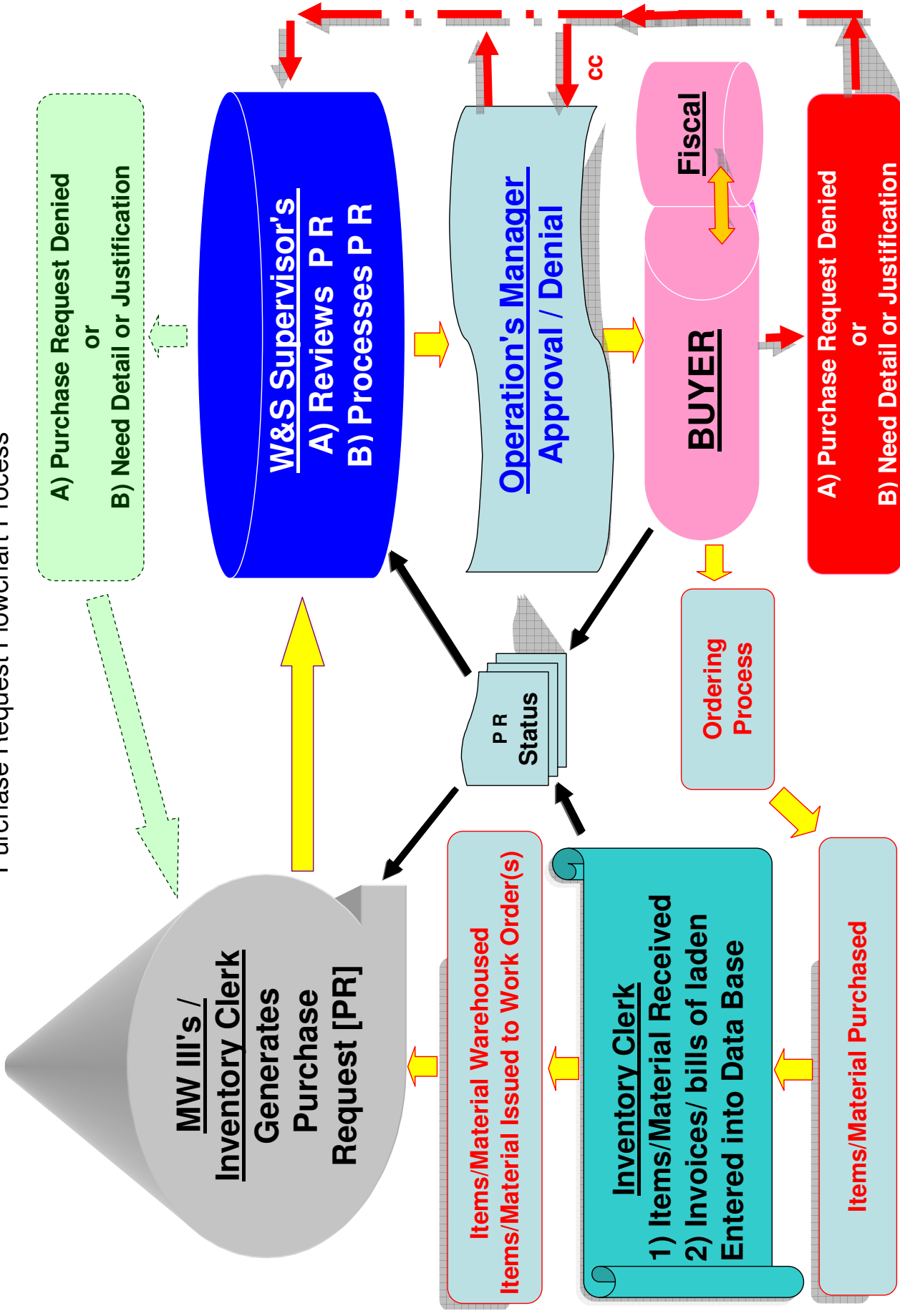
End of Order 2022-0103-DWQ

APPENDIX J: PURCHASE REQUEST FLOWCHART PROCESS



APPENDIX J:

Water and Sanitation Inventory Control Purchase Request Flowchart Process



APPENDIX K: MONITORING AND REPORTING PROGRAM (2013-0058-EXEC)



APPENDIX K:

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 information² 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

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/mal haz.nsf/\\$defaultview](http://w3.calema.ca.gov/operational/mal haz.nsf/$defaultview) and <http://w3.calema.ca.gov/operational/mal haz.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 CIWQS³ 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 Program⁴ 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/ssor/

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 <u>any volume</u> resulting from an enrollee's sanitary sewer system failure or flow condition that: <ul style="list-style-type: none">• 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 <u>1,000 gallons or greater</u> resulting from an enrollee's sanitary sewer system failure or flow condition that <u>do not</u> 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 <u>within a privately owned sewer lateral</u> connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be <u>voluntarily</u> 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)	<ul style="list-style-type: none"> Within two hours of becoming aware of any Category 1 SSO <u>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</u>, 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)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> Conduct water quality sampling <u>within 48 hours</u> 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)	<ul style="list-style-type: none"> 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.

Date

7/30/13



Jeanine Townsend
Clerk to the Board

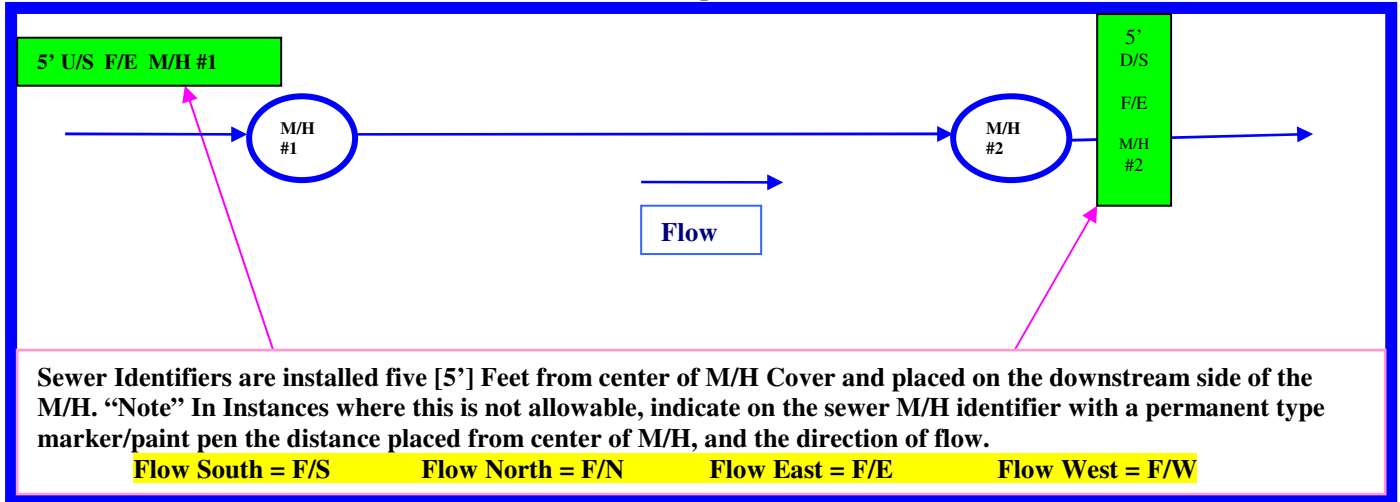
APPENDIX L: SEWER MANHOLE IDENTIFIER INSTRUCTION SHEET



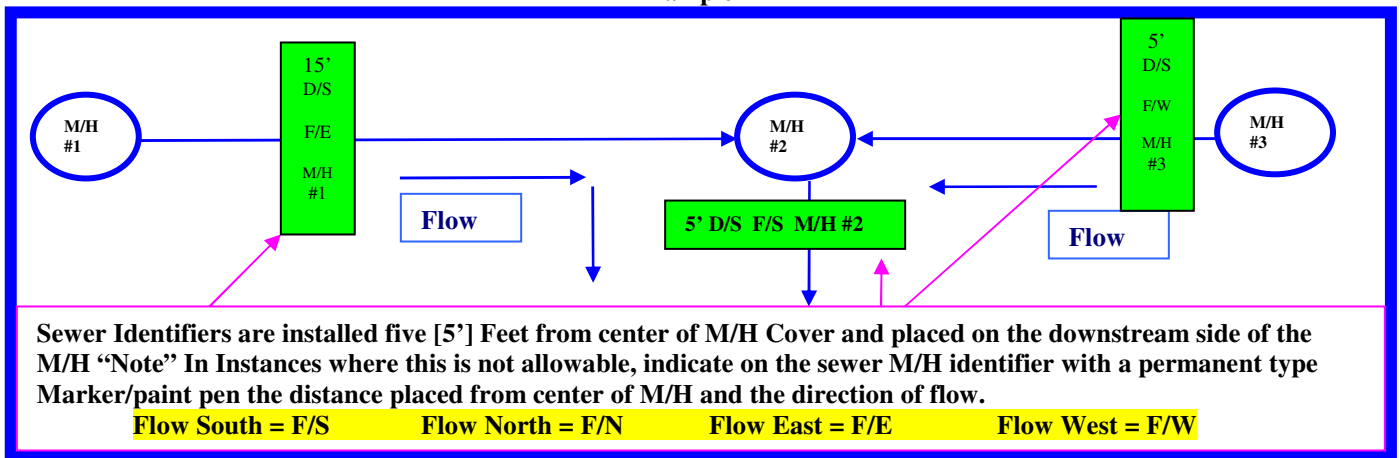
APPENDIX L:

Water and Sanitation Division Sewer M/H Identifier Instruction Sheet

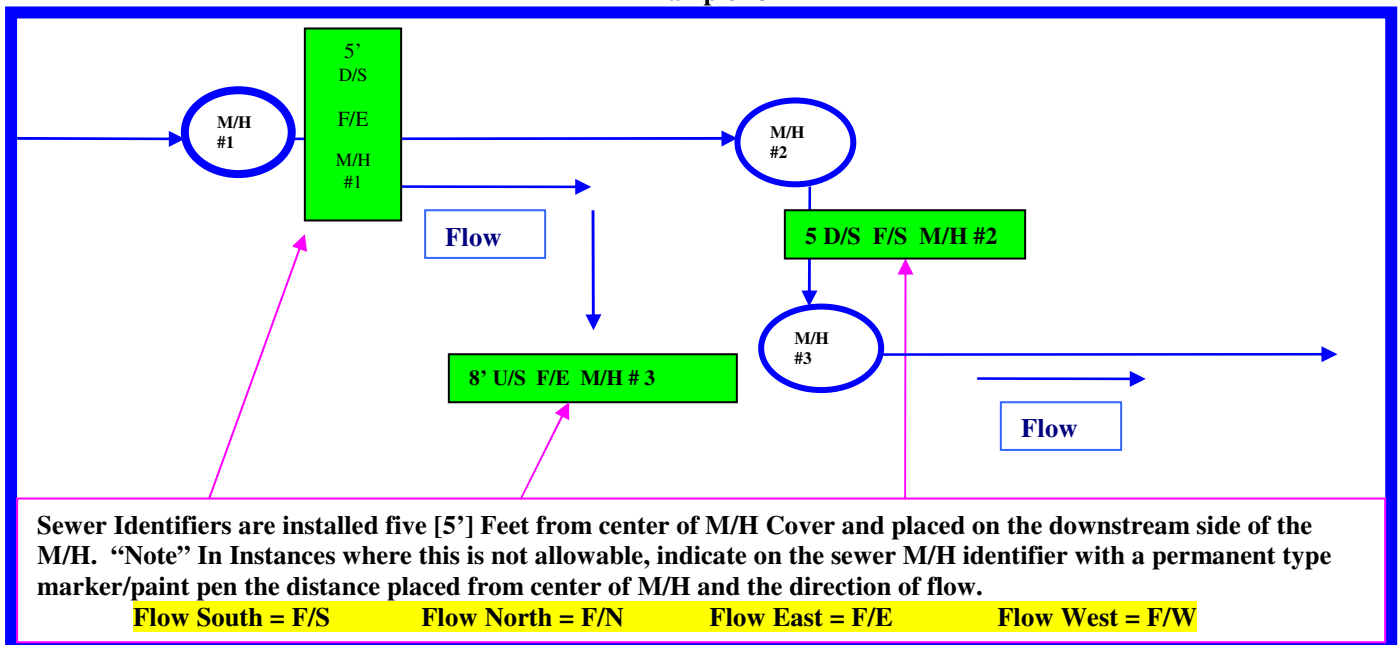
Example #1



Example #2



Example #3



APPENDIX M: FOG ORDINANCE



APPENDIX M:

AN ORDINANCE OF THE COUNTY OF SAN BERNARDINO SPECIAL DISTRICTS DEPARTMENT COUNTY SERVICE AREA 70 AND ITS ZONES, ESTABLISHING FATS, OILS, AND GREASE (FOG) MANAGEMENT FROM FSES (FSE)

The Board of Supervisors of the County of San Bernardino, State of California, acting in its capacity as the governing body of the Special Districts Department, County Service Area 70 and its Zones, hereby ordains as follows:

SECTION 1. - PURPOSE AND INTENT

The purpose of this Ordinance is to comply with the State Water Resources Control Board Order No. DWQ 2006-0003, adopted on May 2, 2006, requiring implementation of various tasks associated with sanitary sewer systems operated by public agencies in the State of California.

SECTION 2.

This Ordinance shall be administered by the Director of the Special Districts Department (SDD) and shall be interpreted and administered to assure consistency with Board Order No. DWQ 2006-0003 and its amendments, revisions, and renewals thereof.

SECTION 3.

A. General

It is a violation of this Ordinance to discharge Fats, Oils and Greases (FOG) and other solids in concentrations from Food Services Establishments (FSE) and other commercial and industrial facilities into the sanitary sewer system, adversely affecting the normal function of these systems or resulting in blockages and/or a public nuisance.

B. General Limitations, Prohibitions, and Requirement

No FSEs shall discharge or cause to be discharged into the sanitary sewer system FOG that may accumulate, cause, or contribute to blockages in the sanitary sewer system and/or at the building sewer (BS) [Upper and Lower Lateral] connection to the sanitary sewer system to which connects the Food Service Establishment to the sanitary sewer system.

C. Prohibitions

The following shall apply to all FSEs and other commercial and industrial facilities:

1. Installation of food grinders in the plumbing system for new construction of FSEs is prohibited.
2. All food grinders from all existing FSEs shall be removed within 180-days from the date of adoption of this Ordinance by the County of San Bernadino Board of Supervisors.
3. FSEs that introduce any additive into the plumbing system for the purpose of emulsifying FOG is strictly prohibited.
4. Any disposal of cooking oil into the sanitary sewer system is prohibited.
5. All waste cooking oil shall be collected and stored properly in recyclable containers and removed off-site for proper recycling and/or disposal.
6. The discharge of wastewater from dishwashers to any grease traps or grease interceptors is prohibited.
7. The discharge of wastewater in excess of 150° degrees Fahrenheit, which is considered hot, to any grease control device, including grease interceptors and/or traps, is prohibited.
8. The discharge of any waste, including FOG and solid materials, removed from grease interceptors and/or traps shall be hauled off-site for appropriate treatment and/or proper recycling and/or disposal.
9. The discharge of wastes from toilets, urinals, wash basins, and other fixtures containing fecal materials to sewer lines intended for grease interceptor and/or grease trap service, or vice versa, is prohibited.
10. The discharge of any waste, including FOG and solid materials, removed from the grease control device to the sewer system is prohibited. Grease removed from the grease interceptor and/or grease trap shall be hauled periodically as part of the operation and maintenance requirements for grease interceptors.

SECTION 4.

This Ordinance shall be interpreted in accordance with the definitions set forth in Section 4.1.01.

SECTION 4.1.01. - DEFINITIONS

- A. Unless otherwise defined herein, terms related to water quality shall be interpreted as defined in the latest edition of the Standard Methods for Examination of Water and Wastewater Environment Federation. The testing procedures for waste constituents and characteristics shall be as provided in 40 CFR 136 (Code of Federal Regulations).
- B. Other terms not defined herein are defined according to the latest adopted edition of the California Codes, as applicable to building construction, and pursuant to the California Building Standards Law. The following definitions shall apply to the terms used in this Ordinance:

Best Management Practices	Schedule of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the introduction of FOG into the sanitary sewer system facilities.
Change in Operations	Any change in the ownership of food types or operational procedures that have a potential to increase the amount of FOG generated and/or discharged by FSEs in an amount that alone or collectively causes or creates a potential for a sanitary sewer system overflow (SSOs) to occur.
County	The County of San Bernardino.
Deputy Director	The Deputy Director of the County of San Bernardino Special Districts Department assigned to the Water and Sanitation Division or his/her designee.
Director	The Director of the County of San Bernardino Special Districts Department.
District Sewerage Facility or System	Any property belonging to County Service Area 70 used for the treatment, reclamation, reuse, transportation, or disposal of wastewater, or sludge.
Composite Sample	A collection of individual samples obtained at selected intervals based on an increment of either flow or time. The resulting mixture (composite sample) forms a representative sample of the waste stream discharged during the sample period. Samples may be collected when a wastewater discharge occurs.
Discharger	Any person who discharges or causes a discharge of wastewater directly or indirectly to a public sewer. Discharger shall mean the same as User.
Effluent	Any liquid outflow from the FSE that is discharged to the sanitary

sewer system.

Fats, Oils, and Grease (FOG)	Any substance such as a vegetable or animal product that is used in, or is a by-product of, the cooking or food preparation process, and that turns or may turn viscous or solidifies with a change in temperature or other conditions.
Food Grinder	Any device installed in the plumbing or sewage system for the purpose of grinding food waste or food preparation by-products for the purpose of disposing it into the sanitary sewer system.
Food Service Establishment	Facilities defined in the California Uniform Retail Food Services Establishments Law (“CURFFL”) Section 113785, and any commercial entity within the boundaries of the District, operating in a permanently constructed structure such as a room, building, or place, or portion thereof, maintained, used, or operated for the purpose of storing, preparing, serving, or manufacturing, packaging, or otherwise handling food for sale to other entities, or for consumption by the public, its member or employees, and which has any process or device that uses or produces FOG, or grease vapors, steam, fumes, smoke or odors that are required to be removed by a Type I or Type II hood, as defined in CURFFL Section 113785. A limited food preparation establishment is not considered a FSE when engaged only in reheating, hot holding or assembly of ready to eat food products and as a result, there is no wastewater discharge containing a significant amount of FOG. A limited food preparation establishment does not include any operation that changes the form, flavor, or consistency of food.
Formal Notice or Notification	The date on which County Service Area 70 sends notice by regular mail to FSEs.
Grease Control Device	Any grease interceptor, grease trap or other mechanism, device, or process, which attaches to, or is applied to, wastewater plumbing fixtures and lines, the purpose of which is to trap, collect or treat FOG prior to it being discharged into the sanitary sewer system.
Grease Interceptor	A multi-compartment device that is constructed in different sizes and is generally required to be located, according to the California Plumbing Code, underground between a FSE and the connection to the sanitary sewer system. These devices primarily use gravity to separate FOG from the wastewater as it moves from one compartment to the next. These devices must be cleaned, maintained, and have the FOG removed and disposed of in a proper manner on regular intervals to be effective.
Grease Trap	A grease control device that is used to serve individual fixtures and have limited effect and should only be used in those cases where the use of a grease interceptor or other grease control device is

determined to be impossible or impracticable.

Grab Sample	A sample taken from a waste stream on a one-time basis without regard to the flow in the waste stream and without consideration of time.
Hot Spots	Areas and sewer lines that have experienced sanitary sewer overflows or that must be cleaned or maintain frequently to avoid blockages in the sanitary sewer system.
Inflow	Water entering a sewer system through a direct storm water runoff connection to the sanitary sewer system, which may cause an almost immediate increase in waste water flows
Infiltration	Water entering into the sanitary sewer system, including sewer service connections, from the ground through such means as defective pipes, fittings, pipe joints, connections, or manhole walls.
Inspector	A person authorized by County Service Area 70 to inspect any existing or propose wastewater generation, conveyance, processing, and disposal facilities.
Interceptor	A grease interceptor.
Interference	Any discharge which, alone or in conjunction with discharges from other sources, inhibits or disrupts the County's National Pollutant Discharge Elimination System (NPDES) or Waste Discharge Requirements or prevents lawful sludge use or disposal.
Local Sewering Agency	Any public agency or private entity responsible for the collection and disposal of wastewater to County Service Area 70's sewer facilities, duly authorized under the laws of the State of California to construct and/or maintain public sewers.
NPDES	The National Pollutant Discharge Elimination System and the permit issued to control the discharge of liquids or other substances or solids to surface waters of the United States as detailed in Public Law 92-500, Section 402.
New Construction	Any structure planned or under construction for which a sewer connection permit has not been issued.
Notice of Violation (NOV)	Any violation of a permit condition, resulting in nuisance or violation of this Ordinance and/or violation of State or Federal law and/or violation of any Federal and State or Local Ruling and Regulation related to FOG discharge.
Permittee	A person or owner of a FSE who has received a permit to discharge wastewater into County Service Area 70's sewer facilities, subject to the requirement and conditions established by County Service Area 70.

Person	Any individual, partnership, firm, association, corporation or public agency, including the State of California and the United States of America.
Program	The Program required by the Regional Water Quality Control Board (RWQCB) Order No. R8-2002-0014, Section (c) (12) (viii) or the SWRCB Order No. DWQ 2006-003 and its amendment or renewals.
Program Manager	The Deputy Director or his or her designee.
Public Agency	The State of California and/or any city, county, special district, other local governmental authority or public body of or within this State.
Public Sewer	A sewer owned and/or operated by County Service Area 70.
Regulatory Agencies	Regulatory Agencies shall mean those agencies having regulatory jurisdiction over the operations of County Service Area 70, including but not limited to: <ul style="list-style-type: none"> a) United States Environmental Protection Agency, Region IX, San Francisco and Washington, DC (EPA). b) California State Water Resources Control Board (SWRCB) c) California Regional Water Quality Control Board, Santa Ana Region (RWQCB) d) California Regional Water Quality Control Board, Lahontan Region (RWQCB) e) California Regional Water Quality Control Board, Colorado Region (RWQCB) f) Mojave Air Quality Management District (MAQMD) g) South Coast Air Quality Management District (SCAQMD) h) California Department of Health Services (DOHS).
Remodeling	A physical change or operational change causing generation of the amount of FOG that exceeds the current amount of FOG discharged to the sanitary sewer system by the FSE in an amount that alone or collectively causes or creates a potential for SSOs to occur or an establishment that requires a building permit, and involves any one or combination of the following: (1) under-slab plumbing, (2) a 30% increase in the net public seating area, (3) a 30% increase in the size of the kitchen area, or (4) any change in the size or type of food preparation equipment.
Sample Point	A location approved by County Service Area 70, from which wastewater can be collected that is representative in content and consistency of the entire flow of the wastewater being sampled.
Sampling Facilities	Structure(s) provided at the user's expense for County Service Area 70 or user to measure and record wastewater constituent mass, concentrations, to collect a representative sample, or to provide access to a plug or terminate the discharge.

Sewer	Wastewater
Sewer Facilities or System	Any and all facilities used for collecting, conveying, pumping, treating, and disposing of wastewater and sludge.
Sewer Lateral	A building sewer as defined in the latest edition of the California Uniform Plumbing Code [UPC]. It is the wastewater connection between the building's wastewater facilities and a public sewer system.
Sludge	Any solid, semi-solid, or liquid decant subnate or supernatant from a manufacturing process, utility service, or pretreatment facility.
Trap	A grease trap.
User	Any person who discharges or causes a discharge of wastewater directly or indirectly to a public sewer system. User shall mean the same as discharger.
Waste	Sewage and any and all other waste substances, liquid, solid, gaseous or radioactive, associated with human habitation or of human or animal nature, including such wastes placed within the containers of whatever nature prior to and for the purpose of disposal.
Wastewater Discharge Permit	A permit issued by County Service Area 70 subject to the requirements and conditions established by County Service Area 70, authorizing a FSE to discharge wastewater into County Service Area 70's sewer facilities or into sewer facilities which ultimately discharge into County Service Area 70's sewer facility.
Manifest	A receipt retained by one who generates waste for the disposing of recyclable wastes or liquid wastes as required by County Service Area 70.
Waste Minimization Practices	Plans or programs intended to reduce or eliminate discharges to the sanitary sewer system or to conserve water, including, but not limited to, product substitutions, housekeeping practices, inventory control, employee education, and other steps necessary to minimize the production of wastewater.
Waste Hauler	Any person transporting or engaging in the vehicular transport of waste as part of, or incidental to, their business practices.
Wastewater	The liquid and/or non-potable water produced by the community, including all constituents thereof, whether treated or untreated, and discharged, or permitted to be disposed of, by way of a public sewer.
Wastewater Constituents and	The individual chemical, physical, bacteriological, and other characteristic, including volume and flow rate, and other such

Characteristics characteristics that define, classify, or measure the quality and quantity of wastewater.

- C. Terms used in this Ordinance, in the singular, may also include the meaning of the term in the plural sense. The masculine and feminine use of terms shall be defined as either form of the term, hence interchangeable. The term “shall” is mandatory; and the term “may” is permissive or discretionary.

SECTION 4.1.02. - WASTEWATER DISCHARGE PERMIT REQUIRED

Pursuant to this Ordinance, no person shall discharge, or cause to be discharge, any wastewater from a FSE directly or indirectly into the sanitary sewer system without first obtaining a Wastewater Discharge Permit.

SECTION 5. - DESIGN AND CONSTRUCTION OF SEWAGE FACILITIES

SECTION 5.1.01

Any and all sewerage facilities for any FSE shall be designed and constructed in accordance with the current editions of the California Uniform Plumbing Code and County of San Bernardino Building Codes.

SECTION 5.1.02

The California Uniform Plumbing Code and County of San Bernardino Building Codes shall be used in addition to the sewerage design and construction standards currently used by the Special Districts Department.

SECTION 6. - DETERMINATION OF NON-COMPLIANCE

A. Sampling and Inspection Procedures

- a. Sampling and Inspection of FSEs maybe conducted in the time, place, manner, and frequency as determined by the Deputy Director or his/her designee.
- b. Non-Compliance may be determined through inspection and by means of analysis and documentation of a grab sample or composite sample of the effluent from the FSE.
- c. Any sample taken from a sample point within the FSEs shall be considered a representative sample of the discharge to the public sewer.
- d. All violations of this Ordinance shall be declared as a public nuisance.

SECTION 7. - REVOCATION OR SUSPENSION OF DISCHARGE

The Deputy Director or his/her designee may revoke or suspend the Wastewater Discharge Permit for any of the following reasons:

- A. Violation of a permit condition
- B. Determination of nuisance
- C. Violation of Sections of this Ordinance
- D. Violation of County, State, or Federal law
- E. Violation of any County, State, Federal and/or Local Ruling and Regulation as related to FOG Discharge

SECTION 8.

The Deputy Director or his/her designee shall provide FSEs with a Notice of Violation (NOV) prior to revocation or suspension of a Wastewater Discharge Permit, except in emergency situations as determined by the Deputy Director or his/her designee. The Deputy Director or his/her designee shall provide a NOV in a manner consistent with County Code or local Municipal Code.

SECTION 9. - HEARING

If a FSE objects to the revocation or suspension of Wastewater Discharge Permit, the FSE may follow the procedures for appeal as set forth in County and/or Municipal Code.

SECTION 10. - SEVERABILITY

If any provision, clause, sentence, or paragraph of this Ordinance is determined to be invalid, it shall not affect the remainder of the Sections in this Ordinance

SECTION 11. - REQUIREMENT OF BEST MANAGEMENT PRACTICES

- A. In an effort to minimize the discharge of FOG to sanitary sewer systems, all FSEs shall implement Best Management Practices in accordance to the requirements and guidelines established by County Service Area 70 under the FOG Program.
- B. All FSEs shall be required, at a minimum, to comply with the following Best Management Practices, where applicable:

1. Installation of drain screens: Drain screens shall be installed on all drainage pipes in food preparation areas.
2. Segregation and collection of waste cooking oil: All waste cooking oil shall be collected and stored properly in recycling receptacles and shall be maintained in a manner to prevent leaks. Licensed waste haulers, or an approved recycling facility, must be used to dispose of waste cooking oil.
3. Disposal of food waste: All food waste shall be disposed of directly into the trash or garbage, not into sinks.
4. Employee training: Employees of the FSE shall be trained by the FSE within 180 days of the formal notification by the County of the effective date of this Ordinance and twice each calendar year thereafter, and shall include the following subjects:
 - a) How to “dry wipe” pots, pans, dishware, and work areas before washing to remove grease.
 - b) How to properly dispose of food waste and solids in enclosed plastic bags prior to disposal in trash bins or containers to prevent leaking and odors.
 - c) The location and use of absorption products to clean under fryer baskets and other locations where grease may accumulate, spill, or drip.
 - d) How to properly dispose of grease or oils from cooking equipment into grease receptacles without spilling, such as barrels or drums.

All employee training sessions shall be documented with employee signatures and retained in a file for a minimum of two (2) calendar years. Documentation must indicate each employee's attendance and their comprehension of FOG prevention practices. Employee FOG prevention training records shall be available to the Special Districts Department's program manager or inspector for review at any reasonable time.

5. Maintenance of kitchen exhaust filters: FSE exhaust filters shall be cleaned as frequently as necessary to be maintained in good operating condition. All wastewater generated from cleaning exhaust filters shall be disposed of properly. If filters are cleaned off-site, then a manifest and/or invoice must be available upon request, indicating where the wastewater generated from cleaning exhaust filters was disposed of properly and the employee that performed the work.
6. Kitchen signage: Best management and waste minimization practices shall be posted conspicuously in all food preparation and dishwashing areas at all times.

SECTION 11.1.01. - GREASE INTERCEPTOR/TRAP OPERATION & MAINTENANCE REQUIREMENTS

- A. Grease Interceptors and/or Traps shall be maintained in an efficient operating condition and its content periodically removed, including accumulated FOG, wastewater, floating materials, sludge, and solids.
- B. All existing, and newly installed, grease interceptors and/or traps shall be maintained on a regularly scheduled interval.
- C. Accumulated grease interceptor and/or trap FOG, shall not be allowed to pass into any building sewer lateral, sewer system, storm drain, or other public right of way during maintenance activities.
- D. FSEs with grease interceptors and/or traps shall be required to submit information and documentation establishing the operation and maintenance frequency.
- E. All FSEs with a grease interceptor and/or trap shall regularly document all maintenance activities. All internal access covers, screens, filters, piping, fittings, and other interceptor/trap appurtenances must be kept in good operating condition. Records must be available to the Special Districts Department's program manager or inspector at any reasonable time for review. All maintenance records shall be kept for a minimum of two calendar years.
- F. The maintenance frequency for all FSEs with a grease interceptor and/or trap shall be determined by the following methods:
 - 1) Grease interceptors and/or traps shall be fully pumped out and cleaned at a frequency such that the combined FOG and solids accumulation does not exceed a maximum of 25% of the total liquid volume [depth] of the grease interceptor and/or trap. This shall ensure that the minimum hydraulic retention time and required available volume is maintained, effectively intercepting and retaining FOG discharge to the sanitary sewer system.
 - 2) All FSEs with a grease interceptor and/or trap shall regularly maintain their grease interceptor and maintain a record of such maintenance.
 - 3) Grease interceptors and/or traps shall be fully pumped out and cleaned on a quarterly basis when the frequency described in "1)" above has not been established. The maintenance frequency may be adjusted when sufficient data has been provided to establish an appropriate cleaning frequency based on the requirements described in "1)" above. The maintenance frequency may increase or decrease, based on the actual generation of FOG from the FSE,.
 - 4) If the grease interceptor and/or trap, at any time, contains FOG and solids accumulation that does not meet the requirements described in "1)" above, the FSE shall be required to have the grease interceptor and/or trap

SECTION 12. ENFORCEMENT

- A. The County of San Bernardino may enforce this Ordinance through Civil, Criminal, or Administrative laws and procedures established by the County of San Bernardino or local Municipal Code.

SECTION 13. EFFECTIVE DATE OR ORDINANCE

This Ordinance shall be enforced 30 days after adoption by the County of San Bernardino Board of Supervisors.

This FOG Ordinance has been approved and adopted by the County of San Bernardino Board of Supervisors (MONTH, DAY, 2011):

(Signature)

APPENDIX N: CUSTOMER COMPLAINT PROTOCOL



APPENDIX N:

County of San Bernardino
Special Districts Department
Water and Sanitation Division
County Service Areas [CSA]
Sanitary Sewer Systems



Customer Complaint - Deposition Protocol

Normal Business Hours (Monday – Friday, 0800 hrs to 1630 hrs)

Pertinent Information Gathering Procedures:

Receipt of general complaint:

1. Date and Time of the Complaint?
2. Full Name, Home & Business and/or Cell Phone Number(s), and Physical address of the complainant?
3. Location of the incident/emergency, all Cross Streets, Nearest Highway, Thomas Guide Page etc.?
4. Brief description of the Incident/Emergency : i.e.- SSO, M/H Cover off, Sewer Backup, Sewer Odor, etc..?
5. Ask what Time the caller observed and/or noticed the Incident/Emergency?
6. Would they like a Return Call of the Final Deposition of their Complaint?
7. Complete the required Service Order [S O] fields.

Deposition of general complaint:

- a) Contact the Field Crew by pager/cell/radio with the complaint information. Record the time of contact on the S O.
“ Note” If the complaint has the potential and/or is an occurring SSO notify a W&S Supervisor or Operation’s Manger immediately.
- b) Place the S O in the inbox for local field crews, and if crew is not local FAX a copy to the crew hub location.
- c) Place a copy of all S O’s in the inbox of the Collection System Data Imputer.

Receipt of complaint from Facilities that W&S Provides Services too:

8. Full Name of Company/Division/Department and/or Region?
9. Full Name, Business and/or Cell Phone Number(s), Physical address of the complainant?
10. Location of the incident/emergency, all Cross Streets, Nearest Highway, Thomas Guide Page: i.e.- Prado Regional Park, Barstow Daggett Airport, San Bernardino Valley College, etc...?
11. Brief description of the incident/emergency: i.e.- SSO, Pump Station Failure, Sewer Backup, etc..?
12. Inform the requestor that they must submit an E-Mail authorizing the Special Districts Department to proceed with Emergency Incident Response, approving re-imbursement for all costs i.e. labor, materials, equipment etc.
13. Notify a W&S Supervisor and/or Operation’s Manger immediately so they can complete the S O request.
14. Upon receiving authorization, the W&S Supervisor, Operation’s Manger or Designee will then contact the appropriate staff to respond.
15. Follow b) & c) above.

- ❑ **If there are any questions concerning an emergency or potential emergency, do not hesitate and call for a consultation with management.**

After Business Hours (Monday–Friday, 1630 hrs to 0800 hrs including Weekends and Holidays)

Receipt of General & Facilities complaints to Apple Valley Answering Service (AVAS):

1. AVAS receives information for questions #1 through #6 above and/or #8 through #11.
2. AVAS then contacts the On-Call W&S Employee for the specific district that the complaint is within by pager/home phone/cell phone/2 way radio.
3. AVAS then provides all the pertinent information to the On-Call employee.
4. The On-Call W&S Employee will then respond to the complaint.
5. The On-Call W&S Employee will notify the On-Call W&S Supervisor immediately if the request is Facilities related and will standby for the approval to respond from W&S Management.
6. AVAS automatically forwards ALL complaint information to the Victorville Office on the next business day. This is a Quality Assurance measure to ensure that all Complaints have been handled and mitigated.

APPENDIX O: COMPLAINT LOG



Receipt of Sanitary Sewer System's Complaint Log

"EXAMPLE"

Jan-11

C:\Field Services\Receipt of S S Complaint Log -Service Order Copies 2011

[illegible]

COUNTY OF SAN BERNARDINO
SPECIAL DISTRICTS DEPARTMENT
WATER SANITATION DIVISION

"EXAMPLE"

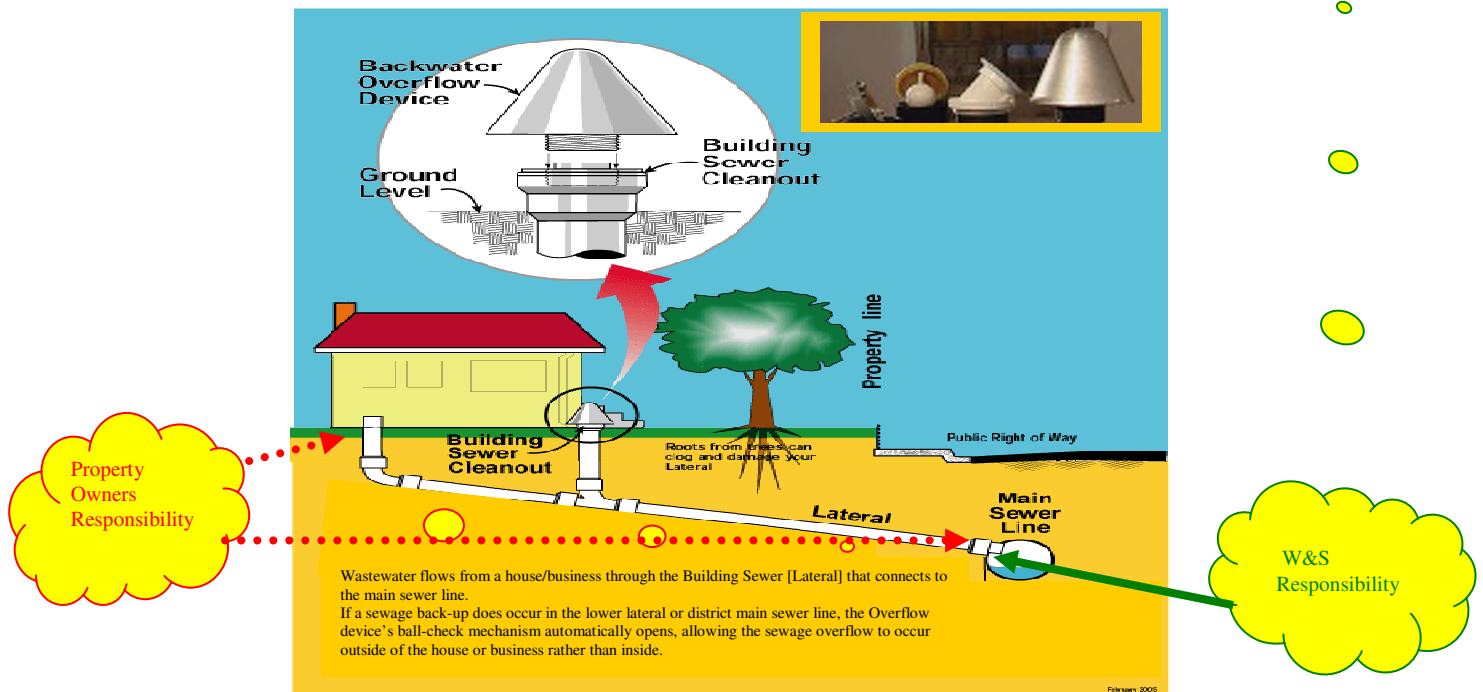
X:\Field Services\Receipt of S S Complaint Log -Service Order Copies 20111

[illegible]

APPENDIX P: BACKWATER OVERFLOW DEVICE



The Devices :



Check with the Water and Sanitation office [800-554-0565] for permit and inspection requirements prior to starting any work on your building sewer.

Always call Dig Alert of Southern California "811 call center" California State Law Says, You Must Call Before You Dig!



- SWRCB requirements for "Communications Program" element of the SSMP

APPENDIX Q: BUILDING SEWER ROOT NOTIFICATION PROGRAM



APPENDIX Q:

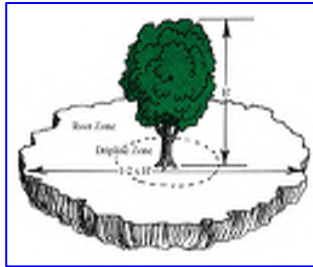
County of San Bernardino
Special Districts Department
Water and Sanitation Division
County Service Areas [CSA]
Sanitary Sewer Systems



Building Sewer Lateral Root

Notification Program

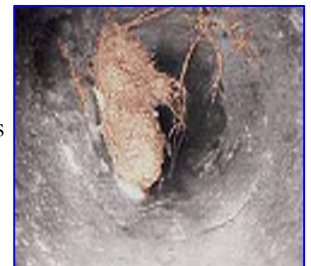
Tree and shrub roots seek out water, depths beyond the outer branch edges in arid and mountainous regions such as normally penetrate a sewer pipe through enter through damaged sections of a About 20% of all sewer backups and Sanitary Sewer Overflows [SSO's] within the CSA districts boundaries are caused by roots and/or Fats, Oils and Grease [FOG] that attaches to the roots. Not only do private building sewer laterals get clogged, but the roots will continue to grow down into the districts sewer pipes causing SSO's. The potential for fines (\$) from Local, State and federal regulatory agencies due to SSO's can be staggering.



nutrients and oxygen at great distances and [canopy] of a tree or shrub. This is especially true in the high desert and local mountains. Roots cracks, broken joints, and defective fittings and sewer pipe searching for moisture to sustain life.

The Law:

State Water Resources Control Board (*SWRCB) Order No. 2006-0003-DWQ, and the local Regional Water Quality Control Boards (RWQCB) that oversee the water quality within the waters of the State within their respective jurisdictions. SWRCB adopted the General Waste Discharge Requirements (GWDR) for Sanitary Sewer Systems. Per the GWDR root infiltration can be remedied by repairing, lining and/or replacing faulty sewer pipes and fittings. The maintenance of private building sewer laterals is the sole responsibility of the property owner(s). District staff frequently clean, televise and repair or replace as necessary the district's main sewer lines. Long established County of San Bernardino policy, based on the opinion of County council, assigns responsibility for the construction, maintenance, and repair of private building sewer laterals to the property owner.



The Cure:

Private building sewer laterals must be maintained in a satisfactory condition to convey sewage from the home or business. It is recommended that all building sewer laterals are cleaned periodically to ensure the pipes capacity and televised at a minimum of every five years. Most repairs on private property can be performed by either the property owner and/or a licensed and bonded plumber.

Check with the Water and Sanitation office [800-554-0565] for permit and inspection requirements prior to starting any work on your building sewer.

Always call Dig Alert of Southern California "811 call center" California State Law Says, You Must Call Before You Dig!



Did you Know?

Tree Rooting Depth Records

Species	Location	Maximum rooting depth (meters)	References ^{[1][2]}
<i>Boscia albitrunca</i>	Kalahari desert	68 meters or (nearly 223' feet)	Jennings (1974)
<i>Juniperus monosperma</i>	Colorado Plateau	61 meters or (nearly 200' feet)	Cannon (1960)
<i>Eucalyptus</i> sp.	Australian forest	61 meters or (nearly 200' feet)	Jennings (1971)
<i>Acacia erioloba</i>	Kalahari desert	60 meters or (nearly 196' feet)	Jennings (1974)
<i>Prosopis juliflora</i>	Tucson Arizona Desert	53.3 meters or (nearly 175' feet)	Phillips (1963)

* SWRCB requirements for "Communications Program" element of the SSMP

APPENDIX R: SBC TRENCHING SPECIFICATIONS



APPENDIX R

**SAN BERNARDINO COUNTY
TRANSPORTATION DEPARTMENT**

**GENERAL PERMIT
CONDITIONS
AND
TRENCH
SPECIFICATIONS**

Effective May 1, 2002

1 - GENERAL

1.1 Standards and Specifications -- The work shall be done in accordance with the current San Bernardino County Standards and Specifications and these Conditions and Specifications. Any deviation shall be approved in writing by the Permit Engineer.

1.2 Changes or Additions to Permit -- The Transportation Department reserves the right to make any changes or additions to a permit after issuance if such changes or additions are believed necessary for the protection of the roads or for the health and safety of the public.

1.3 Relocation -- If any part of an installation interferes with the present use of roads by the general public or is in conflict with future or current County improvement projects, it shall be removed or relocated as directed by the Transportation Department at the expense of the Permittee or his successor in interest.

1.4 Utility Construction -- Permits for utility trenching, including utility service trenching, within County right-of-way, shall be issued to the respective utility purveyor or a California licensed contractor. The permittee shall warranty the trench repair for one year from the Transportation Department approval date. Following the permittee warranty period, the respective utility purveyor shall be responsible for the trench repair.

Developers may apply for a no fee permit for trenching of all utilities within the tract boundaries and shall be responsible for the warranty period of one year.

1.5 Licensed Contractor -- All excavation, repair and restoration in County road right-of-way shall be performed by a contractor with the appropriate license, Class A, C-12 (trenching only, no paving) issued by the State of California Contractors License Board or by utility purveyor's regular employees.

1.6 Permit Possession -- Other than emergency repairs, there shall be no work performed in County road right-of-way until a road permit is issued. A copy of this permit, a set of approved plans and permits required by any other legally constituted authority shall be on site at all times construction is in progress. Permits that require excavation shall be valid only after an Underground Service Alert inquiry identification number is issued. All permitted work in the mountain regions shall cease between October 31 and April 15 of the following year unless approved by the Transportation Department. Start work approval shall be dependent on weather conditions.

1.7 Sanitary Facilities -- The Permittee shall provide and maintain enclosed toilets for the use of employees at all times while work is in progress.

1.8 Permittee Responsibility -- In addition to all conditions herein, the Permittee is responsible for safety and construction requirements within the limits of the project. The Permittee or his employees shall abide by all the regulations of any legally constituted authority.

1.9 Hold Harmless -- The Permittee shall preserve and save harmless the County and each officer and employee thereof, from any liability or responsibility for any accident, loss or

required in Section 5.4. Discharges shall comply with the National Pollutant Discharge Elimination System and with Federal law, State law and local ordinance.

2.5 Closing Roads -- No road shall be closed without authorization from the Transportation Department except in the case of an emergency under the direction of an authorized agency. An authorized road closure will allow the detour of *through* traffic only. The Permittee shall provide a smooth dust controlled route that allows unimpeded access for emergency vehicles and residents at all times. A minimum of ten (10) working days are required to process the application.

To apply for a road closure authorization, submit the following to the Road Permit Section, 825 E. Third Street, San Bernardino, CA 92415-0835.

- Written request for the closure with the time schedule included.
- Detour route and sign locations, a detour plan designed by a Registered Civil or Traffic Engineer, if required by the Department.

3 - PRESERVATION OF PROPERTY

3.1 Protection of Property -- The Permittee shall be responsible for the protection of public and private property adjacent to the work and shall exercise due caution to avoid damage to such property.

The Permittee shall repair or replace all existing improvements damaged within the right-of-way which are not designated for removal on the approved plans to match the original in finish and dimension. Trees, lawns and shrubbery that are not designated for removal on the plans shall be protected from damage or injury. If damaged or removed because of the Permittee operations, they shall be restored or replaced in as nearly the original condition and location as is reasonably possible as approved by Department personnel. The Permittee shall give seven (7) days notice to occupants or owners of adjacent property to allow them to salvage or relocate plants, trees, fences, sprinklers and other improvements within the right-of-way which are designated for removal on the plans and would be destroyed because of the work.

3.2 County Facilities -- Prior to construction, the Permittee shall assess the condition of County facilities within project limits and report to the inspector all damaged, defaced or missing pavement, sidewalk, curb, gutter, traffic signs, pavement markings or hazardous conditions that may exist before work is started. Prior to final acceptance of the project, all County facilities shall be in the same or better condition as determined by Department personnel.

3.3 Traffic Signals -- Traffic signal detector loops, wiring or appurtenant facilities damaged by the Permittee's operation shall be reported immediately to the Traffic Division of the Transportation Department, 825 East Third Street San Bernardino, CA 92415, telephone (909) 387-2833. Any damage shall be repaired immediately at no expense to the County as directed by the Transportation Department.

4.5 Emergency Response -- Before work is started, the Permittee shall furnish names and telephone numbers of persons on-call if emergency work is required by the County. The Department, at its sole discretion, may elect to perform emergency work if it is judged as necessary for the protection of the roads or for the health and safety of the public. All emergency work shall be accomplished at no expense to the County.

4.6 Maintenance of Trenches -- Permittee shall perform continuing maintenance of all trenches, including periods of suspension of work, during the course of construction and shall maintain the trench for the life of the installation in accordance with County Ordinance No. 2377.

5 - MATERIALS AND EQUIPMENT

5.1 Pavement Traffic Markings and Striping -- Pavement traffic markings and striping shall be constructed of thermoplastic material and all damaged or removed markings shall be replaced with thermoplastic material unless otherwise approved by Department personnel. Visual uniformity, as determined by Department personnel, may require that adjacent markings and all markings within an intersection be replaced with thermoplastic material by the Permittee at no cost to the County.

5.2 Asphalt Concrete -- Paving asphalt shall be AR4000 1/2-inch Type B maximum, medium shall be used. Asphalt dike shall be AR8000 paving asphalt with Type B 3/8-inch maximum, medium grading.

5.3 Base Material -- Base shall be Class II Aggregate Base or as approved by Department personnel.

5.4 Grading Equipment -- Grading of soil roads or soil shoulders may be accomplished by any means that will provide a smooth, compacted and uniform surface that varies less than 0.1-foot in 10-feet for line or grade up to 300-feet. Projects greater than 300-feet in length will require grading be performed by an approved motor grader.

5.5 Track Equipment -- Track equipment and outriggers used on paved surfaces shall be equipped with street pads and be operated so as not to mar the surface or cause damage to any County facility. If pavement is marred, it shall be resurfaced over the entire width as required in Section 8, Trench Resurfacing. If County facilities are damaged, they shall be replaced or repaired as specified in Section 3, Preservation of Property.

5.6 Equipment -- Paving 6-feet wide or wider in a driving lane shall be accomplished by use of a paving machine approved by Department personnel. Shoulder paving and miscellaneous paving shall be as approved by the Inspector.

6 - TRENCHING

6.1 CalOSHA -- All excavations shall conform to the requirements of the State of California Division of Occupational Safety and Health. The applicant for a road permit shall possess a permit to excavate from the Division of Industrial Safety, Department of Industrial Relations, State of California.

Rocks or rubble included in the fill shall be mixed with approved material to eliminate voids. Slurry (1-1/2 sack) is also an acceptable option for backfill.

6.9 Narrow Trench -- Unless otherwise authorized, trenches in paved areas, 1-foot or less in width, shall be backfilled to pavement subgrade with 1-1/2 sack aggregate/cement slurry. The slurry shall be protected until cured and pavement placed per Section 8, Trench Resurfacing.

6.10 Inclement Weather -- Other than emergency repairs or as directed by the Transportation Department, there shall be no excavation within the traveled way of County roads during periods of inclement weather.

6.11 Manhole Construction -- Manholes shall remain below the grading plane until final paving has been completed and then set flush with the surface, except in areas that require snow removal, the manhole frame shall be set 1/2-inch to 3/4-inch below pavement surface. In graded earth shoulders or earth flowline areas, asphalt concrete shall be placed to a minimum width of 3-feet around the manhole and paved out at 45 degrees to the edge of existing pavement per San Bernardino County Standard Plan No. 311A. Backfill and testing shall be per Section 7, and shall be independent of the main line trench tests.

7 - COMPACTION

7.1 Relative Compaction (RC) -- RC of 95% minimum shall be required for asphalt pavement, paving base material and that portion of backfill which is within 0.5-foot of the paving base material. RC of 90% minimum shall be required for all other fill or backfill. All compaction shall be in accordance with California Test No. 216 or No. 231 (ASTM D-1556 or D-1557-70). Use of an alternate compaction test method (e.g. Dynamic Cone Penetrometer) must be approved in advance and will be approved on a case-by-case basis.

7.2 Compaction Testing Frequency And Location -- Trench backfill testing shall be at 250-foot maximum intervals. One test shall be performed for each 4-foot of depth or fraction thereof. Pavement subgrade and pavement base material shall be tested at 500-foot intervals. Tests for backfill shall be taken at mid-depth of each 4-feet of backfill starting at the top of the installation. 20% of laterals and 100% of manholes shall be tested independently of the main line. Failure of a compaction test will result in the entire area represented by that test being uniformly reworked and retested at a random location.

7.3 Test Reports -- Tests shall be certified by a registered California civil or geotechnical engineer or testing laboratory in accordance with the State of California test requirements. Test locations shall be determined by Department personnel. Test reports shall be listed individually for each trench or for each type and phase of construction that includes an accurate description of the test location. Compaction reports shall be submitted to Inspector prior to permanent paving. If an alternate compaction method is approved per Section 7.1, alternate test reports specified at time of permit issuance shall be submitted.

7.4 Mechanical Compaction -- Backfill shall be placed in horizontal layers of thickness compatible to the material being placed and the type of equipment being used. Each layer shall be evenly spread then tamped or rolled until the specified relative compaction is attained.

8.5 Overlay Paving -- When the T-cut trench or T-cut option is used to repair or restore pavement removal to 300-feet or longer, an overlay shall not be required unless the road has been paved within three years or the road has a superelevation, or tilt cross section. When the non T-cut trench is used to repair or restore pavement removals of 300-feet or longer, an overlay shall be required. The determination of the overlay shall be made by the County Transportation Department at the prebid/preconstruction meeting or prior to issuance of the permit. Substantial damage to the roadway beyond the trench excavation as a result of negligence by the permittee or their contractor shall meet or exceed prior street conditions and will be determined by the Transportation Department. The overlay, when required, shall be a minimum of 1-inch thick of AR4000 3/8-inch MM placed with a paving machine per Section 5.6 and shall extend beyond pavement removal a minimum of 1-foot laterally and 5-feet longitudinally and shall cover the driving lane or shoulder full width. Roads that have a superelevation or tilt cross section may require full road width overlay in the area of the superelevation or tilt section.

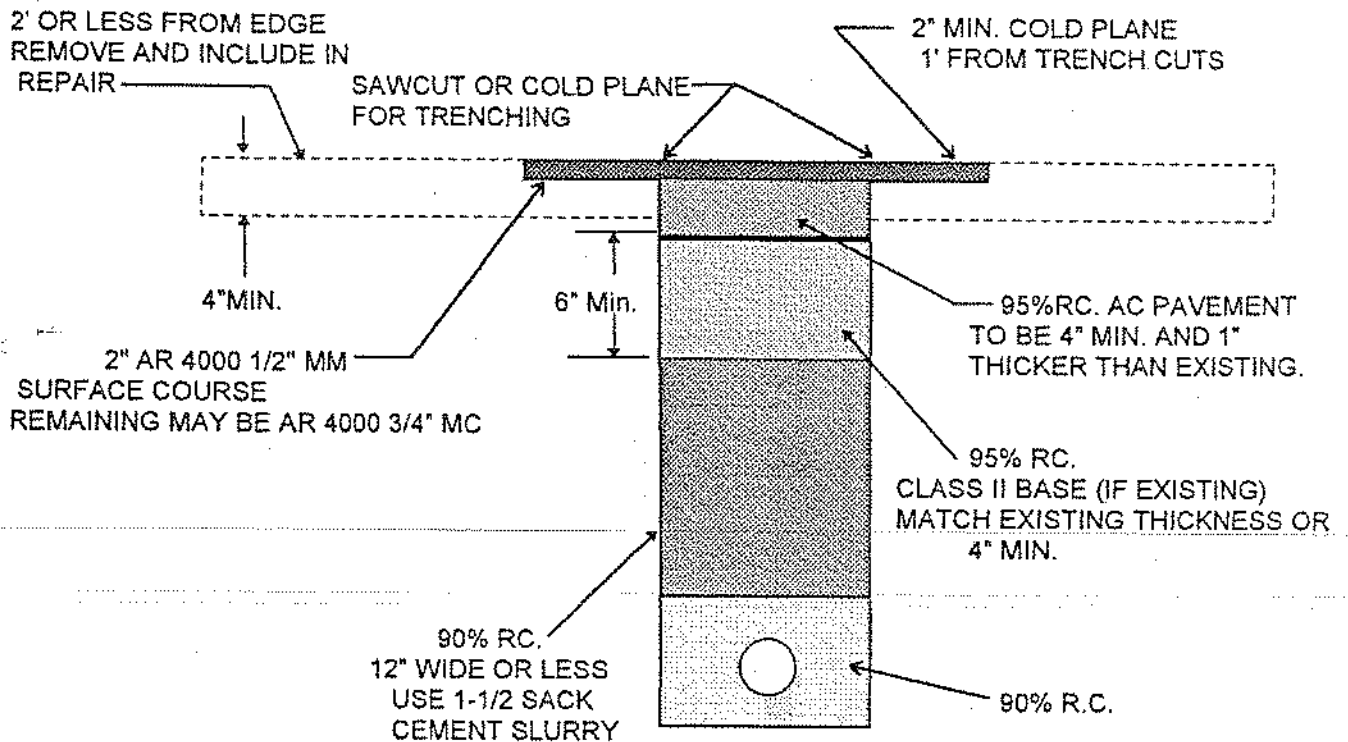
8.6 Excessive Pavement Removal -- Removal of six or more separate areas of pavement or the removal of 15% of the total area of a lane or shoulder by a Permittee within 300-foot length of street, may require an overlay per Section 8.5.

8.7 Pavement Surfacing -- Where there are existing surface coats on the existing paving, open graded paving, chip seal or any type of surfacing that has been removed, the surfacing and paving shall be replaced in-kind.

8.8 Driveway Approaches -- Driveway approaches constructed of asphalt concrete shall be repaired as required and shall also be overlaid 1-inch thick full width to the property line or slurry sealed per Caltrans Section 37-2.01.

8.9 Portland Cement Concrete -- Potholes or trenches in PCC shall be repaired by sawcutting or grinding and removed in full panels at the score lines or as directed by Department personnel.

8.10 Trench Failure and Repair -- When the Transportation Department notifies Permittee of a failure of the trench (settlement, excessive cracking or alligating, etc.) the Permittee shall coordinate the proposed trench repair method and schedule with the Transportation Department.



NOTES:

1. ALL EXCAVATIONS WITHIN COUNTY RIGHT-OF-WAY REQUIRE AN EXCAVATION PERMIT FROM THE ROAD PERMIT SECTION.
2. ROAD PERMITS ARE NOT VALID WITHOUT FULL COMPLIANCE OF UNDERGROUND SERVICE ALERT REQUIREMENTS.
3. ALL EXCAVATIONS SHALL BE CONSTRUCTED AS PRESCRIBED BY CAL. OSHA.
4. TEMPORARY PAVING 2" THICK COMPACTED SMOOTH AND FLUSH, SHALL BE PLACED IN ALL AREAS PAVING WAS REMOVED PRIOR TO OPENING TO TRAFFIC AND AT THE END OF EACH DAY.
5. COMPACTION TESTS IN THE 90% RC PIPE ZONE SHALL BE ON 250' INTERVALS AND SUBMITTED TO INSPECTION PRIOR TO PERMANENT PAVING.
6. NOTIFY PERMIT INSPECTOR ONE WORKING DAY PRIOR TO STARTING A PROJECT AND FOR EACH PHASE OF CONSTRUCTION.

OPTIONAL T-CUT
TRENCH

TRENCH DETAIL

B

PLATE BRIDGING

WIDTH OF TRENCH

1.0 FOOT TO 3 FOOT

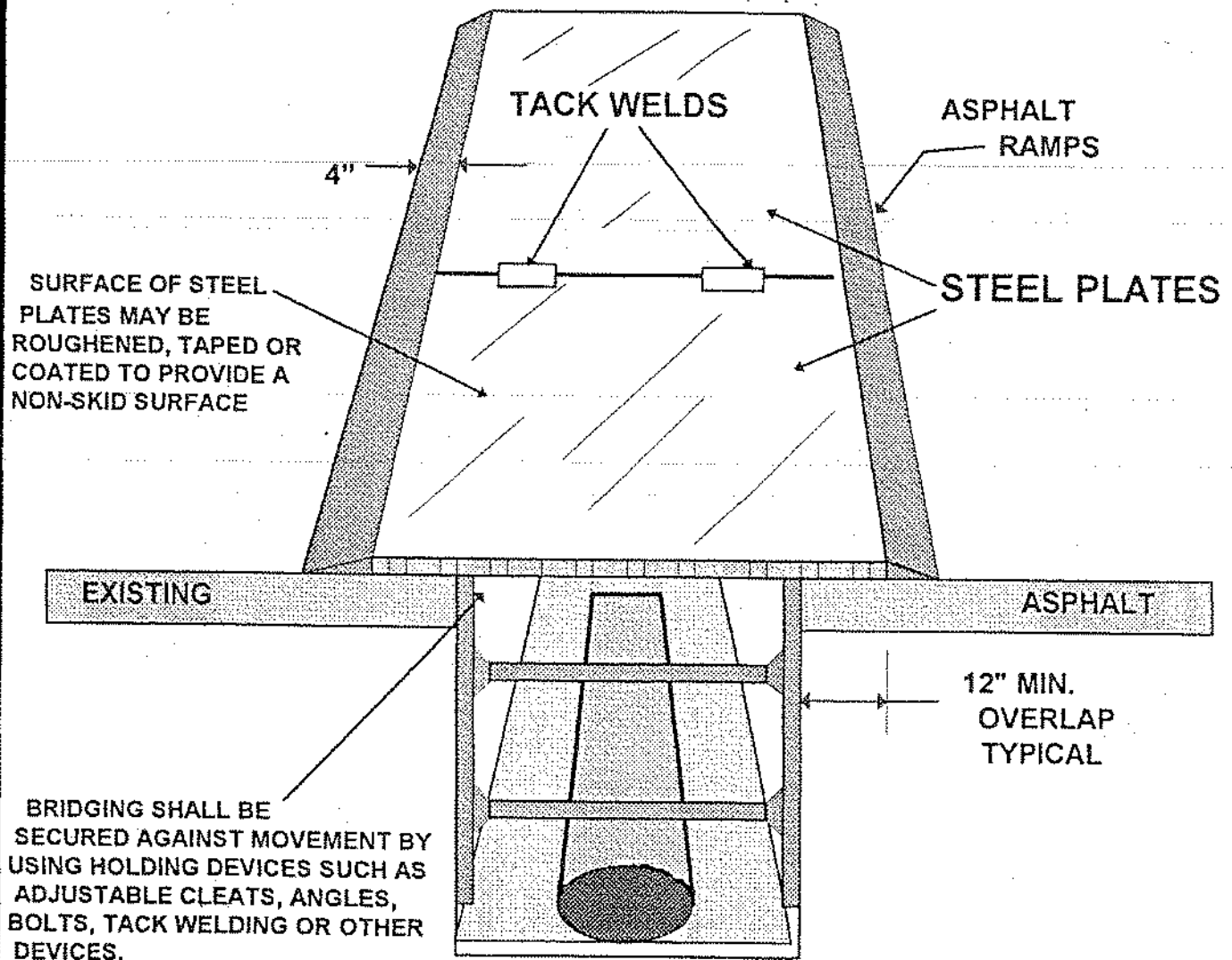
MINIMUM PLATE THICKNESS

1 INCH

4.0 FEET

1-1/4 INCH

SPANS GREATER THAN 4 FEET, A STRUCTURAL DESIGN SHALL BE PREPARED BY A REGISTERED CIVIL ENGINEER AND APPROVED BY DEPARTMENT PERSONNEL.



NOTE: TRENCH WALLS AND ADJACENT SOIL SHALL BE SUFFICIENTLY STABLE FOR THE USE OF THE ABOVE PLATE.

CEDAR PINES PARK
COUNTY SERVICE AREA 18

Alder Creek Road
Ballenger Road
Big Deer Road
Big Oak Road
Bone Drive
Burnt Mill Canyon Road
Canyon Drive
Canyon Vista Road
Cedar Court
Cedarpines Drive
Church Street
Cliff Drive
Cochran Road
Cold Springs Road
Coon Hollow Road
Coyote Trail
Crest Lane
Devils Canyon Road
Dewey Place
Doyle Road
East Buckthorne
Elliot Road
El Valle
Evergreen Drive
Fern Canyon Road
Fern Hill Road
Fir Street
Forest Drive
Greentree Lane
Hansen Circle East
Hansen Circle West
Hartman Circle
Hilltop Lane
Jobs Peak Road
Kissing Rock Road
Knutsford Road
Lakeland View
Linden Way
Little Oak Place
Long Beach Ave
Lookout Lane
Lovers Lane
Mockingbird Lane
Mojave River Road
Morman Road
Nandi Lane

COUNTY SERVICE AREA 18

Peak Circle
Pinon Place
Pine Drive
Plunge Road
Rate Road
Ridge Road
Reservoir Road
Rockwell Road
Romnah Road
Running Springs Lane
Sand Hill Road
Spring Drive
Thomas Road
Thorne Place
Tower Heights Road
Triangle Nook Road
Vista Road
West Buckthorne
Willow Witch Road
Whispering Pines Drive

GREEN VALLEY LAKE
COUNTY SERVICE AREA 79, IMPROVEMENT ZONE R-1

Cedar Oak Lane
Cedar Pine Lane
Lone Pine Lane
Meadow Lane

STRAWBERRY LODGE (TWIN PEAKS)
COUNTY SERVICE AREA R-2

Hi Lane
Hi Place
Lo Lane
Mid Lane
Pump House Road

LANDERS

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-15

Bearing Tree Road
Yucca Mesa Road
Anita Avenue
Bonita Avenue
Inez Avenue
Mallow
Booth Road
Phillips Road
Napa Road
Moon Drive
Delgada Avenue
Ripon Avenue
Tracy Boulevard

Lana Vista
Winters Road
Bodick Road
Snail Trail
Dusty Mile
Mikiska Boulevard
Touchstone Boulevard
Wright Avenue
Broadway
University Boulevard
Acoma
Shannon Road
Happy Trail
Jesse Road
Wamego Trail
Sunny slope
Dixie Mine Road
Encantado Road
Cone Boulevard
Cambria Avenue
Gibraltar Road

RUNNING SPRINGS

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-16

Blue Bird Drive
Pine Cone Lane
Pine Cone Court
Humming Bird Court
Snow Cactus Court

VERDE MONT

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-30

Fifth Avenue
Gray Street

LYTLE CREEK

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-31

Alder Way
Alder Lane
Brae Lane
Glenn Way
West Lane
Lytle Way
Bridge Lane

Seymour
Grand Vista

Lytle Lane

BIG BEAR LAKE

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-33

Fairway Drive
Gildart
Hillendale

Moonridge

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-34

Plumas Court (The Alley)

DEER LODGE

COUNTY SERVICE AREA 59

Edgecliff Drive
Oak Way North
Dixie Way
Sunset Way
Canyon
Overlook Lane
Short Cut
Oakway South
Manzinita Way

DEER LODGE (cont.)
COUNTY SERVICE AREA 59

Pine Drive
Oak Way East
Valley Drive East
Valley Drive
S. Way
Rockridge Drive
Culbertson Lane
Buckles Way
Olsen Drive
Lovers Lane
Lookout Way
Line Drive
Moon Drive

Angle Way
Deer Way
Consolation Way
Evergreen Lane
Brook Lane
Finger Way
The Circle
Abner Drive
Wildcat Drive
Creek Drive
Krause Lane
L Way

VALLEY of THE MOON
COUNTY SERVICE AREA 68

Saxon Drive
Pine Drive
Pyramid Drive
Electra Drive
Arth Drive
King Drive
Moon Drive
Jewell Drive
Temple Court
Boa Drive
Ashlar Drive
Acacia Drive
Cross Drive
Gilroy Lane

GRASS VALLEY
COUNTY SERVICE AREA 69

Kings Court
Amador Lane
Marin Lane
Madera Lane
Modoc Lane
Yolo Way
Pinehurst Drive
San Benito Lane
Brentwood Lane
Sutter Lane
Placer Lane
Del Norte Lane
Merced Lane
Inyo Court

WRIGHT WOOD
COUNTY SERVICE AREA 70, IMPROVEMENT ZONE G

Wintergreen
Scenic
Puma
Manzinita
Jack Rabbit Run
Scrub Oak
Rattlesnake Gulch
Desert Front Road
Sand Canyon
Oak Springs Valley
Quail Haven
Buckwheat
Sequoia
Tweedy Lane
Creekside Road

(MARIANA RANCHOS) HESPERIA
COUNTY SERVICE AREA 77

Manzinita Street
Mesquite Street
Sagebrush Street
Yucca Street
Candlelight Street
Juniper Street
Joshua Street

COPPER MTN. MESA
COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-19

Winters Road
Lear Avenue
Shoshone Valley Road
Sonora (Pole Line) Road
Moonlight Mesa Drive
Rice
East Tilford Way
Mt. Shadow
Sunfair (Coyote Valley) Road
Presswood Drive
Friendship Lane

FLAMINGO HEIGHTS
COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-20

Soledad Avenue
Fortuna Avenue
Delgada Avenue
Tahoe Avenue
Mira Street
Boo Lane
Mesa Vista
Chapparal Road
Luna Vista
Moonstone Lane
Eureka Road
Handley Road
Napa Road
Ripon Avenue
Cambria Avenue
Wamego Trail
Cherokee Trail
Deer Trail
Inca Trail
Perris Street
Butte Street
Starlight Mesa
Serrana

WONDER VALLEY FIRE AND ROAD DISTRICT
COUNTY SERVICE AREA 70, IMPROVEMENT ZONE M

Gammel
Valley Vista
Godwin
Queen Anne
Blower
Screechowl
Wilson
Barbara Lane
Merriwether
Shadow Mt.
Naborly
Pipeline
Midway
Eddie Albert
Parker
Chadwick South
Shelton South
Bullion Mt.
Falderman
Indian Trail
Mica
Amboy
Falderman
Raymond
Diamond Bar
Mojave
Normglo
~~Normglo~~
Gopher
Pinto Mountain
Mesa
Gayley Lane
Brown
Nevada Trail
Steeg Road
Larrera Dr.
Sammakand
Anza
Bristol

Danby
Marks
Pioneer
Sandy Lane
Witt/Indian Trail
Kern-Roop
Kuhns
Schooler
Helen Street
Betty Lane
Gilbert
Melody Lane
Thompson
Little
Hollywood Lane
Morgan
Hill Street
Henry
Kelly
Sampson
Marty Ken Road
Mae Flores
Zelda Lane
Sheep Hole View
Iron Age Road
Dale Vista
Marcoux
Mangles
Ferrell
Bell-King

SAN BERNARDINO COUNTY
OFFICE OF SPECIAL DISTRICTS
CSA 70, IMPROVEMENT ZONE R-3
ERWIN LAKE

North and South Streets

Woodland
Lakewood
West
Central
East
Willow
Fir
Pinon
Hemlock
Spruce
Pine
Ash
Cypress
Castle
Hart
Norwood
A Lane
B Lane
C Lane
D Lane
E Lane
F Lane
G Lane

East and West Streets

1st Street
2nd Street
3rd Street
4th Street
5th Street
6th Street
7th Street
8th Street
9th Street
10th Street
11th Street
Juniper Lane
Oak Lane
Erwin Lane

CEDAR GLEN
COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-4

Ponderosa

SUGARLOAF
COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-5

Cedar Lane
Victoria Lane
Mahogany Road
Rinehart Lane
Chijo Avenue
Orange Avenue
Santa Barbara Avenue
Riverside Avenue
Baldwin Lane
~~Dixie Lee Lane~~
Moreno Lane
San Bernardino Avenue
Vista Lane
Wabash Lane
Eucalyptus Lane
Clark Lane
Imperial Lane
Highland Lane
Holmes Lane
Kern Avenue
Leonard Lane
Los Angeles
Marzinita Lane
Magnolia Lane
Laurel Lane
Pine Lane
Spruce Lane
Maple Lane

GRASS VALLEY
COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-7

Windward Drive

RIVERSIDE TERRACE (CHINO HILLS)
COUNTY SERVICE 70, IMPROVEMENT ZONE R-8

Cimmaron
Riverside Terrace
Riverside Way
Biscayne
Hillview

RIM FOREST

COUNTY SERVICE 70, IMPROVEMENT ZONE R-9

Valley View
Sonecie Place
Scenic Way
Lakeview Drive
Park Place
Hazel Place

RUNNING SPRINGS

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-11

Preston Drive
Loma Drive
Canon Way

BALDWIN LAKE

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-12

Ponderosa Ranch Road
Baldwin Ranch Road
Chapparal Road
Raymond Lane
Ore Lane
Water Hole Road

LAKE ARROWHEAD

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-13

North Shore Road
Talisman Lane
Deerhorn Lane
Antler Lane
Fawn Lane

BIG BEAR LAKE

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-21

Mountain View Boulevard

TWIN PEAKS

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-22

Cedar Brook Drive

Oriole Drive

Fern Drive

Iris Drive

LUCERNE VALLEY

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-25

Custer Avenue

Jack Rabbit Lane

YUCCA VALLEY

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-26

Mesa Drive

Warren Vista

Lucerne Vista

Greasewood Lane

Valley Vista

Condalia

Sage

Campanula

Canterbury

Yucca Road

Palo Alto

JOSHUA TREE

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-28

Sunny Hills Road

JOSHUA TREE

COUNTY SERVICE AREA 70, IMPROVEMENT ZONE R-29

Campanula

Inez Avenue

Olympic Road

Del Lori Lane

Wesley Road

Mesa

Canterbury

Anita Avenue

Bonita Avenue

Julecrest Road

Alta Avenue

(b) The Planning Commission or ~~Planning Commission Subcommittee~~ shall consider appeals regarding land use decisions made by any County agency, department, office, official or officer.

The Planning Commission may refer consideration of an appeal to the Board of Supervisors, except for those decisions involving only a variance, or determination as to the completeness of an application, ~~or the requirement for preparation of an Environmental Impact Report.~~ In these instances the Planning Commission decision shall be the final and conclusive decision. The Board of Supervisors will not accept nor consider an appeal of these Planning Commission decisions.

(c) The Board of Supervisors shall consider appeals regarding land use decisions ~~and decisions to require preparation of an Environmental Impact Report (EIR)~~ made by the Planning Commission, except as specified above.

~~(d) The Board of Supervisors shall only conduct hearings regarding an EIR or other environmental action in conjunction with consideration of the subject land use application and project for which the EIR was prepared or other environmental action proposed.~~

SECTION 3. Subsection 83.030905(b)(15) is added to Chapter 3 of Division 3 of Title 8 of the San Bernardino County Code, to read:

83.030905 Procedures.

(b) (15) Front yard setback requirements in the Mountain Region for garages and carports no closer than 10 feet from the existing edge of pavement of the roadway. Administrative criteria for variances for these structures shall be established by the Building Official. Those proposals that do not meet these criteria shall be submitted to the County Transportation/ Flood Control Department, with the appropriate fee for evaluation. Architectural design and construction materials shall be compatible with the visual setting of the surrounding area.

SECTION 4. Subsections 83.0301120(b) and (c) of the San Bernardino County Code are amended, to read:

July 1, 1990

Circulars No. 11, "Design of Riprap Revetment", No. 14, "Hydraulic Design of Energy Dissipaters for Culverts and Channels", and No. 15, "Design of Roadway Channels with Flexible Linings", and "Hydraulic Design of Stilling Basins" by the U.S. Department of Interior, Bureau of Reclamation, 1964.

Wingwall flare angles should be carefully selected to prevent embankment scour from eddy action at the ends of the wingwalls. Both types of wingwalls should be flush with the culvert barrel and flared at an angle appropriate to the lines of flow, particularly at high discharge velocities.

Topic 828 - Diameter and Length

828.1 Introduction

From a maintenance point of view the minimum diameter of pipe and the distance between convenient cleanout access points are important considerations.

The following instructions apply to minimum pipe diameter and the length of pipe culvert.

828.2 Minimum Diameter

The minimum diameter for cross culverts under the roadway is 18 inches. For other than cross pipes, the minimum diameter is 12 inches. For maintenance purposes, where the slope of longitudinal side drains is not sufficient to produce self-cleaning velocities, pipe sizes of 18 inches or more in diameter should be considered.

The minimum diameter of pipe to be used is further determined by the length of pipe between convenient cleanout access points. If pipe runs exceed 100 feet between inlet and outlet, or intermediate cleanout access, the minimum diameter of pipe to be used is 24 inches. When practicable, intermediate cleanout points should be provided for runs of pipe 24 inches in diameter that exceed 300 feet in length.

If a choice is to be made between using 18 inch diameter pipe with an intermediate cleanout in the highway median or using 24

inch diameter pipe without the median access, the larger diameter pipe without the median access is preferred.

828.3 Length

The length of pipe culvert to be installed is determined as follows:

- (a) Establish a theoretical length based on slope stake requirements making allowance for end treatment.
- (b) Adjust the theoretical length for height of fill by applying these rules:
 - o For fills 12 feet or less, no adjustment is required.
 - o For fills higher than 12 feet, add 1 foot of length at each end for each 10-foot increment of fill height or portion thereof. The additional length should not exceed 6 feet on each end.
 - o In cases of high fills with benches, the additional length is based on the height of the lowest bench.
- (c) Use the nearest combination of commercial lengths which equal or exceed the length obtained in (b) above.

Topic 829 - Special Considerations

829.1 Introduction

In addition to the hydraulic design, other factors must be considered to assure the integrity of culvert installations and the highway.

829.2 Bedding and Backfill

The height of overfill a culvert will safely sustain depends upon foundation conditions, method of installation, and its structural strength and rigidity.

Uniform settlement under both the culvert and the adjoining fill will not overstress flexible and segmental rigid culverts. Unequal settlement, however, can result in distortion and shearing action in the culvert. For rigid pipes this could result in distress and disjuncting of the pipe. A flexible culvert accommodates itself

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT, TRAFFIC DIVISION
TRAFFIC CONTROL DEVICES-SIZE STANDARDIZATION

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SE = SUPER ENGINEERING HI = HIGH INTENSITY DG = DIAMOND GRADE VIP = VISUAL IMPACT PERFORMANCE

SIGN CODE	SIGN DISCRPTION	REF. SHEET	COUNTY STANDARD SIZE
W01	REVERSE CURVE SIGN	HI	36" X 36"
W02	REVERSE TURN SIGN	HI	36" X 36"
W03	TURN SIGN	HI	36" X 36"
W04	SPECIAL CURVE/TURN	HI	48"X48"
W05	CURVE SIGN	HI	36" X 36"
W06	ADVISORY SPEED SIGN	HI	30" X 30"
W07	SIDE ROAD SIGN	HI	30" X 30"
W08	Y-INTERSECTION SIGN	HI	30" X 30"
W09	CROSS ROAD SIGN	HI	30" X 30"
W11	PAVEMENT WIDTH TRANSITION SIGN	HI	36" X 36"
W14	WINDING ROAD SIGN	HI	36" X 36"
W15	ROAD NARROWS SIGN	HI	36" X 36"
W16	GROOVED PVMNT SIGN	HI	48" X 48"
W17	STOP AHEAD SIGN (REPLACES W17A)	HI	36" X 36"
W18	SOFT SHOULDER SIGN	HI	42" X 42"
W19	PAVEMENT ENDS SIGN	HI	42" X 42"
W19A			
W19B	PAVEMENT ENDS ____FT SIGN	HI	24"X8"
W23	NARROW BRIDGE SIGN	HI	36" X 36"
W25	DIVIDED HWY SIGN	HI	36" X 36"
W25A	DIVIDED HWY SIGN(WORDS)	HI	24" X 18"
W26	DIVIDED HWY ENDS SIGN	HI	36" X 36"
W26A	DIVIDED HWY ENDS(SYMBOL)SIGN	HI	24" X 18"
W28	YIELD AHEAD (SYMBOL) SIGN (REPLACES W28A)	HI	36"X36"
W29	HILL (SYMBOL) SIGN	HI	30" X 30"
W29A	% GRADE SIGN	HI	24" X 18"
W29B	% GRADE MILES SIGN	HI	24" X 18"
W29C	TRUCKS USE LOWER GEAR SIGN	HI	24" X 18"
W31	END SIGN	HI	30" X 30"
W31A	ROAD ENDS FT SIGN	HI	30" X 30"
W32	DIP SIGN	HI	30" X 30"
W33	ROUGH ROAD SIGN	HI	30" X 30"
W34	LOW CLEARANCE SIGN	HI	30" X 30"
W34A	MILES AHEAD SIGN	HI	24" X 18"
W34B	VERTICAL CLEARANCE SIGN	HI	120" X 18"
W36	ONE LANE BRIDGE SIGN	HI	42" X 42"
W37	BUMP SIGN	HI	30" X 30"
W38	SLIDE AREA SIGN	HI	30" X 30"
W41	SIGNAL AHEAD SYMBOL SIGN (REPLACES W41A)	HI	36" X 36"
W42	SLIPPERY WHEN WET SYMBOL SIGN	HI	36"X36"
W43	ICY SIGN	HI	30"X30"
W44	TWO-WAY TRAFFIC SIGN	HI	48"X48"
W45	EQUESTRIAN SYMBOL SIGN	HI	30"X30"
W46	EXEMPT PLATE	HI	24"X12"
W46A	EXEMPT SIGN	HI	15"X9"
W47	RAILROAD ADVANCE WARNING SIGN	HI	36" X 36"
W48	RAILROAD CROSSING PLATE	HI	30" X 24"
W50	ROCK SLIDE AREA SIGN	HI	36" X 36"
W51	SLOW TRUCKS SIGN	HI	48" X 48"
W53	NOT A THROUGH ST (ROAD) SIGN	HI	24" X 24"
W53A	NO OUTLET SIGN	HI	30" X 30"
W54	PED CROSSING SYMBOL SIGN	HI	30" X 30"
W54A	PED SYMBOL SIGN	HI	30" X 30"
W55	FLOODED SIGN	HI	30" X 30"
W55A	SUBJECT TO FLOODING SIGN	HI	36" X 36"
W55B	SUBJECT TO FLOODING SIGN	HI	36" X 36"
W56	DOUBLE HEAD ARROW SIGN	HI	36"X18"

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT, TRAFFIC DIVISION
TRAFFIC CONTROL DEVICES-SIZE STANDARDIZATION

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SE = SUPER ENGINEERING HI = HIGH INTENSITY DG = DIAMOND GRADE VIP = VISUAL IMPACT PERFORMANCE

SIGN CODE	SIGN DISCRIPTION	REF. SHEET	COUNTY STANDARD SIZE
W57	SINGLE HEAD ARROW SIGN	HI	48" X 24"
W58	DOUBLE ARROW SIGN	HI	30" X 30"
W59	MERGE SIGN	HI	36" X 36"
W60	ADDED LANE SIGN	HI	48" X 48"
W62	FARM EQUIPMENT SYMBOL SIGN	HI	30" X 30"
W63	ADVANCE SCHOOL SYMBOL SIGN	HI	36" X 36"
W64	SCHOOL BUS STOP FT SIGN	HI	30" X 30"
W65	SCHOOL PLATE	HI	36" X 12"
W66	SCHOOL CROSSING SYMBOL SIGN (W66A NOT REQUIRED)	HI	36" X 36"
W67	CATTLE SYMBOL SIGN	HI	30" X 30"
W68	DEER SYMBOL SIGN	HI	30" X 30"
W70	CROSS TRAFFIC AHEAD SIGN	HI	60" X 60"
W71	NEXT MILE'S PLATE	HI	24" X 18"
W72	ADVISORY EXIT SPEED SIGN	HI	48" X 60"
W73	RIGHT(LEFT) LANE MUST EXIT SIGN	HI	60" X 60"
W74	THRU TRAFFIC MERGE LEFT(RIGHT) SIGN	HI	48" X 48"
W75	LANE ENDS MERGE LEFT(RIGHT) SIGN	HI	60" X 60"
W79	BICYCLE SYMBOL SIGN	HI	36" X 36"
W80	XING PLATE	HI	24" X 8"
W81	CHEVRON ALIGNMENT SIGN	HI	30" X 36"
R01	STOP SIGN	DG / VIP	30" X 30"
R01-3	4-WAY SIGN	HI	12" X 6"
R01-4	ALL WAY SIGN	HI	18" X 6"
R01-2	YIELD SIGN	DG	36" X 36"
R02	SPEED LIMIT SIGN	HI	24" X 30"
R02-4	ZONE AHEAD SIGN	HI	24" X 30"
R03	END SPEED LIMIT SIGN	HI	24" X 30"
R04	TRUCK SIGN	HI	36" X 16"
R05	PATROLLED BY AIRCRAFT SIGN	HI	54" X 36"
R06	MAXIMUM SPEED SIGN	HI	36" X 45"
R07	KEEP RIGHT (SYMBOL) SIGN	HI	24" X 30"
R07A	KEEP RIGHT (WORDS) SIGN	HI	24" X 18"
R10	ONE WAY (ARROW) SIGN	HI	48" X 18"
R10A	ONE WAY SIGN	HI	18" X 24"
R11	DO NOT ENTER SIGN	HI	36" X 36"
R11A	WRONG WAY SIGN	DG	36" X 21"
R13	NO TURN ON RED SIGN	HI	24" X 30"
R15	NO TURNS SIGN	HI	24" X 24"
R16	NO RIGHT TURN (SYMBOL) SIGN	HI	24" X 24"
R16B	NO LEFT TURN (WORDS) SIGN	HI	30" X 36"
R17	NO LEFT TURN (SYMBOL) SIGN	HI	24" X 24"
R17B	NO RIGHT TURN (WORDS) SIGN	HI	30" X 36"
R18	RT/LT LANE MUST TURN RT/LT SIGN	HI	36" X 36"
R19	NO LEFT OR U TURN SIGN	HI	24" X 30"
R20	WEIGHT LIMIT	HI	30" X 36"
R20A	WEIGHT LIMIT	HI	30" X 30"
R20B	NO TRUCK (SYMBOL) SIGN	HI	24" X 24"
R20D-1	TRUCK RESTRICTIONS SIGNS (WEIGHT)	HI	24" X 6"
R20D-2	TRUCK RESTRICTIONS SIGNS (# OF AXLES)	HI	24" X 6"
R20D-3	TRUCK RESTRICTIONS SIGNS (WIDTH)	HI	24" X 10"
R20D-4	TRUCK RESTRICTIONS SIGNS (LENGTH)	HI	24" X 10"
R21	BRIDGE SPEED/WEIGHT LIMIT SIGN	HI	36" X 30"
R23	NO FISHING FROM BRIDGE	HI	26" X 18"
R24	PARK PARALLEL SIGN	SE	12" X 18"
R25	PARK OFF PAVEMENT SIGN	SE	24" X 15"
R26	NO PARKING ANY TIME SIGN	SE	12" X 18"
R26(S)	NO STOPPING ANY TIME SIGN	SE	12" X 18"

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT, TRAFFIC DIVISION
TRAFFIC CONTROL DEVICES-SIZE STANDARDIZATION

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SE = SUPER ENGINEERING HI = HIGH INTENSITY DG = DIAMOND GRADE VIP = VISUAL IMPACT PERFORMANCE

SIGN CODE	SIGN DISCRPTION	REF. SHEET	COUNTY STANDARD SIZE
R26A	NO PARKING ANY TIME SIGN	SE	24"X30"
R26A(S)	NO STOPPING ANY TIME SIGN	SE	24" X 30"
R26B	NO PARKING HERE TO CORNER	SE	12"X18"
R26C	NO PARKING HERE TO CORNER	SE	24"X30"
R26D	NO PARKING SYMBOL SIGN	SE	24"X24"
R26E	SUPPLEMENTAL PLATE	SE	24" X VAR.
R26F	NO STOPPING FIRE LANE SIGN	SE	12" X 18"
R27	NO PARKING ON BRIDGE	SE	12" X 18"
R27A	NO PARKING ON BRIDGE	SE	24"X30"
R28	NO PARKING ANY TIME (ARROW) SIGN	SE	12"X18"
R28(S)	NO STOPPING ANY TIME (ARROW) SIGN	SE	12" X 18"
R28A	NO PARKING ANY TIME (ARROW) SIGN	SE	24"X30"
R28A(S)	NO STOPPING ANY TIME (ARROW) SIGN	SE	24" X 30"
R28B	NO PARKING VEHICLES OVER 6FT HIGH SIGN	SE	12" X 18"
R29	NO STOPPING/NO PARKING SIGN	SE	18" X 30"
R30	NO PARKING SIGN	SE	12" X 18"
R30A	NO PARKING (ARROW) SIGN	SE	12" X 18"
R31	NO PARKING/STOPPING SIGN	SE	14" X 20 1/2"
R31(S)	NO PARKING/STOPPING SIGN	SE	18" X 30"
R32	HOURLY PARKING SIGN	SE	12" X 18"
R32A	MINUTE PARKING SIGN	SE	12" X 18"
R32B	HOURLY/MINUTE PARKING SIGN (2 SIGNS)	SE	12" X 30"
R33	NO LEFT TURN HOURS SIGN	HI	24"X36"
R33A	NO LEFT TURN HOURS SIGN	HI	30"X54"
R34	NO U TURN (SYMBOL) SIGN	HI	24" X 24"
R34-2	NO LEFT OR U TURN SIGN	HI	30" X 30"
R34A	NO U TURN	HI	24" X 30"
R35	TRUCK ROUTE SIGN	HI	24" X 24"
R36	COMMERCIAL VEHICLES OVER TONS PROHIBITED SIGN	HI	24" X 24"
R37	TOW-AWAY/NO STOPPING/NO PARKING SIGN	SE	18" X 31"
R38	TOW-AWAY/NO PARKING/STOPPING SIGN	SE	14" X 20 1/2"
R38(S)	TOW-AWAY/NO PARKING/STOPPING SIGN	SE	18" X 31"
R40	TWO WAY TRAFFIC AHEAD SIGN	HI	24" X 30"
R41	RIGHT TURN ONLY SIGN	HI	30" X 36"
R42	LEFT TURN ONLY SIGN	HI	30" X 36"
R43	PEDESTRIANS PROHIBITED SIGN	HI	24" X 12"
R44A	BIKE PATH SIGN	HI	12" X 24"
R44B	BIKES/MOTOR-DRIVEN CYCLES MUST EXIT SIGN	HI	30" X 36"
R44C	BIKES MUST EXIT SIGN	HI	30" X 30"
R45	EMERGENCY PARKING ONLY SIGN	HI	48" X 36"
R47	\$1000 FINE FOR LITTERING SIGN	HI	52" X 36"
R48	SPEED CHECKED BY RADAR SIGN	HI	36"X36"
R48-1	RADAR ENFORCED	HI	12"X24"
R49	NO PED CROSSING-USE CROSSWALK SIGN	HI	36" X 18"
R50	TURNOUT 1/4 MILE SIGN	HI	30"X20"
R51	TURNOUT SIGN	HI	30"X12"
R52	SLOWER TRAFFIC USE TURNOUTS SIGN	HI	36"X30"
R53	TRUCK LANE FEET SIGN	HI	36"X48"
R53A	END TRUCK LANE SIGN	HI	36"X36"
R53B	TRUCKS RIGHT LANE ONLY SIGN	HI	36"X48"
R53C	TRUCKS USE RIGHT LANE SIGN	HI	36"X48"
R54	WAY SIGNAL SIGN	HI	24"X18"
R55	YIELD TO UPHILL TRAFFIC SIGN	HI	48"X54"
R56	SLOWER TRAFFIC KEEP RIGHT SIGN	HI	48"X60"
R61	LANE-USE CONTROL SIGN (2 LANES)	HI	45" X 45"
R61	LANE-USE SIGN (3 LANES)	HI	72" X 45"
R62A	PUSH BUTTON FOR WALK SIGNAL SIGN	HI	5" X 7 1/2"

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT, TRAFFIC DIVISION
TRAFFIC CONTROL DEVICES-SIZE STANDARDIZATION

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SE = SUPER ENGINEERING HI = HIGH INTENSITY DG = DIAMOND GRADE VIP = VISUAL IMPACT PERFORMANCE

SIGN CODE	SIGN DISCRPTION	REF. SHEET	COUNTY STANDARD SIZE
R62B	PUSH BUTTON FOR GREEN LIGHT	HI	5" X 7 1/2"
R62C	BIKE (SYMBOL) PUSH BUTTON FOR GREEN LIGHT SIGN	HI	5" X 7 1/2"
R62D	PUSH BUTTON FOR PED (SYMBOL) SIGN	HI	5" X 7 1/2"
R63	DO NOT PASS SIGN	HI	24" X 30"
R65	DO NOT STOP ON TRACKS SIGN	HI	24" X 30"
R67	TWO-WAY LEFT TRUN LANE (SYMBOL) SIGN	HI	30" X 36"
R68	PASSING LANE AHEAD SIGN	HI	52" X 42"
R70	TRUCKS OK SIGN	HI	96" X 70"
R72	WHEN CHILDREN ARE PRESENT SIGN	HI	36" X 18"
R73	LANE-USE CONTROL SIGN	HI	36" X VAR
R74	CHAIN INSTALLATION ONLY SIGN	HI	36" X 36"
R75	CHAINS REQUIRED MILE AHEAD SIGN	HI	48" X 42"
R76	CHAINS REQUIRED SIGN	HI	48" X 24"
R76-1	ON SIGNLE AXLE DRIVE VEHICLE W/TRAILER SIGN	HI	48" X 24"
R77	NO EXCEPTIONS SIGN	HI	48" X 12"
R78	END CHAIN CONTROL SIGN	HI	48" X 34"
R79	AUTOS AND PICKUPS SNOW TIRES OK SIGN	HI	48" X 30"
R80	4-W DRIVE WITH SNOW TIRES OK SIGN	HI	48" X 18"
R81	BIKE LANE SIGN	HI	12" X 8"
R81A	BEGIN BIKE LANE SIGN	HI	12" X 5"
R81B	END BIKE LANE SIGN	HI	8" X 5"
R95	NO BICYCLES (SYMBOL) SIGN	HI	18" X 18"
R95A	NO BICYCLES (WORDS) PLATE	HI	18" X 12"
R96	NO PEDESTRIAN (SYMBOL) SIGN	HI	18" X 18"
R96A	NO PED XING PLATE	HI	18" X 12"
R96B	USE CROSSWALK SIGN	HI	18" X 12"
R96C	PEDESTRIAN PROHIBITED PLATE	HI	18" X 9"
R98	DIVIDED HIGHWAY SIGN	HI	24" X 18"
R98A	DIVIDED HIGHWAY (THROUGH) SIGN	HI	24" X 18"
R99	HANDICAPPED PARKING ONLY (SYMBOL) SIGN	HI	12" X 18"
R100	SPECIAL PLACARD OR LICENSE PLATE REQUIRED SIGN	HI	12" X 6"
R100A	TOW-AWAY SPECIAL PLACARD OR LICENSE PLATE REQUIRED SIGN	HI	12" X 8"
R100B	PHYSICALLY HANDICAPPED TOW-AWAY SIGN	HI	18" X 24"
R101	PRIVATE ROAD/PRIVATE PROPERTY VEHICLE CODE ENFORCED SIGN	HI	36" X 24"
R102	HAZARDOUS WASTE PROHIBITED (SYMBOL) SIGN	HI	24" X 24"
R102A	HAZARDOUS WASTE PROHIBITED PLATE	HI	24" X 18"
R103	HAZARDOUS WASTE PERMITTED (SYMBOL) SIGN	HI	24"X24"
R103A	HAZARDOUS WASTE PERMITTED PLATE	HI	24"X18"
R104	HAZARDOUS MATERIAL PROHIBITED (SYMBOL) SIGN	HI	24"X24"
R104A	HAZARDOUS MATERIAL PROHIBITED PLATE	HI	24"X18"
R105	HAZARDOUS MATERIAL PERMITTED (SYMBOL) SIGN	HI	24"X24"
R105A	HAZARDOUS MATERIALS PERMITTED PLATE	HI	24"X18"
M03	WHITE GUIDE MARKER TAPE	DG	3"X12"
WK	YELLOW OBJECT MARKER (HORIZONTAL) TAPE	DG	15"X6"
WL	YELLOW OBJECT MARKER (VERTICAL) TAPE	DG	3"X12"
WN	OBJECT MARKER	HI	18"X18"
CW7R	SNOW NOT REMOVED BEYOND THIS POINT	HI	30"x30"
CW9R	ROAD NOT MAINTAINED by san bernadino co.	HI	24"x24"
CW11R	CAUTION THIS ROAD SUBJECT TO FLASH FLOOD	HI	36"x36"
CW15R	WATCH FOR BIKES	HI	30"x30"
CW16R	GOLF CARTS	HI	30"x30"
CW19R	injury	HI	36"x30"
CR3R	CHAINS REQUIERED beyond this point	HI	30"x24"
CR4	NO PARKING 8AM TO 5PM SCHOOL DAYS ONLY	SE	12"x18"
CR5R	NO PARKING LOADING ZONE	SE	12"x18"
CR6R	NO PARKING HERE TO CORNER	SE	12"x18"
CR7R	NO PARKING BETWEEN SIGNS	SE	12"x18"

TRAFFIC CONTROL DEVICES-SIZE STANDARDIZATION

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SIGN CODE	SIGN DISCRIPTION	REF. SHEET	COUNTY STANDARD SIZE
CR9R	KEEP OFF S.B.COUNTY FLOOD CONTROL	SE	18"x18"
CR10R	THROWING SNOWBALLS or other OBJECTS AT VEHICLES PROHIBITED BY LAW	HI	36"x42"
CR11	DUMPING PROHIBITED \$600 fine or 6 mo. in jail or both	HI	24"x15"
CR12	NO EXCAVATION BEYOND THIS SIGN	HI	20"x20"
CR13	NO LITTERING ALLOWED \$100 REWARD	HI	30"x36"
CR14	VEHICLES BLOCKING SNOWPLOWS WILL BE TOWED AWAY	HI	36"x42"
CR14A	MAX. FINE \$250	HI	36"x12"
CR15	TOW AWAY ZONE	HI	12"x12"
CR16	NO PARKING COMMERCIAL VEHICLES 5 TONS GROSS WEIGHT OR OVER	SE	18"x24"
CR17	GOLF CARTS ALLOWED ON STREET PER C.V.C. 21115	HI	30"x30"
CR30	NO SHOOTING NO TRESPASSING violators will be prosecuted	HI	36"x30"

STANDARDS AND SPECIFICATIONS FOR TREE PLANTING

1. ACCEPTABLE TREE SPECIES:

The following list of recommended tree species is composed of trees that exhibit a combination of some of the following characteristics:

- a) Longevity
- b) Cleanliness
- c) Disease and insect resistance
- d) Strong branching habits
- e) Adaptability to soil and climate
- f) Availability in the local nurseries

1.1* SMALL TREES

Albizia julibrissin - Silk Tree
Callistemon citrinus - Lemon Bottlebrush
Callistemon viminalis - Weeping Bottlebrush
Cupaniopsis anacardioides - Carrotwood
Lagerstroemia indica - Grape Myrtle
Pistacia chinensis - Chinese Pistachio
Schinus terebinthifolius - Brazilian Pepper
Tristania conferta - Brisbane Box

1.2* LARGE TREES

Ceratonia siliqua - Carob Tree (Male Only)
Cinnamomum camphora - Camphor Tree
Ginkgo biloba - Maidenhair Tree
Jacaranda acutifolia - Jacaranda (Permissible only where temperature stays above 25°F.)
Liquidambar styraciflua - Sweet Gum
Uriodendron tulipifera - Tulip Tree
Pinus canariensis - Canary Island Pine
Quercus agrifolia - California Live Oak
Quercus ilex - Holly Oak
Quercus suber - Cork Oak
Eucalyptus sideroxylon - Red Iron Bark

- * See "Note" on attached "Tree Planting Examples" sketch for permissible location. Any deviation from these specified locations shall require prior written approval of the County Service Area and the installation (in accordance with specifications of the "Deep Root Corporation") of a "Deep Root Control Planter" or approved equal.

2. PLACEMENT REQUIREMENTS

- 2.1 A minimum of 72-hour notification shall be given the County Service Area prior to the initial installation of parkway trees for approval of species, material quality and planting supervision. A 24-hour notice shall be given prior to all subsequent inspections as required.
- 2.2 Parkway trees shall be planted as shown on the attached "Tree Planting Example," i.e. (a) cul-de-sac lots and lots 60' frontage - one tree; (b) interior lots, 60'± frontage (typical) - one tree, 100'± frontage (typical) - two trees; (c) corner lots - three trees. All trees when established shall be trimmed so that same shall not encroach upon the sidewalk or street in such a manner so to impede or interfere with vehicle or pedestrian traffic thereon or obstruct the passage of light from any streetlight to the street or sidewalk.

PLACEMENT REQUIREMENTS (continued):

- 2.3 Relative position of parkway trees is subject to approval by the County Service Area and any tree not properly placed will be relocated at no cost to the County. The selection and location of any such trees shall be such as to preclude any damage to adjacent curb, gutter, sidewalk, walls or other concrete structures from the presence of these trees. No trees shall be planted within public right of way or easement unless previous watering and maintenance arrangements have been made guaranteeing the tree or trees for no less than one year or until premises are occupied. Tract development improvement plans shall note when trees are required. Likewise in any commercial or industrial zone, consideration of tree planting proposals to be incorporated in landscaping of the site may be requested in writing, to be accompanied by a site plan and/or planting diagram.

In the interest of public safety, trees shall be kept not less than:

- a) 25 feet back of beginning of curb returns at intersections.
 - b) 10 feet from lamp standards.
 - c) 10 feet from fire hydrants.
 - d) 10 feet from service walks or driveways.
 - e) 10 feet from meters.
- 2.4 Trees shall have a minimum caliper of 1" trunk diameter measured 12" above the base and a minimum container size of fifteen gallon. Plants shall be symmetrical, typical for variety and species, healthy, vigorous, free from plant disease, insect pests and shall have healthy, normal root system free from being root bound. Trees shall not be pruned or topped prior to delivery.

Inspection: All plant material shall be subject to inspection and approval by the County Service Area prior to planting. The County Service Area has the right to reject any item offered.

3. PARKWAY TREE PLANTING OPERATIONS:

- 3.1 Planting pits for trees shall be dug a minimum of twice the diameter of the plant ball and 1-1/2 times the height. The soil at the bottom of the planting pit shall be loosened and refirmed before the tree is placed in it.
- 3.2 A thoroughly prepared "backfill mix" shall be used in the bottom of the planting pit and around the root ball when the tree is being planted. The following backfill mix is to be used for all trees:

Amounts per cubic yard:

- 2/3 cu. yd. on-site soil
- 1/3 cu. yd. organic amendment (i.e. nitro humus)
- 1 lb. Iron Sulphate
- 2 lb. 6-20-20 commercial fertilizer

PARKWAY TREE PLANTING OPERATIONS (continued)

- 3.3 Plants shall be set in center of pit, in vertical position, so that crown of ball will be level with finish grade after allowing for watering and settling and shall bear the same relationship to finish grade that it did to soil surface in original place of growth.
- 3.4 A water basin capable of holding 10 gallons of water shall be prepared. Trees shall be adequately watered in during planting.
- 3.5 If houses are not occupied, trees shall be watered one week later. Thereafter, watering shall be done at one week intervals by the developer for 90 days after acceptance of the tract and until 80% of the housing units are occupied.
- 3.6 Each tree must be properly supported by a single lodgepole stake or other material located in the hole from which the nursery stake was removed, and approved by the County Service Area. Each stake shall be treated with copper naphthanate and shall be a minimum of ten feet in length. ~~All trees shall also be staked at time of planting by placing stake in prepared hole and driving stake a minimum of 18 inches into soil below bottom of planting pit.~~
- 3.7 All trees shall be secured to stakes on the windward side by three (3) cinch ties (one in the center of the stake measured above the ground line, one 12" below the top of stake and one 12" above ground line) tied in a figure 8 and firmly stapled or nailed to the tie.
- 3.8 Prior to installation of trees, a permanently installed and operable irrigation system shall be designed and constructed by the Developer/ Contractor to the satisfaction of the County Service Area for any perimeter planting outside block walls, in median areas, or in locations where the property owner cannot easily provide maintenance.

4. GUARANTEES:

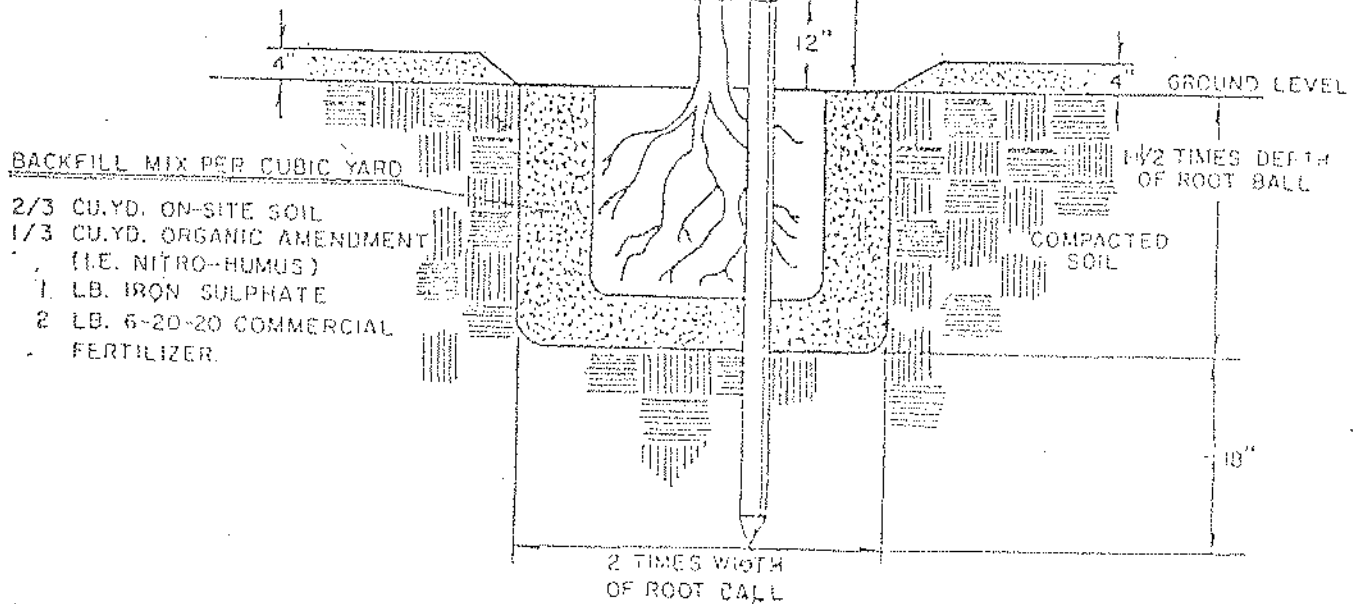
- 4.1 The Contractor/Developer shall guarantee trees for a minimum of one year after acceptance of newly developed tracts and until 80% of the housing units are occupied. After acceptance, the County Service Area shall assume responsibility for the maintenance of all trees, including trimming, removal, replacement thereof throughout such planted areas. Watering shall become the responsibility of the homeowner upon occupancy.
- 4.2 Trees not installed according to the requirements or that fail to grow or any trees that are injured or damaged during planting operations, or previously existing trees now damaged or dead, shall be removed and replaced by the Developer at his own expense within 15 days after notification by County Service Area. Replacement plant materials shall be guaranteed and specified as were the original trees.

GUARANTEES (continued):

- 4.3 County Service Area responsibility shall include repair of such items as damage to pavement, curb and gutter or sidewalk resulting from the presence of such trees, or from excess irrigation waters discharged onto an improved roadway.
- 4.4 Additionally, the County Service Area shall hold the County Transportation Department free and harmless of any liabilities, claims etc. resulting from such tree planting activities; and shall carry Public Liability and Property Damage insurance naming the County Transportation Department as an insured party in protection from above possible liabilities. This shall include the maintenance and repair of sidewalks damaged by such activities.

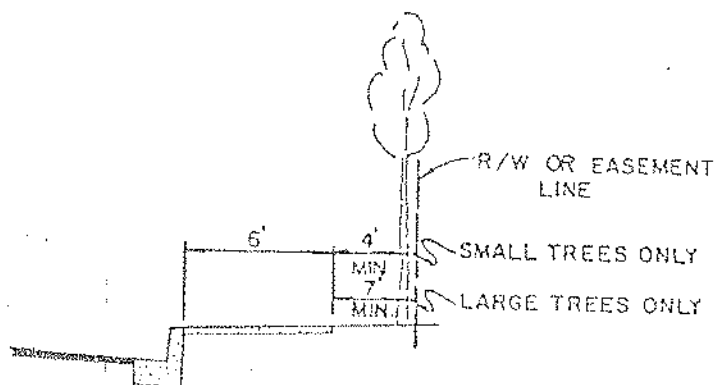
NOTE:

1. CINCH TIES SHALL BE TIED IN A FIGURE '8' AND STAPLED OR NAILED SECURELY TO BACK OF STAKE.
2. NURSERY STAKE SHALL BE REMOVED AND REPLACED BY TREATED LODGE-POLE STAKE. NEW STAKE SHALL REPLACE OLD STAKE IN THE SAME LOCATION TO AVOID DISTURBING ROOT-BALL.



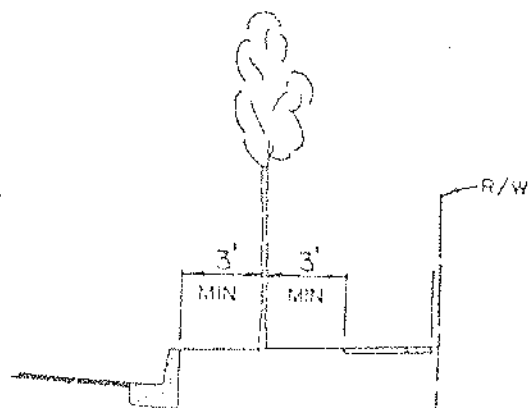
PLANTING DETAIL

NO SCALE



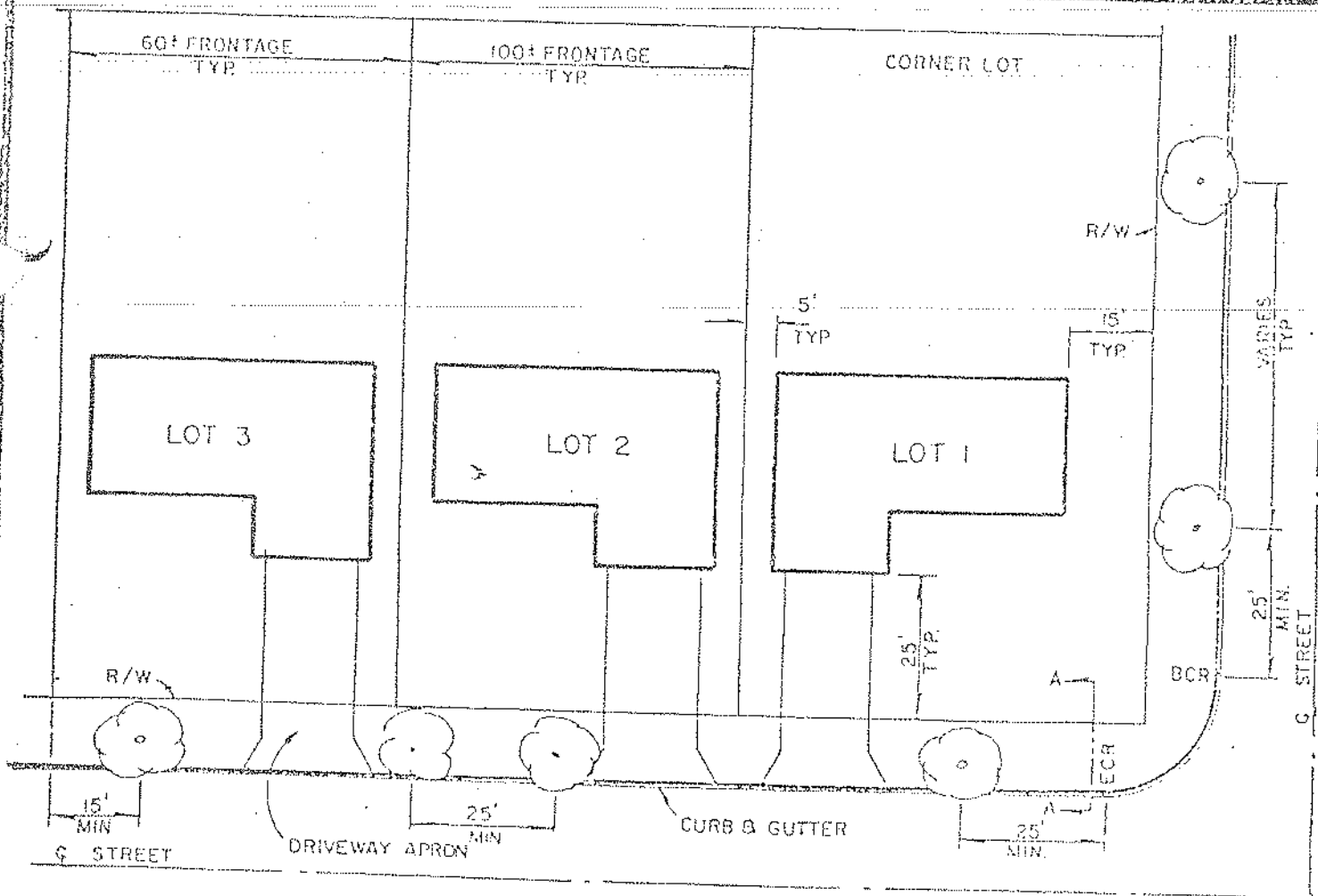
* NOTE: LARGE TREES AND SMALL TREES ARE PERMISSIBLE AT LOCATION SPECIFIED ABOVE.

SECTION A-A



* NOTE: SMALL TREES ONLY
ARE PERMISSIBLE

* SEE APPROVED LIST ON PAGE 1



TREE PLANTING EXAMPLES

NO SCALE

County of San Bernardino
BUILDING / D SAFETY

Owner Name KAWENC No. B200400911 Occup GRAD Plan Reviewer PANOML Date 2-18-04

- ☐ PLANS APPROVED AS MODIFIED BY THIS SHEET.
☐ PLANS NOT APPROVED. Correct tracings, reprint and resubmit three (3) new sets together with marked up sets and all documents. Failure to return the marked up drawings may result in additional plan review fees.
☐ Resubmit plans with requested information and documents.

Correction No.	Plan Sheet No.	CORRECTIONS REQUESTED
1		PROVIDE PROOF THAT ALL EASEMENTS HAVE BEEN RECORDED
2		PROVIDE PROOF OF OWNERSHIP OF ALL LOTS WITH PROPOSED GRADING
3		PROVIDE OFF-SITE GRADING LETTERS FOR LOTS 22 THRU 32
4		PROVIDE PROOF OF SLOPE EASEMENT RECONSTRUCTION / DETAIL THE DRAWINGS
5		PROVIDE PROOF OF 20' DEDICATION ON SOUTH SIDE OF PROPOSED STREET
6		DETAIL FINISH CONTOURS & ALL GRADING
7		PROVIDE & FOR ALL DRAINABLE FACILITIES, DETAIL THE DRAWINGS WITH ALL REQUIRED DRAINABLE STRUCTURES / FEATURES / FACILITIES, SUBMIT DRAINAGE DRAWINGS TO COUNTY TRANSPORTATION DEPARTMENT SECTION FOR REVIEW.
8		PROVIDE DRAWINGS ARE DETAILED WITH A FLOW DIAGRAM WITH DRAINAGE ARROWS
9		PROVIDE FIRE DEPT CRITERIA FOR ROADBED CONSTRUCTION TO INCLUDE WIDTH AND STRUCTURAL SECTION OF SIDEWALKS

County of San Bernardino
BUILDING D SAFETY

Owner Name KANFAN No. B200400911 Occup. GRAD Plan Reviewer RAWONAL Date 2-13-01

- ☐ PLANS APPROVED AS MODIFIED BY THIS SHEET.
☐ PLANS NOT APPROVED. Correct tracings, reprint and resubmit three (3) new sets together with marked up sets and all documents. Failure to return the marked up drawings may result in additional plan review fees.
☐ Resubmit plans with requested information and documents.

Correction No.	Plan Sheet No.	CORRECTIONS REQUESTED
10		SPECIFY QUANTITIES OF ROADWAY EXCAVATION (CUT/FILL)
11		PLAINE SECTION DRAINAGES AT MINIMUM OF 50' STATIONING, SHOW EXISTING AND PROPOSED GRADES
12		SPECIFY THE GRADES OF ALL PROPOSED CUT AND FILL SLOPES.
13		DETAIL DRAINAGES TO SHOW COMPLIANCE WITH CBC APPENDIX C33, SPECIFICALLY SECTIONS 3312 THRU 3318
14		SECTION DRAINAGES SUBMITTED INDICATE DRAINAGE OVER SLOPE FACE. DRAINAGE IS NOT PERMITTED TO SHEET FLOW OVER GRADED SLOPES STEEPER THAN 5:1. PROVIDE A SWALE OR GULLY TO DIRECT DRAINAGE TO AN APPROVED DRAINAGE (SEE CORRECTIONS 7 & 8)
15		PROVIDE THAT DRAINAGES INDICATE THE EXISTING CONTOURS FOR A MINIMUM OF 40' HORIZONTALLY FROM THE TOPS OF ALL CUT SLOPES TO DETERMINE IF INTERCEPTAL DRAINS PER CBC SECT APPENDIX 3315.5 ARE REQUIRED.
16		UPON DETERMINATION OF GRADING SITE BOUNDARIES (SEE CORRECTION #4) DETAIL THE DRAINAGES TO SHOW THE TOP OF CUT SLOPES SET BACK FROM THE SITE BOUNDARIES PER CBC SECT APPENDIX 3314.2 (10' 1/5 H, MIN 2' MAX 10' INCREASED)

County of San Bernardino

K. Auer

No.

B200400911

Occupational Safety and Health Plan Reviewer

Date 2/25/04

- ☐ **PLANS APPROVED AS MODIFIED BY THIS SHEET.**
☐ **PLANS NOT APPROVED.** Correct tracings, reprint and resubmit the marked up drawings may result in additional plan review fees.
☐ Resubmit plans with requested information and documents.

Correction No.	Plan Sheet No.	CORRECTIONS REQUESTED
16 CONT		AS REQD FOR INTERSECTION DRAWS)
17		PROVIDE THAT DRAWINGS SHOW THE LENGTHS AND STATIONING OF TRANSITIONAL PAVED PAVED SECTIONS FOR DRAINAGE CONTROL (IE WHERE CROWN SECTIONS TRANSITION TO TILT OR SUPERELEVATION SECTIONS, ETC.)
18		PROVIDE PROFILE DRAWINGS OF ALL GRADED OR IMPROVED DRAINAGE FACILITIES
19		COMPLY WITH ALL CIRCLED ITEMS ON GRADING PLAN CORRECTION SHEET (ATTACHED)



County of San Bernardino-Public Works Group
Architecture, Building and Engineering Department
BUILDING AND SAFETY DIVISION

4/4



GRADING PLAN CORRECTION SHEET

Owner KANEU Engineer _____ Phone _____
Reviewed by RANDAU Permit Number B2W 4 00911 Date 2-18-04
Type of Grading: ☐ Engineered ☐ Regular UAC cu.yards APN/Tract _____

☐ Approved as corrected by circled items on this sheet and notes on plan.

☒ Corrections requested. Return this plan with corrected plans for final approval.

1. Plan shows off-site grading. Submit notarized letter(s) of permission from the property owners involved. Separate grading permit(s) are required if not under the same ownership.
2. Walls require submittal and approval with the grading plan. Submit permit application and design.
3. Transportation Department permit is required for any construction, temporary or permanent, on County right of way or for use of County maintained roads by overload equipment.
4. Comply with attached request from the Surveyor's Office-Land Development Division.
5. Comply with attached request from the Planning Department.
6. Submit a preliminary soils investigation report.
7. Submit an engineering geology report.
8. Show the following circled items as general notes on the plans:
 - (a) "The undersigned civil engineer accepts the responsibility for professional inspections in accordance with Section 3317 of the Uniform Building Code (U.B.C.)" (must be signed and dated). The civil engineer also shall be responsible for the preparation of revised plans and the submission of as-graded grading plans upon completion of the work.
 - (b) "The grading contractor shall submit a statement of compliance to the as-built plan."
 - (c) "Proposed starting date of grading _____; completion _____". Any grading operations between October 1 and April 15 will require submittal of temporary drainage and erosion control plans for review and approval. The control devices shown on said plans must be installed not later than November 1 and be maintained in operable condition until April 15.
 - (d) "Engineer must set grade stakes for all drainage devices. The contractor shall obtain all necessary inspections before pouring."
 - (e) "No fill to be placed until preparation of the original ground is approved."
 - (f) "No rocks greater than 12 inches in diameter may be placed in fill."
9. For compacted fill, specify on the plan:
 - (a) Method of preparing natural ground.
 - (b) Foundation bearing value desired.
 - (c) All fills shall be compacted to a minimum of 90% of maximum density.
 - (d) Number of tests to be made (1 test for each 2 feet of fill or each 1,000 cubic yards, whichever is greater).
 - (e) Placing and compacting methods. Thickness of layers, equipment used, etc.
 - (f) A description of the fill material and San Bernardino County approved borrow location(s).
10. Submit a compaction test report and obtain approval prior to foundation inspection.
11. Indicate on plan that the inspector is to be contacted to schedule a site pre-grading meeting 48 hours prior to start of grading.
12. Fill may not be placed on existing terrain which slopes greater than 2:1.
13. Hold (top) (toe) of slope _____ feet from (property line) (building location).
14. Slope of proposed fill banks to be no steeper than 2 horizontal to one vertical.
15. Slope of proposed cut banks to be no steeper than 2.
16. Drainage is not permitted to sheet over graded slopes steeper than 5:1. Flatten slope or direct drainage to a paved downdrain or other approved location.
17. Provide a berm and swale at the top of all slopes.
18. Provide a paved interceptor drain (12 inches deep by 30 inches wide) at the top of cut slopes.
19. Draw top and toe of slopes to scale.
20. Existing terrain sloping 5:1 or greater must be benched to support fill. Show details of benching.
21. Specify cut and fill slopes to be planted with an approved ground cover. Slopes are to be planted and ground cover growing prior to occupancy of building(s).
22. Show buttress fill locations, details and calculations based on safety factors of 1.5.
23. For slopes over 30 feet high, provide 6-foot wide terrace (5 foot paved) at 30 foot vertical intervals.
24. Show flow line elevations for paved terrace swales so that a 5% minimum slope is provided.
25. Downdrains shall be provided for every 13,500 sq.ft. of projected area of slopes.
26. Provide detail of transition structures for drains where grade changes from steep to relatively flat slope. Access is required at closed drains where grade changes.
27. Provide velocity reducer (rip-rap) at lower end of downdrain(s). Show detail.
28. Paved drainage devices must be of 3 inch minimum concrete or gunite reinforced with 6x6 10/10 wire mesh. Show detail.
29. Show locations, dimension and details of splash walls.
30. Show proposed drainage pattern of graded areas.
31. Show finish elevations at lot corners and graded areas. _____% minimum slope.
32. Show typical lot drainage and side swale details.
33. Cross lot drainage not allowed.
34. Specify location of San Bernardino County approved borrowed/disposal site or submit a reclamation plan to the County Mining Engineer for plan review. Site approval will be required.
35. Specify locations and show grades for all handicap access requirements, i.e.: parking, curb ramps, walkways, ramps, etc.
36. This project requires a Vector Control Survey. Contact Department of Environmental Health Services for requirements. Submit proof of compliance.
37. In the absence of a soils report where a daylight line (the transition from cut to fill) passes through a building pad or pool, the cut portion shall be excavated by at least 18" below the bottom of the footing. The fill shall be rebuilt as compacted fill in order to provide the same material and compaction methods under the entire building pad.

PROVIDE ALL FIRE DEPT CRITERIA FOR ROADDED CONSTRUCTION
IF MORE RESTRICTIVE THAN ABOVE - INCLUDE AS NOTES
ON DRAWINGS / OR DETAIL DRAWINGS AS APPROPRIATE.

SECONDARY KEY SELECTION

RETRIEVE TRANSACTION: PLAN REVIEW

OPTION: TRX: 6PV KEY: 3010100103135R0102

SELECTION: *** ENTER A SELECTION NUMBER FROM THIS SCREEN ***

	SEQ	LOC	ACTIVITY	DATE	COMMENT	EMPL
1	0001	302	RPLAN	06/12/01		S3356
2	0002	302	PPRC	06/26/01	P/U BY BILL ROGERS	H1749
3	0003	302	RESUBPR	06/28/01		S3356
4	0004	302	PPRC	07/10/01		S3356
5	0005	302	CPLAN	08/22/01		R0122
6	0006	302	NAPPL	08/22/01		A7280
7	0007	302	PPRC	08/23/01	P/U BY OWNER	A7280
8	0008	302	RESUBPR	04/03/02		S3356
9	0009	302	CPLAN	04/29/02		R0122
10	0010	302	PPRC	04/29/02		H1749
11	0011	302	RESUBPR	09/25/02		H1749
12	0012	302	CPLAN	11/14/02		R0122
13	0013	302	PPRC	11/18/02	P/U BY BILL ROGERS	H1749

County of San Bernardino
BUILDING AND SAFETY

Owner Name ROBERTS No. 301 01 103 135 A01 Occup. GRAD Plan Reviewer RAM PAUL Date 4/29-0

☐ PLANS APPROVED AS MODIFIED BY THIS SHEET.

☒ PLANS NOT APPROVED. Correct tracings, reprint and resubmit three (3) new sets together with marked up sets and all documents. Failure to return the marked up drawings may result in additional plan review fees.

☒ Resubmit plans with requested information and documents.

Correction No.	Plan Sheet No.	CORRECTIONS REQUESTED
1		SUBMITTED DRAWINGS INDICATE ROAD BED AND SLOPE GRADING OUTSIDE OF THE RIGHT OF WAY AS DETAILLED ON THE TRACT MAP. PLEASE SUBMIT DRAWINGS TO THE SAN BERNARDINO COUNTY DEPT. OF PUBLIC WORKS FOR REVIEW AND APPROVAL OF THE PROPOSED CONSTRUCTION INCLUDING DRAINAGE DESIGN.
2		PLEASE DETAIL THE DRAWINGS WITH THE IMPROVEMENT LEVEL AND REQUIREMENTS AS DIRECTED BY S.B. COUNTY DEPT. OF PUBLIC WORKS
3		SUBMIT DRAWINGS TO S.B. COUNTY SPECIAL DISTRICTS DEPT. FOR REVIEW AND APPROVAL
4		PLANS SHOW OFF-SITE GRADING - SUBMIT WITHIN 14 DAYS OF PERMISSION FROM THE PROPERTY OWNERS INVOLVED
5		PROVIDE PAVE N. OVERLAP FOR THE LOTS THAT HAVE PROPOSED GRADING
6		PROVIDE A GEOTECHNICAL INVESTIGATION REPORT GRADABLE AND DRAINAGE THAT A CUT SLOPE STEEPER THAN 2:1 (AS DETAILLED) WILL BE STABLE AND NOT CAUSE A HAZARD TO PUBLIC OR PRIVATE PROPERTY
7		DRAWINGS INDICATE FINISH FILL SLOPE FACES OF 1 1/2 H TO 1 V. PLEASE COMPLY WITH CBC SECT 3313.5 (FILL SLOPE SURFACES MAX 2 H TO 1 V.)
8		DRAWINGS INDICATE FILL PLACEMENT ON SLOPES STEEPER THAN 2 H TO 1 V. PLEASE COMPLY WITH CBC SECT 3313.2 (FILL SLOPES SHALL NOT BE CONSTRUCTED ON SLOPES STEEPER THAN 2 H TO 1 V.)

County of San Bernardino

10642

No. 30101103 135A21

Occup. City Plan Reviewer

Date 6-29-02

☐ PLANS APPROVED AS MODIFIED BY THIS SHEET.

☒ PLANS NOT APPROVED. Correct tracings, reprint and resubmit. **DO NOT PROCEED BY THIS SHEET.**

marked up drawings may result in additional plan review fees.

☒ Resubmit plans with requested information and documents.

Correction No.	Plan Sheet No.	CORRECTIONS REQUESTED
9		UPON DETERMINATION OF GRADING SITE BOUNDARIES (SEE CORRECTION #1) DETAIL THE DRAINAGE TO SHOW THE TOP OF CUT SLOPES SET BACK FROM THE SITE BOUNDARIES PER CAC SECT 3314.2 ($\frac{1}{5}H$, MIN 2', MAX 10', INCREASED AS REQD FOR INTERCEPTOR DRAINS). ALSO DETAIL THE TDE OF FILL SLOPES PER CAC SECT 3314.3 ($\frac{1}{2}H$, MIN 2', MAX 20')
10		PROVIDE THAT THE DRAINAGE INDICATE THE EXISTING CONTOURS FOR A MINIMUM OF 40' HORIZONTALLY FROM THE TOPS OF ALL CUT SLOPES TO DETERMINE IF INTERCEPTOR DRAINS PER CAC SECT 3315.5 ARE REQUIRED
11		SECT DRAWING AT STA 9+50 INDICATES DRAINAGE OVER THE SLOPE FACE. DRAINAGE IS NOT PERMITTED TO SHEET FLOW OVER GRADED SLOPES STEEPER THAN 5:1 PROVIDE A SWALE OR BERM TO DIRECT DRAINAGE TO A PAVED DOWNDRAIN
12		PLEASE SHOW THE DESIGN AND FULLY DETAIL THE CONCRETE DRAINAGE STRUCTURE (SHOWN IN SECT DRAWING AT STA 10+00
13		COMPLY WITH ALL CIRCLED ITEMS ON THE ATTACHED GRADING PLAN CORRECTION SHEET"

CHECK LIST
OCTOBER, 1989

SAN BERNARDINO COUNTY TRANSPORTATION
DEPARTMENT

Standards and Specifications

Your Standards and Specifications Book should contain the following sheets in the order listed below. This list is correct as of the date shown in the upper right hand corner.

STANDARD SPECIFICATIONS

Sheet

Sheet

Index	19-1
1-1	19-2
1-2	24-1
2 and 3-1	24-2
4-1	25-1
5-1	26-1
6-1	26-2
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	73-2

IMPROVEMENT PLAN CHECK LIST

Sheet

1
2
3
4

COUNTY OF SAN BERNARDINO
TRANSPORTATION DEPARTMENT
STANDARD SPECIFICATIONS

For construction of County Roads to be accomplished
under the provisions of a County Transportation Department permit.

C O U N T Y O F S A N B E R N A R D I N O
T R A N S P O R T A T I O N D E P A R T M E N T

I N D E X

STANDARD SPECIFICATIONS

SECTION 1.	DEFINITIONS AND TERMS
SECTION 4.	SCOPE OF WORK
SECTION 5.	CONTROL OF WORK
SECTION 6.	CONTROL OF MATERIALS
SECTION 7.	LEGAL RELATIONS AND RESPONSIBILITY
SECTION 8.	PROSECUTION AND PROGRESS
SECTION 9.	MEASUREMENT AND PAYMENT
SECTION 10.	DUST CONTROL
SECTION 15.	EXISTING HIGHWAY FACILITIES
SECTION 19.	EARTHWORK
SECTION 24.	LIME TREATMENT
SECTION 25.	AGGREGATE SUBBASES
SECTION 26.	AGGREGATE BASE
SECTION 38.	ROAD MIXED ASPHALT SURFACING
SECTION 39.	ASPHALT CONCRETE
SECTION 51.	CONCRETE STRUCTURES
SECTION 66.	CORRUGATED METAL PIPE
SECTION 73.	CONCRETE CURB, SIDEWALKS AND DRIVEWAYS

COUNTY OF SAN BERNARDINO
PUBLIC WORKS AGENCY
SURVEYOR DEPARTMENT
LAND DEVELOPMENT DIVISION

STANDARDS & SPECIFICATIONS
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Examples: Final Maps/Title Sheet
Final Maps/Map Sheet
Parcel Map
Certificate of Correction

STANDARD SPECIFICATIONS

The work shall be done in accordance with the current Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, Division of Highways, insofar as the same may apply and in accordance with the Standard Specifications of the San Bernardino County Transportation Department.

These Standard Specifications cover the usual construction requirements for work specified on a County Transportation Department permit; however, in the event it is determined that the specific work to be done is of such a nature that the method of construction, type and/or kind of material is not defined by the Standard Specifications, such work shall be performed in accordance with Special Provisions prepared for the specific work and made a part of the approved plans.

Section numbers in these County Transportation Department Standard Specifications correspond with like numbered sections in the State Standard Specifications. (All sections of the State Standard Specifications will govern except those sections specifically modified herein.)

SECTION 1. DEFINITIONS AND TERMS

1(a) General - State Specifications

Whenever in the State Standard Specifications the following terms are used, they shall be understood to mean and refer to the following:

1. "Department of Transportation", "Department", "Division of Highways", or "Division" shall be construed to mean San Bernardino County Transportation Department.
2. "State Highway Engineer" or "Engineer" shall be construed to mean the County Director of Transportation acting either directly or through properly authorized agents, engineers, assistants, inspectors and superintendents, acting severally within the scope of the particular duties delegated to them.
3. "Contractor" shall be construed to mean the agency or individual doing the work and furnishing the materials herein discussed or the agency or individual securing a County Transportation Department permit to do work on or improve a portion of County right of way.
4. "Attorney General" shall be construed to mean the San Bernardino County Board of Supervisors.
5. "Plans"--Those construction plans prepared under the direction of the County Director of Transportation or a Registered Civil Engineer and approved by the County Director of Transportation or an authorized assistant. San Bernardino County Transportation Department Standard Drawings are to be included in this category.

1(b) General - San Bernardino County Specifications

Whenever in these San Bernardino County Transportation Department Standard Specifications the following terms are used, they shall be understood to mean and refer to the following:

1. "Standard Specifications" shall be construed to mean the State of California, Business and Transportation Agency, Department of Transportation current Standard Specifications.
2. "Subdivider" shall be construed to mean a person, firm, corporation partnership, or association who proposes to divide, divides or causes to be divided any real property into a subdivision for himself or for others.

SECTION 1. DEFINITIONS AND TERMS (Continued)

1(b) General - San Bernardino County Specifications (continued)

3. "Testing Laboratory" shall be construed to mean a Materials Laboratory where all reports submitted to the Transportation Department shall be prepared by or under the supervision of a Civil Engineer, registered in the State of California.
4. "Private Engineer" shall be construed to mean a Civil Engineer, registered in the State of California employed by a Subdivider or Developer to prepare road improvement plans.

SECTIONS 2 AND 3

Sections 2 and 3 of the Standard Specifications are not applicable.

SECTION 4. SCOPE OF WORK

4(a) General

The scope of the work shall be set forth in the special provisions, the improvement plans, these County Transportation Department Standard Specifications and Drawings and the Standard Specifications.

4(b) Precedence

1. Special Provisions (County Approved).

2. Improvement Plans (County Approved)

3. ~~County Transportation Department Standard Specifications and Drawings.~~

4. Standard Specifications.

4(c) Extra Work

When any Extra Work is performed the County shall not be held liable for payment of such work and the Standard Specifications shall not be construed to imply that additional compensation is to be provided for such extra work.

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SECTION 5. CONTROL OF WORK

5(a) General

The work to be performed under these County Transportation Department Standard Specifications shall be controlled in accordance with the provisions in Section 5 of the Standard Specifications and as hereinafter specified.

5(b) Lines and Grades

Where construction plans have been prepared by other than the County Director of Transportation's staff, all lines and grades will be set and established under the direction of the Private Engineer who prepared the plans or an engineer or surveyor acting on his behalf.

1. Adequate stakes shall be set by the Private Engineer to enable the contractor to construct the work to the plan grades.
2. Stakes shall not be destroyed until the work has been reviewed by the County Transportation Department Inspection Personnel.
3. Sub-grade stakes, driven to the pavement sub-grade elevation, shall be set by the contractor or private engineer. The stakes shall be set at all hinge, edge of pavement and crown points within 0.01 foot of sub-grade elevation and at not more than 50 foot intervals. Additional stakes may be needed at warped or vertical curve areas. Sub-grade stakes shall be in place prior to paving to permit spot checking of sub-grade by inspection personnel.

SECTION 6. CONTROL OF MATERIALS

6(a) General

The materials to be furnished under these specifications shall be controlled in accordance with the provisions of Section 6 of the Standard Specifications and as hereinafter specified.

6(b) Testing

Testing of materials shall be in accordance with the schedule in Section 6(d).

Written reports of these tests and a plat showing locations shall be submitted by the Testing Laboratory to the Construction Inspection Section of the Transportation Department prior to proceeding with the next construction operation.

6(c) Certificates of Compliance

If other manufactured products are used which are not listed in Section 6(d), a Certificate of Compliance from the manufacturer may be provided to verify quality of materials unless otherwise required by the plans.

SECTION 6. CONTROL OF MATERIALS (Continued)

6(d) REQUIRED CONSTRUCTION TESTING & SAMPLING
FREQUENCY AND LOCATION

Material	Test For	Test No.	Frequency and Location
Embankment	Relative Compaction	Calif. 231*	Varying depths of fill area per (1000) one thousand cubic yards
Trench or Structure Backfill	Relative Compaction	Calif. 231*	Approx. 250' interval and at varying depths and on 20% of utility laterals
**Basement Materials	Relative Compaction	Calif. 231*	Approx. 500' interval
Class II Aggregate Base	Relative Compaction	Calif. 231*	Approx. 500' interval
	***Sieve Analysis	Calif. 202	Approx. 4000' interval Sampled after spreading
	***Sand Equivalent	Calif. 217	Approx. 4000' interval Sampled after spreading
	***R Value (R Value Test Req'd. only if sand equivalent is less than 35)	Calif. 301	Approx. 4000' interval Sampled after spreading
Class III Aggregate Base or SubBase	Relative Compaction	Calif. 231*	Approx. 500' interval
	Sieve Analysis	Calif. 202	Approx. 1000' interval Sampled after spreading
	R Value	Calif. 301	Approx. 1000' interval Sampled after spreading
	Sand Equivalent	Calif. 217	Approx. 1000' interval Sampled after spreading
Lime Treatment	Relative Compaction Thickness R Value	Calif. 231* ----- Calif. 301	Approx. 500' interval Approx. 250' interval Approx. 1000' interval Sampled immediately after final mixing

<u>Material</u>	<u>Test For</u>	<u>Test No.</u>	<u>Frequency and Location</u>
Native Soil (For determination of Structural Section)	Sieve Analysis	Calif. 202	Approx. 1000' interval at rough grade
	Sand Equivalent	Calif. 217	Approx. 1000' interval at rough grade
	R-Value	Calif. 301	Approx. 5000' interval on material with lowest sand equivalent from above tests. Additional tests as required to isolate poor soil areas.

SECTION 6. CONTROL OF MATERIALS (Continued)

6(d) REQUIRED CONSTRUCTION TESTING & SAMPLING
FREQUENCY AND LOCATION

<u>Material</u>	<u>Test For</u>	<u>Test No.</u>	<u>Frequency and Location</u>
Cement Treated Base	Relative Compaction	Calif. 231*	Approx. 500' interval
	Thickness	-----	Approx. 250' interval
	R Value	Calif. 301	Approx. 1000' interval Sampled immediately after final mixing

* Latest revision of Test No. ASTM D-1556 and D-1557 may also be used.

** Layer defined in Sections 19(d)1, 19(d)2 and 24(d)5 requiring 95 and 90 percent compaction.

*** Test Report not required on projects less than 800' in length when purchased from commercial plant.

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6(d) REQUIRED CONSTRUCTION TESTING & SAMPLING
FREQUENCY AND LOCATION (Continued)

<u>Material</u>	<u>Test For</u>	<u>Test No.</u>	<u>Frequency and Location</u>
Asphalt Concrete	***Stabilometer	Calif. 304	Approx. 4000' interval Sampled from project
	***Sieve Analysis	Calif. 202	Approx. 4000' interval Sampled from project
	Extraction & Moisture	**Calif. 309 or 310	Approx. 4000' interval Sampled from project
Road-Mixed Asphalt Surfacing	Sieve Analysis	Calif. 202	Approx. 500' interval
	Sand Equivalent	Calif. 217	Approx. 500' interval
	Extraction & Moisture	*****Calif. 309 or 310	Approx. 500' interval
Liquid Asphalt	Kinematic Viscosity at 140° F.	AASHTO T201	****
	Water	AASHTO T55	****
	Distillation	AASHTO T78	****
	Asphalt Residue of 100 Pen.	AASHTO T56	****
	Ductility of asphalt Residue at 77° F.	AASHTO T51	****

*** Test Report not required on projects less than 800' in length.

**** Two pint samples from each shipment - submit one pint from each shipment to Construction Inspection Section of the Transportation Department, and retain other pint for one year.

***** Latest revision of Test No. ASTM D 2172 may also be used.

SECTION 7. LEGAL RELATIONS AND RESPONSIBILITY

7(a) General

The Contractor's legal relationship and responsibilities shall be as specified in Section 7 of the Standard Specifications and as hereinafter specified.

7(b) Permits and Licenses

A permit from the San Bernardino County Flood Control District shall be procured prior to any construction operations within Flood Control District rights of way, whether such rights of way be easement or fee-owned.

A permit from the County Transportation Department shall be procured prior to any construction operations within public rights of way or within subdivision tracts where such rights of way have been dedicated on a final tract map or are proposed to be so dedicated. Accompanying each application for a permit shall be a listing of construction and/or excavation contractors and the name of an authorized representative who will be responsible for the construction work undertaken under the terms of the permit. Also, accompanying each application for an excavation permit shall be a drawing(s) (size; 8-1/2" X 11", 11" X 17" or 24" X 36") showing location of the utility work (gas, water, sewer, telephone, electrical, CATV, and irrigation systems) within public road right of way.

SECTION 8. PROSECUTION AND PROGRESS

8(a) General

The provisions of Section 8 of the Standard Specifications, "Prosecution and Progress", will not apply. Beginning of work and time of completion shall be in accordance with the current County Subdivision Ordinance, Subdivision Agreement and/or in accordance with the County Transportation Department Permits issued for the work.

8(b) Relocation

The County of San Bernardino shall have no responsibility in making ~~arrangements for the installation, relocation, alteration or removal~~ of any utility or non-highway facilities necessary for the completion of the work. All non-highway facility work shall be completed at no cost to San Bernardino County Transportation Department.

SECTION 9. MEASUREMENT AND PAYMENT

9(a) General

The provisions of Section 9 of the Standard Specifications, "Measurement and Payment" will not apply.

9(b) Responsibilities

The San Bernardino County Transportation Department does not assume any responsibility for the methods of measurement or for the methods of payment for work completed in accordance with these specifications when the County is not the contracting agency.

SECTION 10. DUST CONTROL

10(a) General

Dust control shall conform to the provisions in Section 10 of the Standard Specifications and in compliance with County "Dust Control" Ordinances.

10(b) Application of Control

When in the opinion of the County Director of Transportation's Representative, the operations of the Contractor are such as to unduly endanger the public health or safety, the Representative may direct the Contractor to apply water or other palliative measures to areas of excavation, embankment, or haul roads to control and minimize dust.

SECTION 15. EXISTING HIGHWAY FACILITIES

15(a) General

The removal or protection of existing highway facilities shall conform to the provisions in Section 15 of the Standard Specifications and as hereinafter specified.

15(b) Removal and Protection

The Contractor shall be responsible for the removal and/or protection of existing signs, fences, curb and gutter, and other highway facilities which may be encountered in the roadway; but the Contractor shall not remove or replace regulatory signs. The replacement or repair of any facilities which the County Director of Transportation's representative deems necessary, as a result of the Contractor's operations, shall be done by the Contractor as directed by the County Director of Transportation's representative. The placement of new stop signs will be done by County forces at the expense of the Subdivider.

15(c) Cleanup

Debris and damage caused by drainage and/or traffic in the work area shall be promptly cleaned up or repaired if such is necessary for the protection of the roads, or for the safety and convenience of the public.

15(d) Preservation of Property

All pipe lines or substructures of any kind shown or not shown on the improvement plan within the limit of improvement work shall be removed or relocated as required at no expense to the San Bernardino County Transportation Department.

15(e) Manholes, Valves etc.

All work required to adjust manhole covers, valves and other utility facilities to finished grade and repair of paving shall be accomplished at no expense to the San Bernardino County Transportation Department. Adjustment shall be accomplished after completion of roadway paving. All facilities within the roadway shall remain a minimum of 6" below the grading plane until after paving is completed.

SECTION 19. EARTHWORK

19(a) General

Earthwork shall conform to the provisions of Section 19 of the Standard Specifications and as hereinafter specified.

19(b) Grade Tolerance

Immediately prior to placing subsequent layers of material thereon, the grading plane shall conform to the following:

1. The grading plane at any point shall not vary more than 0.05 foot above or below the grade established by the Improvement Plans if the structural section indicates placing surfacing on native material.
2. The grading plane at any point shall not vary more than 0.05 feet above the grade established by the Improvement Plans if the structural section indicates placing an aggregate base or sub-base material on native materials.

19(c) Structure Backfill

Structure backfill shall be compacted to a relative compaction of not less than 90 percent in lieu of the 95 percent required in the State Standard Specifications. Also, the State Standard Specifications for sand equivalent of not less than 20 will not apply provided the proper compaction is attained.

19(d) Relative Compaction

1. Relative compaction of not less than 95 percent shall be obtained for a minimum depth of 0.5 foot below the grading plane for the width of the surfacing or of base materials whichever is greater, whether in excavation or embankment.
2. In addition, relative compaction of not less than 90 percent shall be obtained for a minimum depth of 1.0 feet below the grading plane for the width of the surfacing or of base materials whichever is greater, whether in excavation or embankment.
3. In addition, relative compaction of not less than 90 percent shall be obtained in all material in embankment.

SECTION 19. EARTHWORK (Continued)

19(e) Foundation Preparation

Preparation of the foundation to receive material shall be the responsibility of the Contractor. Basement material, that is unsuitable for the planned use, shall be excavated and disposed of.

Subgrade which is not firm and unyielding shall be considered to be unsuitable material. The unsuitable material shall be removed. The resulting space shall be filled with reprocessed material or a material suitable for the planned use.

19(f) Testing

Testing and submittal of test results shall be in accordance with Section 6, "Control of Materials" of these County Transportation Department Standard Specifications.

SECTION 24. LIME TREATMENT

24(a) General

Lime treatment shall conform to the provisions of Section 24 of the Standard Specifications and as hereinafter specified.

24(b) Materials

Lime shall be a commercial granular quicklime conforming to the definition in A.S.T.M. C-51. The quicklime shall contain not less than 95% total available Calcium Oxide and Magnesium Oxide (CaO & MgO) and not less than 90% total available Calcium Oxide (CaO) as determined by A.S.T.M. C-25.

Granular quicklime shall conform to the following gradations:

<u>Sieve Size</u>	<u>Percent Passing</u>
#4	100%
#100	0-20%

A Certificate of Compliance shall be furnished with delivery of lime and shall be submitted to the Construction Inspection Section of the Transportation Department.

24(c) Spreading and Mixing

1. The granular quicklime shall be placed on the prepared roadway in such a manner as to insure the proper percentage of lime when mixed with the soil.
2. The granular quicklime shall be scarified with the underlying soil following the spreading. Scarifying shall be done in such a manner as to minimize the shifting of the lime.
3. The exact spread rate of lime to be mixed shall not be less than that as shown on the approved plans.
4. Primary mixing shall be done with a rotary type machine with the capacity to mix the full depth of the lime treatment for all mixing operations. Sufficient water to hydrate the lime shall be introduced from the mixing machine during primary mixing.
5. Primary mixing shall be completed on the same day the quicklime has been applied. Secondary mixing shall begin the following day and shall be completed within 24 hours following the completion of primary mixing.

SECTION 24. LIME TREATMENT (Continued)

24(d) Compacting

1. The treated material shall not be compacted until at least 24 hours after the first pass of the mixer and not later than the day following completion of the final mixing.
2. Water shall be added to maintain the optimum moisture content of the treated material until the curing seal has been applied.
3. In areas where the depth of typical sections for lime treatment is 0.75' or less, the mixture may be compacted in one course with any type of roller other than a steel-wheeled tandem roller.
4. For those grades steeper than 10%, final compaction shall be accomplished with a sheeps-foot or segmented type roller. On all roadways, final rolling shall be accomplished by means of a pneumatic-tired roller conforming to the provisions in Section 39-5.02 "Rolling Equipment."
5. The untreated material for a depth of 0.5' beneath the lime treated material, shall be compacted to not less than 90% relative compaction.
6. Surfacing or Base Material shall not be placed upon lime treated material until compaction tests and thickness determinations are obtained and a written report submitted to the Construction Inspection Section of the Transportation Department and approval is given.

24(e) Curing

1. SS1-H Curing seal shall be applied immediately following compaction.
2. Curing seal shall be applied at a rate of 0.15 gal. per square yard of surface.

24(f) Grade Tolerance

The surface of the finished lime treated material shall not vary more than 0.05 foot above or below the grade established by the Engineer.

24(g) Testing

Testing and submittal of test results shall be in accordance with Section 6 "Control of Materials" of these County Transportation Department Standard Specifications.

SECTION 25. AGGREGATE SUB-BASES

25(a) General

Aggregate sub-bases shall conform to the requirements of Section 25 of the Standard Specifications and as hereinafter specified.

25(b) Materials

Aggregate sub-base shall be clean and free from vegetable matter and other deleterious substances and shall conform to the gradation and quality requirements set forth in the Standard Specifications under Class 2 Aggregate Sub-base or as specified on the improvement plans.

25(c) Testing

Testing and submittal of test results shall be in accordance with Section 6 "Control of Materials" of these County Transportation Department Standard Specifications.

SECTION 26. AGGREGATE BASES

26(a) General

Aggregate base shall conform to the provisions of Section 26 of the Standard Specifications and as hereinafter specified.

26(b) Materials

Class 2 Aggregate Base

Aggregate for Class 2 Aggregate Base shall conform to the latest provisions of the Standard Specifications.

Class 3 Aggregate Base

Aggregate for Class 3 Aggregate Base shall be clean and free from vegetable matter and other deleterious substances and be of such character that it will form a stable base when compacted to the required density. The material shall be of such sizes that the percentage composition by weight of material shall conform to the following grading at the time that the material is deposited on the roadbed when determined by test method No. Calif. 202.

<u>Sieve Size</u>	<u>Percentage Passing</u>	
	<u>Coarse</u>	<u>Fine</u>
1-1/2"	100	-
1"	-	100
#4	45-75	70-100
#30	22-57	35-75
#200	5-25	6-30

The material shall conform to the following quality requirements after processing:

<u>Test</u>	<u>Test Method</u>	
	<u>No. Calif.</u>	<u>Requirements</u>
R-Value	301	70 minimum
Sand Equivalent	217	30 minimum

26(c) Adding Water

The requirements for adding water will not apply for Class 3 Aggregate Base.

26(d) Spreading

The use of motor graders will be permitted for spreading all aggregate bases.

SECTION 26. AGGREGATE BASES (Continued)

26(e) Testing

Testing and submittal of test results shall be in accordance with Section 6, "Control of Materials" of these County Transportation Department Standard Specifications.

SECTION 38. ROAD-MIXED ASPHALT SURFACING

38(a) General

Road mixed asphalt surfacing shall conform to the provisions in Section 38 of the Standard Specifications and as hereinafter specified.

38(b) Materials

Asphalts

Bituminous binder to be mixed with the aggregate shall be liquid asphalt conforming to the latest provisions in Section 93, "Liquid Asphalts" and shall be of the grade and amount as specified on the approved set of plans.

Aggregate

The aggregate shall be free from decomposed materials, vegetable matter and other deleterious substances and shall consist of any one or a mixture of the following materials.

1. Broken or crushed stone or crushed gravel.
2. Natural material having sufficient roughness to meet the design stabilometer requirements.

The aggregate shall conform to the following gradation immediately prior to mixing with the asphalt binder.

AGGREGATE GRADING REQUIREMENTS FOR R.M.S.

<u>Sieve Sizes</u>	<u>1" Maximum Individual Test Results</u>	<u>Moving Average</u>
1"	100	100
3/4"	80-100	95-100
3/8"	80-100	85-100
No. 4	62-95	70-95
No. 8	45-90	50-90
No. 30	15-60	20-60
No. 200	4-20	6-18

SECTION 38. ROAD-MIXED ASPHALT SURFACING (Continued)

Sand Equivalent Test

Individual Test Result 25 min.

Moving Average 30 min.

Immediately prior to spreading and compacting, the combined mixed shall be sampled for conformance to the specified oil content on the plans.

38(c) Thickness Tolerance

Thicknesses shown on the plans are minimum. Paving thinner than that specified must be corrected.

38(d) Mixing

Mixing may be done either by "Road Mixing" or "Central Plant Mixing":

Road Mixing

Mixing shall be done as specified in Section 38-4 of the Calif. State Standards except for the following:

- (1) Mixing shall be accomplished with a road mixing machine equipped with a spray system which applies the asphalt while mixing.
- (2) The mixing machine shall make four (4) or more passes, after the final application of asphalt, as necessary to insure a thorough mix.
- (3) A motor grader shall follow each pass of the mixing machine to aerate the mixed material. The aggregate material and asphalt shall be thoroughly mixed until the asphalt is uniformly distributed throughout and all aggregate particles are completely coated.

Central Plant Mixing

- (1) Should the Contractor elect to mix the materials at a central mixing plant by the plant mixed method, the mixing shall be done in accordance with Sections 38-4 and 39-3 of the current State Standard Specifications.

SECTION 39. ASPHALT CONCRETE

39(a) General

Asphalt concrete shall conform to the provisions in Section 39 of the Standard Specifications and as hereinafter specified.

39(b) Materials

Asphalts

Paving asphalt to be mixed with aggregate shall be a steam refined asphalt with a Viscosity grade of A.R. 4000 except A.R. 8000 shall be used for asphalt concrete dikes.

Aggregate

The combined aggregate shall be Type B and shall conform to the grading specified for 1/2" maximum medium grading.

When thin overlays are required, a grading of 3/8" maximum may be used.

39(c) Thickness Tolerance

Thicknesses shown on the plans are minimum. Paving, thinner than that specified, must be overlaid by a self-propelled paving machine.

39(d) Paint Binder

Paint binder shall be applied to all vertical surfaces and existing pavement to receive surfacing and to any other surfaces designated by the County Director of Transportation's representative.

39(e) Rocky Subgrade

When Asphalt Concrete is to be placed on native soil which consists of a rocky material the subgrade shall be prepared by removing all rocks which protrude above the subgrade and all voids or depressions shall be filled with a fine graded material having an R-Value equal to or greater than the native material, except that the fine graded material will not be required to exceed an R-Value of 78.

39(f) Utilities

All water, gas and sewer mains and laterals if required in the Sub-division shall be constructed to each individual lot, prior to paving.

SECTION 39. ASPHALT CONCRETE (Continued)

39(g) Spreading and Compacting

For those grades steeper than 10%, final compaction on that plane directly under the surfacing shall be accomplished with a sheeps foot or segmented type roller.

In lieu of the rolling equipment required in the latest provisions of the Standard Specifications, the Contractor shall furnish a minimum of one 8-ton, 2-axle tandem roller for each 50 tons, or fraction thereof, of asphalt concrete placed per hour by each paver or motor grader.

39(h) Testing

Testing and submittal of test results shall be in accordance with Section 6, "Control of Materials" of these County Transportation Department Standard Specifications.

SECTION 38. ROAD-MIXED ASPHALT SURFACING (Continued)

- (2) The R.M.S. shall be spread by a self propelled asphalt paver which conforms with the provisions outlined in Section 39-5 Spreading and Compacting Equipment in the current State Standard Specifications.
- (3) The thickness of any one lift may be increased to 0.33' providing the completed surface conforms to Section 38-4.07 "Compacting" in the current State Standard Specifications.

The method of mixing shall be submitted and acknowledged by the Construction Inspection Section of the Transportation Department prior to paving.

38(e) Testing

Testing and submittal of test results shall be in accordance with Section 6, "Control of Materials" of these County Transportation Department Standard Specifications.

38(f) Utilities

All water, gas and sewer mains and laterals if required in the Subdivision shall be constructed to each individual lot, prior to paving.

SECTION 51. CONCRETE STRUCTURES

51(a) General

Concrete structures shall conform to the provisions in Section 51 of the Standard Specifications except for the following:

- (1) Forms for drainage inlets shall be required for both the inside and the outside for the full height of the structure.

SECTION 66. CORRUGATED METAL PIPE

66(a) General

Corrugated metal pipe shall conform to the provisions in Section 66 of the Standard Specifications and as hereinafter specified.

66(b) Materials

Materials for corrugated metal products shall conform to the latest provisions of the Standard Specifications, except that, when approved and shown on the improvement plans, aluminum corrugated metal pipe may be used outside the roadbed when the flow and soil conditions meet the minimum criteria as set forth in the latest provisions of Section 7-821 of the State Division of Highways Planning Manual, Part 7-Design, for a service life of 25 years.

66(c) End Finish

The ends of 0.060 inch and 0.075 inch thickness installations which are not fully protected by concrete structures or flared ends shall be reinforced in accordance with the provisions of Sub-section 66-3.04 of the State Standard Specifications except that it shall not be necessary to specify this on the plans.

SECTION 73. CONCRETE CURBS, SIDEWALKS AND DRIVEWAYS

73(a) General

Concrete curbs, sidewalks and driveways shall conform to the provisions in Section 73 of the Standard Specifications and as hereinafter specified.

73(b) Curb Construction

Curb shall be constructed in accordance with the latest provisions of the Standard Specifications, except weakened plane joints shall be placed at not more than 10' intervals. Weakened plane joints shall be formed to a minimum depth of one inch to insure control of shrinkage cracking.

73(c) Curb Depressions

When curb depressions are provided for driveways, complete driveway construction will be required in accordance with San Bernardino County Transportation Department Standard Drawings and related specifications.

73(d) Quality of Workmanship

All work shall be structurally sound and neat in appearance. Joints shall be accurately placed and properly constructed.

73(e) Repairs and Replacement

Upon completion of all road work any curb and gutter, sidewalk and driveway which is damaged or cracked at locations other than random, widely spaced shrinkage cracks shall be removed and replaced. Slight surface blemishes may be repaired with an approved cement-epoxy compound.

Damaged concrete shall be removed to nearest joint or shall be saw-cut.

Any concrete surface which exhibits rough texture, spalling or multiple checking or crazing due to defective material, improper curing, or other reasons, shall be removed and replaced to the full extent of the defective work. Weakened plane joints which are not properly located or formed, and as a result of their ineffectiveness contribute to random cracking, shall be considered defective and shall be saw-cut and the cracked areas removed and replaced. Minimum length of curb or sidewalk replacement is 4'.

SECTION 73. CONCRETE CURBS, SIDEWALKS AND DRIVEWAYS (Continued)

73(f) Expansive Soils

In expansive soil areas, the subgrade under sidewalks and driveway approaches shall be scarified to a depth of at least eight (8) inches and moisture shall be applied to maintain free water on the surface for at least 24 hours prior to placing concrete and the subgrade shall then be prepared without compactive effort.

SAN BERNARDINO COUNTY ROAD DEPARTMENT
IMPROVEMENT PLAN CHECK LIST

W.O. NUMBER _____ CHECKED BY _____ SCHEDULE _____ DATE _____

A. PREPARATION OF SHEETS

- _____ 1. Plan and profile cloth 24" x 36"
- _____ 2. Drawings shall be in ink and all work must be clearly reproducible
- _____ 3. Submit eight (8) sets of prints for F.A.S. Projects, and two (2) sets for all other work.
- _____ 4. Submit original for final approval

B. INDEX AND VICINITY MAP

- _____ 1. Shown on first sheet
- _____ 2. Street names shown thereon
- _____ 3. Flow diagram with drainage arrows
- _____ 4. Show tie to nearest County Maintained Road System
- _____ 5. Show location of drainage structures existing and proposed
- _____ 6. Show "Q" for all drainage facilities on work sheet for County review

C. TITLE BLOCK

- _____ 1. Use County Road Department Title Block
- _____ 2. Show all sheet numbers
- _____ 3. Tract Number, W.O. Number or File Number
- _____ 4. Registered Engineer's signature and number
- _____ 5. Date

D. ENGINEERS ESTIMATE OF QUANTITIES

_____ 1. Roadway excavation (clearing and grubbing)		C.Y.
_____ 2. Ditch and channel excavation		C.Y.
_____ 3. Base material	TONS	S.F.
_____ 4. Asphalt concrete (A.C.)	TONS	S.F.
_____ 5. Road mix surfacing	TONS	S.F.
_____ 6. Curb and gutter	CU.YDS	L.F.
_____ 7. Alley aprons	CU.YDS	S.F.
_____ 8. Sidewalks	CU.YDS	S.F.
_____ 9. Cross gutters	CU.YDS	S.F.
_____ 10. R.C.P. ("D" Strength)		L.F.
_____ 11. C.M.P. (Gauge)		L.F.
_____ 12. PCC or AC ditch lining	TONS	S.F.
_____ 13. Catch basins	CU.YDS	Ea.
_____ 14. Outlet structures	CU.YDS	Ea.
_____ 15. Street signs		Ea.
_____ 16. Barricades		Ea.

D. ENGINEERS ESTIMATE OF QUANTITIES (Con't)

17.	Guard fence		L.F.	
18.	Block wall		L.F.	
19.	Chainlink fence		L.F.	
20.	Headwalls		Ea.	
21.	Removal items	LUMP	SUM	
22.	Maintaining traffic	LUMP	SUM	
23.	Finishing roadway	LUMP	SUM	
24.	Developing water	LUMP	SUM	
25.	Furnishing water	LUMP	SUM	
26.	Structural excavation		C.Y.	
27.	Structural backfill		C.Y.	
28.	Borrow material		C.Y.	
29.	Miscellaneous structure	LUMP	SUM	

E. PLAN VIEW

1. North arrow (pointing up or to the right)
2. Stationing shall be from south to north or west to east
3. Centerline stationing shown on plan view
4. Stationing at all intersections with equations if applicable
5. Stationing of all BCR's and ECR's
6. Stationing of all BC's and EC's
7. Stationing of end of improvements
8. Stationing of end of curb and gutter
9. Scale (40 feet to inch)
10. Show names of all streets
11. Curb return data (delta, tangent, radius and length)
12. Show flow line at all BCR's and ECR's
13. Show flow line elevations on cross gutter at intersections
14. Centerline curve data
15. Lot lines and R/W lines
16. Lot numbers
17. Show connection to existing improvements with elevations and stationing
18. Stopping sight distance adequate for design speed. See design designation
19. Lengths and stationing of transitions or superelevations (if required); also of transitional paved sections for drainage control. Show improvements to be constructed with solid lines. Existing improvements shown with dashed lines
20. Limits of different type curb and gutter if applicable
21. Show details of all proposed streets if necessary
22. Show typical sections for all streets per County Standards
 - A. Dimensions of right-of-way pavement and parkway
 - B. Base material thickness
 - C. Asphalt concrete thickness or road mix surfacing thickness
 - D. Curb sections
 - E. Base material under curb sections if required
 - F. Slopes to adjacent property lines
 - G. Supplemental cross sections required for different design widths, structural sections, half width streets etc.
 - H. Note if in Select System

E. PLAN VIEW (Con't)

- ☐ 23. Note size, length, and gauge of CMP
- ☐ 24. Note size, length and "D" strength of RCP
- ☐ 25. Show construction notes wherever necessary to clarify construction details
- ☐ 26. Show existing pipe lines, weir boxes, irrigation systems, power poles, traffic control devices, etc., in or adjacent to right-of-way and include note as to their disposition
- ☐ 27. Refer to County Road Department Standard No. if applicable to structure or work
- ☐ 28. Specifications note, if different from County Standard
- ☐ 29. Improved drainage easements shall provide either pipe or concrete lined ditch sections. Lined ditches shall have the soil sterilized prior to placement of lining
- ☐ 30. Slope easements, delineated
- ☐ 31. All easements to show on plan view
- ☐ 32. Feather over a minimum of two feet when meeting existing pavement
- ☐ 33. Details of drainage facilities
- ☐ 34. Check bench mark location & elevation & survey control data

F. PROFILE VIEW

- ☐ 1. Scale (vertical) four (4) feet to the inch or eight (8) feet to the inch (on prior approval)
- ☐ 2. Existing and future centerline
- ☐ 3. Existing ground at right-of-way line both right and left of centerline
- ☐ 4. Edge of existing pavement both right and left
- ☐ 5. Existing and future top of curb both right and left of centerline with BCR; MOCR; ECR notations, and 1/4 points on curb returns
- ☐ 6. Show datum elevations on each end of sheet at the centerline ground line and the right-of-way ground lines
- ☐ 7. If curbs are variable height, show with elevations and stationing at break points
- ☐ 8. Label all grade lines and profiles; show percent of grade on each
- ☐ 9. Stationing and elevations at beginning and end of improvement
- ☐ 10. Stationing and elevations
- ☐ 11. Stationing and elevations at P.I.
- ☐ 12. Elevations every 25 feet on vertical curves
- ☐ 13. Elevations and stationing at all grade breaks
- ☐ 14. Elevations and stationing with equations if the street is curved
- ☐ 15. Extend profiles beyond end of improvement for 300 feet; if new road intersects existing street show profile on existing street for 100 feet each way
- ☐ 16. At drainage easements show profile for grading and daylight to natural ground
- ☐ 17. Indicate lengths of curb returns
- ☐ 18. Stationing at bottom of profile sheet
- ☐ 19. Names and stationing at intersecting street points
- ☐ 20. Structures to scale, note critical flow line elevations (capacity of structure in relation to "Q" shown on flow chart)
- ☐ 21. Use straight grades for cross gutters without flattening; grade of cross gutters shall be in relation to street centerline grade

F. PROFILE VIEW (Con't)

- ____ 22. Use vertical curves for all grade break differentials more than 1%
____ 23. The minimum fall from the BCR to the cross gutter shall be 0.30 feet
____ 24. Profile to be shown of graded or improved drainage facilities

TRANSMITTAL

Returned to Engineer

Received from Engineer

NOTES:

STANDARD DRAWINGS

TABLE OF CONTENTS

STANDARD NO.

ROADS

100	MAJOR DIVIDED HIGHWAY
100A	MAJOR ARTERIAL
100B	MAJOR ARTERIAL CHSPA
101	MAJOR HIGHWAY
102	SECONDARY HIGHWAY
102A	MAJOR HIGHWAY CHSPA
103	COLLECTOR STREET
103b	INDUSTRIAL COLLECTOR
104	LOCAL STREET
104A	LOCAL STREET (LESS THAN 1000 ADT)
106	FRONTAGE ROAD AND STREET
106a	FRONTAGE ROAD AND STREET
114	GRADED ROAD
114a	PAVED ROAD
114b	PAVED ROAD - MOUNTAIN AREAS
114c	HILLSIDE PAVED ROAD

STANDARD DRAWINGS

TABLE OF CONTENTS

STANDARD NO.

ROAD INTERSECTIONS & TRANSITIONS

105	INTERSECTION DESIGN FRONTAGE STREET
107	INTERSECTION DESIGN DESERT ROAD
111	HALF WIDTH LOCAL STREET
112	HALF WIDTH DESERT ROAD - SECTION
113	HALF WIDTH DESERT ROAD - PLAN
120	CUL-DE-SAC
120a	OFFSET CUL-DE-SAC
121	INTERSECTION DESIGN "L" SHAPE
121a	INTERSECTION DESIGN "L" SHAPE 50' R/W

PARKWAY IMPROVEMENTS

109	SIDEWALK
110,110-a,b,c,d	SIDEWALK RAMP
300	RIGHT OF WAY FENCE
301	NON-RETAINING CONCRETE BLOCK WALL
301-a	RETAINING CONCRETE BLOCK WALL
302	BLOCK WALL LOCATION AT INTERSECTION

STANDARD DRAWINGS

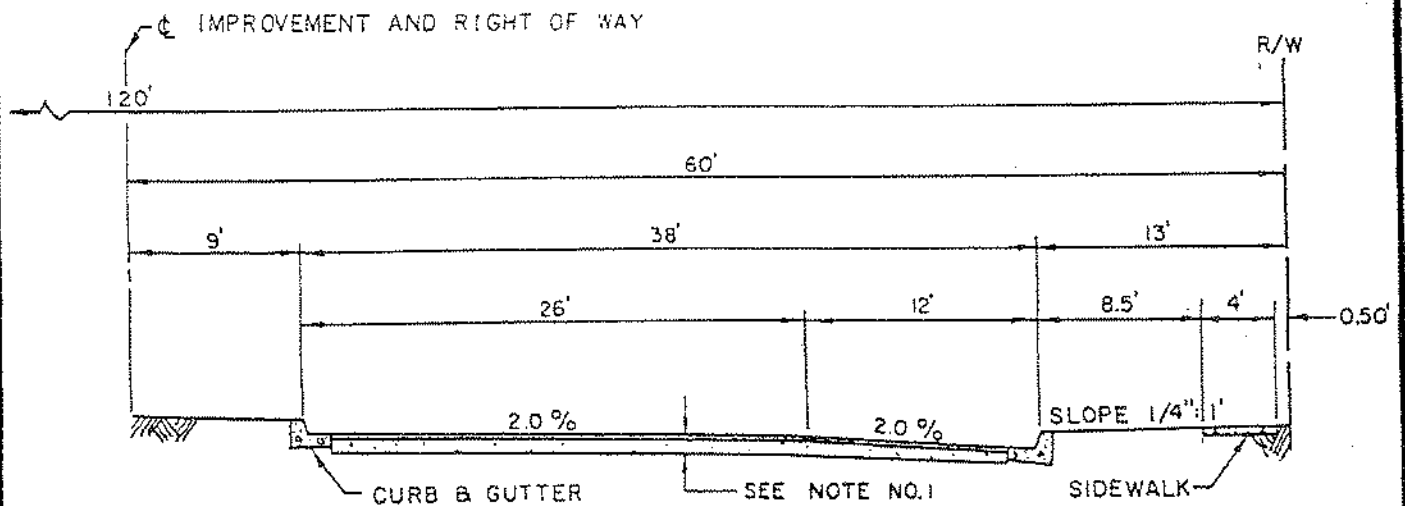
TABLE OF CONTENTS

<u>STANDARD NO.</u>	<u>CURB & DRAINAGE IMPROVEMENTS</u>
115	8" CURB AND GUTTER
116	6" CURB AND GUTTER
117	ASPHALT CONCRETE DIKE
117a	TRAVERSABLE DIKE
119	CROSS GUTTER
127	CURB CUT OFF WALL
200	CUT OFF WALL FOR DRAINAGE CHANNEL
200a	CHANNEL CROSSING
201	GRAVITY HEADWALL
202	CATCH BASIN MOUNTAIN ROADS
202a	CATCH BASIN MOUNTAIN ROADS - DETAIL
203	LOCAL DEPRESSION
203A	LOCAL DEPRESSION
203B	LOCAL DEPRESSION
204	MANHOLE FRAME AND COVER - PARKWAY
205	36" MANHOLE FRAME AND COVER - (ROADWAY)
206	TYPE "A" CATCH BASIN
206a	CATCH BASIN OPENING
206B	GALVANIZED STEEL STEP
208	STORM DRAIN CLEANOUT
209	HEADWALL WING-TYPE
209A	HEADWALL "U"-TYPE
210	CURB OUTLET STRUCTURE
210A	OUTLET STRUCTURE
211	PARKWAY CULVERT W/STEEL PLATE COVER

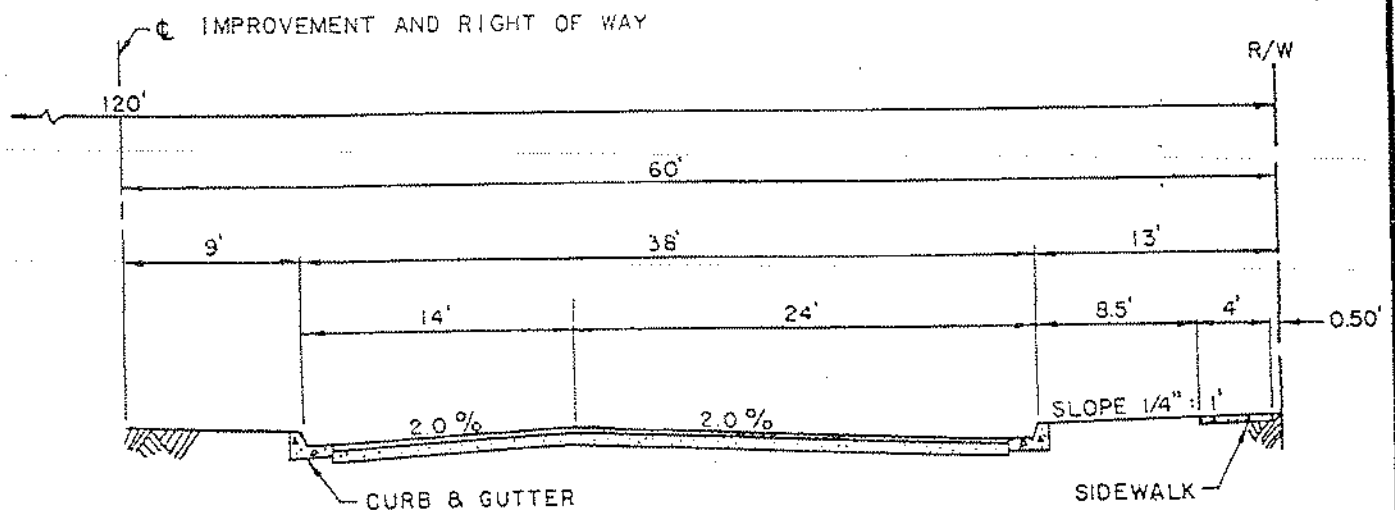
STANDARD DRAWINGS

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<u>STANDARD NO.</u>	<u>DRIVEWAYS & ALLEYS</u>
125	ALLEY
128	RESIDENTIAL DRIVEWAY WITH CURB
128a	RESIDENTIAL DRIVEWAY WITHOUT CURB
129	COMMERCIAL DRIVEWAY APPROACH WITH CURB
129a	COMMERCIAL DRIVEWAY WITHOUT CURB
129b	COMMERCIAL DRIVEWAY WITH CURB RETURNS
130	DRIVEWAY SPACING
131	DRIVEWAY GRADES
	<u>MISCELLANEOUS</u>
303	STREET MARKER - (DETAIL & SPECS.)
303a	STREET MARKERS
303b	STREET MARKER POST INSTALLATION
303c	STREET MARKER DESERT ROAD - 2 1/2 ACRE
305	BARRICADE - URBAN AREA
305a	END OF STREET TEMPORARY PAVEMENT
305B	BARRICADE - URBAN AREA
305C	ROAD CLOSURE BARRICADE
305D	ROAD CLOSURE BARRICADE WITH DETOUR
305E	PARTIAL ROAD CLOSURE BARRICADE WITH DETOUR
305F	PARTIAL ROAD CLOSURE BARRICADE
306	POST WITH REFLECTOR
307	CENTERLINE STRIPING-STRIPING DETAILS
307a	CENTERLINE STRIPING-STRIPING DETAILS
307b	CENTERLINE STRIPING-STRIPING DETAILS
307c	CENTERLINE STRIPING-STRIPING DETAILS
307d	LANELINE STRIPING-STRIPING DETAILS
308	METAL BEAM GUARDRAIL
309	METAL PLATE GUARDRAIL
310	FIRE HYDRANT LOCATION
311	UNDERGROUND UTILITY LOCATION
311A	MANHOLE APRON PAVED ROAD
312	SINGLE MAILBOX INSTALLATION
312A	MULTIPLE MAILBOX INSTALLATION - NEW SIDEWALK
312B	MULTIPLE MAILBOX INSTALL. - EXISTING SIDEWALK



TYPICAL HALF SECTION



TYPICAL HALF SECTION

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

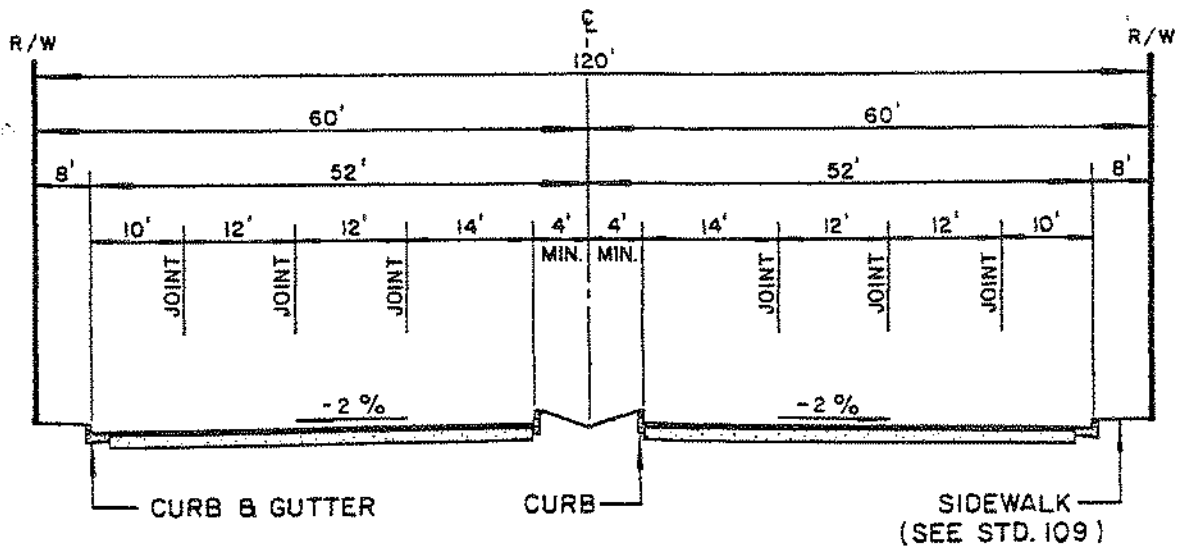
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R.2 4-92

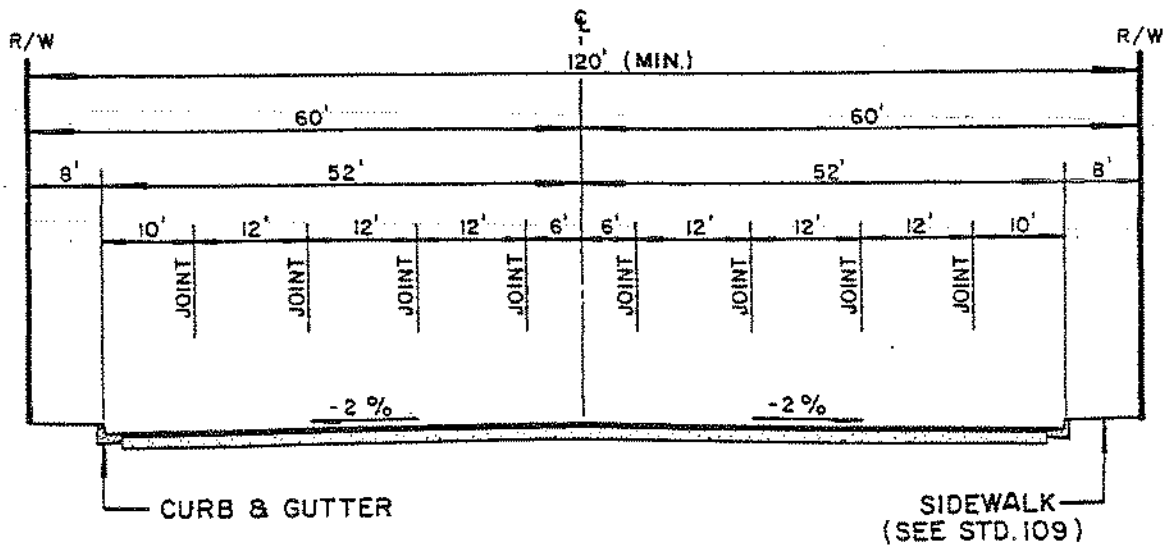
KEN A. MILLER
Director of Transportation

MAJOR DIVIDED
HIGHWAY

100.



**TYPICAL SECTION
WITH RAISED MEDIAN**



**TYPICAL SECTION
WITH CONTINUOUS LEFT TURN LANE**

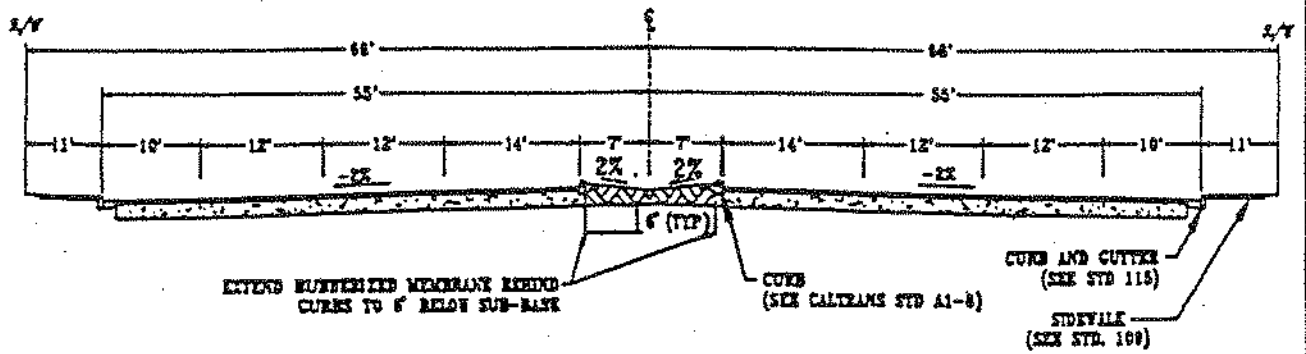
NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. 10' SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.

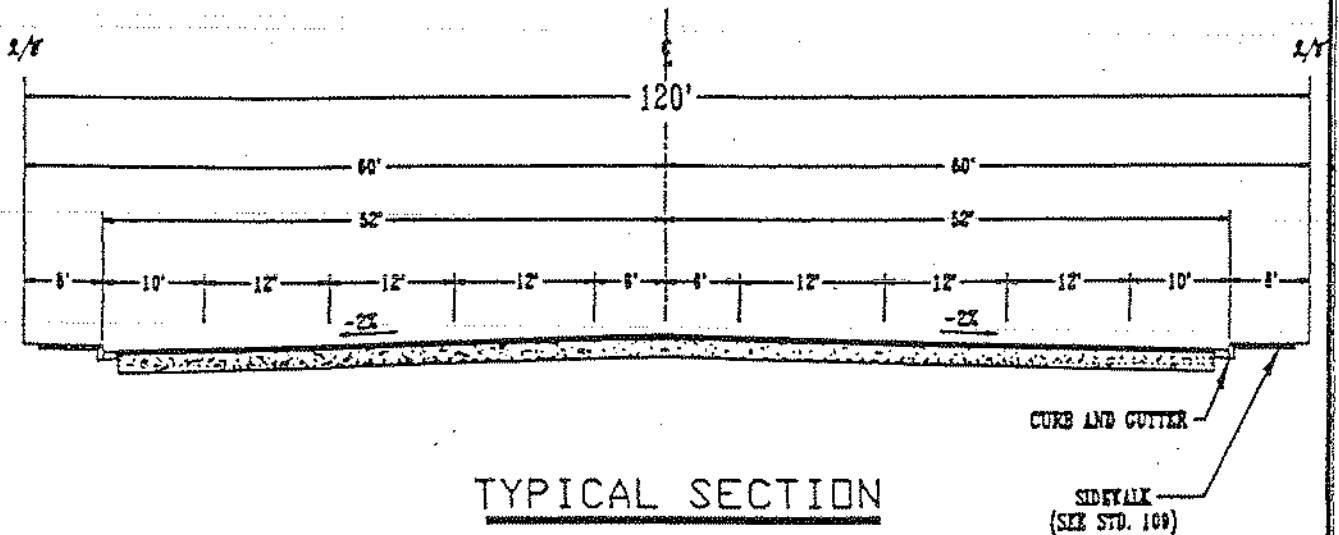
SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT	
DATE 100 12 '81	JOHN R. SHONE
	DIRECTOR OF TRANSPORTATION

MAJOR ARTERIAL

**100
A**



**TYPICAL SECTION
WITH RAISED MEDIAN**



**TYPICAL SECTION
WITH CONTINUOUS LEFT TURN LANE**

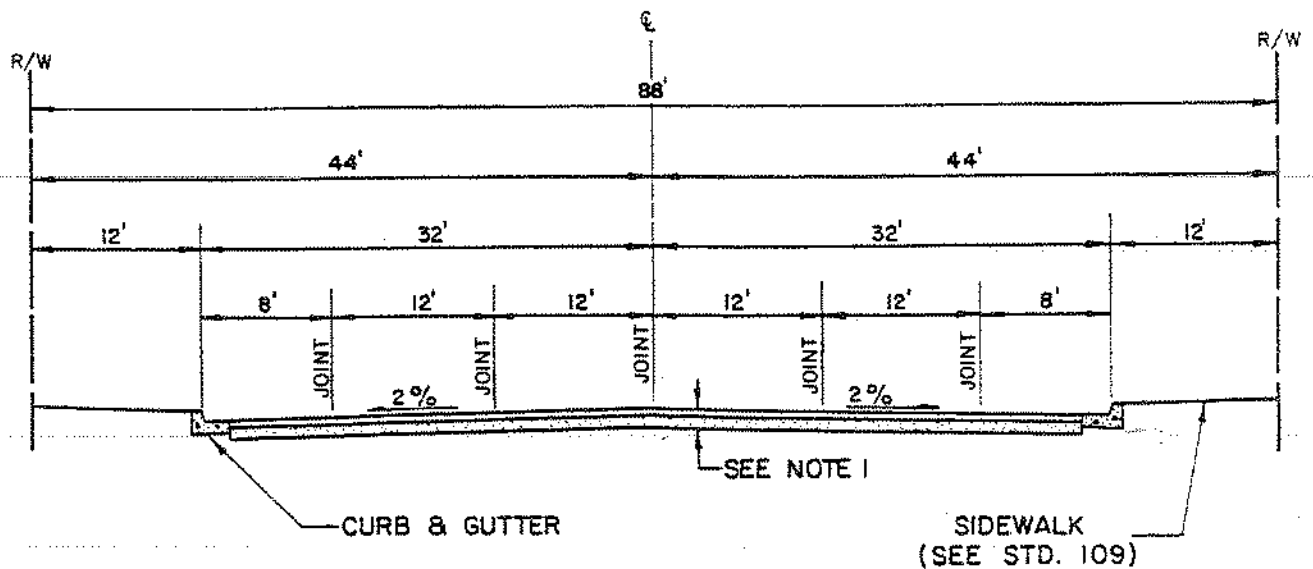
NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. TEN FEET (10') SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.
4. IRRIGATION SYSTEM IN MEDIAN AREA SHALL BE DRIP OR BUBBLE SYSTEM.

SAN BERNARDINO COUNTY ROAD DEPARTMENT		MAJOR ARTERIAL	100B
	KEN MILLER		
	DIRECTOR OF TRANSPORTATION	CHINO HILLS SPECIFIC PLAN AREA	



SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT		MAJOR HIGHWAY	101
DATE: 160 12 '81	JOHN R. SHONE DIRECTOR OF TRANSPORTATION		



TYPICAL SECTION

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. 8' SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.

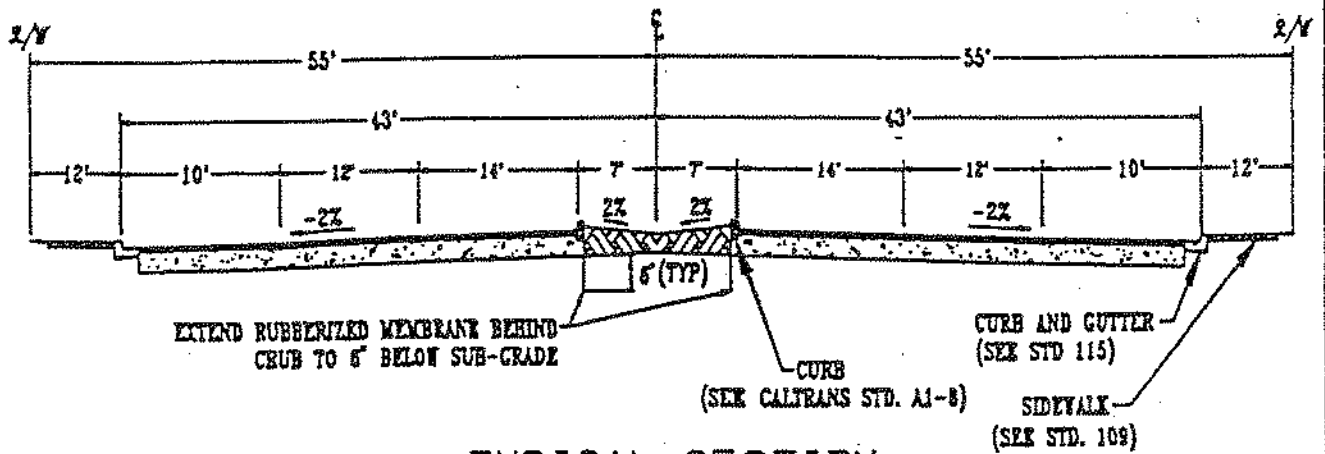
SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT

DATE: *VRK 4 '77*
HDL 12 '81

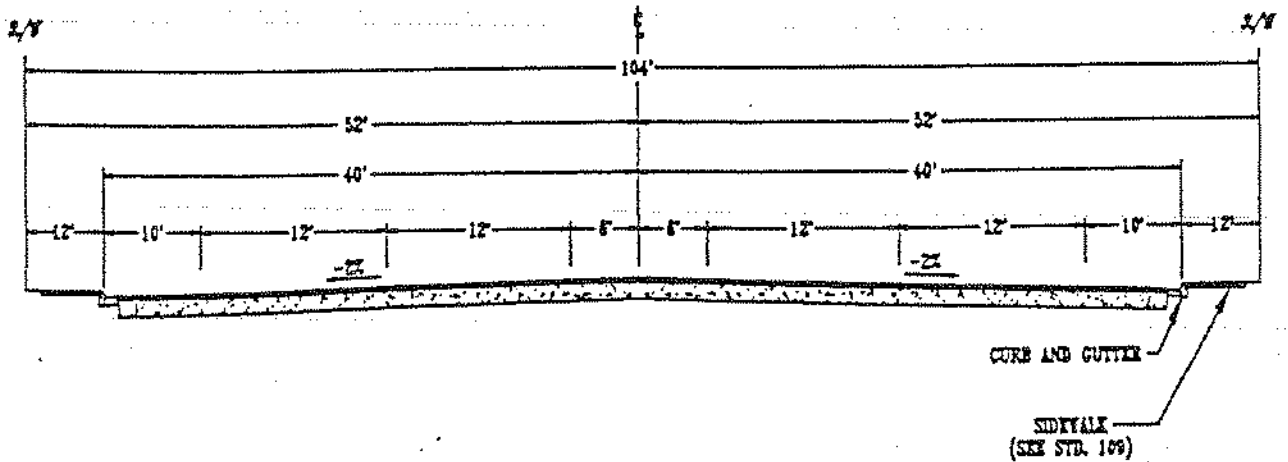
JOHN R. SHONE
DIRECTOR OF TRANSPORTATION

SECONDARY HIGHWAY

102



**TYPICAL SECTION
WITH RAISED MEDIAN**



**TYPICAL SECTION
WITH CONTINUOUS LEFT TURN LANE**

NOTES:

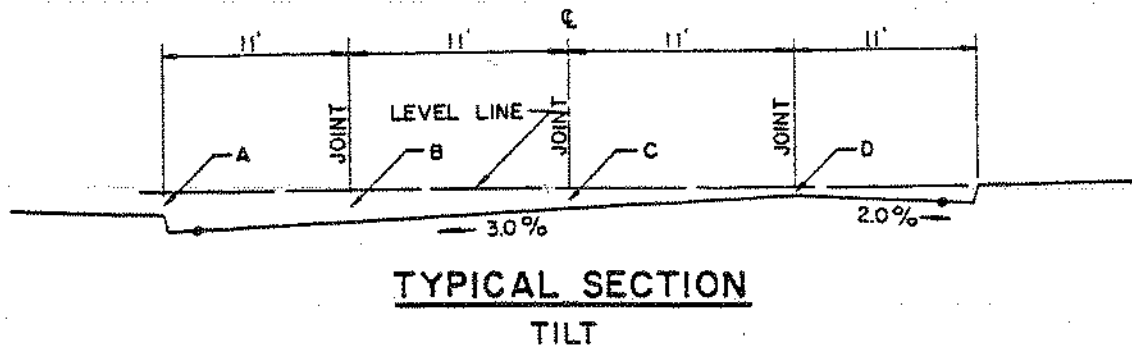
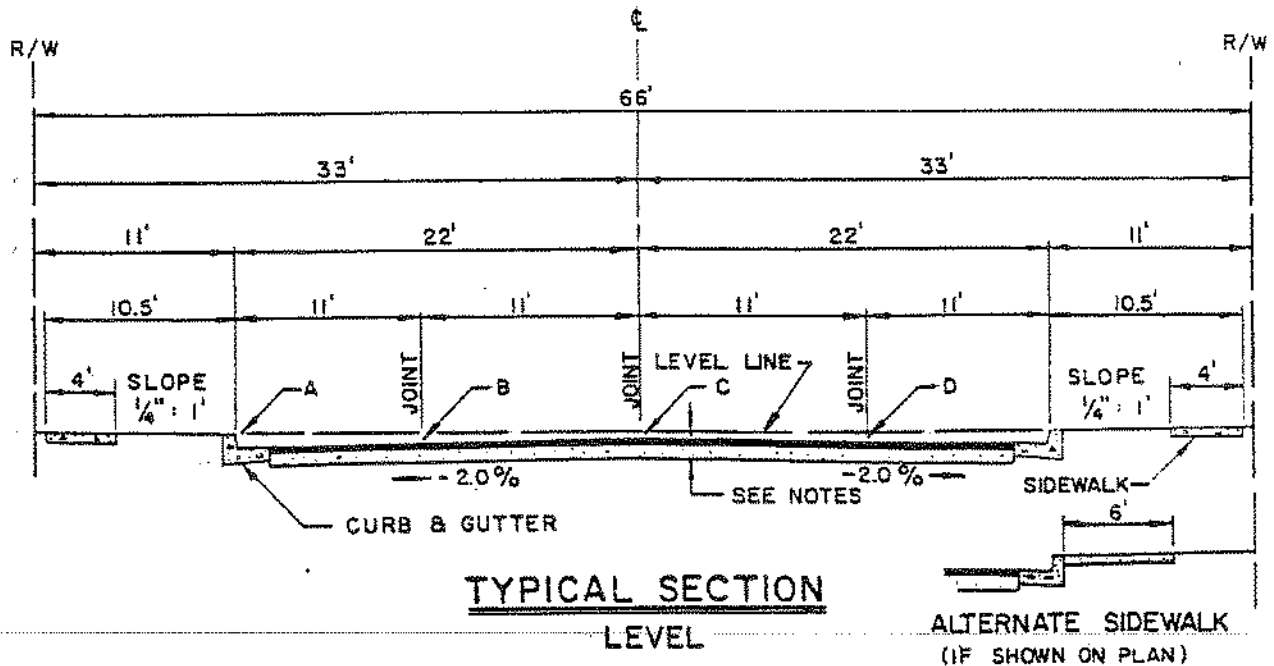
1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. DRAINAGE FACILITIES SHALL BE PROVIDED TO DEWATER RAISED MEDIAN AREAS.
3. TEN FEET (10') SHOULDER AREAS MAY BE DESIGNATED AS A BIKE LANE AND EMERGENCY PARKING ONLY.
4. IRRIGATION SYSTEM IN MEDIAN AREA SHALL BE DRIP OR BUBBLE SYSTEM.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

KEN MILLER
DIRECTOR OF TRANSPORTATION

MAJOR HIGHWAY
CHINO HILLS SPECIFIC PLAN AREA

102A



		A	B	C	D	() INDICATES ABOVE LEVEL LINE
8" CURB	LEVEL	0.00'	0.36'	0.14'	0.36'	
	TILT	0.76'	1.02'	0.69'	0.36'	
6" CURB	LEVEL	0.00'	0.19'	(0.03')	0.19'	
	TILT	0.76'	0.85'	0.52'	0.19'	

NOTE

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.20' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

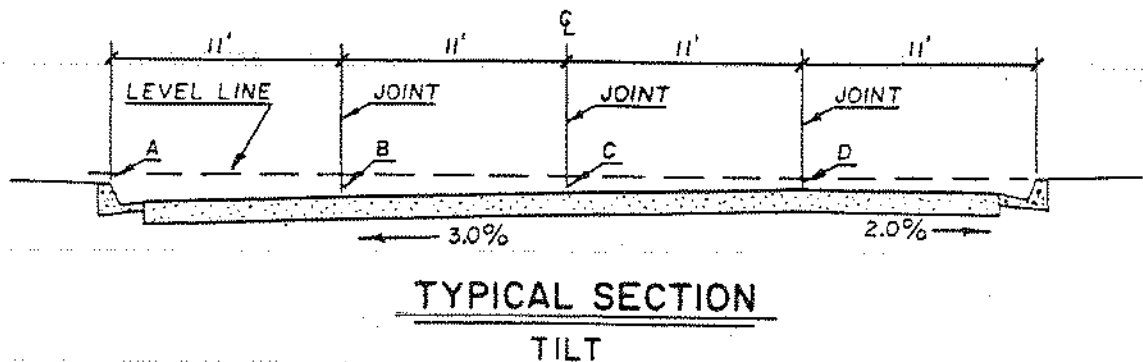
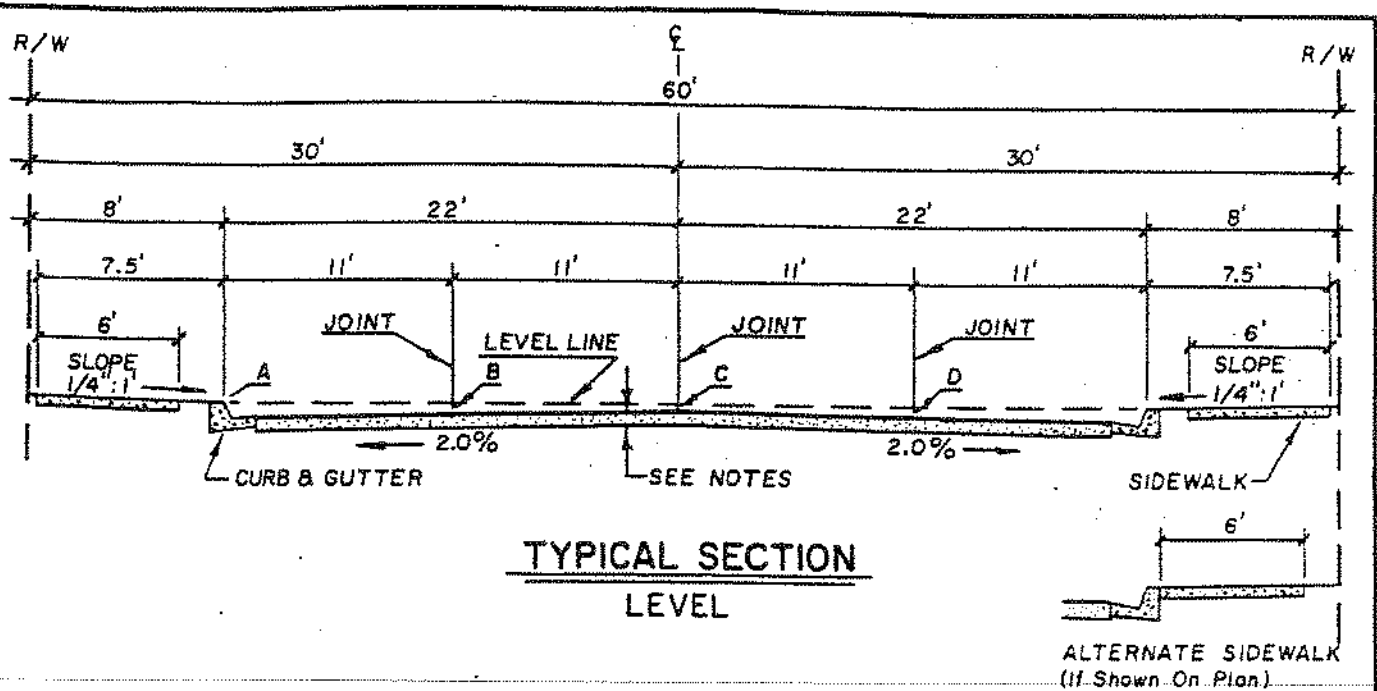
DATE: 3.V.C. 9-65

Rev. 5-74

John R. Shone
COUNTY HIGHWAY ENGINEER

COLLECTOR STREET

103



JOINT ELEVATIONS		A	B	C	D
8" CURB	LEVEL	0.00'	0.36'	0.14'	0.36'
	TILT	0.76'	1.02'	0.69'	0.36'
6" CURB	LEVEL	0.00'	0.19'	(0.03')	0.19'
	TILT	0.76'	0.85'	0.52'	0.19'

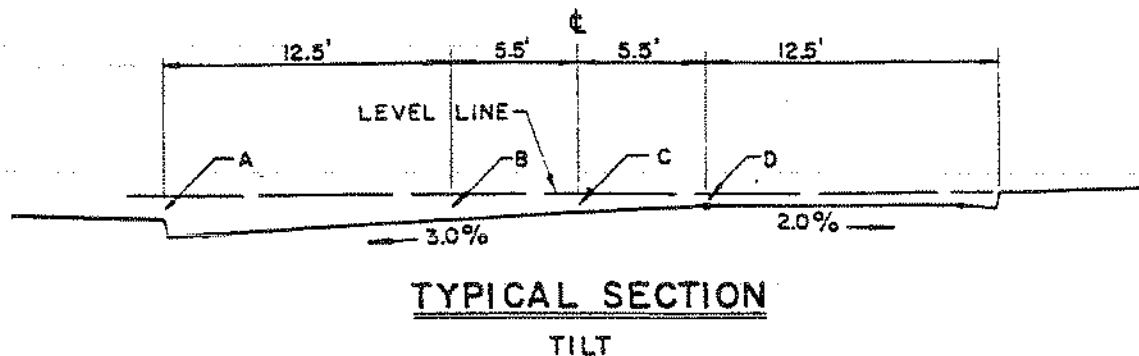
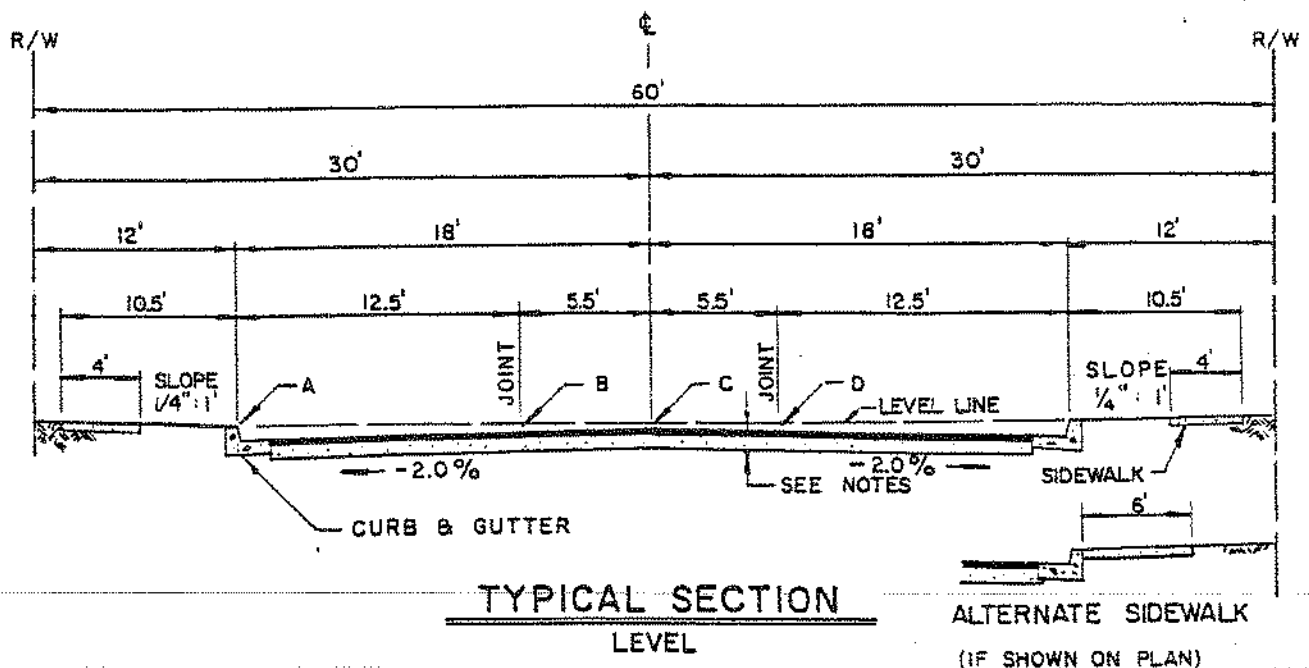
() Indicates Above Level Line.

NOTES:

1. Structural Section Of Roadway Shall Be Determined From Soils Test, Traffic Index, Article IX Of The San Bernardino County Road Planning And Design Standards And Shall Be Approved By The County Transportation Department And So Indicated On Construction Plans.
2. Construction Outside R/W Will Require Slope Easements.

SAN BERNARDINO COUNTY TRANS. DEPT.		INDUSTRIAL COLLECTOR	103b
REV. 3/1/94	KEN A. MILLER Director of Transportation		

4-13-93 vhc



		A	B	C	D
8" CURB	LEVEL	0.00'	0.33'	0.22'	0.33'
	TILT	0.44'	0.66'	0.50'	0.33'
6" CURB	LEVEL	0.00	0.16'	0.05'	0.16'
	TILT	0.44'	0.49'	0.33'	0.16'

NOTE

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. MINIMUM DESIGN PAVING THICKNESS SHALL BE 0.20' ASPHALT CONCRETE.
3. CONSTRUCTION OUTSIDE R/W WILL REQUIRE SLOPE EASEMENTS
4. WHEN PREPARING SUBGRADE FOR PAVING, CENTERLINE CROWN ON THE "LEVEL SECTION" SHALL BE RELOCATED EITHER LEFT OR RIGHT 0.50' TO MATCH CROWN BREAK IN PAVING MACHINE.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

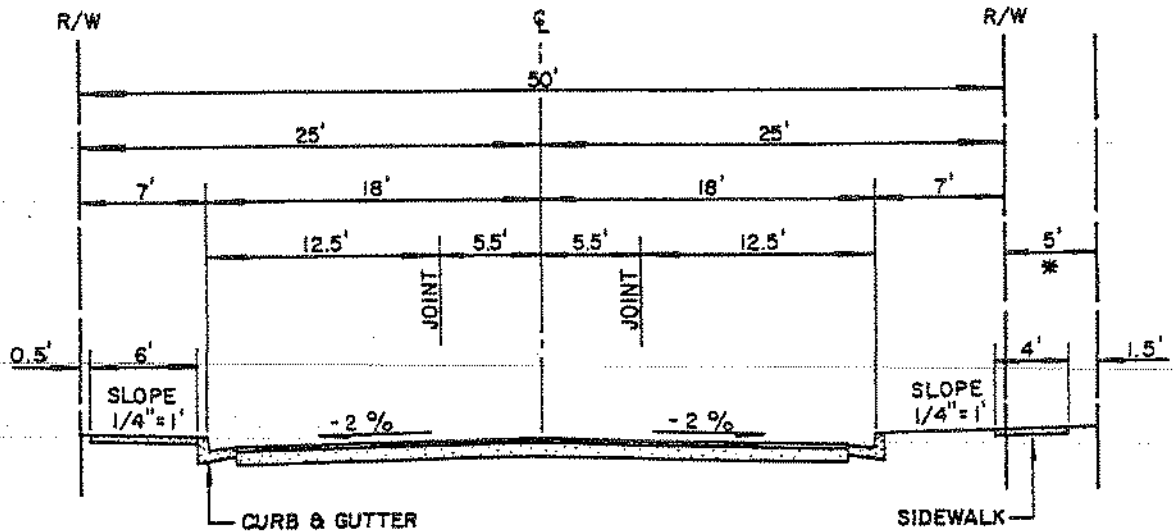
DATE: F.V.C. 9-65

Rev. 5-74

John R. Shone
COUNTY HIGHWAY ENGINEER

LOCAL STREET

104



TYPICAL SECTION

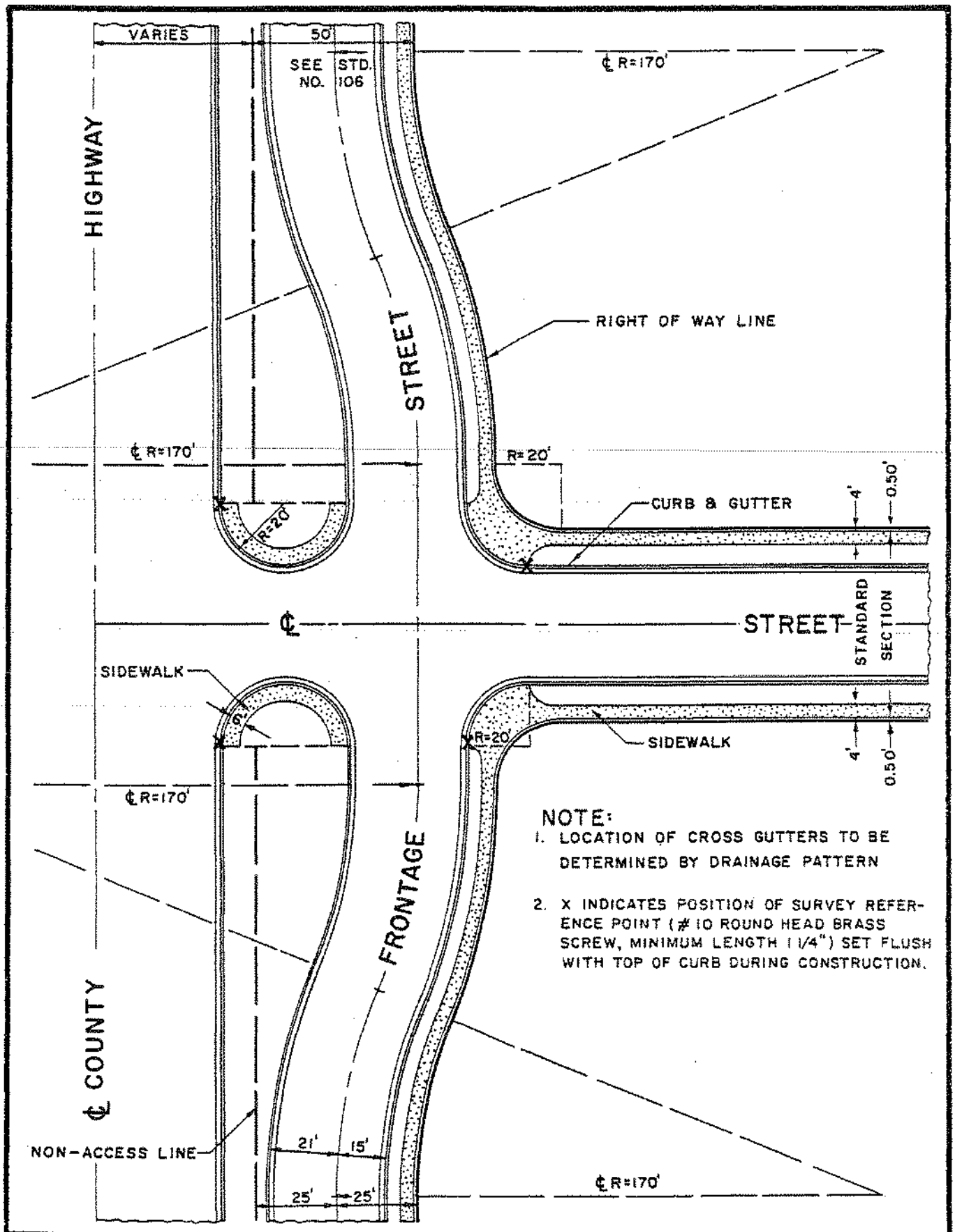
NOTES:

1. THIS TYPICAL SECTION SHALL BE USED ONLY ON LOCAL STREETS SUCH AS CUL-DE-SACS, LOOPS AND STREETS THAT DO NOT CARRY THROUGH TYPE TRAFFIC. THE USE SHALL BE LIMITED TO STREETS WHICH ARE PROJECTED TO CARRY LESS THAN 1000 ADT UPON ULTIMATE DEVELOPMENT OF THE AREA.
2. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOIL TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
3. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
4. TILT SECTION SHALL CONFORM TO LOCAL STREET STANDARD NO. 104.
- * 5' WIDE SIDEWALK AND PUBLIC UTILITIES EASEMENT AT THE OPTION OF THE OWNER, THIS AREA MAY BE DEDICATED AS ROAD RIGHT-OF-WAY.

SAN BERNARDINO COUNTY TRANSPORTATION DEPARTMENT	
DATE: 100 12 81	JOHN R. SHONE
	DIRECTOR OF TRANSPORTATION

LOCAL STREET
(LESS THAN 1000 ADT)

104
A



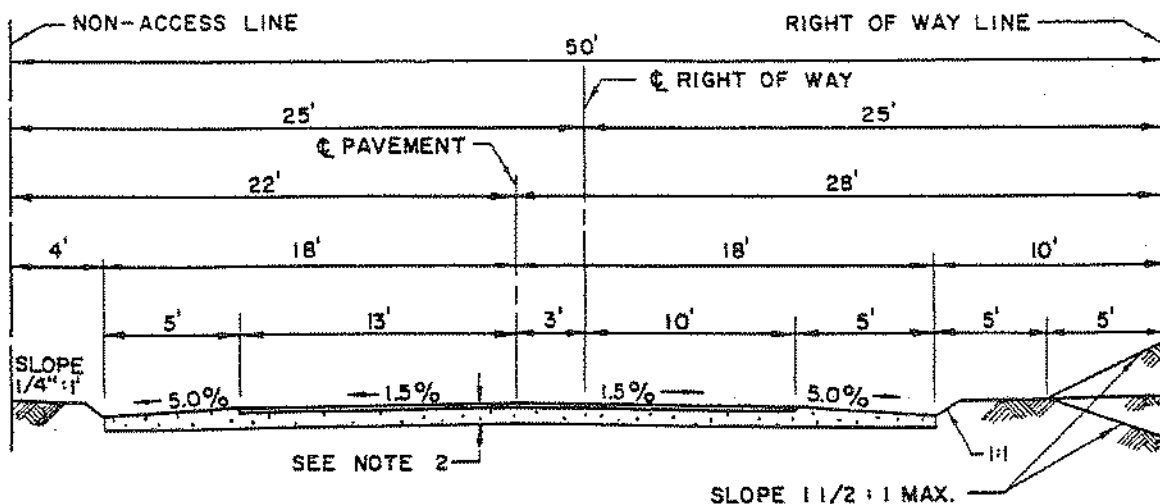
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: F.V.C. 6-65
REV. VEH. 2-79

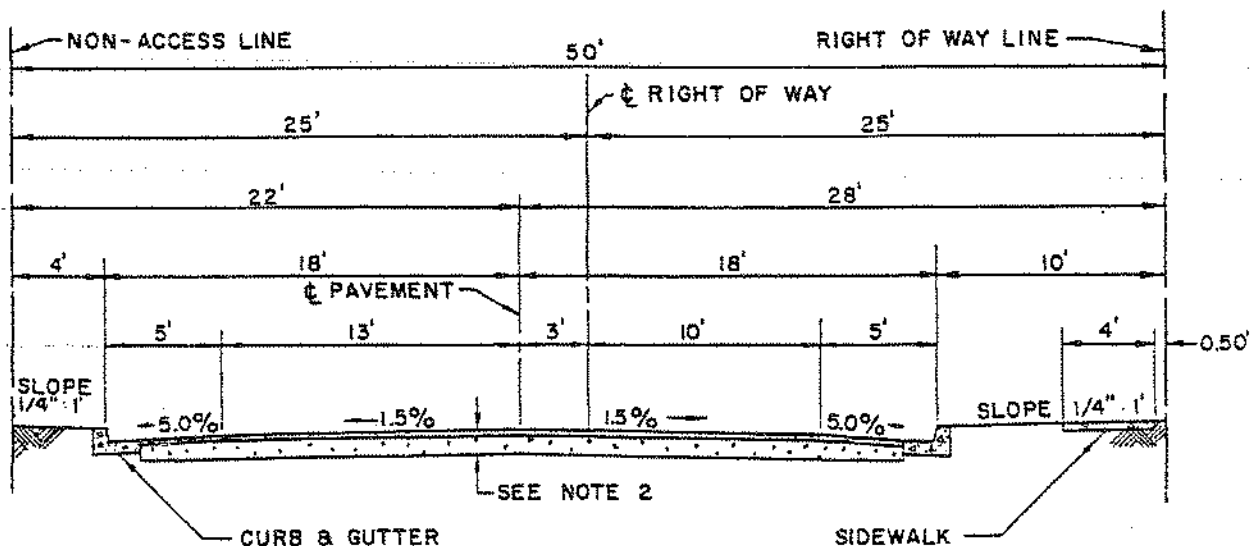
M. A. Nicholas
COUNTY ENGINEER

INTERSECTION DESIGN
FRONTAGE STREET

105



TYPICAL SECTION - FRONTAGE ROAD DESERT, RESIDENTIAL, LOW DENSITY



TYPICAL SECTION - FRONTAGE STREET RESIDENTIAL, COMMERCIAL, INDUSTRIAL

NOTES:

1. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
2. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
3. TILT SECTIONS TO CONFORM TO LOCAL STREET SECTION, STD. NO. 104 OR TILT SECTION OF STD. NO. 100.

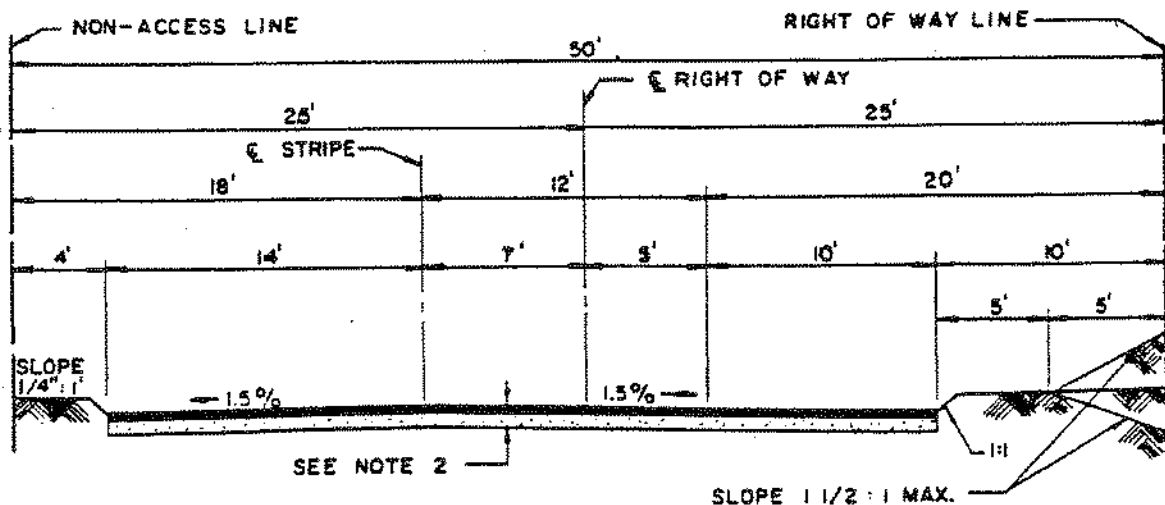
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: E.V.C. 4-65

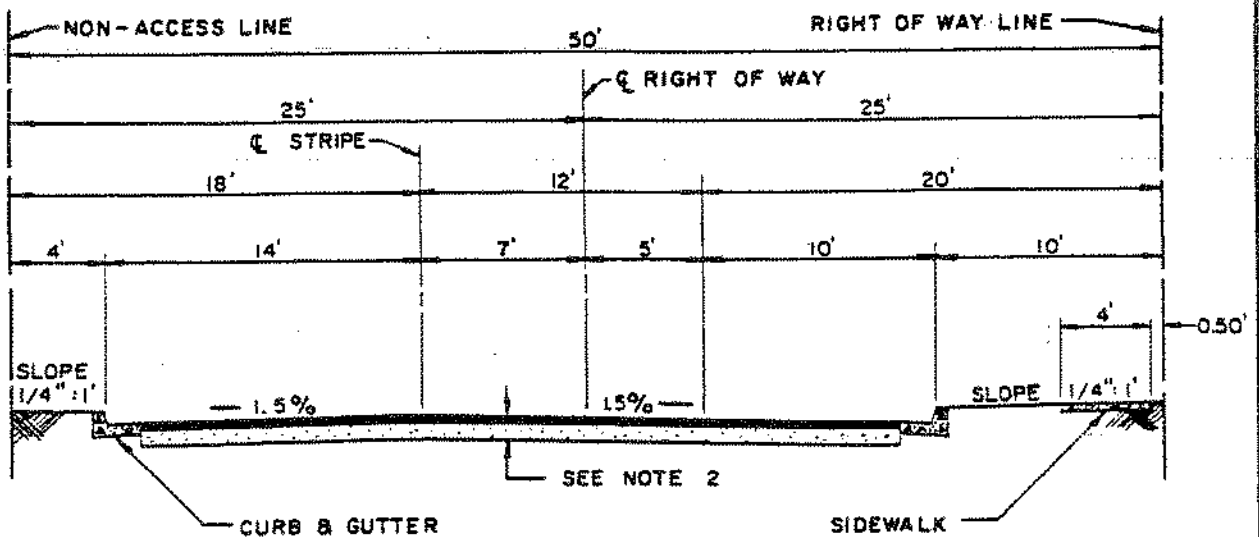
M. A. Nicholas
COUNTY ENGINEER

FRONTAGE
ROAD AND STREET

106



TYPICAL SECTION—FRONTAGE ROAD
DESERT, RESIDENTIAL, LOW DENSITY



TYPICAL SECTION—FRONTAGE STREET
RESIDENTIAL, COMMERCIAL, INDUSTRIAL

NOTES:

1. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
2. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
3. TILT SECTIONS TO CONFORM TO LOCAL STREET SECTION, STD. NO. 104 OR TILT SECTION OF STD. NO. 100.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

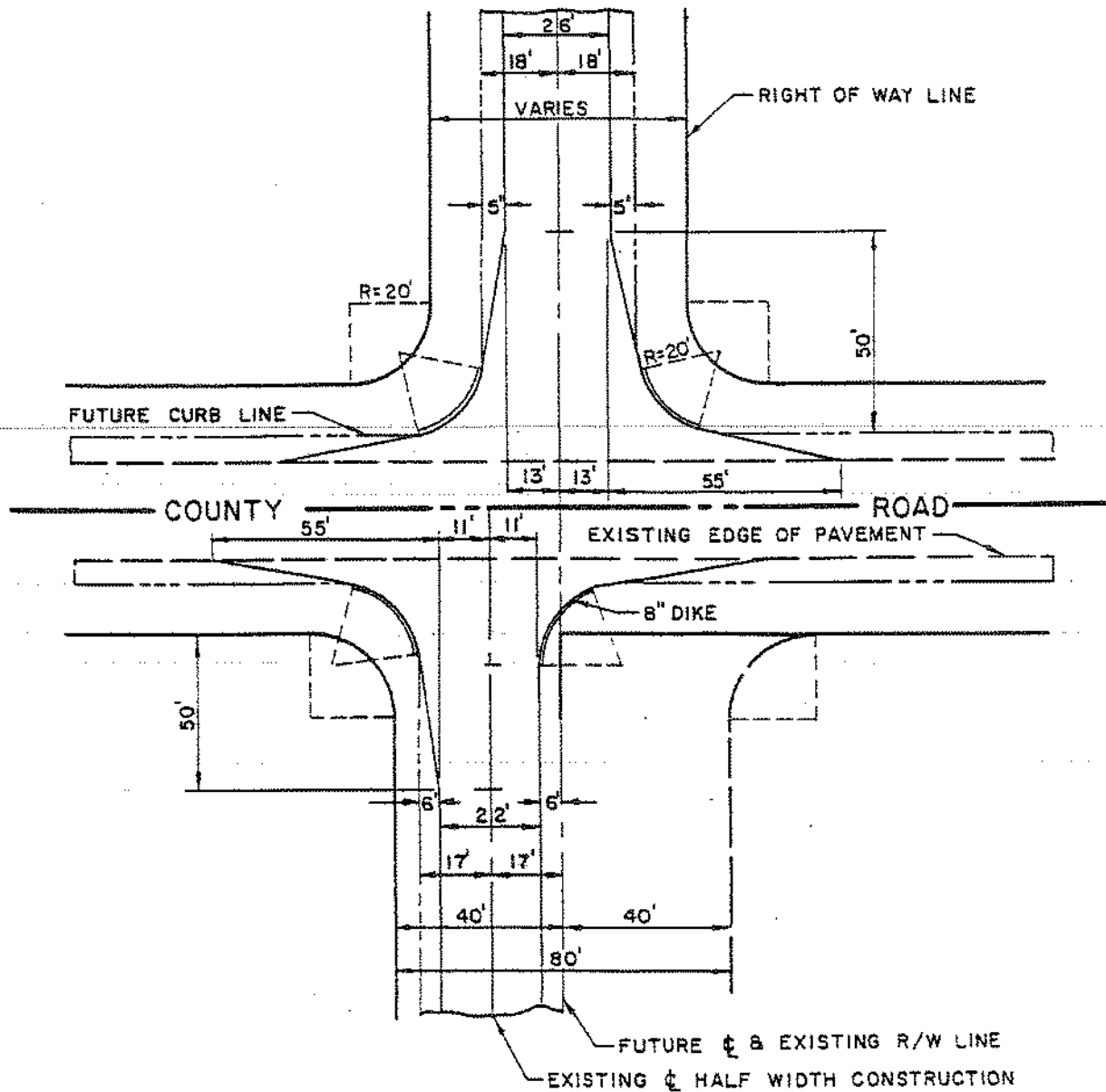
DATE: 1-68

M. A. Nicholas
COUNTY ENGINEER

FRONTAGE
ROAD AND STREET

106a

FULL WIDTH CONSTRUCTION



HALF WIDTH CONSTRUCTION

NOTES :

1. SEE STANDARD NO. 112 FOR ROADWAY SECTIONS.

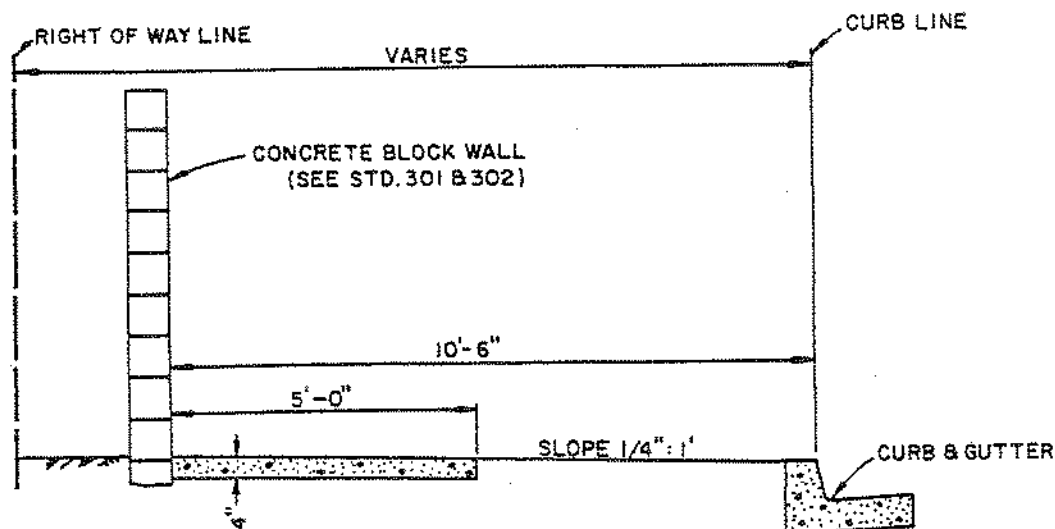
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE *2.11.65*

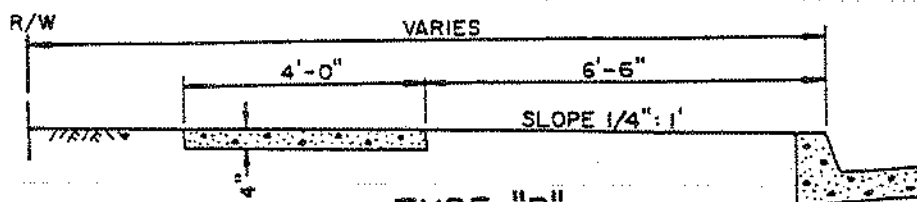
M. A. Nicholas
COUNTY ENGINEER

INTERSECTION DESIGN
DESERT ROAD

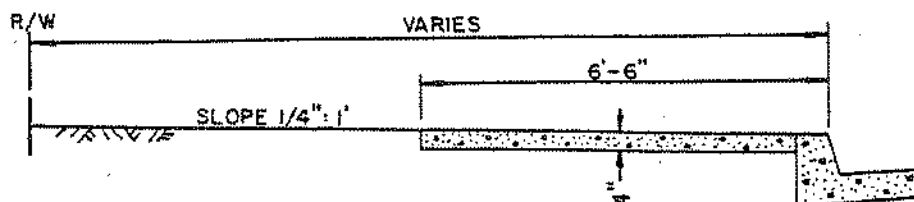
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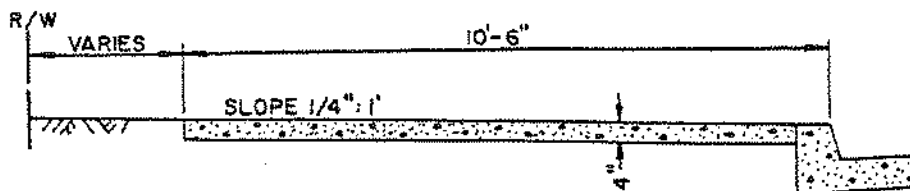
TYPE "A"



TYPE "B"



TYPE "C"



TYPE "D"

1. TYPE "C" SIDEWALKS ADJACENT TO CURB SHALL ONLY BE USED ON LOCAL AND COLLECTOR STREETS AND ONLY UPON APPROVAL OF THE TRANSPORTATION DEPT.
2. SIDEWALK SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
3. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED ON 10' SPACING.
4. SCORING SIDEWALK WILL BE PERMITTED.
5. IN EXPANSIVE SOIL AREAS, REFER TO SECTION 73 OF THE COUNTY SPECIFICATIONS.

San Bernardino County Transportation Department

APP. MAR 1975

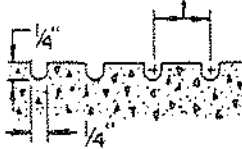
John R. Shone

DIRECTOR OF TRANSPORTATION

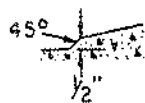
SIDEWALK

109

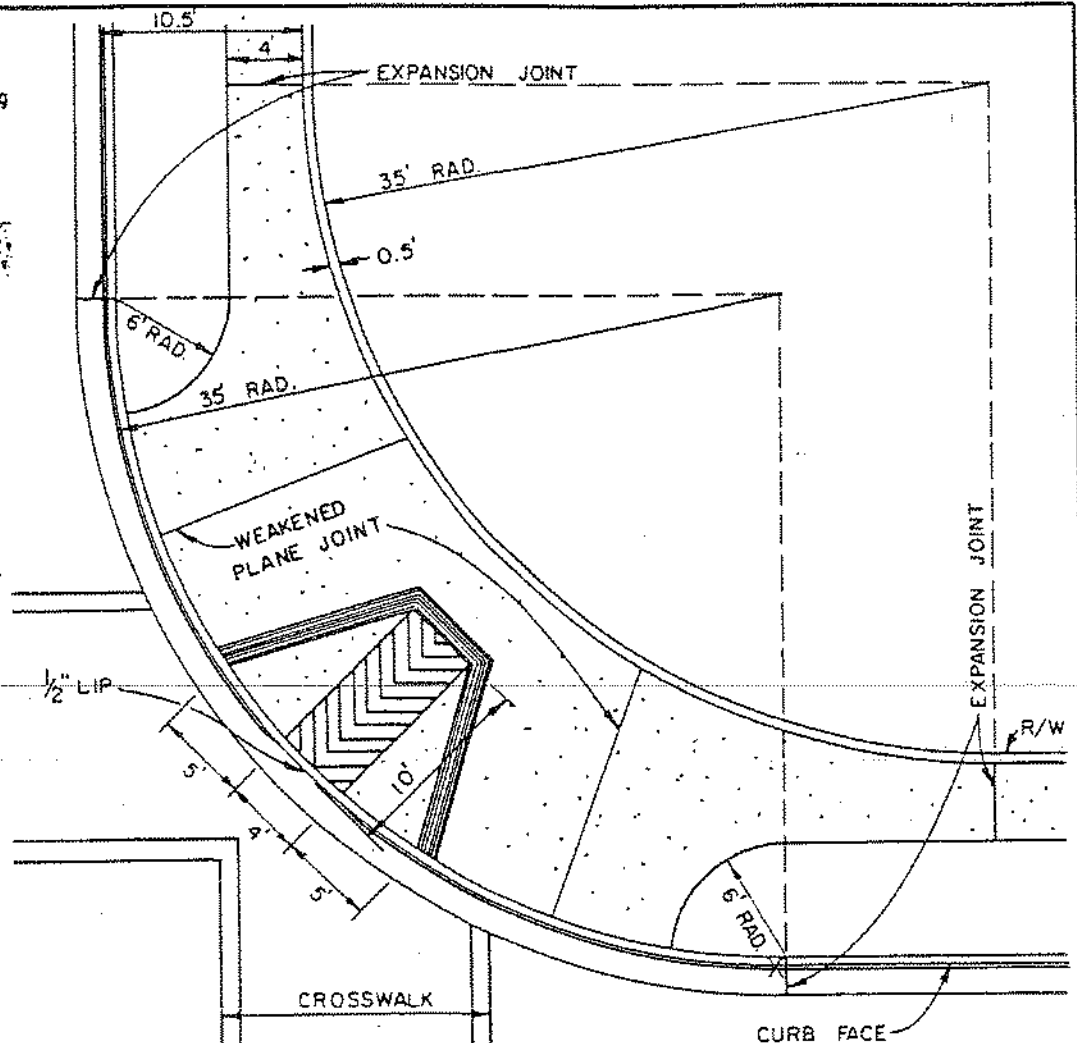
Approx. $\frac{3}{4}$ " except
approx. $1\frac{1}{2}$ " on sloping
portion of ramp



GROOVING
DETAIL



LIP DETAIL



NOTES:

1. Ramp slope shall be 8.33% maximum.
2. The ramp shall have a 12" wide border with $\frac{1}{4}$ " grooves approximately $\frac{3}{4}$ " o.c. See grooving detail.
3. When ramp is located in center of curb return, it shall be grooved in a herringbone pattern with $\frac{1}{4}$ " grooves approximately $1\frac{1}{2}$ " o.c. See grooving detail. Grooves should be aligned parallel to crosswalk stripes to direct blind pedestrians into appropriate crosswalk. When ramp is not located in center of curb return, the surface shall have a transverse broomed surface texture rougher than the surrounding sidewalk.
4. Ramps shall be built and finished so that there are no abrupt changes in elevation or angle of slope.
5. Sidewalk ramps are required at all corners where curbs and/or sidewalks are to be constructed or reconstructed and shall be as shown on the improvement plans.
6. Modifications to location or dimensions of ramp shall require approval of County Engineer and be shown on approved plans.
7. Thickness of concrete: 4 in. minimum.
8. X Indicates position of survey reference point (#10 Round Head Brass Screw, minimum length $1\frac{1}{4}$ ") set flush with top of curb during construction.
9. Use when one or both intersecting streets is a Secondary Highway or wider.

San Bernardino County Transportation Department

REV. JAN. 88

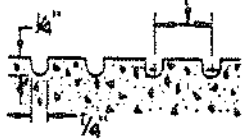
Ken A. Miller

DIRECTOR OF TRANSPORTATION

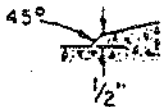
SIDEWALK RAMP

110

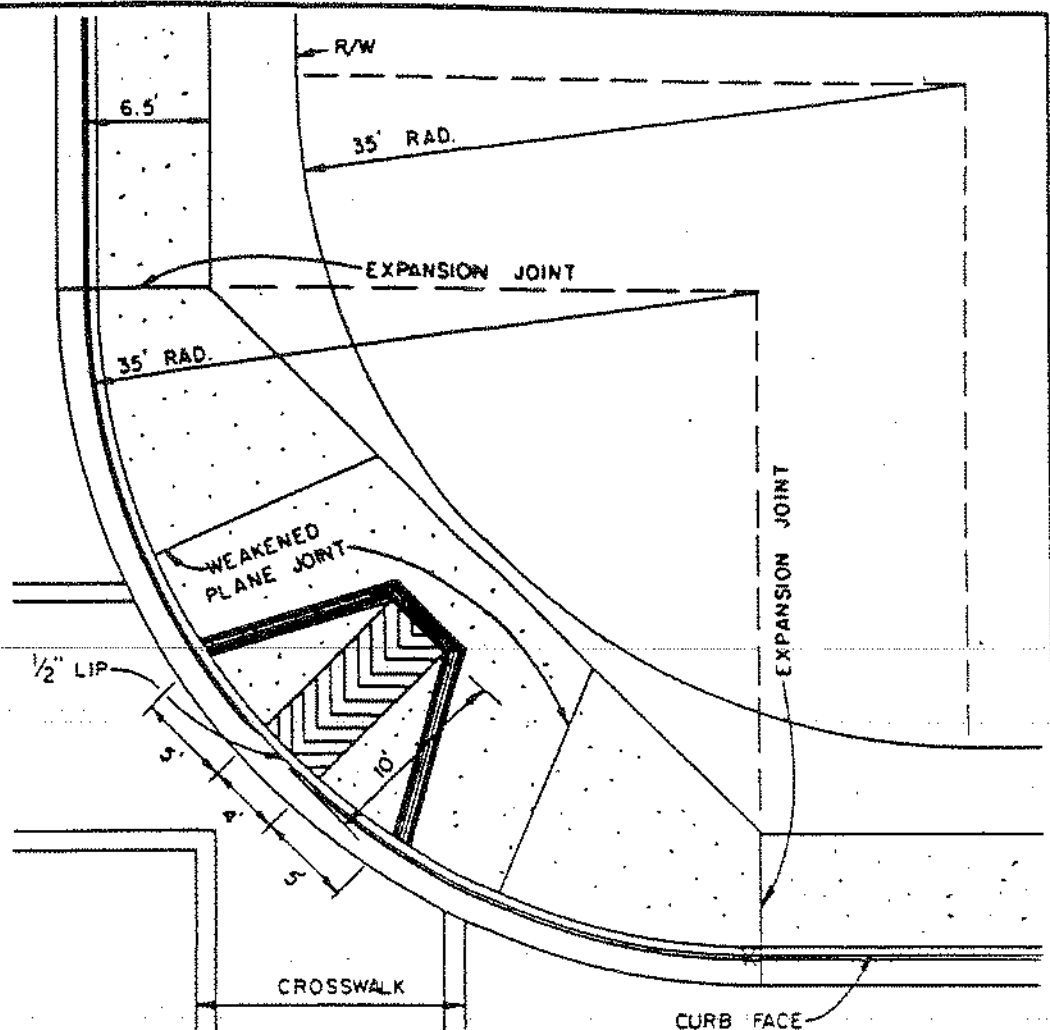
Approx. $\frac{3}{4}$ " except
approx. $1\frac{1}{2}$ " on sloping
portion of ramp



GROOVING
DETAIL



LIP DETAIL



NOTES:

1. Ramp slope shall be 8.33% maximum.
2. The ramp shall have a 12" wide border with $\frac{1}{4}$ " grooves approximately $\frac{3}{4}$ " o.c. See grooving detail.
3. When ramp is located in center of curb return, it shall be grooved in a herringbone pattern with $\frac{1}{4}$ " grooves approximately $1\frac{1}{2}$ " o.c. See grooving detail. Grooves should be aligned parallel to crosswalk stripes to direct blind pedestrians into appropriate crosswalk. When ramp is not located in center of curb return, the surface shall have a transverse broomed surface texture rougher than the surrounding sidewalk.
4. Ramps shall be built and finished so that there are no abrupt changes in elevation or angle of slope.
5. Sidewalk ramps are required at all corners where curbs and/or sidewalks are to be constructed or reconstructed and shall be as shown on the improvement plans.
6. Modifications to location or dimensions of ramp shall require approval of County Engineer and be shown on approved plans.
7. Thickness of concrete: 4 in. minimum.
8. X Indicates position of survey reference point (#10 Round Head Brass Screw, minimum length $1\frac{1}{4}$ ") set flush with top of curb during construction.
9. Use when one or both intersecting streets is a Secondary Highway or wider.

San Bernardino County Transportation Department

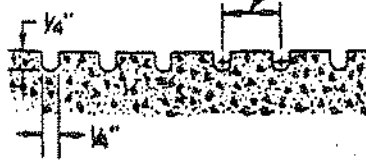
REV. JAN. 88

Ken A. Miller
DIRECTOR OF TRANSPORTATION

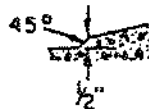
SIDEWALK RAMP

110
A

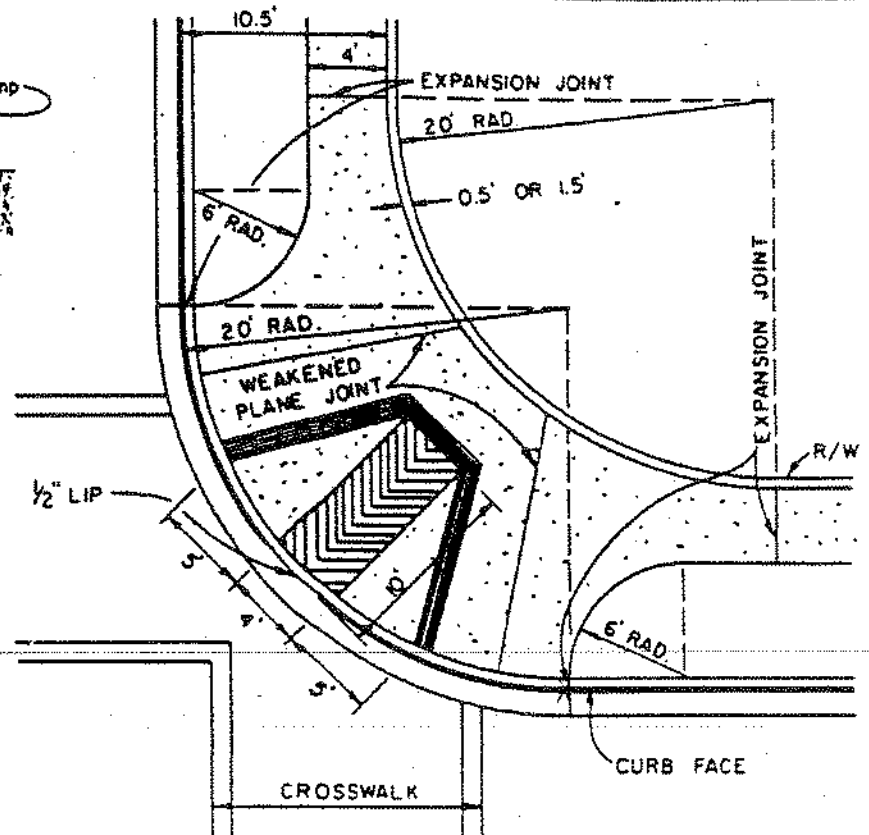
Approx. $\frac{3}{4}$ " except approx.
 $1\frac{1}{2}$ " on sloping portion of ramp



GROOVING DETAIL



LIP DETAIL



NOTES:

1. Ramp slope shall be 8.33% maximum.
2. The ramp shall have a 12" wide border with $\frac{1}{4}$ " grooves approximately $3\frac{3}{4}$ " o.c. See grooving detail.
3. When ramp is located in center of curb return, it shall be grooved in a herringbone pattern with $\frac{1}{4}$ " grooves approximately $1\frac{1}{2}$ " o.c. See grooving detail. Grooves should be aligned parallel to crosswalk stripes to direct blind pedestrians into appropriate crosswalk. When ramp is not located in center of curb return, the surface shall have a transverse broomed surface texture rougher than the surrounding sidewalk.
4. Ramps shall be built and finished so that there are no abrupt changes in elevation or angle of slope.
5. Sidewalk ramps are required at all corners where curbs and/or sidewalks are to be constructed or reconstructed and shall be as shown on the improvement plans.
6. Modifications to location or dimensions of ramp shall require approval of County Engineer and be shown on approved plans.
7. Thickness of concrete: 4 in. minimum.
8. X Indicates position of survey reference point (#10 Round Head Brass Screw, minimum length $1\frac{1}{4}$ ") set flush with top of curb during construction.
9. Use when both intersecting streets are Collector Streets or narrower.

San Bernardino County Transportation Department

REV JAN 88

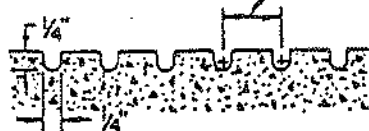
Ken A. Miller

DIRECTOR OF TRANSPORTATION

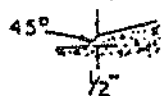
SIDEWALK RAMP

110
B

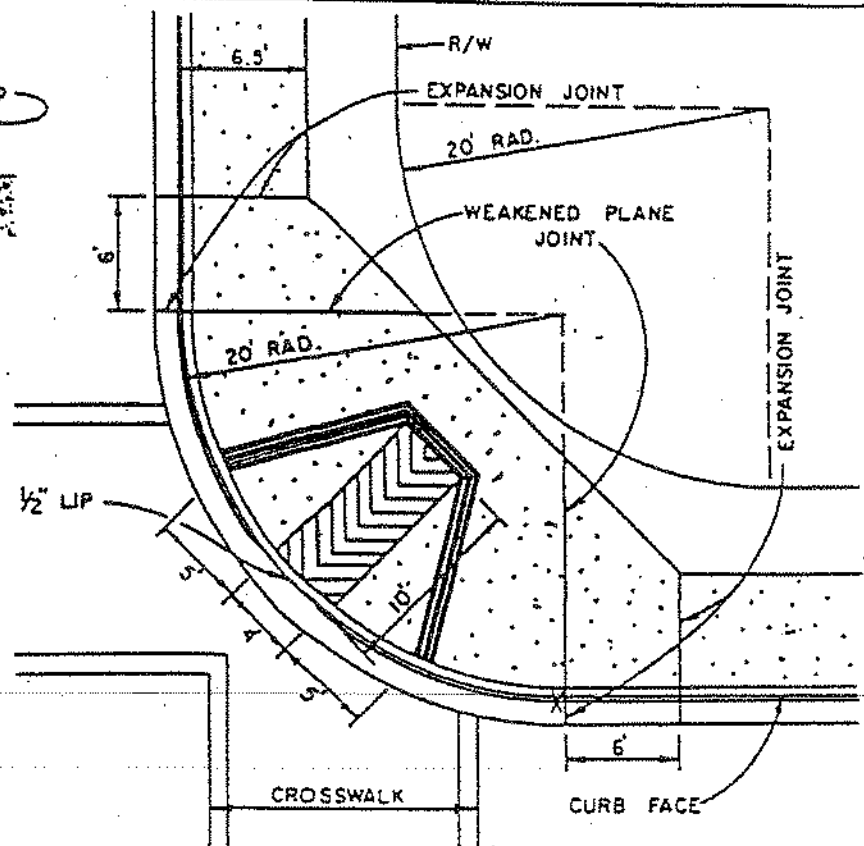
Approx. $\frac{3}{4}$ " except approx.
 $1\frac{1}{2}$ " on sloping portion of ramp



GROOVING DETAIL



LIP DETAIL



NOTES:

1. Ramp slope shall be 8.33% maximum.
2. The ramp shall have a 12" wide border with $\frac{1}{4}$ " grooves approximately $\frac{3}{4}$ " o.c. See grooving detail.
3. When ramp is located in center of curb return, it shall be grooved in a herringbone pattern with $\frac{1}{4}$ " grooves approximately $1\frac{1}{2}$ " o.c. See grooving detail. Grooves should be aligned parallel to crosswalk stripes to direct blind pedestrians into appropriate crosswalk. When ramp is not located in center of curb return, the surface shall have a transverse brooked surface texture rougher than the surrounding sidewalk.
4. Ramps shall be built and finished so that there are no abrupt changes in elevation or angle of slope.
5. Sidewalk ramps are required at all corners where curbs and/or sidewalks are to be constructed or reconstructed and shall be as shown on the improvement plans.
6. Modifications to location or dimensions of ramp shall require approval of County Engineer and be shown on approved plans.
7. Thickness of concrete: 4 in. minimum.
8. X Indicates position of survey reference point (#10 Round Head Brass Screw, minimum length $1\frac{1}{4}$ ") set flush with top of curb during construction.
9. Use when both intersecting streets are Collector Streets or narrower. When one street is a cul-de-sac (Std. No. 120), increase R/W radius to 27'.

San Bernardino County Transportation Department

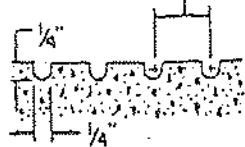
REV. 7-90

Ken A. Miller
 DIRECTOR OF TRANSPORTATION

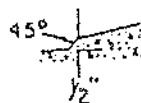
SIDEWALK RAMP

110
 C

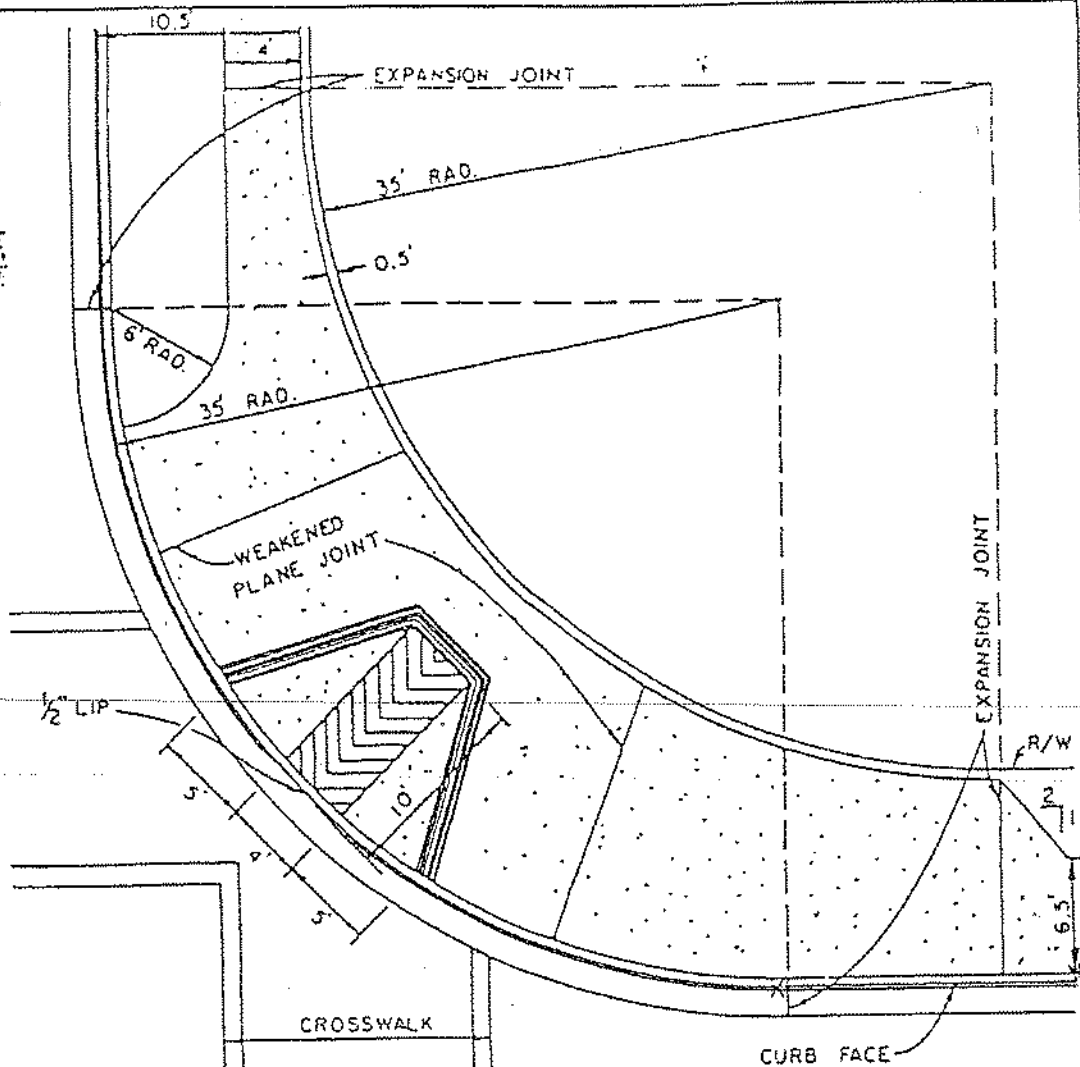
Approx. $\frac{3}{4}$ " except
approx. $1\frac{1}{2}$ " on sloping
portion of ramp



GROOVING
DETAIL



LIP DETAIL



NOTES:

1. Ramp slope shall be 8.33% maximum.
2. The ramp shall have a 12" wide border with 1/4" grooves approximately 3/4" o.c. See grooving detail.
3. When ramp is located in center of curb return, it shall be grooved in a herringbone pattern with 1/4" grooves approximately 1 1/2" o.c. See grooving detail. Grooves should be aligned parallel to crosswalk stripes to direct blind pedestrians into appropriate crosswalk. When ramp is not located in center of curb return, the surface shall have a transverse broomed surface texture rougher than the surrounding sidewalk.
4. Ramps shall be built and finished so that there are no abrupt changes in elevation or angle of slope.
5. Sidewalk ramps are required at all corners where curbs and/or sidewalks are to be constructed or reconstructed and shall be as shown on the improvement plans.
6. Modifications to location or dimensions of ramp shall require approval of County Engineer and be shown on approved plans.
7. Thickness of concrete: 4 in. minimum.
8. X Indicates position of survey reference point (#10 Round Head Brass Screw, minimum length 1 1/4") set flush with top of curb during construction.
9. Use when transitioning between different sidewalk locations.

San Bernardino County Transportation Department

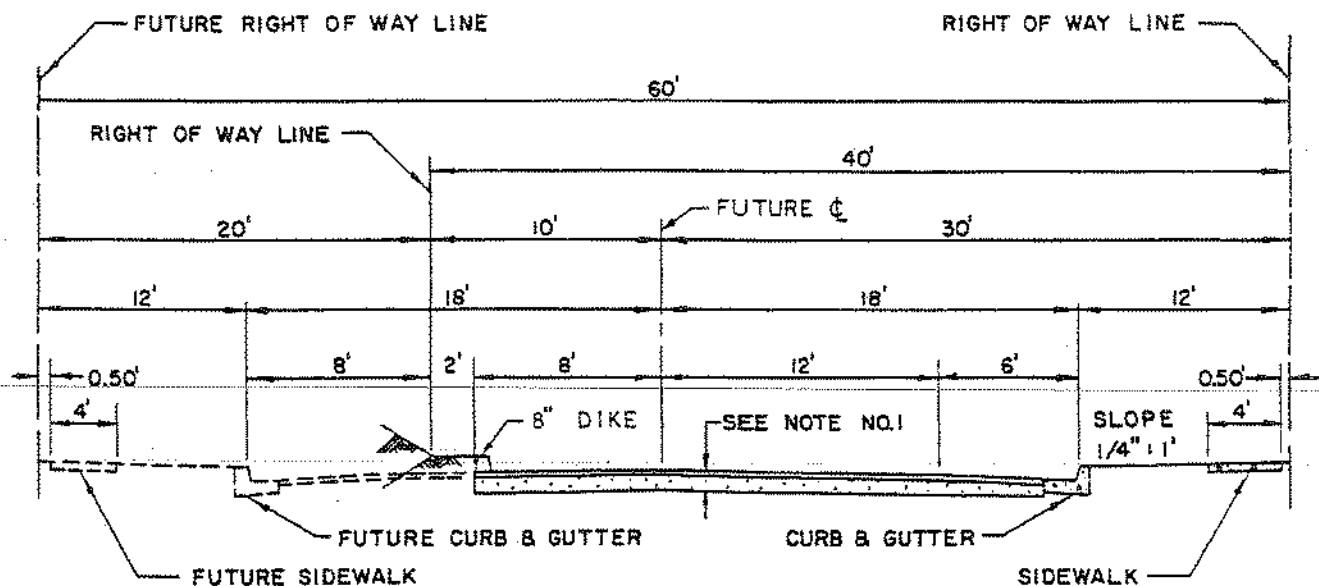
20 8-89

Ken A. Miller

DIRECTOR OF TRANSPORTATION

SIDEWALK RAMP

110
D.



TYPICAL SECTION

NOTES

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN $1\frac{1}{2}:1$.
3. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS
4. ALL SECTIONS SHALL CONFORM TO STANDARD NO. 104.
5. SLOPE REQUIREMENT MAY BE VARIED BY SUBMISSION OF SOILS REPORT.

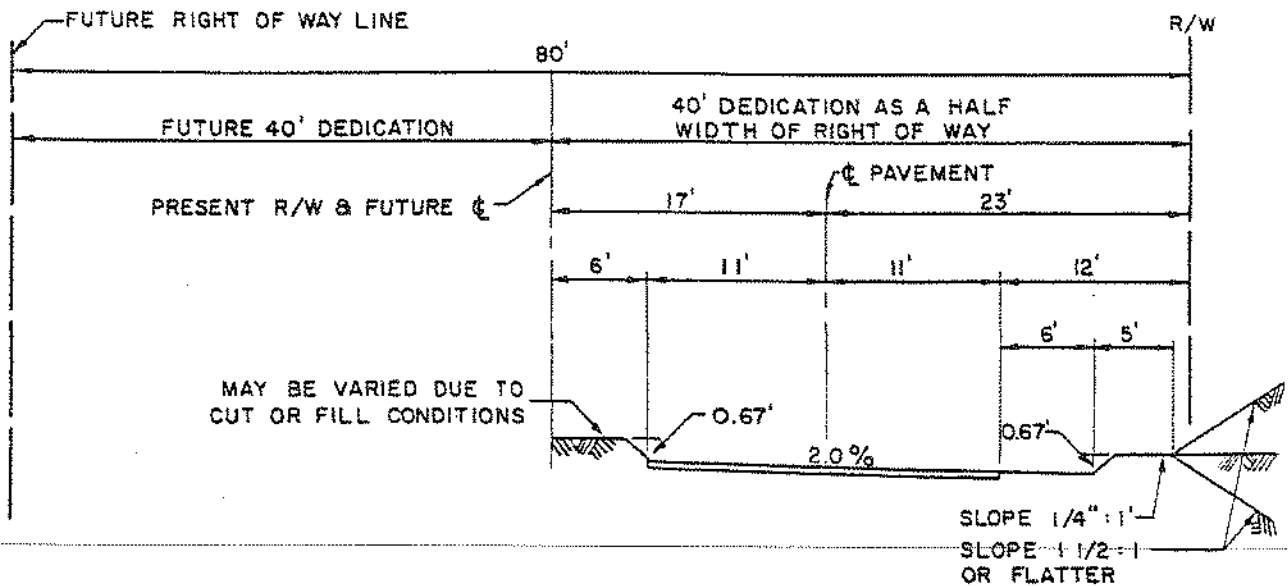
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: P.V.C. 5-23

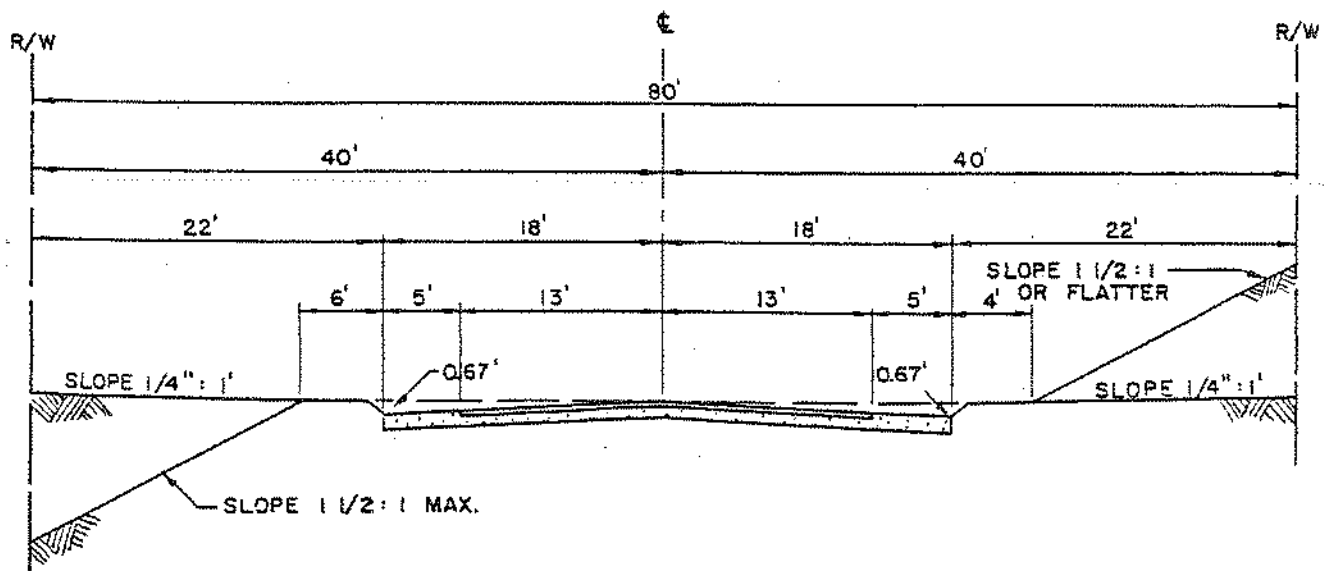
M. A. Nicholas
COUNTY ENGINEER

HALF WIDTH
LOCAL STREET

III



TYPICAL SECTION HALF WIDTH CONSTRUCTION



TYPICAL SECTION ULTIMATE WIDTH

NOTES:

1. FUTURE DEVELOPER TO RECONSTRUCT PAVEMENT TO STANDARD SECTION ON CENTERLINE OF FULL WIDTH RIGHT OF WAY. ROAD TO BE PAVED OR GRADED IN ACCORDANCE WITH STANDARD NO. 113 FOR ALIGNMENT AND IMPROVEMENT, AND STANDARD NUMBER 107 FOR INTERSECTION DESIGN.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.

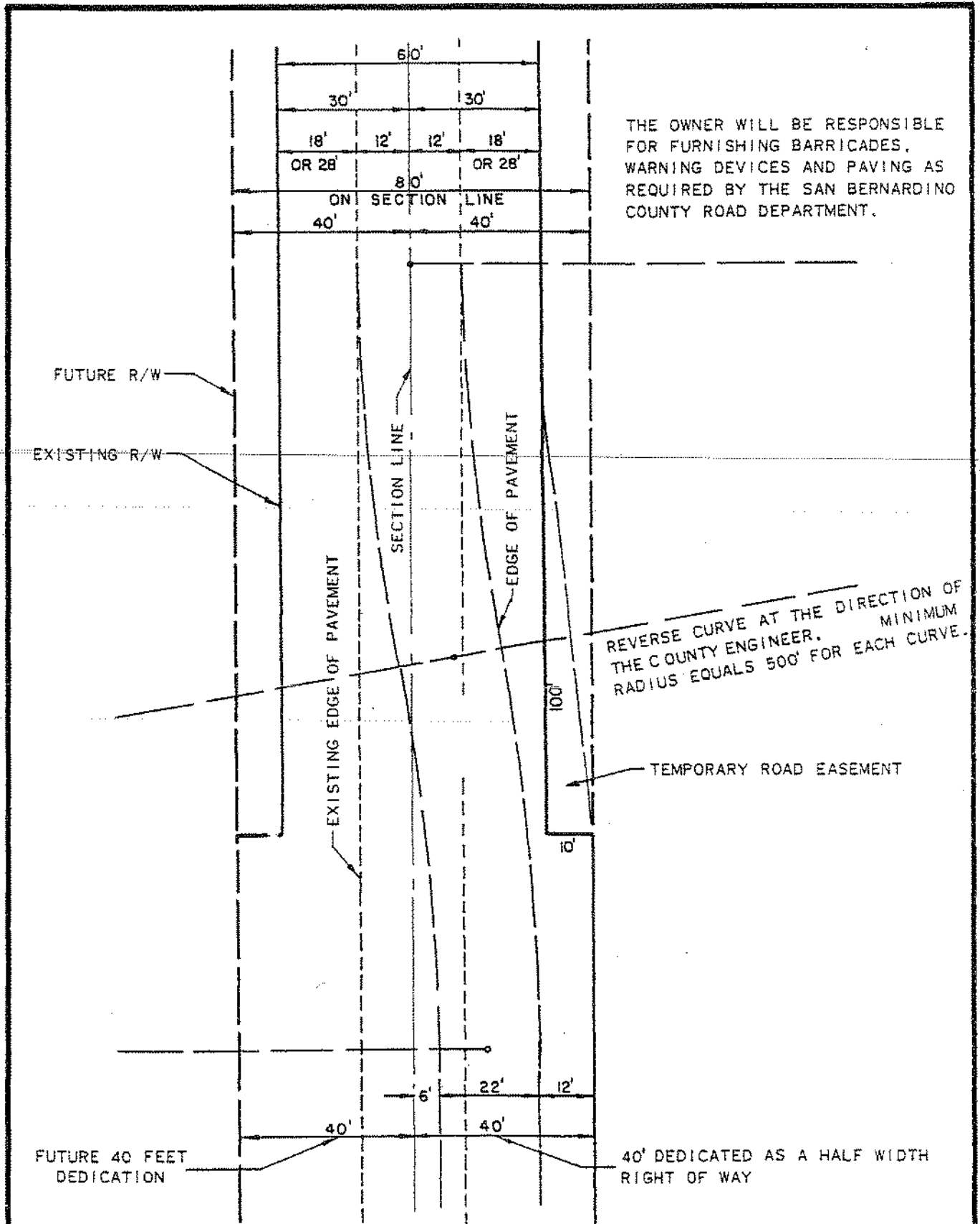
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: 2.1.0.529

M. A. Nicholas
COUNTY ENGINEER

HALF WIDTH
DESERT ROAD

112



THE OWNER WILL BE RESPONSIBLE FOR FURNISHING BARRICADES, WARNING DEVICES AND PAVING AS REQUIRED BY THE SAN BERNARDINO COUNTY ROAD DEPARTMENT.

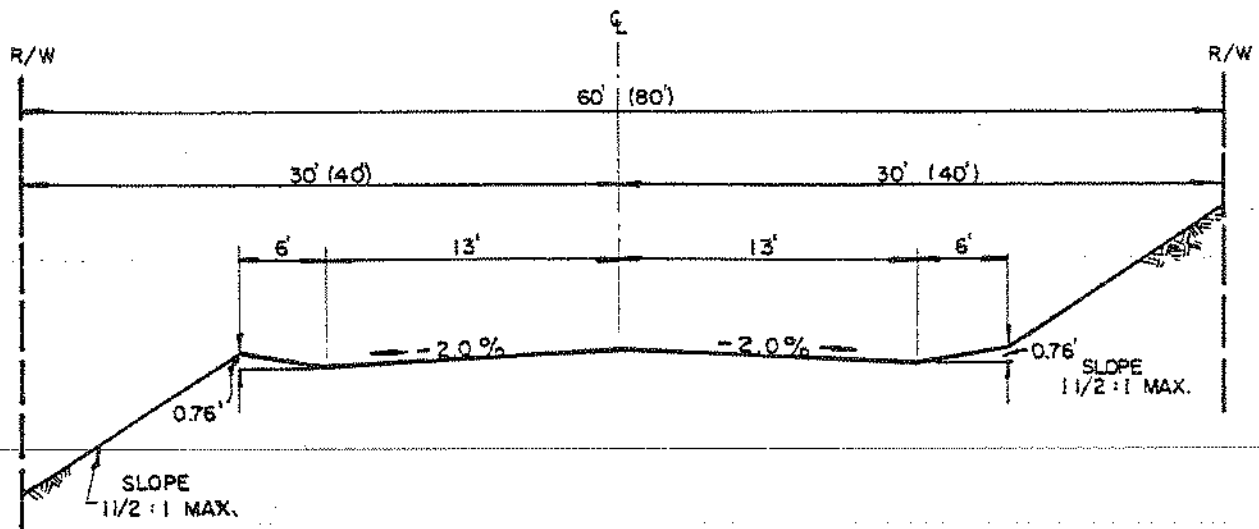
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: DEC. 6-65

M. A. Nicholas
COUNTY ENGINEER

HALF WIDTH
DESERT ROAD

113



TYPICAL SECTION

NOTES:

1. DRAINAGE IMPROVEMENTS TO BE PLACED WHERE REQUIRED BY PLAN.
2. EMBANKMENTS PLACED WITHIN AREA OF THE TRAVELLED WAY SHALL PROVIDE A STABLE ROADWAY.
3. PLANS SHALL INDICATE AREAS WHERE IMPORTED MATERIAL IS REQUIRED TO PROVIDE A STABLE ROADWAY.
4. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.

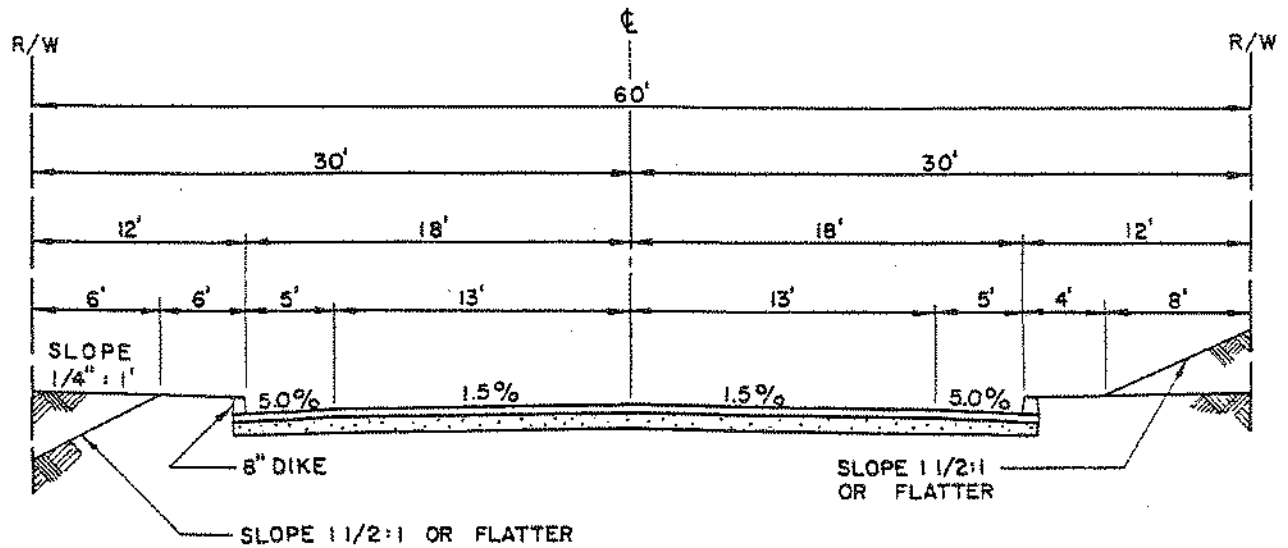
SAN BERNARDINO COUNTY ROAD DEPARTMENT

Rev. 5-74

John R. Shone
COUNTY HIGHWAY ENGINEER

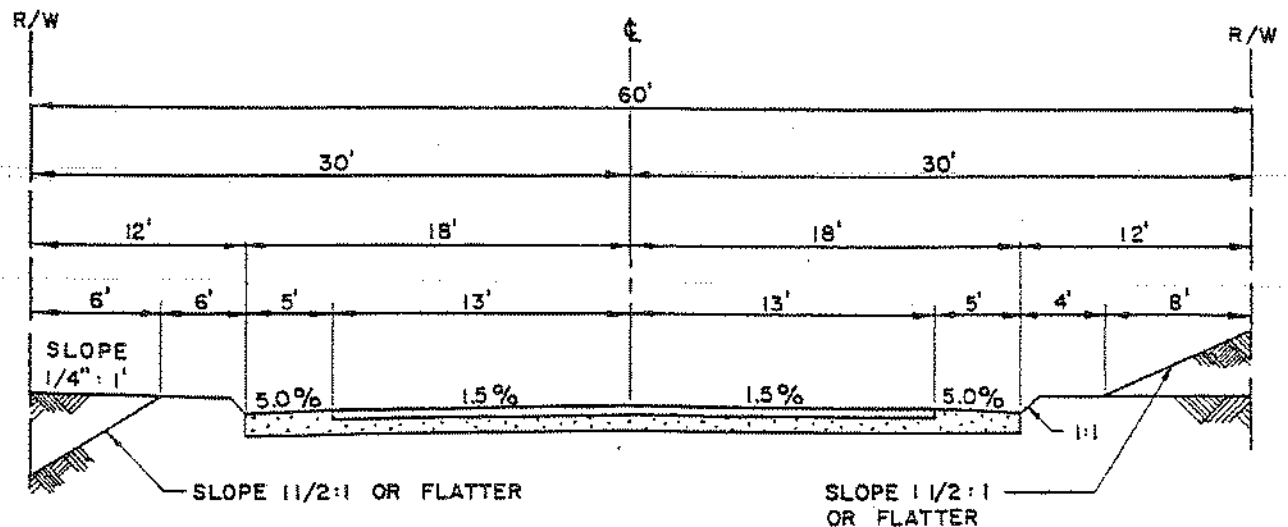
GRADED ROAD

114



TYPICAL SECTION

WHERE REQUIRED FOR DRAINAGE PURPOSES



TYPICAL SECTION

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
3. SLOPE REQUIREMENT MAY BE VARIED BY SUBMISSION OF SOILS REPORT.

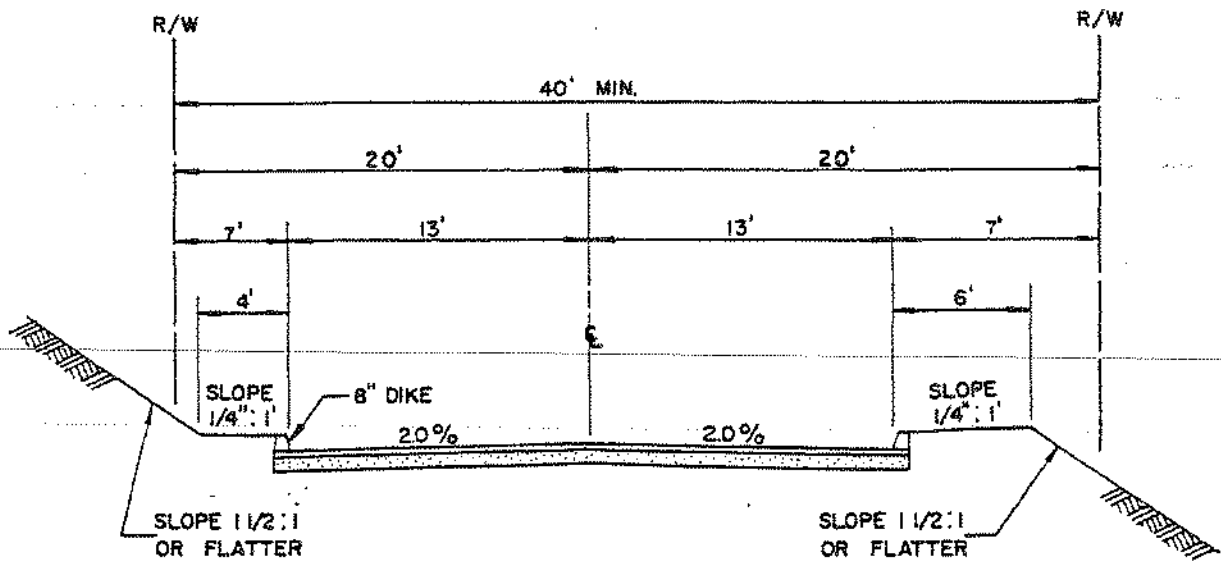
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: F.V.C. 5-88

M. A. Nicholas
COUNTY ENGINEER

PAVED ROAD

114a



TYPICAL SECTION MOUNTAIN AREAS

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOILS TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
3. SLOPE REQUIREMENT MAY BE VARIED BY SUBMISSION OF SOILS REPORT.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

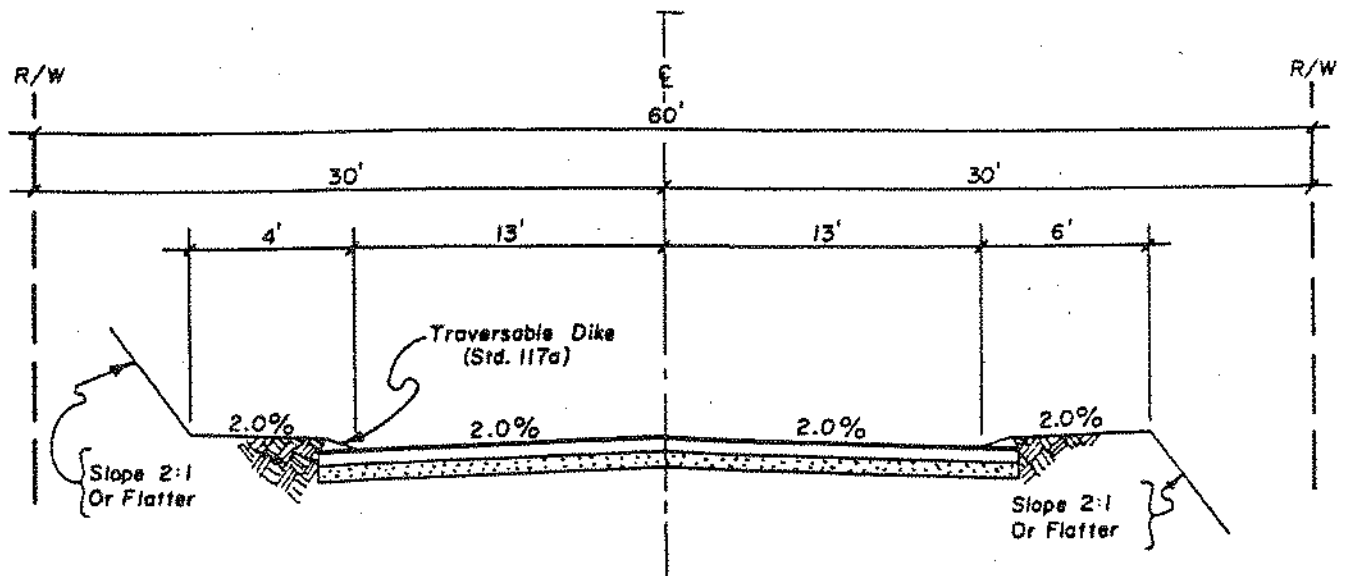
DATE: J.E.M. 9-65

PP 8-80

M. A. Nicholas
COUNTY ENGINEER

PAVED ROAD

114b



TYPICAL SECTION

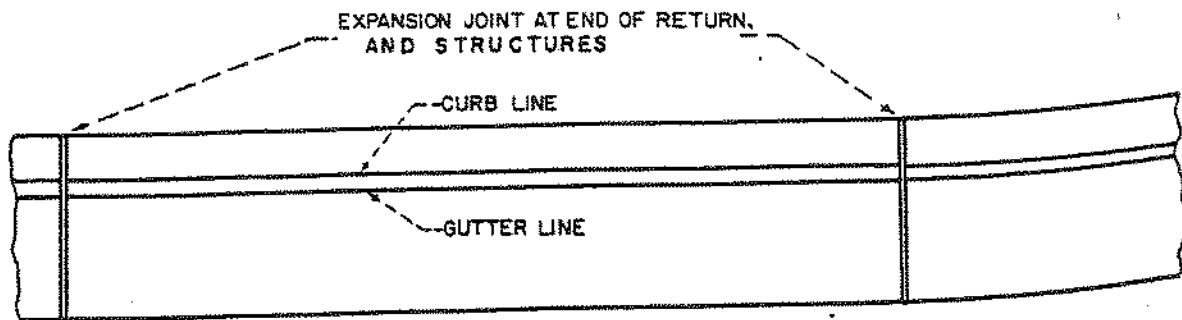
HILLSIDE

NOTES:

1. Structural Section Of Roadway Shall Be Determined From Soils Test And So Indicated On Construction Plans.
2. Construction Outside R/W Line Shall Require Slope Easements...
3. Slope Requirement May Be Varied By Submission Of Soils Report.

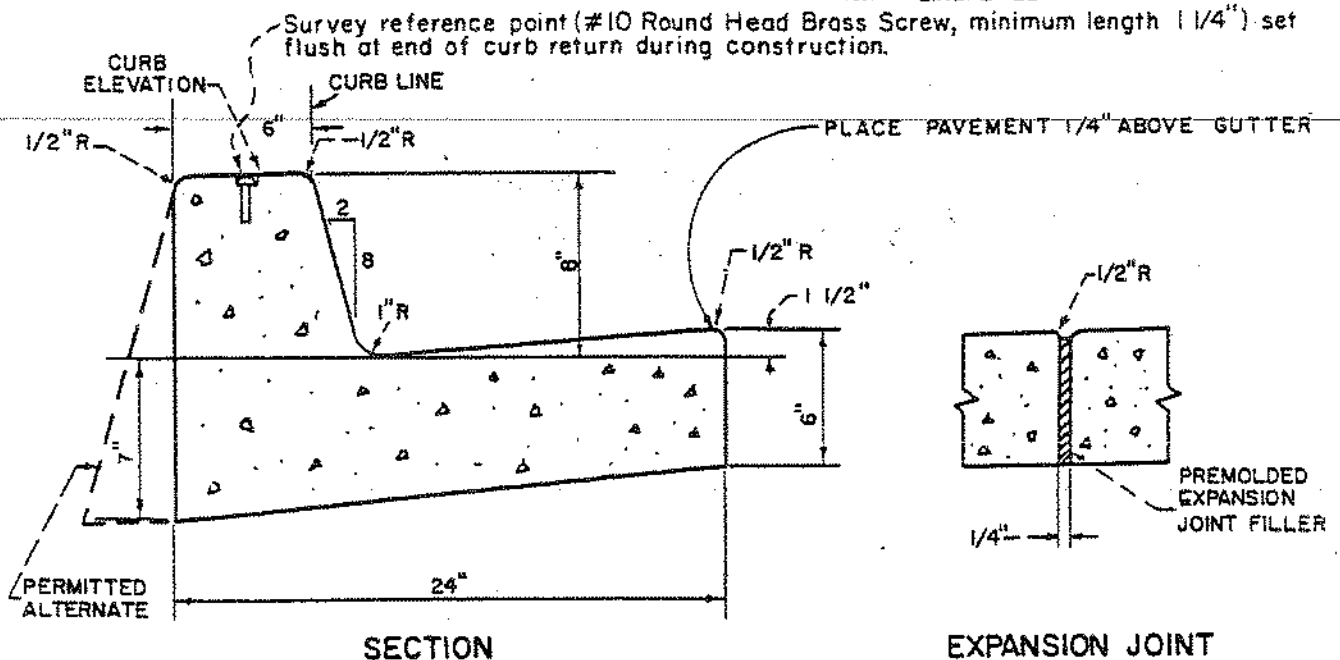
3-31-93 vnc

SAN BERNARDINO COUNTY TRANS. DEPT.		HILLSIDE PAVED ROAD	114c
REV. 3/1/94	KEN A. MILLER Director of Transportation		



PLAN

0.0535 CUBIC YARDS PER LINEAL FOOT.
18.7 LINEAL FEET PER CUBIC YARD.



NOTES:

1. CURB AND GUTTER SHALL BE CONSTRUCTED MONOLITHICALLY OF CLASS "B" CONCRETE.
2. WIDTHS OF STANDARD STREET SECTIONS SHOWN ON PLANS ARE TO CURB LINE UNLESS OTHERWISE INDICATED.
3. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 10-FOOT INTERVALS, EXCEPT THAT THE INTERVAL SHALL BE VARIED TO ALLOW MATCHING OF JOINTS IN ADJACENT EXISTING IMPROVEMENTS.
4. OILING COMPOUND SHALL BE SPRAYED UNIFORMLY ON EXPOSED SURFACES.
5. WHEN CURB AND GUTTER IS PLACED BY AN EXTRUSION MACHINE MINOR FINISHING MAY BE DONE TO PROVIDE AN ACCEPTABLE FINISH AND THE WEAKENED PLANE JOINTS MAY BE SAWCUT.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

REV. V.E.H. 3-74

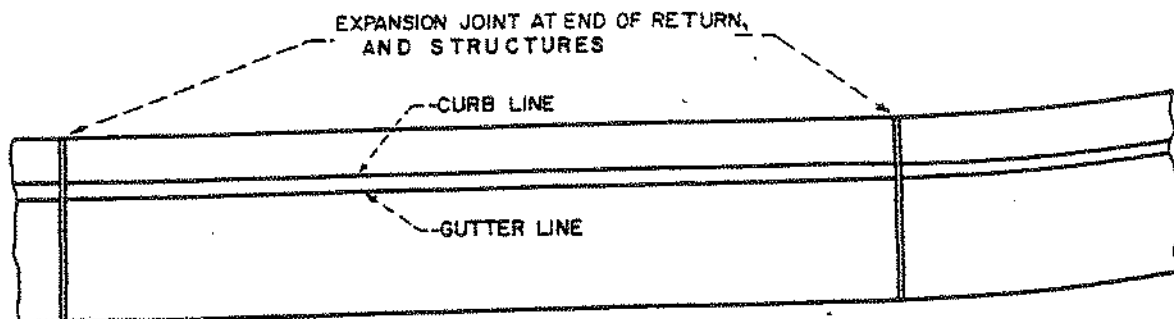
REV. V.E.H. 7-75

Rev. V.E.H. 2-79

John R. Shone
COUNTY HIGHWAY ENGINEER

CURB 8" AND GUTTER

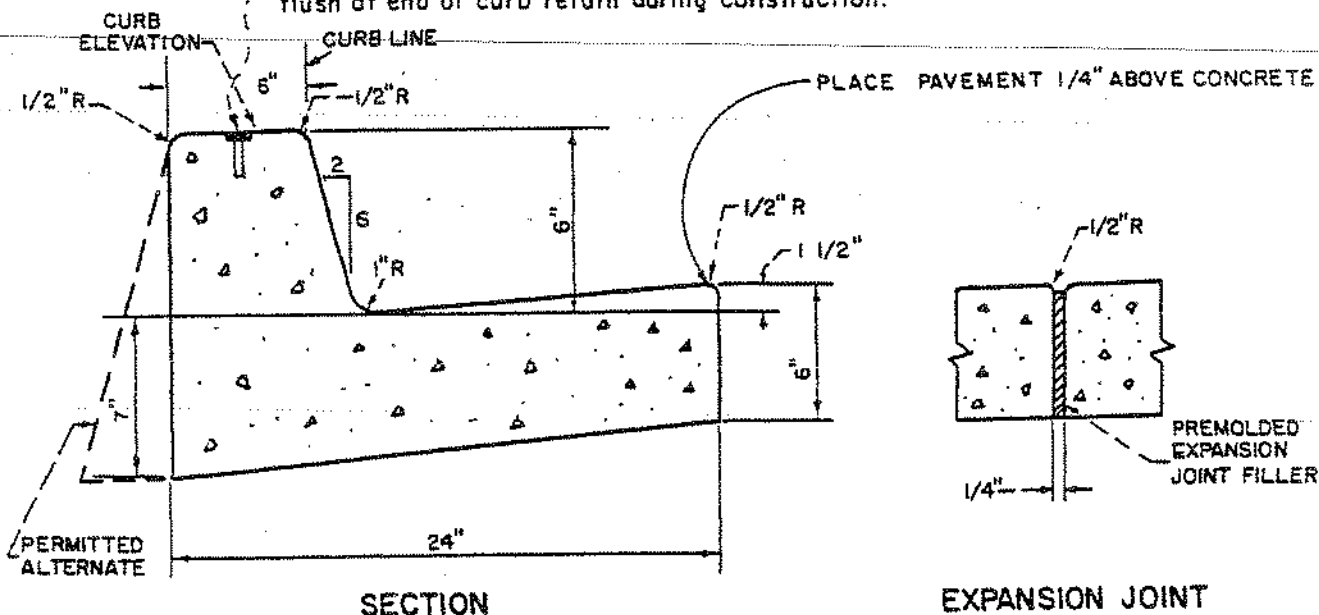
115



PLAN

0.0495 CUBIC YARDS PER LINEAL FOOT.
20.2 LINEAL FEET PER CUBIC YARD.

Survey reference point (#10 Round Head Brass Screw, minimum length 1 1/4") set flush at end of curb return during construction.



EXPANSION JOINT

NOTES:

1. 6" CURB SHALL ONLY BE USED ON LOCAL STREETS WHERE DRAINAGE PERMITS.
2. CURB AND GUTTER SHALL BE CONSTRUCTED MONOLITHICALLY OF CLASS "B" CONCRETE.
3. WIDTHS OF STANDARD STREET SECTIONS SHOWN ON PLANS ARE TO CURB LINE UNLESS OTHERWISE INDICATED.
4. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 10-FOOT INTERVALS, EXCEPT THAT THE INTERVAL SHALL BE VARIED TO ALLOW MATCHING OF JOINTS IN ADJACENT EXISTING IMPROVEMENTS.
5. CURING COMPOUND SHALL BE SPRAYED UNIFORMLY ON EXPOSED SURFACES.
6. WHEN CURB AND GUTTER IS PLACED BY AN EXTRUSION MACHINE MINOR FINISHING MAY BE DONE TO PROVIDE AN ACCEPTABLE FINISH AND THE WEAKENED PLANE JOINTS MAY BE SAWCUT.

SAN BERNARDINO COUNTY TRANS. DEPARTMENT

APPR. 3-75
Rev. VEH 2-79

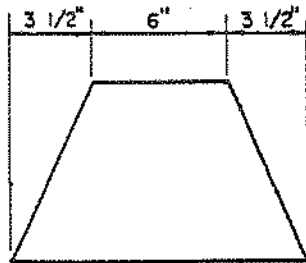
John R. Shone
DIRECTOR OF TRANSPORTATION

CURB

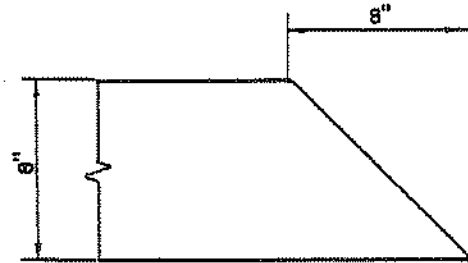
6"
AND

GUTTER

116



SECTION



END CUTOFF

8" DIKE

NOTES:

1. DIKE SHALL BE CONSTRUCTED OF TYPE B ASPHALT CONCRETE.
2. PAINT BINDER SHALL BE PLACED ON EXISTING ASPHALT CONCRETE PAVEMENT PRIOR TO THE INSTALLATION OF THE DIKE.

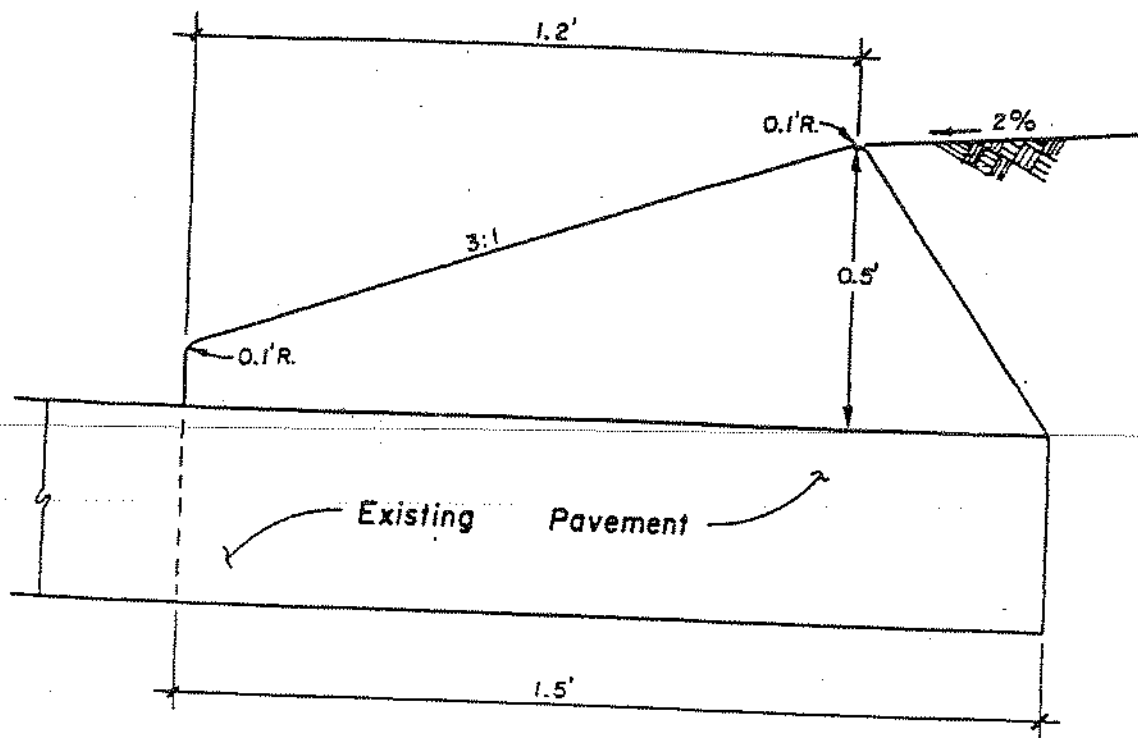
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: P.V.C. 6-65

M. A. Nicholas
COUNTY ENGINEER

ASPHALT CONCRETE
DIKE

117



TYPICAL SECTION

NOTES:

1. Dike Shall Be Constructed Of Type B Asphalt Concrete.
2. Prime Binder Shall Be Placed On Existing Asphalt Concrete Pavement Prior To The Installation Of The Dike.

4-1-95 vhc

SAN BERNARDINO COUNTY TRAN. DEPT.

REV. 3/1/94

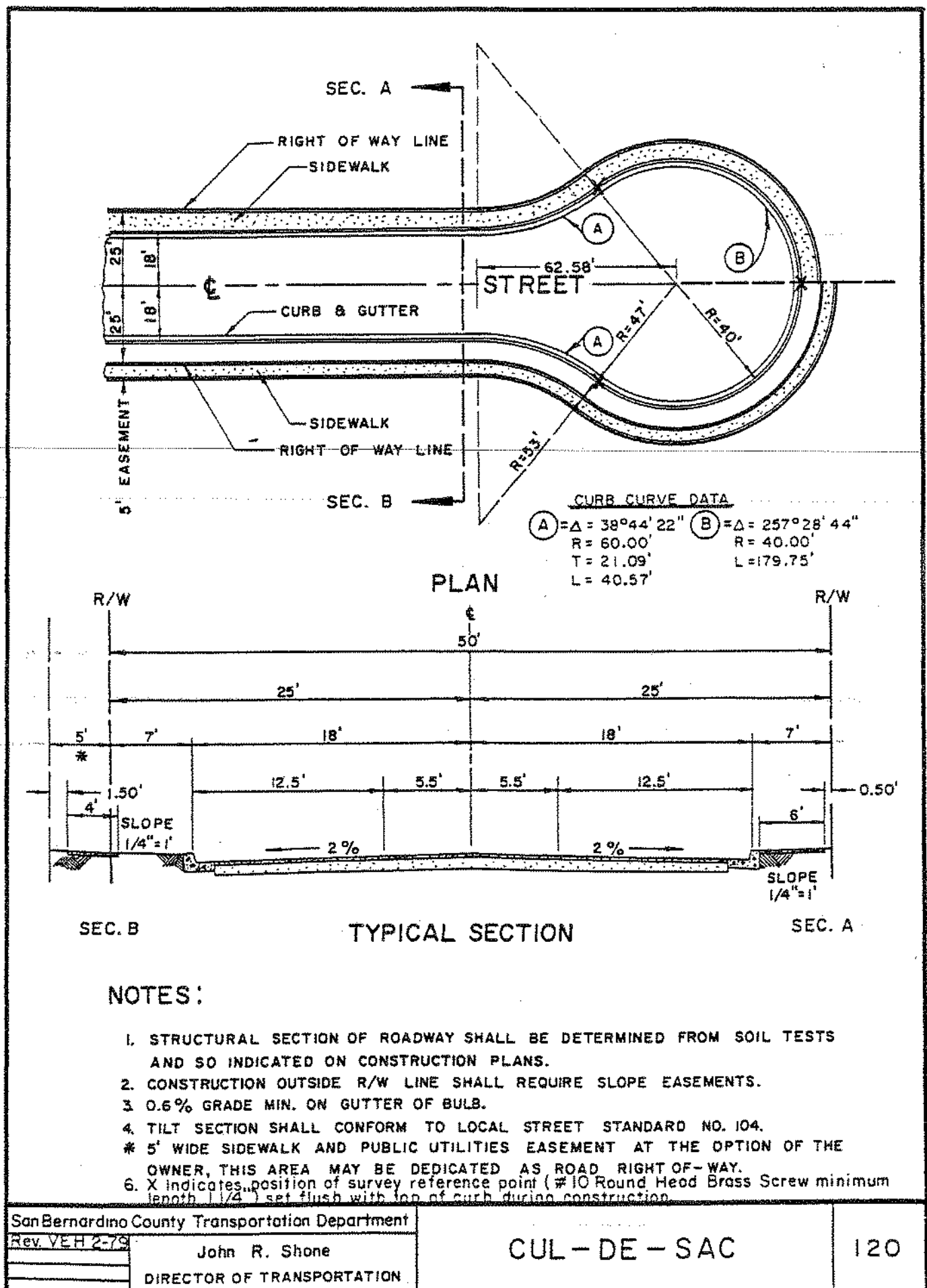
KEN A. MILLER
Director of Transportation

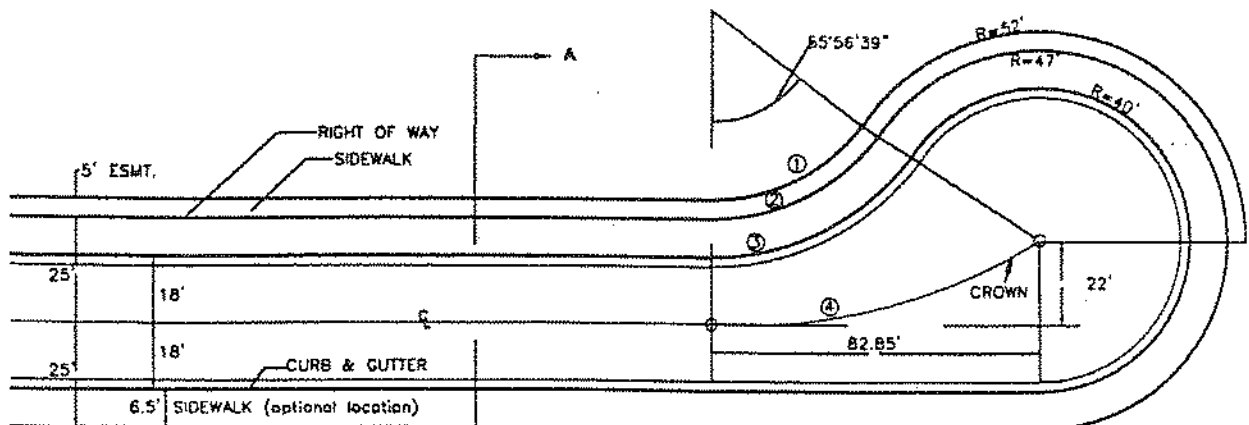
TRAVERSABLE DIKE

117a



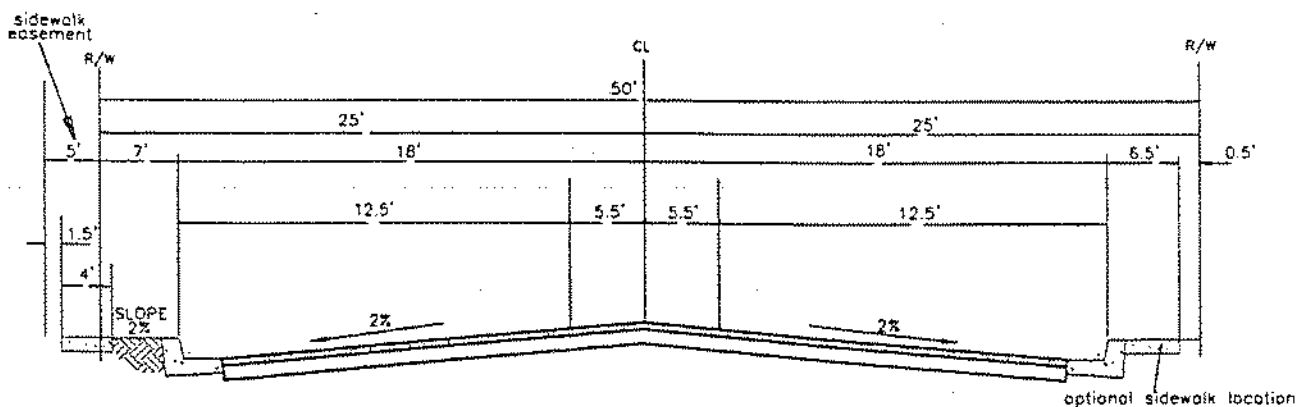
1. CROSS GUTTER SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
2. THE STRAIGHT GRADE BETWEEN B.C.R.'S MAY BE ALTERED ON AN EXCESSIVE GRADE.
3. A 0.3' MINIMUM FALL IS REQUIRED BETWEEN E.C.R. AND CROSS GUTTER FLOWLINE.
4. SPANDREL SHALL BE 8" THICKNESS CLASS "B" CONCRETE.
5. VARIABLE CURB FACE ALLOWED FOR DRAINAGE PURPOSES.





PLAN

①	R=48' Δ=29°44'33" L=24.92' T=12.75'	②	R=53' Δ=29°44'33" L=27.51' T=14.07'
③	R=80' Δ=29°44'33" L=31.15' T=15.93'	④	R=167' Δ=29°44'33" L=86.69' T=44.35'

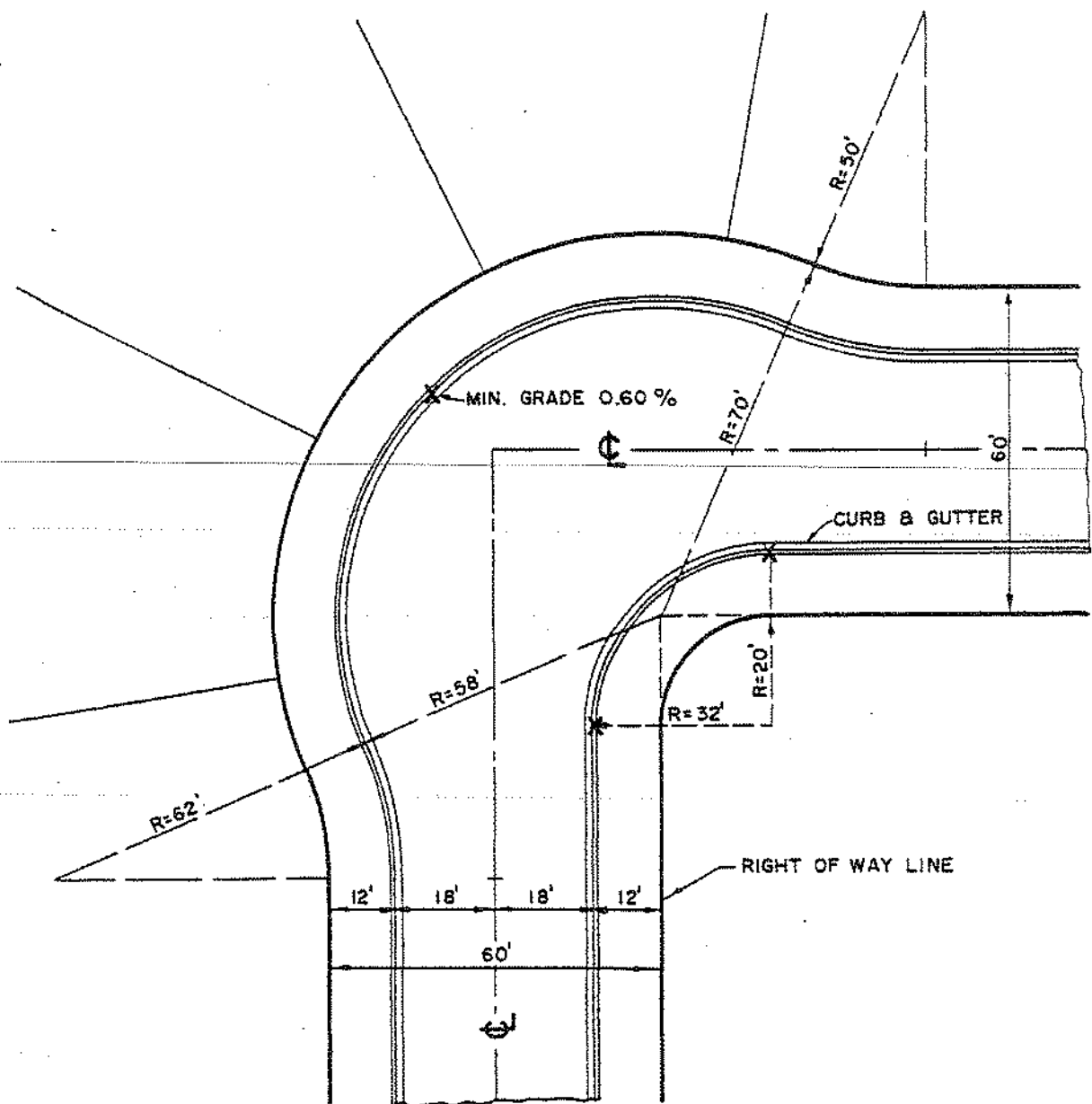


TYPICAL SECTION A-A

NOTES:

1. STRUCTURAL SECTION OF ROADWAY SHALL BE DETERMINED FROM SOIL TESTS AND SO INDICATED ON CONSTRUCTION PLANS.
2. CONSTRUCTION OUTSIDE R/W LINE SHALL REQUIRE SLOPE EASEMENTS.
3. 0.6% GRADE MIN. ON GUTTER OF BULB.
4. TILT SECTION SHALL CONFORM TO LOCAL STREET STANDARD NO.104.
5. SIDEWALK SHALL CONFORM TO LOCAL STREET STANDARD NO.109.
6. SIDEWALK AND PUBLIC UTILITIES EASEMENT AT THE OPTION OF THE OWNER, THIS AREA MAY BE DEDICATED AS ROAD RIGHT-OF-WAY.
7. X INDICATES POSITION OF SURVEY REFERENCE POINT (#10 ROUNDHEAD BRASS SCREW MINIMUM LENGTH 1.25" SET FLUSH WITH TOP OF CURB DURING CONSTRUCTION.

SAN BERNARDINO COUNTY TRANS. DEPT.		OFFSET CUL-DE-SAC	120A
	KEN A. MILLER		
	Director of Transportation		



PLAN

NOTES:

1. MINIMUM 0.60% ON ALL HORIZONTAL CURVE GRADES.
2. SEE STANDARD NO. 104 FOR TYPICAL SECTION.
3. X indicates position of survey reference point (#10 Round Head Brass Screw, minimum length 1 1/4") set flush with top of curb during construction.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

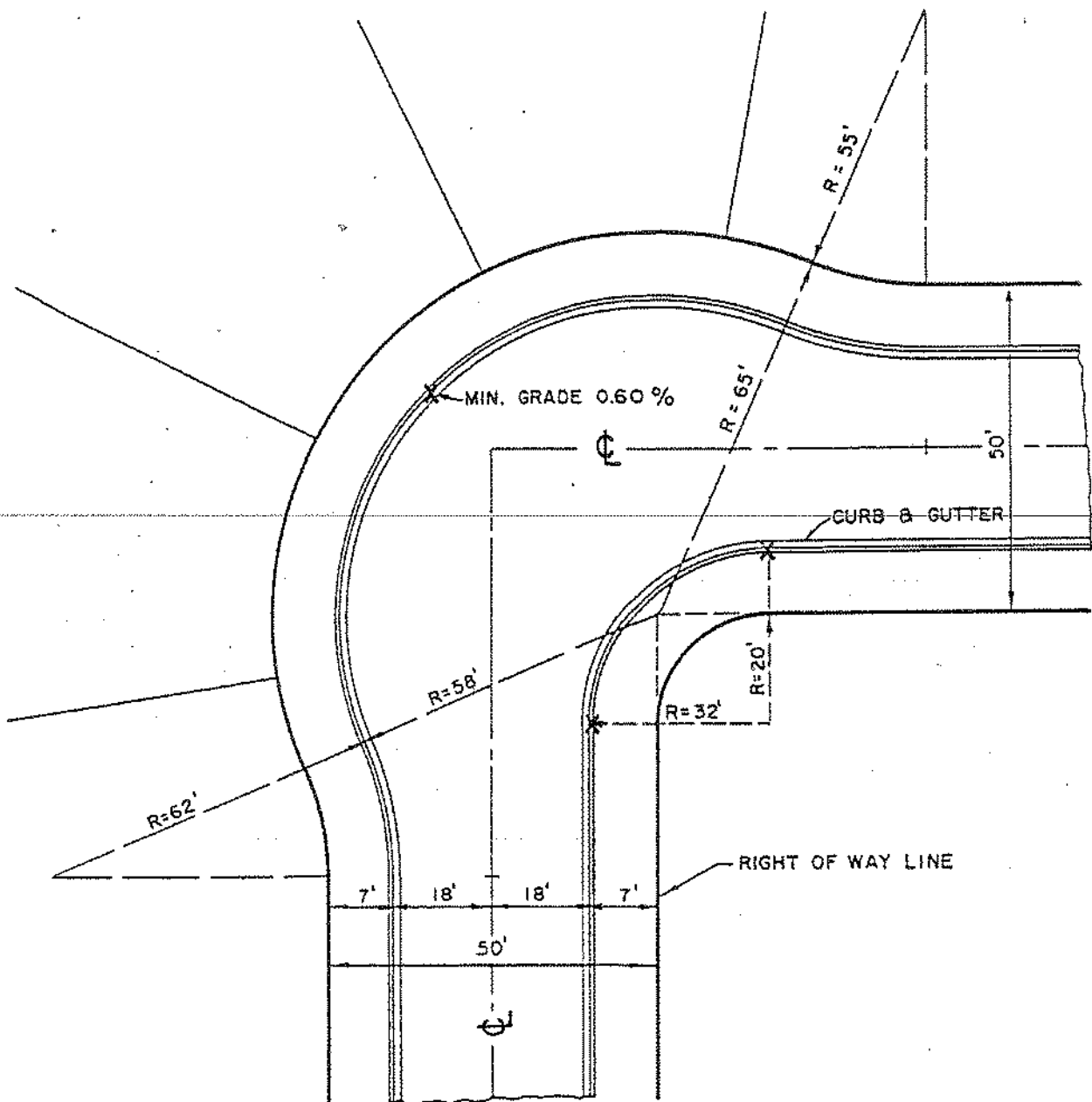
DATE: EVC 4-65

Rev. VEH 2-79

M. A. Nicholas
COUNTY ENGINEER

INTERSECTION DESIGN
"L" SHAPE

121



PLAN

NOTES:

1. MINIMUM 0.60% ON ALL HORIZONTAL CURVE GRADES.
2. SEE STANDARD NO.104A FOR TYPICAL SECTION, AND NOTES.
3. X Indicates position of survey reference point (#10 Round Head Brass Screw, minimum length 1 1/4") set flush with top of curb during construction.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: F.V.C. 4-65

Rev. VEH 2-79

RD 8-89

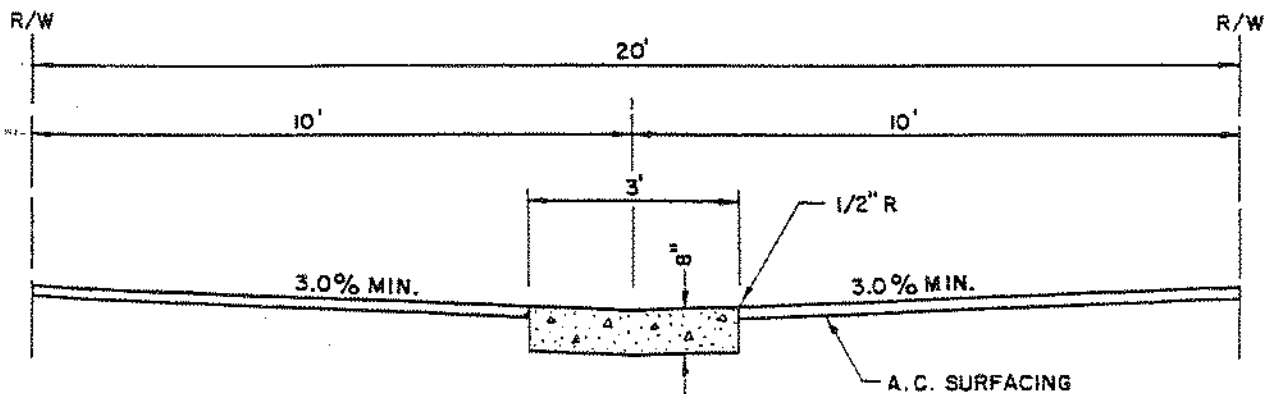
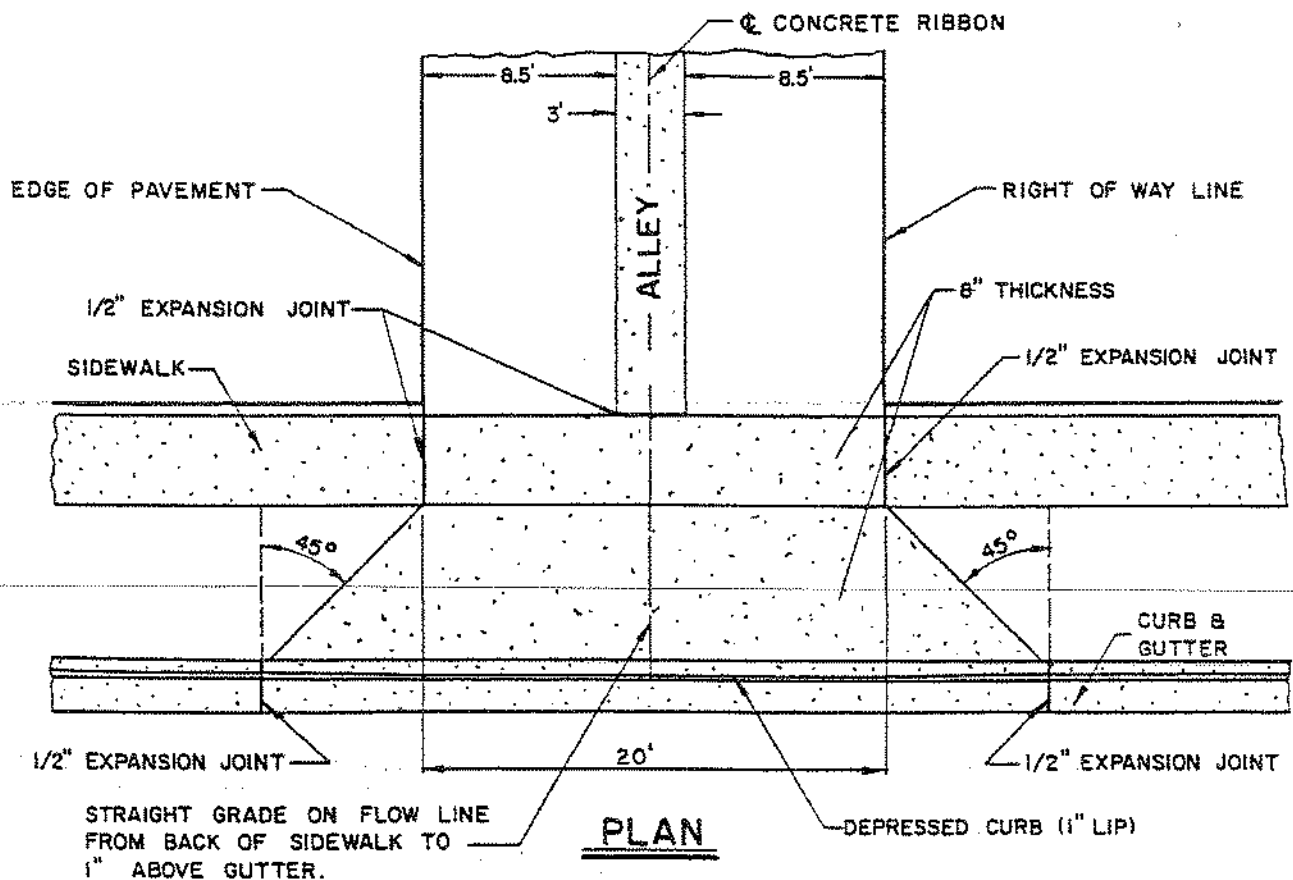
Ken A. Miller

DIRECTOR OF TRANSPORTATION

INTERSECTION DESIGN

"L" SHAPE 50' R/W

121A



NOTES:

1. CONCRETE RIBBON SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
2. ASPHALT CONCRETE SHALL HAVE A MINIMUM THICKNESS OF TWO INCHES.

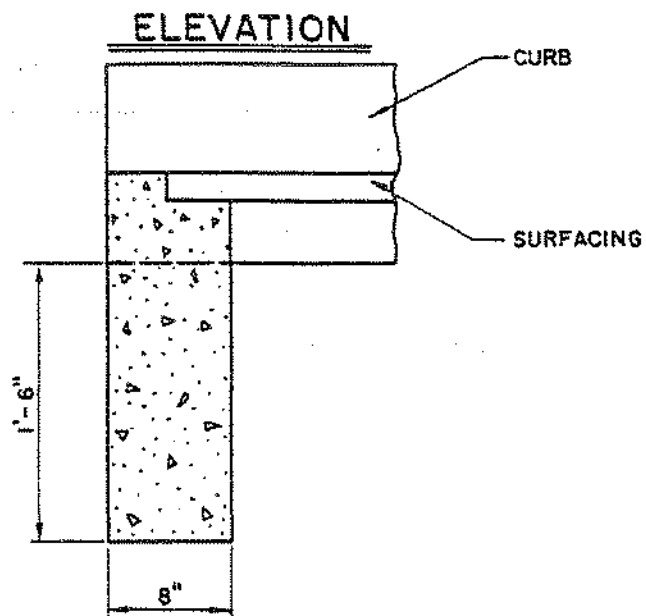
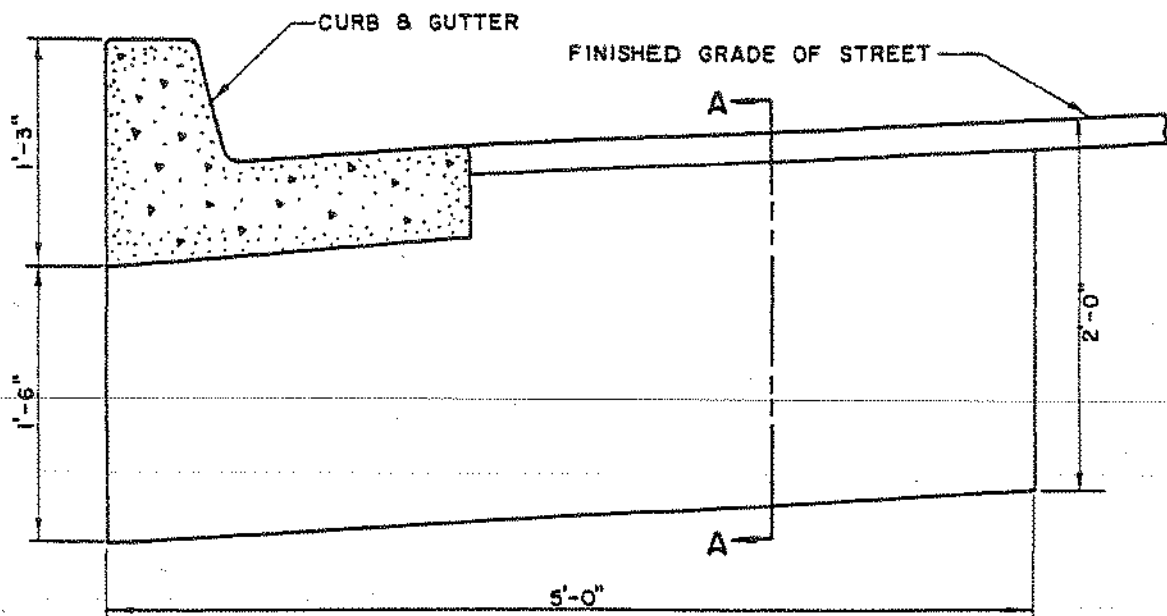
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: 2.11.65

M. A. Nicholas
COUNTY ENGINEER

ALLEY

125



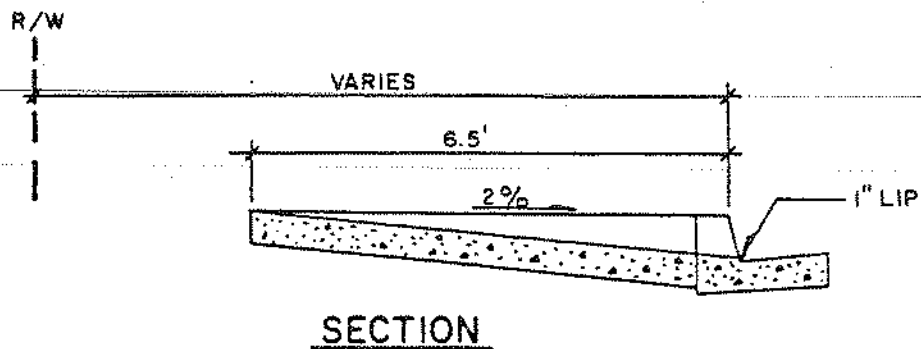
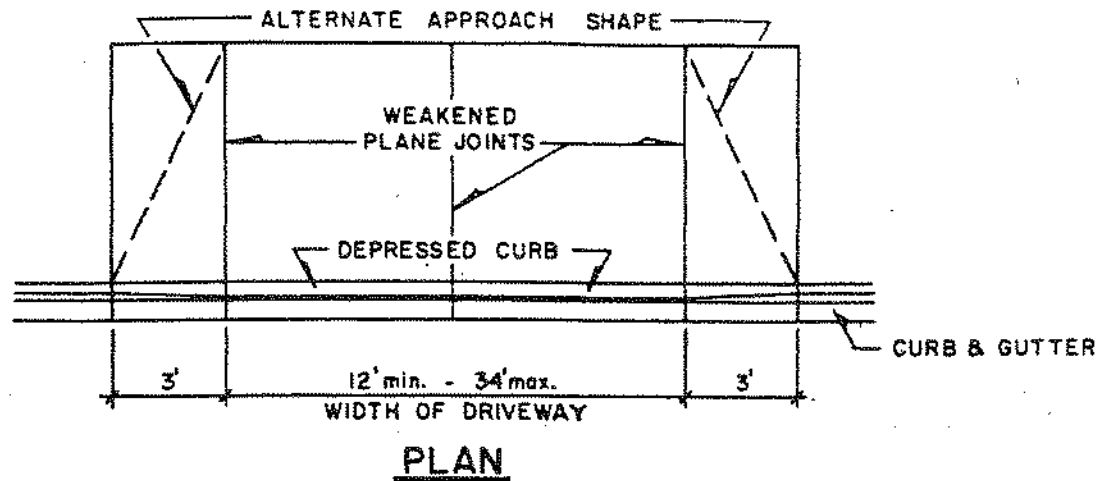
SECTION A-A

NOTES:

1. CUTOFF WALL SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE.
2. CUTOFF WALL SHALL BE INSTALLED WHERE REQUIRED BY DRAINAGE CONDITIONS.

SAN BERNARDINO COUNTY ROAD DEPARTMENT	
DATE: J.V.C. 8-65	
M. A. Nicholas	
COUNTY ENGINEER	

CURB
CUT OFF WALL



NOTES:

1. Driveway Approach Location Shall Be As Indicated In The S.B. Co. Transportation Department Road Planning & Design Manual And Per Standard No.130.
2. To Construct A Depression In Existing Curb And Gutter:
 - a. Saw Cut And Remove For The Necessary Width.
 - b. Remove And Reconstruct To The Nearest Joint.
 - c. Horizontal Saw Cut And Remove Curb As Necessary.
3. An Approach Must Be Constructed With Each Curb Depression.
4. Surfacing Shall Be Portland Cement Concrete Class 'B' (5 Sack) 4" Thick And Have A Broom Finish.

SAN BERNARDINO COUNTY TRANS. DEPT.

OCT. 1, 1995 v.h.c.

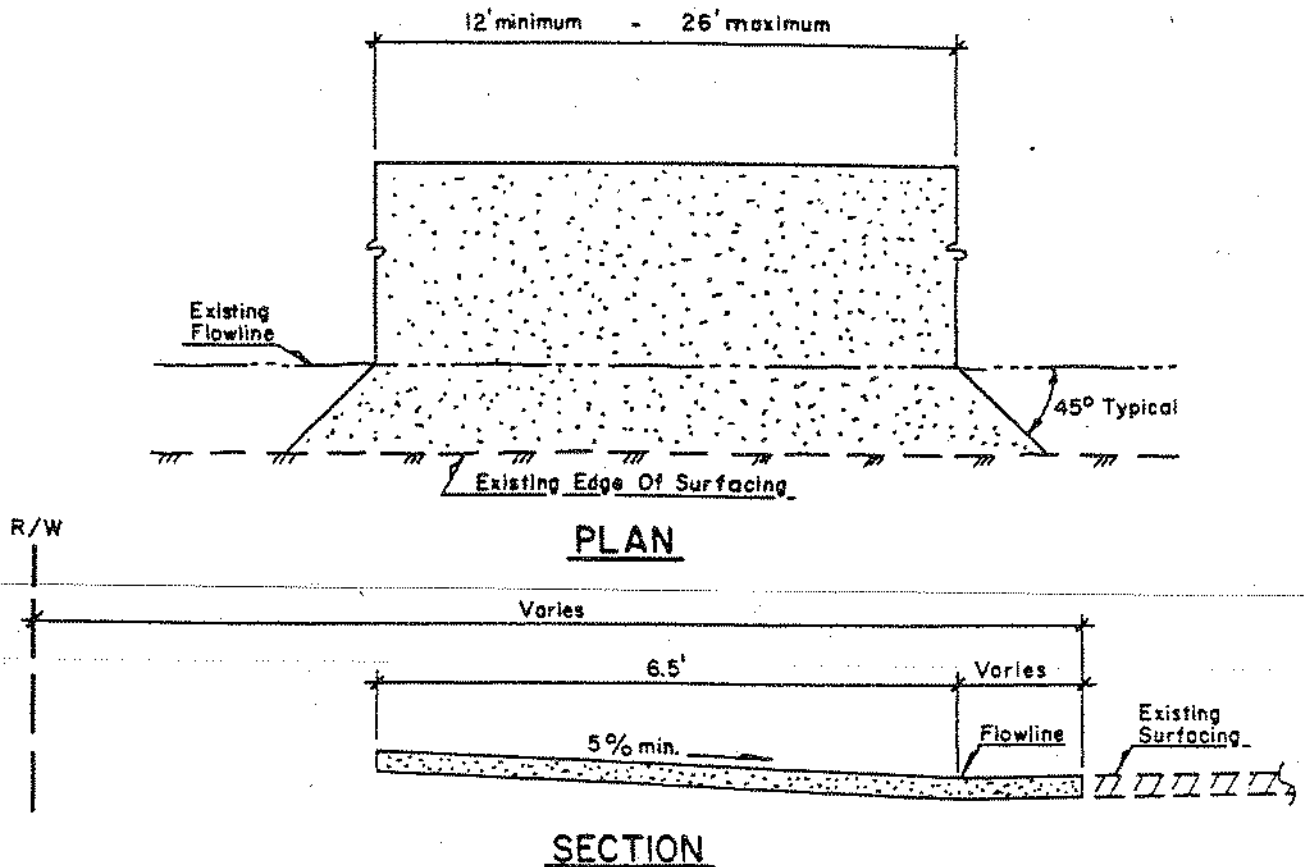
REY. 3/1/94

KEN A. MILLER

Director of Transportation

**RESIDENTIAL DRIVEWAY
APPROACH WITH CURB**

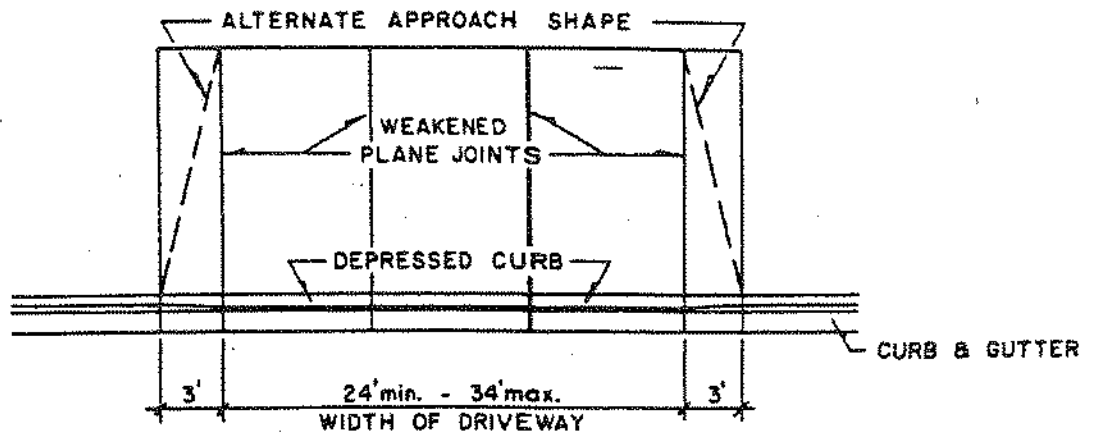
128



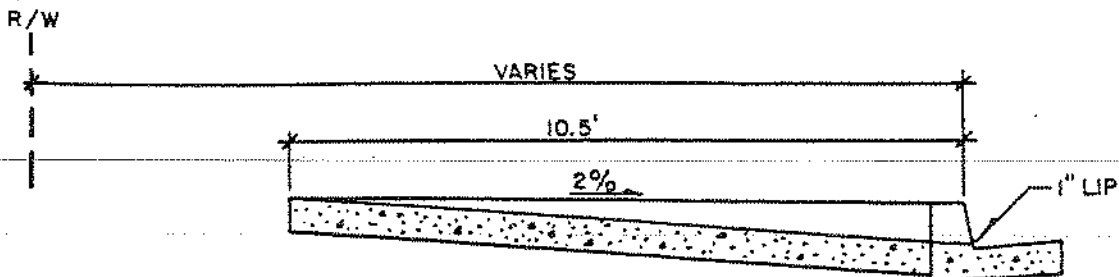
NOTES:

1. Driveway Approach Location Shall Be As Indicated In The S.B. County Transportation Department Road Planning & Design Manual And Per Standard N^o 130.
2. Surfacing Material Shall Be:
 - a. Type 'B' Asphalt Concrete Grade AR-4000, 1/2" Max. Med., 3" Thick.
 - b. In Areas Not Regularly Subjected To Snowplowing, Portland Cement Concrete Class 'B', 4" Thick May Be Used.
 - c. Unpaved, If The Roadway Is Unpaved.
3. Flowline Grade Shall Be Maintained.
4. Where Existing Berm Is Removed, The Approach Shall Be Constructed To An Elevation Equal In Height To Control Drainage.

SAN BERNARDINO COUNTY TRANS. DEPT.		RESIDENTIAL DRIVEWAY APPROACH WITHOUT CURB	128a
OCT. 4, 1993	V.N.C.		
REV 3/1/94	KEN A. MILLER		
	Director of Transportation		



PLAN



SECTION

NOTES:

1. Driveway Approach Location Shall Be As Indicated In The S.B.Co. Transportation Department Road Planning & Design Manual And Per Standard No. 130.
2. To Construct A Depression In Existing Curb And Gutter:
 - a. Saw Cut And Remove For The Necessary Width.
 - b. Remove And Reconstruct To The Nearest Joint.
 - c. Horizontal Saw Cut And Remove Curb As Necessary.
3. An Approach Must Be Constructed With Each Curb Depression.
4. Surfacing Shall Be Portland Cement Concrete Class 'B' (5 Sack) 6" Thick And Have A Broom Finish.

10-1-93 vhc

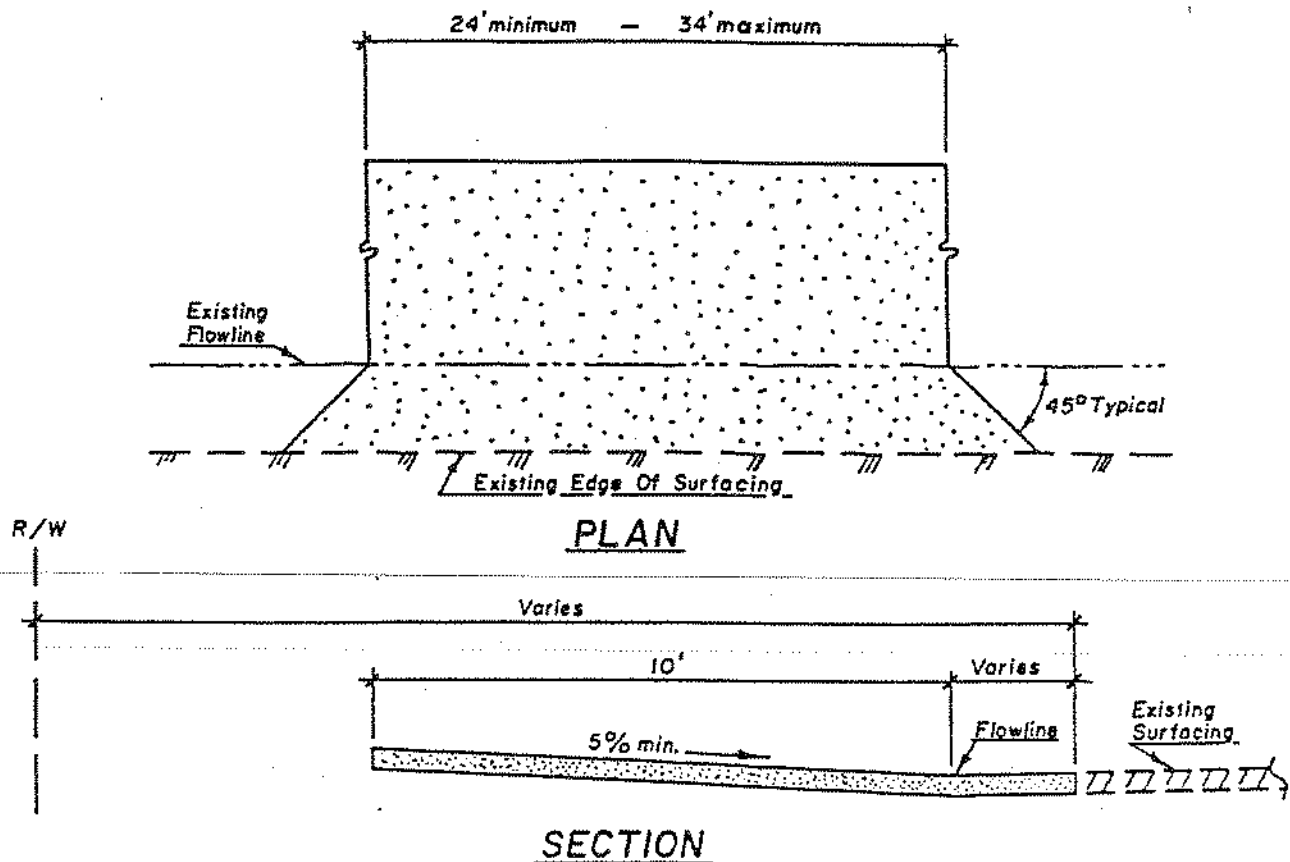
SAN BERNARDINO COUNTY TRANS. DEPT.

REV. 3/1/94

KEN A. MILLER
Director of Transportation

**COMMERCIAL DRIVEWAY
APPROACH WITH CURB**

129

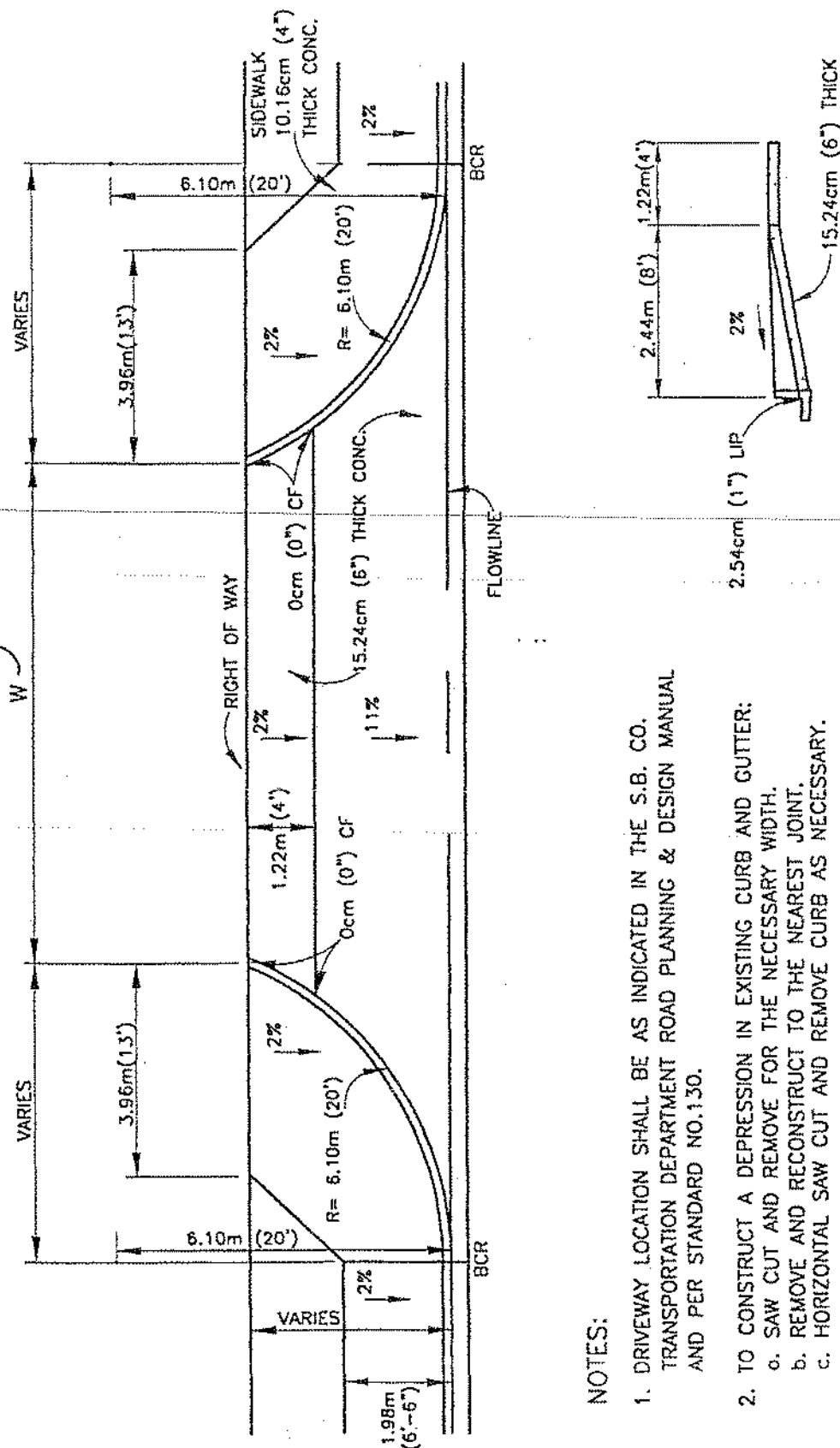


NOTES:

1. Driveway Approach Location Shall Be As Indicated In The S.B. Co. Transportation Department Road Planning & Design Manual And Per Standard N^o 130.
2. Surfacing Material Shall Be:
 - a. Type B Asphalt Concrete Grade AR-4000, 1/2" Max. Med., 3" Thick.
 - b. In Areas Not Regularly Subjected To Snowplowing, Portland Cement Concrete Class B 6" Thick May Be Used.
 - c. Unpaved, If The Roadway Is Unpaved.
3. Flowline Grade Shall Be Maintained.
4. Where Existing Berm is Removed, The Approach Shall Be Constructed To An Elevation Equal In Height To Control Drainage.

SAN BERNARDINO COUNTY TRANS. DEPT.		COMMERCIAL DRIVEWAY APPROACH WITHOUT CURB	129a
REV. 3/1/94	KEN A. MILLER Director of Transportation		

min 24 max 34



NOTES:

1. DRIVEWAY LOCATION SHALL BE AS INDICATED IN THE S.B. CO. TRANSPORTATION DEPARTMENT ROAD PLANNING & DESIGN MANUAL AND PER STANDARD NO.130.
2. TO CONSTRUCT A DEPRESSION IN EXISTING CURB AND GUTTER:
 - a. SAW CUT AND REMOVE FOR THE NECESSARY WIDTH.
 - b. REMOVE AND RECONSTRUCT TO THE NEAREST JOINT.
 - c. HORIZONTAL SAW CUT AND REMOVE CURB AS NECESSARY.
3. A DRIVEWAY MUST BE CONSTRUCTED WITH EACH CURB DEPRESSION.
4. SURFACING SHALL BE PORTLAND CEMENT CONCRETE CLASS 'B' (5 SACK) 15.24cm (6'') THICK AND HAVE A BROOM FINISH.

AUGUST 1998

N.T.S.

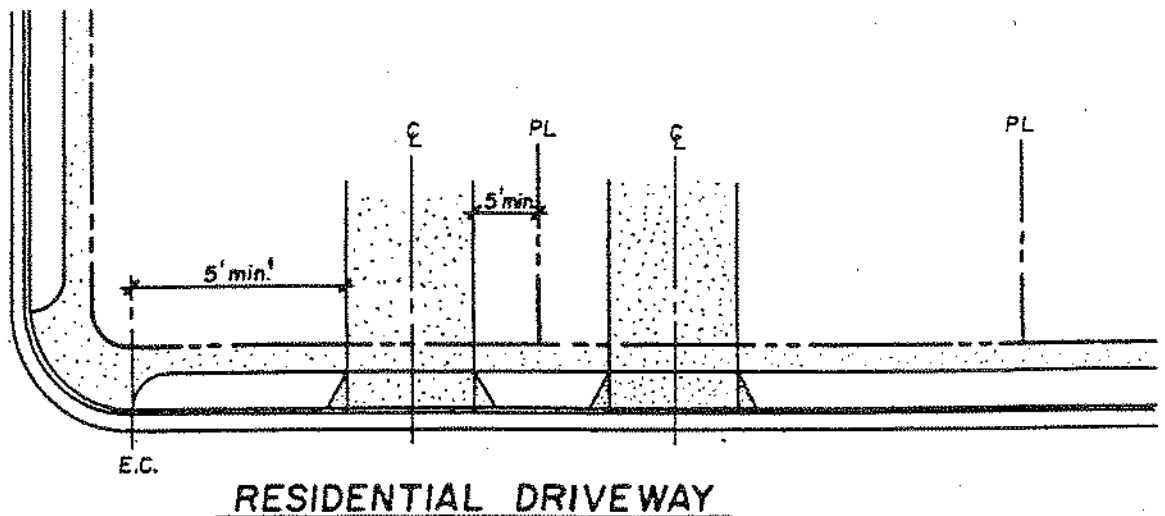
SAN BERNARDINO COUNTY TRANS. DEPT.

KEN A. MILLER
Director of Transportation

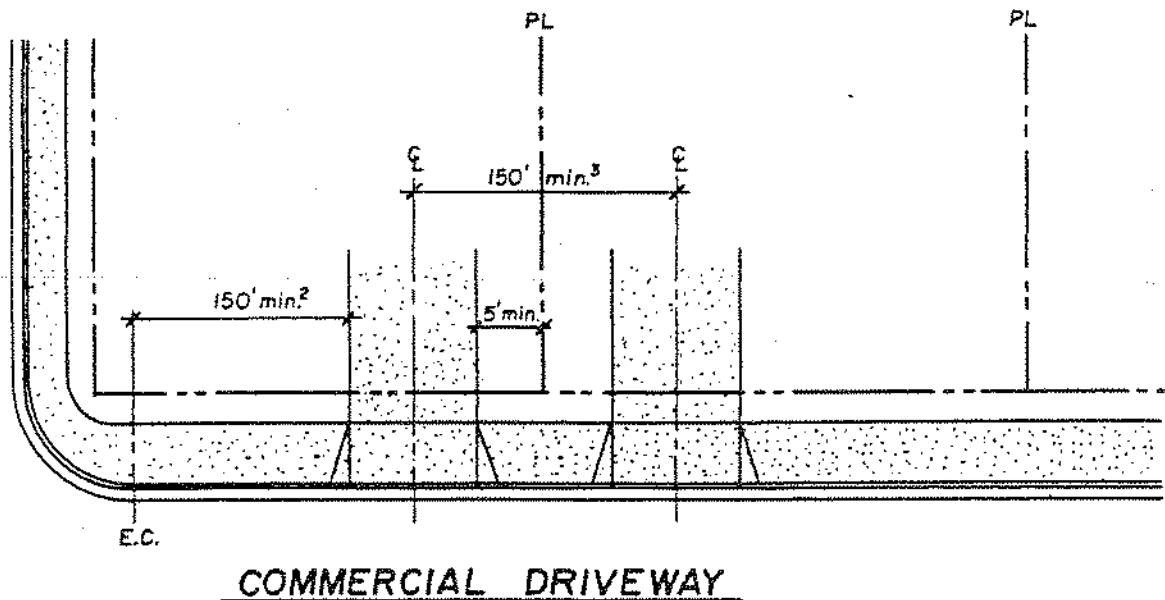
COMMERCIAL DRIVEWAY
WITH CURB RETURNS

129B

MAJOR HIGHWAY
SECONDARY HIGHWAY



MAJOR HIGHWAY
SECONDARY HIGHWAY



Refer To Section 6.3 In S.B. Co. Transportation Dept. Road Planning & Design Manual
For Number Of Access Points Permitted.

²May Be Increased 75' On Collector Roads & 50' On Local Streets To Provide Additional Clearance For Left Turn Storage.

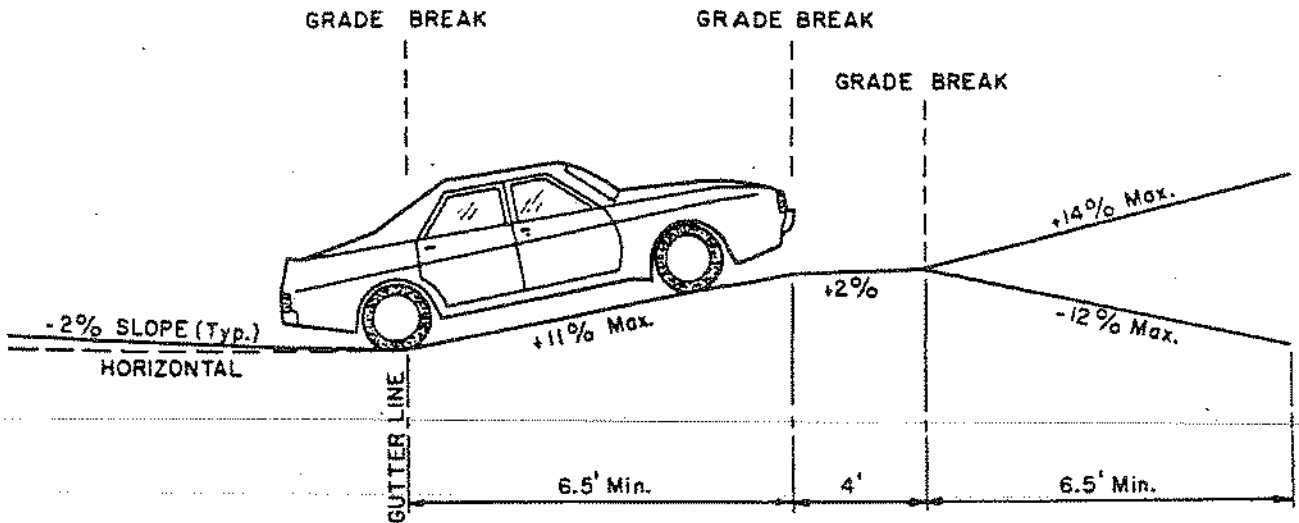
4-20-93 yhc

REV. 3/1/94

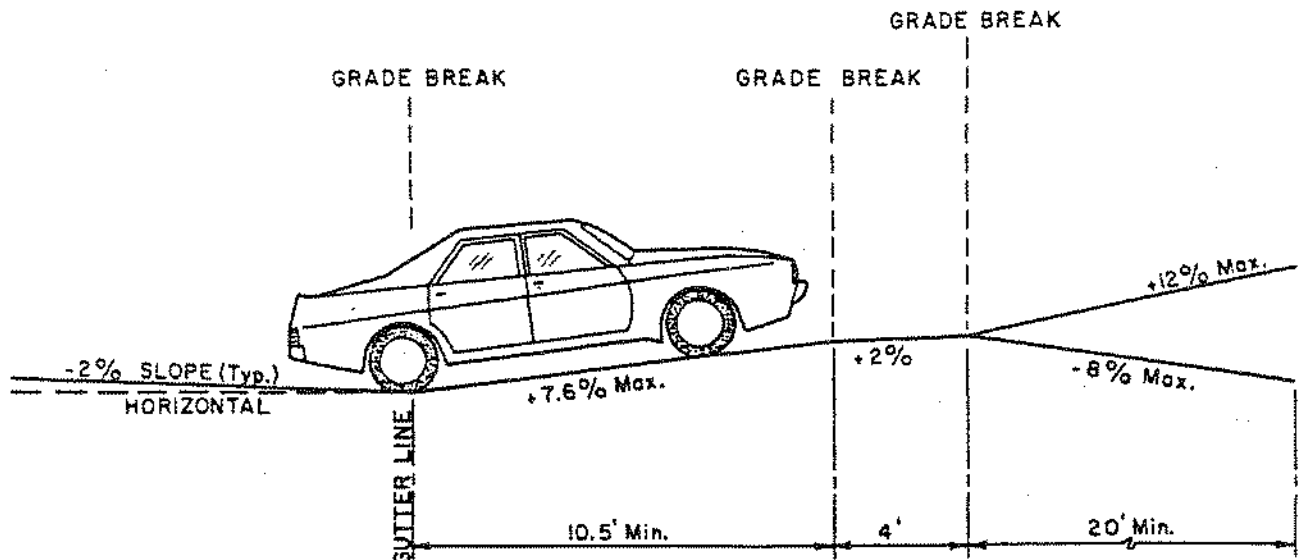
DRIVEWAY SPACING

130

RESIDENTIAL DRIVEWAY



COMMERCIAL DRIVEWAY



6-19-92 vhc

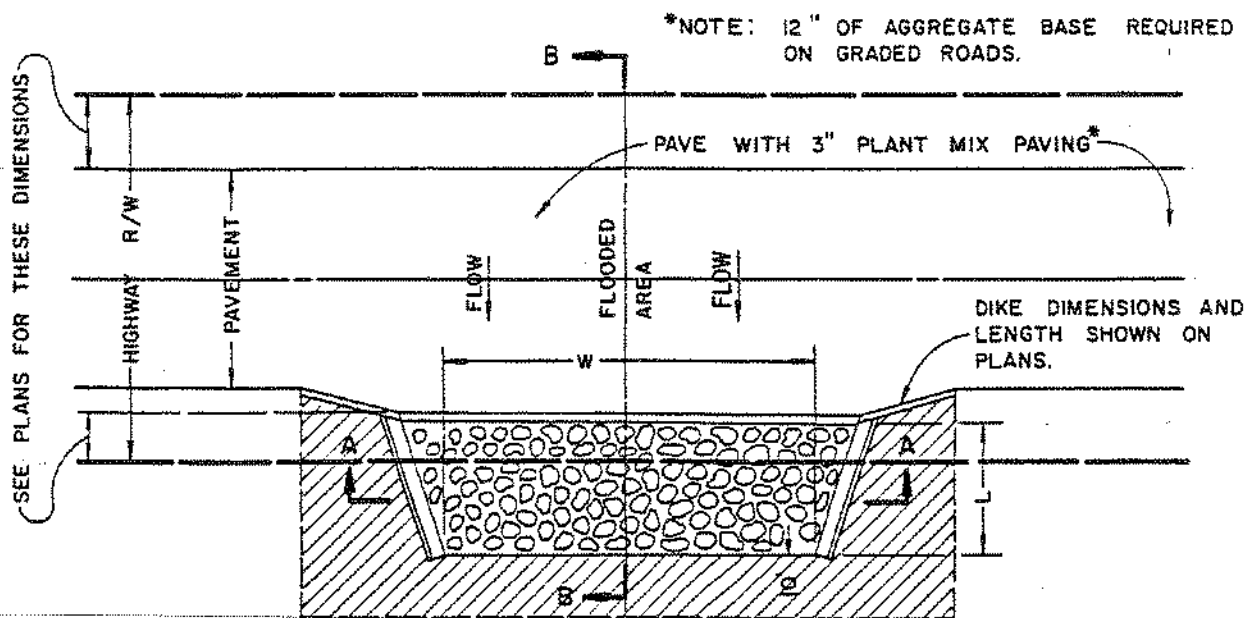
SAN BERNARDINO COUNTY TRANS. DEPT.

REV. 3/1/99

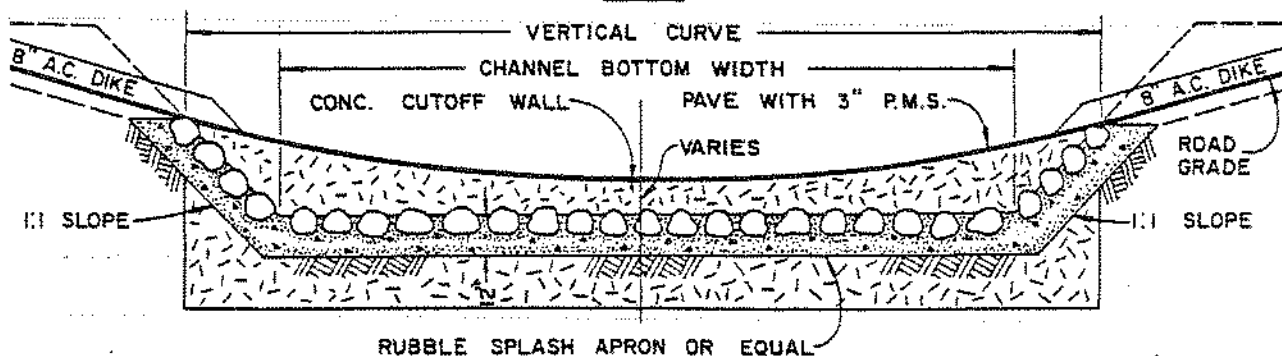
KEN A. MILLER
Director of Transportation

DRIVEWAY GRADES

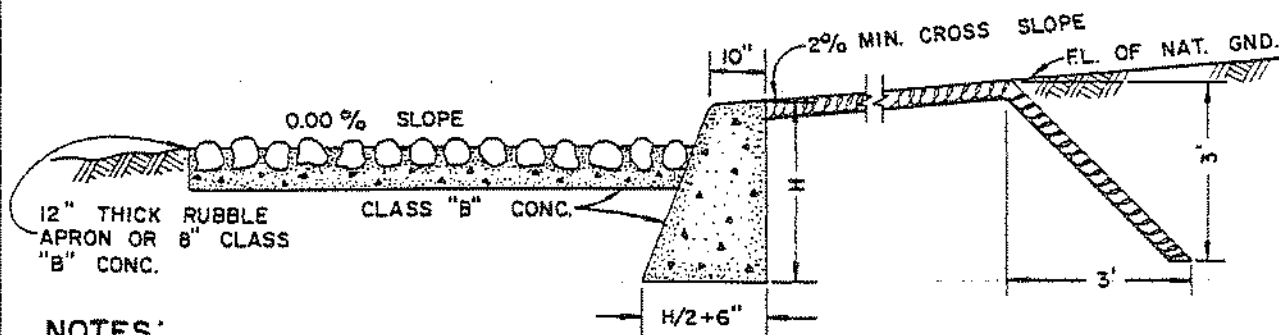
131



PLAN




SECTION A-A



SECTION B-B

NOTES:

1. ALL CONCRETE TO BE CLASS "B".
2. L = SHOWN ON PLANS, H = 3' MIN., 6' MAX.
3. DRAINAGE EASEMENT REQUIRED.
4. AREA SHOWN THUS  SHALL BE COMPACTED TO 90% RELATIVE DENSITY PER STANDARD SPECIFICATION 3.04.03.
5. REINFORCED BLOCK WALL AND FOOTING PERMITTED.

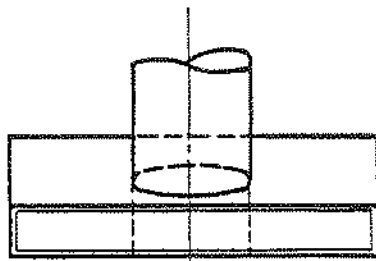
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: J.E.M. 7-66

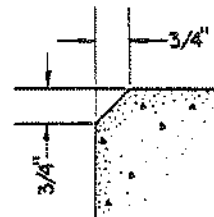
M. A. Nicholas
COUNTY ENGINEER

CUTOFF WALL FOR
DRAINAGE CHANNEL

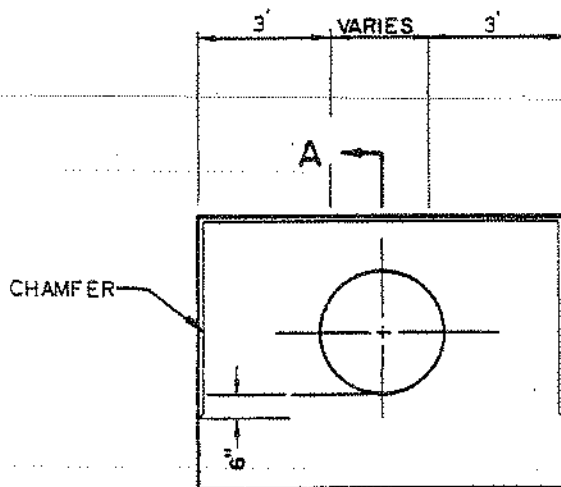
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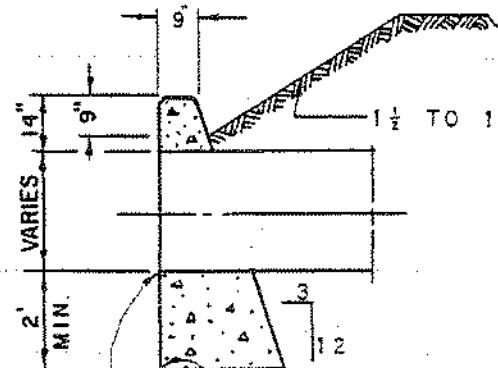
PLAN



CHAMFER
DETAIL



ELEVATION



FOR ELEVATIONS
SEE PROFILE
SECTION A-A

NOTES:

1. ALL CONCRETE SHALL BE CLASS B CONCRETE.
2. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
3. DESIGN FEATURES SHALL CONTROL THE INSTALLATION OF THIS HEADWALL.

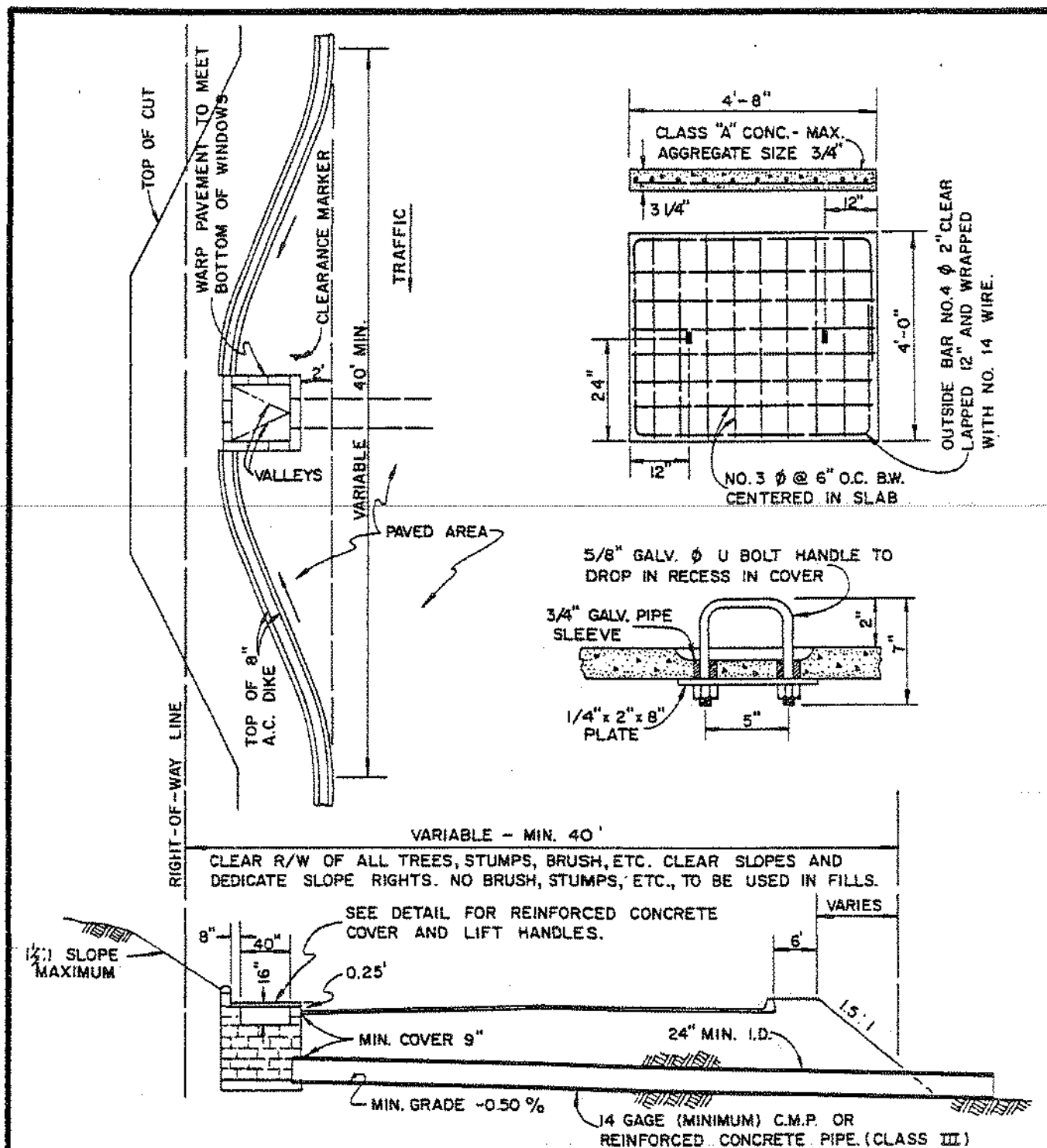
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: F.V.C. 7-65

M. A. Nicholas
COUNTY ENGINEER

GRAVITY HEADWALL

201



NOTES:

1. FOR CONSTRUCTION DETAILS OF CATCH BASIN SEE STD. NO. 202 A.

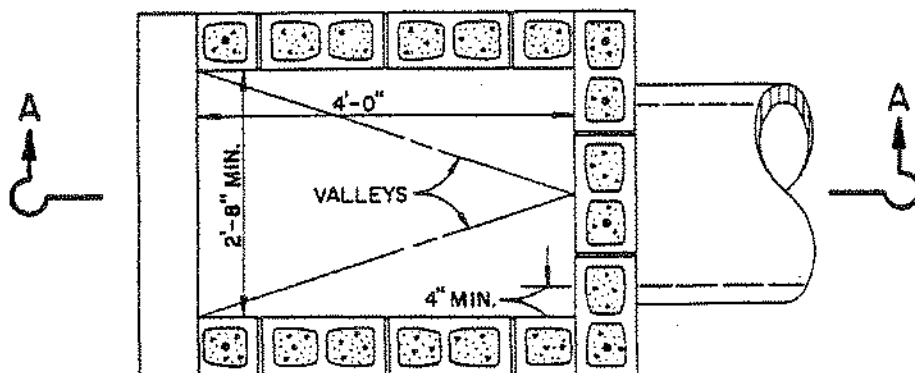
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: J.E.M. 7-65

M. A. Nicholas
COUNTY ENGINEER

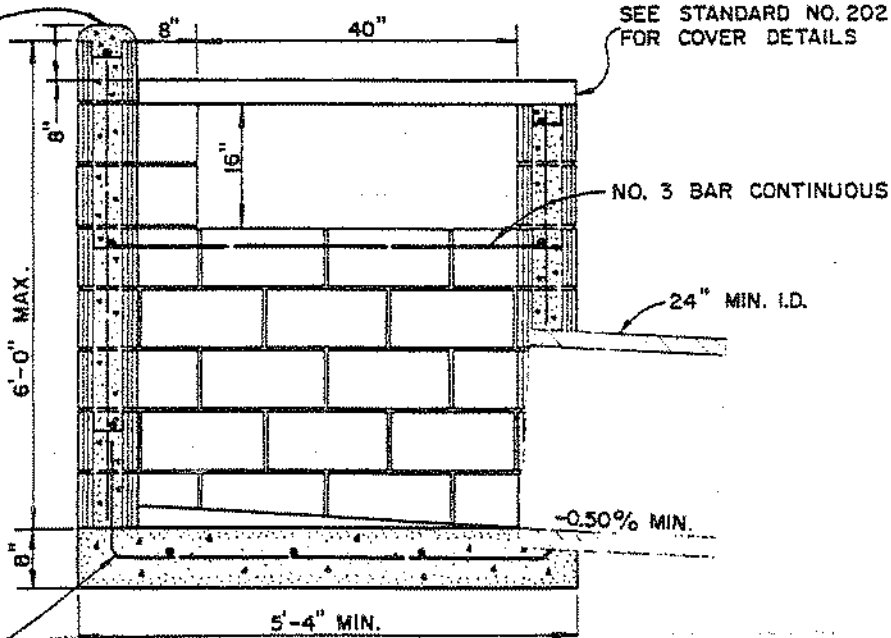
CATCH BASIN
MOUNTAIN ROADS

202



PLAN

CONCRETE CAP ON
BOND BEAM WITH
NO. 3 CONTINUOUS.



REINFORCEMENT IN
BASE SHALL BE NO. 3
BARS 16" O.C. BENT
AS VERTICAL DOWELS

SECTION A-A

NOTES:

1. 8" x 8" x 16" CONC. BLOCK WITH NO. 3 STEEL 16" O.C. VERTICAL AND 24" O.C. HORIZONTAL.
2. FILL ALL BLOCKS WITH GROUT.
3. BASE OF CATCH BASIN SHALL BE CONSTRUCTED WITH CLASS 'B' CONCRETE.
4. HORIZONTAL STEEL SHALL BE PLACED IN BOND BEAM BLOCKS.

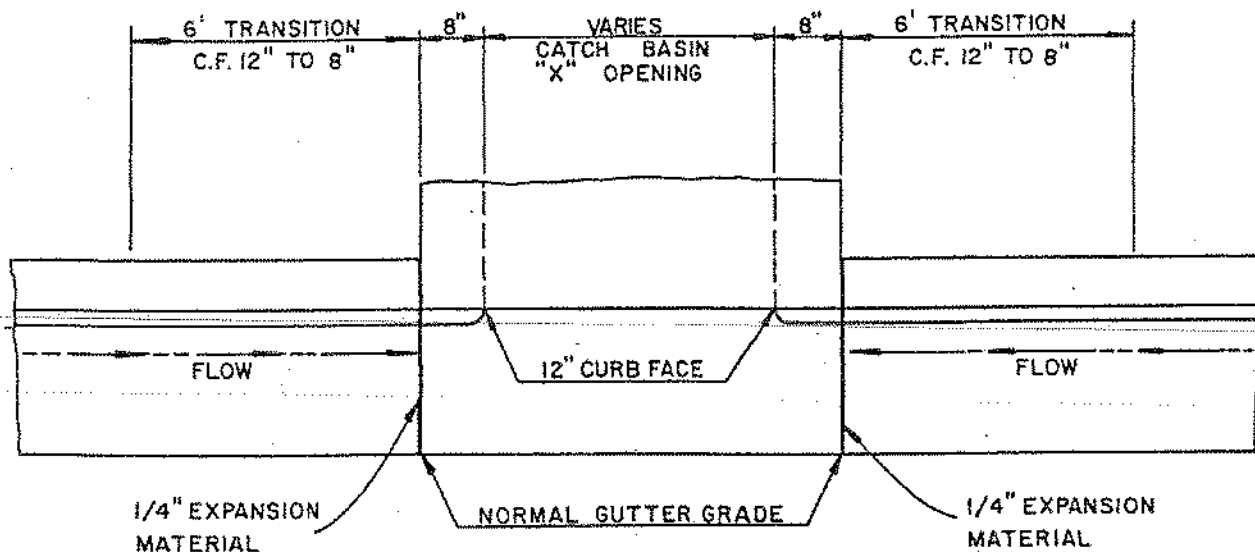
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: J.E.M. 10-65

M. A. Nicholas
COUNTY ENGINEER

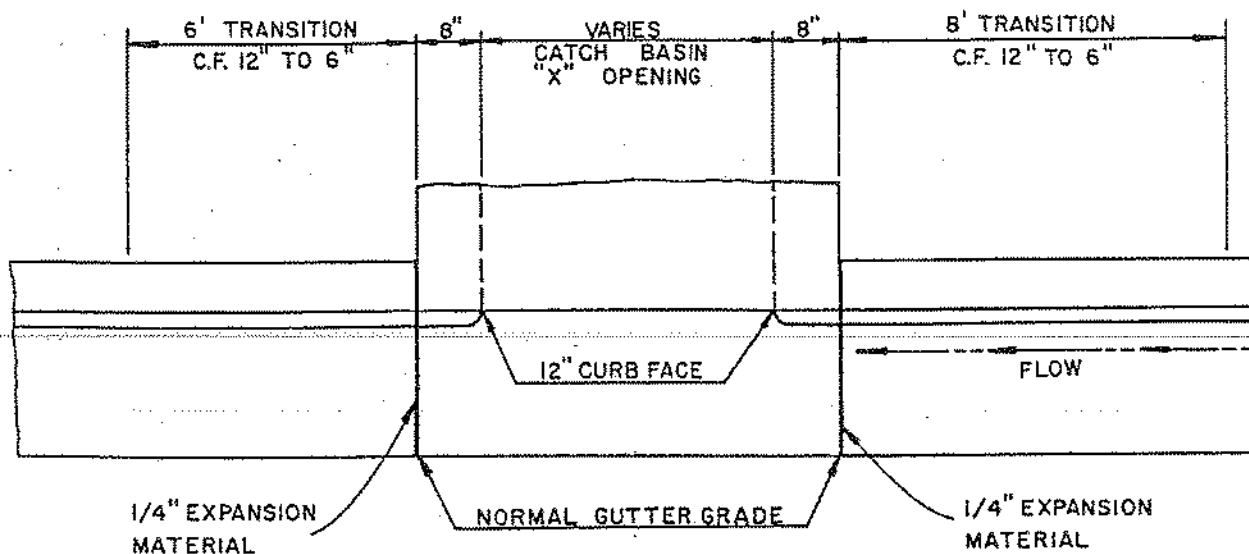
CATCH BASIN
MOUNTAIN ROADS

202a



NOTES:

1. LOCAL DEPRESSION SHALL BE CONSTRUCTED OF CLASS B CONCRETE 6" THICK.
2. CURB AND GUTTER SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTING TOP OF CATCH BASIN AND CURB TRANSITIONS.



NOTES:

1. LOCAL DEPRESSION SHALL BE CONSTRUCTED OF CLASS B CONCRETE 6" THICK.
2. CURB AND GUTTER SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTING TOP OF CATCH BASIN AND CURB TRANSITIONS.

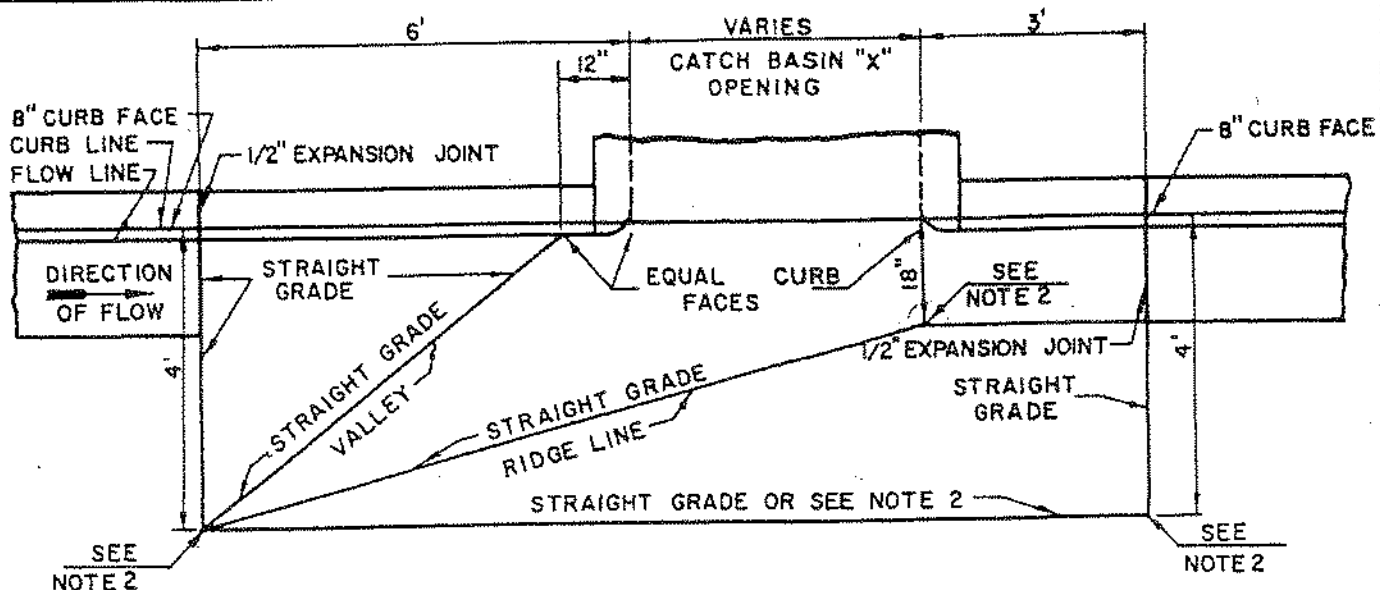
SAN BERNARDINO COUNTY TRANS. DEPARTMENT

W.V.E. 12-74
R.D. A. 59

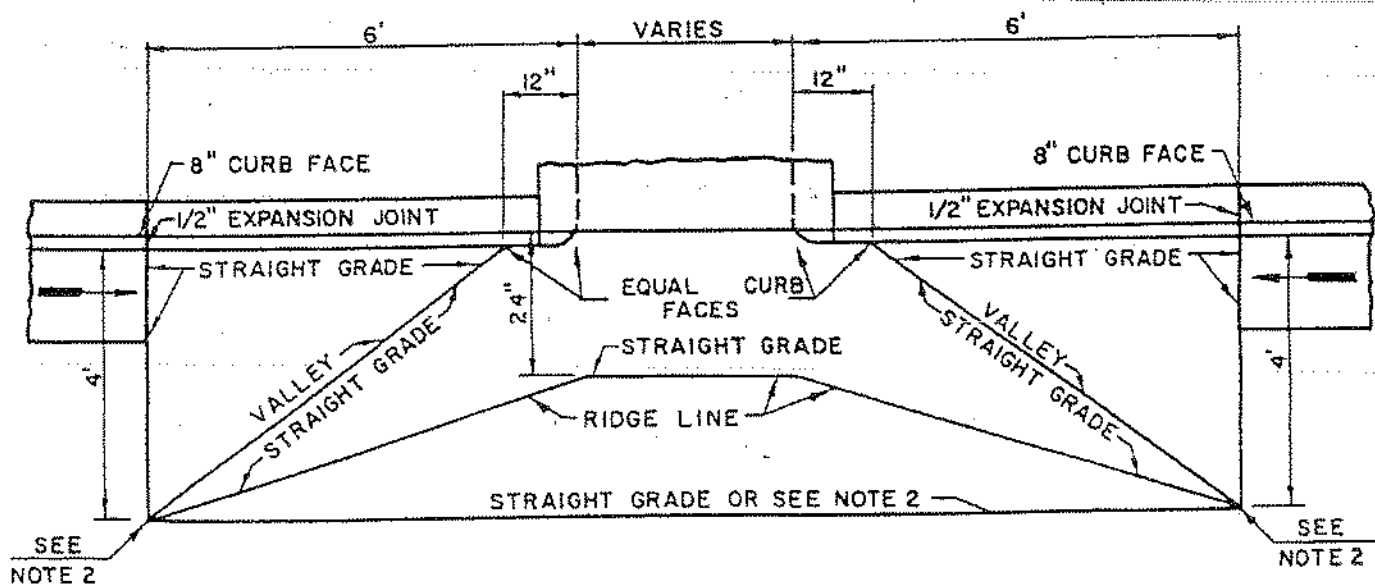
KEN A. Miller
Director of Transportation

LOCAL DEPRESSION

203A.



TYPE A



TYPE B

NOTES:

1. LOCAL DEPRESSION SHALL BE CONSTRUCTED OF CLASS B CONCRETE 8" THICK.
2. ELEVATIONS SHALL BE SHOWN ON CONSTRUCTION PLANS. THE OUTER EDGE OF THE LOCAL DEPRESSION SHALL CONFORM TO FINISHED STREET SURFACE.
3. SPECIAL DETAILS GOVERNING THE CONSTRUCTION ON A VERTICAL CURVE SHALL BE SHOWN ON CONSTRUCTION PLANS.

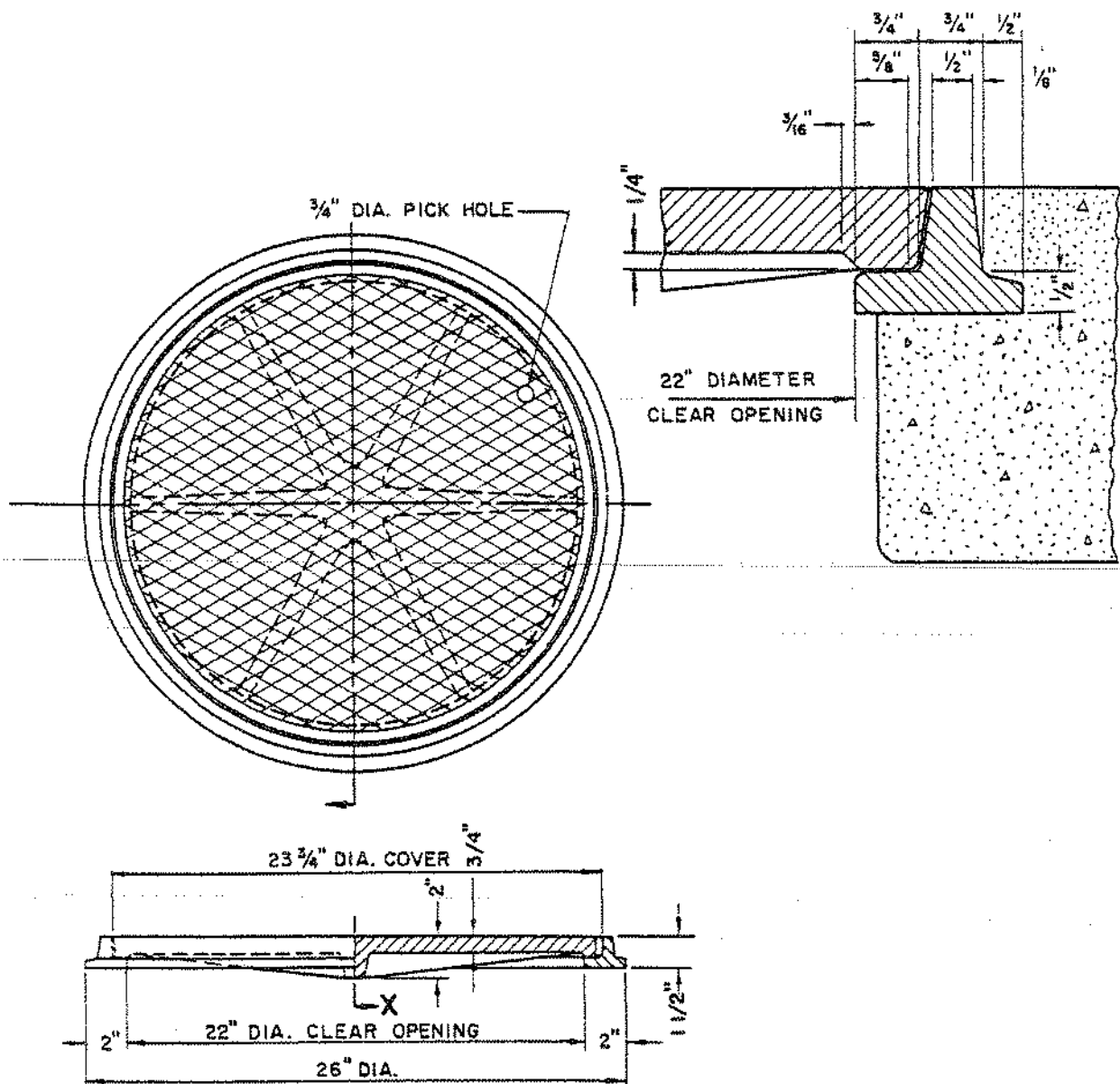
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: 3.10.89
12.08.89

KEN A. MILLER
DIRECTOR OF TRANSPORTATION

LOCAL DEPRESSION

203
B



MATERIAL: CAST IRON (ASPHALT COATED OR GALVANIZED)

NOTES

1. SEATS OF FRAME AND COVER SHALL BE MACHINED TO PREVENT NOISE.
2. TOTAL WEIGHT OF FRAME AND COVER APPROX. 130 LBS.
3. MINIMUM CLEAR OPENING 22" DIAMETER. ALL OTHER DIMENSIONS ARE NOMINAL.

ALHAMBRA A-1530 OR EQUIVALENT

SAN BERNARDINO COUNTY ROAD DEPARTMENT

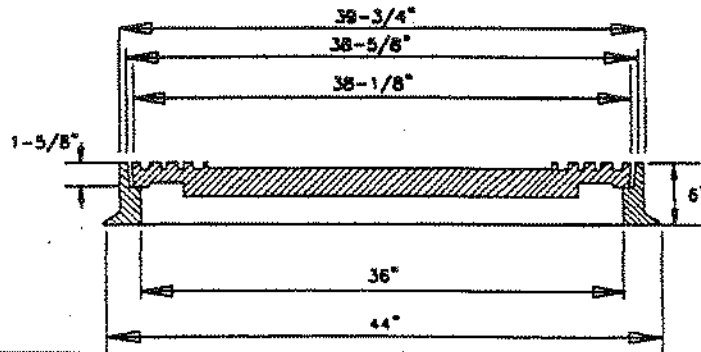
DATE: F.V.C. 7-65

W.J.P. 7-74

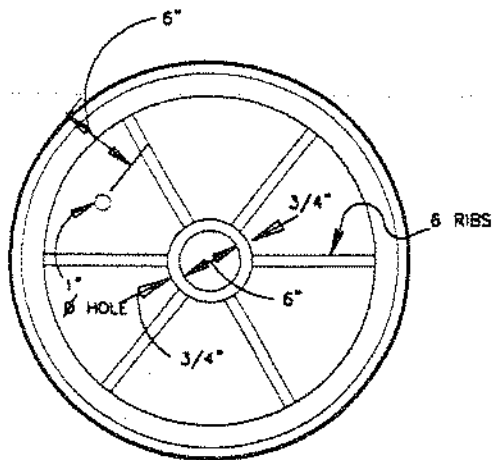
John R. Shone
COUNTY HIGHWAY ENGINEER

MANHOLE FRAME &
COVER - PARKWAY

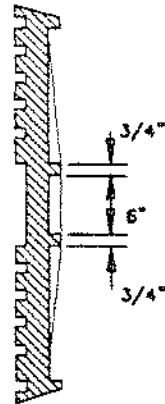
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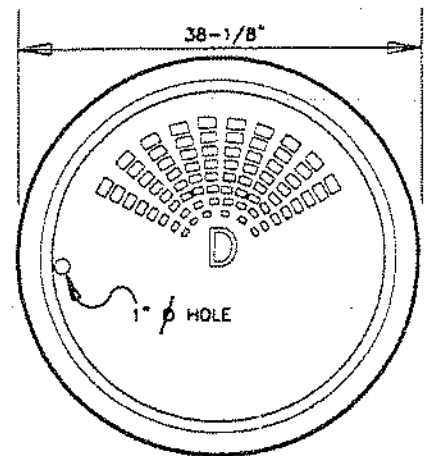
SECTION
FRAME AND COVER



BOTTOM VIEW



SECTION



PLAN

COVER

NOTES:

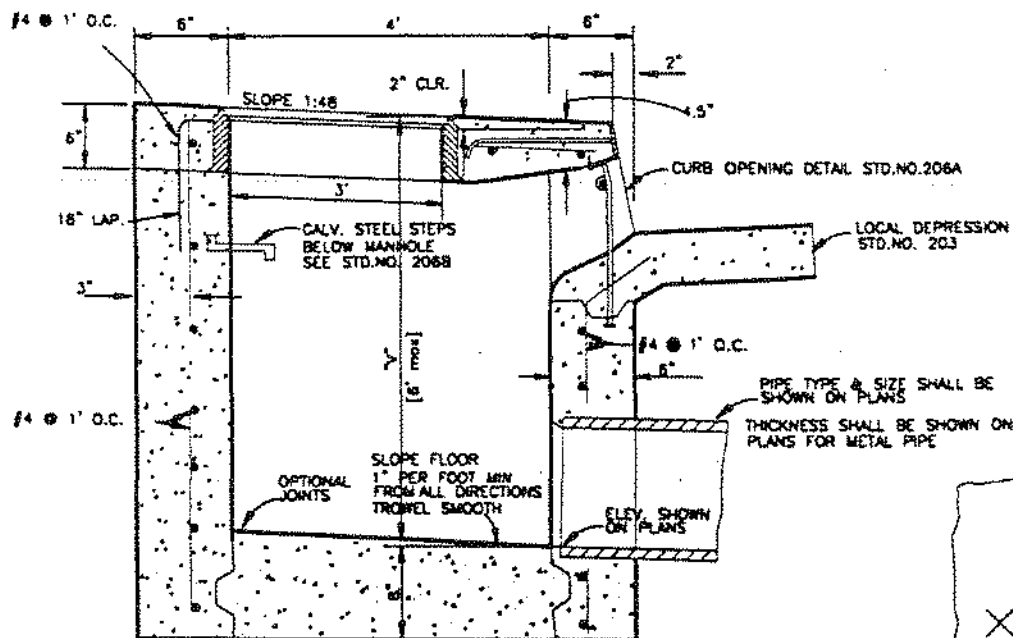
1. SEATS OF FRAME AND COVER SHALL BE MACHINED TO PREVENT NOISE.
2. TOTAL WEIGHT OF FRAME AND COVERS - 580 lbs MIN.
3. MATERIAL: CAST IRON (BITUMINOUS COATED).
4. SURFACE OF LETTERS SHALL BE FLUSH WITH FINISHED SURFACE OF COVER

SAN BERNARDINO COUNTY TRANS. DEPT.

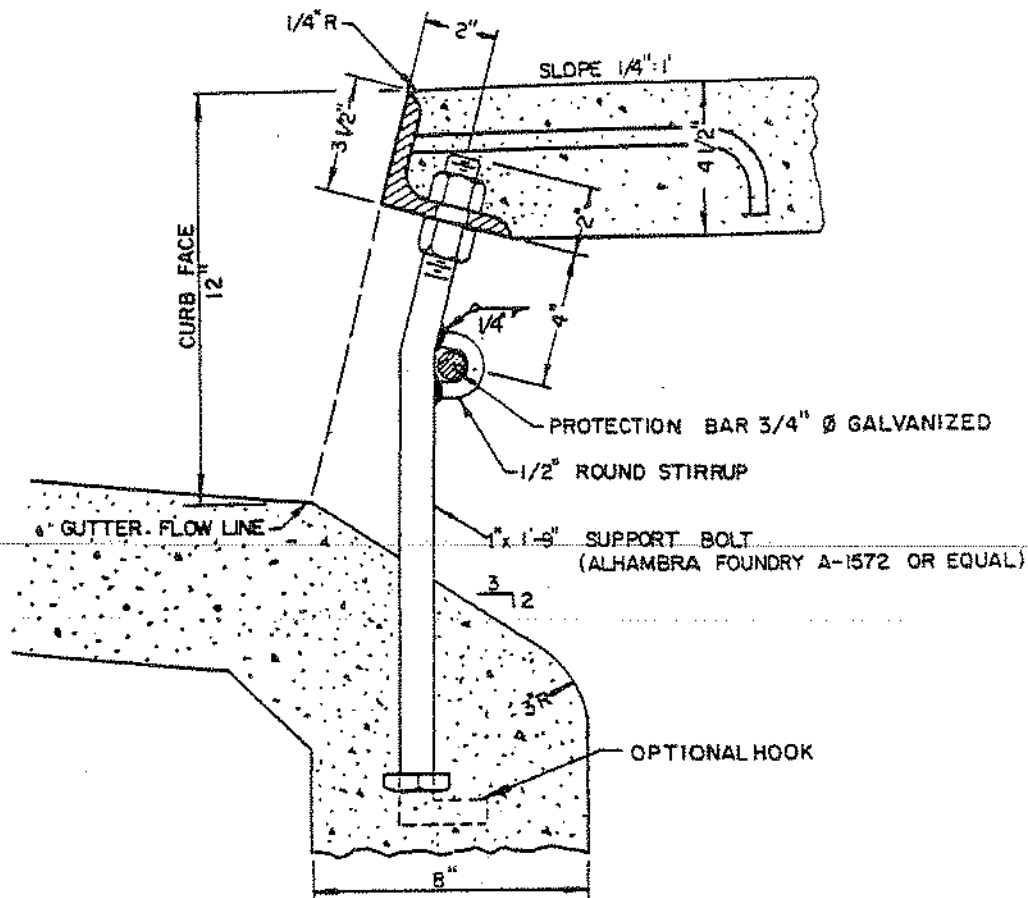
KEN A. MILLER
Director of Transportation

36" MANHOLE
FRAME & COVER

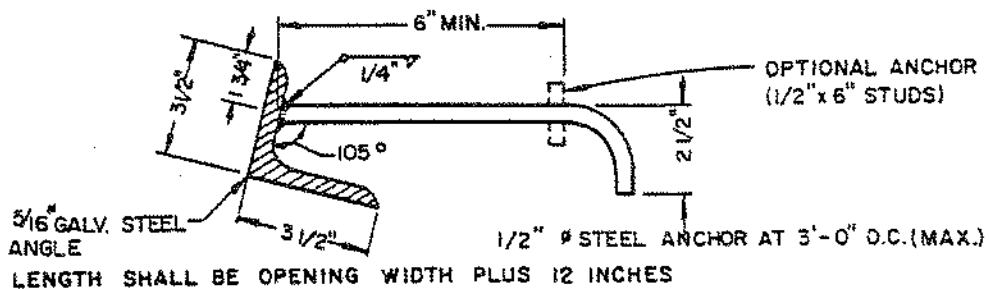
205



206



STEEL ANGLE & SUPPORT BOLT DETAIL



STEEL ANGLE ANCHOR

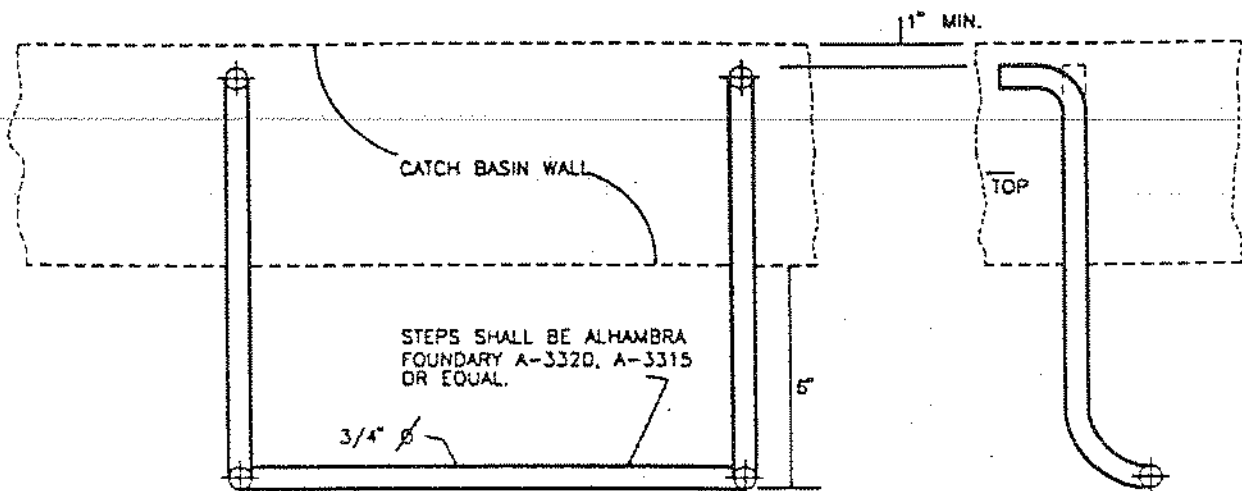
NOTES:

1. A PLAIN ROUND GALVANIZED STEEL PROTECTION BAR 3/4" IN DIA. SHALL BE INSTALLED AND EMBEDDED 6" AT EACH END.
2. ALL EXPOSED METAL PARTS SHALL BE GALVANIZED.(EXCEPT FRAME AND COVER)
3. SUPPORT BOLTS SHALL BE UNIFORMLY SPACED BUT NOT TO EXCEED 7' ON CENTER.
4. STEEL ANGLE SHALL BE BENT TO MATCH CURB ALIGNMENT.

SAN BERNARDINO COUNTY TRANS.DEPT.	
L.S.F. 12-74	John R. Shone
	Director of Transportation

CATCH BASIN
OPENING

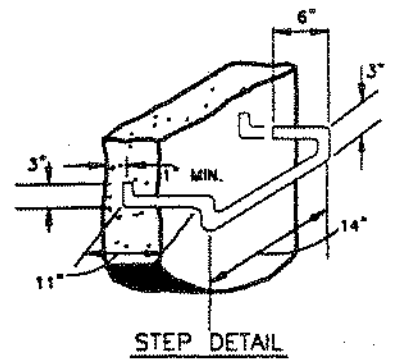
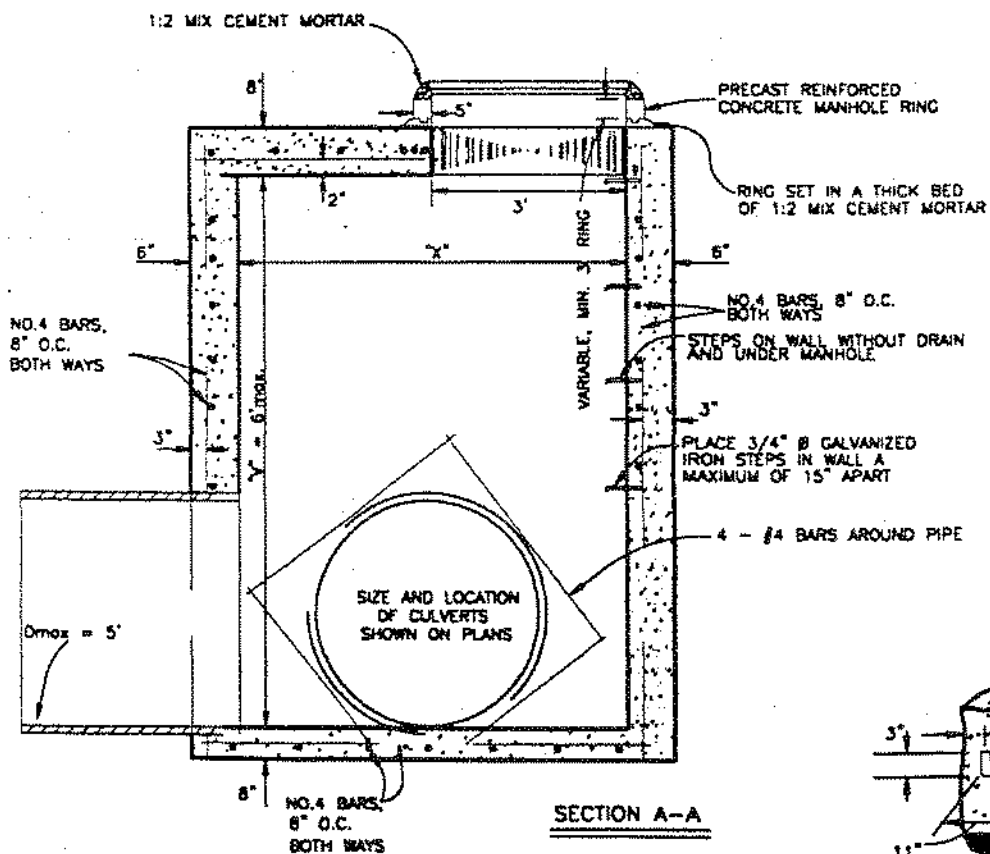
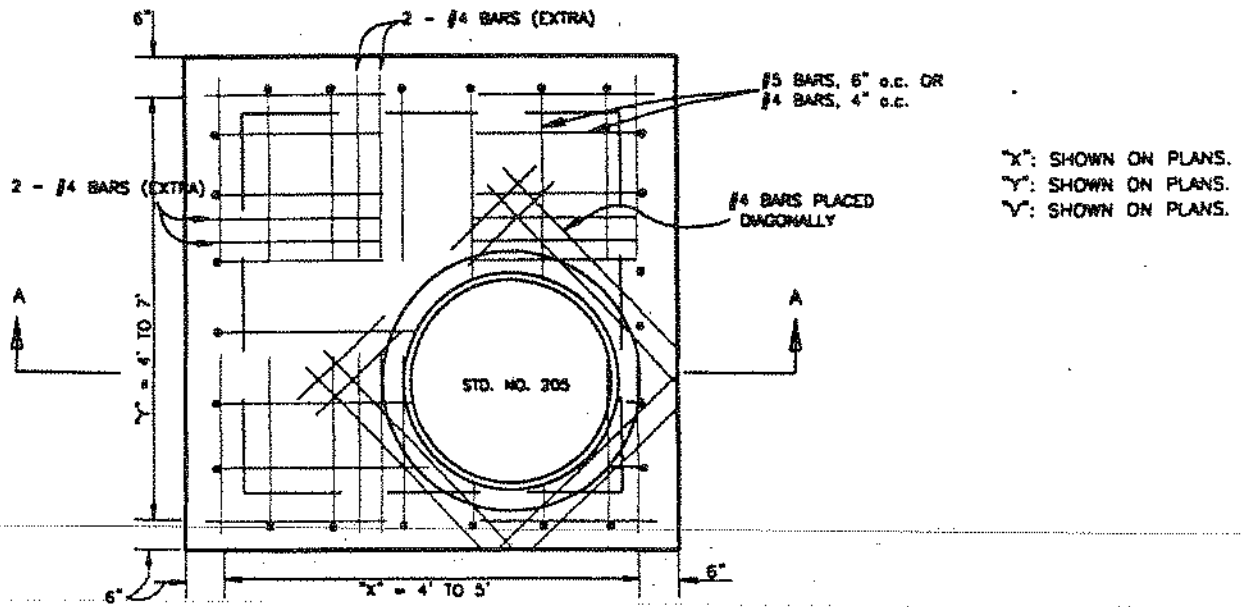
206a



NOTES:

1. STEPS - NONE REQUIRED WHERE "V" IS 3'-6" OR LESS. INSTALL ONE STEP 16"± ABOVE FLOOR WHEN "V" IS MORE THAN 3'-6" & LESS THAN 5'-0". WHERE "V" IS MORE THAN 5'-0" STEPS SHALL BE EVENLY SPACED @ 12"± INTERVALS FROM 16"± ABOVE THE FLOOR TO WITHIN 12"± FROM THE TOP OF THE BOX. PLACE STEPS IN WALL WITHOUT PIPE OPENINGS AND UNDER MANHOLE.

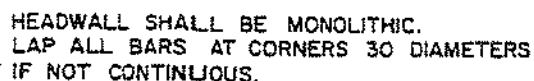
SAN BERNARDINO COUNTY TRANS. DEPT.		GALVANIZED STEEL STEP	206B
	KEN A. MILLER		
	Director of Transportation		



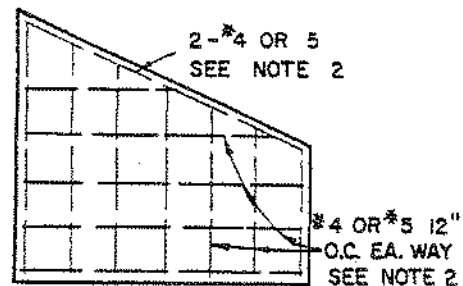
NOTES:

1. STORM DRAIN CLEANOUT SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE.
2. CLEARANCE FROM I.D. OF PIPE TO CLEANOUT WALL SHALL BE 4" MIN.
3. APPROVED PRECAST CONCRETE MANHOLE SHAFT RINGS WILL BE ACCEPTED IN LIEU OF CAST-IN-PLACE SHAFT

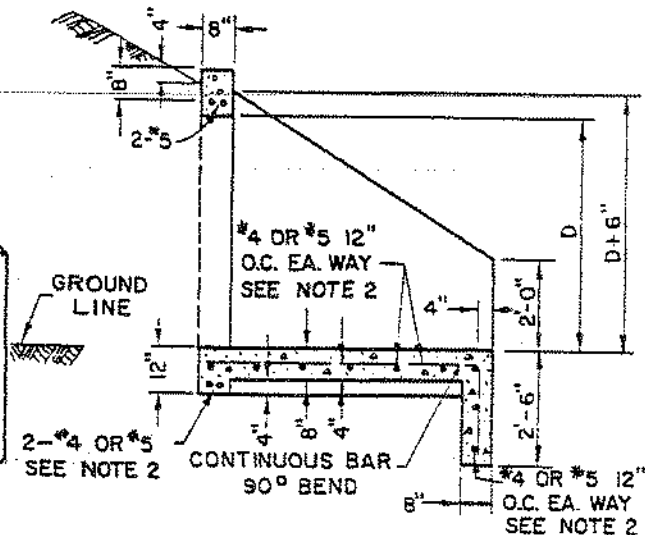
SAN BERNARDINO COUNTY TRANS. DEPT.		STORM DRAIN CLEANOUT	208
	KEN A. MILLER		
	Director of Transportation		



PLAN



REINFORCING DETAIL



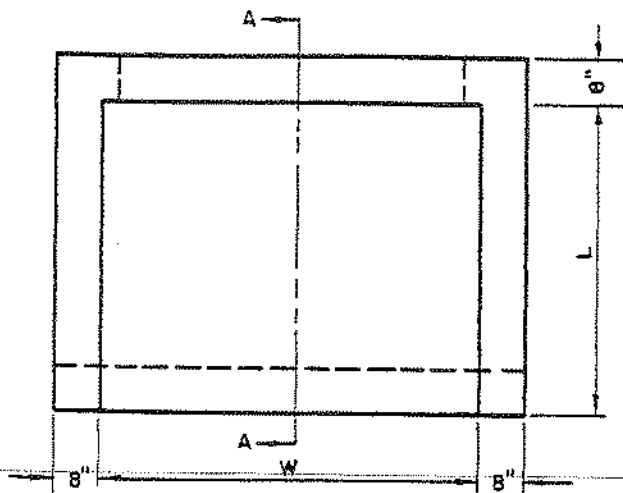
ELEVATION

SECTION A-A

DIMENSIONS				
PIPE DIAM	L	E	F	W
24"	4'-9"	2'-8"	4'-0"	2'-6"
30"	5'-5"	3'-0"	4'-6"	3'-0"
36"	6'-0"	3'-4"	5'-0"	3'-8"
42"	6'-7"	3'-8"	5'-6"	4'-2"
48"	7'-3"	4'-0"	6'-0"	4'-10"
54"	8'-2"	4'-6"	6'-9"	5'-4"

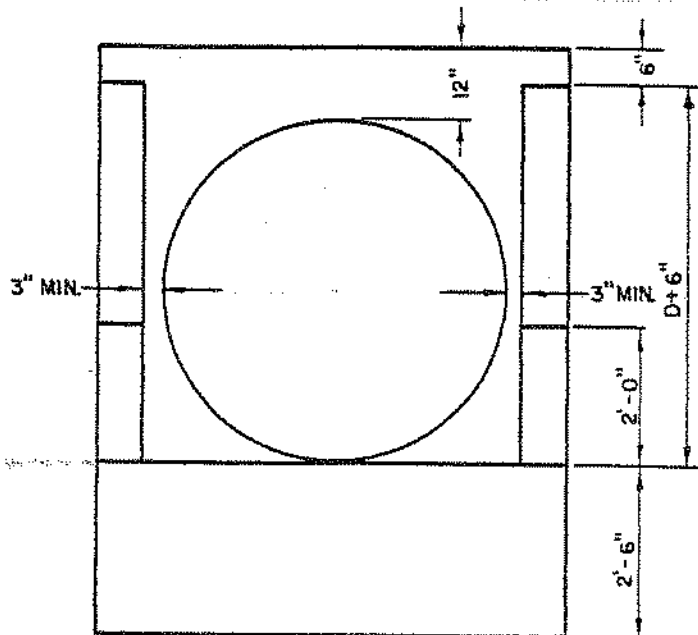
NOTES:

1. HEADWALL SHALL BE CONSTRUCTED OF CLASS A CONCRETE.
2. REINFORCING STEEL SHALL BE NO. 4 BARS FOR "W" UP TO 60". ABOVE "W"=60" NO. 5 BARS SHALL BE USED. 2" MIN CLEARANCE, 30 DIAMETER LAP, ALL STEEL.
3. ADJACENT SLOPES SHALL BE 1½ TO 1 OR FLATTER.
4. MULTIPLE PIPES TO BE SET WITH LONGITUDINAL CENTERS 1 2/3 DIAMETERS APART.
5. ALL EXPOSED CORNERS TO BE ROUNDED 3/4" RADIUS.
6. W SHALL BE INCREASED WHEN MULTIPLE PIPES OR PIPES ON SKEW ARE USED.



PLAN

DIMENSIONS		
PIPE DIAM	L	W
24"	4'-0"	2'-6"
30"	4'-6"	3'-0"
36"	5'-0"	3'-8"
42"	5'-6"	4'-2"
48"	6'-0"	4'-10"
54"	6'-9"	5'-4"



ELEVATION

NOTES:

1. REINFORCING STEEL IN WALLS AND BASE SHALL BE THE SAME AS STD. NO. 209.
2. NOTES SHALL BE THE SAME AS STD. NO. 209.
3. SECTION A-A IS THE SAME AS STD. NO. 209.

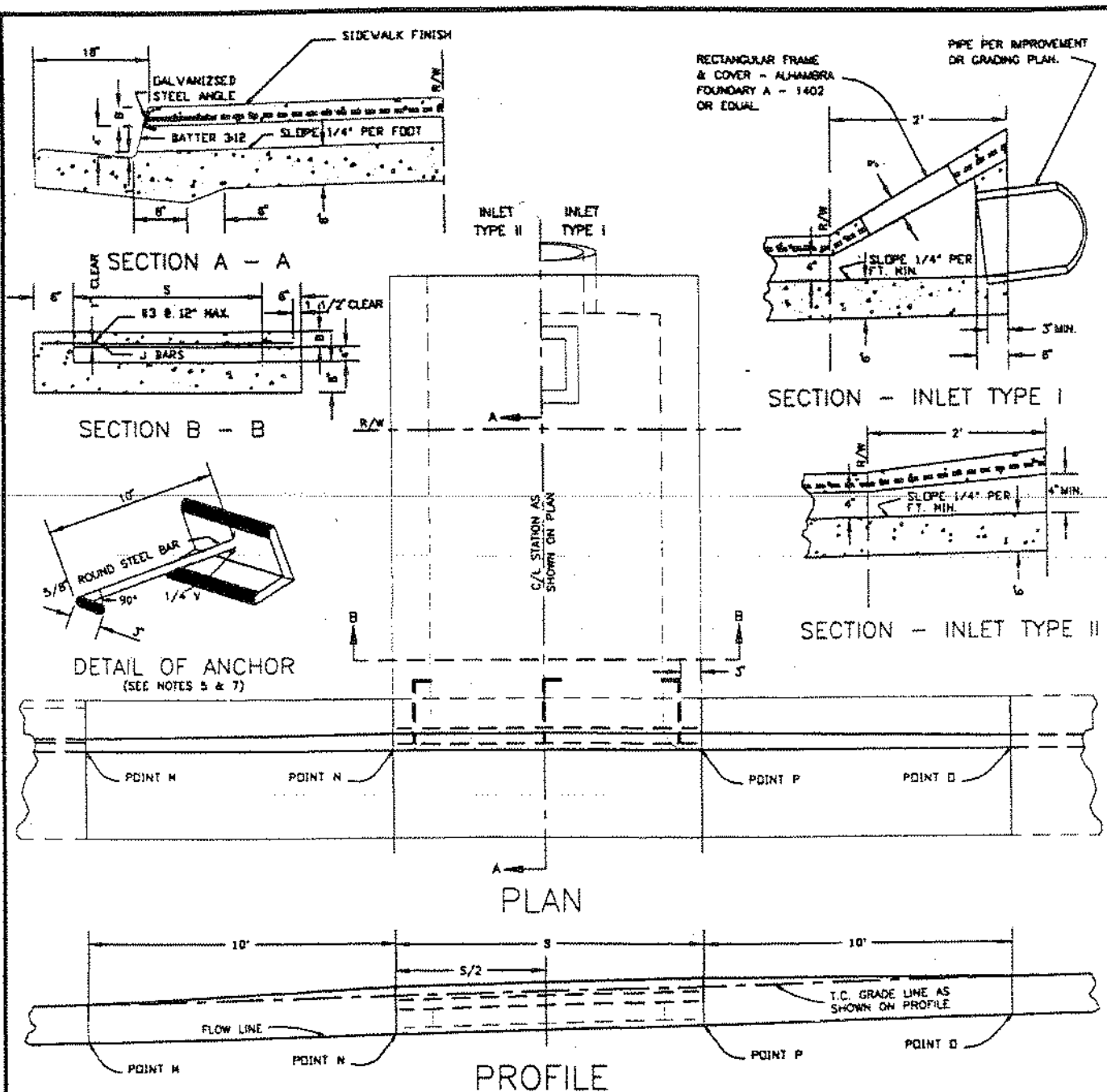
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE 3.11.7-65

M. A. Nicholas
COUNTY ENGINEER

HEADWALL
'U'-TYPE

209A



NOTES:

1. FLOOR OF BOX TO BE TROWELED SMOOTH.
2. WHEN THE TOE OF SLOPE IS WITHIN THE R/W, INLET TYPE I BEGINS AT THE TOE, RATHER THAN AT THE R/W LINE.
3. FOR OPEN DITCH APPROACH (TYPE II) THE 2" OR MORE IS FROM THE R/W LINE.
4. TOP OF INLET STRUCTURE (TYPE I OR II) TO BE FLUSH WITH ADJACENT SIDEWALK WHERE PRACTICAL.
5. A HEADED STEEL STUD 5/8" X 3/8" WITH HEAD 0.1" ATTACHED BY A FULL PENETRATION BUTT WELD MAY BE USED AS AN ALTERNATE ANCHOR.
6. NORMAL CURBS AT POINTS M AND Q. B + 5" AT POINTS N AND P.
7. THE 3" LEG OF THE INTERIOR ANCHORS SHALL BE PARALLEL TO THE TOP OF SIDEWALK.

S	B	GALVANIZED STEEL ANGLE	ANCHOR	J BAR		
				SIZE	SPACING	LENGTH
1'-0"	3"	2 1/2" X 2" X 3/8"	2	#3	7"	1'-9"
1'-6"	"	"	"	"	"	2'-3"
2'-0"	"	"	"	"	"	2'-9"
2'-6"	"	"	"	"	"	3'-3"
3'-0"	"	"	3	"	"	3'-9"
3'-6"	"	"	"	"	6"	4'-3"
4'-0"	"	"	"	"	5"	4'-9"
4'-6"	4"	3 1/2" X 3" X 1/2"	"	"	6 1/2"	5'-3"
5'-0"	"	"	"	"	5"	5'-9"
5'-6"	"	"	"	"	4"	6'-3"
6'-0"	"	"	"	"	3 1/2"	6'-9"

STD5210

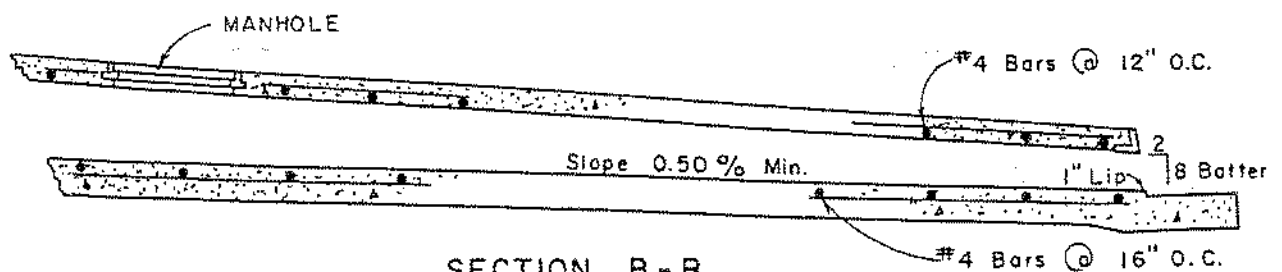
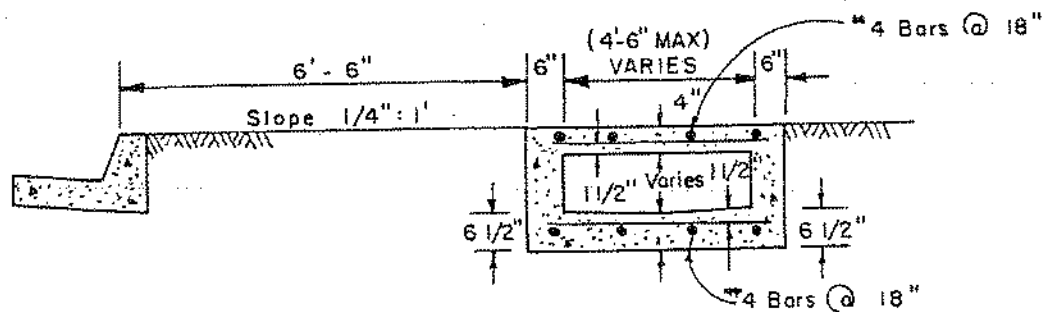
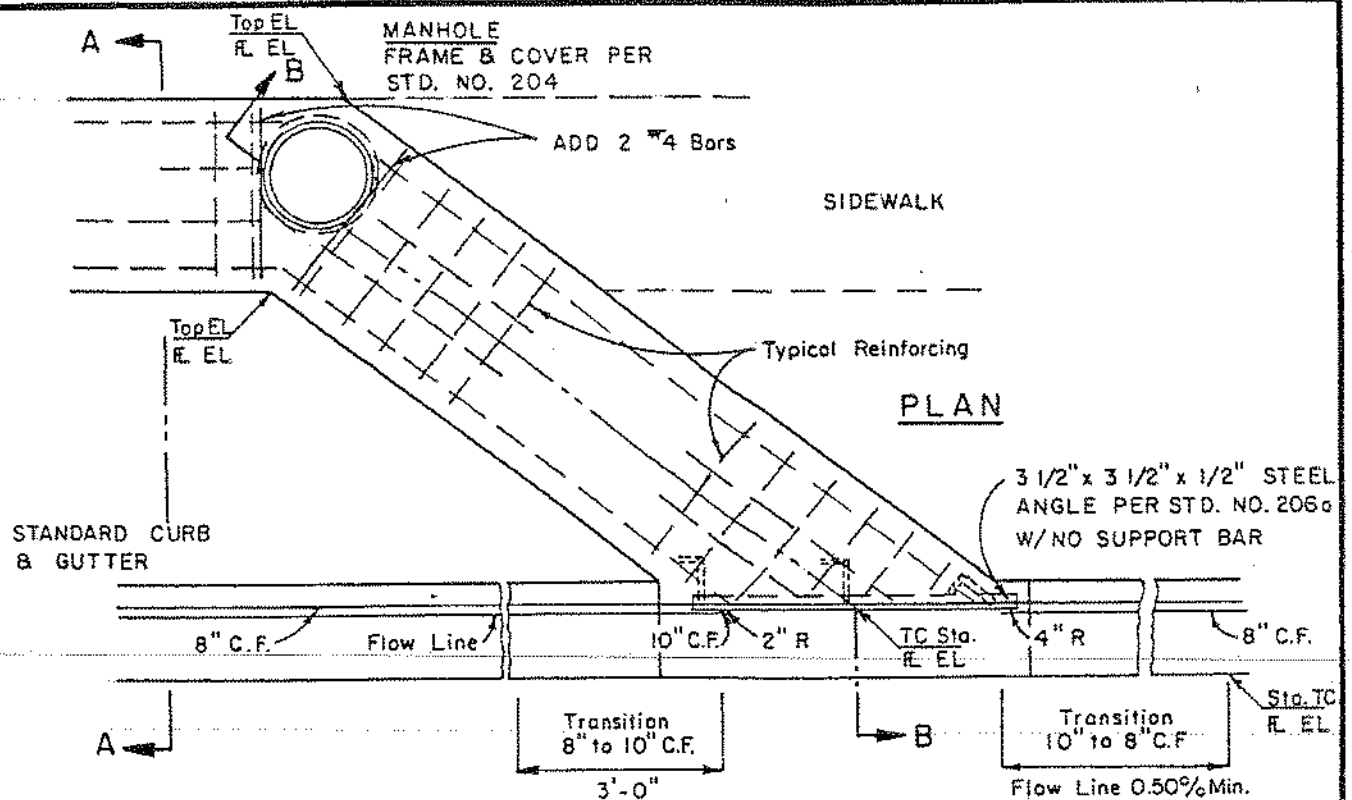
01/31/95

SAN BERNARDINO COUNTY TRANS. DEPT.

KEN A. MILLER
Director of Transportation

CURB OUTLET
STRUCTURE

210



NOTES :

1. CONCRETE SHALL BE CLASS "A"
2. FLOOR OF STRUCTURE SHALL BE GIVEN A STEEL TROWEL FINISH.
3. TOP OF BOX TO HAVE SIDEWALK FINISH.
4. ANCHORS SHALL BE SYMMETRICALLY SPACED AND NOT TO EXCEED 4' BETWEEN CENTERS, AND BE PLACED 4 1/2" FROM EACH END OF THE STEEL ANGLE, A MINIMUM OF 3 ANCHORS IS REQUIRED.

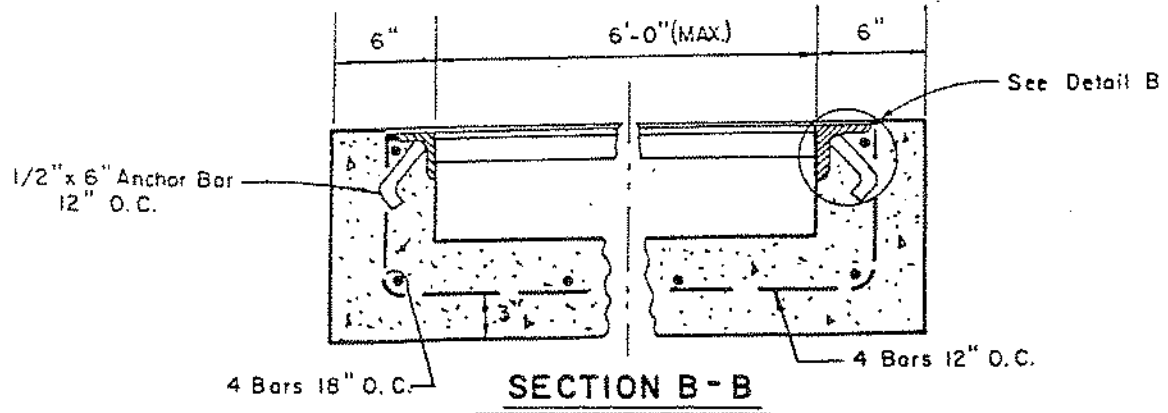
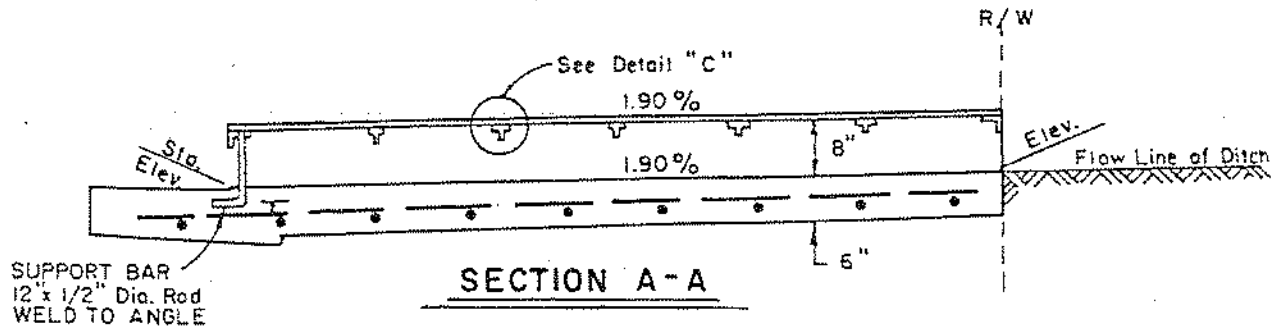
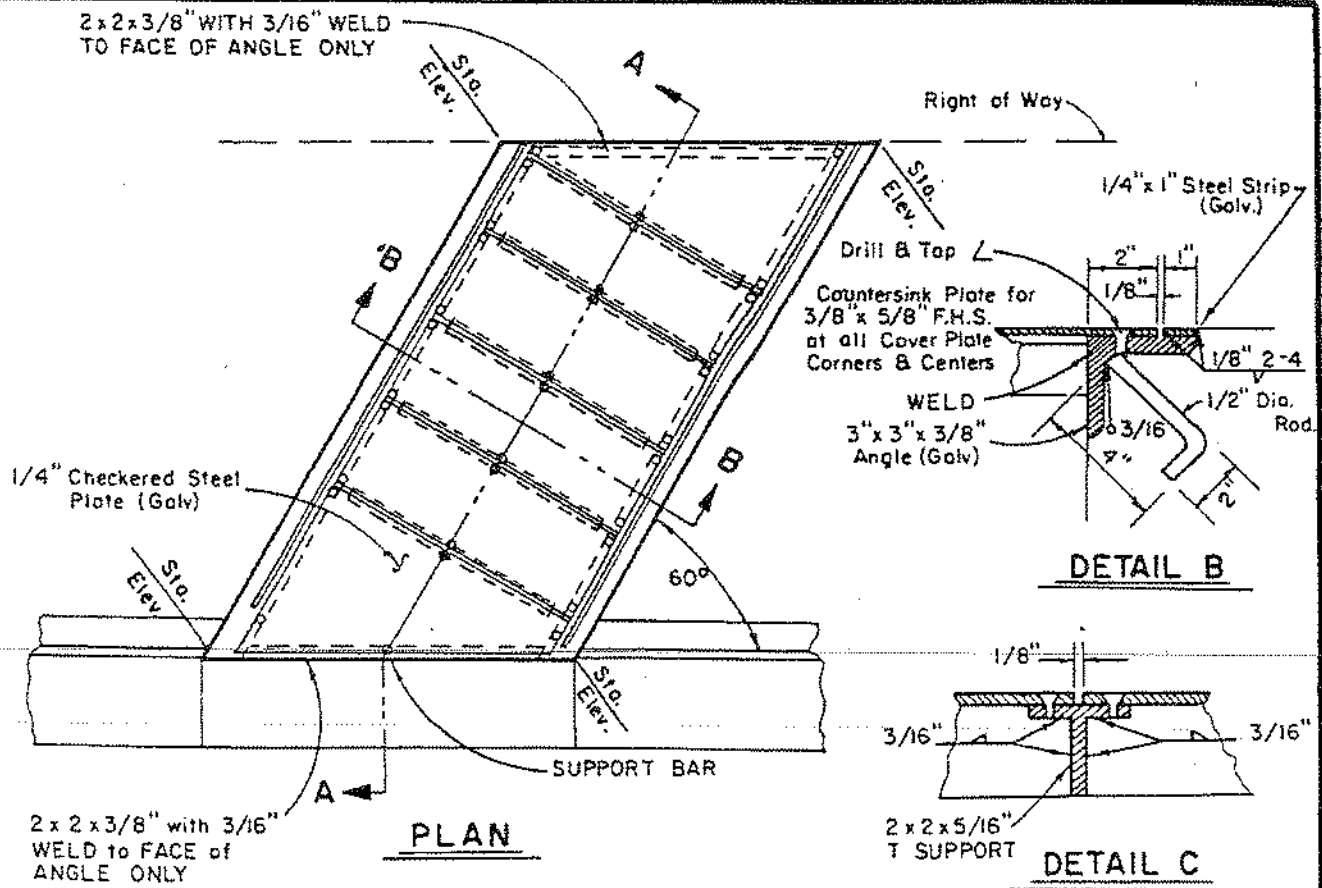
SAN BERNARDINO COUNTY TRANS. DEPT.

RD 8-89

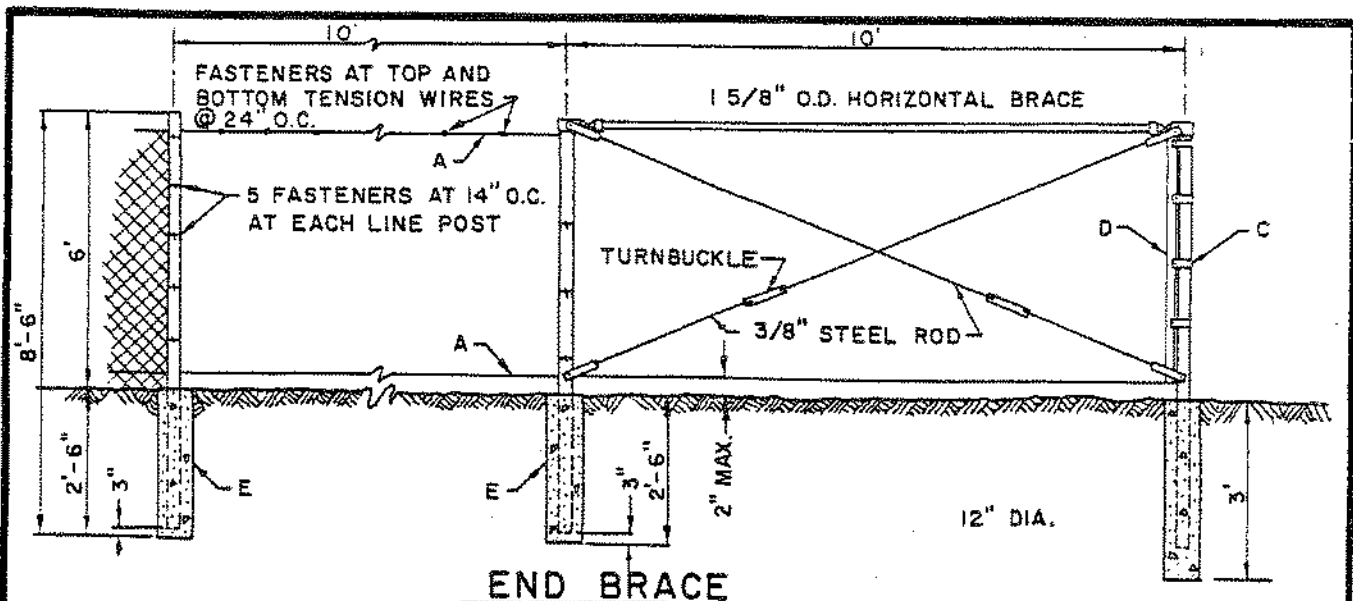
KEN A. MILLER
Director of Transportation

OUTLET STRUCTURE

210A

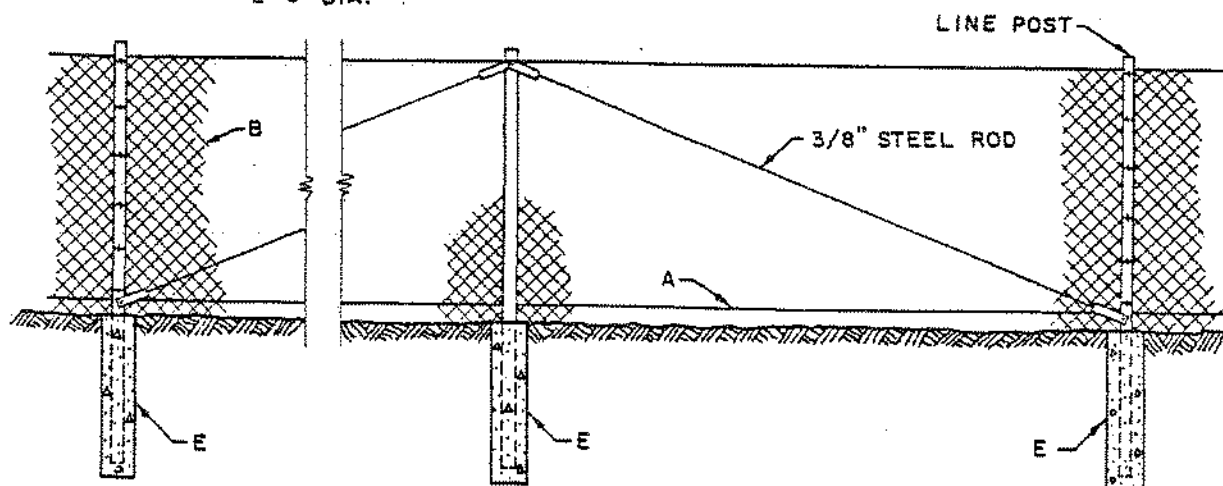


- NOTES:
1. ALL CONCRETE TO BE CLASS "A"
 2. ALL STEEL EXCEPT REINFORCING BARS SHALL BE GALVANIZED AFTER FABRICATION.



END BRACE

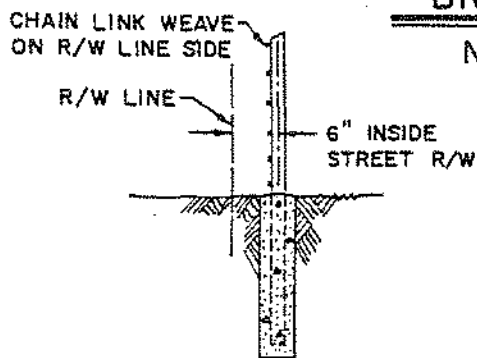
- A-TENSION WIRE NUMBER 10 GAGE MINIMUM
 B-CHAIN LINK FENCE FABRIC NUMBER 9 GAGE MINIMUM
 C-1/8" X 1" BAND AT 1' INTERVAL
 D-3/16" X 3/4" X 6' STEEL TENSION BAR
 E-9" DIA.



BRACE EVERY 500'

NOTES:

1. EACH POST SHALL BE CAPPED WITH A MALLEABLE IRON POST CAP, EXCEPT WHERE BARBED WIRE IS TO BE USED. THEN EACH POST SHALL BE CAPPED WITH A GALVANIZED MALLEABLE IRON 3 STRAND BARBED WIRE ARM & CAP.
2. MATERIALS AND CONSTRUCTION OF FENCE SHALL CONFORM TO STATE OF CALIFORNIA, STANDARD SPECIFICATIONS, UNLESS SHOWN OTHERWISE.



DETAIL

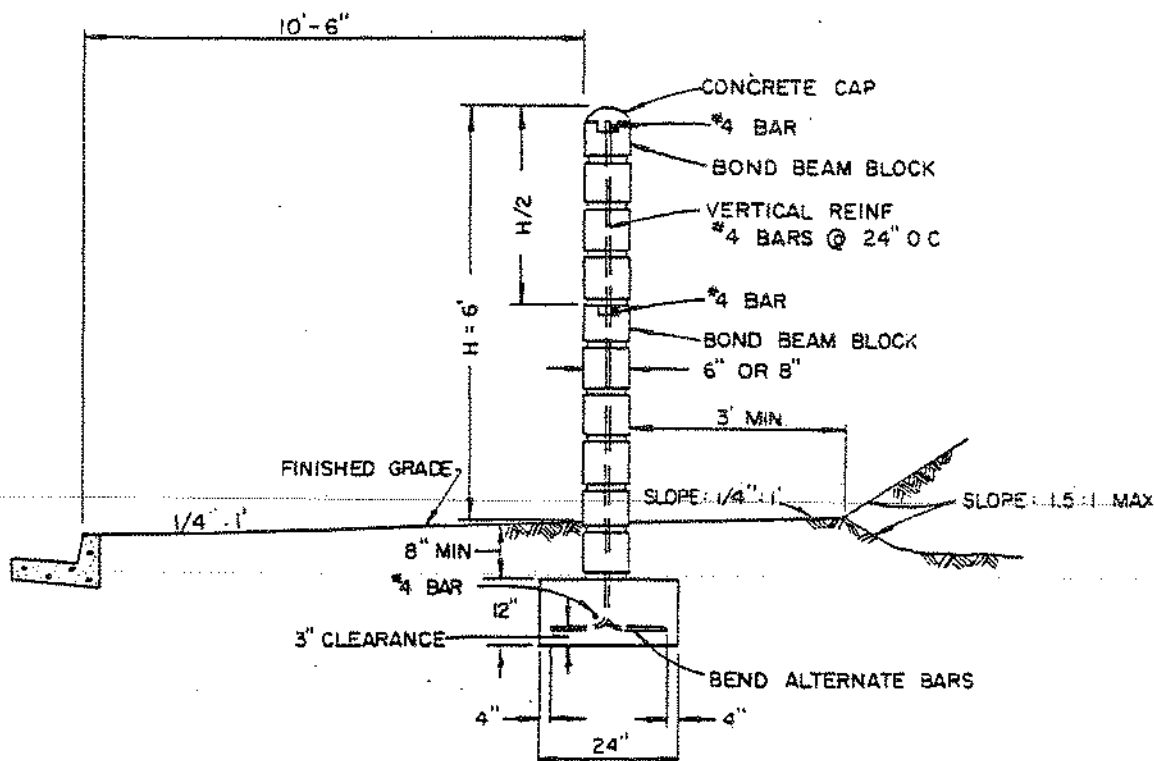
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: F.V.C. 7-65

M. A. Nicholas
 COUNTY ENGINEER

RIGHT OF WAY
 FENCE

300



1. ALL VERTICAL CELLS CONTAINING REINFORCING STEEL SHALL BE FILLED WITH GROUT. IN ADDITION, WHERE 6" BLOCKS ARE USED ALL CELLS WITHOUT VERTICAL REINFORCING STEEL SHALL BE FILLED WITH GROUT TO TOP OF BOND BEAM AT MIDHEIGHT OF WALL.
2. THE BLOCK WALL COURSES AND FOOTINGS MAY BE BUILT PARALLEL WITH THE STREET GRADE (7% MAX.) OR STEPPED.
3. ALL WALLS SHALL BE PLUMB.
4. BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 90%.
5. FOOTING SHALL BE CLASS B CONCRETE.
6. CONCRETE BLOCK SHALL BE GRADE A UNITS, CONFORMING TO ASTM DESIGNATION NO. C90.
7. REINFORCING STEEL, GROUT MORTAR, AND CLASS B CONCRETE SHALL CONFORM TO THE STANDARD SPECIFICATIONS.
8. ELIMINATE MORTAR IN ALL VERTICAL JOINTS IN FIRST COURSE ABOVE FINISH GRADE.
9. 1/2" OPEN JOINTS EXTENDING THROUGH THE ENTIRE HEIGHT OF THE BLOCK WALL, SHALL BE SPACED AT A MAXIMUM OF 50'.
10. ELIMINATE MID-HEIGHT BOND BEAM IN WALLS WHERE H=4' OR LESS.

SAN BERNARDINO COUNTY TRANS. DEPARTMENT

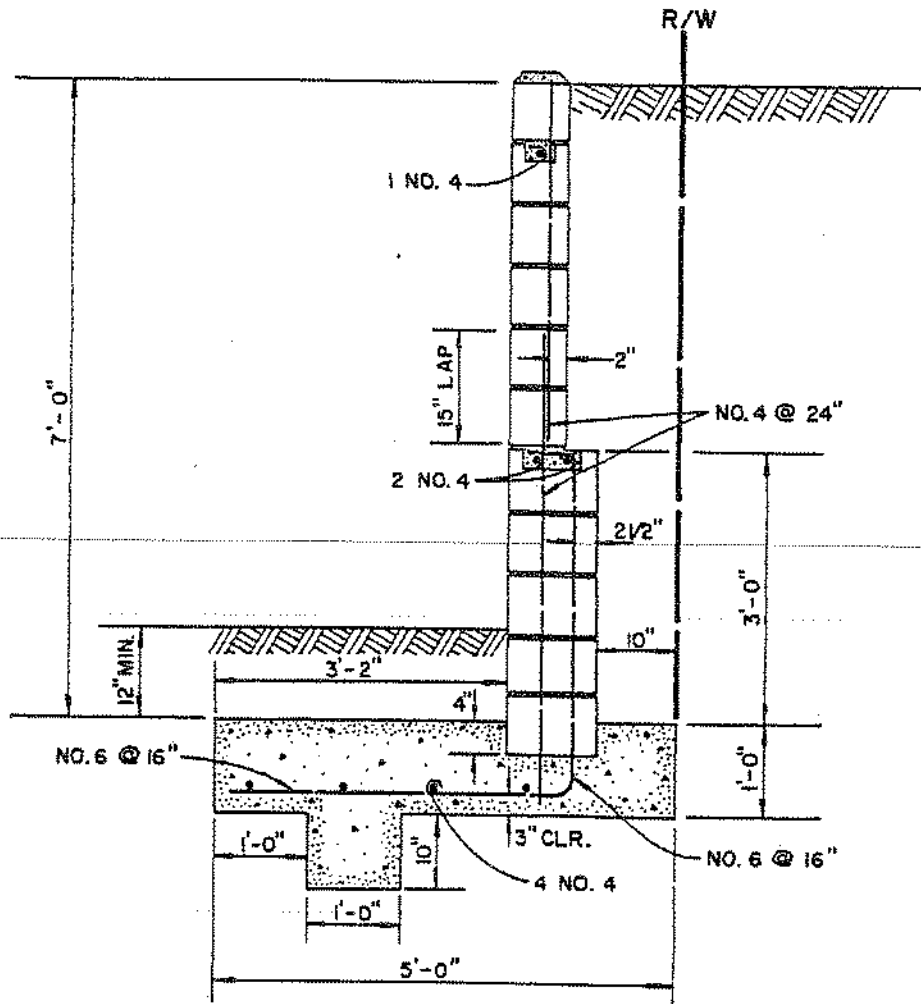
Revised - MAY '73
APP. MAR. 1975

John R. Shone

DIRECTOR OF TRANSPORTATION

NON RETAINING
CONCRETE BLOCK WALL

301



NOTES:

1. ALL VERTICAL CELLS CONTAINING BAR STEEL SHALL BE FILLED WITH GROUT.
2. TOP OF WALL AND FOOTINGS SHALL BE STEPPED TO CONFORM WITH SLOPE OF GROUND.
3. ALL WALLS SHALL BE PLUMB AND ALL BLOCK COURSES SHALL BE LEVEL.
4. BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY.
5. FOOTING SHALL BE CLASS 'A' CONCRETE.
6. CONCRETE BLOCK SHALL BE GRADE A UNITS, CONFORMING TO A.S.T.M. DESIGNATION NO. C90.
7. REINFORCING STEEL, GROUT, MORTAR AND CLASS 'A' CONCRETE SHALL CONFORM TO THE STANDARD SPECIFICATIONS. LAP STEEL 20 DIAMETERS.
8. MORTAR TO BE ELIMINATED FROM VERTICAL JOINTS OF ROW OF BLOCKS AT PARKWAY LEVEL.
9. THIS WALL SHALL BE USED WHERE A SCREENING WALL IS REQUIRED ON NON-ACCESS STREET AND THE POSSIBILITY OF BACKFILL ON PRIVATE LOT BY OWNER IS ACCOMPLISHED OR POSSIBLE.
10. DESIGN OF RETAINING WALLS UNDER OTHER CONDITIONS SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR APPROVAL.

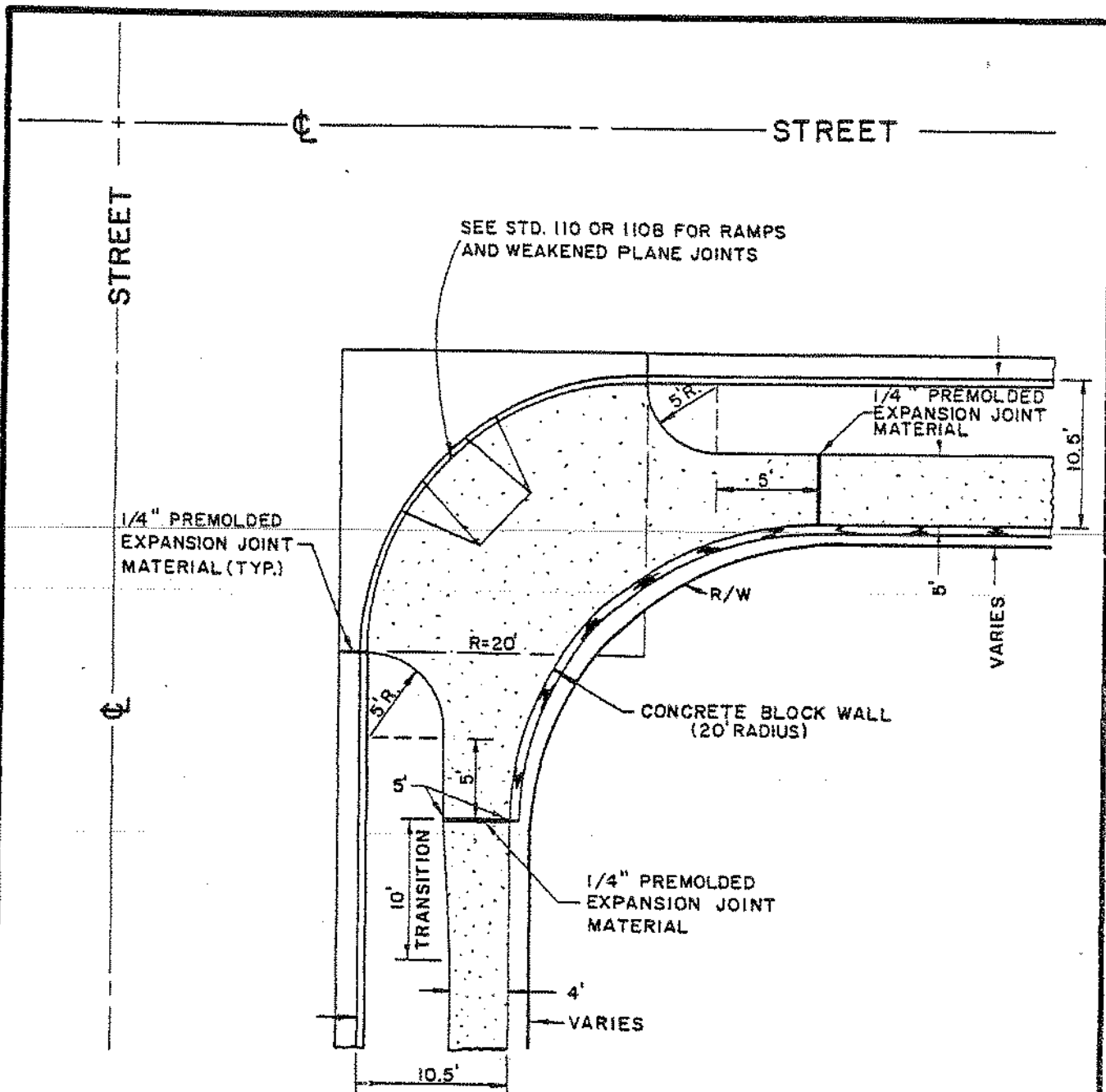
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: J.E.M. 7-66

M. A. Nicholas
COUNTY ENGINEER

RETAINING
CONCRETE BLOCK WALL

301 a



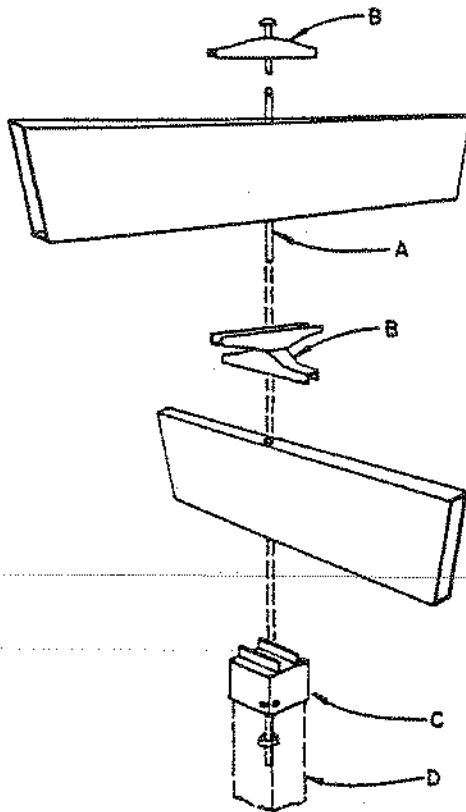
SAN BERNARDINO COUNTY TRANSDEPARTMENT

DATE: F.V.C. 6-65
APP MAR. 1975

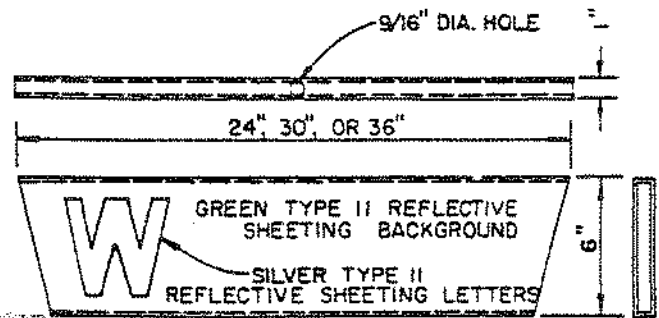
John R. Shone
DIRECTOR OF TRANSPORTATION

BLOCKWALL LOCATION
AT INTERSECTION

302



ASSEMBLY



- A $\frac{5}{8}$ "X15" CADMIUM PLATED CARRIAGE BOLT.
- B ORNAMENTAL TOP SHALL BE 14 GAGE ANODIZED ALUMINUM. CENTER CROSS SADDLE SHALL BE ONE PIECE CAST ANODIZED ALUMINUM.
- C ONE PIECE 2" CAST ANODIZED ALUMINUM POST CAP WITH FOUR $\frac{3}{8}$ " STAINLESS STEEL ALLEN HEAD SET SCREWS.
- D 2" SQ. STEEL POST 8'-12' LONG INSTALLED WITH A DRIVEN 2 $\frac{1}{2}$ " SQ. STEEL BREAKAWAY BASE 3' LONG AS PER COUNTY INSTALLATION STD. 303b.

DESIGN: EACH FOUR-WAY UNIT SHALL CONSIST OF TWO DOUBLE FACE SIGNS WITH STREET NAMES MOUNTED AT RIGHT ANGLES WITH CENTER ROD ASSEMBLY.

BRACKET ASSEMBLY: THE POST CAP, ORNAMENT, AND CENTER ROD ASSEMBLY SHALL BE MADE TO MOUNT ON 2" SQ. GALVANIZED POST. THE CENTER ROD SHALL BE A $\frac{5}{8}$ " CADMIUM PLATED CARRIAGE BOLT. HEAD OF BOLT SHALL FORM TOP OF ORNAMENT. BOLT SHALL EXTEND THROUGH SIGNS AND FASTEN WITH NUT INSIDE OF POST CAP. POST CAP SHALL BE DEEPLY GROOVED TO SECURELY HOLD SIGN FROM TWISTING AND SHALL BE SECURED TO THE PIPE WITH THREE $\frac{3}{8}$ " STAINLESS STEEL ALLEN HEAD SET SCREWS.

MATERIAL: SIGN SHALL BE GREEN ANODIZED ALUMINUM EXTRUSION OF 6063T-4 ALLOY MATERIAL. ALL ANODIZING SHALL CONFORM WITH ALUMILITE SPECIFICATION #215-R1.

FINISH: SIGN FACES SHALL BE FHWA TYPE II REFLECTIVE SHEETING. THE TRANSPARENT SCREEN PROCESS COLOR SHALL BE AS RECOMMENDED BY THE REFLECTIVE SHEETING MANUFACTURER. APPLICATION OF THE REFLECTIVE SHEETING TO THE SIGN SHALL BE BY METHODS AS APPROVED BY THE REFLECTIVE SHEETING MANUFACTURER.

LETTERING: STREET NAMES SHALL BE 4" HIGH. EACH NAME SHALL BE INDIVIDUALLY LAID OUT TO FIT EITHER THE 24" OR 30" SPACE. THE LETTERS SHALL BE OF THE ROUNDED TYPE STYLE CONFORMING WITH THE STANDARD ALPHABET FOR HIGHWAY SIGNS DESIGNED BY THE U.S. PUBLIC ROADS ADMINISTRATION. LETTERS SHALL BE FHWA TYPE II REFLECTIVE SHEETING.

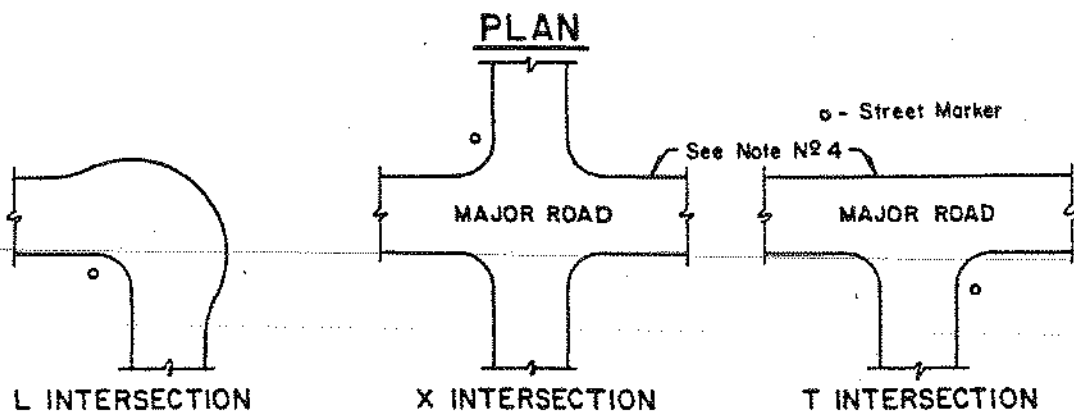
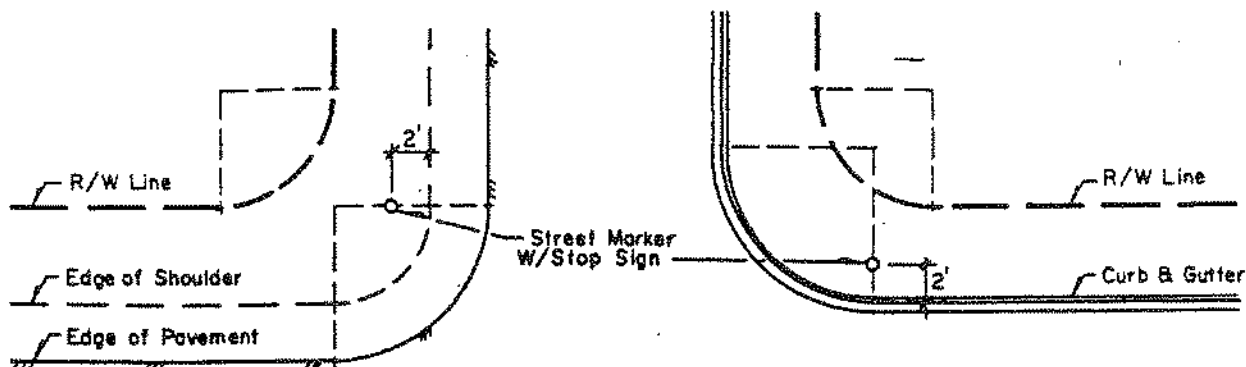
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: J.E.M. 11-63
R.A.J. 10-81

M. A. Nicholas
COUNTY ENGINEER

STREET MARKER

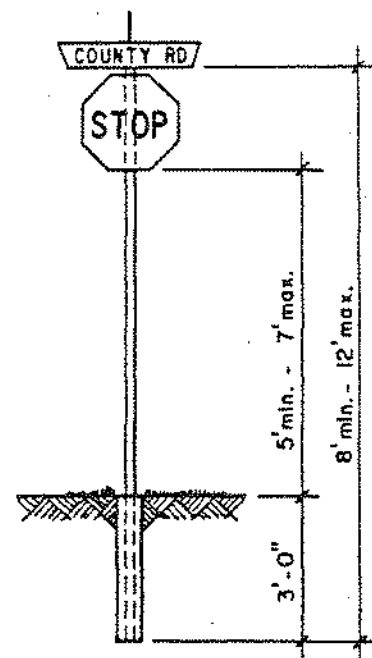
303



TYPICAL LOCATION

NOTES:

1. Marker To Be Set On County Right Of Way.
2. Location Of Marker Shown Is Approximate.
3. Markers To Be Visible For A Distance Of 150 Feet.
4. If Either Road Is Divided Into 4 Lanes Or More (Major Road), Additional Markers Will Be Required.
5. Street Markers Located At Major Roads Will Be Mounted On 12 Foot Posts To Accommodate A Stop Sign.



ELEVATION

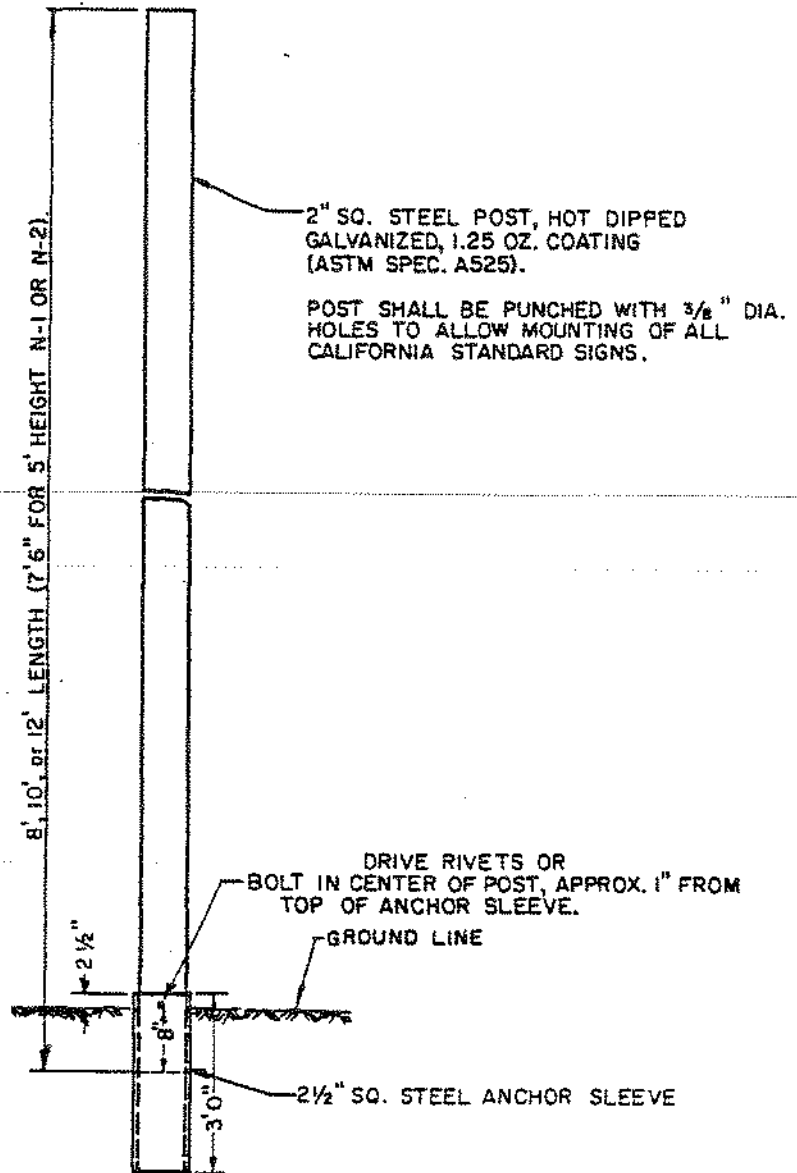
SAN BERNARDINO COUNTY TRANS. DEPT.

OCT. 5, 1993 v.a.e.
REV. 3/1/94

KEN A. MILLER
Director of Transportation

STREET MARKER

303a



NOTES:

1. SEE STANDARD NO. 303a FOR MARKER LOCATIONS.
2. POST SHALL BE 2" SQ. STEEL AS SHOWN AND STATED.
3. ANCHOR SLEEVE SHALL BE 2 1/2" SQ. STEEL HOT DIPPED GALVANIZED AFTER FABRICATION (ASTM SPEC. A-123).
4. SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH COUNTY STANDARD 303.

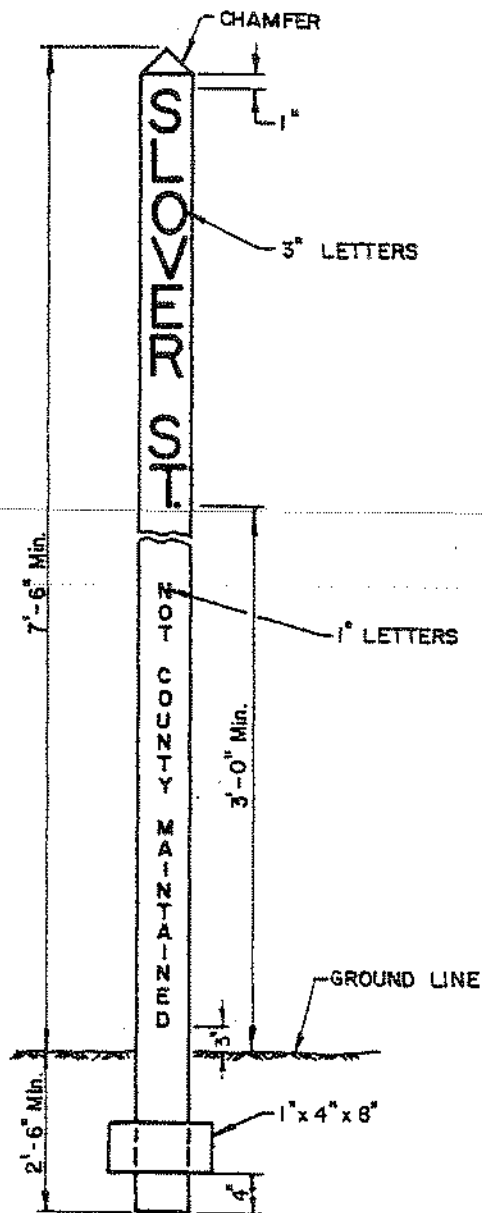
SAN BERNARDINO COUNTY ROAD DEPARTMENT

H.G. 1-71
R.G. 12-61

M. A. Nicholas
COUNTY ENGINEER

STREET MARKER
POST INSTALLATION

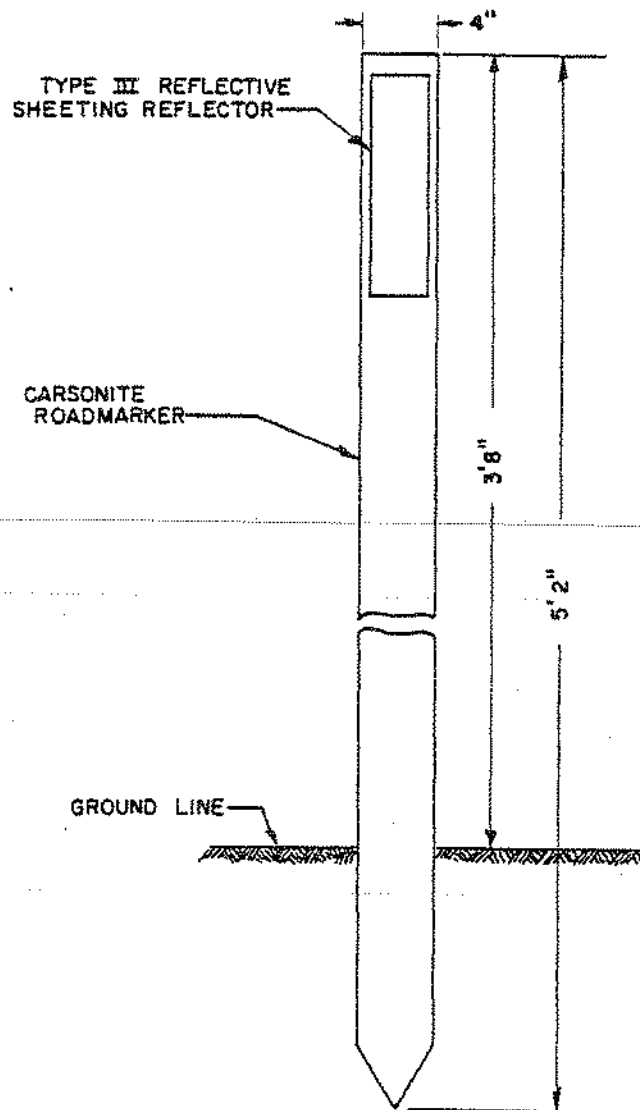
303 b



NOTES:

1. SEE STANDARD NO 303a FOR MARKER LOCATIONS.
2. POST SHALL BE 4" x 4" CONSTRUCTION HEART STRUCTURAL REDWOOD, S. 4 S. AND/OR EQUIVALENT AS APPROVED BY STANDARD SPECIFICATIONS.
3. ALL WOOD SURFACES SHALL BE GIVEN ONE COAT OF WOOD PRIMER AND TWO COATS OF ENAMEL; SIGN POST YELLOW, IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
4. LETTERS SHALL BE STENCILED WITH BLACK PAINT ON ALL SIDES.
5. STREET NAME LETTERS SHALL BE 3" HIGH AND NOT COUNTY MAINTAINED LETTERS 1" HIGH ROUNDED TYPE STYLE CONFORMING WITH THE STANDARD ALPHABET FOR HIGHWAY SIGNS DESIGNED BY THE U.S. PUBLIC ROADS ADMINISTRATION.

SAN BERNARDINO COUNTY ROAD DEPARTMENT		STREET MARKER	303c
H.G. 1-71	M. A. Nicholas		
	COUNTY ENGINEER	DESERT ROAD - 2 1/2 ACRE	



NOTES:

1. MARKER SHALL BE A CARSONITE ROADMARKER CONSISTING OF A CARSONITE POST WITH A 3" X 12" FHWA TYPE III REFLECTIVE SHEETING REFLECTOR.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

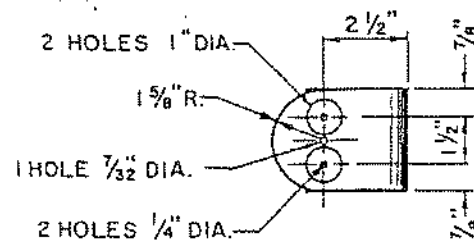
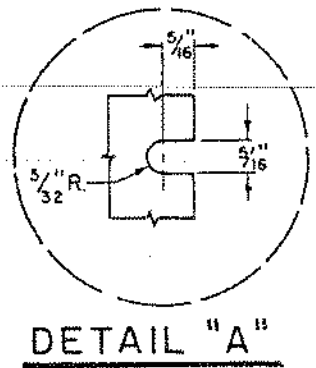
DATE: F.V.C. 7-85

R.L.W. 10-81

M. A. Nicholas
COUNTY ENGINEER

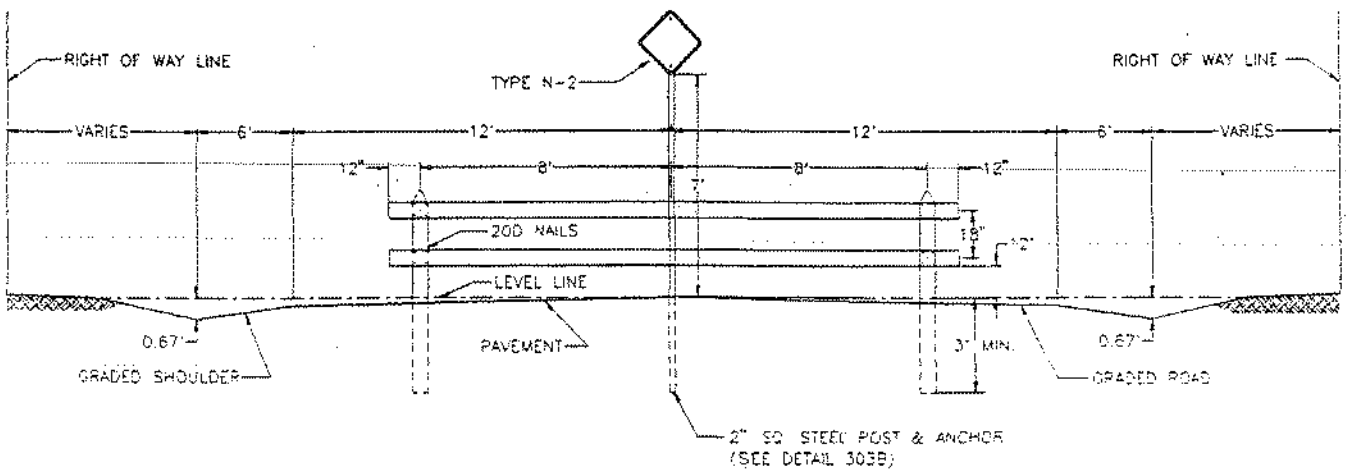
MARKERS

304



1. CLEARANCE MARKER (W-GOR) THREE 3 1/4" YELLOW CENTERMOUNT³ REFLECTORS.
2. GUIDE MARKERS ONE 3 1/4" WHITE CENTERMOUNT REFLECTOR.
3. REAR MOUNT REFLECTOR BRACKET SHALL BE USED ON CURVES. BRACKET SHALL BE ATTACHED WITH 3/16" BLIND ALUMINUM RIVETS AND USED TO MOUNT A 3" WHITE REFLECTOR.
4. ALL MATERIALS SHALL CONFORM TO STATE OF CALIFORNIA, STANDARD SPECIFICATIONS
5. HOLE DIAMETERS APPLY TO DIMENSION AFTER ITEM IS PAINTED.

304 A



SECTION VIEW

WIDTH OF ROADWAY	NUMBER OF PANELS	TOTAL LENGTH OF PANELS
20' ALLEY	2	18'
36'	4	34'
44'	5	42'
64'	7	58'
DESERT ROAD	VARIES	VARIES

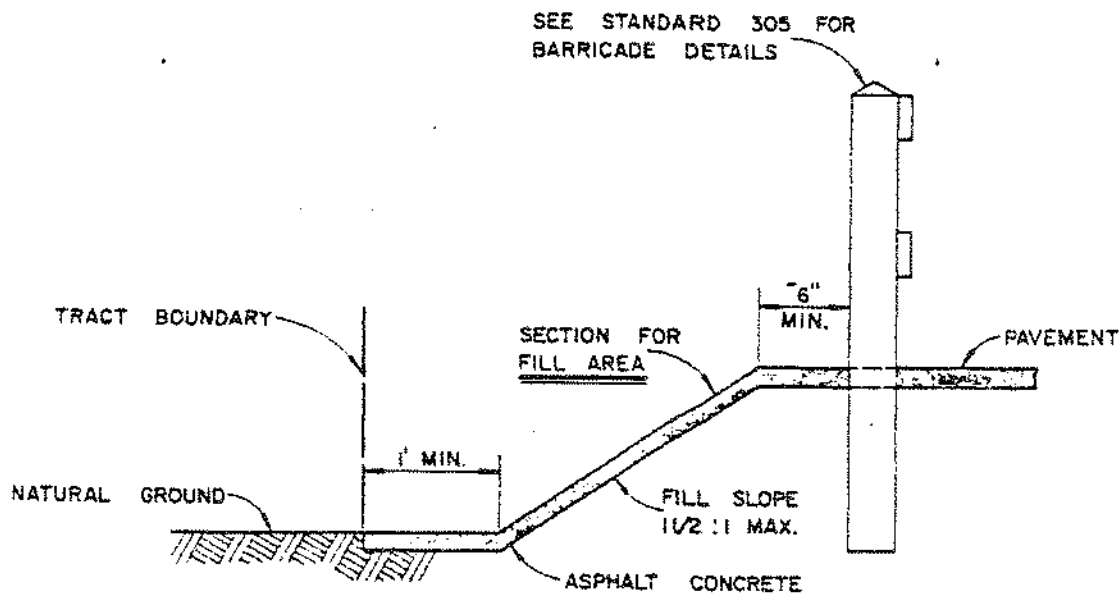
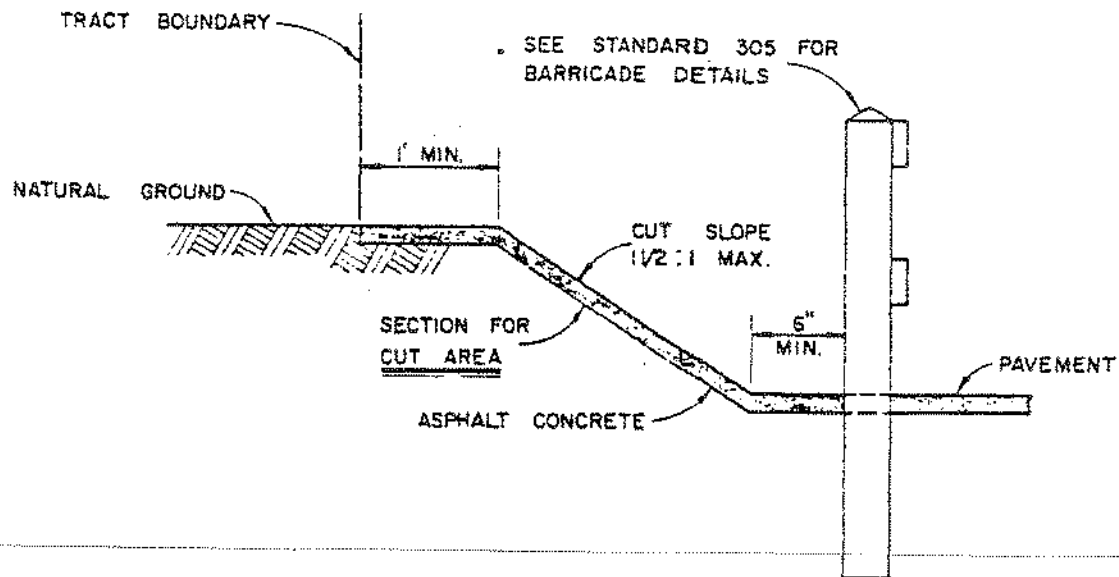
NOTES:

1. POSTS ARE TO BE CHAMFERED 6" X 6" X 6' CONST. HEART REDWOOD, S4S. TWO CROSS PLANKS ARE TO BE 2" X 6" DOUGLAS FIR, CONSTRUCTION GRADE.
2. BARRICADE MATERIALS AND N-2 REFLECTOR SHALL CONFORM TO STATE OF CALIFORNIA STANDARD SPECIFICATIONS AND TO FHWA TYPE IIIA OR VISUAL IMPACT PERFORMANCE (VIP) REFLECTIVE SHEETING.
3. ALL EXPOSED WOOD SURFACES SHALL BE GIVEN 2 BRUSH COATS OF FUME-RESISTANT EXTERIOR WHITE PAINT CONFORMING TO STATE OF CALIFORNIA SPECIFICATION 58-G-06.
4. FOR RAIL TO POST CONNECTIONS, PROVIDE TWO EACH 3/8" CARRIAGE BOLTS WITH CUT WASHERS AND NUTS.

ST05\305

01/20/95

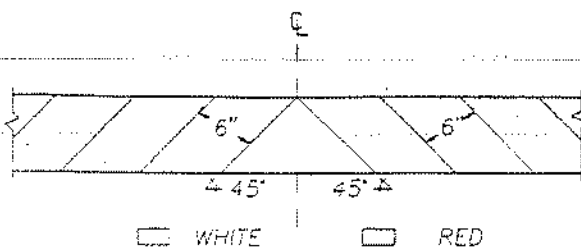
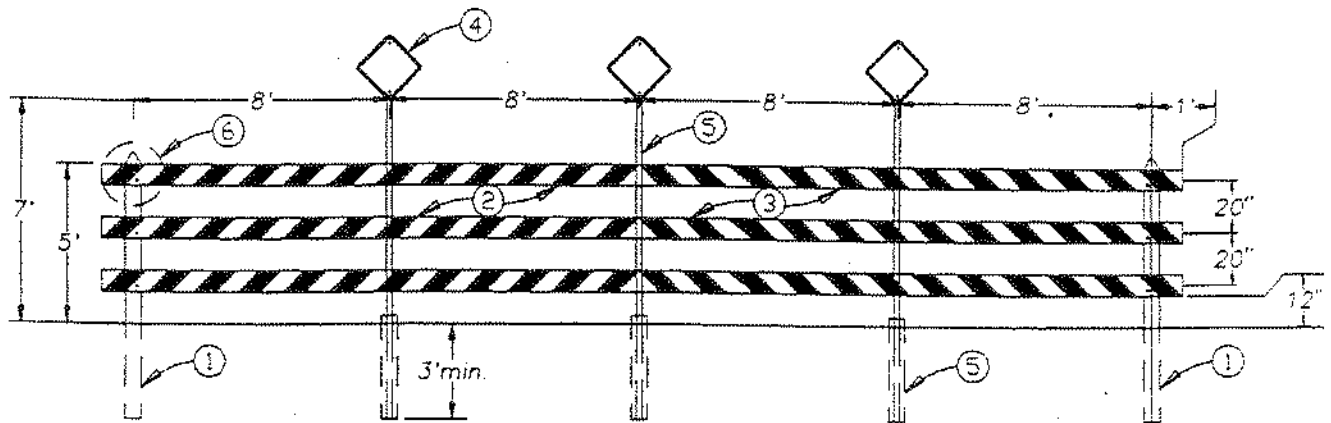
SAN BERNARDINO COUNTY TRANS. DEPT.		BARRICADE URBAN AREA	305
	KEN A. MILLER		
	Director of Transportation		



NOTES:

1. ASPHALT CONCRETE SHALL BE MINIMUM 3 INCHES THICKNESS ON CUT OR FILL AREA.

SAN BERNARDINO COUNTY ROAD DEPARTMENT		END OF STREET TEMPORARY PAVEMENT	305a
DATE: J.E.M. 10-65 R.A.T. 10-61	M. A. Nicholas COUNTY ENGINEER		



WIDTH OF ROADWAY	NUMBER OF PANELS	NO. OF N2	TOTAL LENGTH OF RAILS
20' ALLEY	2	1	20' MAX.
26'	3	2	26'
36'	4	3	34'
44'	5	3	42'
64'	8	4	66'
80'	10	5	82'

③ REFLECTIVE TAPE DETAIL

NOTE: RAILS FACING IN TWO DIRECTIONS. NUMBER OF REFLECTORIZED RAILS SHOULD BE ON TWO FACES

NOTES:

- ① - Post Is To Be 6" x 6" x Varies, Timber S.4S.
- ② - Three (3) Cross Panels To Be 2" x 8" x Varies, Timber S.4S.
- ③ - Reflective Tape Consists Of Reflective Diamond Grade Sheeting With High Tack Pressure Sensitive Adhesive, White And Red Tape With 6" Width. (See Detail Above)
- ④ - Object Marker Red Type N2 Sign Reflector Shall Conform To State Of California Standard Specification And To FHWA Type IIIA Or Visual Impact Performance (VIP) Reflective Sheeting. Use A Minimum Of Two (2) Signs (Similar To Standard Detail 306).
- ⑤ - 2" Square Steel Post And 2 1/2" Square Anchor Sleeve. (See Standard Detail 303B).
- ⑥ - Use 3/8" Diameter x 4 1/2" Long Lag Bolts (Galvanized) For Fastening Item 2 To Item 1. (Minimum 4 Bolts Per Connection).
- 7 - Rails Facing Traffic To Be ReflectORIZED.
- 8 - All Timber To Be S.4S Weather Resistant.
- 9 - All Dimensions are Nominal Lumber Dimensions.

STDN305B

01/20/95

SAN BERNARDINO COUNTY TRANS. DEPT.

KEN A. MILLER
Director of Transportation

BARRICADE
RURAL AREA

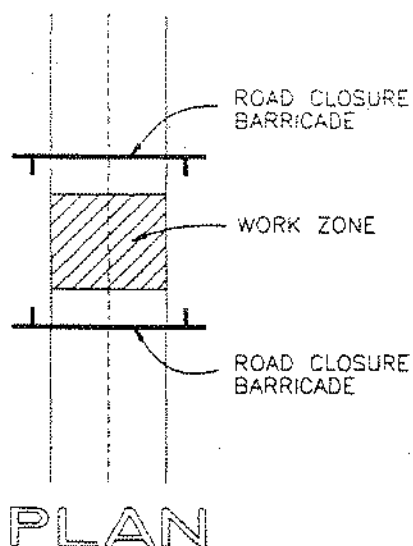
305B



SECTION VIEW

NOTES:

1. All timber shall be S4S.
2. White and orange painted stripes shall be reflectorized per FHWA II (Engineering Grade Sheeting).
3. Traffic Control Devices shall be of high intensity sheeting.
4. For rail to post connection, provide 2-3/8" Carriage Bolts with cut washers and nuts.
5. Advance construction signs are required.
6. Use N-2 with Visual Impact Performance (VIP) sheeting.
7. For 5'-0" barricade, use only one C-2 and N-2 mounted at the center of the assembly.

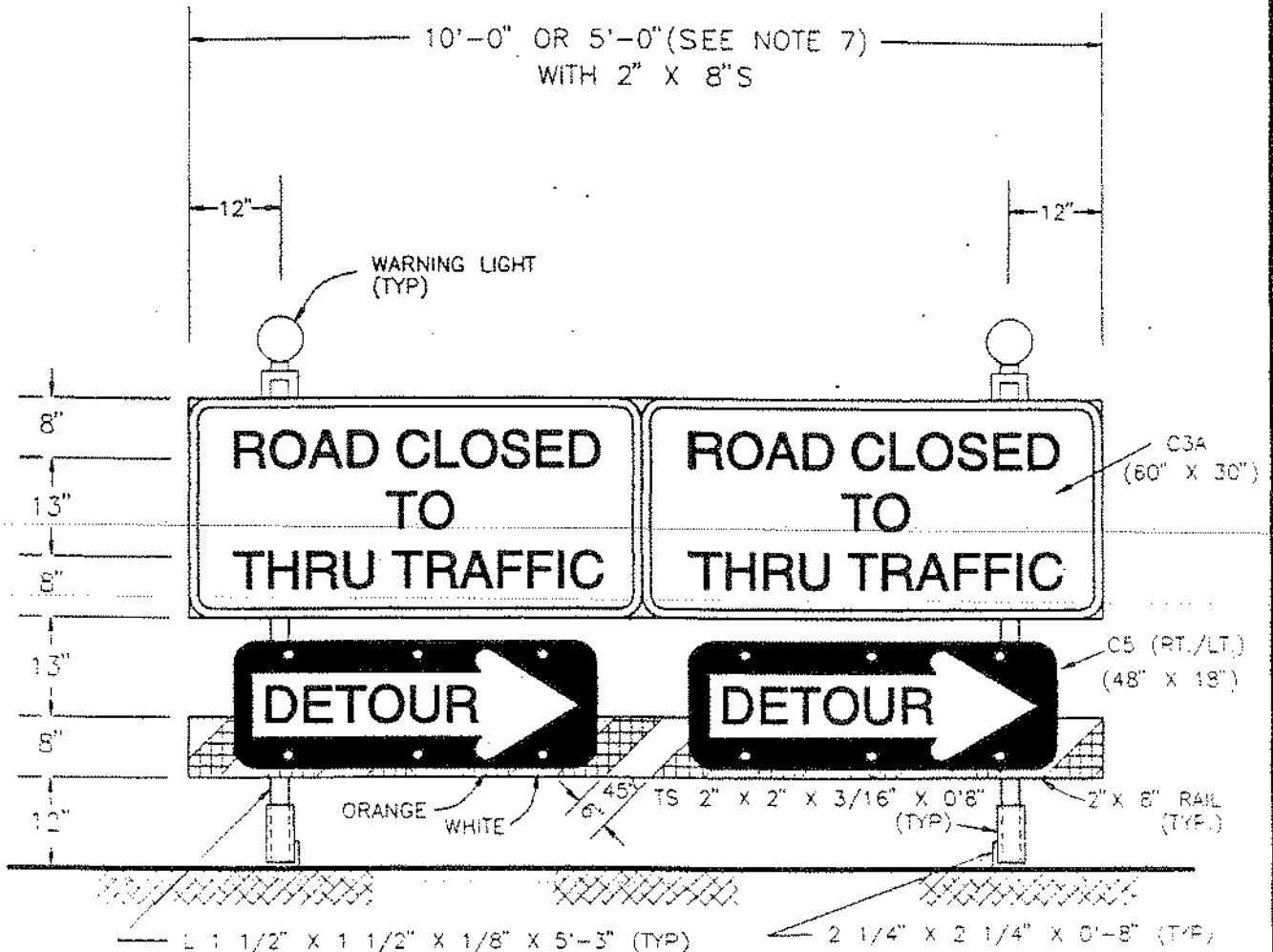


PLAN

\$105,305.

01/20/85

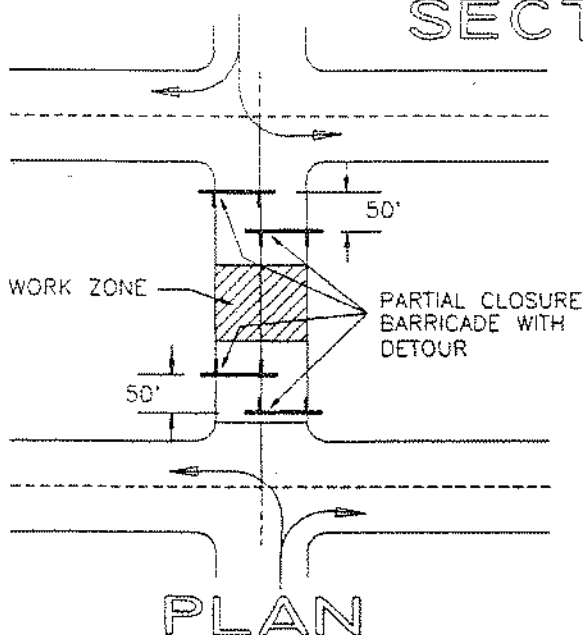
SAN BERNARDINO COUNTY TRANS. DEPT.		ROAD CLOSURE BARRICADE	305C
	KEN A. MILLER		
	Director of Transportation		



SECTION VIEW

NOTES:

1. All timber shall be S4S.
2. White and orange painted stripes shall be reflectorized per FHWA II (Engineering Grade Sheeting).
3. Traffic Control Devices shall be of high intensity sheeting.
4. For rail to post connection, provide 2-3/8" Carriage Bolts with cut washers and nuts.
5. Advance construction signs are required.
6. For 5'-0" barrigode, use only one C3A and C5 mounted at the center of the assembly.



SDS\305E

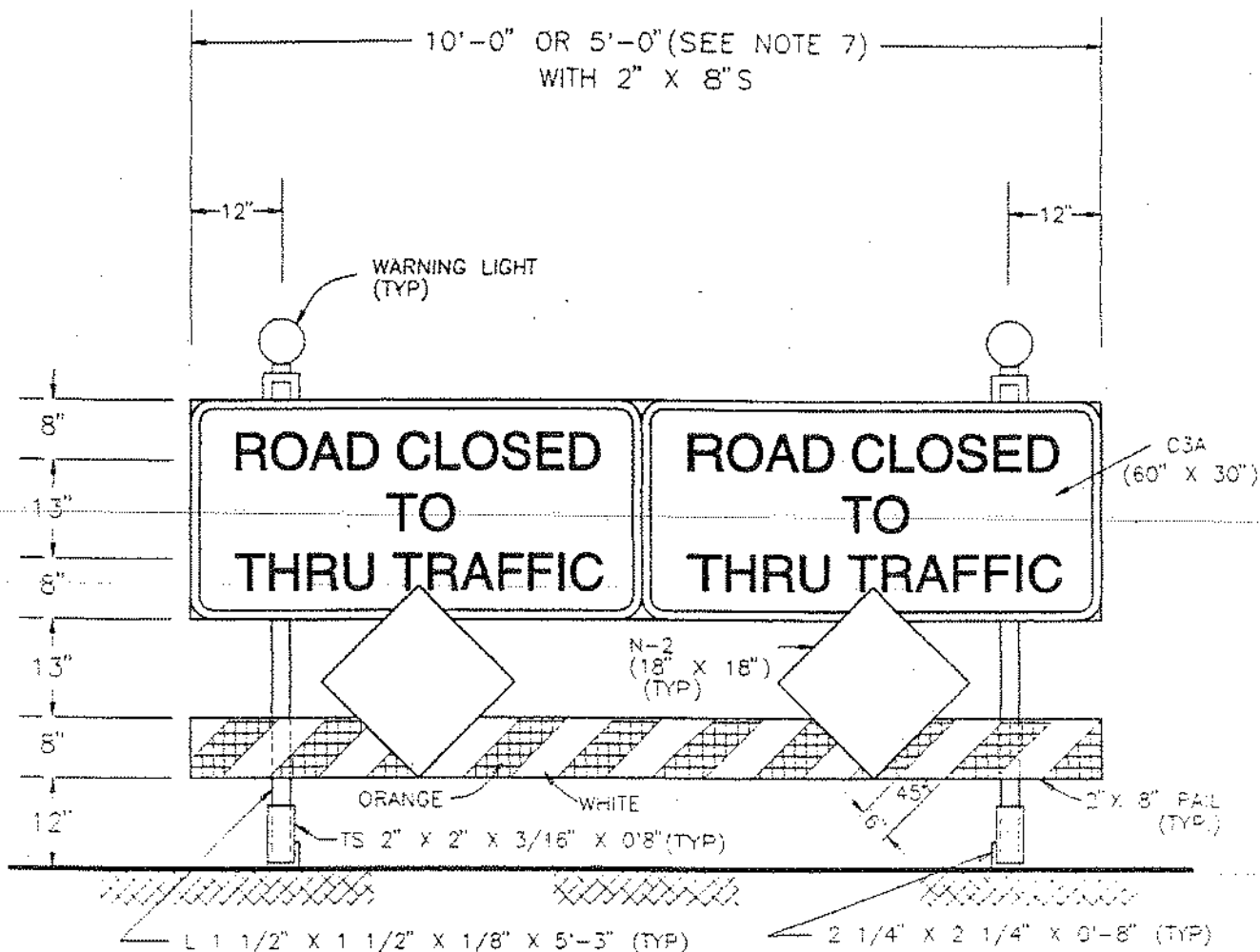
01/20/95

SAN BERNARDINO COUNTY TRANS. DEPT.

KEN A. MILLER
Director of Transportation

PARTIAL ROAD CLOSURE
BARRICADE WITH DETOUR

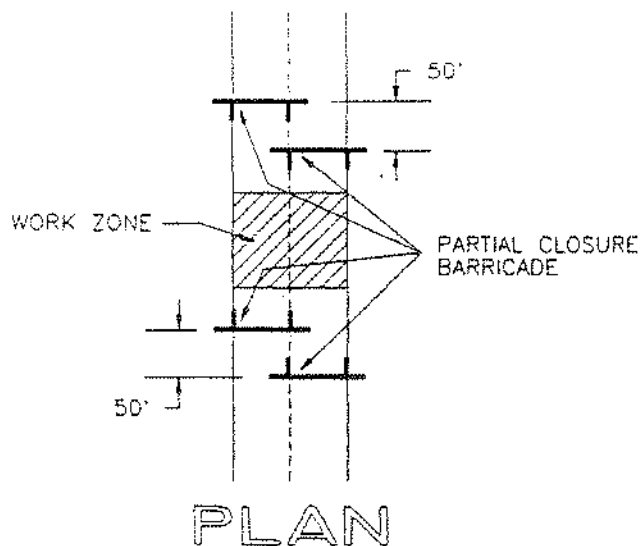
305E



SECTION VIEW

NOTES:

1. All timber shall be S4S.
2. White and orange pointed stripes shall be reflectorized per FHWA II (Engineering Grade Sheeting).
3. Traffic Control Devices shall be of high intensity sheeting.
4. For rail to post connection, provide 2-3/8" Carriage Bolts with cut washers and nuts.
5. Advance construction signs are required.
6. Use N-2 Visual Impact Performance (VIP) sheeting.
7. For 5'-0" barricade, use only one C3A and N-2 mounted at the center of the assembly.



PLAN

57051 305F

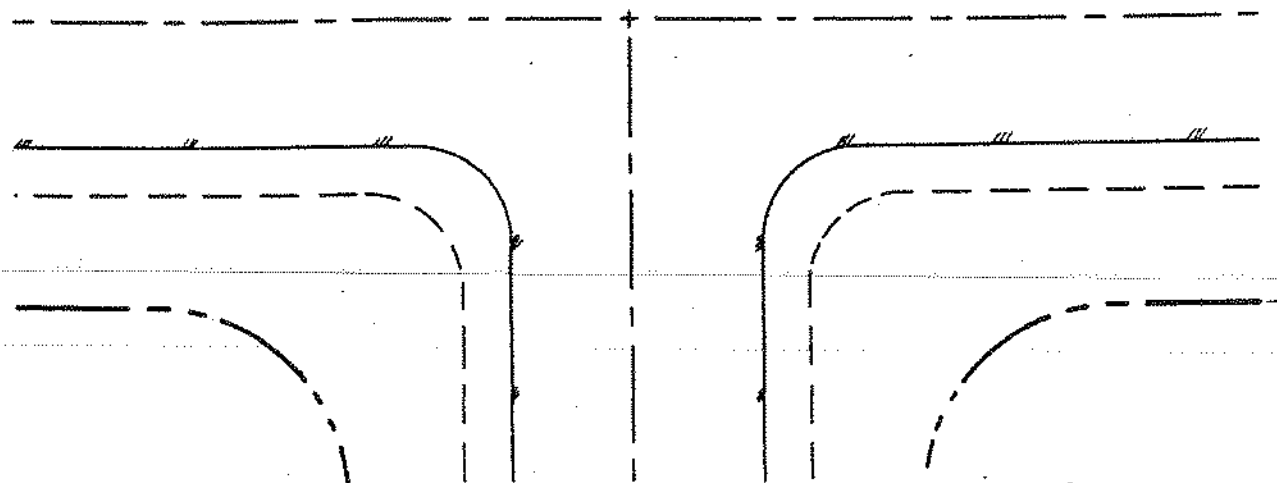
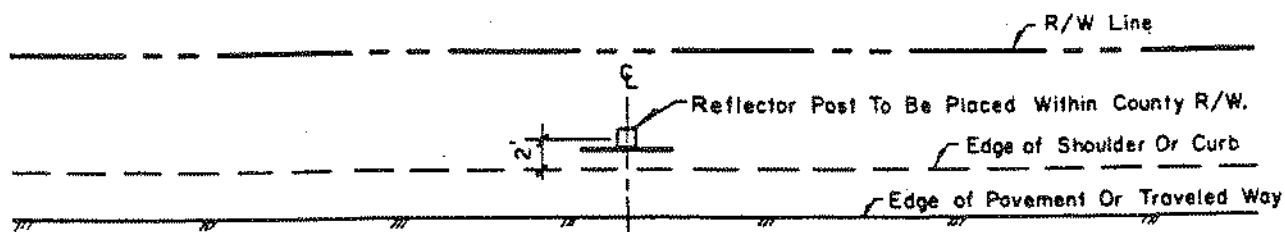
01/20/95

SAN BERNARDINO COUNTY TRANS. DEPT.

KEN A. MILLER
Director of Transportation

PARTIAL ROAD
CLOSURE BARRICADE

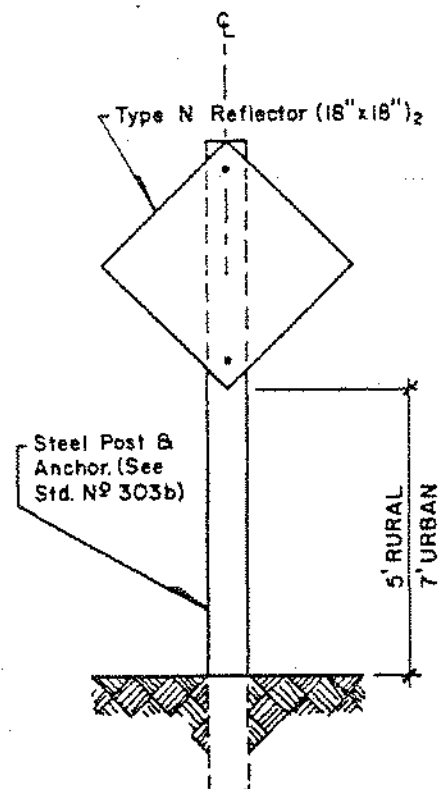
305F



PLAN

NOTES:

1. Post Shall Be 2" x 2" Square Steel In Accordance With Standard N^o 303b.
2. Materials And Type N Reflector Shall Conform To State Of California, Standard Specifications.
Type N-1 Shall Be Yellow FHWA Type III Reflective Sheeting.
Type N-2 Shall Be Red FHWA Type III Reflective Sheeting.



ELEVATION

SAN BERNARDINO COUNTY TRANS. DEPT.

OCT. 6, 1993 v.h.c.

REV. 3/1/94

KEN A. MILLER
Director of Transportation

POST WITH
REFLECTOR

306

CENTERLINE STRIPING

L01 Traffic is permitted to pass for both directions of travel



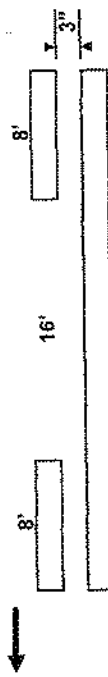
Centerline pattern for use on two-lane streets and highways (normally used on local streets and highways).

L01a Traffic is permitted to pass for both directions of travel



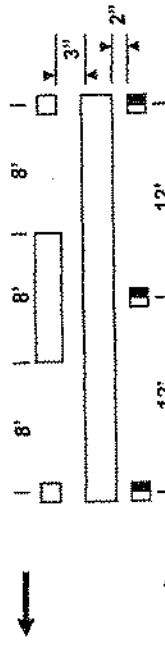
Centerline pattern with pavement markers for use on two-lane streets and highways.

L14 Traffic is permitted to pass along dotted line and passing is prohibited along solid line



One direction no passing pattern for use on two-lane streets and highways (normally used on local streets and highways).

L14a Traffic is permitted to pass along dotted line and passing is prohibited along solid line



One direction no-passing pattern with pavement markers for use on two lane streets and highways.

Direction of Travel ☐ 4" Yellow Stripe ☐ Two-Way Yellow Reflective Markers ☐ One-Way Yellow Reflective Markers

SAN BERNARDINO COUNTY TRANS. DEPT.

NOT TO SCALE

KEN A. MILLER

Director of Public Works

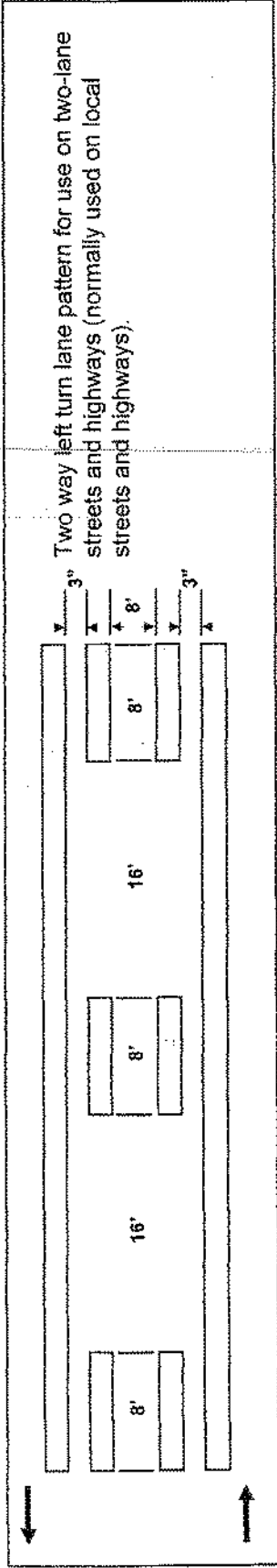
Revised 09/03

STRIPING DETAILS

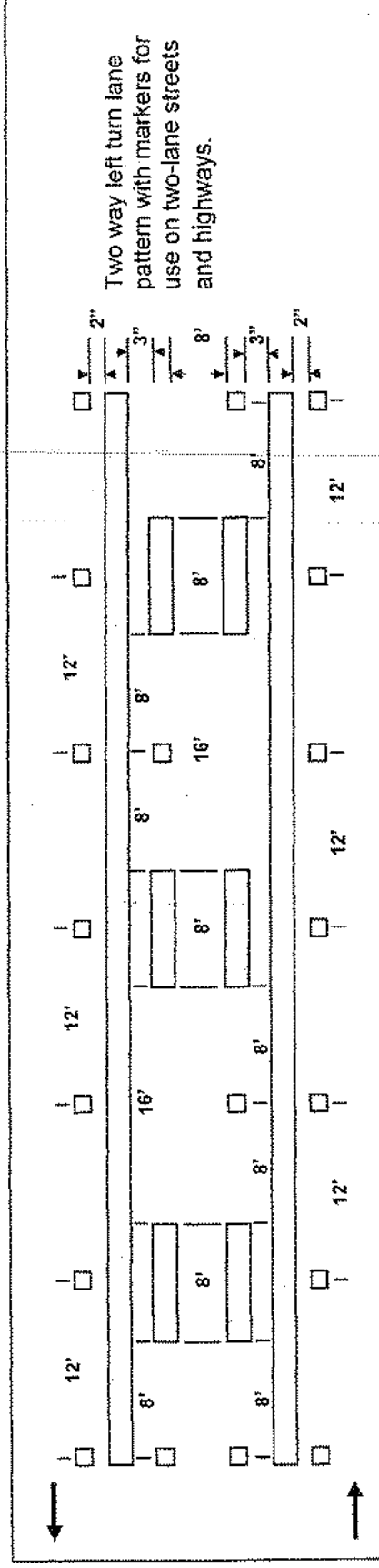
307

CENTERLINE STRIPING

L07 4 Lanes Continuous Left-Turn Lane



L07a 4 Lanes Continuous Left-Turn Lane



Direction of Travel ☐ 4" Yellow Stripe ☐ Two-Way Yellow Reflective Markers

SAN BERNARDINO COUNTY TRANS. DEPT.

NOT TO SCALE

KEN A. MILLER

Director of Public Works

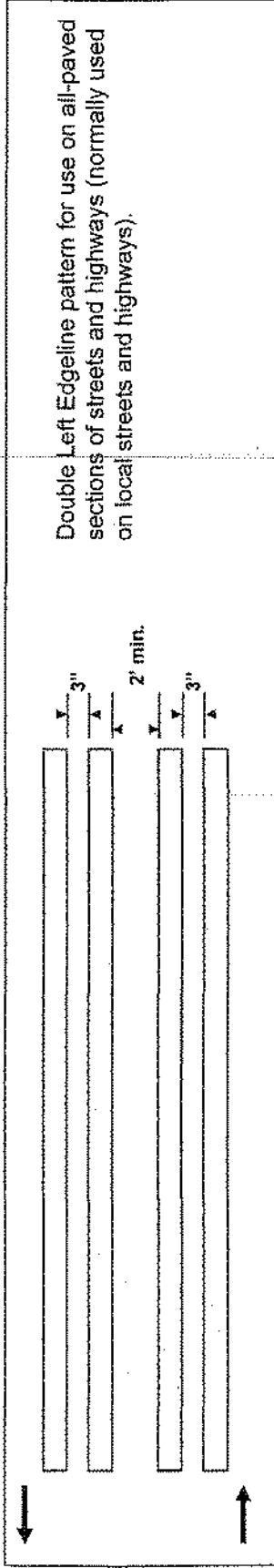
Revised 08/03

STRIPING DETAILS

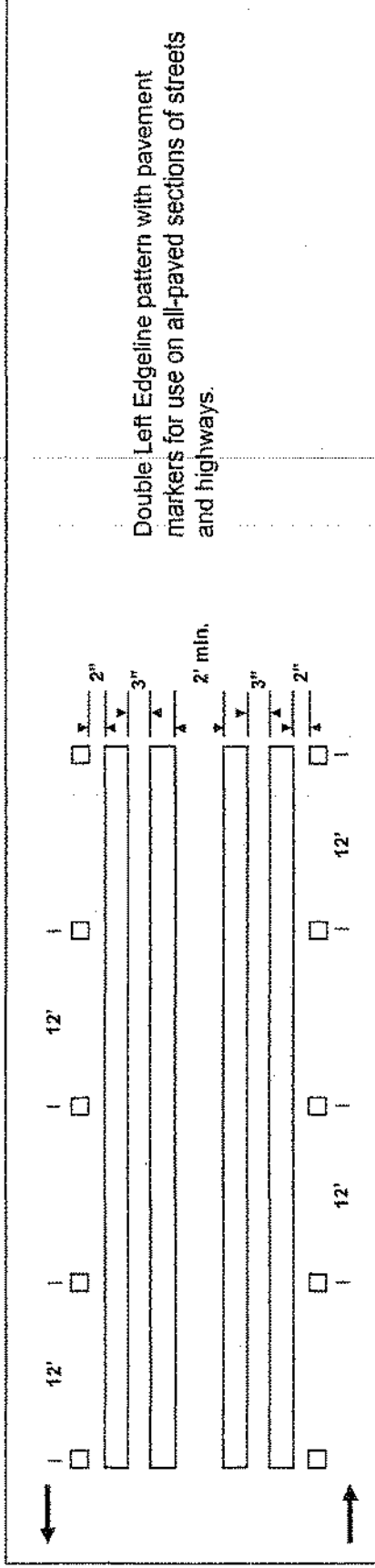
307a

CENTERLINE STRIPING

L05 Painted Median



L05a Painted Median



Direction of Travel ☐ 4" Yellow Stripe ☐ Two-Way Yellow Reflective Markers

SAN BERNARDINO COUNTY TRANS. DEPT.

NOT TO SCALE

KEN A. MILLER

Director of Public Works

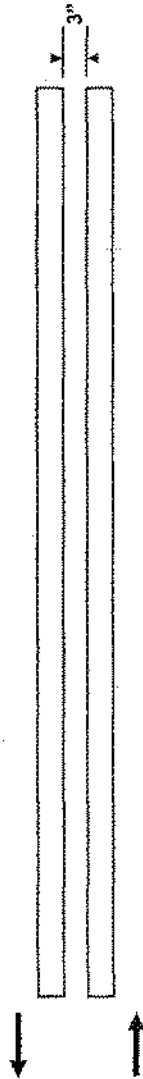
Revised 09/03

STRIPING DETAILS

307b

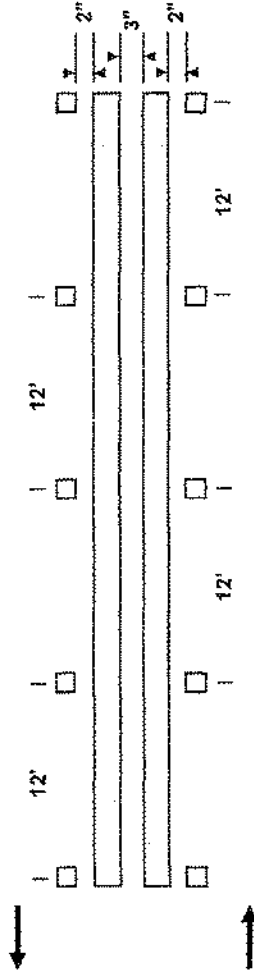
CENTERLINE STRIPING

L12 2 Lanes 1 Each Direction, No Passing



Two-direction no-passing pattern for use on two-lane streets and highways (normally used on local streets and highways).

L12a 2 Lanes 1 Each Direction, No Passing



Two-direction no-passing pattern with markers for use on two-lane streets and highways.

Direction of Travel ☐ 4" Yellow Stripe ☐ Two-Way Yellow Reflective Markers

SAN BERNARDINO COUNTY TRANS. DEPT.

KEN A. MILLER
Director of Public Works

NOT TO SCALE

Revised 09/03

STRIPING DETAILS

307c

LANELINE STRIPING

L26 Laneline Quarterstripe Pattern



Laneline pattern for use on multi-lane streets and highways (normally used on local streets and highways).

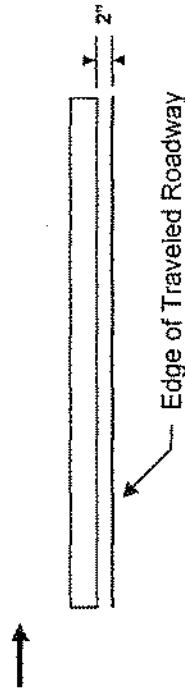
L26a Laneline Quarterstripe Pattern



Laneline pattern with pavement markers for use on two-lane streets and highways.

EDGE LINE STRIPING

L27 Right Edgeline



Right Edgeline pattern for use local streets and highways. It is generally dropped at the beginning of intersection flares on conventional highways.

Direction of Travel ☐ 4" White Stripe ☐ One-Way White Reflective Markers

SAN BERNARDINO COUNTY TRANS. DEPT.

NOT TO SCALE

KEN A. MILLER

Director of Public Works

Revised 09/03

STRIPING DETAILS

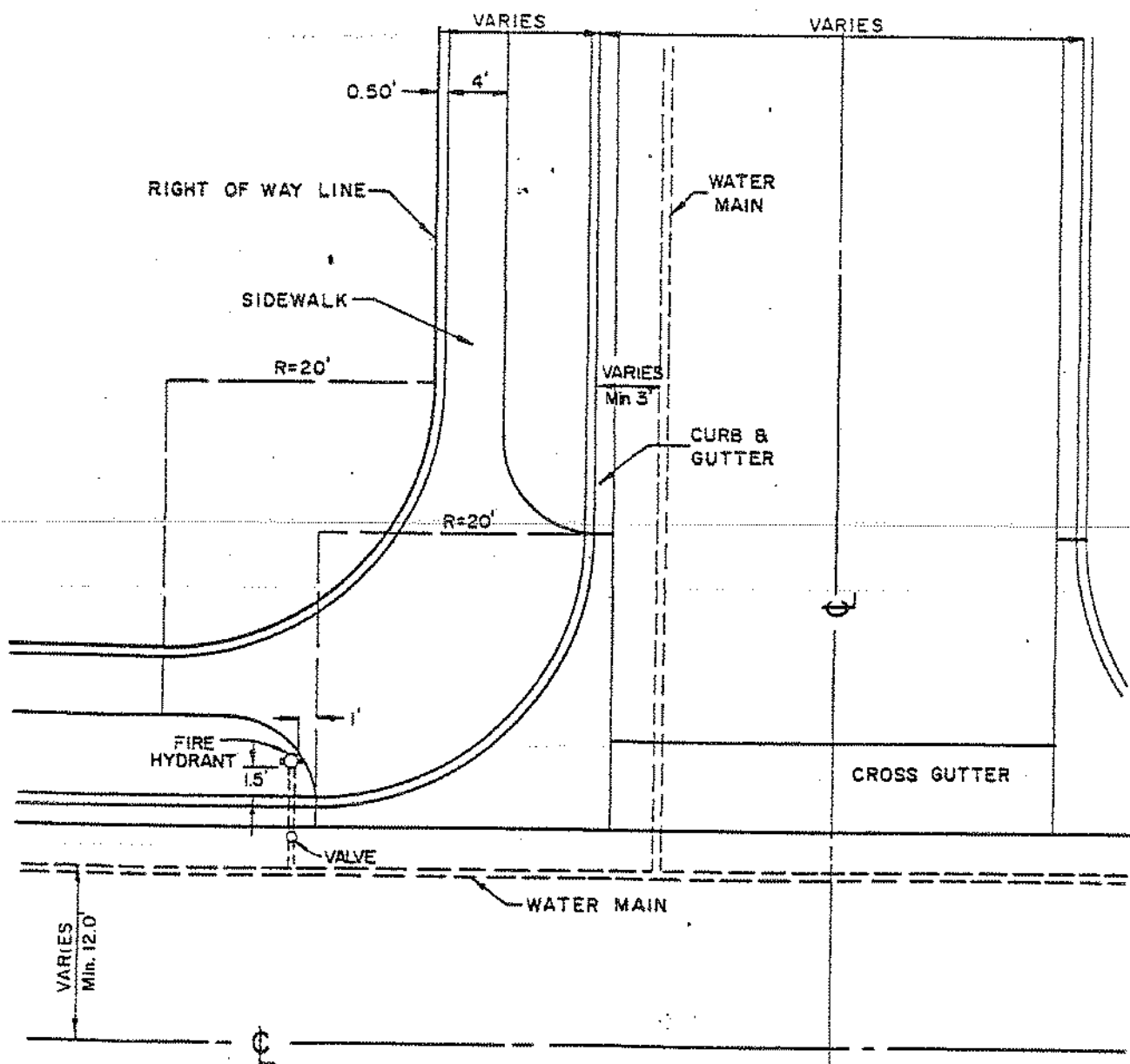
307d

REFER TO STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION,
STANDARD PLAN MANUAL FOR CURRENT CONSTRUCTION & MATERIALS
REQUIREMENTS.

SAN BERNARDINO COUNTY TRANS. DEPT.		METAL BEAM GUARDRAIL	308
	KEN A. MILLER		
	Director of Transportation		

REFER TO STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION,
STANDARD PLAN MANUAL FOR CURRENT CONSTRUCTION & MATERIALS
REQUIREMENTS.

SAN BERNARDINO COUNTY TRANS. DEPT.		METAL PLATE GUARDRAIL	309
	KEN A. MILLER Director of Transportation		



NOTES:

1. LOCATION OF WATER LINES AND VALVES SHALL BE SHOWN ON THE PLAN VIEW, FOR SUBDIVISION IMPROVEMENT PLANS. SEE HEALTH DEPARTMENT STANDARDS, SECTION 7, DISTRIBUTION SYSTEMS, FOR MINIMUM DEPTH.
2. HYDRANT TO BE SET PLUMB, WITH NOZZLE A MINIMUM OF EIGHTEEN (18") INCHES ABOVE GROUND LEVEL. WHEN HYDRANTS ARE PLACED BEFORE GRADING IS COMPLETED, THE FINAL GRADE LINE, AND ACCESSIBILITY SHOULD BE CONSIDERED.
3. NO OBSTRUCTIONS SUCH AS POLES, GUY LINES, ETC. SHOULD BE PLACED CLOSER THAN (5') FEET TO HYDRANT.

SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: P.V.C. 7-65

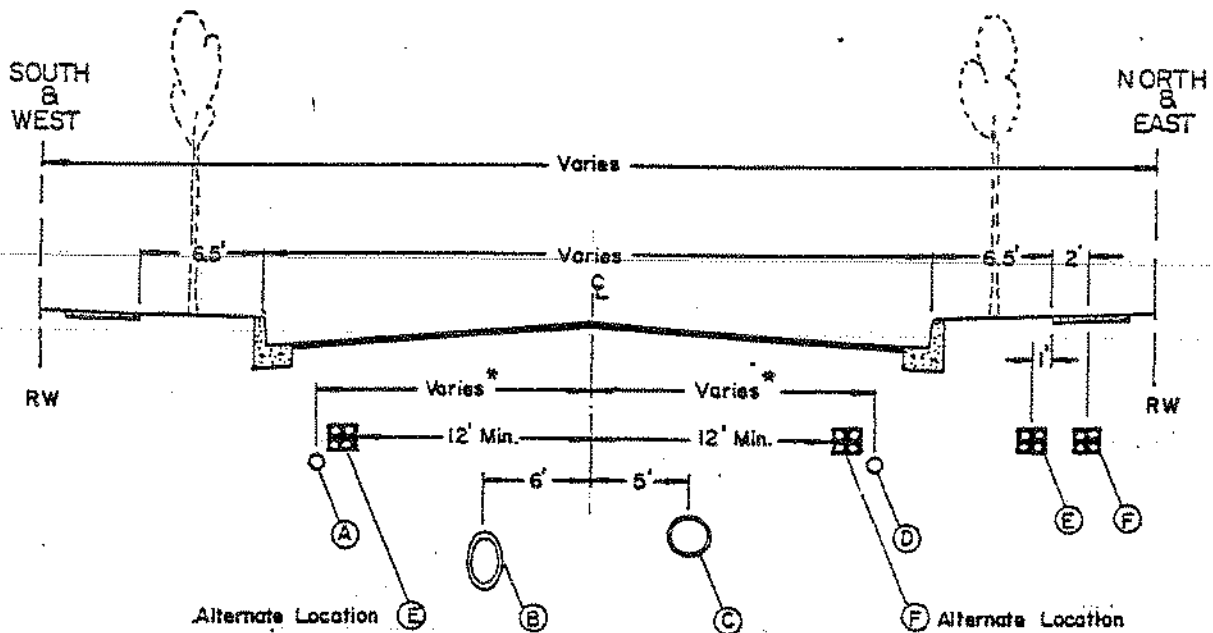
DATE: 7-17-72

M. A. Nicholas
COUNTY ENGINEER

FIRE HYDRANT
LOCATION

310

RECOMMENDED UTILITY LOCATION



UTILITY	MIN. COVER
(A) WATER	30"
(B) STORM DRAIN	Varies
(C) SEWER	Varies
(D) GAS	30"
(E) POWER	36"
(F) TELEPHONE-CATV	30"

RECOMMENDED UTILITY INSTALLATION SCHEDULE

1. STORM DRAIN
2. SEWER
3. POWER & TELEPHONE
4. CURB & GUTTER
5. WATER
6. GAS
7. PAVING

NOTES:

1. WHERE ULTIMATE STREET IMPROVEMENTS ARE TO BE CONSTRUCTED, MINIMUM COVER OF UTILITY LINES MAY BE VARIED TO FACILITATE INSTALLATION.
2. THE UTILITY COMPANIES SHALL MAKE EVERY EFFORT TO LOCATE THEIR FACILITIES IN THE RECOMMENDED LOCATIONS, PARTICULARLY IN NEW SUBDIVISIONS.
3. EDISON & TELEPHONE UTILITIES MAY USE A COMMON TRENCH. ALTERNATE LOCATION MAY BE EITHER THE EDISON POSITION OR THE TELEPHONE POSITION.
- * 4. VARIES 3' FROM THE CURB FACE TO 14' FROM C
5. THE CENTER 24' OF THE STREET SHALL BE RESERVED FOR SEWER AND STORM DRAIN INSTALLATION.
6. SURFACE OF VAULT OR MANHOLE MUST MATCH PAVEMENT AND PARKWAY GRADES.
7. REPAIR OF TRENCHES AND REPLACEMENT OF PAVED SURFACING IN EXIST COUNTY ROADS SHALL BE IN ACCORDANCE WITH CURRENT "SPECIFICATIONS FOR TRENCH REPAIR."
8. WHENEVER POSSIBLE, MANHOLE COVERS SHALL NOT BE PLACED WITHIN THE SIDEWALKS.

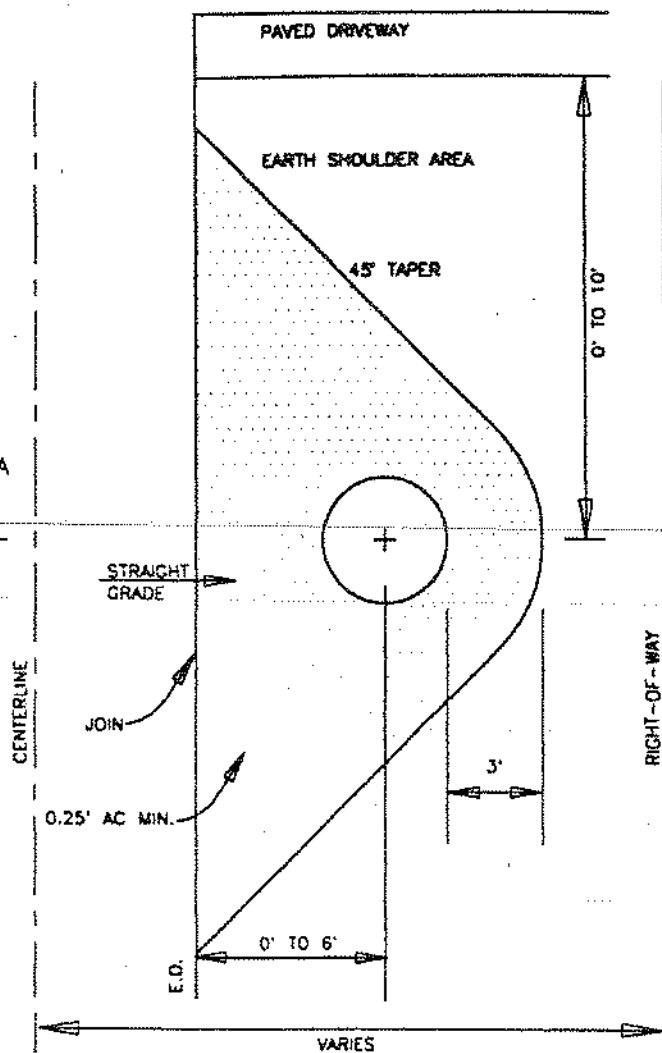
SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: 7-17-72

M. A. Nicholas
COUNTY ENGINEER

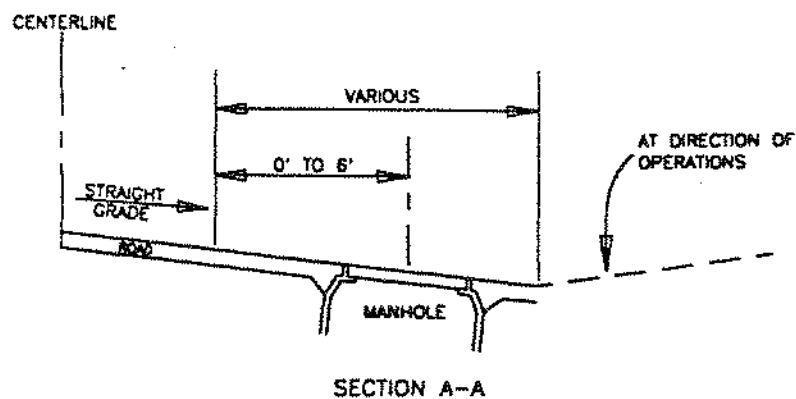
UNDERGROUND
UTILITY LOCATION

311



GENERAL NOTES:

1. MANHOLE SHALL BE SET TO EXISTING SHOULDER GRADE.
2. IF CENTER OF MANHOLE IS WITHIN 10' OF PAVED DRIVEWAY, NEW PAVING SHALL TIE INTO EXISTING DRIVEWAY.
3. IN THE MOUNTAIN AREA WHEN MANHOLES ARE ADJUSTED TO PAVEMENT GRADES, THEY SHALL BE 1/2 TO 3/4-INCH BELOW ADJACENT PAVEMENT SURFACE.



SDOS\311-A

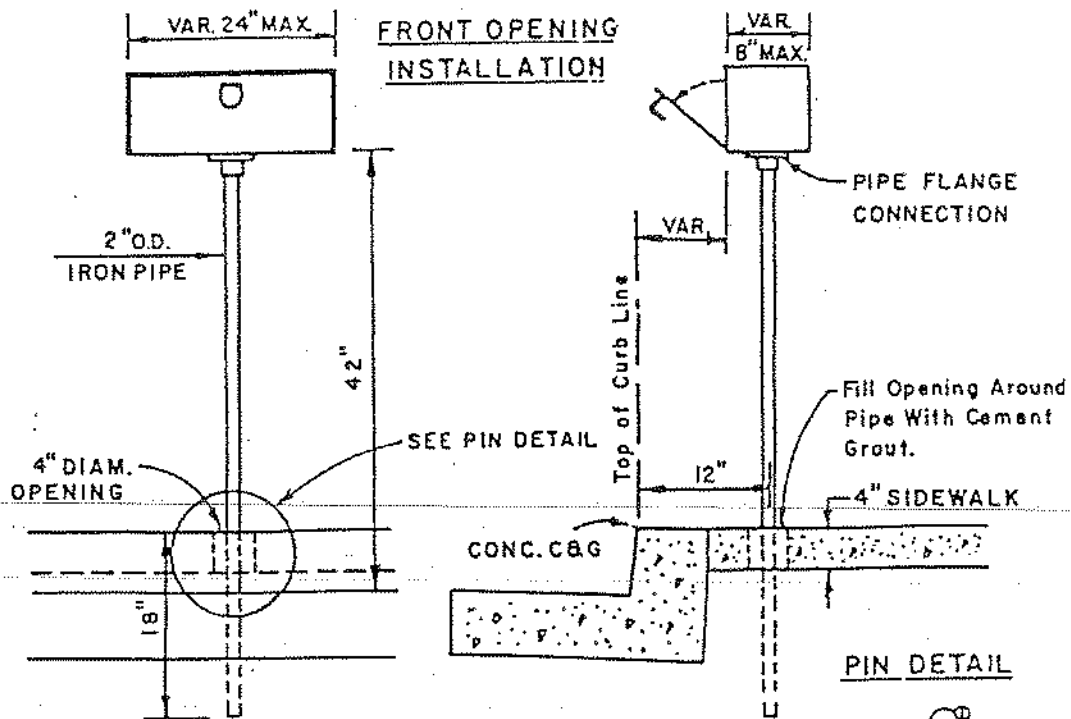
06/28/95

SAN BERNARDINO COUNTY TRANS. DEPT.

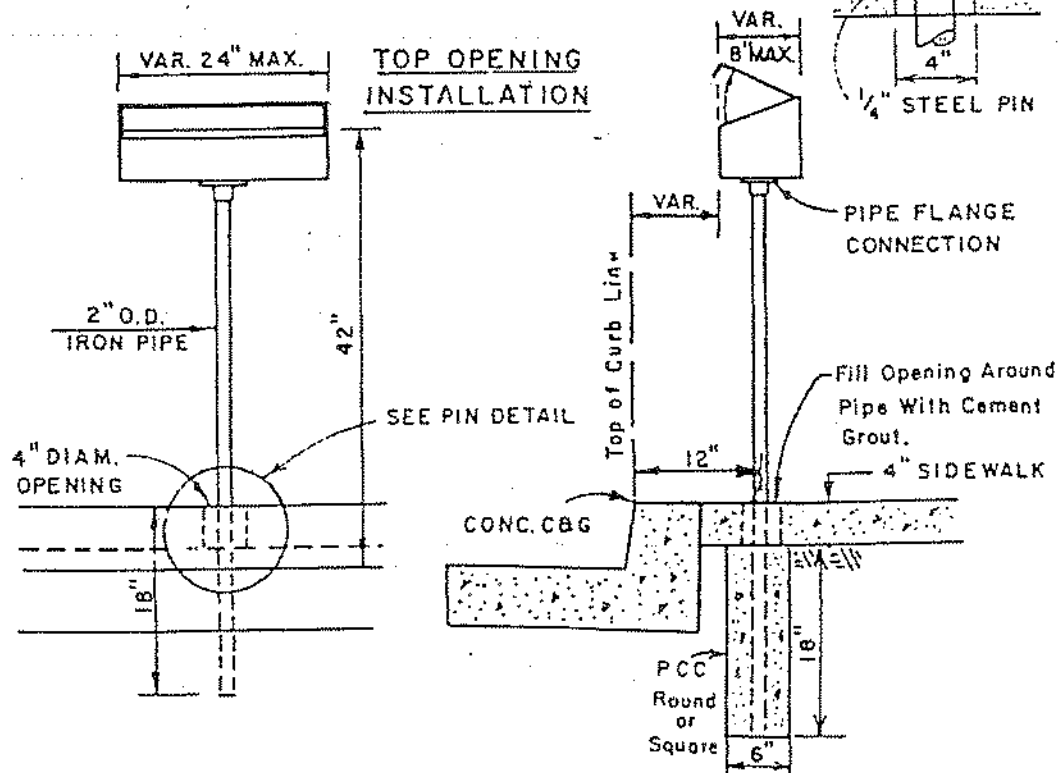
KEN A. MILLER
Director of Transportation

MANHOLE APRON
PAVED ROAD

311-A



NOTE: END OPENING MAILBOX NOT PERMITTED.
FACE OF MAILBOX SHALL NOT EXTEND
PAST TOP OF CURB LINE.



SAN BERNARDINO COUNTY ROAD DEPARTMENT

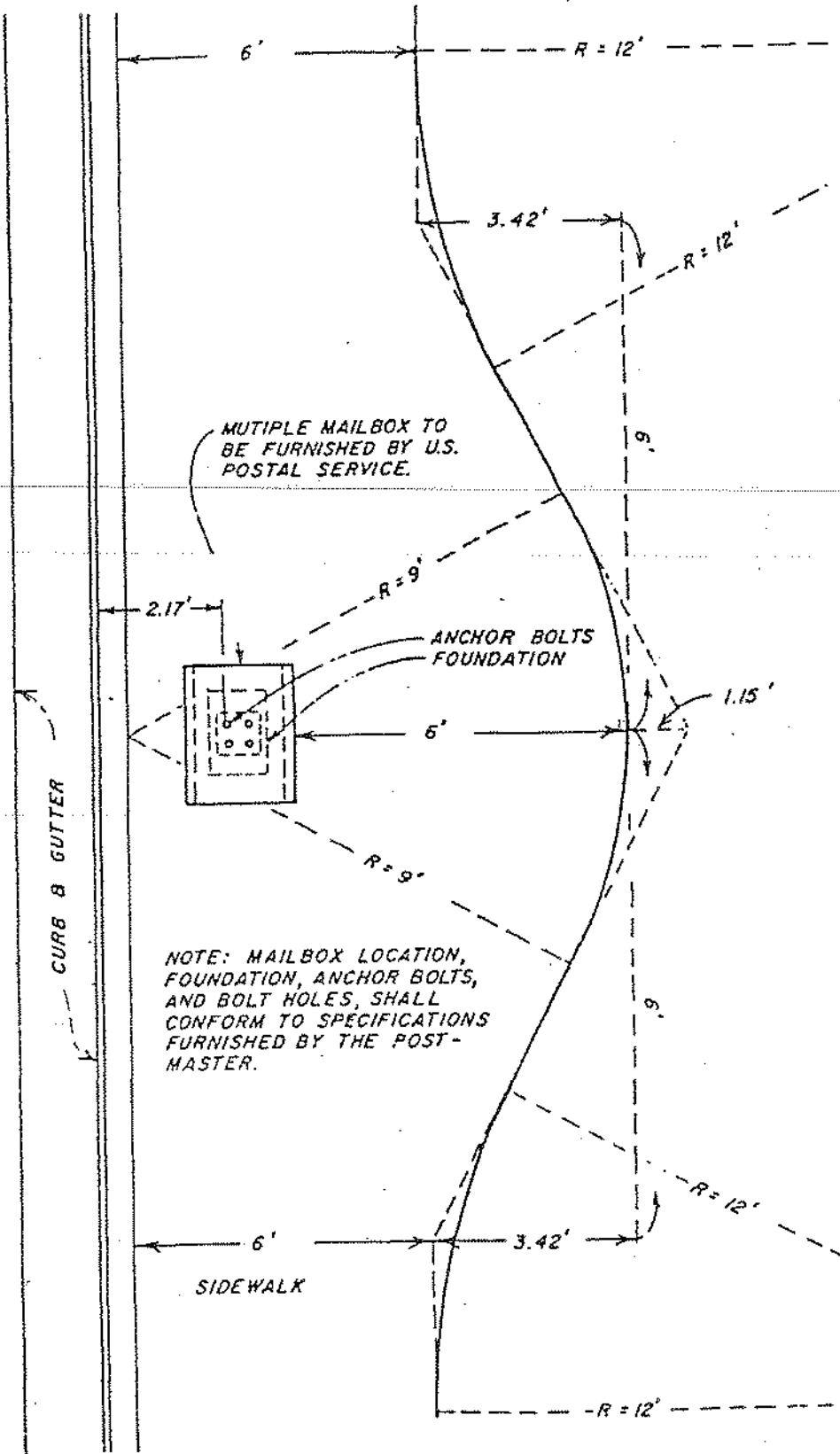
DATE:

20.8.89

Ken A. Miller
DIRECTOR OF TRANSPORTATION

SINGLE MAILBOX
INSTALLATION

312



SAN BERNARDINO COUNTY ROAD DEPARTMENT

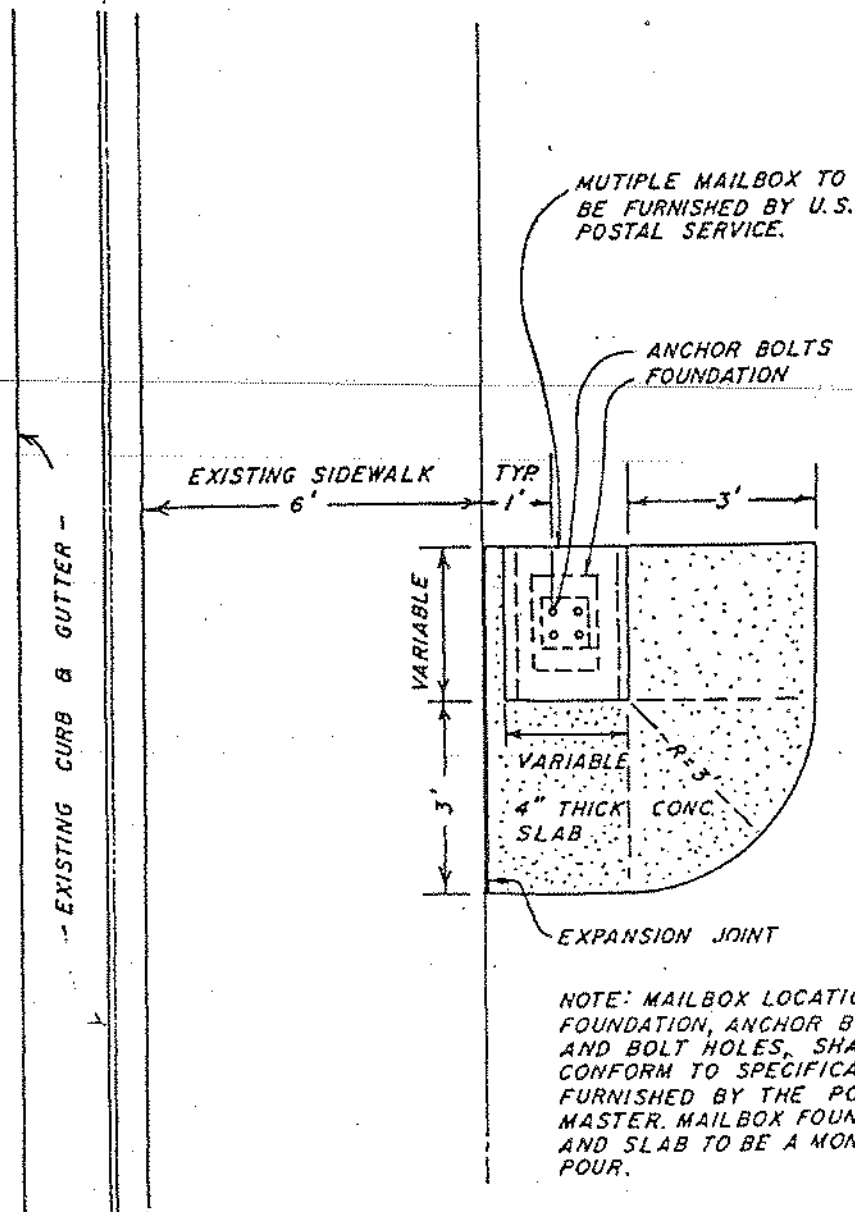
DATE: 12-8-89

Ken A. Miller

DIRECTOR OF TRANSPORTATION

MULTIPLE MAILBOX INSTALLATION
FOR
NEW SIDEWALK

312 A.



SAN BERNARDINO COUNTY ROAD DEPARTMENT

DATE: 12.8.88

Ken A. Miller
DIRECTOR OF TRANSPORTATION

MULTIPLE MAILBOX INSTALLATION
FOR
EXISTING SIDEWALK

312 B.

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT STANDARD PLATS

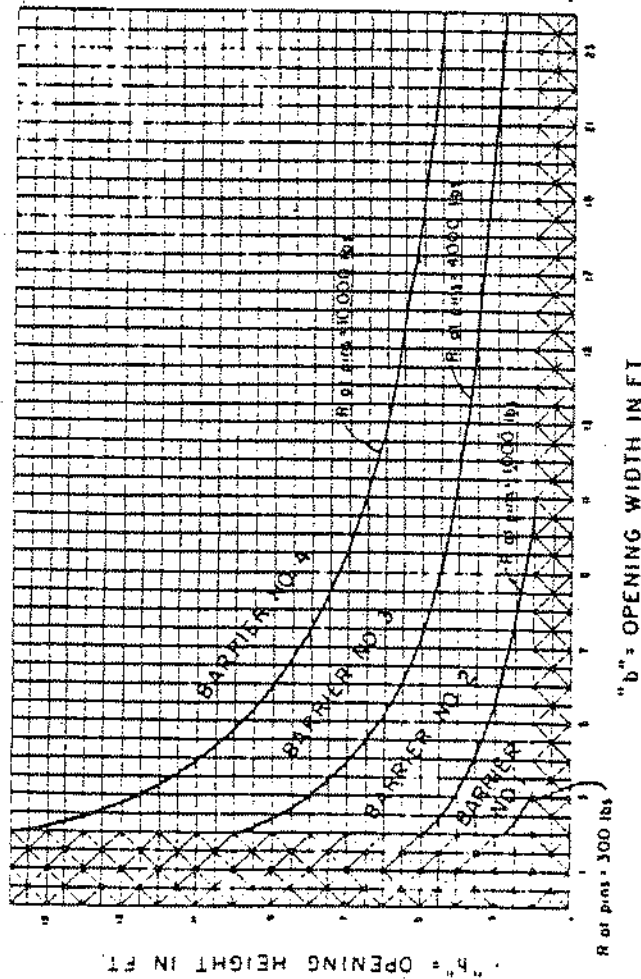
Table of Contents

1.	100	Earth Channel Section
2.	101-1	Protection Barrier
3.	101-2	Protection Barrier
4.	101-3	Protection Barrier
5.	114	Rail and Wire Revetment
6.	162	Timber Pile Fencing (2 Sheets)
7.	167	R.C.P. Collar Detail
8.	183A	Details of Pipe Through Trapezoidal Earth Channel
9.	183B	Side Inlet With Headwall Through R & W Revetment
10.	187A	Side Drain Installation Detail
11.	189C	Rail and Wire Revetment (Rail Anchor Detail)
12.	192E	Typical Channel Lining Detail – Concrete – Paved
13.	196A	Routed Stone Outlet Pad Detail
14.	199	Standard Advisory Signs
15.	200	C.S.P. Connection Detail
16.	200A	Typical Level Section With P & W Revetment and Rock Slope Facing
17.	202A	Levee With P & W Revetment and Rock Facing
18.	204	Underground Utility Marker
19.	209	Pipe Gate
20.	215	Bottom Control
21.	220	Standard R.C.P. Connection (Vertical Wall Channel)
22.	222	Double Drive Gate Detail

**SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT
DESIGN CRITERIA**

- c) Dike width

DIETRICH-POST CLEARPRINT 1020-10

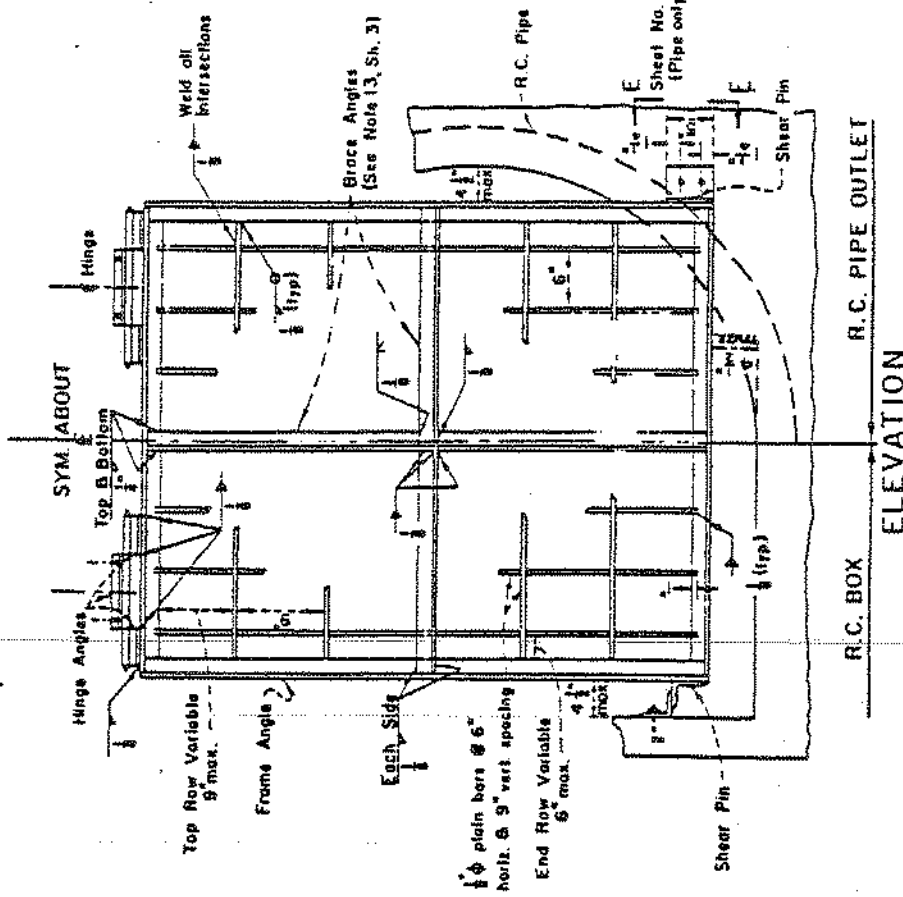


The curves represent reactions at the shear pins due to hydrostatic head on the debris-obstructed barriers. The height and width of the openings determines which barrier (see sheet 3), or numbers 1, 2, or 3 between the curves, or number 4 beyond the curves, is to be used.

PROTECTION BARRIER

Note: Barrier number shall be specified on project drawings.

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT			
REVISIONS	DWN. BY		DATE
	K.J.K.		11-18-85
			FILE NO.
			S.P. 101-1



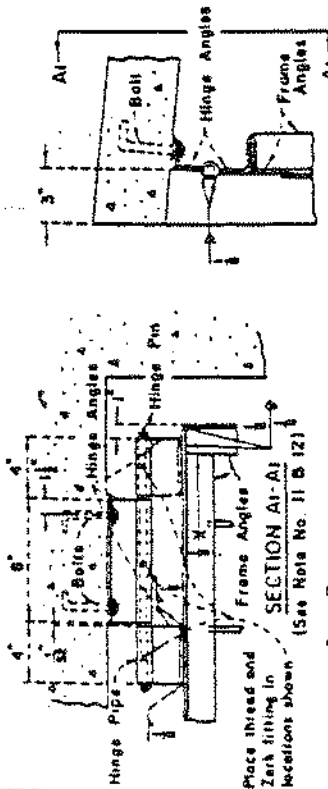
NOTE: For Protection Barrier member sizes, see Sheet 3.

① Structural Design Details of R.C. Box containing Inlet Barrier shall be delineated on the Project Drawings.

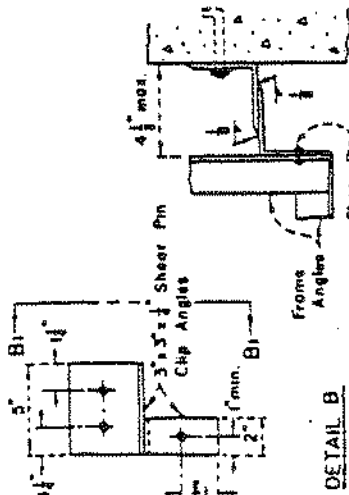
		DWN. BY	DATE
		K.J.K.	11-18-85
		FILE NO.	
		S.P.101 - 2	

GENERAL NOTES:

1. Angles connected with shear pins shall fit snugly and truly face to face.
2. The shear pin holes shall be drilled so as to provide a tight fit with the shear pins in place.
3. All shear pins shall be peened on both ends after installation.
4. The aluminum shear pin material will be furnished by the District to the Contractor.
5. All 5/8-inch diameter bolt holes shall be drilled on the gage lines of the angles.
6. All bolts shall be 5/8-inch in diameter embedded a minimum of 4 inches into concrete or equivalent expansion bolts, and shall be furnished with hex nuts and metallic washers at least 3/32-inch thick.
7. Frame, brace, and hinge angles shall have the outstanding legs facing in the direction of flow for both inlets and outlets, see Section sheet 2.
8. Thread ends of hinge pins so that nuts and lock washers will be flush with the hinge angle.
9. Damage threads beyond the nut face. Use bolt stock for pin.
10. Galvanize all ferrous parts after fabrication.
11. Cover all movable contact surfaces with a coat of waterproof grease prior to installation.
12. For barriers 36 inches and less in width, use one hinge the full width of barrier.
13. If the barrier width exceeds 12 feet, provide an additional hinge on the centerline of the barrier.
14. For barriers exceeding 6 feet in height or width, use brace angles evenly spaced of a maximum of 6 feet on center.
15. Shear pin material shall be commercially pure aluminum wire, alloy H100, temper O.
16. Federal Specification QQ-A-411.
17. Refer to part J of the specifications for additional requirements and material specifications.

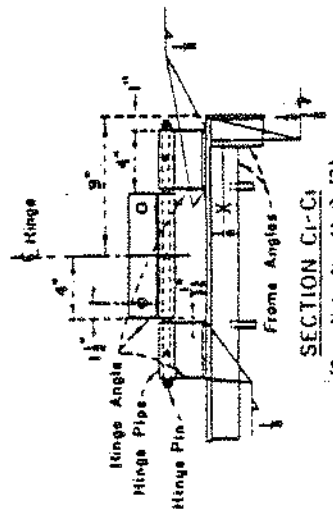
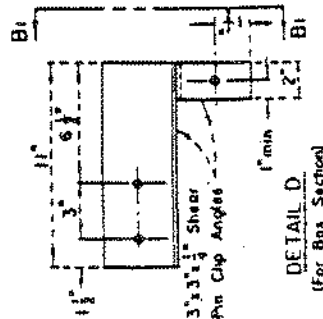


DETAIL A
(See Note No. 12)



DETAIL B

SECTION E-E
(See Elevation, Sheet 2)
for pipe only



DETAIL C

Barrier No.	Frame Angles	Brace Angles	Shear Pins	Inlet Hinge Angles	Outlet Hinge Angles	Hinge Pin
1	2' x 2' x 1/2"	2' x 2' x 1/2"	1"	2' x 2' x 1/2"	2' x 2' x 1/2"	1"
2	3' x 3' x 1/2"	2' x 2' x 1/2"	1"	2' x 2' x 1/2"	2' x 2' x 1/2"	1"
3	4' x 4' x 1/2"	2' x 2' x 1/2"	1"	3' x 3' x 1/2"	3' x 3' x 1/2"	1"
4	5' x 5' x 1/2"	2' x 2' x 1/2"	1"	5' x 5' x 1/2"	5' x 5' x 1/2"	1"

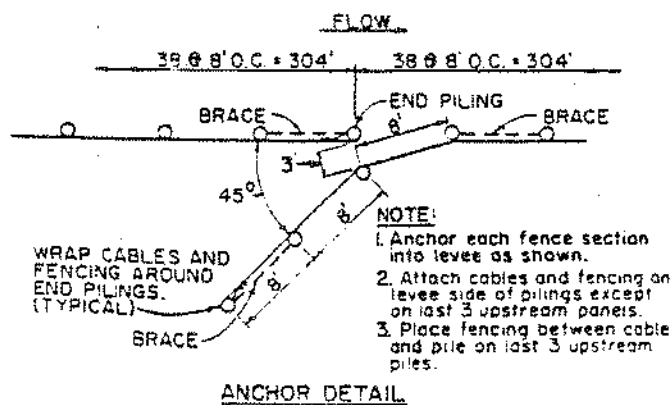
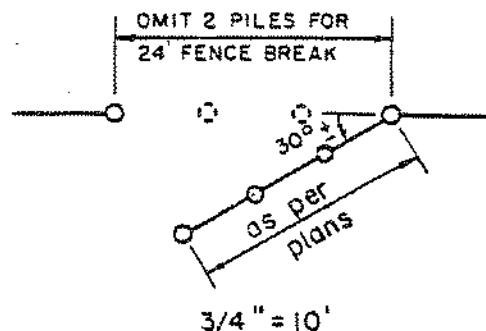
**SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT**

REVISIONS	DWN. BY	DATE
	K.J.K.	11-18-85
FILE NO.		S.P 101-3

GENERAL NOTES:

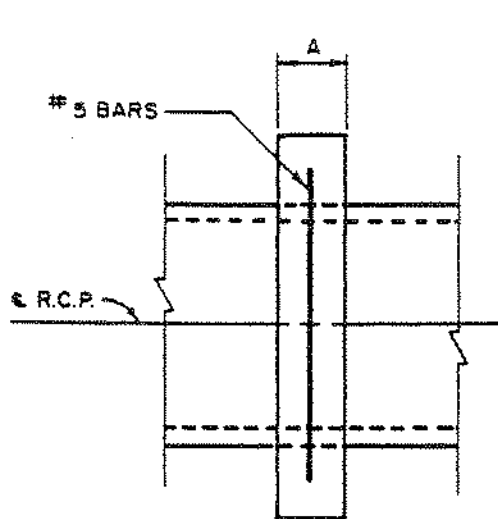
1. Tension cable to be new 1/2", or used 9/16", 6 x 7 hemp core center wire rope in good condition and free from broken wires.
2. Tension cables 10,000 + lbs. and clamp at each tension pile. Place cable clamps at each side of tension pile to hold tension.
3. Tension fencing with 10,000 + lbs. pull during tying. Maintain tension until fencing is completely tied at every pile. Tie every horizontal fencing wire to piles where laps occur.
4. Install diagonal braces at every 40 spans, at end or beginning of tension pull, and at every angle point and in end spans.
5. Use two 1/2" cable clamps at all cable splices.
6. Timber pile to conform to Specification on file in the Department of Transportation/Flood Control.
7. For rock bank protection see S. P. 202.

DETAIL OF FENCE BREAK AT ACCESS RAMP

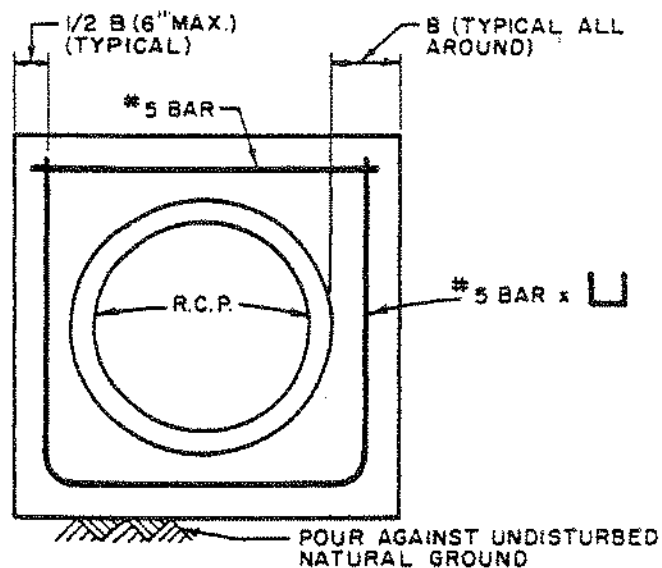


SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

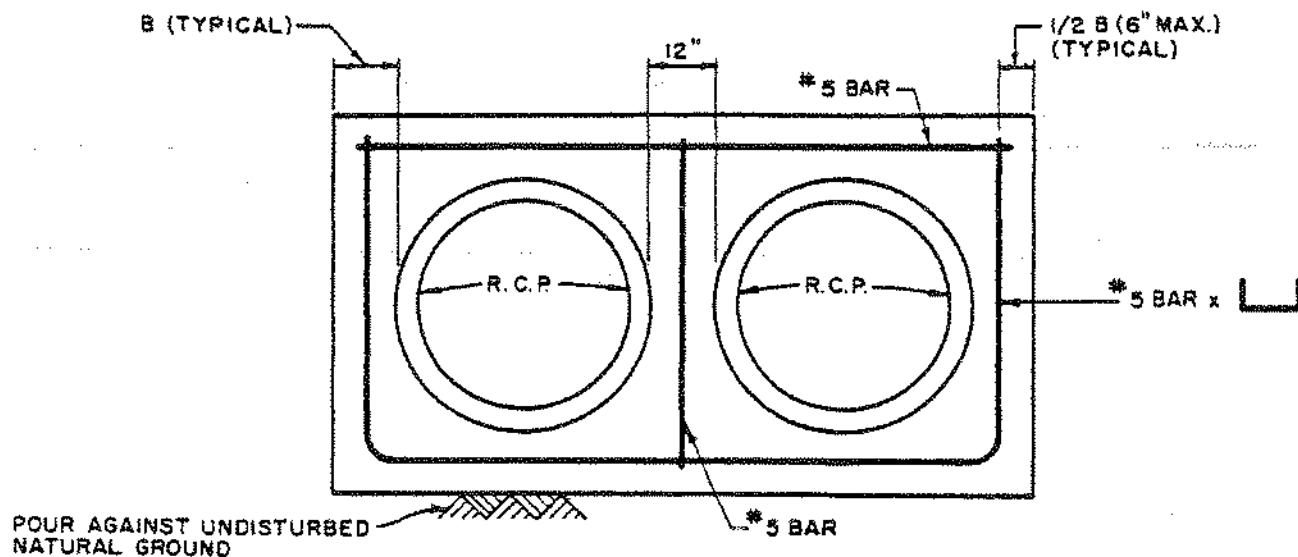
REVISIONS	OWN. BY	DATE
	R.L.H.	8-30-71
	FILE NO. S.P. 162 (2 of 2)	



TYPICAL ELEVATION



SINGLE DRAIN



DOUBLE DRAIN

NOTES:

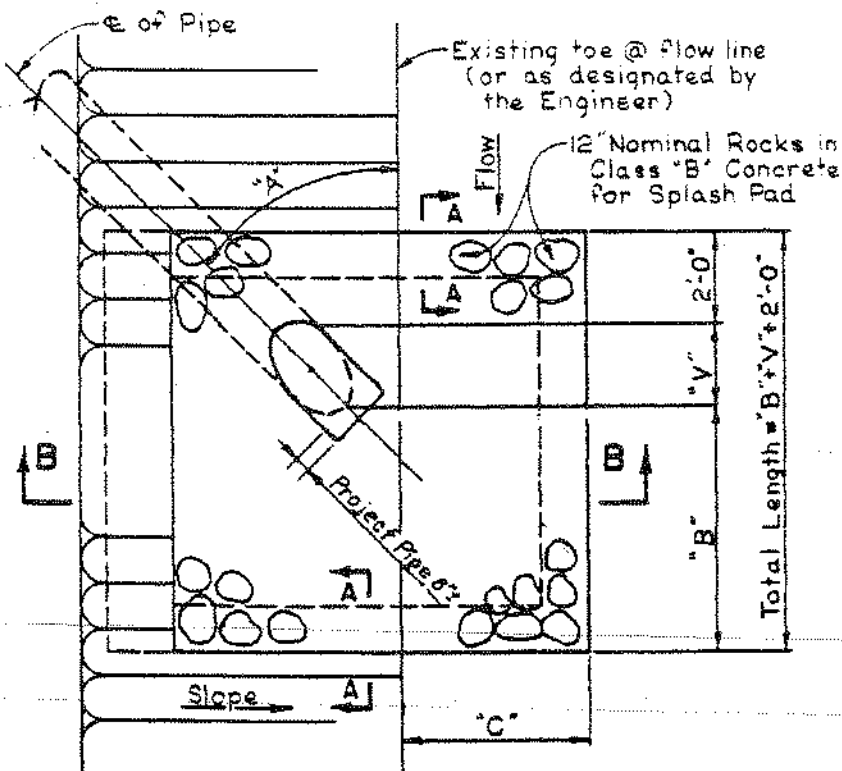
1. UNLESS OTHERWISE NOTED ON THE PLANS USE A=12", B=12"
2. SEE PLANS FOR COLLAR LOCATION AND SPACING

R.C.P. COLLAR DETAIL

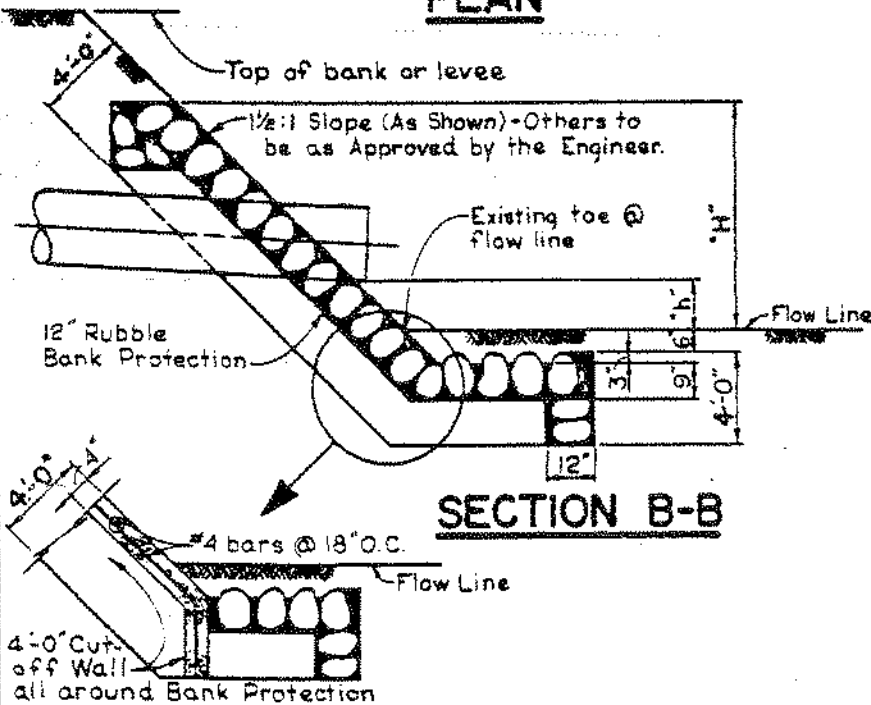
(Use Class "A" concrete, $f'_c = 3000$ p.s.i.)

**SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT**

REVISIONS		DWN. BY	DATE
REVISED	3-4-70	R.L.H.	3-4-70
TITLE	3-9-70		
		FILE NO.	
		S.P. 167	

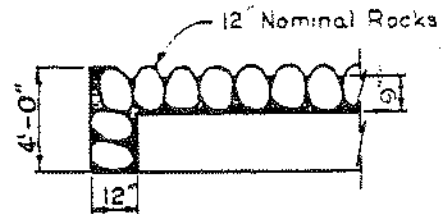


PLAN

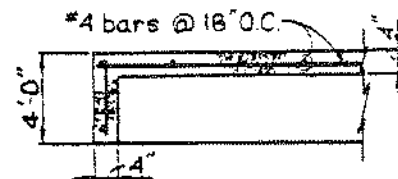


ALTERNATE

REINFORCED CONCRETE SLAB
ON SLOPE IN LIEU OF RUBBLE



SECTION A-A



ALTERNATE SECTION A-A

REINFORCED CONCRETE SLAB ON
SLOPE IN LIEU OF RUBBLE

NOTES:

- "A" Varies 30° to 45°
- "B" Varies 5'-0" for 18" diameter pipe & smaller; 6'-0" to 36" diameter pipes.
- "C" Varies 4'-0" for 18" diameter pipe & smaller; 6'-0" to 36" diameter pipes, except for Channels not exceeding 10' width. Place pad across entire Channel width and place Rubble Bank Protection up opposite side to provide symmetrical section.
- "H" Minimum 5'-0" for Channels of 5'-0" depth or greater, otherwise to top of bank or levee
- "h" Shall be 12" unless noted. Pipe shall be placed at an approved location & elevation.
- "V" Varies with pipe size and Angle "A".

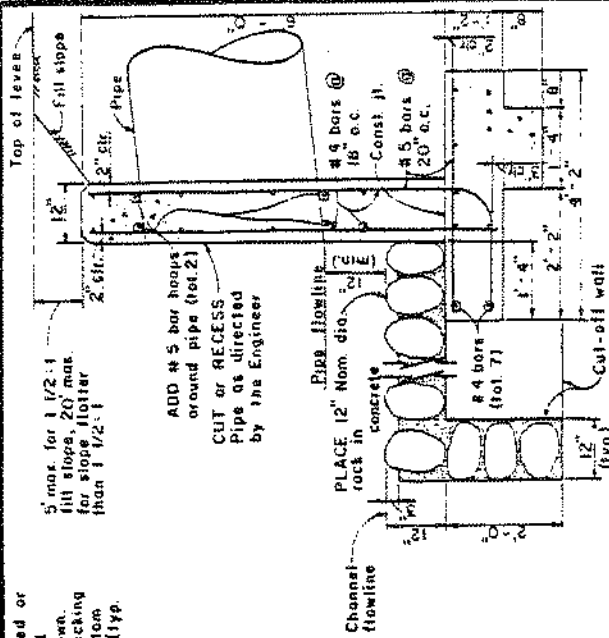
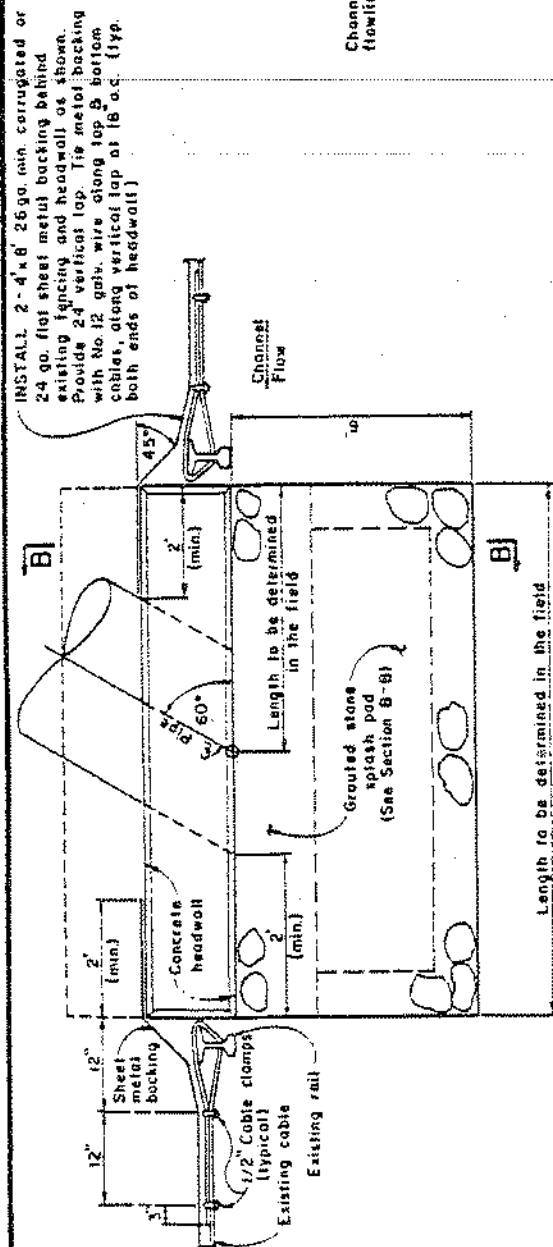
DETAILS OF PIPE THRU

TRAPEZOIDAL EARTH CHANNEL

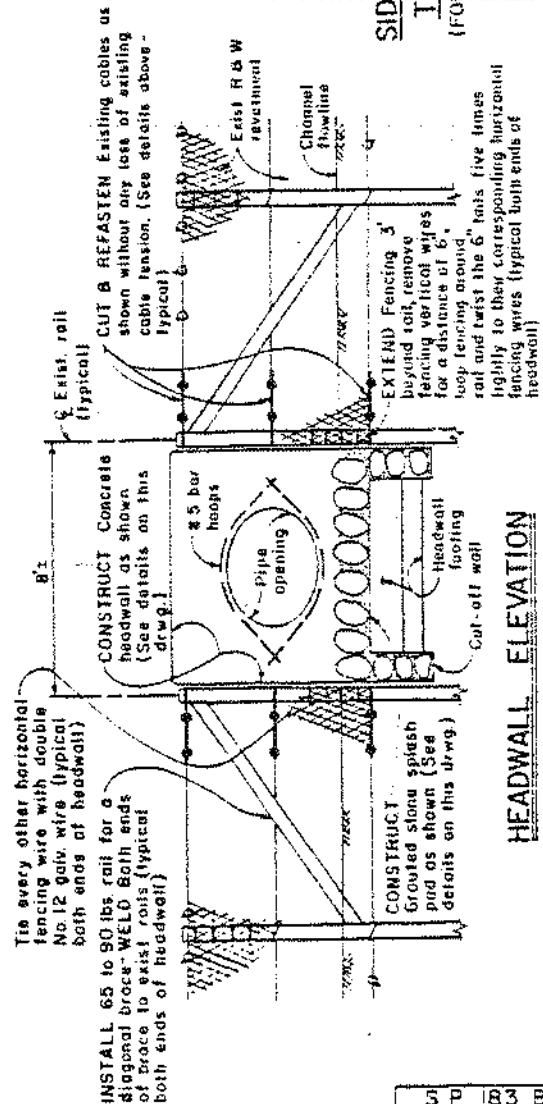
(FOR 36" DIA. PIPE AND SMALLER)

**SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT**

REVISIONS		DWN. BY	DATE
Proj. Pipe 11-1-65		C.B.	10/18/63
C.O. Wall Dim. 10-13-72			
		FILE NO.	
		S.P. 183-A	



ENLARGED PLAN



SECTION B-B

NOTES

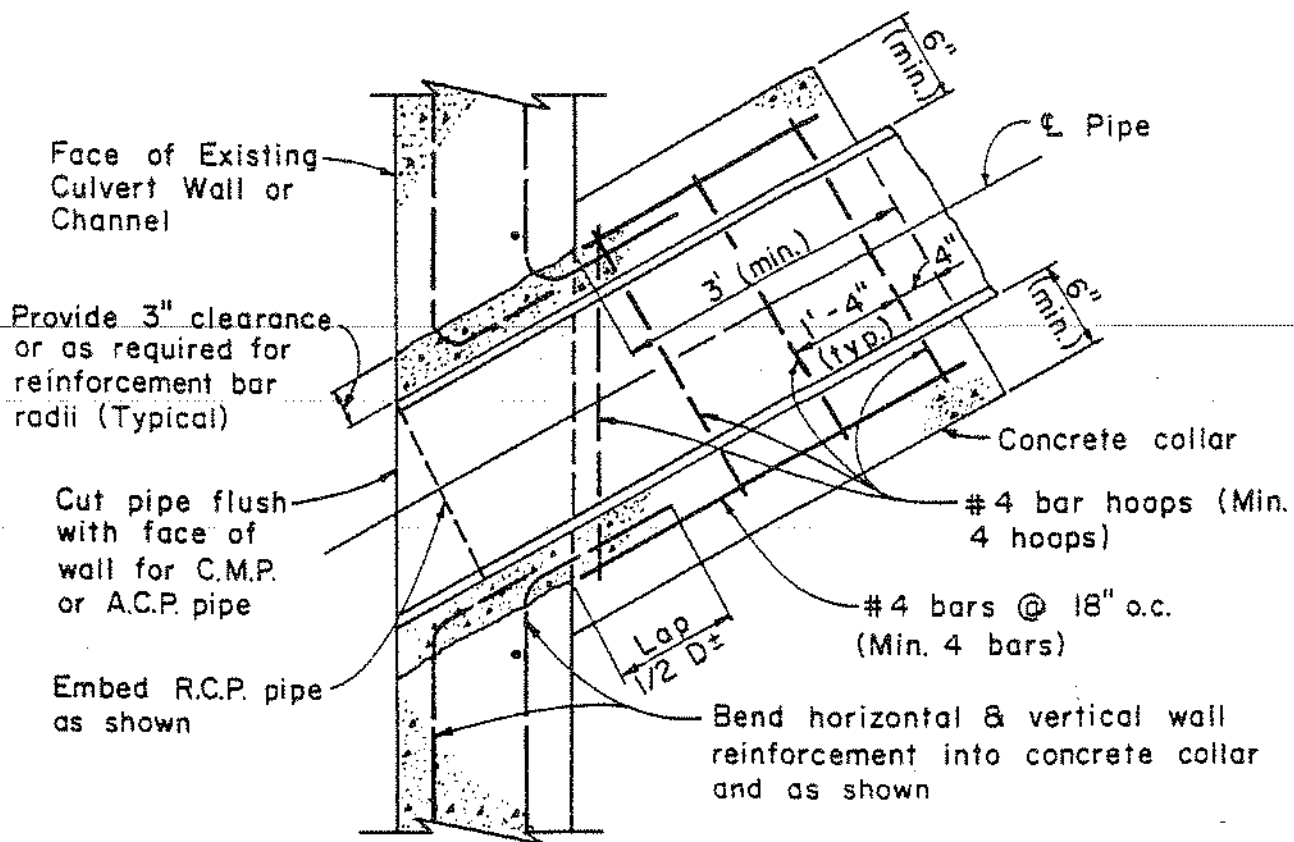
1. In general, all construction materials and construction methods shall conform to the Standard Specifications of the State of California.
2. Headwall structure shall be of class A concrete, unless otherwise specified.
3. Headwall and pipe shall be placed at a location and elevation as approved by the Engineer.
4. Fence cables shall be cut and connected to existing rails as shown. Diagonal bracing shall be installed on each side of concrete headwall as shown. Existing sheet metal backing shall be removed from area where concrete headwall is to be constructed.

SIDE INLET WITH HEADWALL
THRU R&W REVEIMENT
(FOR 36" DIA PIPE AND SMALLER)

SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

DIVISIONS	JOB NO.	DATE
	JES	6-6-75

SF 103-B



NOTES:

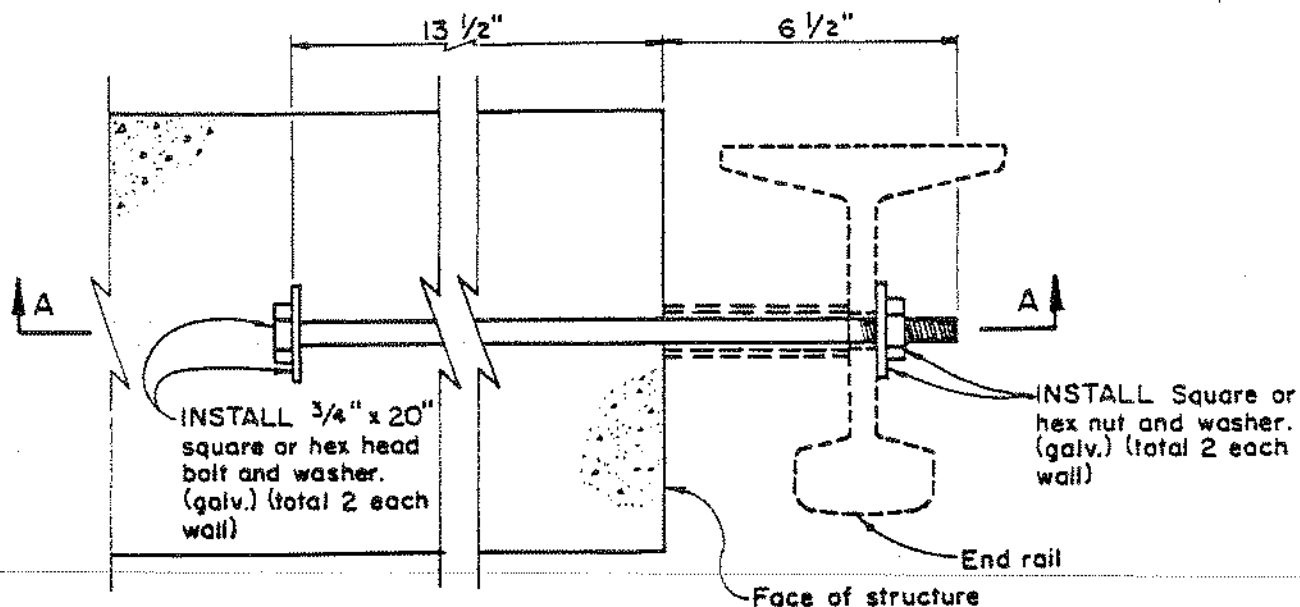
1. In general, all construction materials and construction methods shall conform to the Standard Specifications of the State of California.
2. "D" means inside diameter of side drain pipe.

SIDE DRAIN INSTALLATION DETAIL

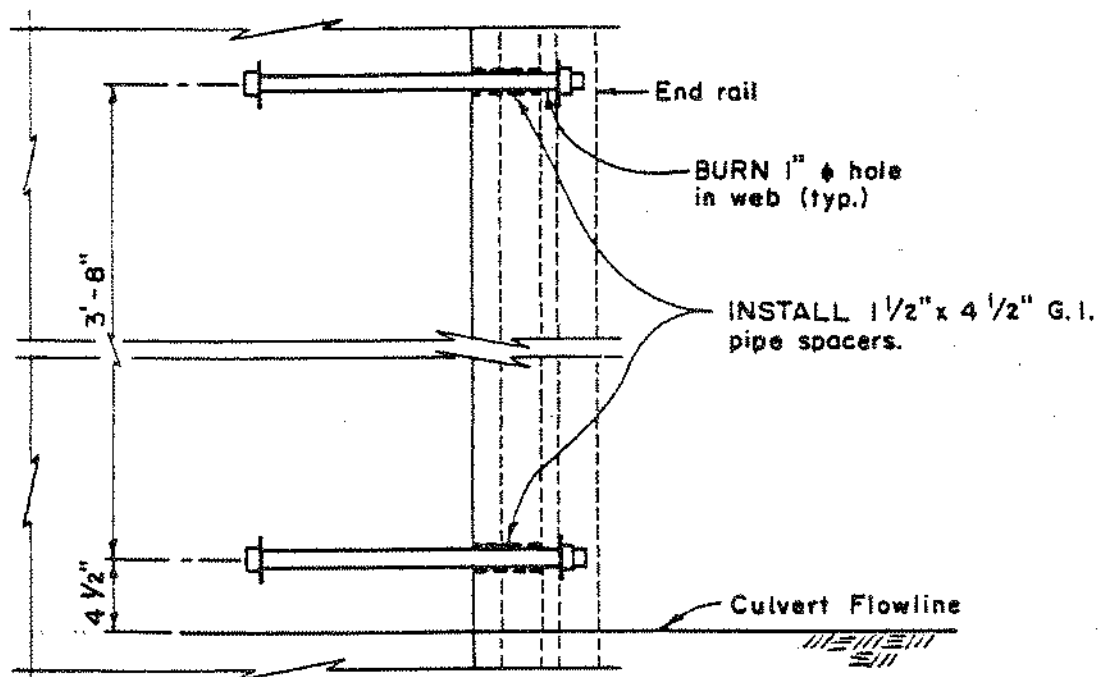
For Use With 24" I.D. Pipe or Smaller
Use Special Design For Larger Pipes

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

REVISIONS	DWN. BY	DATE
	J.E.S.	8-27-75
	FILE NO.	
	S.P. 187 A	



SECTIONAL PLAN
(BOLT DETAIL)



SECTION A-A

RAIL AND WIRE REVETMENT

RAIL ANCHOR DETAIL

(FOR INSTALLATION IN ENDS OF WALLS)

**SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT**

REVISIONS

DWN. BY

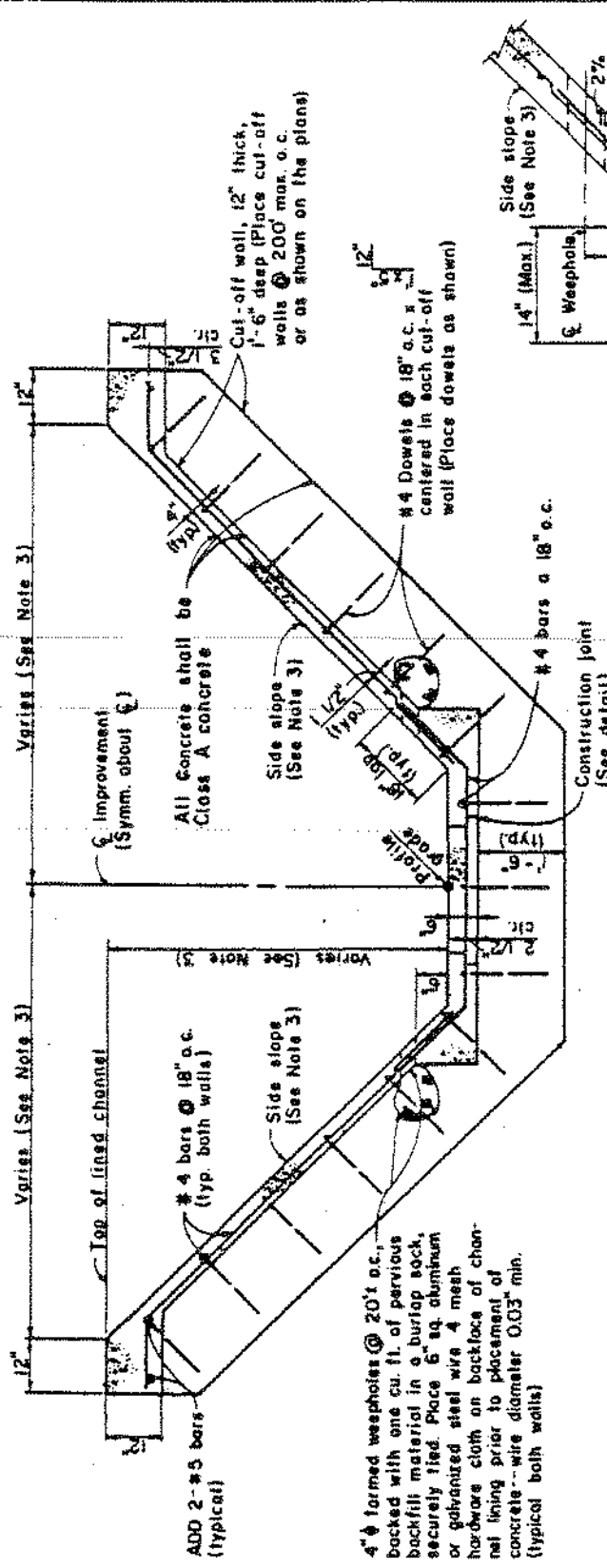
DATE

K.D.G.

9-28-72

FILE NO.

S.P. 189 C



TYPICAL CHANNEL LINING DETAIL-CONCRETE PAVED
NO SCALE

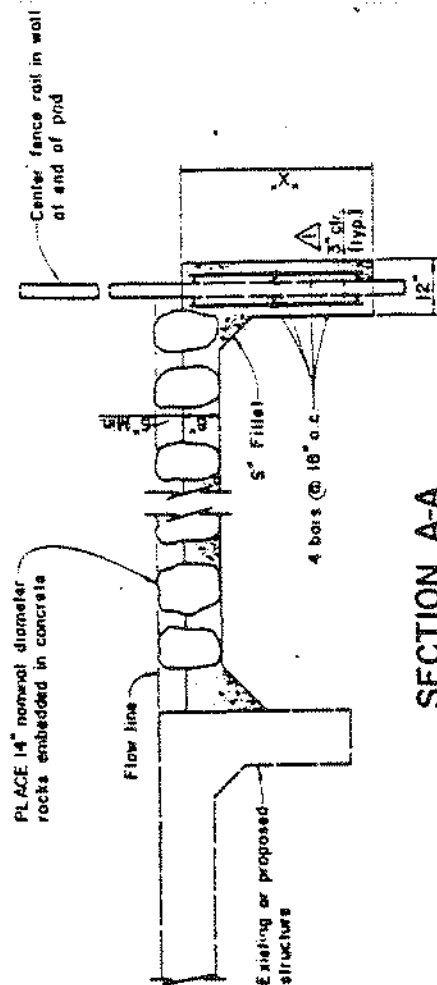
1. In general, all construction materials and construction methods shall conform to the Standard Specifications of the State of California.
2. See Special Provisions for additional data relative to channel lining.
3. For dimensions and side slopes, see Typical Channel Section on Plan and Profile drawings.
4. Saw cut transverse weakened plane joints in the invert and side walls of the channel at 20' ± O.C. The first and last joints shall be placed 20' from each cut-off wall. Joints shall be 1/4" maximum in width and to a depth of within 1/2" of the reinforcement.
5. The interval of weepholes shall be such that a weephole will be located 2' upstream of all cut-off walls and transverse weakened plane joints.
6. The reinforcement mat shall be supported in both directions at 4' maximum spacing or as directed by the Engineer.
7. Slope paved walls shall be placed by machine using traveling or slip form and shall be externally vibrated by use of a traveling vibrating screed or equivalent as approved by the Engineer. Surfaces of the channel lining shall be finished by a light brooming and shall be protected against scarring and damage.

CONSTRUCTION JOINT
NO SCALE

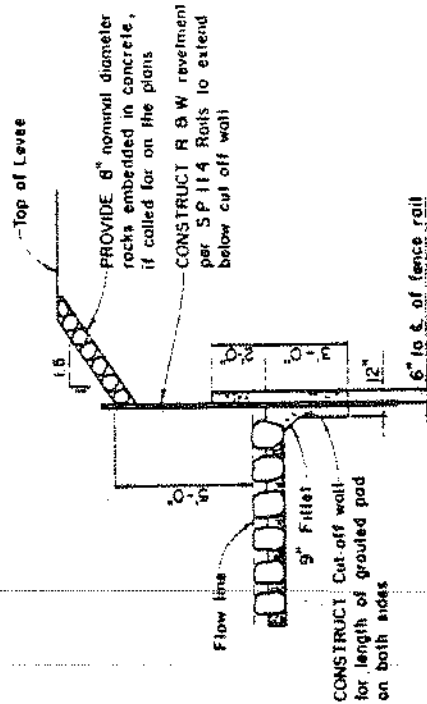
REVISIONS	DATE	BY	CHKD
REV. NO. 1	11-15-75	J.E.S.	
REV. NO. 2	12-15-75		
REV. NO. 3	5-14-77		
REV. NO. 4	3-14-84		
REV. NO. 5			
REV. NO. 6			
REV. NO. 7			
REV. NO. 8			
REV. NO. 9			
REV. NO. 10			
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SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

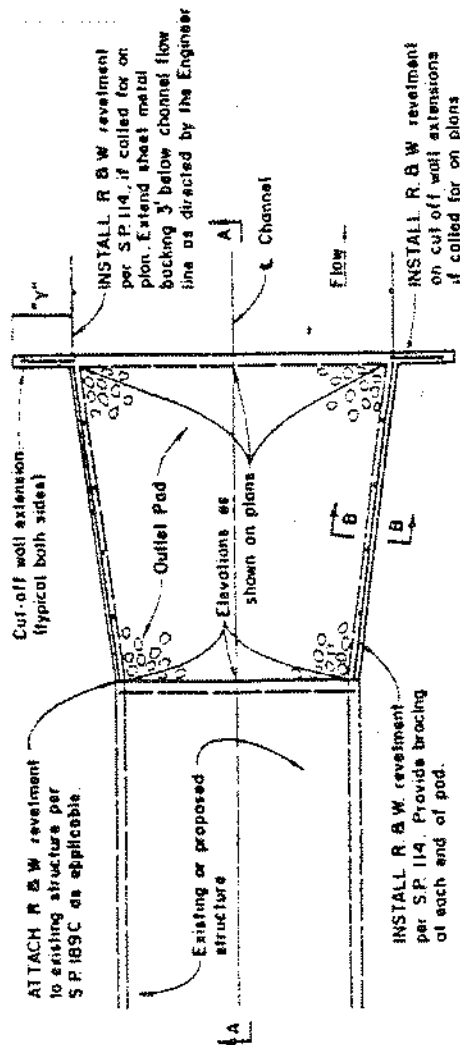
DATE: 5-27-75
BY: J.E.S.
CHKD:
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SECTION A-A



SECTION B-B



TYPICAL PLAN

NOTES:

1. Dimensions of the Outlet Pad and dimensions "X" "B" "Y" to be as shown on the plans.
2. Concrete to be Class "B" concrete unless otherwise noted on the plans or as directed by the Engineer.
3. All reinforcing bars shall be grade 60.
4. Clean, roughen and remove scum and loose aggregate from the face of all existing concrete against which new concrete is to be poured. Wet surface and apply a coating of cement grout. Pour the new concrete against the grout before it sets.

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT		
REVISIONS	DWN BY	DATE
1. Change Dim	C.B.	10-3-66
FILE NO.		SP 196-A

GROUTED STONE OUTLET PAD DETAIL

FC1



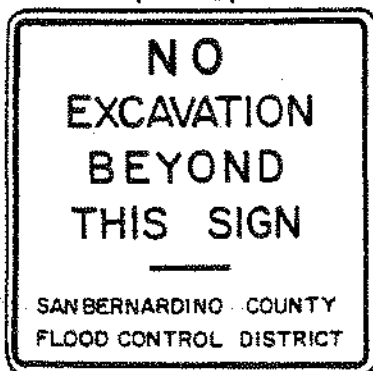
BLACK ON WHITE
18"x18"
LINE 1-3"
LINES 2&3-1 1/2"
LINES 4&5-1"

FC2
(CR9)



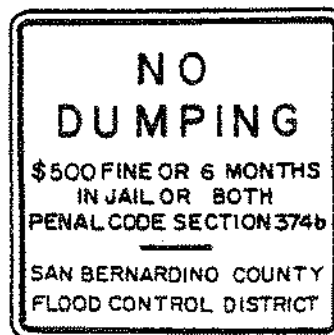
BLACK ON WHITE
18"x18"
LINES 1&2-3"
LINES 3&4-1 1/2"
LINES 5,6&7-1"

FC3
(CR12)



RED ON WHITE
20"x20"
LINE 1-3"
LINES 2,3&4-2"
LINES 5&6-1"

FC4



BLACK ON WHITE
18"x18"
LINES 1&2-2 1/2"
LINES 3,4,5,6 & 7-1"

FC5



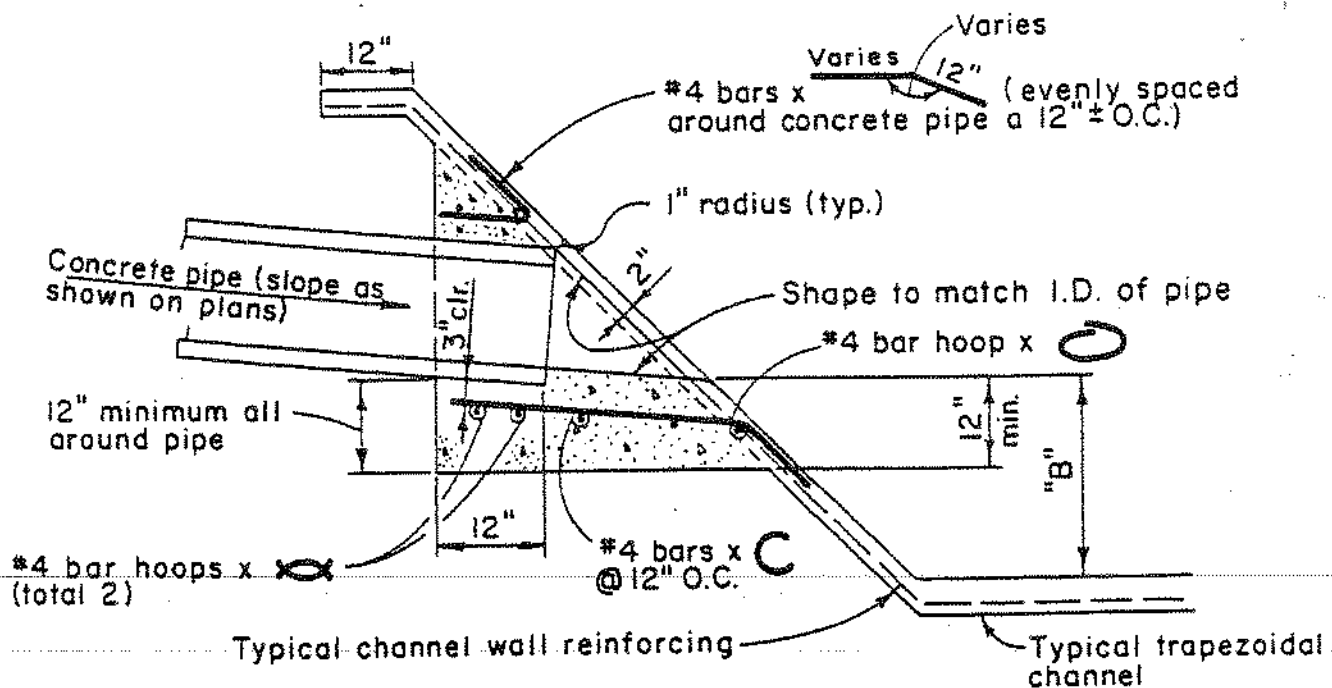
BLACK ON WHITE
6"x12"
LINES 1 & 2-3"

STANDARD ADVISORY SIGNS

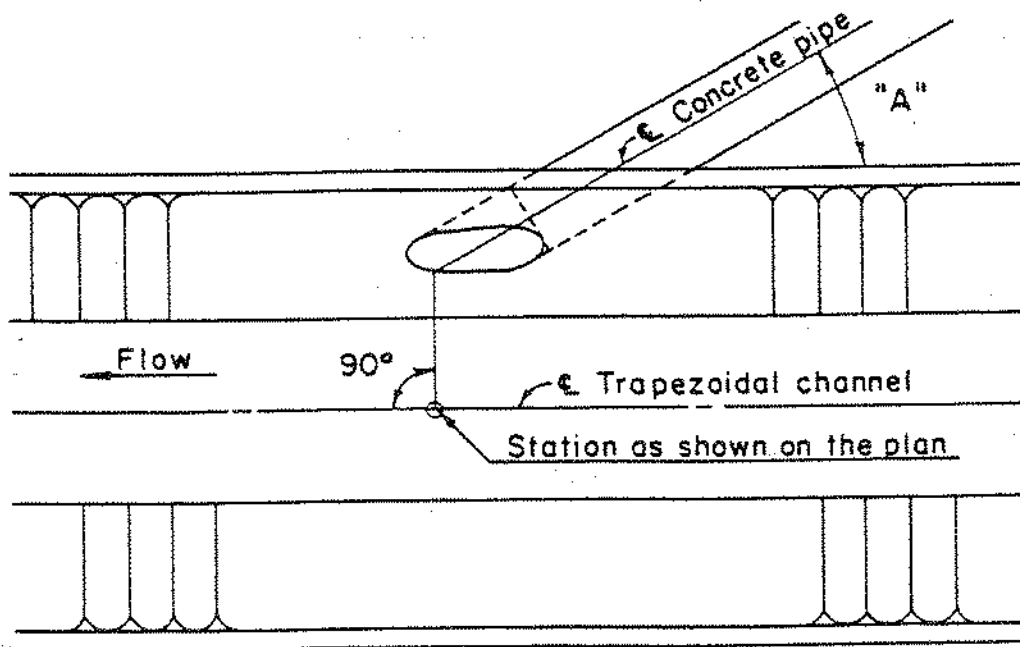
SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT		
REVISIONS	DWN. BY	DATE
REVISED FC2, 1-2-78	RWM	9/12/68
	FILE NO.	
	S.P. 199	



12-58 OSTERICH-POST CLEARPRINT 1020-10



SECTION



PLAN

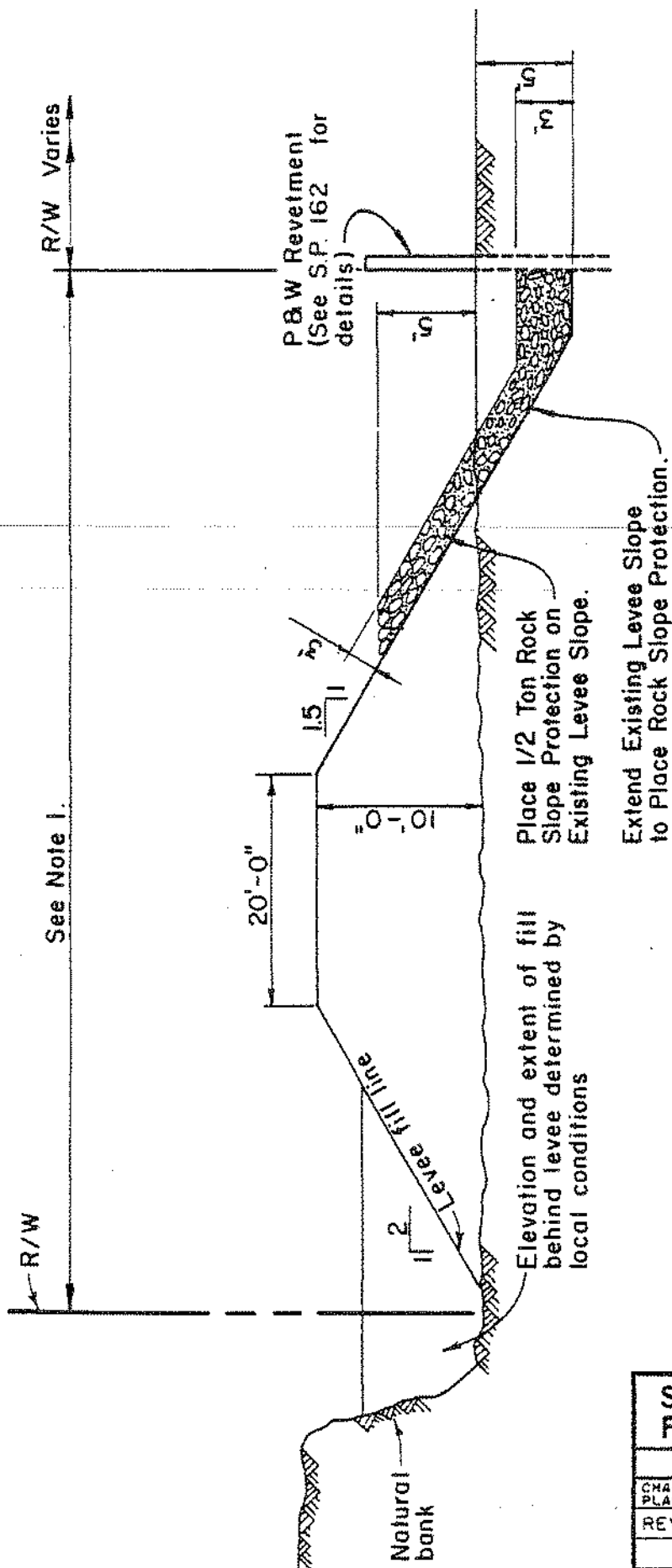
NOTE: Diameter of concrete pipe, angle "A" and dimension "B" to be as shown on the plans.

CONCRETE PIPE CONNECTION DETAIL

ABM OR CONCRETE
LINED TRAPEZOIDAL CHANNEL
NO SCALE

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

REVISIONS	DWN. BY	DATE
	R.L.H.	5-9-69
	FILE NO.	
	S.P. 200 A	



NOTES

1. Set back line 100' from R/W on Santa Ana River and 75' on Mojave River
2. Rock not to be placed against wire

TYPICAL SECTION

LEVEE WITH P&W REVETMENT AND ROCK FACING

NO SCALE

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

REVISIONS		DWN. BY	DATE
CHANGED ROCK PLACEMENT	7-9-71 C.B.	R.L.H.	4-23-69
REVISED	9-15-71	FILE NO. S.P. 202 A	

Chamfer all corners, $1" \pm$

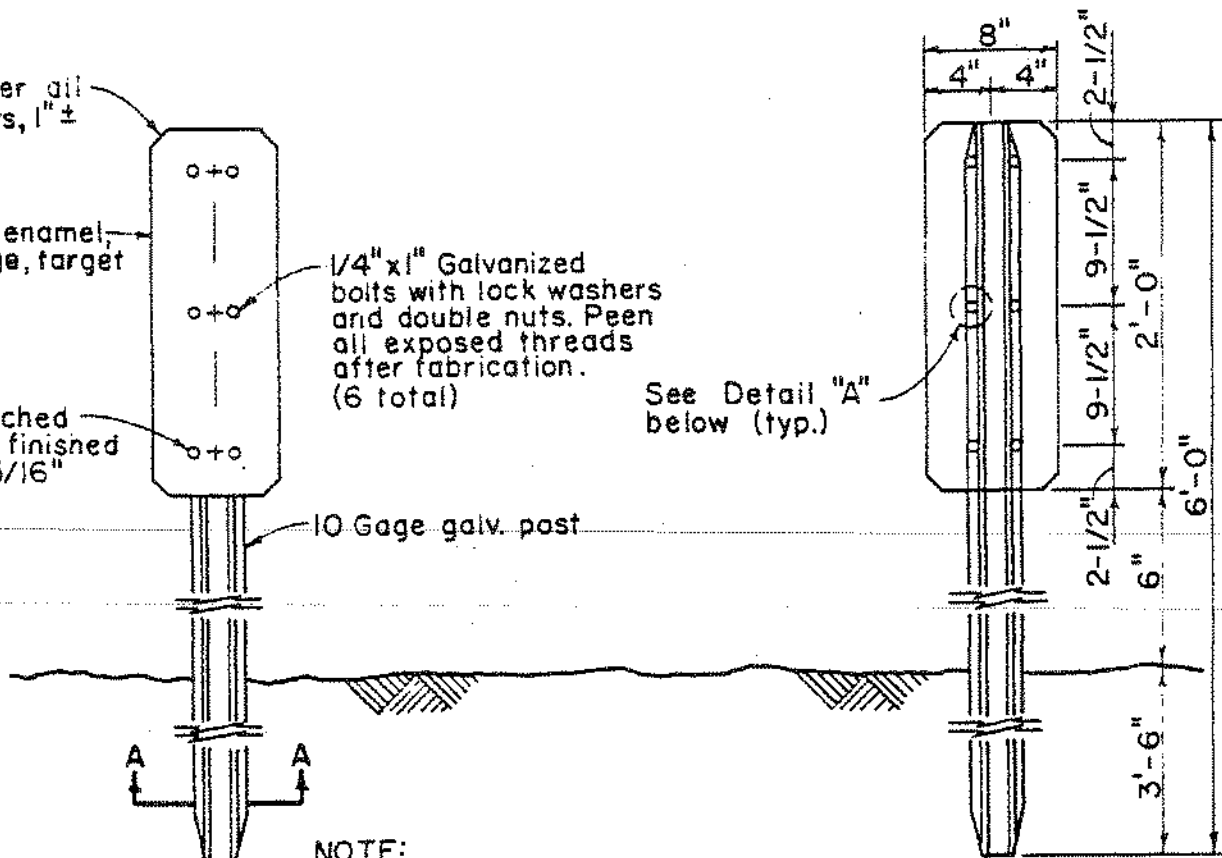
White enamel, 14 gage, target plate

6 Punched holes, finished dia., $5/16"$

$1/4" \times 1"$ Galvanized bolts with lock washers and double nuts. Peen all exposed threads after fabrication. (6 total)

See Detail "A" below (typ.)

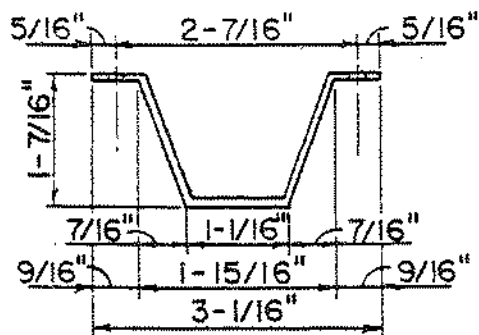
10 Gage galv. post



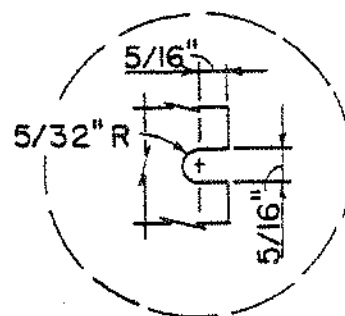
NOTE:

Information Required On Plate

1. Name of owner.
2. Telephone no.
3. Type of installation with appropriate sign.
4. Depth of installation from top of marker.



SECTION A-A



DETAIL "A"

UNDERGROUND UTILITY MARKER

NO SCALE

**SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT**

REVISIONS

OWN. BY

DATE

B.W.

6/4/69

FILE NO.

S.P. 204

R & W revetment
per S.P. 114

When Rail & Wire revetment and
bottom control are being installed
concurrently extend Rail & Wire
revetment to 3' below profile grade
for 24' downstream of bottom control.

Flow

Rails, 60 lbs. per yard min.
(weld base to base)

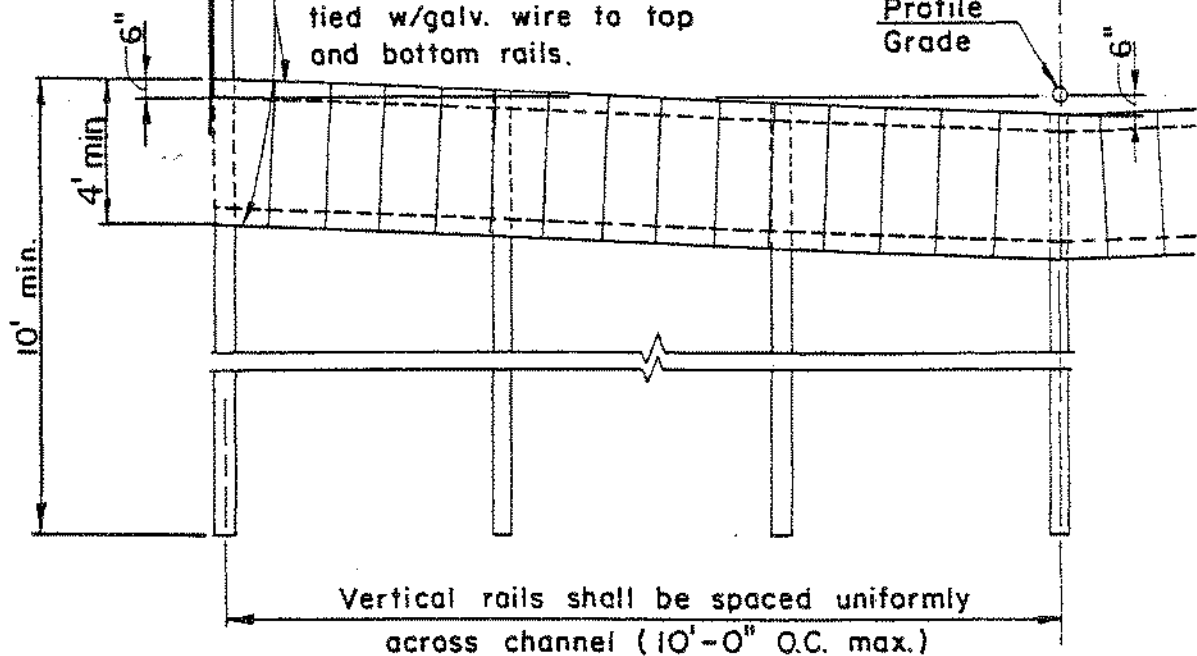
Steel landing mat (if perforated mat
is used place 26 ga. galvanized
sheet metal in front of mat). Mat shall be
placed vertically.

R & W revetment per S.P. 114
(where shown on plans)

Steel landing mat spot welded or
tied w/galv. wire to top
and bottom rails.

Profile
Grade

Symmetrical
about ϵ



BOTTOM CONTROL

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

REVISIONS

DWN. BY

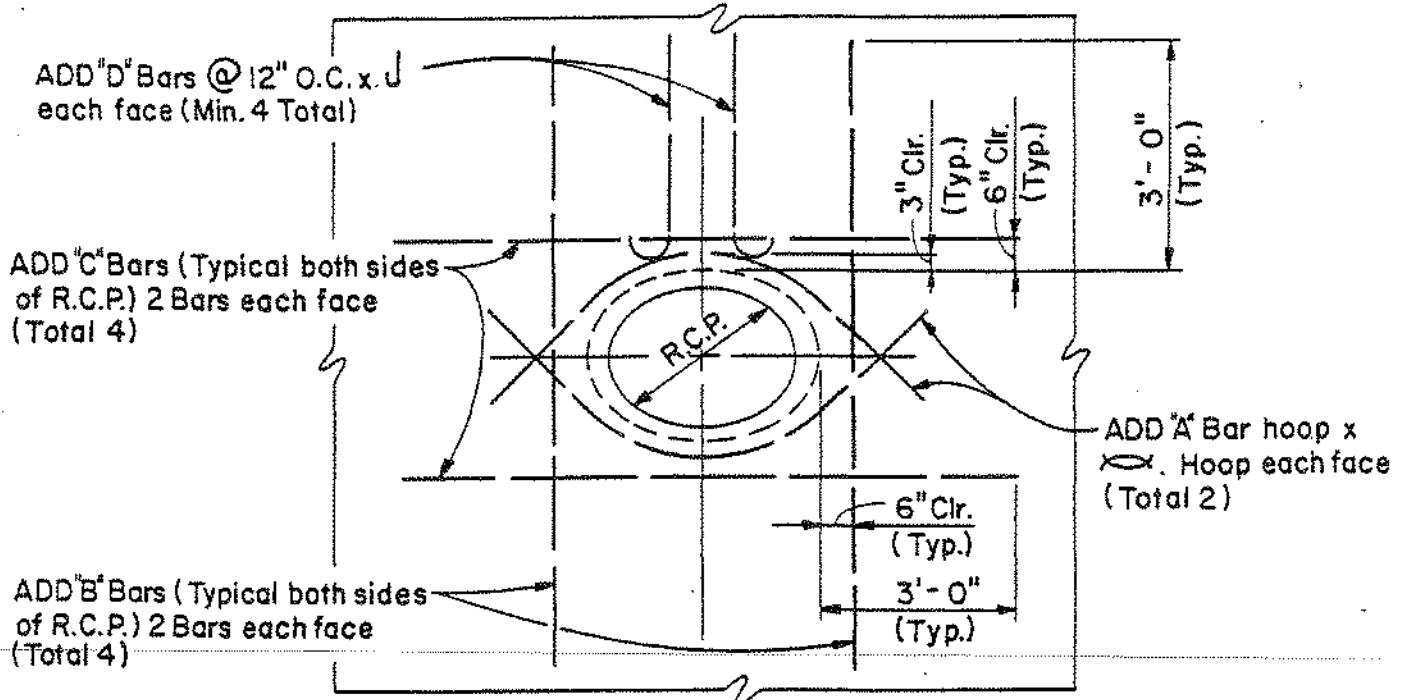
DATE

D. D. E.

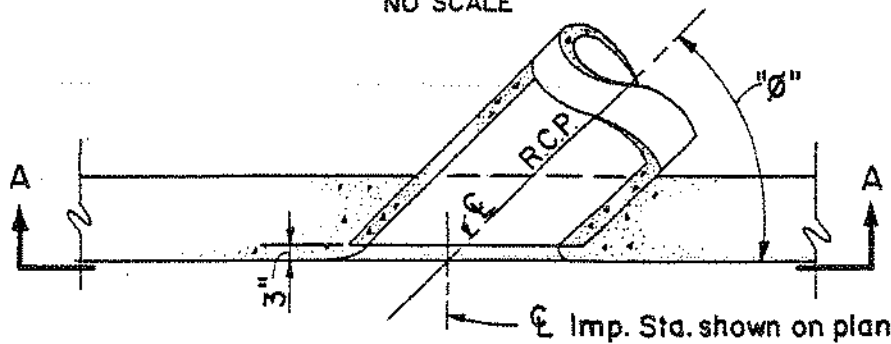
2-16-79

FILE NO.

S.P. 215



SECTION A-A
NO SCALE



PLAN
NO SCALE

NOTES:

1. Unless Otherwise Noted On The Plans;

"A" = #5 Bar Hoop

"C" = #6 Bars

"B" = #6 Bars

"D" = #5 Bars

2. Unless Otherwise Noted On The Plans;

Ø = 60° For Pipes 30" and Smaller

Ø = 45° For Pipes Larger Than 30" But Smaller Than 54"

Ø = 30° For Pipes 54" and Larger

STANDARD R.C.P. CONNECTION
(VERTICAL WALL CHANNEL)

**SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT**

REVISIONS

OWN. BY

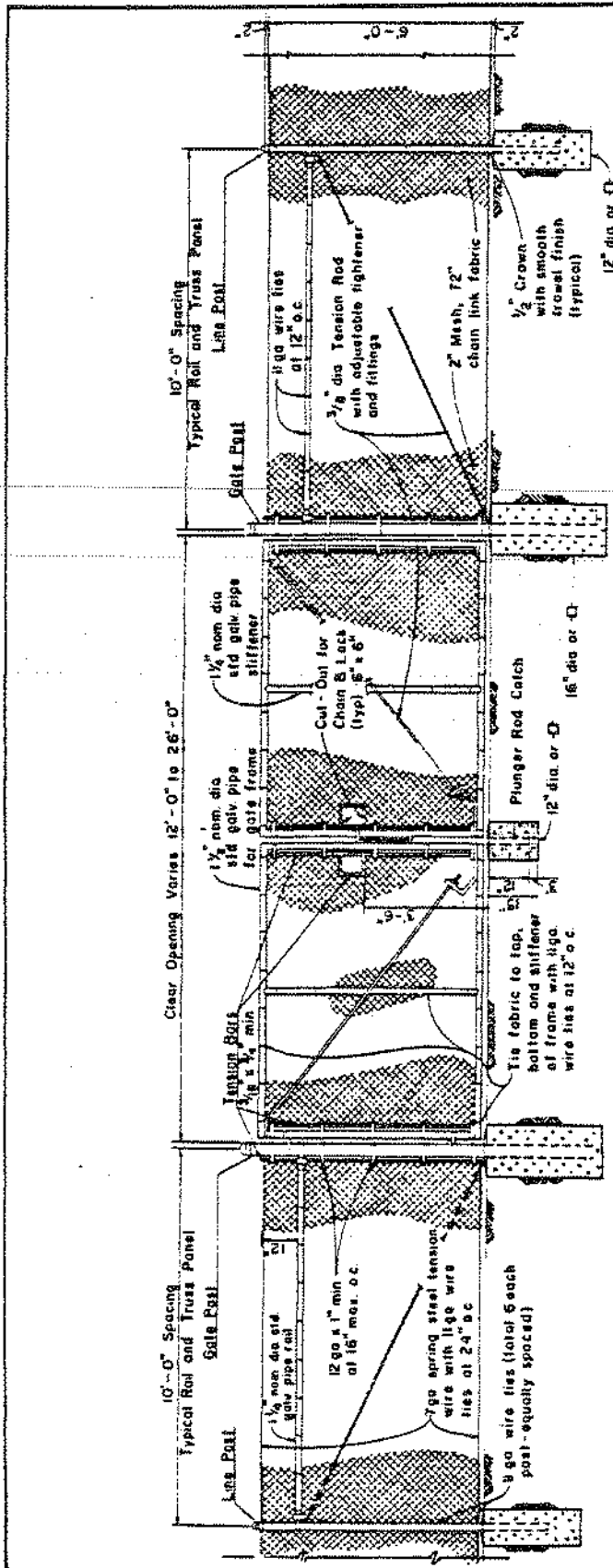
DATE

C.S.

11-3-80

FILE NO.

S.P. 220



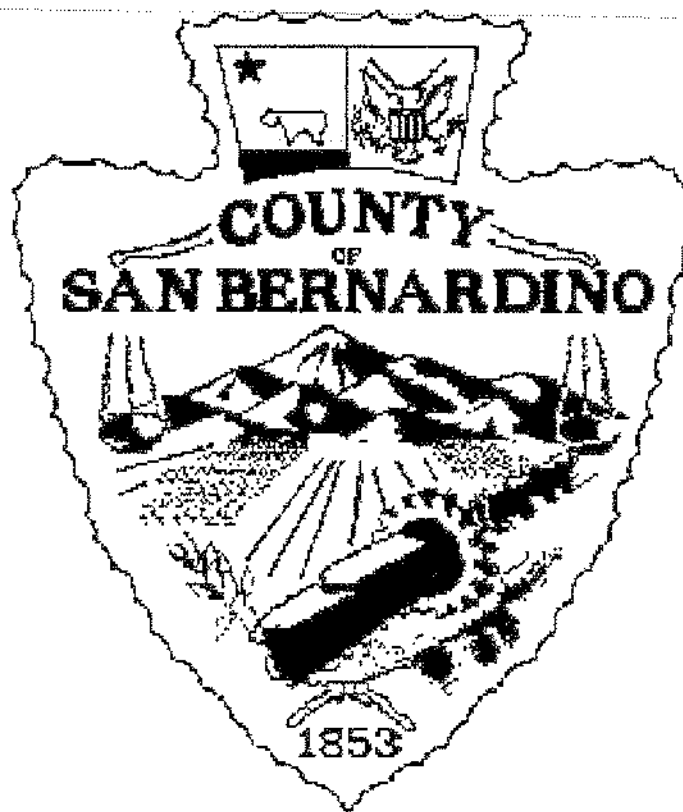
SAN BERNARDINO COUNTY	
FLOOD CONTROL DISTRICT	
DESIGNED BY	DATE
REVISIONS	4-8-74
S.P. 222	

DOUBLE DRIVE GATE DETAIL

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS
COUNTY SURVEYOR'S OFFICE

FINAL MAP STANDARDS

PARCEL MAP STANDARDS



May 17, 2004

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COUNTY SURVEYOR DEPARTMENT
COUNTY OF SAN BERNARDINO, CALIFORNIA
SECTION 1
GENERAL PROVISIONS

1.1 GENERAL: Engineers, surveyors, and subdividers engaged in activities pertaining to the subdivision of land in the unincorporated areas of San Bernardino County are referred to Division 3, San Bernardino County Development Code. This publication is not intended to be a repetition of a part of Division 3, San Bernardino County Development Code, it only amplifies certain requirements of the Development Code and gives examples of certificates and like matters. Close adherence to requirements and the use of standardized data and procedures will aid in the orderly and rapid processing of subdivision maps.

1.2 STANDARDS: The Standards required are based on:

- A. Manuals of Surveying Instruction for the Survey of the Public Lands of the United States, prepared and published by the Bureau of Land Management.
- B. Division 2, Title 7 of the Government Code, referred to herein as the Subdivision Map Act.
- C. The Professional Land Surveyor's Act and Administrative Rules, State of California.
- D. Division 3, San Bernardino County Code.
- E. All requests for deviation from the above or from these Standards shall be submitted to the County Surveyor in writing.

1.3 MONUMENTS:

- A. STREETS: (PRIVATE AND/OR PUBLIC)
 - (1) 1" (I.D.) iron pipe (minimum 18" in length) on street centerline, point of intersection or beginning of curve and ending of curve are required.
 - (2) In A.C. pavement the top of the pipe shall be 1/4" below the finished pavement surface. Permanent swing ties to P.C.C. curbs or other approved fixtures shall be established.

MONUMENTS: (continued)

A. STREETS: (Private and/or Public . . . continued)

- (3) Monuments shall be set 6" below surface when streets are not to be paved. Permanent swing ties shall be established if natural monuments (telephone poles, trees, etc.) are within limits. If not, 1/2" re-bar (minimum) with tag, shall be set at the B.C. and E.C. of returns.
- (4) Swing ties shall not be required for offers of dedication that are not improved.
- (5) Where the tract boundary is on a street right-of-way line or center line, a 1" iron pipe may be set on the prolongation of the tract boundary at the street center line in lieu of a monument at the tract corner.
- (6) Characteristics of the soil should dictate the type, length, and diameter of monument to be used at the tract boundary. In any case, a 1" iron pipe shall be the minimum monument used.
- (7) Diagrams of center line tie Standards Nos. 1 and 2 show approved methods of tying out P.I.'s, P.O.S.T.'s and mid-points (see pages 7B and 7C). When P.O.S.T.'s are shown and tied out, mid-points and/or P.I.'s need not be tied out. When P.I.'s are set, the E.C. and B.C. are not required.

B. LOT CORNERS:

- (1) All shall be monumented with 2" x 2" redwood stakes, a minimum of 15" in length, painted (color), tagged or stamped with R.C.E. or L.S. number and set at the exact lot corner. The top of all lot stakes will be set 3" to 5" above surface of ground.

C. ALTERNATE MONUMENTS:

- (1) The following shall be considered as acceptable alternative monuments for lots corners:
 - (a) Lead, tack, and engineers/surveyors tag, or nail and tag set in permanent concrete.
 - (b) 1/2" iron rod (minimum 18" long) with tag.
 - (c) 3/4" (I.D.) iron pipe (minimum 18" long) with tag.

MONUMENTS: (continued)

C. ALTERNATE MONUMENTS: (continued)

- (2) Nail and tag in curb or sidewalk on prolonged lot lines may be set in lieu of front lot corners. P.I. of curve returns on road dedications may be monumented in lieu of B.C. and E.C.
- (3) Type of monumentation shall be indicated in engineer's/surveyor's notes. When it is not practical to monument lot corners as noted above, alternate monumentation shall be approved by the County Surveyor prior to recordation of map.
- (4) Right of way monuments will not be required to be set on curvilinear streets if a schedule of street centerline ties, as approved by the County Surveyor, is shown on the final map.
- (5) When it is impractical to set lot stakes at lot corners, witness corners may be set on the lot lines in lieu of lot corner stakes. Witness corners shall be set if the lot corner is in a drainage easement. These witness corners will be tied in with a dimension on the effected lot lines and so shown in the engineer's notes or on the map. The same type of stakes used for lot staking will be assumed to be used for witness corners unless otherwise stipulated.

D. GOVERNMENT CORNERS:

- (1) The following shall apply to sectional corners wherever set:
 - (a) 2" (I.D.) iron pipe, 24" in length with brass plate, shall be set at section corners and 1/4 corners. 1" (I.D.) iron pipe 18" in length (minimum), with brass plate or tag, shall be set at 1/16 corners.
 - (b) The brass plate shall be marked as shown in diagrams on Page 7A.
 - (c) All section and 1/4 corners directly used in the subdivision of a section will be marked with a permanent durable monument as specified above. 1/16 corners will be set when pertinent to the survey.
 - (d) The County Surveyor may approve alternate monumentation.

1.3 MONUMENTS: (continued)

E. MONUMENTATION INSPECTION:

Control boundary monuments shall be set and are subject to inspection prior to recordation (filing) of the subdivision. If proposed grading conditions prohibit the setting of monuments as noted above, information shall be submitted to the County Surveyor to insure that the boundary is adequately monumented or referenced before the map is recorded.

F. NOTES (TIE SHEETS):

For each centerline intersection monument set, and such other monuments as are deemed necessary by the County Surveyor, the engineer or surveyor under whose supervision the survey has been made, shall furnish the County Surveyor a set of notes showing clearly a sufficient number (normally four) of durable, distinctive reference points or monuments. Such reference points or monuments may be lead and tack in sidewalk or curbs, iron pipes, or such substitutes as appear unlikely to be disturbed. Such set of notes may be placed upon the map sheet in the form of a table of ties or sketch and properly indexed or these notes can be submitted in duplicate on an 8 1/2" x 14" (legal size) sheet with signature, seal and expiration date of the engineer/surveyor. In lieu of tie notes, a Corner Record can be filed showing the monuments, ties, and distances.

1.4 FINAL MAPS:

A. CHECKING PROCEDURES:

- (1) A boundary plat may be submitted for each division of land. Our office will accept the boundary plat prior to the tentative map being conditionally approved by the County Planning Commission. Prior to submission of final map prints, two copies of a sketch of the boundary plat, together with a current preliminary title report plus checking deposit, shall be sent to the County Surveyor showing monuments upon which the survey of the tract is to be or has been based. All monuments should be identified and evidence presented upon the sketch to prove their acceptability. For example: If a single or double proportioning is required, then essential dimensions, both record and measured should be included.

1.4 FINAL MAPS: (continued)

A. CHECKING PROCEDURES: (continued)

- (2) The engineer or surveyor shall submit the following applicable number of advance copies of the final map to the County Surveyor for distribution to the serving utility companies and other agencies for their review and comments.

County Surveyor's Office	
Final Map Review Section	2 prints
Drainage and Improvement	
Review Section	1 print
County Transportation Department Traffic	
Section (1 additional print for West Valley)	2 prints
<hr/>	
California Dept. of Transportation (If required)	2 prints
Fire Warden	1 prints
Power Company	2 prints
Street Lights	2 prints
Telephone Company	2 prints
Gas Company	2 prints
Water Company	2 prints
Sewer Company	2 prints
Cable Television	<u>2 prints</u>
	22 Total

- (3) In lieu of the above procedure, the engineer or surveyor may obtain approvals from public utility companies and forward the map with said companies' approvals and comments to the County Surveyor.
- (4) All final maps being submitted to the County Surveyor for checking shall be accompanied by machine printed traverse sheets showing closures within acceptable limits, together with one copy of the final map with coordinate points indicated upon it in colored pencil, relating to the specific coordinates indicated on the traverse sheets. The coordinates shall be based on one point of origin for the entire map. These traverses should be run using coordinates in a manner so that they can be easily followed. All maps not accompanied by this information will be subject to being returned without review. All maps shall be accompanied by; a copy of pertinent property deeds used in the interpretation of the property boundaries, a current preliminary title report and copy of recorded easements referenced within, and private survey maps or notes not on file with the County Surveyor.

1.4 FINAL MAPS: (continued)

A. CHECKING PROCEDURES: (continued)

- (5) Notations of necessary changes and/or corrections shall be made on one print (check sheet) by this office and returned to the engineer or surveyor. Corrections will be made, and revised prints as requested, together with the check sheet, shall be returned to the County Surveyor for further review.
- (6) When the engineer or surveyor has furnished the County Surveyor with a check print of the final map which reflects all required changes and/or corrections, and after all approvals have been given and after all conditions of approval have been met, he will be notified that the map is ready to record. A distinctive symbol, being an opaque ink line three times as wide as the widest line on the map, excluding the 1" border line, shall be placed on the linen indicating the land being subdivided.
- (7) Signatures and seals shall than be secured on the originals after which it shall be forwarded to the County Surveyor by the responsible title company, together with all other appurtenant data, for presentation to the Board of Supervisors.

B. FEES:

REFER TO CURRENT FEE SCHEDULE

1.5 MAP SCALES AND LEGIBILITY:

- A. Final Maps drawn at a scale of 1" = 200' will be accepted if lots are of a rectangular design and 2-1/2 acres or larger.
- B. Final Maps drawn at a scale of 1" = 100' will be accepted if lots are of a curvilinear design and are less than 2-1/2 acres, but greater than 18,000 square feet.
- C. Final Maps drawn at a scale from 1" = 40' to 1' = 80' will be accepted for lots less than 18,000 square feet.
- D. Subdivision maps which, as determined by the County Surveyor, are not legible will be returned to the surveyor or engineer for corrective action.

1.5 MAP SCALES AND LEGIBILITY: (continued)

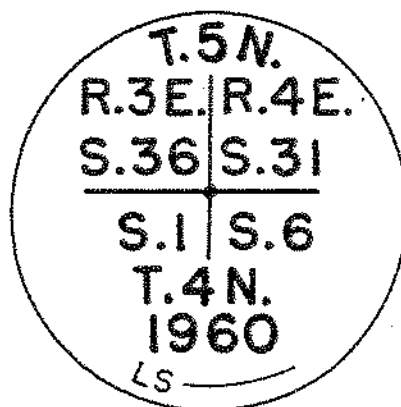
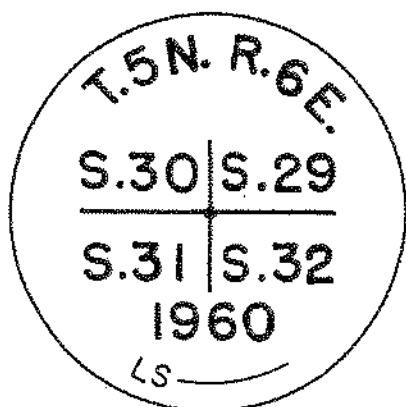
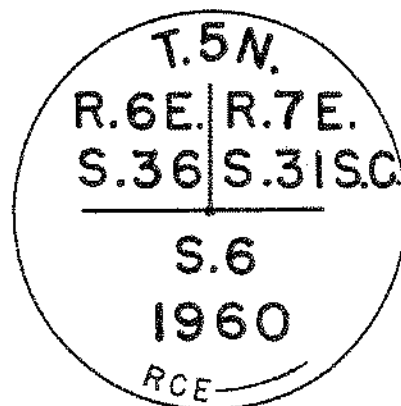
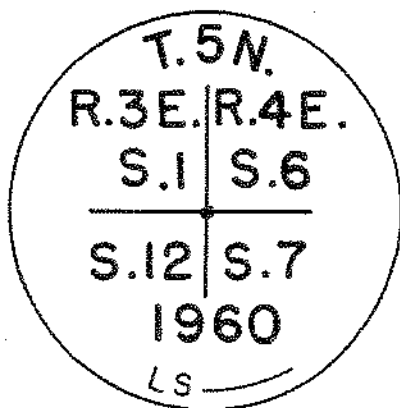
- E. Two or more map sheets are required; an index map showing the entire subdivision shall be placed on sheet two (2). It shall show the general plan including interior streets and street names, the relationship of each map sheet, the boundary and control used, and shall be drawn to a legible scale. No mapping shall appear on sheet one (1) unless otherwise approved by the County Surveyor. A vicinity map is optional.
- F. Lettering and numbering shall be oriented as shown on Page 7D.
- G. Each lot shall be shown in its entirety on one sheet. Large open space lots may be shown on the index map as approved by the County Surveyor.

1.6 SOIL TESTS:

Soil test report data shall be placed on the Composite Development Plan as shown in Section 4.3 of this publication as required per Section 83.041115(a) (4) of the San Bernardino County Development Code.

1.7 MAP SHEETS:

The final map shall consist of a minimum of three (3) sheets; Title Sheet, Index and Boundary Control Sheet, and Detail Sheet(s) (The Index and Boundary Control Sheet can be combined with the Detail Sheet when approved). The first sheet in all instances will minimally contain the Owner's Statement, Notary Acknowledgement, Acceptance Certificate, and the Recorder's Certificate. The CDP Note shall be placed on the Index and all Detail Sheets.



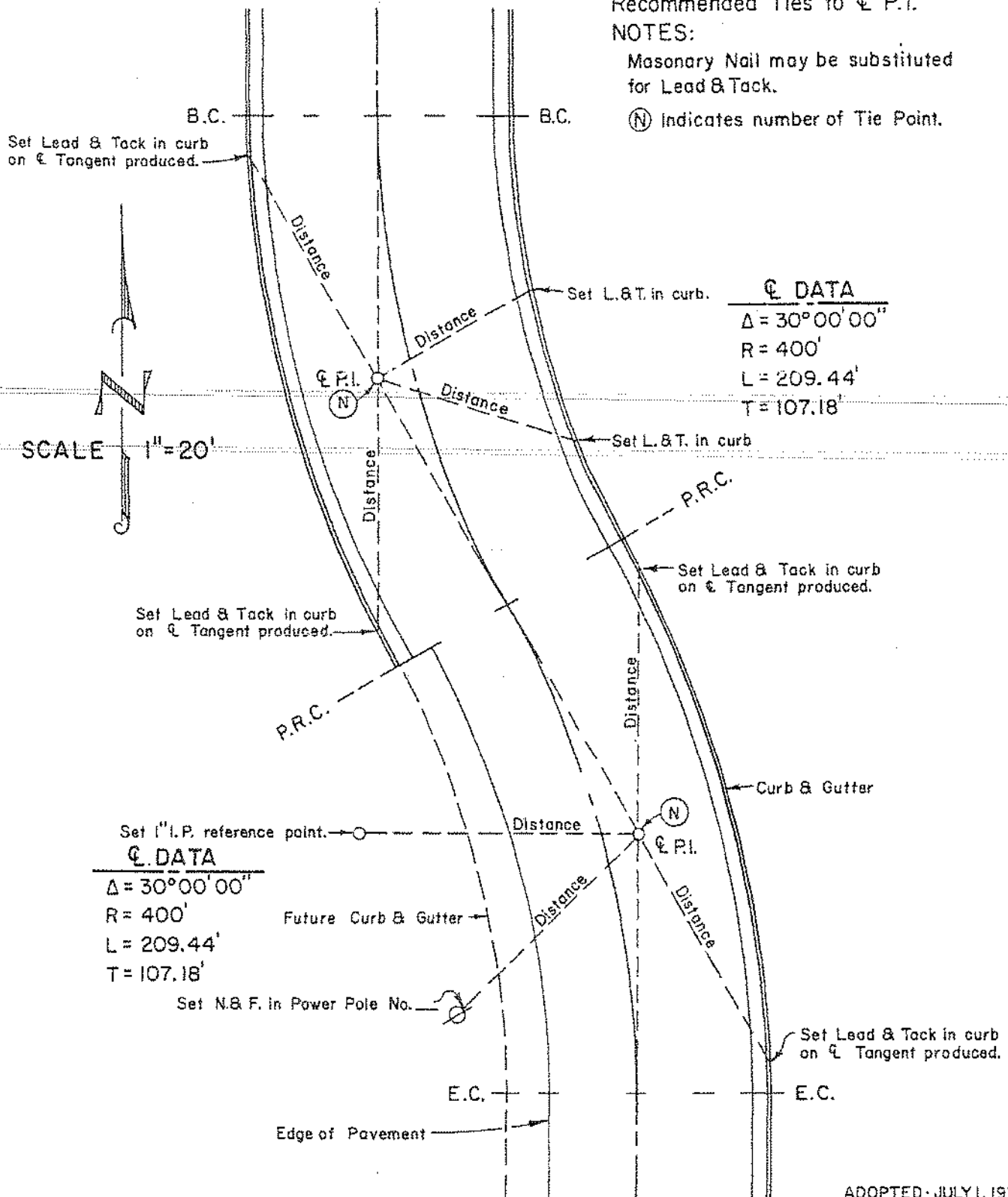
Q TIES STANDARD NO.1

Recommended Ties to C P.I.

NOTES:

Masonry Nail may be substituted
for Lead & Tack.

① Indicates number of Tie Point.



ADOPTED - JULY 1, 1972

No.	REVISED	BY
1	JULY 1, 1992	VHC

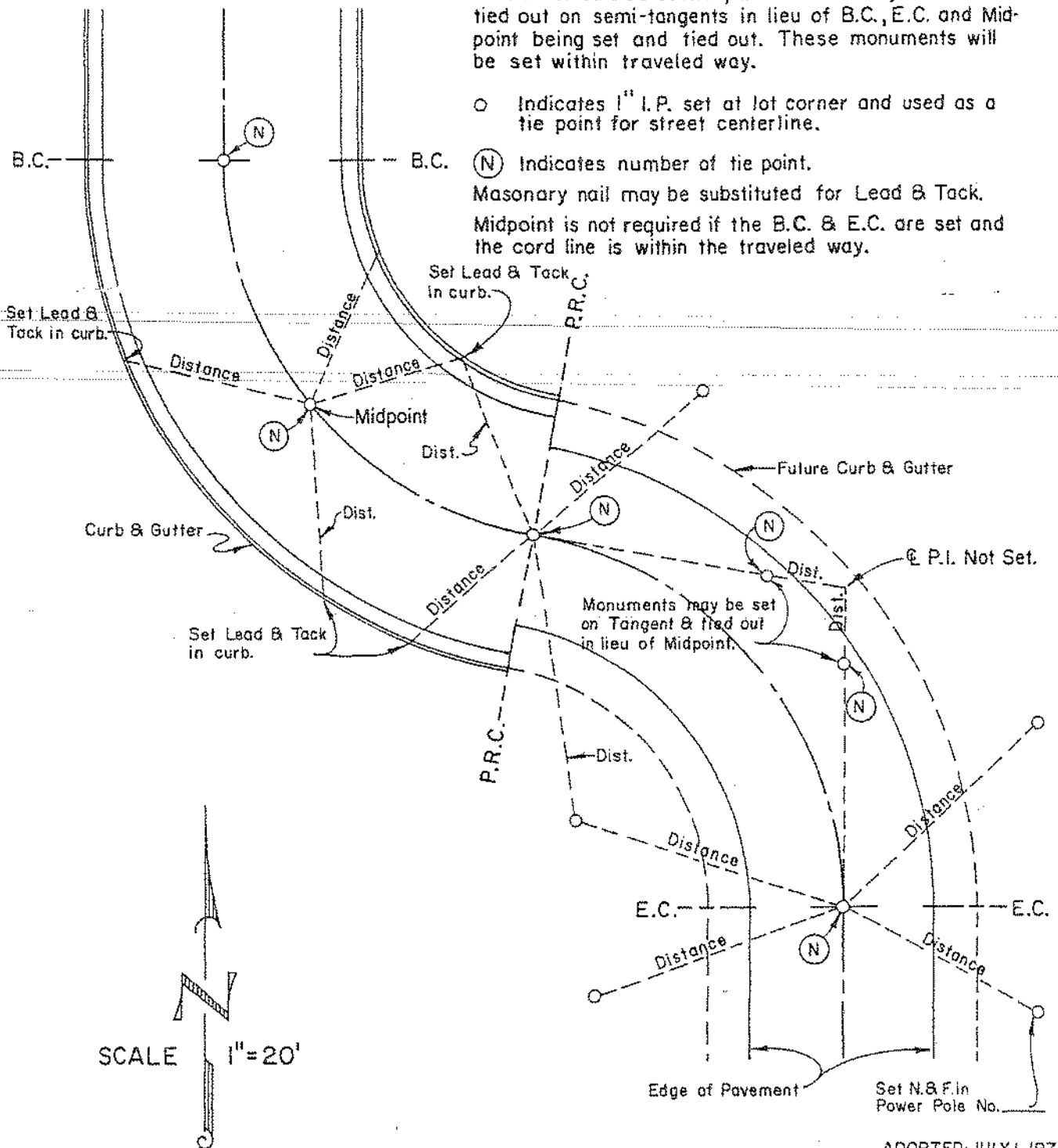
On curves where the P.I. falls outside of the paved section or curbed section, monuments may be set and tied out on semi-tangents in lieu of B.C., E.C. and Midpoint being set and tied out. These monuments will be set within traveled way.

○ Indicates 1" I.P. set at lot corner and used as a tie point for street centerline.

(N) Indicates number of tie point.

Masonry nail may be substituted for Lead & Tack.

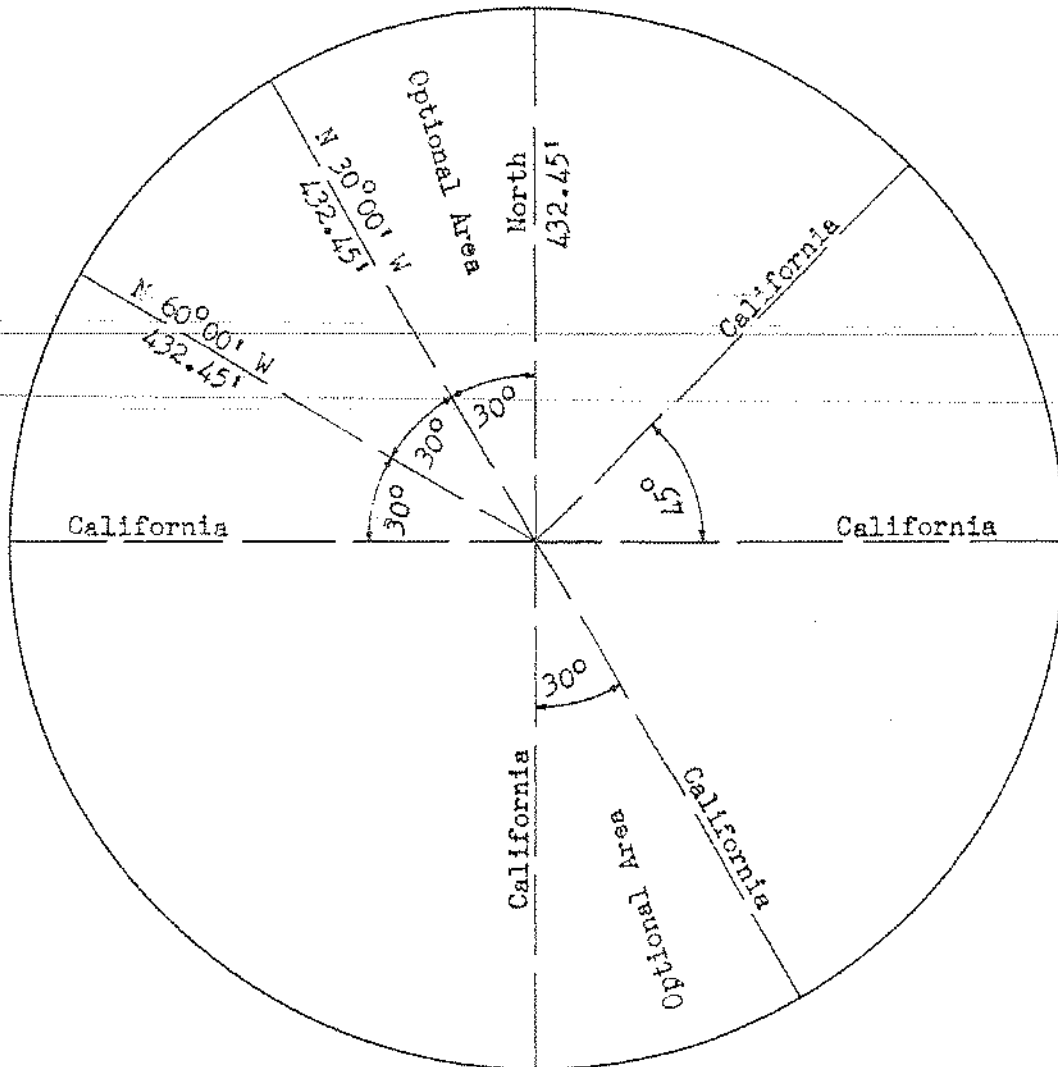
Midpoint is not required if the B.C. & E.C. are set and the cord line is within the traveled way.



ADOPTED JULY 1, 1972

No.	REVISED	BY
1	JULY 1, 1976	-
2	JULY 1, 1992	V.H.C.

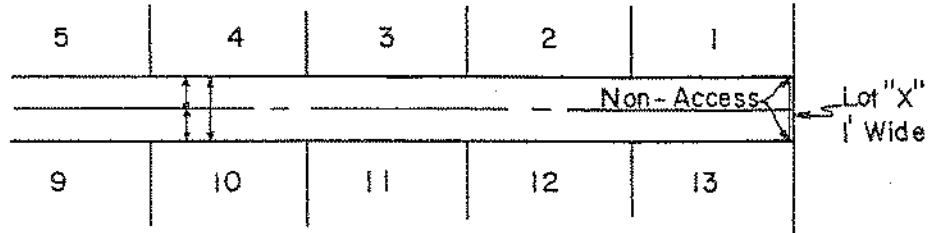
TITLE
DESCRIPTION



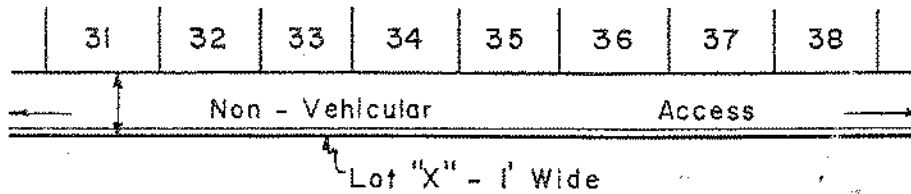
Title, description, dimensioning, and lettering shall be based upon the north point, and so oriented that with the north point directed away from the reader the map may be read most conveniently from the bottom or lower right corner of such sheet.

ACCESS RIGHTS

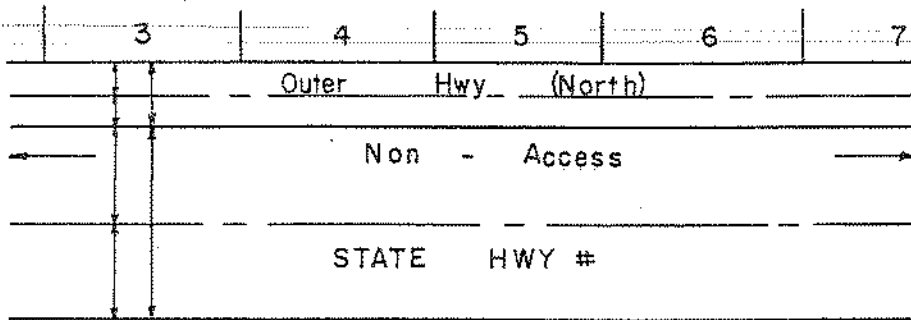
STREET TO BE EXTENDED



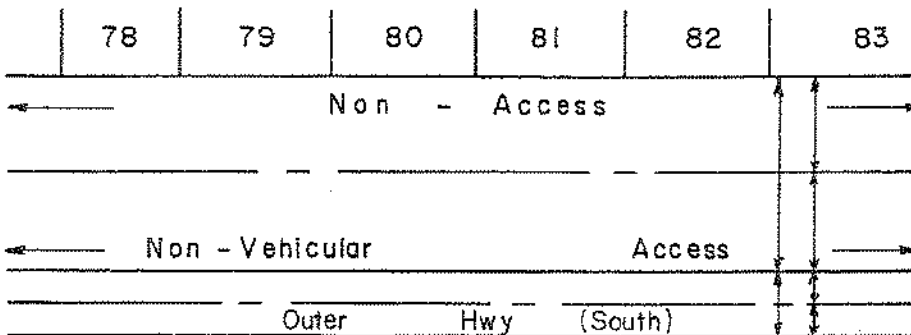
STREET TO BE EXTENDED (HALF-WIDTH)



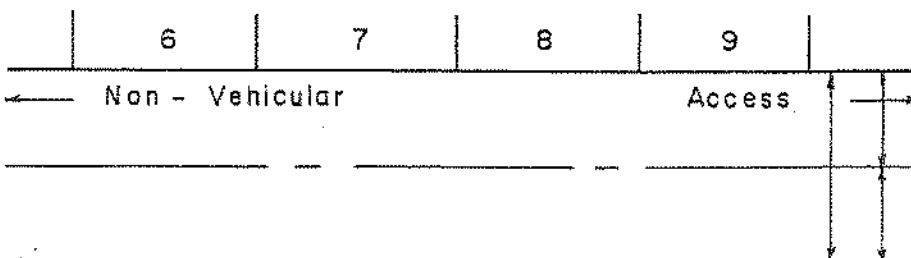
MAJOR STATE HWY WITH ACCESS ROAD



MAJOR COUNTY HWY



SECONDARY COUNTY HWY



SECTION 2
CERTIFICATES FOR FINAL MAPS

2.1 OWNER'S STATEMENTS:

Notary Acknowledgments and Signature Omissions should be on the same sheet as the Owner's Statement, and should be below or to one side of said Owner's Statement. Use only applicable portions of samples below:

- A. I (we) hereby state I (we) am (are all and) the only party (parties) having any record title interest in the land subdivided as shown on this (the annexed) map, and I (we) consent to the preparation and recordation of this final map (parcel map). I (we) hereby irrevocably offer to dedicate to the County of San Bernardino, the public in general, and to any of the several public utility companies which are authorized to serve in said subdivision, an easement for public roads, county highways, and public utility purposes in, under, over, through, and across (streets by name, i.e., Sierra Way, Orange Street) as shown on this (the annexed) map. The expressed rights to the public in general and to the several utility companies shall be and shall remain inferior to the superior rights of the County of San Bernardino.

I (we) also irrevocably offer to dedicate to the County of San Bernardino:

RESERVE PARCELS (Lots A, B, C, etc. as reserve parcels)

[See Sec. (2.1) (F) (3)]

EASEMENTS (S.B. Co. Drainage Easements; open space)

[See Sec. (2.1) (B through E and G)]

RIGHTS (access, vehicular access, slope rights, etc. over and across lots) [See Sec. (2.1) (F)]

Private Easements:

I (we) hereby reserve to myself (ourselves), my (our) heirs and assigns, for the use and benefit of (name and specific easement), as delineated on said map.

- B. The following shall be added when dedication of San Bernardino County Drainage Easements is to be shown:

"... the San Bernardino County Drainage Easement(s) (S.B.C.D.E.) as shown on the annexed map."

2.1 OWNER'S STATEMENTS: (continued)

B. (continued)

If right-of-way is being dedicated to the San Bernardino County Flood Control District in "Fee Simple", use the following:

"We hereby grant in fee simple to the San Bernardino County Flood Control District for flood control and water conservation purposes, lots X, Y, and Z as shown on said map within said subdivision."

C. If there are Public Utility Easements add:

"...and we hereby reserve to ourselves, our heirs and assigns, for the use and benefit of the several public utility companies, which are authorized to serve in said subdivision, easements for public utility purposes, delineated on said map as "Public Utility Easement", or "P.U.E.".

D. The following shall be added when "Open-Space Easements" are to be

"...an open-space easement in perpetuity as a covenant running with the land over lot _____, being the common area, reserving to the Grantor, his successors and assigns, the right to use the underlying land for recreational purposes and vehicular access, provided, however, that said use shall not interfere with the open-space easement herein granted; and provided that no improvements other than landscaping or recreational facilities shall be placed upon said land without the approval of the Grantee; and provided further that the approval of the Grantee of any improvement shall not constitute an abandonment of the open-space easement."

E. For Condominium Maps:

The following shall be added when "Open-Space Easements" are to be dedicated:

"...an open-space easement in perpetuity as a covenant running with the land over lot _____, being the common area, except for areas required for those condominium buildings shown on plans recorded pursuant to Section 1351 of the Civil Code, reserving to the Grantor, his successors and assigns the right to use the underlying land for recreational purposes

2.1 OWNER'S STATEMENTS: (continued)

E. For Condominium Maps: (continued)

and vehicular access, provided however that said use shall not interfere with the open-space easement herein granted and provided that no improvements other than landscaping or recreational facilities shall be placed upon said land without the approval of the Grantee; and provided further that the approval of the Grantee of any improvement shall not constitute an abandonment of the open-space easement."

F. When dedication of access rights is to be made, the following shall be added: (See diagram on Page 7E)

(1) When outer highways are involved:

"...all rights of (vehicular) ingress to or egress from (name of street) over and across the (northerly, southerly, easterly, or westerly) line of the outer highway (name of street) lying adjacent to Lots No. _____."

Note: State Highways may require non-access. County Highways require non-vehicular access.

(2) When no outer highway is involved, but limited access:

"...all rights of (vehicular) ingress to or egress from Lots No. _____, over and across the (northerly, southerly, easterly, or westerly) line of said lots abutting (name of street) or (names of streets), respectively."

(3) When streets are to be extended in the future (reserve parcels), add the following:

"...all rights of (vehicular) ingress to or egress from Lots "_____" to "_____" inclusive, over and across the (appropriate direction being the side of lot towards the subdivision) line of said Lots abutting _____, _____, and _____ Streets respectively."

(4) The following shall be added when excavation and embankment slopes are required:

"...the privilege and right to extend and maintain drainage structures, 1-1/2 to 1 excavation slopes, 1-1/2 to 1 embankment slopes upon all of those certain lot areas where said slopes or

2.1 OWNER'S STATMENTS: (continued)

F (4) (continued)

embankments or drainage structures extend beyond the limits of the dedicated rights of way included within Tract No. _____, wherever required for the construction and maintenance of road beds occupying the full width of said portions, and the privilege and right to plant and maintain grass, plants, and/or trees on said slopes for soil erosion protection of same. (Modify wording to meet conditions.) Said privilege and right shall be superior to the right of the grantors and their heirs and assigns to lateral support."

Notes: When slopes steeper than 1-1/2: 1 are permitted, a geologic report is required. Said report shall be included in the Composite Development Plan notes (see Section 4.3B).

G. For block walls and landscaping easements that are to be maintained by a County Service Area add:

"I (We) hereby reserve to ourselves, our heirs and assigns for the use and benefit of (applicable improvement zone and district) easements for walls, planting, and planting maintenance purposes as shown on said map."

H. The following statement will be used on parcel maps where no dedications are required:

"I (We) hereby state I (we) am (are all and) the only party (parties) having any record title interest in the land subdivided as shown on this (the annexed) map as required by Section 66445 (e) of the Subdivision Map Act, and I (we) consent to the preparation and recordation of this parcel map."

2.2 NOTARY ACKNOWLEDGEMENT:
FOR REFERENCE ONLY, CONSULT TITLE COMPANY

STATE OF CALIFORNIA

COUNTY OF _____

On _____ before me, the undersigned, a Notary Public in and for said State, personally appeared _____

_____ personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand.

Signature _____

Commission Number: _____ Expires: _____

2.3 STATEMENTS:

A. Surveyor's (Engineer's) Statement (Individual) (rev 1/30/02):

This map was prepared by me or under my direction and is based upon a field survey in conformance with the requirements of the Subdivision Map Act and local ordinance at the request of (name of person authorizing map) on (date). I hereby state that this final map substantially conforms to the conditionally approved tentative map. All monuments shown hereon are of the character and occupy the positions indicated in compliance with Section 66495 of the Subdivision Map Act and are sufficient to enable the survey to be retraced.

Date: _____
(Signed and Sealed)

Professional Land Surveyor No. _____
(or Registered Civil Engineer No. _____)
Expiration Date _____

2.3 STATEMENTS (CONTINUED):

B. Surveyor's (Engineer's) Statement (Individual) (rev 1/30/02):

This map was prepared by me or under my direction and is based upon a field survey in conformance with the requirements of the Subdivision Map Act and local ordinance at the request of (name of person authorizing map) on (date). I hereby state that this final map substantially conforms to the conditionally approved tentative map. All the monuments shown hereon are of the character and occupy the positions indicated, or will be set in such positions on or before _____, 20____, in compliance with Sections 66495 and 66496 of the Subdivision Map Act and will be sufficient to enable the survey to be retraced.

Dated _____
(signed and sealed)

Professional Land Surveyor No. _____

(or Registered Civil Engineer No. _____)

Expiration Date _____

Note: If the engineer or surveyor does not fill in the date monuments are to be set (twenty-four [24] months maximum), this office will insert the date twenty-four [24] months after receipt date of cash deposit guaranteeing setting of final monuments.

C. San Bernardino County Recorder's Certificate. Effective January 1, 2003, all maps submitted for recording must follow these requirements. Failure to follow these requirements may adversely affect the recording process of your map.

It shall be in the lower or upper right hand corner whenever practical.

This map has been filed under Document Number _____,
this _____ day of _____, 20____, at _____ .m. in Book _____
of _____ at page _____, at the request
of _____,
in the amount of \$ _____.

Larry Walker
Auditor-Controller/Recorder
County of San Bernardino

By: _____
Deputy Recorder

2.4 NOTES: (Notes shall appear on the Index and Boundary Control map sheet, and may show on all map sheets for clarity)

- A. The following CDP Note shall be placed on the Index and all Detail Sheets, if applicable:

COMPOSITE DEVELOPMENT PLAN NOTE

A Composite Development Plan (C.D.P.) affecting this map is on file in the San Bernardino County Office of Building and Safety.

- B. ABANDONMENT NOTE (To be incorporated within the "ACCEPTANCE CERTIFICATE" when applicable. Titled as: "ACCEPTANCE AND ABANDONMENT CERTIFICATE" when applicable.

Pursuant to Section (66434 (g) and 66445 (j) 66499.20 1/4 66499.20 1/2) of the Subdivision Map Act, the recordation of this (Final/Parcel) Map constitutes abandonment of that certain (easement) acquired by the County of San Bernardino for (road) (drainage) purposes by (document) (Final/Parcel Map), recorded on (date) by (Inst. No.) (M.B.) (P.M.B.), Official Records of San Bernardino County.

- C. Use only symbols and abbreviations applicable.
- D. Character of monuments found or set (see 1.3 A, B, C, & D).
- E. The following will be used in the notes when applicable and shall be placed on the Index map sheet.

Example: 2" x 2" redwood stakes tagged (or whatever is used), (X"), long and painted (color) set on lot lines 'X' feet from edge of S.B.C.D.E. (or whatever) in lieu of rear lot stakes unless otherwise noted.

OR: Unless otherwise indicated on this map, a (type, character, dimensions, and L.S. tag number) has been set at all lot corners and at all points of curve along the sidelines of dedicated streets and private roads. In the event the above type of monument cannot be set due to unforeseen circumstances, then a tag marked "L.S. _____" will be affixed in concrete, stone, wood, or metal at the true position called for by this map.

- - Indicates monument found (give type and size); (or as noted here). Always give reference. The map in which the monument was set is preferable, also C.S. Field Books in which ties are placed.

2.4 NOTES (continued):

E. (continued)

- - - - Indicates monument set (give type and size: 2" (I.D.) (minimum) iron pipe shall be used at section corners and quarter corners and a 1" (I.D.) (minimum) iron pipe shall be used at 1/16 corners and at street center line intersections (sizes given are minimum).

State in notes relationship of top of monument to surface; i.e., "Iron pipe set 1/4" below surface or 1" iron pipe set 6" below finish grade".

- N- - - Indicates monument tied out (indicate number of each monument) as shown on schedule of ties. Schedule of ties will be filed in the office of the County Surveyor.

PUE Indicates Public Utility Easement.

(RAD) Indicates a radial bearing as run from the radius point to the curve.

CSFB Indicates County Surveyor's Field Book.

CSM Indicates County Surveyor's Monument. (size and character)

BSL Indicates Building Setback Line.

GLO Indicates General Land Office.

SBCDE Indicates San Bernardino County Drainage Easement.

BLM Indicates Bureau of Land Management.

SBCFCDE Indicates San Bernardino County Flood Control District Easement.

USC & GS Indicates United States Coast & Geodetic Survey.

Alphabetical Lots indicate (Reserve Parcels) (Open Space Easements) or (S.B.C.F.C.D.E.)

This Tract has _____ lots.

Note: Any further standard abbreviations used should be clarified in these notes.

2.4 NOTES (continued):

F. (continued)

Basis of bearings (two monuments on the same line and shown on a recorded or filed map)

Include minor subdivision (or lot line adjustment) number for parcel maps (See Section 3.3H.)

2.5 COUNTY SURVEYOR'S CERTIFICATE:

- A. I hereby certify that I have examined the annexed map, and that the subdivision shown thereon is substantially the same as it appeared on the tentative map and any approved alterations thereto, and that all the provisions of the Subdivision Map Act and Division 3 of the San Bernardino County Code have been complied with, and I am satisfied that this map is technically correct.

Date: _____

Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

L. S. No. _____

Expiration Date: _____

- B. The following certificate is to appear on all city maps reviewed by the County Surveyor's Office.

I hereby certify that I have examined this map and have found that all mapping provisions of the Subdivision Map Act have been complied with and I am satisfied said map is technically correct relative to the Final Map boundary and all mathematical computations.

Date: _____

Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

L. S. No. _____

Expiration Date: _____

2.6 ACCEPTANCE CERTIFICATES: (Final Maps)

A. (When no dedications are offered or accepted:)

I hereby certify that the Board of Supervisors of the County of San Bernardino duly approved (this) (the annexed) map of Tract No. _____.

Date: _____

J. Renee' Bastian
Clerk of the Board of Supervisors
of the County of San Bernardino

By: _____, Deputy

B. (When dedications and improvements are offered and accepted, but San Bernardino County Drainage Easement, alleys, and reserve parcels (future streets to be extended) are rejected:)

I hereby certify that the Board of Supervisors of the County of San Bernardino duly approved this (the annexed) map of Tract No. _____ and accepted (name of item from Owner's Statement) and accepted, subject to its (their) improvement in accordance with County Standards (name of item from Owner's Statement) but rejected (name of item from Owner's Statement).

Date: _____

J. Renee' Bastian
Clerk of the Board of Supervisors
of the County of San Bernardino

By: _____ Deputy

2.6 ACCEPTANCE CERTIFICATES: (continued)

C. (When graded streets (Desert Subdivisions) are accepted:)

I hereby certify that the Board of Supervisors of the County of San Bernardino duly approved (this) (the annexed) map of Tract No. _____, and accepted (name of item from Owner's Statement) but without the obligation to maintain or improve the road(s) referred to herein, but rejected Lot(s) _____ (Reserve Parcels), and the San Bernardino County Drainage Easement(s).

Date: _____

J. Renee' Bastian
Clerk of the Board of Supervisors
of the County of San Bernardino

By: _____ Deputy

D. (When streets, San Bernardino County Flood Control District (easements) (fee simple, rights of way) are accepted but alleys are rejected.)

I hereby certify that the Board of Supervisors of the County of San Bernardino duly approved (this) (the annexed) map of Tract No. _____ and accepted the (name of item from Owner's Statement) subject to their improvement in accordance with County Standards, but rejected all alleys, and further, on behalf of the San Bernardino County Flood Control District, accepted Lot(s) X, Y, and Z in fee simple.

Date: _____

J. Renee' Bastian
Clerk of the Board of Supervisors
of the County of San Bernardino

By: _____ Deputy

2.7 TAX BOND REQUIREMENTS:

- A. Bond: from 1st of March to 2nd week of October.
- B. Bond and receipted tax bill; from 1st of March to 1st of April.
- C. Receipted tax bill; from 2nd week of October to 1st of March and supplemental taxes.

2.8 AUDITOR'S CERTIFICATE

A. (When tax bond is not required:)

I hereby certify that according to the records of this office as of this date, there are no liens against the real property shown upon the annexed map for unpaid State, County, Municipal, or local taxes or special assessments collected as taxes.

Dated: _____

Larry Walker, COUNTY AUDITOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

B. (When tax bond is required:)

I hereby certify that according to the records of this office as of this date, there are no liens against the real property shown upon the annexed map for unpaid State, County, Municipal, or local taxes or special assessments collected as taxes, except taxes or special assessments not yet payable, estimated to be \$_____.

Dated: _____

Larry Walker, COUNTY AUDITOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

2.9 BOARD OF SUPERVISORS CERTIFICATE:

(When tax bond is required:) (When tax bonds are not required, Board of Supervisor's Certificate is not necessary.)

I hereby certify that a bond in the sum of \$_____ has been executed and filed with the Board of Supervisors of the County of San Bernardino, State of California, conditioned upon the payment of all taxes, State, County, Municipal, or local, and all special assessments, collected as taxes, which at the time of the filing of the annexed map with the County Recorder are a lien against said property, but not yet payable and that the subdivider has filed with me a certificate by the proper officer giving his estimate of the amount of said taxes and assessments, and said bond is hereby accepted.

Date:_____

J. Renee' Bastian
Clerk of the Board of Supervisors
of the County of San Bernardino

By:_____ Deputy

2.10 SIGNATURE OMISSIONS (Final Maps and Parcel Maps):

The signature(s) of (name of persons, corporations, or partnership) the owner(s) of an easement for (Nature of easement) as disclosed by (Instrument and O. R. Number) Records of San Bernardino County has/have been omitted under the provisions of Section 66436 of the Subdivision Map Act. Its interest can not ripen into a fee. (The Easement must be definitely located or one of the following statements must be included in the above):

1. Said easement covers the entire area being subdivided.
2. Said easement can not be located of record.

The above shall appear for each entity having a record title interest in the land being subdivided that falls within the purview of Section 66436, Subdivision Map Act, State of California.

Note: When easements are definite and locatable, the signature omission statement as hereinbefore outlined may be omitted provided that: the owners' names, the nature of their interest and the reference document are noted within or adjacent to the area so delineated on the map. Easements, if locatable, shall be shown with bearings and distances on each and every course, together with tie distances of crossings of division lines and boundary lines.

2.11 AMENDING MAPS (Refer to Section 66469, Subdivision Map Act and Section 83.041105(a)(5) of County Code):

- A. A reproduction shall be made on linen or mylar of the map to be amended.
- B. Remove M. B. (Book)/(Page) from margin of all sheets of recorded map.
- C. Add San Bernardino County Recorder's Certificate (see page 13 & 28).
- D. The words "Amending Map" shall appear prominently on each sheet above the tract number or parcel map number.
- E. The subdivision will retain the same tract number, but the Recorder will reference the map book and page of the amending map on each sheet of the original map. The same reference will be made in the County Surveyor's files.
- F. Pursuant to Section 66469 of the Subdivision Map Act, mathematical changes on the map will be checked. Private engineers shall indicate courses and distances changed or added when they submit prints.
- G. An Amending Map Note shall prominently appear on the first map sheet or as approved by this office detailing the change made in compliance with provisions in Sections 66469 and 66470 of the Subdivision Map Act.
- H. The following certificates will be added to the amending title sheet.

SURVEYOR'S (OR ENGINEER'S) STATEMENT (Amending Map)

I hereby state that I am a (Registered Civil Engineer or Professional Land Surveyor) of the State of California, and the only corrections shown on this amending map are those provided for in Section 66469 of the Subdivision Map Act, and the names of the fee owners of the real property affected by the correction or omission on the date of the filing or recording of the original recorded map are as follows:

Date: _____
(Signed and sealed)

(Name of Engineer or Surveyor printed)
L.S. or R.C.E. No. _____
Expiration Date: _____

COUNTY SURVEYOR'S CERTIFICATE (Amending Map)

I hereby certify that I have examined the amendments made on the annexed amending map, and the only changes thereon from the original map are those provided for in Section 66469 of the Subdivision Map Act, and I am satisfied that this map is technically correct.

Date: _____

Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO
By: _____ Deputy
L. S. No. _____
Expiration Date: _____

2.12 REVERSION TO ACREAGE MAPS:

(Refer to Chapter 6, Section 66499.11 to 66499.20 $\frac{3}{4}$ of the Subdivision Map Act and Section 83.0408 of the County Development Code).

Auditor's and Board of Supervisors' Certificates, per Sections 2.8 and 2.9 (Tax Bond), are not required for a reversion to acreage map.

2.13 CONDOMINIUM MAPS:

Refer to Section 66427 of the Subdivision Map Act. Also see: Section 783, 1350, and 1351 of the Civil Code for definitions and other requirements.

2.14 CEMETERY MAPS:

Cemetery maps are governed by Chapter 3, Division 8 of the State of California Health and Safety code and County Ordinance Number 615. Maps must be tied to survey monuments of record and mathematical data appearing on them must be correct. All approvals and conditions, as required by the Board of Supervisors, shall be met prior to filing of the cemetery map with the County Recorder.

The following statements shall appear on the map:

OWNER'S STATEMENT:

I (We) hereby state that I (we) am (are all and) the only party (parties) having any record title interest in the land subdivided as shown on the annexed map and I (we) consent to the preparation and recordation of this cemetery map.

NOTARY ACKNOWLEDGEMENT (S), See Section 2.2

SURVEYOR'S (OR ENGINEER'S) STATEMENT:

This map was prepared by me or under my direction and is based on a field survey filed in conformance with the requirements of Division 8, Part 3, Chapter 3, Section 8550 Health and Safety Code of the State of California, at the request of _____ in _____ (month) _____, 20____: I hereby state that it is a true and complete representation of said survey.

(Signed and Sealed) Signature _____
(Name printed)

R.C.E. or L. S. No. _____

Expiration Date: _____

2.14 CEMETERY MAPS: (continued)

COUNTY SURVEYOR'S CERTIFICATE:

I hereby certify that I have examined the annexed map, and that all the provisions of Chapter 3, Division 8 of the Health and Safety Code of the State of California and San Bernardino County Ordinance No. 615 have been complied with and I am satisfied that this map is technically correct.

Date: _____

Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

L. S. No. _____

Expiration Date: _____

ACCEPTANCE CERTIFICATE:

I hereby certify that the Board of Supervisors of the County of San Bernardino duly approved this (the annexed) map of Tract No. _____.

Date: _____

J. Renee' Bastian
Clerk of the Board of Supervisors
of the County of San Bernardino

By: _____, Deputy

SECTION 3
PARCEL MAPS

3.1 Parcel maps may be submitted in this County for minor subdivisions as described in Section 66444 of the Subdivision Map Act. They shall follow the provisions of Section 83.040301 (a) of the San Bernardino County Development Code.

3.2 MAPS:

- A. The parcel map shall be a map legibly drawn with black India Ink printed or reproduced by a process guaranteeing a permanent record in black on a linen or mylar 18"x 26", with a one-inch blank margin at all edges of the map.
- B. Five prints of the proposed parcel map shall be submitted to the County Surveyor for review purposes, and if a natural drainage course or other flood control element is required to be delineated on the map, two additional prints are necessary.
- C. A current preliminary title report along with any schedule "B" documents and checking fee as prescribed by the County Fee Ordinance are required with first submission.
- D. All maps shall be accompanied with pertinent deeds used in the interpretation of the property boundaries and location of any easement as specified by current title report, any private survey maps or notes not on file with the County Surveyor.
- E. Parcel maps will not be recorded until all conditions outlined in the approved minor subdivision plot plan (tentative parcel map) have been met.
- F. Field work is not advised until after conditional approval of the minor subdivision is received from the Planning Department.

3.3 PARCEL MAPS SHALL SHOW:

- A. All monuments found, set, reset, replaced, or removed, describing their kind, size, and location, and giving other data relating thereto.
- B. Bearing or witness monuments, basis of bearings, bearing and length of lines, North indicator, and scale of map. Title description, dimensioning, and lettering shall be based upon the North arrow (see Page 7D).
- C. Name and legal designation of tract or grant in which the survey is located, and ties to adjoining tracts.

3.3 PARCEL MAPS SHALL SHOW: (continued)

- D. Certificates required by Sections 66445 (f), 66447, 66449, and 66450 of the Subdivision Map Act shall be placed on the map, except the Recorder's Certificate (see Section 3.4).
- E. Dedications may be made by a parcel map (Re: Section 66447 of the Subdivision Map Act). Existing easement (s) of record shall be delineated on the map, and the recording information shall be shown.
- F. Each parcel shall be numbered according to the minor subdivision plot plan (tentative parcel map).
- G. Pursuant to Section 66445 (d) of the Subdivision Map Act, effective March 1, 1975, county standards will require that the boundaries of all parcel maps be delineated by a line that is three times wider than any other line delineated on the map.
- H. The minor subdivision number and/or certificate of compliance number and/or variance index number shall be included in the notes.
- I. Notes required are the same as for final maps (Section 2.4), except for Section 3.3 (H) above.

3.4 CERTIFICATES:

A. SURVEYOR'S (ENGINEER'S) STATEMENT

This map was prepared by me or under my direction and is based upon a field survey in conformance with the requirements of the Subdivision Map Act and local ordinance at the request of _____ (print) _____ in _____ 20____. All monuments shown hereon are of the character and occupy the positions indicated. I hereby state that this Parcel Map substantially conforms to the approved or conditionally approved tentative map, if any.

Date: _____
(signed and sealed)

Signature _____
L.S. (R.C.E.) No. _____
Expiration Date _____

3.4 CERTIFICATES: (continued)

B. SURVEYOR'S (ENGINEER'S) STATEMENT

This map was prepared by me or under my direction and is based upon a field survey in conformance with the requirements of the Subdivision Map Act and Local Ordinance at the request of _____ (print) _____ (month) _____ 20____. All monuments shown hereon are of the character and occupy the positions indicated, or will be set in such positions on or before _____ 20____, in compliance with Sections 66495 and 66496 of the Subdivision Map Act. I hereby state that this Parcel Map substantially conforms to the approved or conditionally approved tentative map, if any.

Date: _____

(signed and sealed)

Signature: _____

L. S. (R.C.E.) No. _____

Expiration Date _____

NOTE: Cash staking deposit shall be required based upon the surveyor's or engineer's estimate as approved by the County Surveyor.

C. COUNTY SURVEYOR'S CERTIFICATE

I hereby certify that I have examined the annexed map, and that the subdivision shown thereon is substantially the same as it appeared on the tentative map, if required, and any approved alterations thereof, and that all the provisions of the Subdivision Map Act and Division 3 of the San Bernardino County Development Code have been complied with, and I am satisfied that this map is technically correct.

Date: _____

Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

L. S. No. _____

Expiration Date: _____

3.4 CERTIFICATES: (continued):

C. (continued)

(The following certificate is to appear on all City maps reviewed by the County Surveyor's Office.)

COUNTY SURVEYOR'S CERTIFICATE

This map conforms with the mapping provisions of the Subdivision Map Act and I am satisfied said map is technically correct relative to the Parcel Map boundary and all mathematical computations.

Date: _____ Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

L. S. No. _____

Expiration Date: _____

D. ACCEPTANCE CERTIFICATE

The undersigned officer on behalf of the Board of Supervisors, pursuant to authority Conferred by Section 83.040310 (c) (4) of the San Bernardino County Development Code, hereby approves this (the annexed) map and accepts the following as shown on this (the annexed) map:

1. For existing maintained roads – accept the dedication: (name of street from Owner's Statement).
2. For non-existing and/or non-public maintained roads – accept the dedication but without the obligation as to maintenance or improvement: "(name of street from Owner's Statement) but without the obligation to maintain or improve the roads referred to herein."
3. For roads that are to be built and brought into the County Maintained System – accept subject to their improvement: "(name of street from Owner's Statement) subject to its (their) improvement in accordance with county standards."

Date: _____ Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

L. S. No. _____

Expiration Date: _____

3.4 CERTIFICATES: (continued)

E. OWNER'S STATEMENT
See Section 2.1

F. See Section 2.2 for Notary Acknowledgment and Section 2.10 for Signature Omissions.

G. San Bernardino County Recorder's Certificate. Effective January 1, 2003, all maps submitted for recording must follow these requirements. Failure to follow these requirements may adversely affect the recording process of your map.

It shall be in the lower or upper right hand corner whenever practical.

This map has been filed under Document Number _____,
this _____ day of _____, 20____, at _____ m. in Book _____
of _____ at page _____, at the request
of _____,
in the amount of \$_____.

Larry Walker

Auditor-Controller/Recorder

County of San Bernardino

By: _____

Deputy Recorder

H. AUDITOR'S & CLERK OF THE BOARD OF SUPERVISORS TAX
CERTIFICATES
See Sections 2.8 and 2.9

SECTION 4
COMPOSITE DEVELOPMENT PLAN

4.1 A Composite Development Plan pursuant to Section 83.0405 of the San Bernardino County Development Code shall be filed with the Office of Building & Safety to show information that may be required for a development that does not pertain to record title interest.

4.2 MAPS:

A. The Composite Development Plan shall be a duplicate mylar of the approved map sheet(s) of the final map or parcel map. Each sheet shall be 18" x 26", with a one inch blank margin at all edges of the map.

B. Advanced copies of the plan shall be submitted to the Final Map/Parcel Map Section for distribution to each office or section that requires review and approval, i.e. (2) copies to Planning for B.S.L.'s, (2) copies to Drainage for applicable drainage B.S.L.'s, (2) copies to Building & Safety for geological criteria.

C. The Composite Development Plan will be filed with the Office of Building & Safety concurrently with the acceptance of the final map by the Board of Supervisors or the acceptance of a parcel map by the County Surveyor.

4.3 COMPOSITE DEVELOPMENT PLANS SHALL SHOW:

A. The top margin of all map sheets shall be prominently labeled "Composite Development Plan" and include area location. Also add Section, Township and Range, if not already in the title heading.

B. The plan shall contain a section titled "Composite Development Plan Notes". The County may list here any conditions or mitigating measures stipulated for the development of the subject property. Any explanatory notes related to criteria delineated on the map shall also be listed within this section. In addition, any related reports regarding development criteria shall be listed, including the following information.

(I) Title and date of the report.

(II) Name and credentials of person or firm preparing report.

4.3 COMPOSITE DEVELOPMENT PLANS SHALL SHOW: (continued)

B. (continued)

(III) The location where the reports are on file.

Example:

A soils report was made by _____,
R.C.E. No. _____ on _____, 20____ and
filed with the Office of Building & Safety.

C. The plan may delineate and note applicable criteria to the development of the subject property. These criteria are limited to:

- (I) Building criteria (i.e., Building Setback Lines). Any street setback lines that are delineated on Composite Development Plans shall be the street and yard setback distances required on the property.
- (II) Geological and Seismic Criteria.
- (III) Grading Criteria
- (IV) Flood Control Criteria (i.e. setbacks, hazard note).
- (V) Environmental Criteria.
- (VI) Incorporation of Special Map Requirements referred in General Regulations.
- (VII) All easements of record shall be delineated on the plan.

D. (The following certificates shall be placed on the first map sheet if possible.)

ENGINEER'S (SURVEYOR'S) STATEMENT

Notes on this plan are for informational purposes, to indicate conditions of development that exist on this subdivision that are known and identified as of (date map filed) _____ and is not intended to effect record title interest. This information is derived from public records or reports and the undersigned is not responsible for the correctness or sufficiency of those records and reports.

Dated: _____

(signed and sealed) Signature _____
R.C.E. or L.S. No. _____
Expiration Date _____

4.3 COMPOSITE DEVELOPMENT PLANS SHALL SHOW: (continued)
D. (continued)

COUNTY SURVEYOR'S STATEMENT:

This plan has been examined for conformance with the requirements of
Section 66434.2 of the Subdivision Map Act and Section 83.040501 of the
County Code and is hereby approved.

Date: _____

Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

L. S. No. _____

Expiration Date: _____

SECTION 5
OFFICIAL MAPS

5.1 Official Maps may be submitted in this County as described in Section 66499.52(b) of the Subdivision Map Act and Section 83.041001(b) of the San Bernardino County Development Code. Official Maps shall follow the provisions of Section 83.041005 of the San Bernardino County Development Code. A tentative map application shall be filed with the Planning Department for conditional approval.

5.2 MAPS:

A. The Official Map shall be a map legibly drawn with black India ink printed or reproduced by a process guaranteeing a permanent record in black on a linen or mylar 18" x 26" with a one-inch blank margin at all edges of the map. The map shall be drawn on the front of the mylar.

B. Five prints of the proposed Official Map shall be submitted to the County Surveyor for review purposes and if a natural drainage course or other flood control element is required to be delineated on the map, two additional prints are necessary.

C. A current preliminary title report and checking fee as prescribed by the County Fee Ordinance are required with the first submission.

D. All maps shall be accompanied by pertinent deeds used in the interpretation of the property boundaries and location of any easement as specified by the current title report and any private survey maps or notes not on file with the County Surveyor.

E. Official Maps shall not be recorded until all conditions outlined in the conditionally approved tentative map have been met.

F. All Official Maps shall be based upon a field survey performed by a Licensed Land Surveyor or Registered Civil Engineer.

5.3 OFFICIAL MAPS SHALL SHOW:

A. All monuments found, set, reset, replaced, or removed, describing their kind, size and location, and giving other data relating thereto.

B. Bearings or witness monuments, basis of bearings, bearing and length of lines, North indicator, and scale of map. Title description, dimensioning, and lettering shall be based upon the North arrow (see page 7D).

5.3 OFFICIAL MAPS SHALL SHOW: (continued)

- C. Private road easements or grants of easement to each lot shall be made by separate instrument, or a note shall be placed on the map that dedication shall be required prior to building permits. Existing easement(s) of record shall be delineated on the map and the recording information shall be shown.
- D. The boundary of the land of the illegal subdivision that encompasses the mapped parcels shall be shown by a line three times wider than any other line delineated on the map.
- E. Notes required are the same as for Final Maps (see Section 2.4)

5.4 CERTIFICATES

A. CERTIFICATE OF ADOPTION

I _____, Chairman of the Board of Supervisors of the County of San Bernardino, State of California, with the approval of a majority of the members of said Board of Supervisors, do hereby certify that the herein map was on the _____ day of _____ 20____, adopted by the said Board of Supervisors as the Official Map of the property therein described by a resolution of adoption as follows:

Be it resolved that Official Map No. _____ is hereby adopted as the Official Map of the property described as provided in Section 64499.52, et seq., of the Government Code of the State of California.

B. SURVEYOR'S (ENGINEER'S) CERTIFICATE (rev. 1/30/2002)

This map was prepared by me or under my direction and is based upon a field survey in conformance with the requirements of the Subdivision Map Act and local ordinance at the request of (name of person authorizing map) on (date). All monuments shown hereon are of the character and occupy the positions indicated in compliance with Section 66495 of the Subdivision Map Act and are sufficient to enable the survey to be retraced.

Date: _____
(Signed and Sealed)

Professional Land Surveyor No. _____
(or Registered Civil Engineer No. _____)
Expiration Date _____

5.4 CERTIFICATES: (continued)

C. COUNTY SURVEYOR'S CERTIFICATE

I hereby certify that I have examined the annexed map and that the subdivision shown hereon is substantially the same as it appeared on the tentative map and any approved alterations thereto, and that all the provisions of the Subdivision Map Act and Division 3 of the San Bernardino County Development Code have been complied with and I am satisfied that this map is technically correct.

Date: _____

Daniel C. Moye, COUNTY SURVEYOR
COUNTY OF SAN BERNARDINO

By: _____ Deputy

L. S. No. _____

Expiration Date: _____

6.0 RECORDER'S STANDARDS (See Sections 2.3C & 3.4G)

(Amended 12/17/2002)

In order to provide legible and reproducible recorded maps, my office has coordinated with the County Recorder in establishing the following requirements. These requirements are in addition to the State Subdivision Map Act Requirement, Land Surveyors Act or any other State statute that governs the filing of maps with the County Recorder.

- * Maps must be drawn with black permanent ink (not gray).
- * Maps must be drawn on the top of the Mylar (not the back side).
- * Maps must be drawn on white Mylar (Polyester)(No off-color) 3 mil or 4 mil thick.
- * Adequate lettering (not thin). Smallest letters and numbers not less than 8 pt.
- * No shading. (Shading does not show up on scanning or microphotography.)
- * Line width and character stroke width must be between .014" and .020".
- * Character width must be 80%-100% (do not use condensed or compressed at a rate of less than 80%).
- * If an original is submitted in which portions of the map have been duplicated it must be a legible direct positive Mylar.
- * Street names must be clearly shown.
- * Map size is to be 18" x 26" with a 1" blank border.
- * Indicate Section, township and range for indexing purposes.
- * Maps must have the San Bernardino's County Recorder's Certificate printed on them prior to submission for recordation. The certificate shall appear in the lower or upper right hand corner on the first map sheet.

Effective January 1, 2003, all maps submitted for recording must follow these requirements. Failure to follow these requirements may adversely affect the recording process of your map.

End of document.

APPENDIX S: SPILL RESPONSE FLOW CHART



SAN BERNARDINO COUNTY-SPECIAL DISTRICT DEPARTMENT
WASTEWATER DIVISION

SPILL RESPONSE FLOW CHART

Arrival at SSO - "Record Time of Arrival"

ASSESS SPILL SITE

"CONTACT DISTRICT OFFICE"
ANY SPILLAGE INTO OR THE POTENTIAL TO ENTER RECEIVING
WATERS?
EXPLAIN WHAT IS NEEDED TO MITIGATE SITUATION?
ANY SCHOOLS IN AREA?

MAKE YOUR WORK AREA SAFE

"CONTAIN"
[DIRECT SEWAGE FLOW OR HOLD IN PARTICULAR AREA]
PHOTOGRAPH AREA

Rough Gallonage Estimate
SSO Direction

Notification:
Category #1 <2 hours
Category #2 <4 hours
Category #3 and
Category #4 OES/ DEHS /
DFG / Regional Board's

MAINLINE WILL NOT
OPEN
RE-CONTACT OFFICE

"Record Time SSO
Relieved"

"CONTROL"
RELIEVE STOPPAGE
PROOF [CLEAN] MAINLINE
INSPECT D/S OF STOPPAGE

"Record Time SSO
Relieved"

"CONTROL"
BY PASS

PERFORM ESTIMATE ON GALLONAGE OF SPILL

"CLEAN-UP AREA"
POST AREA IF INSTRUCTED

CCTV ASAP

"CLEAN-UP AREA"
POST AREA IF INSTRUCTED

PERFORM ESTIMATE ON GALLONAGE OF SPILL

CCTV ASAP

Photograph

CORRECT PROBLEM
INSPECT D/S OF STOPPAGE

SAMPLING PROCEDURES

ANY PROPERTY DAMAGE?

SAMPLING PROCEDURES

ANY PROPERTY DAMAGE

YES

NO

Photograph

YES

NO

BACKWATER VALVE NOTICE FORM
CLAIM FOR DAMAGES FORM

COMPLETE DOCUMENTATION

BACKWATER VALVE NOTICE FORM
CLAIM FOR DAMAGES FORM

COMPLETE DOCUMENTATION

COMPLETE DOCUMENTATION

1] Enter SSO Report Data into CIWQS Data Base [SWRCB] Deadline
based one Category of SSO
2] Provide Complete SSO Report to Regional Board (RWQCB)
Within 10 Business Days
3] Provide Complete SSO Report to other Regulatory Agencies
when requested [Example: DFG/ DEHS / Local Water Purveyors]