



# Sewer System Management Plan

Public Works Department  
345 Foothill Road  
Beverly Hills, California 90210

December 2012

Prepared by



# SEWER SYSTEM MANAGEMENT PLAN



City of Beverly Hills  
Public Works and Transportation Department  
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## **INTRODUCTION**

A Sewer System Management Plan (SSMP) is defined as a document that describes the activities an agency uses to effectively manage its wastewater collection system with the ultimate goal of protecting human health and the environment. Effective management of a wastewater collection system includes the following:

- Maintaining or improving the condition of the collection system infrastructure in order to provide reliable service into the future;
- Cost-effectively minimizing infiltration/inflow (I/I) and providing adequate sewer capacity to accommodate design storm flows; and
- Minimizing the number and impact of sanitary sewer overflows (SSO's) that occur.

In order to achieve these management objectives, the State Water Resources Control Board and its subsidiary Regional Water Quality Control Boards require that each wastewater collection system agency develop and implement its own unique SSMP.

The City of Beverly Hills has prepared the following SSMP in accordance with the guidelines of the California Water Environment Association (CWEA). The resultant document is a compendium of the existing policies, procedures, and activities that are included in the planning, management, operation, and maintenance of the City's sanitary sewer system.

The structure (section numbering and nomenclature) of this SSMP follows the General Waste Discharge Requirements for Wastewater Collection Agencies (GWDR), State Water Resources Control Board Order Number 2006-0003 dated May 2, 2006. In summary, the required elements of this SSMP are:

1. Collection system management goals
2. Organization of personnel, including the chain of command and communications
3. Legal authority for permitting flows into the system, inflow/infiltration control as well as enforcement for proper design, installation, and testing standards, and inspection requirements for new and rehabilitated sewers
4. Operations and maintenance activities to maintain the wastewater collection system
5. Design and performance provisions
6. Overflow emergency response plan
7. Fats, Oils, and Greases (FOG) control program
8. System evaluation and capacity assurance program
9. Monitoring, measurement, and modifications plan for SSMP program effectiveness
10. Periodic internal SSMP audits
11. SSMP communication program



## DEFINITIONS/ABBREVIATIONS/ACRONYMS

### Terms That Appear in This Guide (Glossary)

Some terms and acronyms used in this document (and/or the Statewide GWDR), along with their definitions, are as follows:

Authorized Representative – The person designated, for a municipality, state, federal or other public agency, as either a principal executive officer or ranking elected official, or a duly authorized representative of that person.

Blockage – Something that partially or fully blocks the wastewater from flowing 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 Association of Sanitation Agencies (CASA) – CASA is a non-profit, statewide trade association representing 16 public agencies that provide wastewater collection, treatment, disposal, and water reclamation services to 90 percent of the sewered population in California. CASA's mission is to provide proactive leadership, innovative solutions, timely education and information to members, legislators, and the public, and to promote partnerships on wastewater issues with other organizations, so that sound public health and environmental goals may be achieved. Website: <http://casaweb.org/>

California Emergency Management Agency (CalEMA) – A cabinet-level agency responsible for overseeing and coordinating emergency preparedness, response, recovery and homeland security activities within the state.

California Integrated Water Quality System (CIWQS) – Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system.

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/>

CIP – Capital Improvement Plan.

Closed Circuit Television (CCTV) – The use of video cameras to inspect the interior of the sewer system and record that data onto a DVD.



Dynamic Model – Computer hydraulic model simulation which solves the complete dynamic flow routing equations (St. Venant’s equations) for accurate simulation of backwater, looped connections, surcharging, and pressure flow in a collection system.

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

Environmental Protection Agency (EPA) – Refers to the United States Environmental Protection Agency.

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 SSO’s.

FOG Control Program – To be implemented at the Enrollee’s discretion. May include 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.

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.

Governing Board – This is the governing board of the sewer entity developing the SSMP. Examples would be the Board of Directors, the City Council, or the County Board of Supervisors.

GWDR – General Waste Discharge Requirements – Similar to a NPDES permit but with significant differences. 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. WDR’s do not sunset, unlike NPDES permits, and are most commonly issued by the Regional Water Boards. The Statewide General WDR for Sanitary Sewer Systems was adopted by the SWCRB and will be implemented by the Regional Water Boards and SWRCB.

Groundwater Induced Infiltration (GWI) – Infiltration attributed to groundwater entering the sewer system.



Infiltration – The seepage of groundwater into a sewer system, including service connections. Seepage frequently occurs through defective or cracked pipes, pipe joints, connections or manhole walls and joints.

Inflow – Water discharged into a sewer system and service connections from such sources as, but not limited to, roof leaders, cellars, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, around manhole covers or through holes in the covers, cross connections from storm and combined sewer system, catch basins, storm waters, surface runoff, street wash waters or drainage. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than a leak into the sewer itself.

I/I – Infiltration and Inflow

Lateral – The portion of sewer that connects a home or business with the main line in the street. Sometimes sewer system agencies own or maintain a portion of the lateral.

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

*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.

Los Angeles Regional Water Quality Control Board – Also known as Regional Water Board or RWQCB. The mission of this state regulatory agency is to: preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. Website: <http://waterboards.ca.gov/losangeles/>

Manhole (MH) – Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection.

MRP – 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 GWDR.

OERP – 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.

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.

Preventative Maintenance – Regularly scheduled servicing of machinery, infrastructure or other equipment using appropriate tools, tests, and lubricants. This type of maintenance can prolong



the useful life of equipment, infrastructure, and machinery and increase its efficiency by detecting and correcting problems before they cause a breakdown of the equipment, or failure of the infrastructure.

R-Value – The amount of rainfall that reaches the collection system via infiltration and inflow. This value is typically expressed as a percentage of total rainfall volume that reaches the collection system.

Rainfall Dependent Infiltration and Inflow (RDII) – Infiltration and Inflow that is attributed directly to rainfall.

Regional Water Board – Short name for any of the nine regional boards including the Los Angeles Area Regional Water Quality Control Board.

Rehabilitation and Replacement Plan (also referred to as Capital Improvement Plan) – Identifies and prioritizes system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency.

Sanitary Sewer Overflow (SSO) – The Statewide GWDR 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 – All discharges of sewage resulting from a failure in the Enrollee’s sanitary sewer system that equals or exceeds 1000 gallons; or result in a discharge to a drainage channel and/or surface water; or discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.
- Category 2 – All other discharges of sewage resulting from a failure in the Enrollee’s sanitary sewer system
- Private Lateral Sewage Discharges – Sewage discharges that are caused by blockages or other problems within a privately owned lateral

Sanitary Sewer Systems – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities are considered to be part of the sanitary sewer system and discharges into these temporary storage facilities are not to be considered SSO’s.

Santa Monica Bay Restoration Commission – SMBRC – The SMBRC is a coalition of environmentalists, government, scientists, business and the public that was formed in 1988 to develop a Santa Monica bay Restoration Plan. One of the first among 27 National Estuary Programs nationwide, the SMBRC is funded by the US Environmental Protection Agency, the State of California, and the Santa Monica Bay Restoration Foundation. Its mission has been to



create a comprehensive plan to ensure the long-term health of Santa Monica Bay, the 266-square-mile body of water located adjacent to the heavily urbanized, second most populous region in the United States.

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.

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. Includes provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer system, while taking into consideration risk management and cost benefit analysis. Also must contain a spill response plan. Certification is offered by technically qualified and experienced persons and provides a useful cost effective means for ensuring that SSMP's are developed and implemented appropriately.

Southern California Alliance of Publicly Owned Treatment Works (SCAP) – SCAP is a non-profit organization comprised of Publicly Owned Treatment Works (POTW's) including wastewater treatment plants (WWTP) and public collection system owner/operators dedicated to assisting its member cities and agencies in achieving regulatory compliance. Website: <http://scap1.org/>

State Water Resources Control Board (SWRCB) – Also called the State Board. This is the State agency that developed and passed the GWDR for collection systems and the agency that maintains the SSO reporting web site.

Static Model – A computer hydraulic model that uses the Manning's Equation to determine hydraulic capacity of the gravity pipelines and either the Manning's or Hazen-Williams Equations to determine the hydraulic capacity of the pressure pipeline system. The capacity is compared to the peak hydraulic flow in the system to determine potential deficiencies. The static model assumes the peak hydraulic flow occurs at all locations within the collection system at the same time.

Stoppage – Something that partially or fully blocks the wastewater from flowing through a sewer pipeline. A stoppage 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, a stoppage may cause an overflow. This is also called a blockage.

System Evaluation and Capacity Assurance Plan – A required component of an agency's SSMP and 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.

Wastewater Collection System – See Sanitary Sewer System.



WDR – General Waste Discharge Requirements (GWDR) – Similar to a NPDES permit but with significant differences. 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. WDR's do not sunset, unlike NPDES permits, and are most commonly issued by the Regional Water Boards. The Statewide General WDR for Sanitary Sewer Systems was adopted by the SWCRB and is implemented by the Regional Water Boards and SWRCB.



## SECTION 1. GOALS

### 1.1 Introduction

This section of the Sewer System Management Plan (SSMP) identifies goals the City has set for the management, operation and maintenance of the sewer system and discusses the role of the SSMP in supporting these goals. These goals provide focus for City staff to continue high-quality work and to implement improvements in the management of the City's wastewater collection system. This section fulfills the Goals requirement of the General Waste Discharge Requirements (GWDR) of the State Water Resources Control Board (SWRCB) Element 1 SSMP Requirements.

### 1.2 Regulatory Requirements for Goals Section

The summarized requirements for the Goals section of the SSMP are:

#### **GWDR (Element 1 - Goals) Requirement:**

*The collection system agency must develop goals to properly manage, operate, and maintain all parts of its wastewater collection system in order to reduce and prevent SSO's, as well as mitigate any SSO's that occur.*

*Each wastewater collection system agency shall develop goals for the Sewer System Management Plan as follows:*

- *To properly manage, operate, and maintain all parts of the wastewater collection system;*
- *To provide adequate capacity to convey peak flows;*
- *To minimize the frequency of sanitary sewer overflows (SSO's); and*
- *To mitigate the impact of SSO's.*

### 1.3 SSMP Goals

The goals of the City of Beverly Hills are to:

- Properly manage, operate, and maintain the wastewater collection system;
- Maintain design construction standards and specifications for the installation of new wastewater systems and upgrades to existing infrastructure;
- Verify the wastewater collection system has adequate capacity to convey sewage during peak events;
- Minimize the frequency of sanitary sewer overflows;
- Respond to sanitary sewer overflows quickly and mitigate the impact of overflows;
- Provide training on a regular basis for staff in collection system maintenance and operations;
- Encourage and support participation in the California Water Environment Associations' voluntary Wastewater Certification Program and on-going training programs;



- Implement a Regular, proactive Fats, Oil, and Grease (FOG) maintenance program to limit fats, oils, grease, and other debris that may cause blockages in the sewer collection system;
- Identify and prioritize structural deficiencies and implement short-term and long-term maintenance and rehabilitation actions to address each deficiency;
- Protect the environment and prevent public health hazards;
- Use funds available for sewer operations in the most efficient manner;
- Perform all operations in a safe manner to avoid personal injury and property damage;
- Meet all applicable regulatory notification and reporting requirements;
- Provide a fair and equitable method of imposing wastewater charges;
- Facilitate the enactment of regulations for the wastewater system that are mandated by the Environmental Protection Agency and the State of California;
- Maintain public education outreach in support of the SSMP program; and
- Provide excellent customer service.

This SSMP supplements and supports the City's existing Operations & Maintenance program and goals by providing high-level, consolidated guidelines and procedures for all aspects of the City's sewer system management. The SSMP will contribute to the proper management of the collection system and assist the City in minimizing the frequency and impacts of SSO's by providing guidance for appropriate maintenance, capacity management, and emergency response.



## SECTION 2. ORGANIZATION

### 2.1 Introduction

This section of the SSMP identifies City staff responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements. This section also includes the designation of the Authorized Representative to meet SWRCB requirements for completing and certifying spill reports. This section fulfills the Organization requirement of the GWDR Element 2 - Organization SSMP Requirements.

### 2.2 Regulatory Requirements for Organization Section

The summarized requirements for the Organization section of the SSMP are:

#### **GWDR (Element 2 - Organization) Requirement:**

*The collection system agency's SSMP must identify:*

- *The name of the responsible or authorized representative;*
- *The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. Include lines of authority as shown in an organization chart or similar document with a narrative explanation; and*
- *The chain of communication for reporting SSO's, from receipt of a complaint or other information, including the person responsible for reporting SSO's to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, and/or California Emergency Management Agency (CAL E.M.A.)).*

### 2.3 Organization

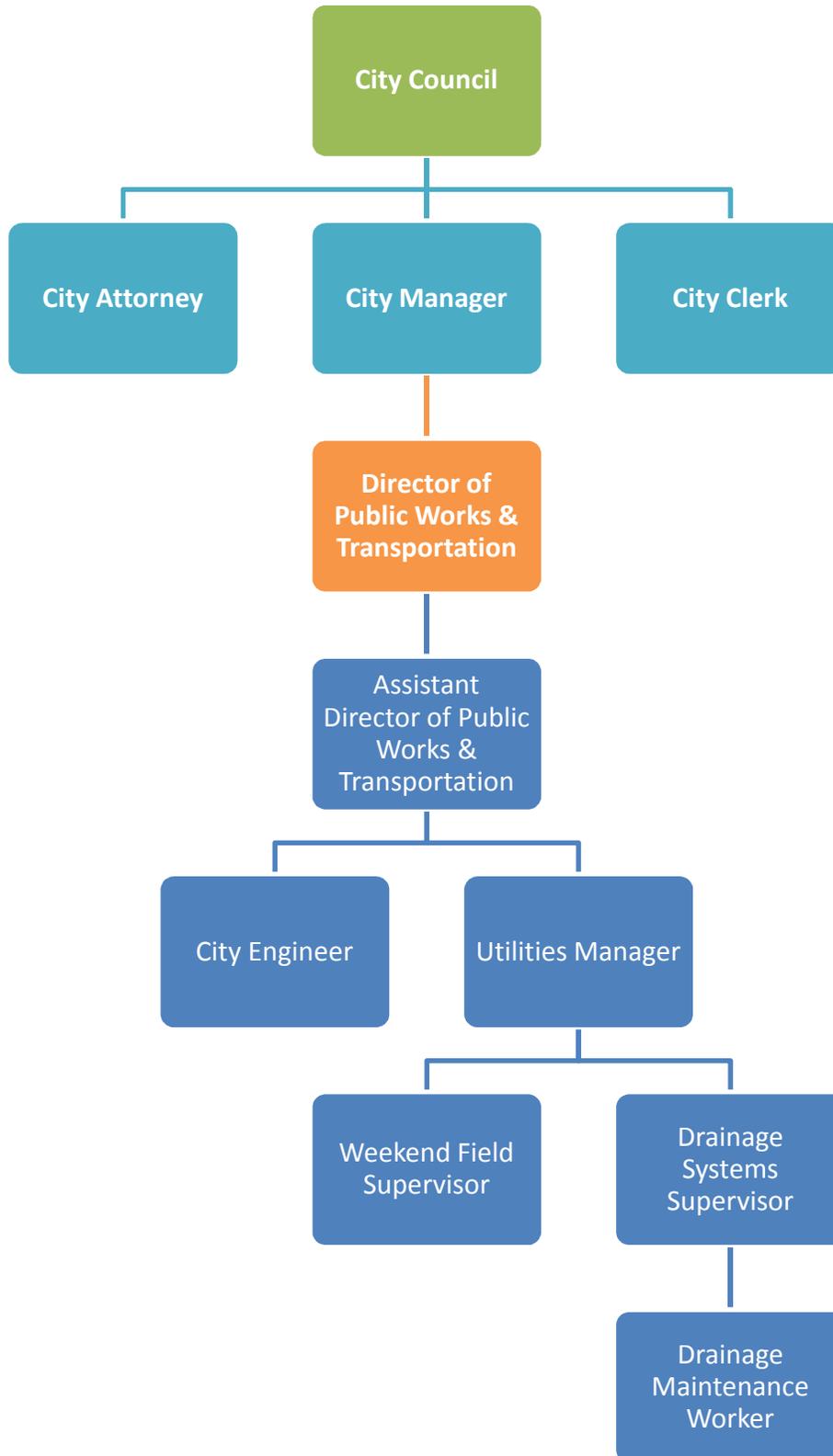
#### 2.3.1 Reporting Structure

The City of Beverly Hills is operated under the City Council/City Manager form of government. The City Manager reports to the Council and is responsible for city-wide operations. The Director of Public Works and Transportation reports to the City Manager and is responsible for the Water and Wastewater Divisions and provides updates to the City Council on the status of water and wastewater operations. The Drainage Systems Supervisor is responsible for the daily operation of the collection system. Collection System Operators (Operators) report to and are given direction from the Drainage Systems Supervisor.

The organization chart for the management, operation, and maintenance of the City's wastewater collection system is shown on Figure 2-1.



Figure 2-1. Organization Chart



### **2.3.2 Service Calls/Sanitary Sewer Overflow Reporting**

#### **Service Calls:**

The City of Beverly Hills operates two main communication centers (Public Works and Transportation Customer Service Center and Police/Fire Dispatch) that receive calls from the general public. During normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday and 8:00 a.m. to 5:00 p.m. on Fridays) all wastewater related phone calls are transferred to the Drainage Systems Supervisor. During all other hours, phone calls to City Hall are automatically transferred to the Police/Fire Dispatch for routing to the Drainage Systems Supervisor if related to wastewater.

The collection system is staffed from 6:30 a.m. to 4:00 p.m. Tuesday through Thursday, and 6:30 a.m. to 5:00 p.m. Friday through Monday. Operators are designated weekly to carry a cellular telephone for after-hour emergencies. (Note: The City has an automated telephone system which notifies the operator and supervisor for after-hour emergencies).

The Drainage Systems Supervisor is required to carry the wastewater division cellular telephone at all times. Immediately after Operators receive a call, they shall call the telephone number sent on the telephone, and acknowledge receipt of the call. The Operator shall respond to the emergency as required.

In the absence of the Drainage Systems Supervisor (after hours), Drainage Maintenance Workers are responsible to respond as required for collection system and emergencies. A situation may occur where Drainage Maintenance Workers will need specialized equipment, physical assistance, and (or) technical advice. If needed, Drainage Maintenance Workers may call in other employees, and/or contractors for assistance during an emergency. Drainage Maintenance Workers are instructed to contact the Drainage Systems Supervisor in case of any emergency. If the Supervisor cannot be reached, Drainage Maintenance Workers are instructed to contact the Utilities Manager. If the Utilities Manager is not available, contact the Director of Public Works and Transportation. The Utilities Manager acts as shift supervisor when the Drainage Systems Supervisor is not present.



**Sanitary Sewer Overflow Reporting:**

Once notified, Drainage Maintenance Workers on duty will be dispatched to the location for immediate response.

All Wastewater personnel shall document all spills in the following reports and actions. The reports shall be forwarded to the Drainage Systems Supervisor for investigation and/or follow-up.

- Hansen work order and/or stoppage sheet
- Sewer Spill Report Form (RWQCB)
- Phone calls to CAL-E.M.A., LACDPH, and RWQCB
- Complete online reporting to CIWQS by designated data entry staff and certified by an LRO

**2.3.3 Authorized Representative**

The City’s Authorized Representative in all wastewater collection system matters is the Utilities Manager and his/her designee. The Utilities Manager and Drainage Systems Supervisor are authorized to certify electronic spill reports submitted to the SWRCB.

The Drainage Systems Supervisor is authorized to act in the Utilities Manager’s absence. The Drainage Systems Supervisor is authorized to submit SSO reports to the appropriate government agencies.

**2.3.4 Responsibility for SSMP Development, Implementation, and Maintenance**

The Utilities Manager is responsible for implementing all elements of this SSMP. The Utilities Manager has the responsibility for developing, periodically auditing, and maintaining the City’s SSMP. The Utilities Manager may delegate the responsibility for developing, periodically auditing, and maintaining portions of this SSMP to his/her staff.

**2.3.5 SSO Reporting Chain of Communication**

Figure 2-2 contains a flowchart depicting the chain of communication for responding to and reporting SSO’s, from observation of an SSO to reporting the SSO to the appropriate regulatory agencies. Table 2-1 lists contact phone numbers for the parties included in the chain of communication. The SSO Reporting process is described in more detail in Section 6: Overflow Emergency Response Plan.

**Table 2-1. Contact Numbers for SSO Chain of Communication**

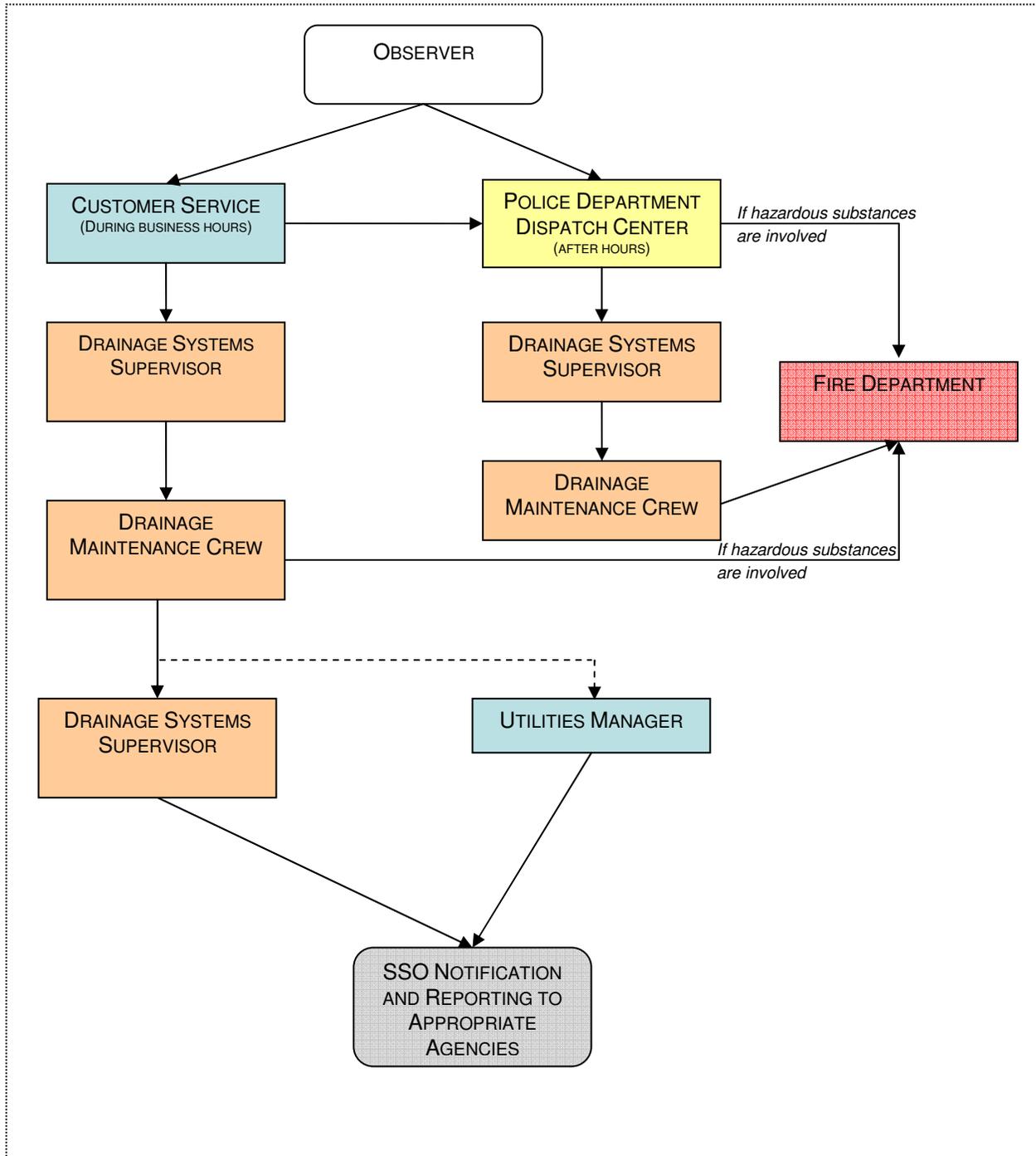
CONTACT	TELEPHONE NUMBER
City of Beverly Hills, Utilities Manager VACANT	
City of Beverly Hills, Senior Management Analyst Christian Di Renzo	(310) 285-2821



City of Beverly Hills, Drainage Systems Supervisor Ken Gettler	(310) 285-2469 (310) 487-3293
City of Beverly Hills, Senior Drainage System Worker Fausto Zagal	(310) 285-2467
City of Beverly Hills, Drainage Maintenance Worker II D'Andre Williams	(310) 285-2467
City of Beverly Hills, Drainage Maintenance Worker II Gardner McKay	(310) 285-2467
City of Beverly Hills, Drainage Maintenance Worker II Paul Marquez	(310) 285-2467
City of Beverly Hills, Drainage Maintenance Worker II Salvador Gomez	(310) 285-2467
City of Beverly Hills, Drainage Maintenance Worker II Andrew Diaz	(310) 285-2467
City of Beverly Hills, Drainage Maintenance Worker I Daniel S. Boyle	(310) 285-2467
City of Beverly Hills, Drainage Maintenance Worker I Jose Alvarez	(310) 285-2467



Figure 2-2. SSO Response Chain of Communication



## SECTION 3. LEGAL AUTHORITY

### 3.1 Introduction

This section of the SSMP discusses the City's Legal Authority, including the Municipal Code and agreements with other agencies. This section fulfills the Legal Authority requirement of the GWDR Element 3 – Legal Authority SSMP Requirements.

### 3.2 Regulatory Requirements for Organization Section

The summarized requirements for the Legal Authority section of the SSMP are:

#### **GWDR (Element 3 – Legal Authority) Requirement:**

*The wastewater collection system agency must demonstrate, through collection system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:*

- *Prevent illicit discharges into its wastewater collection system (examples may include infiltration and inflow (I/I), storm water, chemical dumping, unauthorized debris and cut roots, etc.);*
- *Require that sewer and connections be properly designed and constructed;*
- *Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City;*
- *Limit the discharge of fats, oils, and grease and other debris that may cause blockages;*
- *Enforce violation of its sewer ordinances;*
- *Authority to inspect grease producing dischargers; and*
- *Authority to enforce sewer-related ordinances.*

### 3.3 Municipal Code

The City of Beverly Hills' City Code, Title 6, Chapter 1, Article 3, describes the City's current legal authorities. The legal authorities provided by the City Code and other sources that address the regulatory requirements are summarized on Table 3-1. A copy of the current version of Chapter 1, Article 3 is included in Appendix 3-A.



**Table 3-1. Summary of Legal Authority in Municipal Code and Other Sources**

REQUIREMENT	MUNICIPAL CODE REFERENCE	MEETS GWDR REQUIREMENTS?
<b>General</b>		
Prevent illicit discharges into the wastewater collection system	Section 6-1-304.B Section 6-1-307.K Section 6-1-308.A	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	Section 6-1-311.C	Yes
Require that sewer and connections be properly designed and constructed	Section 6-1-308.C Section 6-1-308.F.1-7	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	Section 6-1-308.E Section 6-1-307.A,B,C	Yes
<b>Laterals</b>		
Clearly define City responsibility and policies	Section 6-1-306 Section 6-1-307.A,B,C,H	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City	Section 6-1-308.E Section 6-1-307.C Section 6-1-315	Yes
Control infiltration and inflow (I/I) from private service laterals	Section 6-1-307	Yes
<b>FOG Source Control</b>		
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements	Section 6-1-311.A Section 6-1-311.C City Standard Plan (Industrial Waste Only)	Yes
Authority to inspect grease producing facilities	Section 6-1-315	Yes
<b>Enforcement</b>		
Enforce any violation of its sewer ordinances	Section 6-1-305 Section 6-1-316	Yes

**Note:** Sections 6-1-309 to 6-1-316 deal with industrial discharges.



### **3.4 Agreements with Other Agencies**

1. **City of Los Angeles:** The City of Beverly Hills entered into an agreement with the City of Los Angeles on March 9, 1999 for the conveyance, treatment and disposal of wastewater. This agreement is included as Appendix 3-B in this SSMP.
2. **County of Los Angeles:** The City of Beverly Hills entered into an agreement with the County of Los Angeles on August 14, 1990 for the enforcement of the industrial waste provisions of the City's Municipal code. These services include, but are not limited to providing inspections, filing of required reports, and issuing permits. The services shall also include the inspection of open sanitary spills only in the event that the City, by action of City Council, requests such services. This agreement is included as Appendix 3-C in this SSMP.



## APPENDIX 3-A. CITY OF BEVERLY HILLS CITY CODE, CHAPTER 1, ARTICLE 3

### ARTICLE 3 WASTEWATER SYSTEM

- 6-1-301: Title
- 6-1-302: Purpose
- 6-1-303: Definitions
- 6-1-304: Applicability
- 6-1-305: Penalties For Violation Of Provisions
- 6-1-306: Record Keeping By City
- 6-1-307: Wastewater System; General Regulations
- 6-1-308: Sewer Connection Regulations
- 6-1-309: Permit Requirements And Regulations For Industrial Discharge
- 6-1-310: Industrial Discharge Fees
- 6-1-311: General Requirements For Industrial Discharge
- 6-1-312: Industrial Waste And Discharge Limits
- 6-1-313: Environmental Impact Report
- 6-1-314: Self-Monitoring And Reporting
- 6-1-315: Compliance Inspection And Reporting
- 6-1-316: Remedial Actions, Revocations And Suspensions

#### **6-1-301: TITLE:**

This article shall be referred to as the WASTEWATER ORDINANCE OF THE CITY OF BEVERLY HILLS. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)

#### **6-1-302: PURPOSE:**

The purpose of this article is to protect the environment and public health by providing for the regulation of the construction and operation of wastewater systems and the discharge of wastewater into the city of Beverly Hills wastewater system, to provide a fair and equitable method of imposing wastewater charges, and to facilitate enactment of regulations for the wastewater system that are mandated by the environmental protection agency and the state of California. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)

#### **6-1-303: DEFINITIONS:**

For the purpose of this article, the following words and phrases shall be construed herein as set forth in this section:

ACT: The federal water pollution control act, also known as the clean water act, as amended, 33 USC 1251, et seq. (40 CFR 403.3(B)).



**AVERAGE DAILY FLOW:** The number of gallons of sewage discharged into the public sewers during a twenty four (24) hour period.

**BOD OR BIOCHEMICAL OXYGEN DEMAND:** The measure of decomposable organic material in domestic or industrial wastewaters as represented by the oxygen utilized over a period of five (5) days at twenty degrees centigrade (20°C) and as determined by the appropriate procedure in "standard methods".

**BACKWATER VALVE OR DEVICE:** A valve installed in a house or industrial connection sewer to prevent sewage backflows into the internal plumbing facilities.

**CITY BUILDING OFFICIAL:** The chief administrative official for the building and safety department of the city or his duly authorized representative.

**CLARIFICATION:** The process of removal and retention of turbidity, settleable solids, and deleterious, hazardous, or undesirable matter from wastes by sedimentation or flotation.

**CLARIFIER:** A device or structure which separates and retains suspended solids, settleable solids, deleterious, hazardous, or undesirable matter from wastes prior to discharge into public sewer.

**COMMERCIAL USE:** Any commercial or business establishment, office, hotel, motel, or hospital.

**DIRECTOR OF PUBLIC WORKS AND TRANSPORTATION:** The chief administrative official of the transportation and engineering department of the city or his duly authorized representative.

**DISCHARGER:** Any person who discharges or causes a discharge to a public sewer.

**DOMESTIC WASTEWATER:** The water carried wastes not produced from commercial or industrial activity and which result from normal human living processes.

**EPA:** The United States environmental protection agency.

**FACILITY:** A pipe or structure constructed for the purpose of collecting, conveying, pumping, treating and disposing of industrial wastewater and sewage.

**GREASE TRAP:** A device that separates grease or oil from wastewater flows prior to discharge to the industrial connection sewer.

**GROSS FLOOR AREA:** The area included within the exterior of the surrounding walls of a building or portions thereof, exclusive of courts.

**HOUSE CONNECTION SEWER:** That part of the sewer piping that connects to the internal structure plumbing and connects with the public sewer in the public right of way.

**INDIRECT CHARGE (Into A Sewer):** The introduction of pollutants into a POTW from any nondomestic source regulated under section 307 (B), (C) or (D) of the act (40 CFR 401.11 (C)).



**INDUSTRIAL CONNECTION SEWER:** A house connection sewer used primarily for the discharge of industrial waste.

**INDUSTRIAL USER:** A source of indirect discharge.

**INDUSTRIAL WASTE:** Liquid or solid waste, except domestic sewage, including radioactive substances and explosives, and noxious or toxic gas in the sewer system.

**INDUSTRIAL WASTE PRETREATMENT OR TREATMENT FACILITY:** Any works or device for the treatment of industrial waste, prior to discharge into the public sewer.

**INDUSTRIAL WASTEWATER:** All water carried wastes and wastewater excluding domestic wastewater and uncontaminated water, and shall include all wastewater from commercial, manufacturing, institutional, agricultural, or other operations where it includes significant quantities of wastes of nonhuman origin.

**INSPECTOR:** A person authorized by the public works administrator to inspect wastewater facilities.

**INTERFERENCE:** A discharge which, or in conjunction with a discharge or discharges from other sources: a) inhibits or disrupts the POTW, its treatment processes or operations or its sludge processes, use or disposal; and b) is therefore a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of a sewage sludge use or disposal in compliance with the following statutory provision and regulations or permits issued thereunder (or more stringent state or local regulation): section 405 of the clean water act, the solid waste disposal act (SWDA) (including title II, more commonly referred to as the resource conservation and recovery act (RCDA)), and including state regulations contained in any sludge management plan prepared pursuant to subtitle D of the SWDA, the clean air act, and the marine protection, research and sanctuaries act (40 CFR 403.3 (I)).

**LOT:** Any parcel of land occupied or to be occupied for use permitted by this code.

**NPDES PERMIT:** A national pollution discharge elimination system permit issued pursuant to section 402 of the act (40 CFR 404.3 (K)).

**NATIONAL CATEGORICAL PRETREATMENT STANDARD, NCPS, NATIONAL PRETREATMENT STANDARD, PRETREATMENT STANDARD, OR STANDARD:** Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with sections 307 (B) and (C) of the act which applies to industrial users. This term includes prohibitive discharge limits established pursuant to section 403.5 of title 40 of the code of federal regulations (40 CFR 404.3 (J)).

**NEW SOURCE:** Any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under section 307 (C) of the act applicable to such source.



**OFF SITE DISPOSAL:** The disposal or removal of industrial wastes or other materials regulated by this article to a site other than the premises where the wastes are generated whether or not such site is under the control of the industrial waste disposal permittee.

**ON SITE DISPOSAL:** The management, treatment, control or disposal, other than to the public sewer system, of industrial wastes or other materials within the premises named in an industrial waste permit whether or not the wastes were generated at the permitted site or by the permittee.

**PASS THROUGH:** A discharge which exits the POTW into the waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) (40 CFR 403.3 (N)).

**PEAK FLOW OR PEAK FLOW RATE:** The maximum thirty (30) minute rate of sewage flow to be generated from the premises as estimated by the public works administrator.

**POLLUTION OF UNDERGROUND OR SURFACE WATERS:** Affecting the chemical, physical, biological and radiological integrity of such waters by manmade or man induced activities.

**PRETREATMENT OR TREATMENT:** The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW or disposal facility. The reduction or alteration can be obtained by physical, chemical or biological processes or process changes by use of an industrial waste treatment facility or other means, except as prohibited by 40 CFR section 403.6 (D). (40 CFR 403.3 (Q).)

**PUBLIC SEWER:** A main line sanitary sewer, dedicated to public use and owned by the city.

**PUBLIC WORKS ADMINISTRATOR:** The chief administrative official of the public works department of the city or the duly authorized representative.

**RESIDENTIAL USE:** Any single-or multiple-family dwelling.

**SEWAGE OR WASTEWATER:** The wastewater of the community received by the sewer system consisting of the liquid and water carried wastes from residences, commercial and industrial buildings, and institutions, and of such a character as to permit satisfactory disposal without special treatment into the public sewer system.

**SEWER DISPOSAL:** The disposal of industrial waste or other materials by means of a connection to the public sewer system from the premises named in an industrial waste permit.

**SOLID WASTES:** Wastes that are not water carried and that are suitable for disposal with refuse at sanitary landfill refuse disposal site.



**STANDARD INDUSTRIAL CLASSIFICATION:** A classification pursuant to the "Standard Industrial Classification Manual" issued by the Executive Office of the President, Office of Management and Budget, 1972, as amended.

**STANDARD METHODS:** The current edition of "Standard Methods For The Examination Of Water And Wastewater", published by the American Public Health Association.

**SUSPENDED SOLIDS OR SS:** The insoluble solid matter suspended in wastewater that is separable by filtration in accordance with the procedure described in "standard methods".

**TAPPING:** The forming of a connection to a public sewer after the sewer is in place.

**TEE SADDLE:** A short pipe fitting with a shoulder at one end to allow the application of the fitting to a hole tapped in the public sewer forming a ninety degree (90°) angle to the public sewer pipe.

**UNCONTROLLED DISCHARGE:** Any discharge, intentional or accidental, occurring in such a manner that the discharger is unable to determine or regulate the quantity, quality or effects of the discharge.

**WYE SADDLE:** A short pipe fitting with a shoulder at one end to allow the application of a fitting to a hole tapped in the public sewer forming a forty five degree (45°) angle to the public sewer pipe. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304).

**6-1-304: APPLICABILITY:**

A. Facilities: This article shall apply to all sewer facilities in the city, including house connection sewers, industrial connection sewers, clarifiers, grease traps, and their appurtenances, except that nonconforming facilities may be continued in use as determined by the public works administrator in determining the best interests of the city.

B. Discharges: This article shall apply to the direct or indirect discharge of all liquid carried wastes to the sewer system of the city. Generally, liquid wastes originating within the city will be removed by the city sewer system, unless the wastes cause damage to structures, create nuisances such as odors, menace to public health, impose unreasonable collection, treatment or disposal costs on the city, violate quantity and quality requirements prescribed by state and federal laws, interfere with wastewater treatment processes, violate applicable state and federal laws, or detrimentally affect the environment.

C. Limitations On Effect Of Permit: Permits issued pursuant to this article and subsequent amendments do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from his liabilities under federal, state, or local law, nor guarantee the discharger a capacity right in the receiving waters. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)

**6-1-305: PENALTIES FOR VIOLATION OF PROVISIONS:**



A. Penalties: It shall be unlawful to violate any provision of this article, the conditions or limitations or any permit issued under this article, or any rule or regulation prescribed and adopted pursuant to this article.

B. Unlawful To Violate: Violation of this article or any condition or limitation of the permits issued pursuant to this article is a misdemeanor punishable by a fine not exceeding one thousand dollars (\$1,000.00) or six (6) months in jail, and may be prosecuted as a misdemeanor unless prosecuted as a civil administrative matter pursuant to title 1, chapter 3, article 3 or 4 of this code. Each day that a violation continues is a separate violation of this article. Violations of limitations or regulations of industrial waste permits are also subject to civil damages up to one thousand dollars (\$1,000.00) per day per violation. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304; amd. Ord. 00-O-2356, eff. 11-3-2000)

**6-1-306: RECORD KEEPING BY CITY:**

The Director of Public Works and Transportation shall keep complete records of all permit applications and permits issued for sewer construction. All permit applications and permits issued under this article for industrial discharges shall be maintained by the public works administrator or his duly authorized representative. All applications shall include location, plans and specific description of the use, and the names and addresses of applicants and permittees. All records of fee payments made in compliance with this article shall be maintained by the director of finance administration. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)

**6-1-307: WASTEWATER SYSTEM; GENERAL REGULATIONS:**

A. Inspection: Inspection of every facility involved with the discharge of wastewater to the city sewer system may be made by the public works administrator, or a duly authorized representative, as often as is deemed necessary for the proper operation of the city sewer system. These facilities shall include, but not be limited to, sewers, clarifiers, grease traps, pollution control devices, all industrial processes, industrial wastewater generation, conveyance and pretreatment facilities, and similar facilities. Inspection may be made to determine whether such facilities comply with the provisions of this article.

B. Required Access For Inspection: No person shall interfere with, delay, or refuse entrance to authorized city personnel attempting to inspect any facility connected directly or indirectly to the city sewer system.

C. Authority To Enter In Emergency: If the public works administrator has reasonable cause to believe that there are violations of this article occurring that are so hazardous, unsafe or dangerous as to require immediate inspection to protect the public health or safety, the public works administrator shall have the right to immediately enter and inspect such property, and may use any reasonable means required to effect such entry and make such inspection, whether such property is occupied or unoccupied and whether or not permission to inspect has been obtained. If the property is occupied, he shall first present proper credentials, as authorized by the public works administrator, to the occupant and demand entry, explaining his reasons therefor and the purpose of his inspection. No person shall fail or refuse to permit reasonable inspection.



D. House Connection Sewers To Serve Only One Lot: No more than one lot shall be connected to any one house connection sewer.

E. Cesspools And Septic Tanks Prohibited: The disposal of sewage by means of septic tanks and cesspools or leach fields is a nonconforming sewer facility in the city and their use is to be discontinued within a time frame deemed reasonable by the city building official.

F. Maintenance Of Sewers, Clarifiers, Sewage Plants, And Appurtenances: All house connection sewers, house sewers, industrial connection sewers, clarifiers, sewage and industrial waste treatment facilities, private pretreatment plants, grease traps, and their appurtenances shall be maintained in good operating condition and in conformity with applicable law by the owner of the property to which such facilities serve.

G. Responsibility For Maintenance: Maintenance and repair of house connection sewers and industrial connection sewers from the point of connection with the internal facility plumbing to the connection to the public sewer shall be the sole responsibility of the property owner.

H. Disconnection Of Unlawful Connection: The Director of Public Works and Transportation may order disconnection of any house connection sewer installed or maintained in violation of the provisions of this article. Reconnection of such a disconnected sewer shall be made only upon issuance of a permit as provided in this article. Before such permit is issued or considered, the applicant shall reimburse the city for all cost resulting from the disconnection.

I. Cost Of Repair To A Public Sewer: Any person, who unlawfully obstructs, damages, destroys, or removes any public sewer, or appurtenance thereof, shall be liable for the reconstruction of the sewer and associated structures and/or the reasonable cost of necessary flushing, cleaning, and inspection.

J. Discharges Of Water On Streets Prohibited: No person shall negligently, wilfully or maliciously discharge, throw or deposit water on any street or alley in such a manner as to obstruct or damage the street or alley, or to create a nuisance or hazard to persons or property, or to prevent or interfere with the free and uninterrupted use of the street by the public.

K. Unlawful Discharge Or Pollution: No person shall discharge any waste or sewage into any watercourse, flood control channel or tributaries or into the ground by percolation or injection.

1. No person shall discharge or deposit waste or sewage which creates a public nuisance, a menace to the public safety, pollution or contamination of underground or surface waters, or impairs the use of any public sewer, storm drain channel, or public or private property.

2. Any person who unlawfully discharges or causes wastewater to be discharged into the public sewer or storm drain systems is in violation of this article and shall be deemed to be liable for all damages, costs, fines or charges incurred. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)

**6-1-308: SEWER CONNECTION REGULATIONS:**



A. Permit: No person shall connect to or tap a public sewer of the city or maintain a connection or tap to such sewer without obtaining a permit from the transportation and engineering department.

B. Easement Requirements: No permit shall be issued to connect a house sewer or house connection sewer to a public sewer if the connection or any portion thereof is in, under, or on a lot not owned by the person whose house is to be connected and no recorded easements exists authorizing the connection of such lot.

C. Capacity Requirements For Discharge Of Sewage: No permit shall be issued to connect to or tap a public sewer unless said sewer has sufficient sewage capacity to receive the intended discharge. The Director of Public Works and Transportation may require the discharger to restrict the discharge until sufficient capacity is available, or to construct a public sewer to provide sufficient capacity. The Director of Public Works and Transportation may refuse service to persons locating facilities in areas where their proposed quantity or quality of sewage or industrial wastewater is unacceptable to the available treatment facility.

D. Tapping Public Sewer: When, in the opinion of the Director of Public Works and Transportation, a house connection sewer should be connected to a public sewer at a point where there is no connection facility, application for a public sewer tap shall be submitted and upon approval by the Director of Public Works and Transportation a permit will be issued for construction of the house connection sewer.

E. Tapping To Be Performed In The Presence Of A City Employee: All tapping of public sewers shall be made by a licensed sewer contractor in the presence of and to the satisfaction of an inspector acting under the authority of the Director of Public Works and Transportation.

F. Specifications And Grades: Connections to public sewers shall comply with the following:

1. House connection sewers shall be made with pipe of cast iron, clay or other material, approved by the city building official;

2. The pipe of the house connection sewer shall be laid in conformity with city specifications for public sewers as determined by the Director of Public Works and Transportation;

3. The pipe shall be laid in a straight alignment and at a uniform slope, and shall have a fall of at least one foot (1') in fifty feet (50') unless the Director of Public Works and Transportation determines that an exception is warranted;

4. The pipe must be at least three and one-half feet (3 1/2') below an established street or alley grade where it crosses the property line on the date of installation unless the Director of Public Works and Transportation determines that an exception is warranted;

5. A collar wye or tee saddle shall be installed in tapped public sewers by cutting a property proportioned hole in the public sewer and fitting the saddle tightly in place. Wye saddles shall be placed in the side of the public sewer with the wye branch so pointed as to direct the flow from the house connection sewer downstream at approximately a forty five degree (45°) angle with the public sewer, and tilted upward at approximately forty five degrees (45°) from the horizontal. Tee saddles shall be used for connections to



twelve inches (12") diameter and larger public sewers and tilted upward at approximately forty five degrees (45°) from the horizontal or as approved by the Director of Public Works and Transportation;

6. No house or industrial waste connection to a public sewer shall be made, except through a wye or tee branch, without written permission from the Director of Public Works and Transportation;

7. The city building official may require the installation of a backwater valve by the property owner under conditions specified in the uniform plumbing code, section 409, or under other conditions that warrant installation as determined by the city building official.

G. Opening Manhole: No person shall open, enter, or allow to remain open, any manhole in any public sewer without a permit from the Director of Public Works and Transportation.

H. Disposal Of Effluent In Manhole; Prohibition: No person shall deposit cesspool effluent or any waste or sewage into a manhole. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)

**6-1-309: PERMIT REQUIREMENTS AND REGULATIONS FOR INDUSTRIAL DISCHARGE:**

A. Purpose: The highest and best use of the city's wastewater system is the conveyance of domestic wastewater. The use of the city's wastewater system for the conveyance of industrial wastewater is subject to additional regulation and permits.

B. Industrial Waste Permit: No person shall discharge any industrial waste into any city sewer without first obtaining an industrial waste permit from the public works administrator.

C. Industrial Waste Disposal, Off Site: If a person chooses to dispose of industrial waste material by hauling said material to an authorized disposal site, he shall apply for an industrial waste permit as provided herein.

D. Industrial Waste Disposal, On Site: If a person chooses to operate a pretreatment facility for the disposal of industrial waste, he shall apply for an industrial waste permit as provided herein.

E. Application For Industrial Waste Permit: Applications for industrial waste permits shall be filed in writing with the public works administrator or his duly authorized representative and shall be supplemented by such additional information as he may require.

F. Permit Fee: Applications for industrial waste permits shall be accompanied by an application fee as set forth in section 6-1.310 of this article.

G. Review Of Applications: The public works administrator shall review all applications for industrial waste permits to determine that the proposed discharge of waste will not violate any provision of this article or state and federal laws.

1. Within thirty (30) days after the public works administrator receives an application for an industrial waste permit he shall, pursuant to this article, grant or deny the permit and notify the applicant of the



action taken. Such time limit may be extended by mutual agreement between the public works administrator and the applicant.

H. Permit Conditions: The public works administrator, in granting a permit, may impose conditions consistent with the purpose of this article, including, but not limited to, pretreatment of wastewater before discharge, installation of clarifiers or grease traps, restriction of peak flow discharges or of discharge of certain substances, limitation of discharge to certain hours, and payment of additional charges to defray increased costs to the city created by the discharge. The public works administrator may establish a maximum permissible rate of discharge for each permittee.

1. Whenever the operators of the treatment facilities, through which effluent from the city's wastewater system is discharged, require any modification of the conditions or composition of the effluent, the public works administrator may impose conditions upon any industrial waste permit in order to conform with such requirements.

I. Permit Expiration: The public works administrator shall have the authority to impose a permit expiration date not to exceed a term of five (5) years, where he determines such a date is necessary to ensure compliance with all applicable laws and regulations governing the disposal of industrial wastes. Application for renewal of such a permit shall be made not later than one hundred eighty (180) days prior to the expiration date of the existing permit.

J. Permit Transfer Prohibited: Permits issued under this article are not transferable from one location to another.

K. Confidential Information; Public Access: Information and data concerning an industrial user obtained from reports, questionnaires, permit application, permits, monitoring programs and inspections shall be available to the public or other governmental agency without restriction unless the user specifically requests and is able to demonstrate to the satisfaction of the public works administrator that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the user, as exempted by the California public records act or applicable federal regulations (40 CFR 403.14). Wastewater constituents and characteristics will not be recognized as confidential information. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)

**6-1-310: INDUSTRIAL DISCHARGE FEES:**

A. Fees; General: The fees established in this article and subsequent amendments shall be set annually by council in the resolution of the council of the city of Beverly Hills amending comprehensive schedule of municipal fees and charges. All fees established in this article shall be applicable to all sewer connections within the city, except that, those portions of the city within the Los Angeles County sanitation district no. 4 shall not be subject to any of the fees set forth in the foregoing sections where a fee for similar service is imposed by the Los Angeles County sanitation district no. 4.

B. Industrial Waste Permit Fees: Each applicant for an industrial waste permit shall pay a fee, at the time of application, that shall be separate and apart from any fee or deposit collected for industrial waste plan review or imposed under any other provisions of this article, or other city ordinance or regulation or by



reason of any license, agreement or contract between the applicant and other public agency. Such application fee shall not be refundable even though the application is denied.

C. Industrial Waste Plan Review Fee: A plan review fee shall be paid to the city, at the time of submittal, for each set of plans received for any single site or location. Such fee shall be separate and apart from any fee or deposit collected for any permit or inspection or imposed by any other city ordinance or regulation. Such plan review fee shall be applied to any submittal required by the public works administrator and shall not be refundable even though the submittal may be rejected or project terminated.

1. The public works administrator may impose a reinstatement fee of one-half (1/2) of the plan review fee if the applicant fails to correct any plans or submittal upon written notice of correction or request for additional information by the public works administrator after three (3) attempts have been made to gain such correction.

D. Annual Inspection Fee: Every person granted an industrial waste permit under this article shall pay a fee to the city for inspection and control and such fee shall be fixed and established from time to time by the city council.

1. Immediately upon issuance of a new permit, the permittee shall be billed a percentage of the inspection fee, determined by the days remaining in the billing period, as scheduled below:

Days Remaining	Fee Percentage
1 – 60	0%
61 – 120	25%
121 – 210	50%
211 – 300	75%
301 – 365	100%

E. Inspection Classifications: The public works administrator may establish a classification system based on the minimum number of inspections per year which the public works administrator determines to be necessary for the property enforcement of this article and subsequent amendments.

F. Due Dates: The annual inspection fee shall be paid annually in advance of one of four (4) dates as follows:

If the permit is granted between:	Due Date Of Annual Fee
January 1 and March 31, inclusive	April 1
April 1 and June 30, inclusive	July 1
July 1 and September 30, inclusive	October 1
October 1 and December 31, inclusive	January 1



G. Wastewater Sampling And Analysis Fee: The public works administrator may charge the discharger a fee for each analysis performed by or on behalf of the city on wastewater samples taken from the discharger. Said fee shall be set by city council and reflect the city's cost for sampling. The sampling and analysis fee shall be paid by the discharger within thirty (30) days of the statement date.

H. Quality Surcharge Fee: The city council may establish a charge for each pound of suspended solids and for each pound of biochemical oxygen demand. Every person granted an industrial waste permit under this article shall pay an annual quality surcharge fee for wastes discharged into the sanitary sewer system pursuant to the following formula:

$$C = V [a(SS - 250) + b(BOD - 230)] k$$

Where:

C is the quality surcharge fee.

V is the chargeable volume of waste discharged in gallons, based in: 1) the volume of water supplied to the premises less an amount determined by the public works administrator to account for water not discharged into the sanitary sewer system, or 2) the metered volume of waste discharged into the sanitary sewer system according to a measuring device approved by the public works administrator, or 3) a figure determined by the public works administrator based on any other equitable method.

SS is the suspended solids in the waste discharged, expressed in milligrams per liter.

BOD is the five (5) day biochemical oxygen demand of the waste discharged, expressed in milligrams per liter.

a is the cost assessed for each pound of suspended solids, and such cost shall be fixed and established from time to time by the city council.

b is the cost assessed for each pound of biochemical oxygen demand, and such cost shall be fixed and established from time to time by the city council.

k is a dimensional constant to convert C to dollars.

If the term containing SS or BOD is negative, a value of zero shall be used for that term.

SS and BOD analyses shall be made in accordance with "standard methods". In determining the quality surcharge fee, the public works administrator may use industrial averages for SS and BOD values. The public works administrator may group permit holders into discharge volume ranges where volume measurement at the premises of a permit holder is impractical for physical, economic or other reasons, these volume ranges may be used in establishing the quality surcharge fee.



I. Appeal From Quality Surcharge Fee: Any permit holder whose quality surcharge fee has been determined in the manner provided may appeal the fee amount by submission of engineering data to the public works administrator. If the public works administrator finds the discharge of the permit holder differs significantly from the volume range which was applied, he may adjust the fee.

J. Due Date For Quality Surcharge Fee: The quality surcharge fee will be separate charge to be included in the bimonthly water/wastewater utility billing and due in full on the day the notice is received. Water/wastewater utility bills not paid within fifteen (15) days of receipt are delinquent.

K. Penalty For Delinquency: All fees required by this article shall be due and payable on the billing date established by director of finance administration. Fees not paid within thirty (30) calendar days from the billing date shall be subject to a ten percent (10%) penalty fee for each thirty (30) day period beyond the billing date that the fee is due. Permits for which the inspection fee is delinquent for ninety (90) days or more are subject to suspension. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)

#### **6-1-311: GENERAL REQUIREMENTS FOR INDUSTRIAL DISCHARGE:**

A. Unlawful Discharge Of Industrial Waste: No person shall directly or indirectly discharge industrial waste into the city sewer system unless the public works administrator has determined that the substance to be discharged will not violate the provisions of this article or the water quality standard for receiving waters established by other government agencies.

B. Facility Maintenance: The discharger shall maintain in good working order and operate as efficiently as possible any pretreatment or monitoring facility or control system installed by the discharger to achieve compliance with the permit requirements.

1. Access to such pretreatment or monitoring facilities by authorized personnel will remain unobstructed at all times.

C. Facility Requirements: All permittees shall comply with the following regulations and restrictions:

1. The industrial waste discharger shall provide, install and operate a clarifier or grease trap of adequate capacity and at a location, as determined by the public works administrator, prior to connection with the public sewer, unless it is waived by the public works administrator. Approval for the size, type and location of clarifier shall be obtained from the public works administrator and the building official prior to installation.

2. Sanitary wastes from rest rooms, lavatories, drinking fountains, showers, etc., shall be segregated from the process wastewaters, until necessary pretreatment and/or clarification, flow, and quality monitoring steps are completed.

3. Cleansers utilized in wastes discharged into the public sewer shall be limited to soap, similarly acting biodegradable synthetic detergents, and/or sodium or potassium compounds of phosphates, polyphosphates, silicates, sulfates, carbonate, bicarbonate, or hydroxide. No organic solvents shall be discharged into the public sewers.



4. A copy of the industrial waste permit shall be maintained at the facility so as to be available at all times to operating personnel and inspectors.

5. Any change in the applicant's industrial process or an increase in volume of wastes to a level in excess of twenty five thousand (25,000) gallons per day shall require notification of the public works administrator before initiation of the proposed change in the waste discharge. The public works administrator may require a new application for the issuance of an industrial discharge permit pursuant to section 6-1-309 of this article.

6. In the event of any change in name, ownership, or control of the company, or any change referred to in subsection C5 of this section, the discharger shall notify the public works administrator of such change, and shall notify the succeeding owner or operator of the existence of this permit by letter, copy of which shall be forwarded to the public works administrator, at least thirty (30) days prior to such change. The public works administrator may require a new application to be submitted and compliance with all applicable sections of this article.

7. The top of the pretreatment facilities, clarifier and inspection chamber shall be at least one inch (1") above the ground level when provided in an unroofed area. Provisions shall also be made to divert storm water away from the pretreatment facilities, clarifier and inspection chambers.

8. If changes should occur in plumbing layout subsequent to the issuance of an industrial waste permit, the discharger shall submit as built plumbing plans of building showing clearly the origin of wastewater, identifying the process creating the wastewater, and listing accurately for each wastewater discharge point the total daily flow in gallons and the peak flow rate in gallons per minute including location and details of pretreatment facilities, clarifier and its connection to the public sewer system for approval by the public works administrator and the building official.

9. A means shall be provided to effect immediate cessation of discharge of liquid chemicals, process solutions, or spent process solutions into the city sewer as a result of spills, overflows, leaks, failure of containers or inadvertent discharges. Such means of cessation shall include, but not be limited to, installation of automatic valves, gates, or bypasses to impervious containers which when activated will stop water supply to and the discharge from industrial processes. The discharger shall submit details of the proposed measures and drawings before installation and obtain approval from the public works administrator and the building official.

D. Uncontrolled Discharge: In the event of an uncontrolled discharge, the discharger or permittee shall immediately notify the public works administrator of the incident by telephone. The notification shall include the location of the discharge, type of material, concentration and volume, and corrective action.

1. Within ten (10) working days after the uncontrolled discharge, the discharger or permittee shall submit to the public works administrator a detailed written report describing the cause of the discharge, the corrective action taken and the measures to be taken to prevent future incidents. Such notification shall not relieve the discharger or permittee of liability or fines that may result from the uncontrolled discharge. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)



**6-1-312: INDUSTRIAL WASTE AND DISCHARGE LIMITS:**

A. List Of Allowable Concentrations Of Certain Wastes: The public works administrator shall from time to time prepare a list of allowable quantities or concentrations of certain constituents in industrial wastewater flows and shall issue directions for meeting the requirements of this section.

B. Scope And Compliance: No person shall introduce wastewater in the sewer system or POTW that exceeds local limits which have been developed by the treatment system NPDES permit holder. Said local limits shall not apply where more restrictive limitations are imposed by permit or NCPS limitations. Except as provided above, dischargers tributary to the Hyperion POTW operated by the city of Los Angeles shall comply with the following local limits:

<u>Constituent</u>	<u>Value Units</u>	<u>Existing Sources</u>
Arsenic	mg/l	3
Cadmium	mg/l	15
Chromium - total	mg/l	10
Copper	mg/l	15
Lead	mg/l	5
Mercury	mg/l	Essentially none
Nickel	mg/l	12
Zinc	mg/l	25
Silver	mg/l	5
Cyanide - total	mg/l	10
Cyanide - free	mg/l	2
Oil and grease - total		
Dispersed	mg/l	600
Floatable	mg/l	None visible
Phenol	mg/l	*
Chlorinated hydrocarbons	mg/l	Essentially none
Selenium	mg/l	*
Dissolved sulfides	mg/l	0.1
pH ranges	5.5-11	
Temperatures	140°F	



\*Values for phenol and selenium and other constituents not shown, such as fluoride, boron, aluminum, iron, tin, cobalt, etc., have been established for general application. They are not critical constituents at this time for existing sources. The board of public works of the city of Los Angeles will impose such limits as it may find necessary to ensure compliance with treatment plant discharge limits and more restrictive pretreatment standards for new sources prescribed by the environmental protection agency (EPA).

The above limitations shall not apply where more restrictive limitations are imposed by permit or national categorical pretreatment standards.

1. In addition to the concentration limits for heavy metals and toxicants in this subsection B of this section, the discharge shall also comply with the maximum allowable daily mass emission rate and the maximum allowable monthly mass emission rates.

C. Concentration Limits And Prohibitions: The total daily mass emission rate for effluent concentrations that are defined by this section shall be limited by the following:

1. The daily mass emission rate for each constituent shall be calculated from the total waste flow occurring in each specific day, and the maximum concentration limit. The mass emission rate of the discharge during any twenty four (24) hour period shall not exceed the product of the proposed daily average discharge in million gallons per day, maximum concentration limit, and a constant 8.34.

2. The monthly mass emission rate for each constituent shall be calculated from the total waste flow occurring in each specific month, and the average concentration limit or the maximum concentration limit, if average concentration limit is not prescribed. The mass emission rate of discharge during any month shall not exceed the product of proposed monthly average discharge in million gallons per month, average concentration limit, or the maximum concentration limit, if average concentration limit is not prescribed, and a constant 8.34.

3. The pH of wastes discharged shall at all times be within the range of 5.5 to 11. No person shall discharge acids or alkaline materials to the public sewers until the pH has been controlled to a level not less than 5.5 nor higher than 11.0. No discharge shall have any corrosive or detrimental characteristics that may cause injury to wastewater treatment, inspection or maintenance personnel or may cause damage to structures, equipment or other physical facilities of the public sewer system.

4. The temperature of the wastes discharged shall not exceed one hundred forty degrees Fahrenheit (140°F) nor shall the temperature exceed one hundred four degrees Fahrenheit (104°F) at the point of entry into the POTW treatment facility.

5. Radioactivity in the effluent shall not exceed the limits specified in ordinance 17, chapter 5, subchapter 4, group 3, article 5, section 30287, of the California Code of Regulations.

6. Discharge of the following wastes into public sewer system is prohibited:



- a. Any solids or viscous substances of such size or in such quantity that may cause obstruction to the flow in the sewer or be detrimental to proper wastewater treatment plant operations. These objectionable substances include, but are not limited to, asphalt, dead animals, offal, ashes, sand, mud, straw, industrial process shavings, metal, glass, rags, feathers, plastics, wood, whole blood, bones, hair, coffee grounds, egg shells, seafood shells, fleshings, entrails, paper dishes, paper cups, milk containers, grease or fats, or other similar paper products either whole or ground.
  - b. Any pollutant released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW.
  - c. Any nonbiodegradable cutting oil, commonly called soluble oil, which forms persistent water emulsions.
  - d. Any wastes with excessively high BOD, COD or decomposable organic contents.
  - e. Any strongly odorous waste or waste which can create odors in receiving waters of sewerage system.
  - f. Any excessive amounts of organic phosphorous type compounds.
  - g. Any excessive amounts of deionized water, steam condensate or distilled water.
  - h. Any waste containing substances that may precipitate, solidify or become viscous at temperatures between fifty degrees Fahrenheit (50°F) and one hundred forty degrees Fahrenheit (140°F).
  - i. Any waste producing excessive discoloration of wastewater or treatment plant effluent.
  - j. Any blow down or bleed off water from cooling towers or other evaporation coolers exceeding one-third (1/3) of the makeup water.
  - k. Any single pass cooling water.
  - l. Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than one hundred forty degrees Fahrenheit (140°F) or sixty degrees centigrade (60°C) using the test methods specified in 40 CFR 261.21.
  - m. Any rainwater, storm water, ground water, street drainage, surface drainage, roof drainage, yard drainage, water from the yard fountains, swimming pools or lawn sprays, or any other uncontaminated water.
7. The discharge of any radiological, chemical, or biological warfare agent or radiological waste is prohibited.

D. Compliance With Standards: The discharger shall comply with applicable toxic and pretreatment standards promulgated in accordance with sections 307 and 308 of the federal water pollution control act, or amendments thereto. The discharger shall submit periodic notices (over intervals not to exceed 3



months) of progress toward compliance with applicable toxic and pretreatment standards developed pursuant to the federal water pollution control act, or amendments thereto.

E. National Categorical Pretreatment Standards (NCPS): Upon promulgation of mandatory NCPS for any industrial subcategory, the NCPS, if more restrictive than limitations imposed by this section, shall apply. The public works administrator may impose a phased compliance schedule to ensure that affected industries meet the NCPS. Failure to meet the phased compliance schedule may result in permit suspension or revocation. Those dischargers subject to NCPS shall comply with all reporting requirements in accordance with the general pretreatment regulations for existing and new sources of pollution (title 40, code of federal regulations, part 403).

F. Prohibited Material Disposal: All wastes which are prohibited from being discharged into public sewers, including, but not limited to, chemical solutions, acids, caustic wastes, solvents, oil and grease, screenings, sludges, and other solids removed from liquid wastes, etc., shall be held in impervious containers and disposed of at a legal point of disposal, and in accordance with the provisions of division 7.5 of the California Water Code. For the purpose of this requirement, a "legal point of disposal" is defined as one for which waste discharge requirements have been prescribed by a regional water quality control board, and which is in full compliance therewith.

G. Off Site Disposal; Reporting: The discharger shall submit a hazardous waste manifest, as required by the public works administrator, by the fifteenth day of the month following the reporting period. A statement to that effect shall be submitted to the public works administrator.

H. New Standard Enforcement: If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the federal water pollution control act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized by the permit, and such standard or pollutant in the permit, the public works administrator shall revise or modify the permit in accordance with such toxic effluent standard or prohibition, and so notify the discharger. Compliance with the new standard or prohibition shall be in accordance with the prescribed timetables stated in such regulation or within a reasonable time as determined by the public works administrator.

I. Dilution Prohibited: No person shall discharge or cause to be discharged any water or other substance added for the purpose of diluting any industrial waste to achieve compliance with limitations imposed by the provision of this section. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304; amd. Ord. 05-O-2478, eff. 8-5-2005)

### **6-1-313: ENVIRONMENTAL IMPACT REPORT:**

A. Requirements: No permit to connect to or tap a public sewer to discharge industrial wastes shall be issued if the proposed use of the public sewer may have a significant effect on the environment unless the environmental review process has been completed pursuant to the requirements of the California environmental quality act. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304)



**6-1-314: SELF-MONITORING AND REPORTING:**

A. Requirement For Reporting: Industrial waste permit holders must implement a self-monitoring and reporting program in compliance with 40 CFR section 403.12. The nature of sampling and frequency of analysis and reporting will be based on the size of discharge and type of industrial operation.

B. Requirement For Monitoring Equipment: The public works administrator may require the discharger to install, use and maintain, at user expense, adequate continuous monitoring equipment or methods.

C. Record Maintenance By Discharger: The discharger shall retain for a minimum period of three (3) years records of monitoring activity and results including all original strip charts, calibration, and maintenance records. The public works administrator may require the discharger to submit such records for review.

D. Person Responsible To Report: Self-monitoring reports shall be signed by a duly authorized representative responsible for the overall operation of the facility from which discharge originates. In the case of a partnership, by the general partner, in case of a sole proprietorship, by the proprietor.

Each report shall contain the following declaration:

I declare under penalty of perjury that the forgoing is true and correct.

Executed on the day of , at .

Signature

(1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304; amd. Ord. 05-O-2478, eff. 8-5-2005)

**6-1-315: COMPLIANCE INSPECTION AND REPORTING:**

A. Installation Of Control Manhole: The public works administrator may require a control manhole of a design approved by the public works administrator to be furnished and installed by any industrial wastewater discharger to facilitate inspection and sampling by the city or other governmental agencies. Such manholes shall be constructed at locations approved by the public works administrator and authorized city personnel shall have unrestricted access thereto at all times consistent with the provisions of this article. Access of others to such manholes shall be restricted by appropriate security measures.

B. Inspection: The public works administrator may, as herein provided, enter private property to exercise any power vested in the public works administrator by this article, including the power to inspect and copy records, sample, and determine:

1. The size, depth and location of any connection with a public sewer or storm drain;

2. The quantity, quality and nature of industrial waste, sewage, or surface waters being discharged into a public sewer, storm drain, or watercourse;



3. The effectiveness of any device used to prevent waste prohibited by this article from entering any sewer, storm drain or watercourse;
4. The location of roof, swimming pool, and surface drains, and whether they are connected to a street gutter, storm drain, or sewer;
5. The nature of liquids and the condition of processing equipment which are a potential hazard to the city sewer system;
6. Whether there is compliance with the provisions of this article.

C. Reporting Requirements: Dischargers shall furnish additional reports to the public works department concerning the disposal of industrial wastes as required by the public works administrator.

D. Standard Methods: All wastewater constituents, including BOD and SS, shall be determined in accordance with the standard methods. (1962 Code §§ 5-6.01 et seq., 6-1.301\_6-1.304; amd. Ord. 05-O-2478, eff. 8-5-2005)

**6-1-316: REMEDIAL ACTIONS, REVOCATIONS AND SUSPENSIONS:**

A. Notice To Correct Violations: The public works administrator shall serve notice of violation upon the person owning, occupying or operating premises which notice shall describe the conditions and require prompt correction thereof, when he finds that:

1. Industrial waste, effluent, or any other material is being maintained, discharged, or deposited in such a manner as to create one or more of the following conditions:

- a. A public nuisance;
  - b. A menace to public health and safety;
  - c. Pollution of underground or surface waters;
  - d. Adverse effect or damage to any public sewer, storm drain, channel or public or private property; or
2. The permittee had failed to conform with conditions or limitations of any permit issued in accordance with this article; or
3. The industrial waste permit was issued in error, or on the basis of incorrect information supplied, or in violation of ordinance, regulation, or law.

B. Injunctive Relief: The public works administrator may seek injunctive relief for noncompliance with any provision of this article or the conditions and limitations of any permit issued pursuant to this article.



C. Suspension Of Permit: The public works administrator shall suspend the permit of any permit holder who fails to comply with the conditions of his permit or any provision, rule, or regulation of this article, which failure creates an emergency condition that is a threat to the health, welfare and safety of the community. Any person whose permit has been suspended shall immediately discontinue the discharge of industrial waste, until the public works administrator verifies that the permit holder is in compliance.

1. The public works administrator shall reinstate a suspended permit when all violations have been corrected and all new conditions have been met to alleviate the emergency. Before any revoked permit is reissued, all delinquent fees and additional charges due and owing to the city shall be paid. Any discharger notified of a suspension of that discharger's industrial wastewater permit shall immediately cease and desist the discharge of all industrial wastewater to the sewer system.

2. In the event of a failure of the discharger to comply voluntarily with the suspension order, the public works administrator may take such steps as are reasonably necessary to ensure compliance. These include, but are not limited to, immediate blockage or disconnection of the discharger's connection to the sewer system.

D. Appeals To The Suspension Of Permit: Any discharger suspended or served with a notice of an intended order of suspension may file with the city clerk a request for a city council hearing with respect thereto. Filing of such a request shall not stay a suspension. In the event of a suspension of a permit due to imminent hazard related to continued discharge, the discharger may request a hearing, and the city council or a hearing examiner designated by the city council for that purpose shall conduct a hearing within five (5) days of receipt of the request. In the event of hearing requests, for other than an imminent hazard suspension, the city council shall hold a hearing on the suspension within thirty (30) days of receipt of the request. At the close of the hearing, the city council shall make its determination whether to terminate, or conditionally terminate the suspension imposed by the public works administrator, or the city council may cause the permit to be revoked. Except in the case of a hearing within five (5) days being required as above provided, reasonable notice of the hearing shall be given to the suspended discharger in the manner provided for in this article.

E. Reinstatement Of Permit: The public works administrator shall reinstate the industrial wastewater permit upon proof of compliance which ends the emergency nature of the hazard created by the discharge that had been cause for the public works administrator to initiate the suspension, provided that the public works administrator is satisfied that all discharge requirements of this article and any city council order will be implemented.

F. Revocation Of Industrial Wastewater Permit: The city council may revoke an industrial wastewater permit by the following procedures:

1. A finding that the discharger has violated any provision of this article. No revocation shall be ordered until a notice and hearing on the question has been held by the council as provided in this section.

2. Any discharger whose industrial wastewater permit has been revoked shall immediately cease and desist all discharge of any wastewater covered by the permit. The public works administrator may



disconnect or permanently block the discharger's connection if such action is necessary to ensure compliance with the order of revocation.

3. After revocation of a discharger's industrial waste permit, there shall be no further discharge of industrial wastewater by that discharger into the sewer system, the storm drain system, or the waters of the state unless there has been a new application filed, all fees and charges that would be required upon an initial application and all delinquent fees, charges, penalties and other sums owed by the discharger and/or the applicant to the city have been paid to the city, and a new industrial wastewater permit has been issued. Any costs incurred by the city, including administrative costs and investigative fees, in revoking the permit and disconnecting the connection, if necessary, shall also be paid for by the discharger before issuance of a new industrial wastewater permit.

4. Notice of the hearing shall be given to the discharger at least ten (10) days prior to the date of hearing. Unless otherwise provided herein, any notice required to be given by the public works administrator under this article shall be in writing and served in person or by registered or certified mail addressed to the addressee's last known address with request for return receipt. Where no address is known, service may be made upon the owner of record of the property upon which the alleged violation occurred or by posting the notice conspicuously on the property.

G. Emergency Remedial Measures: The public works administrator shall have full power and authority to take any necessary precautions in order to protect life, protect property, or prevent further damage resulting from a condition that is likely to result in a discharge which presents an imminent hazard to the public health, safety or welfare; or which either singularly or by interaction with other discharges, is an imminent hazard to the sewer system. The public works administrator may order cessation of water service to the property on which the hazardous condition exists and may order the sealing of the industrial sewer connection through which the hazardous discharge is conveyed. In the pursuit of such an operation, city personnel, or duly authorized representative of another government agency shall have immediate access to the premises.

H. Public Notice Of Violation: The public works administrator shall provide annual public notification, in the largest daily newspaper published in the municipality in which the POTW is located, of industrial users of the POTW which during the previous twelve (12) months, were significantly violating applicable standards or other pretreatment requirements, as provided in 40 CFR 403.8. (Ord. 90-O-2092, eff. 4-26-1990)



## **APPENDIX 3-B. AGREEMENTS WITH OTHER AGENCIES**



C-98178

AGREEMENT NO.

34-99

**AGREEMENT  
BETWEEN THE CITY OF LOS ANGELES  
AND THE CITY OF BEVERLY HILLS  
FOR THE CONVEYANCE, TREATMENT  
AND DISPOSAL OF WASTEWATER**

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AGREEMENT

THIS AGREEMENT ("Agreement") is made and entered into this 9<sup>th</sup> day of March 1999, by and between the CITY OF LOS ANGELES ("Los Angeles") and the CITY OF BEVERLY HILLS ("Contracting Entity") (collectively referred to herein as the "Parties" or individually as "Party").

RECITALS

WHEREAS, Contracting Entity currently contracts with Los Angeles for the conveyance, treatment, and disposal of wastewater; and

WHEREAS, disputes have arisen between Los Angeles and Contracting Entity in regard to a number of matters pertaining to the conveyance, treatment, and disposal of wastewater as well as charges regarding the same. Some of these disputes have resulted in a lawsuit, which has been consolidated with lawsuits between Los Angeles and other entities receiving wastewater service into a single case, LASC Case No. BC 034185 ("Consolidated Action"), and a related case, LASC Case No. BC 128412 (collectively "Pending Actions"); and

WHEREAS, Los Angeles and Contracting Entity desire to resolve these issues and enter into a new contract for conveyance, treatment, and disposal of wastewater; and

WHEREAS, under the existing contracts, Contracting Entity is authorized to discharge wastewater up to a specified flow. Under the existing contracts, the charges imposed on Contracting Entity for operation and maintenance are based on actual volume of discharge and for capital are based on allowable volume of discharge; and

WHEREAS, Los Angeles acknowledges that the wastewater system currently has unused system capacity; and

WHEREAS, Los Angeles and Contracting Entity desire to eliminate discharge entitlements and make all unused capacity in the wastewater system available to either of the Parties as that Party's discharge increases, subject to the requirements and limitations set forth in this Agreement; and

WHEREAS, Los Angeles and Contracting Entity desire to eliminate discharge entitlements in return for proportionally sharing future Sewerage Facility Charges, as hereinafter defined below, and for proportionally sharing in the capital costs for both the upgrade of existing facilities and the construction of new facilities; and

WHEREAS, Los Angeles acknowledges that it is operating a regional wastewater system and is obligated to assess charges on a fair and equitable basis because Los Angeles has received state and federal grant funding; and

WHEREAS, Los Angeles and Contracting Entity desire to base all treatment and disposal charges on actual discharge and to comply with federal and state requirements by measuring discharge in terms of flow and strength; and

WHEREAS, Los Angeles and Contracting Entity desire to base all conveyance charges on actual flow and distance; and

WHEREAS, Los Angeles and Contracting Entity desire to have all wastewater dischargers of the Amalgamated System, as more fully described herein below, pay equivalent rates for all fees and charges related to the Amalgamated System;

NOW, THEREFORE, in consideration of the mutual promises specified herein and for other good and valuable consideration, Los Angeles and the Contracting Entity agree as follows:

#### I. DEFINITIONS

**"Agency" or "Agencies"** means any Entity(ies), other than Los Angeles, that is(are) signatory to an agreement or contract for wastewater services that complies with the Universal Terms.

**"Amalgamated System"** (See "Los Angeles' Wastewater Treatment and Collection System")

**"Amalgamated System Expenses"** means those expenses used to determine the Amalgamated System Sewerage System Charge pursuant to Section II.B.2.

**"Amalgamated System Revenues"** means those revenues used to determine the Amalgamated System Sewerage System Charge pursuant to Section II.B.3 of this Agreement.

**"Amalgamated System Sewerage Facilities Charge"** means the charge, as determined in Section II.C.3, levied on new or expanding dischargers to recover the full cost of constructing Amalgamated System capacity to accommodate the anticipated increase in wastewater discharge.

**"Amalgamated System Sewerage System Charge"** means the charge levied on an Entity to recover that Entity's Proportionate Share of the Net Amalgamated System Expenses.

**"Available Treatment Plant Effluent"** means all treatment plant effluent that meets all applicable discharge standards and is not committed for the maintenance or preservation of a biological habitat as mandated by a county, state, or federal agency.

**"Biochemical Oxygen Demand" or "BOD"** means the measure of the biochemically decomposable material in wastewater as represented by the oxygen uptake as determined by the procedures specified in Standard Methods.

**"Boundary Line Connection"** means any wastewater discharge that is generated within the territorial boundaries of one Entity but is directly discharged to the sewer system of another Entity, and ultimately is treated by the Amalgamated System.

**"By-product"** means any product, excluding Reclaimed Water, produced incidental to the process of treating wastewater. By-products may include, but are not limited to, electricity, digester gas, and biosolids products.

**"Capital Improvement Program"** means Los Angeles' planned expenditures for capital projects in the Los Angeles Wastewater Treatment and Collection System.

**"Commercial Discharger"** means any commercial user as defined in Appendix G, Revenue Program Guidelines of the *Policy for Implementing the State Revolving Fund for the Construction of Wastewater Treatment Facilities* published by the California State Water Resources Control Board, dated February 21, 1996 or as it may be revised from time to time.

**"Contracting Entity"** means the City of Beverly Hills.

**"Date of Execution" or "Execution"** means the date the last Original Contracting Entity executes an agreement complying with the Universal Terms or the date Los Angeles executes an agreement complying with the Universal Terms with the last of the Original Contracting Entities, whichever occurs last.

**"Default"** means those actions as specified in Section VIII.A.

**"Entity" or "Entities"** means Los Angeles or any local governmental organization(s), whether a city or a sanitation district, any state or federal jurisdiction, or any other jurisdiction or organization, public or private, which is located outside Los Angeles' jurisdictional boundaries and receives wastewater conveyance, treatment, and disposal services from the Los Angeles Wastewater Treatment and Collection System pursuant to a contract with Los Angeles, except as provided in Section IX.B.1.b.

**"Fiscal Year (FY)"** means the 12-month period beginning on July 1 of one calendar year and ending on June 30 of the following calendar year or any other 12 month period mutually agreed to by the Parties. The designation for the Fiscal Year shall be based on the two partial calendar years included in the Fiscal Year (e.g. 1998-99).

"Flow Year" means the fourth quarter of one Fiscal Year and the first three quarters of the next Fiscal Year. The designation of the Flow Year (e.g. 1998-99) shall be the same as that of the Fiscal Year from which the three quarters are utilized.

"General Fund Reimbursement Charge" means the charge levied pursuant to Section II.D for reimbursement of the costs of emergency response services that are provided to the Amalgamated System but are paid for by Los Angeles' General Fund, separate and apart from costs that are reimbursed pursuant to Section II.B.2.a.(3).

"Incremental Cost Approach" means the method of calculating the Amalgamated System Sewerage Facilities Charge in which the rate is based on the sum of (a) the value of that capacity of the Amalgamated System facilities that is unused and therefore available to provide service to new customers and (b) the present value of projected future costs within any Los Angeles' Capital Improvement Plan that are related to expanding the Amalgamated System capacity, all divided by the sum of the unused capacity plus the future capacity of the projects identified in any Los Angeles' Capital Improvement Plan.

"Industrial Discharger" means any industrial user as defined in Appendix G, Revenue Program Guidelines of the *Policy for Implementing the State Revolving Fund for the Construction of Wastewater Treatment Facilities* published by the California State Water Resources Control Board, dated February 21, 1996 or as it may be revised from time to time.

"Local System" (See "Los Angeles' Wastewater Treatment and Collection System").

"Los Angeles" means the City of Los Angeles, a municipal corporation and the individual organizational components thereof.

"Los Angeles' Wastewater Treatment and Collection System" or "System" means all present and future facilities, including but not limited to plants, pipelines, pump stations, structures, tanks, valves, support facilities such as laboratories and maintenance yards, and other appurtenances owned by Los Angeles to manage, operate, maintain, collect, convey, treat, store, distribute, and dispose of wastewater, treatment plant effluent, and By-products.

"Amalgamated System" means that portion of the Los Angeles' Wastewater Treatment and Collection System exclusive of the Local System.

"Local System" means the following facilities:

- a. One half of the Los Angeles-Glendale Water Reclamation Plant, the costs of which are paid by the City of Glendale.

- b. Pumping stations, pipelines, and other facilities needed to distribute Reclaimed Water to the extent that the facilities are not also needed to discharge treatment plant effluent to the ocean, Los Angeles River, or other receiving water in the event that the treatment plant effluent is not reused.
- c. Sewers less than 30 inches in diameter.
- d. Pumping plants and associated force mains, siphon structures and piping, diversion structures and junction structures with single influent sewers less than 30 inches in diameter, or, in the case of multiple influent sewers, where the equivalent single influent sewer is less than 30 inches in diameter as set forth in Section II.B.2.d.
- e. The Los Angeles Zoo treatment plant.
- f. The Japanese Garden at the Donald C. Tillman Water Reclamation Plant.

**"MGD-miles"** means the product of the quantity of flow of an area of Los Angeles as set forth in Section III.G.7, Contracting Entity, or other Entity discharging wastewater to the Amalgamated System and the distance between the Point of Discharge, as hereinafter defined, of that area of Los Angeles, Contracting Entity, or other Entity into the Amalgamated System and the point(s) of treatment as more fully described in Section III.G.

**"Net Amalgamated System Expenses"** means the difference between the Amalgamated System Expenses and the Amalgamated System Revenues.

**"Nonpayment Charge"** means the charge levied on an Agency to collect its share, as determined pursuant to Section II.E, of any Unpaid Amounts.

**"Original Contracting Entities"** means collectively all of the following Entities which execute a contract for wastewater service complying with the Universal Terms, as herein defined, with Los Angeles by April 1, 1999: the City of Beverly Hills, the City of Culver City, County Sanitation Districts Nos. 4, 5, 9, 16, and 27 of Los Angeles County, the City of El Segundo, the City of San Fernando, and the City of Santa Monica.

**"Party"** or **"Parties"** means Contracting Entity and/or Los Angeles.

**"Pass Through Flow"** means any wastewater discharge other than Boundary Line Connections, either measured or estimated, that is generated within one Entity's jurisdiction and is subsequently included in another Entity's measured discharge.

**"Point of Discharge"** means either (a) the population centroid of Contracting Entity or (b) the population centroid of a drainage area within Los Angeles, of an Agency other than Contracting Entity, or of an Entity not signatory to an agreement complying with the Universal Terms.

**"Prime Rate"** means the base rate on corporate loans posted by at least 75 % of the nation's 30 largest banks, as published in the Wall Street Journal or its successor publication.

**"Proportionate Share"** means (a) for treatment/disposal, the quantity of wastewater discharged directly or indirectly by an Entity into the Amalgamated System measured in terms of flow and Strength, as calculated pursuant to Section III.F, divided by the total quantity of wastewater discharged into the Amalgamated System comprised of the same parameters, calculated pursuant to Section III.A.2, and (b) for conveyance, the quantity of wastewater discharged directly or indirectly by an Entity into the Amalgamated System measured in terms of MGD-miles, calculated pursuant to Section III.G, divided by the total MGD-miles from all Entities discharging wastewater to the Amalgamated System. Proportionate Share for the City of Glendale shall include the flow, Strength and MGD-miles for its share of sludge from the Los Angeles/Glendale Water Reclamation Plant.

**"Reclaimed Water"** means Available Treatment Plant Effluent that is put to beneficial reuse in accordance with applicable laws and regulations.

**"Revenue Program"** means the rate schedule and analysis that demonstrates that each class of wastewater discharger is paying its fair and equitable share of the cost of operating and maintaining the Amalgamated System, complying with the Revenue Program Guidelines of the *Policy for Implementing the State Revolving Fund for the Construction of Wastewater Treatment Facilities* published by the California State Water Resources Control Board, dated February 21, 1996 or as it may be revised from time to time.

**"Standard Methods"** means the most recent edition of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association, the American Water Works Association, and the Water Environment Federation or their successors, or the successor publication which establishes the standards in the wastewater disposal industry.

**"Strength"** means, upon Execution of this Agreement, the parameters of Biochemical Oxygen Demand and Suspended Solids, and, subsequently, as these parameters are modified or augmented pursuant to Section II.B.1.d.

**"Surface Water Runoff"** means water contained in publicly-owned streambeds, channels or other catchments located on the ground surface or in publicly-owned storm sewers. Surface Water Runoff does not include groundwater, except for groundwater that has seeped

into publicly-owned streambeds, channels or other catchments located on the ground surface or into publicly-owned storm sewers.

**"Suspended Solids" or "SS"** means the insoluble solid matter in wastewater that is separable by laboratory filtration as determined by the procedures specified in Standard Methods.

**"System Buy-in Approach"** means the method of calculating the Amalgamated System Sewerage Facilities Charge in which the rates are based on the value of the Amalgamated System capital facilities, whether in service or still to be placed into service, calculated pursuant to Section II.C.4.a, divided by the total Amalgamated System flow and Strength capacity.

**"System Buy-out Approach"** means the method of calculating the payment to an Agency for completely removing its wastewater from the Amalgamated System in which the rates are based on the value of the Amalgamated System facilities constructed subsequent to June 30, 1984, whether in service or still to be placed into service, calculated pursuant to Section II.C.4.a, divided by the total Amalgamated System flow and Strength.

**"Universal Terms"** means those terms and conditions of this Agreement that were negotiated between Los Angeles and the Original Contracting Entities or, in the case of federal entities, provides the same cost recovery of Net Amalgamated System Expenses. These terms and conditions are set forth in detail in the Sections I through IX of this Agreement and as those terms and conditions may be amended pursuant to Sections VII and IX.P.

**"Unpaid Amount"** means the difference between what Los Angeles has billed an Entity for Net Amalgamated System Expenses under its wastewater services contract or agreement, including any month-to-month charges levied pursuant to Section VII.I, and what the Entity actually has paid.

**"Value Engineering"** means the process by which an independent engineer or group of engineers reviews and evaluates plans, specifications, and supporting engineering documents for a capital project, including the project's cost effectiveness.

## II. CHARGE SYSTEM

### A. General

Los Angeles agrees to implement and Contracting Entity agrees to abide by a new charge system. The new charge system will:

1. allow Los Angeles to equitably recover, from each Agency, that Agency's Proportionate Share of the Net Amalgamated System Expenses by implementation of an Amalgamated System Sewerage System Charge,
2. provide for the collection and crediting of Amalgamated System Sewerage Facilities Charges,
3. provide for the collection of General Fund Reimbursement Charges, and
4. provide for the collection of Nonpayment Charges.

**B. Amalgamated System Sewerage System Charge**

The Amalgamated System Sewerage System Charge shall be based on the operation and maintenance (O&M) costs and capital costs of the Amalgamated System for the Fiscal Year in which service is provided. The charge shall include credits for all Amalgamated System Revenues as discussed in Section II.B.3.

**1. Allocation of Expenses & Revenues**

The Net Amalgamated System Expenses shall be allocated to either conveyance or treatment/disposal as more fully defined in Section III.A.1. The allocated expenses shall then be divided by the appropriate Amalgamated System loading(s) to determine unit rates.

- a. The unit rate for conveyance shall be equal to the net conveyance expense divided by the Amalgamated System MGD-miles as calculated pursuant to Section III.A.2.c.
- b. The treatment/disposal expenses shall be further allocated among the parameters of flow and Strength in accordance with the procedures set forth in Section III.A.1. The unit rate for each parameter shall be equal to the portion of the Net Amalgamated System Expenses allocated to that parameter divided by the total Amalgamated System loading for that parameter.
- c. The total Amalgamated System quantities and loadings for MGD-miles, flow and Strength shall be determined in accordance with the procedures set forth in Section III.A.2.
- d. The Strength parameters shall be modified or augmented by Los Angeles as necessary to conform with state and federal requirements or, upon mutual consent of the Parties, to account for a constituent that causes the

Amalgamated System to incur a significant cost that would otherwise not be incurred.

2. Amalgamated System Expenses

a. The Amalgamated System Expenses, projected for the forthcoming Fiscal Year, used to determine the Amalgamated System Sewerage System Charge shall include the following:

- (1) The direct O&M costs of the Amalgamated System, including direct salary costs incurred by Los Angeles General Fund on behalf of the Amalgamated System and later charged to the Amalgamated System.
- (2) The direct capital costs of the Amalgamated System, whether for the purpose of upgrading existing facilities or for providing new and expanded facilities, including direct salary costs incurred by the General Fund on behalf of the Amalgamated System and later charged to the Amalgamated System.
- (3) Costs of administrative, management and support activities at the program, bureau, department and city-wide levels which are directly charged or allocated as overhead to the Amalgamated System, including the costs of administering any agreement for wastewater services that complies with the Universal Terms.
- (4) The costs associated with support facilities such as laboratories and maintenance yards to the extent that those facilities are used to support the Amalgamated System.
- (5) The costs of portable equipment, such as vehicles and computers, to the extent that the equipment is used to support the Amalgamated System.
- (6) Compensated time off, retirement and fringe benefits added to the labor component of O&M and capital costs, to the extent that they are not already included in either the direct O&M or capital costs or in the overhead allocated to the Amalgamated System.
- (7) Costs associated with the operation, maintenance and construction of capital facilities relating to the processing, distribution or sale of By-products, which costs are incurred by Los Angeles and are related to the Amalgamated System, including the associated administrative and overhead costs.

- (8) Principal and interest payments on and the costs of obtaining any loan that is attributable to the Amalgamated System, the proceeds of which are Amalgamated System Revenues pursuant to Section II.B.3.a.(4).
  - (9) Costs resulting from compliance with any program mandated by another governmental agency, or a court decree, settlement agreement or consent decree with a regulatory agency that are related to the Amalgamated System provided that Los Angeles shall make good faith efforts to make any such program available to Contracting Entity. However, the costs shall not be included if that program is mandated to be separately implemented and locally funded by any of the Agencies.
  - (10) Liability as provided in Sections VI.B and C.
  - (11) Costs of preparing Los Angeles' Wastewater Revenue Program, developing charging and billing procedures and ordinances, calculating the charges and preparing the invoices pursuant to the provisions of this Agreement, and investigating adjustments and providing customer service related to service charges. Those activities which are related to Los Angeles' internal customers that were being performed by the Los Angeles Department of Water and Power as of the Date of Execution of this Agreement shall not be included regardless of who shall perform those activities in the future.
  - (12) The capital and O&M costs of the Moss Avenue Pumping Station and portions of the Coastal Interceptor Sewer owned, managed, operated, maintained, and controlled by the City of Santa Monica at its sole and exclusive discretion, as set forth in Exhibit A.
  - (13) Any fee or charge that is legally levied by an Agency on Amalgamated System sewers or pumping plants that are located within that Agency.
  - (14) The compensation paid to an Agency removing its wastewater discharge from the Amalgamated System pursuant to Section VII.L, including any interest paid by Los Angeles for late payment pursuant to Section VII.L.
- b. The expenses used to determine the Amalgamated System Sewerage System Charge shall not include the following:

- (1) Costs related to the Local System.
  - (2) Costs of issuance, interest and retirement of principal related to the Los Angeles capital financing program, except as identified in Section II.B.2.a.(8).
  - (3) Costs related to the inspection, monitoring and enforcement programs for the Industrial Dischargers either located in Los Angeles or monitored by Los Angeles on behalf of another Entity, including associated administrative and laboratory services.
  - (4) Costs of billing, collection, and enforcement activities which are related to Los Angeles' internal customers that were being performed by the Los Angeles Department of Water and Power as of the Date of Execution of this Agreement regardless of who shall perform those activities in the future.
- c. The conveyance portion of the capital and O&M costs included as Amalgamated System Expenses shall be equal to the sum of the total cost of all facilities 30 inches in diameter and greater and the total cost of all facilities 36 inches in diameter and greater, divided by two.
- d. For purposes of determining the conveyance costs included in the Amalgamated System Expenses pursuant to Section II.B.2.c and for inclusion as an Amalgamated System facility, the diameter of a pump station and associated force main, siphon structure and piping, diversion structure, junction structure, or sewage storage facility shall be considered to be equal to the diameter of the influent sewer to the pump station, siphon, diversion structure, junction structure, or sewage storage facility. The diameter of a vent station, manhole, or other appurtenance to a sewer shall be equal to the diameter of the sewer to which the appurtenance is connected. A pump station and force main, diversion structure, junction structure, or siphon structure and piping with multiple influent sewers shall be considered to have an equivalent single influent sewer of 30 inches or greater if:

$$\sum_{i=1}^n d_i^{8/3} \geq 8,689$$

and shall be considered to have an equivalent single influent sewer of 36 inches or greater if:

$$\sum_{i=1}^n d_i^{8/3} \geq 14,130$$

Where  $d_i$  is the diameter of the  $i^{\text{th}}$  influent sewer, in inches, and  $i=1,2,\dots,n$  influent sewers.

- e. The treatment portion of the capital and O&M costs included in the allowable expenses set forth in Sections II.B.2.a shall include only one-half of the costs related to the Los Angeles-Glendale Water Reclamation Plant.

### 3. Amalgamated System Revenues

- a. The revenues to be credited against expenses in determining the Amalgamated System Sewerage System Charge shall include the following:
  - (1) Amalgamated System Sewerage Facilities Charges - The Amalgamated System Sewerage Facilities Charges received from all Agencies and determined for Los Angeles pursuant to Section III.D.2 as new or anticipated burdens are placed on the Amalgamated System.
  - (2) Any of the following penalties or interest:
    - (a) Reimbursement for any liability for non-compliance with state or federal regulatory requirements included as an Amalgamated System Expense for which a Party is solely responsible pursuant to Section VI.C.
    - (b) Penalties paid by an Agency for violating the conditions of the month-to-month relationship pursuant to Section VII.K.
    - (c) Interest paid by an Agency for late payment of amounts owed to Los Angeles in excess of compensation for the Agency's past capital payments pursuant to Section VII.L.
    - (d) Proceeds of any penalty not otherwise allocated pursuant to this Agreement.
  - (3) Any grant receipts, FEMA funds, or other state or federal appropriations that offset Amalgamated System Expenses.
  - (4) Any receipts of loans from the federal and/or state governments (e.g. from the State Revolving Fund) that are used to offset Amalgamated System Expenses, provided that Contracting Entity does not separately receive loans to offset its share of Amalgamated System Expenses.
  - (5) Revenue from the sale of By-products.

b. The revenues used to determine the Amalgamated System Sewerage System Charge shall exclude the following:

- (1) Proceeds from the Los Angeles capital financing program, including any bonds, certificates, commercial paper or other securities, except as included pursuant to Section II.B.3.a.(4).
- (2) Interest and penalties for late payments pursuant to Section III.E.
- (3) Interest from a joint account established because an Agency disputes a portion of a bill pursuant to Section VIII.C.3.

Amalgamated System Sewerage System Charges related to monitoring penalty amounts, imposed pursuant to Sections IV.A.2, IV.F, and IV.G, shall not be considered as Amalgamated System Revenues because the penalty amounts are used to adjust the Proportionate Shares attributable to each Agency and Los Angeles.

4. Reclaimed Water

Los Angeles and Contracting Entity shall share in the Available Treatment Plant Effluent produced by the Amalgamated System, as expressly set forth herein.

- a. Los Angeles shall have a proportionate right to all Available Treatment Plant Effluent produced by the Amalgamated System. The quantity of Available Treatment Plant Effluent to which Los Angeles has a right shall be equal to the total Available Treatment Plant Effluent produced by the Amalgamated System multiplied by the proportion its quantity of flow discharged into the Amalgamated System for the latest completed Flow Year, calculated pursuant to Section III.F.1.b, bears to the total Amalgamated System flow for the latest completed Flow Year calculated pursuant to Section III.A.2. For purposes of determining Los Angeles' proportionate right to Available Treatment Plant Effluent produced by the Amalgamated System, the quantity of flow discharged by Los Angeles shall include any flow discharged by an organization not having an agreement or contract that complies with the Universal Terms pursuant to Section IX.B.1.b.
- b. Contracting Entity shall have a proportionate right to Available Treatment Plant Effluent produced by the Amalgamated System. The quantity of Available Treatment Plant Effluent to which Contracting Entity has a right shall be equal to the total Available Treatment Plant Effluent produced by the Amalgamated System multiplied by the proportion its quantity of flow discharged into the Amalgamated System for the latest completed Flow

Year, calculated pursuant to Section III.F.1.a, bears to the total Amalgamated System Flow for the latest completed Flow Year, calculated pursuant to Section III.A.2.

- c. The maximum amount of Available Treatment Plant Effluent which a Party may obtain from any individual Amalgamated System facility shall be limited to its proportionate right to Available Treatment Plant Effluent produced by the entire Amalgamated System, determined pursuant to Section II.B.4.a or b, multiplied by the total Available Treatment Plant Effluent produced at that Amalgamated System facility and divided by the total Available Treatment Plant Effluent produced by the entire Amalgamated System, except as allowed by Section II.B.4.e.
- d. In no event shall a Party have a right to more Available Treatment Plant Effluent from a combination of all treatment facilities in the Amalgamated System than its proportionate right to Available Treatment Plant Effluent produced by the entire Amalgamated System, determined pursuant to Section II.B.4.a or b. This limitation on a Party's right shall not restrict a Party's ability to acquire Available Treatment Plant Effluent from any other Entity that has a right to Available Treatment Plant Effluent.
- e. Any Available Treatment Plant Effluent to which a Party has a right, but is not being utilized by that Party, may be utilized by the other Party at no cost until such time as the first Party utilizes the Available Treatment Plant Effluent or, if the first Party sells its share, until such time as the buyer of the first Party's share utilizes the Available Treatment Plant Effluent.
- f. Los Angeles shall provide Contracting Entity access to the Available Treatment Plant Effluent supply, as set forth above, at no cost to Los Angeles. Contracting Entity shall be responsible for acquiring any easements, rights-of-way, and permits as necessary and for constructing any facilities necessary for the Contracting Entity to receive Available Treatment Plant Effluent from any Amalgamated System facility. Los Angeles shall not unreasonably withhold the approval of nor unreasonably charge for any easements, rights-of-way, or permits requested by Contracting Entity.
- g. Los Angeles may impose reasonable conditions on granting access to the Available Treatment Plant Effluent supply as are necessary to ensure that such access does not interfere with its treatment operations.

C. Amalgamated System Sewerage Facilities Charges

1. Requirements for Amalgamated System Sewerage Facilities Charges

- a. Each Party shall be responsible, pursuant to Section III.D, for Amalgamated System Sewerage Facilities Charges for any net increase in anticipated wastewater discharge, as determined pursuant to Section II.C.2, arising from new development, changes in land use, or increases in discharges from Industrial Dischargers within its jurisdiction or within jurisdictions for which it has assumed full responsibility.
- b. Although a Party is responsible for Amalgamated System Sewerage Facilities Charges, it is not obligated to levy the same or any charge upon individual dischargers within its jurisdiction.
- c. Surface Water Runoff discharged directly or indirectly to the Amalgamated System may be exempted from the Amalgamated System Sewerage Facilities Charge requirement pursuant to Section II.F.4.

2. Net Increase in Anticipated Discharge

For purposes of determining whether an Amalgamated System Sewerage Facilities Charge will be required of a Party, the net increase in anticipated wastewater discharge shall be determined on a parcel by parcel basis, except where more than one parcel has been consolidated into a single development. In this case, the net increase will be based on the entire development. The net increase in anticipated wastewater discharge for any parcel or development shall be equal to the difference between the anticipated discharge and the baseline discharge for the parcel or development.

a. Anticipated Discharge

For Industrial Dischargers, the anticipated discharge shall be based on the new permitted flow and the anticipated discharges of Strength. If the Industrial Discharger's discharge permit does not contain more accurate information, the anticipated discharges of Strength shall be equal to the discharges contained in the Los Angeles Sewage Generation Factor Table, established in accordance with Section III.F.4.a, proportioned by the amount of flow.

For residential parcels and for Commercial Dischargers, the anticipated discharge shall be equal to the theoretical quantities of discharge for each of the parameters of flow and Strength based on the total square footage or

other unit of measure, as adopted pursuant to Section III.F.4.a, and the intended use of the proposed project.

b. Baseline Discharge

The baseline discharge shall be the greater of:

- (1) For an Industrial Discharger, the highest annual flow, BOD, and SS measured during the five Flow Years preceding the Date of Execution of this Agreement.

For residential parcels and for Commercial Dischargers, the theoretical quantity of discharge, established in accordance with Section III.F.4.a, for each of the parameters of flow, BOD, and SS at the time this Agreement is executed, or

- (2) the theoretical or permitted discharge that has been acquired through the payment of Amalgamated System Sewerage Facilities Charges pursuant to this Agreement.

c. Future Strength Parameters

Any future Strength parameter will be established for baseline discharge at the time the parameter is adopted pursuant to Section II.B.1.d.

3. Amalgamated System Sewerage Facilities Charge

The Amalgamated System Sewerage Facilities Charges shall be calculated as follows:

$$ASFC = [TSFCR_Q + (CSFCR_Q)(D_{Miles})](ID_Q) + \sum(TSFCR_{Strength.})(ID_{Strength})$$

Where:

ASFC = The Amalgamated System Sewerage Facilities Charge;

TSFCR<sub>Q</sub>, = The Amalgamated System Sewerage Facilities Charge rates for flow related to treatment, calculated in terms of dollars per million gallons per day pursuant to Section II.C.4;

$TSFCR_{Strength}$	=	The Amalgamated System Sewerage Facilities Charge rates for each Strength parameter related to treatment, calculated in terms of dollars per 1000 pounds per day pursuant to Section II.C.4;
$CSFCR_Q$	=	The Amalgamated System Sewerage Facilities Charge rate related to conveyance, calculated in terms of dollars per MGD-mile pursuant to Section II.C.4;
$ID_Q$ and $ID_{Strength}$	=	Party's net increase in anticipated annual average flow, and annual average Strength loading for each parameter, in terms of million gallons per day and 1000 pounds per day, respectively; and
$D_{Miles}$	=	Party's total MGD-miles for the latest completed Flow Year, calculated pursuant to Section III.G, divided by the Party's flow for the latest completed Flow Year, calculated pursuant to Section III.F.1.

#### 4. Rate Calculation

The Amalgamated System Sewerage Facilities Charge rates levied upon a Party shall be based on the System Buy-in Approach as described below. Pursuant to the provisions of Section VII.A, following the initial ten year non-renegotiation period, either Party may initiate renegotiations to change the basis of the Amalgamated System Sewerage Facilities Charge to the Incremental Cost Approach provided that the conditions of Section VII.E are met.

##### a. Value of Facilities

- (1) The value of any Amalgamated System facility in service shall be equal to the full cost of that facility inflated to reflect present costs and then depreciated.
- (2) The value of any Amalgamated System facility under construction or not yet in service, also known as "Construction Work In Progress" shall be equal to the full cost of that facility inflated to reflect present costs but not depreciated.

- (3) The remaining principal on any loan from the federal and/or state governments that was used to offset the cost of an Amalgamated System facility, pursuant to Section II.B.3.a.(4) shall be subtracted from the value of that facility.
- (4) The full cost shall be equal to the original acquisition cost, including all direct and indirect costs and all design and construction management costs, of those Amalgamated System facilities contained in Los Angeles' wastewater fixed asset register and Los Angeles' wastewater Construction Work in Progress.
- (5) Inflation to present worth shall be calculated using the *Engineering News Record* Construction Cost Index or its equivalent.
- (6) Depreciation shall be calculated using the straight-line depreciation method with the same asset lives used by Los Angeles in its accounting reports.

b. Design Capacity of Amalgamated System Facilities

(1) Treatment-related Facilities

The design capacities for flow and Strength used to calculate the Amalgamated System Sewerage Facilities Charge rate shall be equal to:

- (a) the sum of the average influent flow and Strength capacities, respectively, of the Donald C. Tillman Water Reclamation Plant, the Terminal Island Treatment Plant, the Hyperion Treatment Plant, and any other reclamation or treatment plant that is incorporated into the Amalgamated System, plus
- (b) one-half of the average influent flow and Strength capacities, respectively of the entire Los Angeles-Glendale Water Reclamation Plant, less
- (c) the sum of the design flow and Strength, respectively, of the sludge returned to the Amalgamated System conveyance system from the Donald C. Tillman Water Reclamation Plant and any other reclamation plant that is incorporated into the Amalgamated System, less

- (d) one-half of the design flow and Strength, respectively, of the sludge returned to the Amalgamated System conveyance system from the entire Los Angeles-Glendale Water Reclamation Plant.

The average influent flow and Strength capacities for the treatment and reclamation plants shall be the design values as adopted by Los Angeles' Board of Public Works or any revised values adopted by Los Angeles' Board of Public Works where the revised values reflect changes in regulation by a county, state, or federal agency or where the revised values more accurately reflect the true capacities of the plants as demonstrated by Los Angeles. The standard flow and Strength loadings in the sludge returned to the Amalgamated System conveyance facilities from the reclamation plants shall be the values used in the planning and/or design of the Amalgamated System facilities as adopted by Los Angeles' Board of Public Works or any revised values adopted by Los Angeles' Board of Public Works where the revised values more accurately reflect the average flow and Strength loadings of the sludge produced by the reclamation plants when they are operated at their influent capacities, as demonstrated by Los Angeles.

(2) Conveyance-related Facilities

The capacity of conveyance-related facilities, measured in terms of MGD-miles, shall be equal to the Amalgamated System flow capacity, calculated pursuant to Section II.C.4.b.(1), multiplied by the average distance of the Amalgamated System. The average distance of the Amalgamated System shall be equal to the sum of the MGD-miles of Los Angeles, Contracting Entity, and all other Entities discharging wastewater to the Amalgamated System, calculated pursuant to Section III.G, divided by the total flow in the Amalgamated System, calculated pursuant to Section III.A.2. The MGD-miles and total flow in the Amalgamated System shall be determined using data for the latest Flow Year completed prior to the adoption of the Amalgamated System Sewerage Facilities Charge rates pursuant to Section III.A.3.

c. Rates

- (1) The value of each facility that is part of the Amalgamated System, either by its inclusion in the fixed asset register or the Construction Work In Progress, shall be allocated to conveyance and to treatment flow and Strength by cost centers and using the same allocation factors adopted by Los Angeles pursuant to Section III.A.1.b.

- (2) The Amalgamated System Sewerage Facilities Charge rates shall be calculated by dividing the allocated costs of all capital facilities that are part of the Amalgamated System by the Amalgamated System design conveyance and treatment flow and Strength capacities as determined pursuant to Section II.C.4.b.

D. General Fund Reimbursement Charge

1. Contracting Entity shall pay a General Fund Reimbursement Charge to compensate the Los Angeles general fund for the Contracting Entity's share of providing emergency response services to the Amalgamated System. The General Fund Reimbursement Charge shall be calculated based on the formula ("Formula") set forth in Exhibit B, which is attached hereto and is incorporated herein by this reference as if it were set forth fully herein.

In no case shall the General Fund Reimbursement Charge exceed an amount equal to the O&M portion of the Amalgamated System Sewerage System Charge levied upon Contracting Entity times the lesser of: (1) 5%, or (2) the percentage of operating revenues levied upon the Los Angeles' wastewater enterprise fund as general fund reimbursement, pursuant to Los Angeles Municipal Code Section 64.60 and as that Section may be amended from time to time.

Los Angeles shall not initiate any action to revise or invalidate the Formula. The Formula may only be amended or revised under the following circumstances: (a) the State Water Resources Control Board or the Environmental Protection Agency, on its own initiative, requires or mandates the change; or (b) a court of competent jurisdiction rules in final, binding judgment that the Formula is invalid or illegal. Prior to any change in the Formula, and before implementation of any revised Formula, Los Angeles must obtain the written approval of the State Water Resources Control Board or the Environmental Protection Agency, or their successor agencies, stating that the proposed change and the revised Formula comply with the Revenue Program Guideline requirements.

2. Provided that Contracting Entity interpleads or otherwise names Los Angeles in any court challenge, Contracting Entity shall not be responsible for any General Fund Reimbursement Charge that is held to be invalid or illegal, or any amount that is held to be excessive for Los Angeles or any Agency by a court of competent jurisdiction.
3. If, in finding that the General Fund Reimbursement Charge is invalid, illegal, or excessive, a court of competent jurisdiction rules that monies collected for this purpose must be returned, Los Angeles shall within 90 days return or credit all General Fund Reimbursement Charges paid by Contracting Entity that are ordered to be returned by the court.

E. Nonpayment Charges

As of October 1 following the end of each Fiscal Year, Los Angeles shall determine all of the Unpaid Amounts which have become more than 120 days delinquent since the previous October 1. Contracting Entity shall pay a Nonpayment Charge equal to the Unpaid Amounts multiplied by Contracting Entity's Proportionate Share of the Net Amalgamated System Expenses for the Fiscal Year and divided by the total Proportionate Shares of the Net Amalgamated System Expenses for the Fiscal Year for Los Angeles and all Agencies without any Unpaid Amounts.

F. Surface Water Runoff

1. Privilege to Discharge

- a. Either Party may discharge Surface Water Runoff, directly or indirectly, to the Amalgamated System, subject to the conditions set forth in Section II.F.
- b. Discharge of Surface Water Runoff during the period of November 1 through March 31 shall be prohibited.
- c. Discharge of Surface Water Runoff shall be prohibited unless Los Angeles has obtained a waiver from the U.S. Environmental Protection Agency or has otherwise demonstrated that the discharge of Surface Water Runoff complies with the state and federal revenue program guidelines.

2. Limitation of Discharge

- a. The total Surface Water Runoff discharge to all treatment and reclamation plants in the Amalgamated System from all dischargers shall not exceed 5% of the Amalgamated System flow capacity, as defined in Section II.C.4.b.
- b. The Surface Water Runoff discharge to any treatment or reclamation plant other than the Hyperion Treatment Plant shall be limited to an aggregate amount from all dischargers that does not exceed 5% of the flow capacity of that treatment or reclamation plant, as defined in Section II.C.4.b.
- c. The Surface Water Runoff discharge to any treatment or reclamation plant shall not exceed the difference between the flow capacity at that treatment or reclamation plant, as defined in Section II.C.4.b, and the influent flow, exclusive of Surface Water Runoff, at that treatment or reclamation plant.

3. Amalgamated System Sewerage System Charges

Any Party who discharges Surface Water Runoff to the Amalgamated System shall be responsible for the full Amalgamated System Sewerage System Charge for the total amount of Surface Water Runoff discharged by the Party to the Amalgamated System.

4. Amalgamated System Sewerage Facilities Charge

a. Treatment Facilities

(1) If the aggregate amount of Surface Water Runoff discharged by all Agencies and Los Angeles does not cause any of the limitations as set forth in Section II.F.2 to be violated, no payment of Amalgamated flow System Sewerage Facilities Charges shall be required.

(2) If the aggregate amount of Surface Water Runoff discharged by all Agencies and Los Angeles causes any of the limitations as set forth in Section II.F.2 to be violated, the discharges shall be divided into categories and prioritized as follows:

Category 1 - Mandated by a responsible agency of the County of Los Angeles, the State of California, or the United States

Category 2 - Voluntary discharge

Beginning with all of the dischargers in Category 2 and then moving to Category 1, the full Amalgamated System Sewerage Facilities Charge must be paid or the flow removed from the Amalgamated System until the remaining Surface Water Runoff no longer causes the limitations as set forth in Section II.F.2 to be violated. The portions of their discharges for which the dischargers shall be required to pay the Amalgamated System Sewerage Facility Charge or remove flow from the Amalgamated System shall correspond to the proportions of the total Surface Water Runoff in their respective categories that they discharge. For purposes of this calculation, any Surface Water Runoff for which an Amalgamated System Sewerage Facilities Charge has been paid shall not be included. Once any discharger within a given category has been required to pay the Amalgamated System Sewerage Facilities Charge, all subsequent dischargers in that category shall also be required to pay the Amalgamated System Sewerage Facilities Charge.

- (3) For purposes of this Section, the flow capacities of the treatment or reclamation plants and of the Amalgamated System shall be as determined pursuant to Section II.C.4.b, the plant influent flow shall be the average plant influent flow for the most recently completed Flow Year, and the amount of Surface Water Runoff shall be the average discharge. The average discharge shall be defined as the total discharge during a Flow Year divided by the number of days of actual discharge during that same Flow Year.

b. Conveyance Facilities

- (1) Each Fiscal Year before discharging Surface Water Runoff into a conveyance system owned by the other Party, a Party wishing to discharge Surface Water Runoff shall first obtain permission from the other Party.
- (2) If the individual Surface Water Runoff discharge from any given point of diversion of a Party causes the total peak dry weather flow in the receiving conveyance system to exceed the capacity of any part of the system, the Party owning the receiving conveyance system with insufficient capacity may deny the other Party the right to discharge that portion of the Surface Water Runoff which causes the exceedence. For purposes of this paragraph, the capacity of any sewer within the receiving conveyance system shall be that peak dry weather flow which causes the sewer to flow at three-quarters (3/4) of its full depth. The capacity of any pumping station within the receiving conveyance system shall be ninety (90) percent of the rated capacity of the plant.

### III. ADMINISTRATION

A. Amalgamated System Sewerage System Charge Rate Development

1. Expense and Revenue Allocation

- a. The allocation of O&M costs to flow and Strength shall be determined by using updated cost accounting information for individual cost centers, typically unit processes, and distribution of the O&M expenditures utilizing process-specific O&M distribution factors adopted by the Los Angeles Board of Public Works for each cost center. The cost accounting information shall be updated for the first full Fiscal Year following completion of secondary treatment facilities under construction at the Hyperion Treatment Plant as of the Date of Execution of this Agreement.

Thereafter, this information shall be updated not less than once every two years using the average O&M expenditures from the two most recently completed Fiscal Years. Plant-wide allocation percentages shall be calculated by dividing the distributed O&M costs by the total costs and shall be used to allocate anticipated O&M costs in Los Angeles' Revenue Program.

- b. The allocation of capital costs to flow and Strength shall be determined by assigning anticipated capital expenditures for the forthcoming Fiscal Year to individual cost centers, typically unit processes, and distribution of these anticipated expenditures utilizing process-specific distribution factors adopted by the Los Angeles Board of Public Works for each cost center and shall be incorporated into Los Angeles' Revenue Program.

## 2. Amalgamated System Loadings

- a. The Amalgamated System flow and Strength loadings, respectively, shall be equal to:
  - (1) the sum of the influent flow and Strength loadings, respectively, at the Donald C. Tillman Water Reclamation Plant, the Terminal Island Treatment Plant, the Hyperion Treatment Plant, the entire Los Angeles-Glendale Water Reclamation Plant and any other reclamation or treatment plant that is incorporated into the Amalgamated System, less
  - (2) the sum of the flow and Strength loadings, respectively, in the sludge returned to the Amalgamated System conveyance system from the Donald C. Tillman Water Reclamation Plant, the entire Los Angeles-Glendale Water Reclamation Plant and any other reclamation plant that is incorporated into the Amalgamated System, less
  - (3) the City of Glendale's share of the influent flow and Strength loadings, respectively, at the Los Angeles-Glendale Water Reclamation Plant, plus
  - (4) the flow and Strength loadings, respectively, in Glendale's share of the sludge that is returned to the Amalgamated System conveyance system from the Los Angeles-Glendale Water Reclamation Plant.

Glendale's share of the influent flow at the Los Angeles-Glendale Water Reclamation Plant shall be equal to one-half ( $\frac{1}{2}$ ) of the total influent flow at the plant. Glendale's share of the influent Strength loadings, measured in pounds per day, shall be equal to Glendale's share of the influent flow,

measured in million gallons per day, multiplied by the average concentrations of Strength discharged from Glendale, measured in milligrams per liter, and multiplied by 8.34, a conversion factor.

Glendale's share of the sludge flow from the Los Angeles-Glendale Water Reclamation Plant shall be equal to one-half ( $\frac{1}{2}$ ) of the total sludge flow from the Los Angeles-Glendale Water Reclamation Plant for the latest completed Flow Year. Glendale's share of the Strength loadings in the sludge from the Los Angeles-Glendale Water Reclamation Plant shall be equal to the Strength loadings in Glendale's share of the influent to the plant multiplied by the Strength loadings in the sludge of the plant, and divided by the total Strength loadings in the plant influent.

- b. For purposes of calculating the Amalgamated System Sewerage System Charge rates and for determining the flow and Strength loadings from Los Angeles pursuant to Section III.F.1.b, the Amalgamated System flow and Strength loadings shall be equal to the quantities determined in Section III.A.2.a plus the sums of any penalty amounts determined pursuant to Sections IV.A.2, IV.F.2.a, IV.F.3.b, IV.G.2.a, and IV.G.3.b.
- c. The Amalgamated System MGD-miles shall be equal to the sum of the MGD-miles for all areas as set forth in Section III.G.

### 3. Rate Adoption Ordinance

Los Angeles shall annually adopt, by ordinance, in conformance with the requirements and provisions of this Agreement, the rates to determine the Amalgamated System Sewerage System Charges and Amalgamated System Sewerage Facilities Charges for the use of the Amalgamated System. This rate setting process will begin with the first full Fiscal Year following Execution of the Agreement and continue every Fiscal Year thereafter. The rates for the first partial year, if any, after Execution of the Agreement shall be those that were mutually agreed to by the Parties prior to Execution of this Agreement.

- a. **Rate Adoption Time Frame** - Los Angeles shall adopt rates for service to be provided in the next Fiscal Year prior to the start of that Fiscal Year. To allow sufficient time for the Contracting Entity to adopt corresponding rates for its own jurisdiction, Los Angeles shall provide the adopted rates no later than four (4) months prior to the start of the Fiscal Year for which they are to become effective. If there are less than four (4) months between the Execution of this Agreement and the start of the next Fiscal Year, Los Angeles shall provide preliminary rates within one (1) month of Execution of this Agreement and shall adopt rates within four (4) months of the Execution of this Agreement.

- b. Breakdown of Charges to O&M and Capital - The rate adoption ordinance shall provide a breakdown of the Amalgamated System Sewerage System Charge rates into the categories of O&M and capital.
  - c. At the same time that Los Angeles submits information on the forthcoming annual rates, Los Angeles shall provide an estimate of Amalgamated System Sewerage Service Charges for the following five year period. This estimate shall not be binding and shall only be used by the Agencies for planning purposes.
4. Modification of Adopted Rates

If during a given Fiscal Year it becomes apparent that the actual expenditures in that Fiscal Year will exceed the anticipated expenditures used to establish the rates for the Amalgamated System Sewerage Service Charge in that Fiscal Year, Los Angeles may adopt a new rate ordinance to reflect the increased costs and subsequent payments will be based on the newly adopted rates. If Los Angeles adopts new rates pursuant to this Section, Los Angeles shall also prepare new invoices pursuant to Sections III.B.1, 2 and 3 for any remaining periods within the Fiscal Year for which the new rates will apply.

**B. Billing**

- 1. Los Angeles shall prepare an annual estimated bill containing bimonthly installments for the Amalgamated System Sewerage System Charge and the General Fund Reimbursement Charge to the Contracting Entity. The bill shall be postmarked to Contracting Entity no later than 30 days prior to the start of the Fiscal Year for which the bill applies.
- 2. The Amalgamated System Sewerage System Charge portion of the bimonthly installments shall be calculated as follows:

$$\text{Bimonthly Amount} = [(R_Q \times D_Q) + \sum (R_{\text{Strength}} \times D_{\text{Strength}}) + (R_C \times D_C)] \times F / 6$$

where:

$R_Q$  = The Amalgamated System Sewerage System Charge rate for the Fiscal Year which is attributable to flow in terms of dollars per million gallons;

- $R_{\text{Strength}}$  = The Amalgamated System Sewerage System Charge rate for the Fiscal Year which is attributable to each Strength parameter in terms of dollars per 1000 pounds;
- $R_C$  = The Amalgamated System Sewerage System Charge rate for the Fiscal Year which is attributable to MGD-miles in terms of dollars per MGD-mile;
- $D_Q$  = The wastewater flow, including any treatment sludge, discharged by Contracting Entity during the latest completed Flow Year;
- $D_{\text{Strength}}$  = The quantity of each Strength parameter, including any treatment sludge, discharged by Contracting Entity during the latest completed Flow Year;
- $D_C$  = The MGD-miles attributable to Contracting Entity for the latest completed Flow Year, calculated pursuant to Section III.G;
- $F$  = Payment factor equal to the ratio of actual expenditures to budgeted expenditures, averaged over the three most recently completed Fiscal Years, multiplied by 0.9.

3. The General Fund Reimbursement Charge portion of the bimonthly installments shall be calculated pursuant to Section II.D.
4. Within six months following the conclusion of a Fiscal Year, Los Angeles shall submit to Contracting Entity a reconciliation invoice for the Amalgamated System Sewerage System Charge and the General Fund Reimbursement Charge for services provided during that Fiscal Year. For purposes of calculating the reconciliation invoice, the Proportionate Share shall be determined using quantities for the Flow Year with the designation corresponding to the same Fiscal Year for which service is provided and for which the reconciliation invoice applies. The reconciliation invoice shall include the following :
  - a. the Contracting Entity's reconciled Amalgamated System Sewerage System Charge which shall be calculated as its Proportionate Share of the actual Net Amalgamated System Expenses for that Fiscal Year, including credit for all Amalgamated System Sewerage Facilities Charges paid by the Agencies and determined for Los Angeles, although not paid by Los Angeles, pursuant to Section III.D.2, less any payments already made pursuant to Section III.C.1. This part of the bill will also break the total actual Net Amalgamated Expenses for the Fiscal Year into expenses

attributable to O&M and expenses attributable to capital in accordance with Los Angeles' adopted policy on capitalization.

- b. the Contracting Entity's reconciled General Fund Reimbursement Charge for that Fiscal Year which shall be calculated pursuant to Section II.D.1, less any General Fund Reimbursement Charge payments already made by Contracting Entity during the Fiscal Year pursuant to Section III.C.
- c. any Nonpayment Charge for the past Fiscal Year pursuant to Section II.E.
- d. a statement of the flow and Strength, including any penalty amounts, of each Entity discharging into the Amalgamated System.
- e. a statement of the final Amalgamated System rates.

C. Payment

1. Contracting Entity shall make the payments for the bimonthly installments of the Amalgamated System Sewerage System Charge and the General Fund Reimbursement Charge, prepared pursuant to Section III.B.1, for each Fiscal Year in a timely manner so that they are postmarked by the last business day of July, September, November, January, March, and May, respectively, or within 30 days of receipt of the annual bill by Contracting Entity, which ever comes later.
2. Contracting Entity shall pay the reconciliation invoice within 30 days of its receipt.

D. Amalgamated System Sewerage Facilities Charge Payment

1. Beginning on the Date of Execution of this Agreement, Contracting Entity and Los Angeles shall be responsible for Amalgamated System Sewerage Facilities Charges in accordance with Section II.C.1.
2. All of Contracting Entity's Amalgamated System Sewerage Facilities Charges for its increased flow and strength during each bimonthly billing period shall be calculated by Contracting Entity and submitted along with the next bimonthly payment made pursuant to Section III.C.1. The Amalgamated System Sewerage Facilities Charges for which Los Angeles is responsible shall be calculated by Los Angeles after the end of each Fiscal Year. Los Angeles' and Contracting Entity's Amalgamated System Sewerage Facilities Charge shall be calculated pursuant to Section II.C using rates adopted pursuant to Section III.A.3. These amounts are Amalgamated System Revenues and shall be subtracted from the Net

Amalgamated System Expenses when determining the reconciliation invoices pursuant to Section III.B.4.a.

3. Within 60 days following the end of each Fiscal Year, Contracting Entity shall submit a report to Los Angeles listing all new development, changes in land use, or increases in discharges from Industrial Dischargers which could result in a net increase in wastewater discharge during the Fiscal Year or partial Fiscal Year following the Date of Execution. The report shall total the increased flow, Strength loadings and MGD-miles resulting from the development, changes in land use and increases in discharges from Industrial Dischargers listed in the report. Within 60 days following the end of each Fiscal Year, Los Angeles shall submit to Contracting Entity a report listing all of the new development, changes in land use and increases in discharges from Industrial Dischargers in the areas for which Los Angeles has responsibility and which could result in a net increase in wastewater discharge during the Fiscal Year or partial Fiscal Year following the Date of Execution. The report shall total the increased flow, Strength loadings and MGD-miles resulting from the development, changes in land use and increases in Industrial discharges listed in the report for Los Angeles. Either Party may, at its own cost, audit the other Party's records to assess compliance with the foregoing requirement.
4. Los Angeles shall notify Contracting Entity in writing if Contracting Entity's wastewater discharges are increasing at a rate that exceeds the growth rate upon which Los Angeles' long-range capacity plans for the System are based. If Los Angeles' wastewater discharges are increasing at a rate greater than the growth rate upon which the long-range capacity plans are based, Los Angeles shall notify Contracting Entity in writing.
5. By February 1 of each year, Contracting Entity shall provide Los Angeles with an estimate of the long-term increased flow and Strength loadings arising from new development, changes in land use and increases in discharges from Industrial Dischargers within its jurisdiction during the forthcoming Fiscal Year. This information shall be used for planning purposes only; there is no implied warranty as to its accuracy.

E. Late Payment

1. Any payments of Amalgamated System Sewerage System Charges, General Fund Reimbursement Charges, Nonpayment Charges or Amalgamated System Sewerage Facilities Charges that are late shall be subject to interest on the original amounts due at the Prime Rate in effect when the payment first became due plus one (1) percent for payments that are 1 to 30 days late, the Prime Rate in effect when the payment first became due plus five (5) percent for payments 31 to 60 days late, and the Prime Rate in effect when the payment first became

due plus ten (10) percent for payments more than 60 days late, not to exceed the maximum rate allowed by law. As long as payment, including applicable interest and penalties, is made within 120 days, Contracting Entity shall not be deemed to be in Default.

2. Los Angeles shall credit Contracting Entity for any Unpaid Amount that is subsequently paid by an Agency other than Contracting Entity, provided that Contracting Entity has paid a Nonpayment Charge corresponding to its share of the original Unpaid Amount. Los Angeles shall notify Contracting Entity of the credit within ten (10) business days of receiving the payment of the Unpaid Amount. Contracting Entity shall deduct the amount of the credit from its next bimonthly payment of Amalgamated System Sewerage System Charges, provided the payment of the Unpaid Amount was received no less than ten (10) days before the due date of the next bimonthly payment. If the payment of the Unpaid Amount is received less than ten (10) days before the due date of the next bimonthly payment, Contracting Entity shall deduct the credit from its second bimonthly payment of the Amalgamated System Sewerage System Charges following the payment of the Unpaid Amount. Noticing shall be pursuant to the requirements of Section IX.O. The credit shall be equal to:
  - a. The amount of the previous Nonpayment Charge, plus
  - b. Any related interest and penalties paid by the delinquent Agency over the period of time from when Contracting Entity is billed the Nonpayment Charge to when the Unpaid Amount is recovered, multiplied by Contracting Entity's Proportionate Share of the Net Amalgamated System Expenses for the Fiscal Year divided by the total Proportionate Shares of the Net Amalgamated System Expenses for the Fiscal Year for Los Angeles and all Agencies without any late or delinquent payments.
3. If Los Angeles does not notify Contracting Entity within ten (10) days of receipt of the payment of an Unpaid Amount by an Agency, Los Angeles shall credit Contracting Entity with interest at a rate equal to the Prime Rate in effect when the credit first became due plus ten (10) percent over the period of time from when the Unpaid Amount was paid to the date that Los Angeles notifies Contracting Entity of the credit.

F. Discharge Flow and Strength

1. Discharge Quantities

The quantity of wastewater flow and Strength discharged by each Party, including any wastewater treatment sludge and Surface Water Runoff, shall be calculated at the end of each Flow Year as follows:

- a. The total quantity of flow and Strength discharged from Contracting Entity shall be equal to:
  - (1) the sum of all quantities measured, pursuant to Sections III.F.2 and IV.B, at gauging stations located on sewers discharging from Contracting Entity either directly or indirectly to the Amalgamated System, less
  - (2) any quantities from Surface Water Runoff, Pass Through Flows, and Boundary Line Connections which originate from any Entity besides Contracting Entity that pass through a gauging station located on sewers discharging from Contracting Entity, less
  - (3) any wastewater or Surface Water Runoff that is generated within the territorial boundaries of jurisdictions or organizations for which Los Angeles has assumed responsibility pursuant to Section IX.B.1.b that passes through a gauging station located on sewers discharging from Contracting Entity, plus
  - (4) the quantities, pursuant to Section III.F.3, that are generated in Contracting Entity's ungauged areas and discharged either directly or indirectly to the Amalgamated System, including Boundary Line Connections.
- b. The total quantity of flow and Strength discharged by Los Angeles shall be equal to:
  - (1) the total Amalgamated System flow and Strength loadings, calculated as set forth in Section III.A.2, less
  - (2) the sum of all quantities discharged by the Agencies and other Entities to the Amalgamated System.

## 2. Measurement Methodology

- a. The measurement of the quantity of flow or Strength of any discharge pursuant to Section IV.B shall be performed in accordance with the requirements of Section IV.D. Strength shall be measured following the sampling and analysis protocols recommended in Standard Methods. All analyses of Strength samples shall be performed by a laboratory certified to conduct such analyses by the California State Department of Health Services pursuant to the Environmental Laboratory Act of 1988, and as that Act may be amended from time to time.
- b. The total mass emission of Strength at any given monitoring station shall be equal to the daily average pounds per day of Strength measured at the monitoring station multiplied by the number of days in the Flow Year. The daily average pounds per day shall be equal to the straight average of the samples taken, as follows:
  - (1) For the first three years following Execution of this Agreement, it shall be based on all samples taken from the Date of Execution through the end of the Flow Year.
  - (2) After the first three years following Execution of this Agreement, it shall be based on samples taken only during the three most recently completed Flow Years.

## 3. Estimation Methodology

The quantity of flow or Strength of any discharge that is not measured pursuant to Section IV.B, including the discharge from Boundary Line Connections and Pass Through Flows, shall be equal to the sum of the estimated discharges from each of the individual dischargers within the ungauged area, except that Los Angeles need not estimate the quantities of Pass Through Flows or Boundary Line Connections if they are tributary to unmeasured areas for which the discharges are estimated. However, if requested by Contracting Entity for purposes of its facilities planning, Los Angeles shall make this information available to Contracting Entity.

- a. The flow and Strength discharges for residential customers shall be estimated using the theoretical factors adopted pursuant to Section III.F.4.b.
- b. Where a Party bases its service charges to Commercial/Industrial Dischargers on their metered water usage, the flows for those dischargers shall be estimated based on their metered water usage and the percentage

of water usage that is discharged to the sewer, which percentage is as adopted by Los Angeles for use in charging the dischargers within its corporate limits and included in its Wastewater Revenue Program. Where a Party monitors Industrial Dischargers' flows directly, those dischargers' estimated flows shall be based on the monitored flows. Where a Party does not base its service charges to Commercial/Industrial Dischargers on metered water usage or monitored flows, the flows for those dischargers shall be estimated using the theoretical factors adopted pursuant to Section III.F.4.b.

- c. The Strength discharged by Commercial/Industrial Dischargers shall be estimated using the theoretical factors adopted pursuant to Section III.F.4.b, except where Strength concentrations are monitored. Where a Party monitors Industrial Dischargers' Strength concentrations, those customers' estimated Strength shall be based on the monitored concentrations.

#### 4. Estimation Factors

- a. For purposes of determining estimated discharges for the calculation of Amalgamated System Sewerage Facilities Charges, Los Angeles' Board of Public Works shall adopt a list of user categories and assumed loadings per unit of usage for each category. This list of user categories and assumed loadings shall be known as the Los Angeles Sewage Generation Factor Table.
- b. For purposes of determining estimated discharges for ungauged areas and Boundary Line Connections, Los Angeles' Board of Public Works shall adopt another list of user categories and an assumed flow and Strength per unit of usage for each category. This list of user categories and assumed loadings shall be based on the Los Angeles Sewage Generation Factor Table, however, the number of user categories shall be condensed to conform with the classifications set forth in the Los Angeles County Assessor's tax roll or as may otherwise be mutually agreed to by the Parties. This list shall be known as the Amalgamated System Sewage Generation Factor Table.

#### G. MGD - miles

Until Contracting Entity and Los Angeles can develop a more accurate method of allocating the costs of the conveyance portion of the Amalgamated System, the MGD-miles shall be based on a straight-line centroidal approach. Los Angeles shall use the following formulas and procedures to determine the centroidal MGD-miles for

Contracting Entity, Los Angeles, other Agencies and any other Entities discharging wastewater to the Amalgamated System:

1. For an area whose flow is tributary to the Donald C. Tillman Water Reclamation Plant but not tributary to any future treatment or water reclamation plant that may be operated by Los Angeles, that area's MGD-miles shall be equal to the sum of:
  - a. the portion of that area's flow that is treated at the Donald C. Tillman Water Reclamation Plant, including the area's share of sludge returned to the sewer from any upstream treatment or water reclamation plant that may be operated by Los Angeles, multiplied by the straight-line distance from the area's Point of Discharge to the Donald C. Tillman Water Reclamation Plant, plus
  - b. the portion of that area's flow that is treated at the Los Angeles-Glendale Water Reclamation Plant, including the area's share of sludge returned to the sewer from any upstream treatment or water reclamation plant that is operated by Los Angeles, multiplied by the straight-line distance from the area's Point of Discharge to the Los Angeles-Glendale Water Reclamation Plant, plus
  - c. the portion of that area's flow that is treated at the Hyperion Treatment Plant, including the area's share of sludge returned to the sewer from any upstream treatment or water reclamation plant that is operated by Los Angeles, multiplied by the sum of the straight-line distance from the area's Point of Discharge to the Valley Spring Forman Diversion Structure and the straight-line distance from the Valley Spring Forman Diversion Structure to the Hyperion Treatment Plant.
2. For an area whose flow is tributary to the Valley Spring Forman Diversion Structure but not tributary to the Donald C. Tillman Water Reclamation Plant or any future treatment or water reclamation plant that may be operated by Los Angeles, that area's MGD-miles shall be equal to the sum of:
  - a. the portion of that area's flow that is treated at the Los Angeles-Glendale Water Reclamation Plant, including the area's share of sludge returned to the sewer from any upstream treatment or water reclamation plant that may be operated by Los Angeles, multiplied by the straight-line distance from the area's Point of Discharge to the Los Angeles-Glendale Water Reclamation Plant, plus
  - b. the portion of that area's flow that is treated at the Hyperion Treatment Plant, including the area's share of sludge returned to the sewer from any

upstream treatment or water reclamation plant that is operated by Los Angeles, multiplied by the sum of the straight-line distance from the area's Point of Discharge to the Valley Spring Forman Diversion Structure and the straight-line distance from the Valley Spring Forman Diversion Structure to the Hyperion Treatment Plant.

3. For an area whose flow is tributary to the Los Angeles-Glendale Water Reclamation Plant, but not tributary to the Donald C. Tillman Water Reclamation Plant, the Valley Spring Foreman Diversion Structure or any future treatment or water reclamation plant that may be operated by Los Angeles, that area's MGD-miles shall be equal to the sum of:
  - a. that portion of that area's flow that is treated at the Los Angeles-Glendale Water Reclamation Plant, including the area's share of sludge returned to the sewer from any upstream treatment or water reclamation plant that may be operated by Los Angeles, multiplied by the straight-line distance from that area's Point of Discharge to the Los Angeles-Glendale Water Reclamation Plant, plus
  - b. the portion of that area's flow that is treated at the Hyperion Treatment Plant, including the area's share of sludge returned to the sewer from any upstream treatment or water reclamation plant that is operated by Los Angeles, multiplied by the straight-line distance from the area's Point of Discharge to the Hyperion Treatment Plant.

For the City of Glendale, the area's flow shall include its share of sludge from the Los Angeles-Glendale Water Reclamation Plant, calculated pursuant to Section III.A.2.a.

4. For an area whose flow is tributary to the Hyperion Treatment Plant, but not tributary to the Donald C. Tillman Water Reclamation Plant, the Valley Spring Forman Diversion Structure, the Los Angeles-Glendale Water Reclamation Plant or any future treatment or water reclamation plant that may be operated by Los Angeles, that area's MGD-miles shall be equal to that area's flow multiplied by the straight-line distance from that area's Point of Discharge to the Hyperion Treatment Plant.
5. For an area whose flow is tributary to the Terminal Island Treatment Plant but not tributary to any future treatment or water reclamation plant that may be operated by Los Angeles, that area's MGD-miles shall be equal to that area's flow multiplied by the straight-line distance from that area's Point of Discharge to the Terminal Island Treatment Plant.

6. For an area whose flow is tributary to any future treatment or water reclamation plant that may be operated by Los Angeles, that area's MGD-miles shall be equal to the MGD-miles calculated in Sections III.G.1 through 5, as applicable, plus the amount of that area's flow that is treated at the future treatment or reclamation plant multiplied by the straight-line distance from that area's Point of Discharge to the future treatment or reclamation plant.
7. In order to determine the MGD-miles attributable to Los Angeles, Los Angeles shall first be divided into sub-areas tributary to the Donald C. Tillman Water Reclamation Plant, the Valley Spring Forman Diversion Structure, the Los Angeles-Glendale Water Reclamation Plant, the Hyperion Treatment Plant, the Terminal Island Treatment Plant and any future treatment or water reclamation plant that may be operated by Los Angeles, respectively. The sub-area tributary to the Terminal Island Treatment Plant shall be further subdivided into the Harbor, Terminal Island and Wilmington areas. The MGD-miles for each sub-area shall be determined using the same procedures in Sections III.G.1 through 6, as applicable. The total MGD-miles attributable to Los Angeles shall be equal to the sum of the MGD-miles attributable to each of the sub-areas.
8. In calculating MGD-miles pursuant to Section III.G.1 through 7, each area's flow shall consist of the total wastewater generated within the area, including infiltration and inflow and the sludge from any treatment facility operated by the Entity that is not included in the Amalgamated System, which sludge is discharged by the Entity into the Amalgamated System.

#### IV. DISCHARGE MEASUREMENT

##### A. Responsibility for Monitoring, Estimating, Evaluating, and Reporting

1. The discharging Party, i.e. the Party discharging wastewater to the other Party, shall be responsible for all monitoring, evaluating, and reporting of wastewater discharge measurements at the locations required by Section IV.B. The discharging Party shall also be responsible for estimating, evaluating and reporting flow and Strength where estimation is allowed pursuant to Section IV.B.
2. The receiving Party, i.e. the Party receiving the wastewater discharge from the other Party, shall have the option of monitoring, evaluating, and reporting of discharge measurements when the discharging Party fails to execute its responsibility pursuant to Sections IV.A.1 and IV.E. In this case, the cost of monitoring, estimating, evaluating, and reporting shall still be the sole responsibility of the discharging Party and not attributable to the Amalgamated System. If the receiving Party exercises its option due to the discharging Party's

failure, the data shall not be considered missing, but penalty amounts equal to 5% of the quantities measured by the receiving Party shall be added to the measured quantities.

3. If the receiving Party exercises its option for monitoring, evaluating, and reporting, the discharging Party may resume its responsibility after it demonstrates compliance with the monitoring, evaluating, and reporting requirements for a period of 30 days. During the demonstration period, the receiving Party shall still have the right to monitor the discharge at the expense of the discharging Party, but no penalty amounts shall apply.

**B. Criteria for Measurement**

1. The flow and Strength shall be measured for any discharge that meets one of the following criteria:
  - a. The discharge is Surface Water Runoff.
  - b. The wastewater discharged through a single sewer, excluding Pass Through Flow, Surface Water Runoff, and Boundary Line Connections from another Entity, exceeds 0.5 cfs for the prior three consecutive flow years.
2. All flow and Strength not measured pursuant to Section IV.B.1 shall be estimated pursuant to Section III.F.3, except as follows:
  - a. The receiving Party, at its discretion, may measure flow and Strength from a discharging Party with a discharge less than 0.5 cfs, provided that the cost of such measurement will be the sole responsibility of the receiving Party and not be attributable to the Amalgamated System.
  - b. The discharging Party may elect to measure the flow and Strength of any discharge in lieu of estimating the flow and Strength. The discharging Party shall inform the receiving Party of its election before the Flow Year in which it will begin such measurement or within two months after the Date of Execution, whichever comes later. The discharging Party may also elect to begin estimating the flow and Strength of any discharge it has previously elected to measure, but is not required to measure, in which case it shall inform the receiving Party of this election before the Flow Year in which it will begin such estimation. Whether it elects to estimate or measure the discharge, the discharging Party shall use the elected method to determine the flow and strength it reports to the receiving Party pursuant to Section IV.C for the entire Flow Year.

C. Flow and Strength Reporting

1. Quarterly reports of all measured flow and Strength data collected during a quarter shall be submitted within 30 days of the end of the quarter.
2. Annual reports of the estimated flow and Strength, including all Boundary Line Connections, and the last quarterly report of measured flow and Strength data shall be submitted within 30 days of the end of the Flow Year.
3. Submission of quantity measurements and estimates shall constitute the discharging Party's verification that such data is an accurate representation of the Party's wastewater flow and Strength and acknowledgment that such data will be used to calculate a Party's total quantity of wastewater pursuant to Section III.F.1.

D. Flow and Strength Measurement

1. Frequency
  - a. Flow shall be monitored continuously.
  - b. Strength shall be sampled monthly for the first two years after Execution of this Agreement and then quarterly thereafter. Strength samples shall be collected for 24 uninterrupted hours each month or quarter such that each day of the week is represented over a seven sample period and no day of the week is represented in more than four out of twelve consecutive 24-hour samples. Each 24-hour composite sample shall consist of 24 individual samples which are combined such that each sample represents the volume of wastewater discharged during the time between samples.
2. Physical Requirements
  - a. A permanent and continuous flow metering station shall be installed at each location where flow and Strength is measured pursuant to Section IV.B and at each location where Surface Water Runoff is discharged to the sanitary sewer system.
  - b. A temporary flow metering device may be used to measure flow while the permanent station is being repaired or replaced. If a temporary flow metering device is used, the Party shall make reasonable efforts to ensure the timely repair or replacement of the permanent flow metering device.
  - c. All Strength samples shall be taken at the same location as the flow measurement station using an automatic sampling device.

3. Weather

No Strength samples shall be collected within 72 hours of a rainfall event which records more than ½ inch of rain within a 24 hour period.

4. Flow Monitoring

- a. Flow metering equipment installed at each station shall be of a type that will accurately measure the range of flows passing the gauging station.
- b. Flow metering equipment shall include redundant measuring techniques over the entire range of flows for which the station is intended to measure.
- c. Procedures for the measurement, data collection, and flow calculation shall be documented for each gauging station.
- d. If multiple methods of measurement can be utilized, the most accurate method for the particular device being used and the quantity of flow being measured shall be consistently utilized and reported. In the event of a measurement sensor failure, an alternate method of measurement and flow calculation may be utilized until such time as the sensor failure is corrected.

E. Verification of Procedures

1. The discharging Party shall provide the receiving Party with its flow database via computer disk or other electronic means. The database shall include all of the discharging Party's unprocessed data for each measuring technique employed in measuring its flows pursuant to Section IV.D.4.b. The discharging Party shall provide the data collected each month within fifteen (15) working days after the end of the month. If the discharging Party fails to provide the data within the fifteen day period, the receiving Party shall have the option of monitoring the flow itself at the expense of the discharging Party pursuant to Section IV.A. Any data not submitted within thirty (30) days following the end of each quarter shall be considered missing pursuant to Sections IV.F and G. Provision of the database to the receiving Party does not release the discharging Party of its obligation to evaluate the data pursuant to Section IV.A.
2. If the receiving Party desires to conduct an audit of the discharging Party's quantity measurements and/or estimations, it shall notify the discharging Party of its intent to audit within 30 days of receiving the measured or estimated quantities. The receiving Party's costs of performing the audit shall be borne by the receiving Party. The discharging Party shall provide the receiving Party access to all monitoring data and records within 15 days of the notice of intent to audit. The receiving Party shall notify the discharging Party of the results of

the audit within 45 days of the notice of intent to audit. If the receiving Party's audit of the data and records reveals discrepancies in the discharging Party's data and records, the Parties shall meet for the purpose of resolving, to the mutual satisfaction of both Parties, the discrepancy in the data and records. If the Parties cannot arrive at a satisfactory resolution, the Parties shall resolve the issue via the dispute resolution process set forth in Section VIII.C. Routine questions regarding quantity measurement and estimation shall not be considered to be audits for purposes of this Section and shall be considered to be an expense of the Amalgamated System.

3. A representative of the receiving Party, at its own cost, shall be authorized to accompany the discharging Party and observe the discharging Party's practice in setting the Strength sampling device, in retrieving the device and in compositing the samples, for one sampling each year and at all locations discharging Party is required to sample. Discharging Party shall notify receiving Party of the date, time and location(s) of the next sampling after being notified of receiving Party's desire to observe the sampling.
4. The discharging Party shall split each composite sample and shall make available a preserved half to the receiving Party within six hours of retrieval of the sampling device if so requested by the receiving Party at no cost to the discharging Party.
5. If the Parties cannot arrive at a satisfactory solution to any disputes over sampling and measurement, the Parties shall resolve the issue via the dispute resolution process set forth in Section VIII.C. Routine questions shall not be considered audits for purposes of this Section and shall be considered expenses of the Amalgamated System.

F. Missing Flow Data

1. If no more than 30 days are missed during any Flow Year and no more than 14 days are missed during any 30 day period at any individual monitoring station, then:
  - a. No penalty shall apply.
  - b. The data for the missing days shall be assumed to be equal to the average of all measured days.
  - c. A letter shall be submitted explaining the cause for any missed data that exceeds 7 consecutive days.

2. If the number of missed days is between 30 and 90 days during any Flow Year, is no more than 30 days during any 45 day period, or is no more than 20 consecutive days at any individual monitoring station, then:
  - a. The data for the missing days shall be assumed to be equal to the average of all measured days. To this amount shall be added a penalty equal to 10% of the assumed amount.
  - b. A letter shall be submitted explaining the cause for any missed data that exceeds 7 consecutive days.
3. If the number of missed days exceeds 90 days during any Flow Year, is more than 30 days during any 45 day period, or is more than 20 consecutive days at any individual monitoring station, then:
  - a. The Party will be deemed to be in Default upon compliance with the noticing requirements of Section VIII.A.1.c or Section VIII.A.2.b.
  - b. The missing data shall be assumed to be equal to either (1) the average of all measured days, if at least 200 days were measured or (2) the average of the preceding Flow Year, if less than 200 days were measured. To this amount shall be added a penalty equal to 25% of the assumed amount.
  - c. The receiving Party shall have the right to measure the flow at the expense of the discharging Party. The receiving Party shall have the right to continue to meter the flow at the expense of the discharging Party until the discharging Party has shown, to the reasonable satisfaction of the receiving Party, that it can and will comply with all of the flow metering requirements.

#### G. Missing Strength Data

1. If no more than 2 non-consecutive months of sampling are missed during the first two Fiscal Years and no quarterly samples thereafter at any individual monitoring station, then:
  - a. No penalty shall apply.
  - b. The data for the missing months or quarters shall be assumed to be equal to the average of all measured months or quarters.
  - c. A letter shall be submitted explaining the cause for any missed data.

2. If the number of missed samples is between 2 and 4 months and no more than 2 consecutive months during the first two Fiscal Years and no more than one quarterly sample thereafter at any individual monitoring station, then:
  - a. The data for the missing months or quarters shall be assumed to be equal to the average of all measured months or quarters. To this amount shall be added a penalty equal to 10% of the assumed amount.
  - b. A letter shall be submitted explaining the cause for any missed data.
3. If the number of samples missed is more than four months or more than two consecutive months during the first two Fiscal Years or more than one quarterly sample thereafter at any individual monitoring station, then:
  - a. The Party will be deemed to be in Default upon compliance with the noticing requirements of Section VIII.A.1.c or Section VIII.A.2.b.
  - b. The missing data shall be assumed to be equal to either (1) the average of all measured months or quarters or (2) the average of the preceding year, whichever is higher. To this amount shall be added a penalty equal to 25% of the assumed amount.
  - c. The receiving Party shall have the right to measure Strength at the expense of the discharging Party. The receiving Party shall have the right to continue to measure the strength at the expense of the discharging Party until the discharging Party has shown, to the reasonable satisfaction of the receiving Party, that it can and will comply with all of the Strength measuring requirements.

#### H. Conditions for Waiver of Penalties

If conditions beyond the reasonable control of a discharging Party prevents that Party from meeting any of the measurement requirements, the discharging Party may petition the receiving Party for a waiver of the penalty provisions. The discharging Party shall provide documentation of the reasons that caused the problems and the steps being taken to correct the problems. The receiving Party shall not unreasonably deny the petition for waiver.

#### I. Implementation

1. Each discharging Party shall have 12 months from the Execution of this Agreement to install and operate the flow monitoring stations required under the terms of this Agreement. Each discharging Party shall report the completion of

the flow monitoring stations. Upon notification of completion, the flow monitoring requirements shall become effective.

2. For locations that meet the requirements for measuring flow pursuant to Section IV.B.1 or where the discharging Party elects to measure the flow and Strength of its discharge pursuant to Section IV.B.2.b subsequent to the Date of Execution, the discharging Party shall have one year from the date that the location meets the requirements or from the date that the discharging Party notifies the receiving Party of its election to install the appropriate flow metering equipment. Each discharging Party shall report the completion of the flow monitoring stations. Upon notification of completion, the flow monitoring requirements shall become effective.
3. The provisions for the collection of flow data in the agreements in effect prior to the Date of Execution of this Agreement shall continue in effect until the new flow measurement stations are operable.

## V. MEETINGS

### A. Contracting Entity/Los Angeles Meetings

1. Within 30 days of a written request of Contracting Entity, but in no case less than semi-annually, Los Angeles shall meet with a representative or representatives of Contracting Entity to discuss issues of mutual interest relative to this Agreement, including but not limited to:
  - a. The operation and maintenance costs pertaining to the Amalgamated System;
  - b. The capital program pertaining to the Amalgamated System;
  - c. Written policies pertaining to the administration of the charge system;
  - d. Disputes between Los Angeles and the Agencies, pursuant to Section VIII of this Agreement;
  - e. The risk management practices pertaining to the Amalgamated System;
  - f. Regulatory updates.

At any such meeting, two representatives from Los Angeles shall be present. One Los Angeles representative shall be an employee from Los Angeles with knowledge of the Amalgamated System and the second Los Angeles

representative shall be appointed by the President of the City Council. The representative from Contracting Entity must be an Assistant Manager, Division Head, City Manager, Department Head or their duly authorized representative. In no case shall the representative(s) from either Party be legal counsel. The foregoing requirements, however, shall not prevent either Party from designating other representatives to be present at any such meeting, including additional staff, consultants and attorneys. Los Angeles' costs of preparing for and attending any such meeting shall be considered a contract administration cost and shall be included as Amalgamated System Expenses pursuant to Section II.B.2.a.(3).

2. In submitting the Revenue Program and annual Capital Improvement Program to the Council and the Mayor for approval, Los Angeles Staff shall identify and summarize any issues where the Contract Entity disagrees with the proposed Revenue Program or Capital Improvement Program and shall expressly state the reasons for those disagreements.
3. If matters are deemed to be of general interest to all Agencies who have wastewater conveyed and treated by Los Angeles, Los Angeles shall have the right to meet with the representatives of the Agencies collectively to discuss the issues of common interest. If Los Angeles meets with the Agencies collectively, this shall not preclude either Contracting Entity or Los Angeles from requesting a meeting to discuss an issue or issues limited in scope to the interest of Contracting Entity and Los Angeles.
4. If requested by two or more Agencies, those Agencies shall have the right to meet collectively with Los Angeles. If Los Angeles meets collectively with the Agencies, this shall not preclude either Contracting Entity or Los Angeles from requesting a meeting to discuss an issue or issues limited in scope to the interest of the Contracting Entity and Los Angeles.

#### B. Value Engineering

1. The Agencies have the right, collectively, to meet at least once with any Value Engineering team hired by Los Angeles to review a proposed capital project for the Amalgamated System. For each project, Los Angeles' cost of the first of any such meeting shall be considered to be an Amalgamated System Expense. Contracting Entity shall pay the cost incurred by the Value Engineering team as a result of any subsequent meetings in proportion to its flow discharged to the Amalgamated System divided by the total flow discharged to the Amalgamated System by those Agencies requesting the subsequent meetings. The first meeting shall take place, if at all, within 30 days of the date of the letter requesting such meeting and at a mutually convenient time and place.

2. Los Angeles shall provide the Agency representatives with a copy of any Value Engineering study for an Amalgamated System project within 30 days of the completion of the study.

C. Financial Auditing

1. The Agencies have the right, collectively, to meet at least once each auditing cycle with the auditor of the System's financial statement. The meeting shall take place, if at all, within 30 days of the date of the letter requesting such meeting and at a mutually convenient time and place. The cost of a single meeting shall be considered to be an Amalgamated System Expense. Contracting Entity may have further meetings with the auditors of the Amalgamated System's financial statement, provided that Contracting Entity reimburses Los Angeles for any additional auditor's cost incurred as a result of the additional meetings, in proportion to its flow discharged to the Amalgamated System divided by the total flow discharged to the Amalgamated System by those Agencies requesting the subsequent meetings. Los Angeles may require that the auditors bill the Agencies directly for the additional costs.
2. Contracting Entity shall have the right to audit those System financial records that are made available to the auditor of the System's financial statements for audit purposes and to review the audit work papers at its own expense.

VI. OPERATION, LIABILITY, AND COMPLIANCE

A. Ownership and Operation

1. Los Angeles is recognized as the sole owner and sole operating authority of the Amalgamated System. As such, Los Angeles shall exercise reasonable care and skill and shall act as a prudent manager of the Amalgamated System to ensure compliance with all federal, state, and local laws, regulations, and rules pertaining to the discharge of wastewater, including without limitations all applicable pretreatment standards and effluent limits, if any.
2. With regard to the inspection, maintenance, and operation of the Local System or of facilities owned by either Los Angeles or Contracting Entity and all discharges within each Party's respective jurisdiction or territorial boundaries, each Party shall exercise reasonable care and skill and shall act as a prudent manager to ensure compliance with all federal, state, and local laws, regulations, and rules pertaining to the discharge of wastewater, including without limitation, all applicable pretreatment standards and effluent limitations, if any.

3. Contracting Entity hereby waives any present and future claims to any equity interest in the Amalgamated System. Los Angeles agrees that any future agreement or contract with any other Entity shall not give that Entity any equity interest in the Amalgamated System.

## B. Liability

### 1. Regulatory Liability

Liability, federal or state, whether related to water or air, including fines, penalties, increased costs due to more stringent regulations as a result of the regulatory liability, and/or the cost of any alternative project in lieu of, or in addition to, any fine or penalty shall be treated as an expense of the Amalgamated System if said liability results from the construction or operation of the Amalgamated System. This would include, but not be limited to: operator error, negligence, sewage spills or other discharges resulting from clogs, breaks in pipes, lack of capacity, or electrical outages, equipment failure or breakdown, discharges into the air in violation of any SCAQMD rule or regulation, or any other action or inaction by Los Angeles in constructing or operating the Amalgamated System which results in liability assigned to any portion of the Amalgamated System.

### 2. General Liability

Unless otherwise stated in this Agreement, third party liability, including compensatory damages, shall be treated as an expense of the Amalgamated System if said liability results from the operation of the Amalgamated System.

### 3. Liability Related to Non-Amalgamated System Facilities

Contracting Entity will not be responsible for liability which results solely from construction and operation of the Local System. Similarly, Los Angeles will not be responsible for liability which results solely from construction and operation of Contracting Entity's wastewater collection system. If liability results from a combination of activities involving the Amalgamated System and other wastewater facilities, the Net Amalgamated System Expenses shall include the costs related to that portion of the liability attributable to the activities involving the Amalgamated System which is the basis for the liability.

### 4. Gross Negligence

Liability which results from gross negligence and/or the willful and/or intentional acts of an individual or individuals charged with the operation of a facility which is part of the Amalgamated System shall not be chargeable as an expense of the

Amalgamated System but shall be borne by Los Angeles or the successor jurisdiction responsible for the operation of the Amalgamated System.

5. Notification of Claims

Los Angeles shall provide written notification to all Agencies of any and all claims and Notices of Dispute submitted to Los Angeles which refer, relate, or pertain to the Amalgamated System within thirty (30) days of receipt of such claim, provided that such claims are for amounts exceeding \$500,000, excluding construction claims. Notification of construction claims shall only be required if so requested by Contracting Entity.

C. Compliance with State and Federal Regulatory Requirements

1. The Parties shall satisfy all state or federal requirements for preparing and updating their Revenue Programs.
2. In any circumstance where (i) Los Angeles as owner of the System is mandated by a state or federal requirement to establish a program, prepare a study, or undertake some other action and (ii) such action would require Los Angeles to enter Contracting Entity's jurisdiction, Contracting Entity shall be responsible for complying with such requirement and shall report to Los Angeles all actions undertaken to comply.
  - a. Los Angeles shall provide written notification to Contracting Entity of any state or federal requirements that are applicable to Contracting Entity in the foregoing circumstances.
  - b. If Contracting Entity fails to take the necessary action after having been duly notified of its obligations by Los Angeles and if Contracting Entity's failure to take the necessary action would result in any liability payable from the Amalgamated System, then Los Angeles shall have the authority to enter Contracting Entity's jurisdiction to perform the required actions on behalf of Contracting Entity and to directly charge Contracting Entity for any costs necessarily incurred to achieve compliance.
  - c. If Contracting Entity's failure to take the actions necessary to comply with the state or federal requirements results in any liability payable from the Amalgamated System, Contracting Entity shall bear full financial responsibility for any fines or penalties that are levied as a result of Contracting Entity's failure to comply.
  - d. If Los Angeles and Contracting Entity are both required to take actions to comply with state and federal requirements and Los Angeles fails to take

the necessary actions to comply with the state and federal requirements and if Los Angeles' failure to take the necessary actions results in any liability payable from the Amalgamated System, Los Angeles shall bear full financial responsibility for any fines or penalties that are levied as a result of Los Angeles' failure to comply.

## VII. TERM OF AGREEMENT

The term of this Agreement is thirty (30) years unless it is modified in writing by mutual consent of the Parties and shall commence upon full Execution.

### A. Reasons to Initiate Renegotiations

During the unexpired term of this Agreement, either Party may request that the other Party negotiate, in good faith, modifications of the Agreement which the requesting Party believes are necessary because of any of the following changed circumstances:

1. There is a material change in the regulatory framework for wastewater that renders one or more of the terms or conditions of the Agreement to no longer be fair and equitable;
2. There is a proposed change in the physical configuration of the Amalgamated System that the existing terms or conditions of the Agreement do not adequately address;
3. There is a material change in the financial framework of Los Angeles' wastewater conveyance and/or treatment system which either renders any of the terms or conditions of the Agreement to no longer be fair and equitable or creates a condition that the existing terms or conditions cannot accommodate;
4. There is any change in the regulatory, operating or financial framework of Los Angeles' wastewater conveyance and/or treatment system, which in the view of either Party, will or has caused the charge system described in Section II of this Agreement to no longer be fair and equitable.
5. If, after ten (10) years from the Date of Execution of this Agreement, Los Angeles requests the Contracting Entity to contribute money towards capital facilities or improvements for the Amalgamated System which are valued at \$100 million or more, including direct and indirect costs, in any one fiscal year and whose useful life is greater than the length remaining on the term of the then existing Agreement.

B. Initial Time Prohibitions on Negotiations

Notwithstanding the provisions of Section VII.A above, and excepting the provisions within this Agreement concerning Reclaimed Water and Surface Water Runoff, the Parties hereby knowingly and expressly waive the right to renegotiate any provision of this Agreement for a period of ten (10) years from the Date of Execution, irrespective of the cause, rationale or circumstances. The Parties further acknowledge and agree that the existing charge system will be used to recover the Amalgamated System Expenses during the initial ten (10) years of this Agreement even if either Party believes that the charge system may not be fair and equitable. The Parties acknowledge and agree that they have reached this Agreement following a period of lengthy and complicated negotiations and they are unwilling and further find it imprudent to revisit the subject-matter herein for a period of ten (10) years. With respect to the renegotiation of the Reclaimed Water and Surface Water Runoff provisions, the Parties knowingly and expressly waive the right to renegotiate these provisions for a period of five (5) years from the Date of Execution of this Agreement. Thereafter, either Party may seek to renegotiate Reclaimed Water and Surface Water Runoff provisions at any time. However, if after two years of good faith negotiations, the Parties fail to agree on new Reclaimed Water and Surface Water Runoff provisions, this Agreement shall not terminate within the initial ten (10) years of this Agreement.

C. Negotiation Completion Requirements

If after two years of good faith negotiations concerning any of the above proposed changes to a then existing Agreement, pursuant to Sections VII.A and B, the Parties have been unable to reach a mutual agreement on any proposed changes to a then existing Agreement, the then existing Agreement shall, unless otherwise stated, terminate and the relationship of the Parties shall be governed by Section VII.I below.

D. Negotiations at Expiration of the Term

At least two calendar years prior to the expiration date of a then existing Agreement, the Parties shall begin good faith negotiations to extend the relationship of the Contracting Entity with Los Angeles for the conveyance and treatment of the Contracting Entity's wastewater. If, at the time set for expiration of the then existing Agreement, the Parties have not been able to reach a new agreement or have not agreed to extend the then existing Agreement, the Agreement shall, unless otherwise stated in Sections VII.A or B, terminate and the relationship of the Parties shall be governed by Sections VII.I and L below.

E. Conditions for Modification Proposals

In the renegotiation of any provision in this Agreement pursuant to Section VII.A or in the negotiation of any extension to this Agreement or any new agreement pursuant to Section VII.D, all Los Angeles proposals to the Contracting Entity shall include a restatement of this Section VII.E in its entirety and shall comply with the following:

1. The charge system must be fair and equitable to Los Angeles and Contracting Entity;
2. The charge system for the Contracting Entity within the Amalgamated System must be substantially similar to and consistent with the charge system for the internal users of Los Angeles' wastewater conveyance and/or treatment system within the Amalgamated System;
3. There shall be a fair and equitable cost recovery methodology to fully reimburse Los Angeles and the Contracting Entity for capital payments for the Amalgamated System capacity needed to serve new dischargers; and
4. There shall be a fair and equitable term (period of years) as measured by the capital needs and revenue requirements of the Contracting Entity.

F. Requirement for Good Faith Renegotiations

Los Angeles' obligation to, in good faith, negotiate an extension of its relationship with the Contracting Entity pursuant to Section VII.D or renegotiate any matter under this Agreement pursuant to Section VII.A shall not be discharged unless and until it has presented in good faith a proposal which complies with the requirements set forth in Section VII.E above.

G. Non-binding Mediation

It shall be the right of either Party to request, in writing, a formal, non-binding mediation concerning the renegotiation of any provision of this Agreement or negotiation of any extensions hereto up to and including the one hundred eightieth (180<sup>th</sup>) calendar day prior to termination of this Agreement pursuant to Sections VII.C and D above. The non-requesting Party must accept a timely written request for non-binding mediation. The good faith negotiations shall not be deemed complete until the formal, non-binding mediation process has concluded by written statement of the mediator or the term of this Agreement has terminated pursuant to Sections VII.C and D above.

#### H. Termination Restriction

In the event Los Angeles fails to propose provisions or an extension pursuant to Sections VII.C and D above that satisfy the requirements of Section VII.E or fails to participate in a formal, non-binding mediation process upon timely request by the Contracting Entity, the then existing Agreement shall not terminate and it shall continue in full force and effect until Los Angeles presents, in good faith, a proposal to the Contracting Entity that satisfies the requirements of Section VII.E.

#### I. Month to Month Relationship

The Parties recognize that withdrawal from the Amalgamated System is a serious and complex undertaking and as such agree to follow the procedure for such withdrawal as set forth herein. If the Parties are unable to reach a mutual agreement on changes to the then existing Agreement proposed pursuant to Section VII.C above and the then existing Agreement is terminated as provided, or if the term of the then existing Agreement expires as described in Section VII.D above, or if a Party remains in Default for more than ninety (90) days, the result in any of these instances shall be a month to month relationship between the Parties wherein Los Angeles agrees to transport and treat the wastewater of the Contracting Entity provided that the Contracting Entity:

1. pays its fair and equitable share of the wastewater conveyance and treatment costs, including O&M and capital, in an amount and according to a charge system as determined by Los Angeles consistent with the requirements of Section VII.E above;
2. complies with all then existing regulatory requirements, rules, regulations, laws and directives of the federal and state government concerning wastewater, including all Industrial Waste pretreatment requirements, rules, regulations and laws; and
3. actively and in good faith works towards extricating its wastewater discharge from the Amalgamated System.

#### J. Termination of the Month to Month Relationship

The month to month relationship shall terminate if:

1. the Parties agree to a written agreement which supersedes the month to month relationship;
2. the Contracting Entity removes its wastewater discharge from the Amalgamated System;

3. the Contracting Entity violates one of the provisions of the month to month relationship set forth above; or
4. five years expires from the date that the month to month relationship commences. However, this five year cap on the month to month relationship may be extended by mutual written agreement of the Parties.

K. Penalties for Violation of the Month to Month Relationship Conditions

If the Contracting Entity violates the terms and conditions of the month to month relationship, the Contracting Entity shall move, with all due deliberate speed, to remove its wastewater discharge from the Amalgamated System and shall be liable to pay the Amalgamated System a 10% penalty on all wastewater conveyance and treatment provided by the Amalgamated System from the time the Contracting Entity violates the terms of the month to month relationship to the time that the Contracting Entity no longer discharges wastewater to the Amalgamated System. If the Contracting Entity takes longer than one year from the date that it violates the month to month relationship to remove its wastewater from the Amalgamated System, then the penalty for conveyance and treatment of the Contracting Entity's wastewater shall increase to 15% and shall increase 5% each year until the Contracting Entity's wastewater is removed from the Amalgamated System.

L. Contracting Entity Capital Investment Buyout

If the Contracting Entity removes its wastewater discharge from the Amalgamated System pursuant to any of the scenarios set forth above, then the Amalgamated System will reimburse the Contracting Entity for the remaining value of its past capital payments for the Amalgamated System. The compensation for the past capital payments shall be based on the System Buy-out Approach as described below :

1. The values of Amalgamated System facilities in service or included in Construction Work in Progress from Fiscal Year 1984-85 forward shall be determined using the procedure contained in Section II.C.4.a.
2. The value of each facility determined pursuant to Section VII.L.1 shall be allocated to conveyance and to treatment flow and Strength by cost centers and using the same allocation factors adopted by Los Angeles pursuant to Section III.A.1.b.
3. The compensation rates shall be calculated by dividing the totals of the values allocated pursuant to Section VII.L.2 by the Amalgamated System MGD-miles and flow and Strength loadings determined pursuant to Section III.A.2 for the latest completed Flow Year. Los Angeles shall calculate the compensation rates

and include the rates in its Revenue Program whenever it prepares and adopts a Revenue Program.

4. The amount of compensation shall be calculated by multiplying Contracting Entity's MGD-miles and flow and Strength discharges for the latest completed Flow Year by the compensation rates and summing the results.
5. Los Angeles shall subtract the following from Contracting Entity's compensation for its past capital payments calculated pursuant to Section VII.L.1 through 4:
  - a. Any Amalgamated System Sewerage System Charges, General Fund Reimbursement Charges, and Amalgamated System Sewerage Facilities Charges owed by Contracting Entity pursuant to Sections III.C and D.
  - b. Any interest owed for late payments pursuant to Section III.E.
  - c. Any surcharges owed for wastewater service provided to Contracting Entity after it is required to remove its wastewater from the Amalgamated System pursuant to Section VII.K.
  - d. Any amounts owed by Contracting Entity for meetings with any Value Engineering team or the System's financial auditor beyond the first such meeting, pursuant to Sections V.B.1 and V.C.1.
6. Contracting Entity shall pay to Los Angeles any negative net amount calculated above within 90 days of removing its flow. Los Angeles shall pay to Contracting Entity any positive amount calculated above within 90 days of Contracting Entity removing its flow. If payment is made after 90 days but before 120 days, interest shall be added at the Prime Rate in effect at the time Contracting Entity removes its flow plus one (1) percent. If payment is made after 120 days but before 150 days, interest shall be added at the Prime Rate in effect at the time Contracting Entity removes its flow plus five (5) percent. If payment is made after more than 150 days, interest shall be added at the Prime Rate in effect at the time Contracting Entity removes its flow plus ten (10) percent. In no case shall interest exceed the maximum rate allowed by law.

## VIII. CONFLICTS

### A. Default

#### 1. Events Constituting a Default by Contracting Entity

Each of the following constitutes a "Default" by Contracting Entity under this Agreement.

- a. Contracting Entity fails to pay any amount of an undisputed invoice, including any applicable interest and penalties, within 120 days of the due date.
- b. Contracting Entity fails to pay at least eighty-five (85) percent of the total amount due on any disputed invoice by the due date and to place the withheld amount into a joint account within ten (10) business days from the due date, as required pursuant to Section VIII.C.3.a.
- c. Contracting Entity fails to perform or observe any term, covenant, or undertaking in this Agreement that it is to perform or observe and such failure continues for ninety (90) days from a Notice of Default being sent in the manner prescribed in Section IX.O.

#### 2. Events Constituting a Default by Los Angeles

Each of the following constitutes a "Default" by Los Angeles under this Agreement.

- a. Los Angeles fails to accept and treat the wastewater discharged into the Amalgamated System by Contracting Entity.
- b. Los Angeles fails to perform or observe any term, covenant, or undertaking in this Agreement that it is to perform or observe and such failure continues for ninety (90) days from a Notice of Default being sent in the manner prescribed in Section IX.O.

## B. Remedies

In the event of a Default, the Parties shall have the following rights and remedies:

### 1. Specific Performance

Contracting Entity and Los Angeles agree and recognize that the rights and obligations set forth in this Agreement are unique and of such a nature as to be inherently difficult or impossible to value monetarily. If one Party does not perform in accordance with the specific wording of any of the provisions in this Agreement applicable to that Party, Defaults, or otherwise breaches this Agreement, an action at law for damages or other remedies at law would be wholly inadequate to protect the unique rights and interests of the other Party to the Agreement. Accordingly, in any court controversy concerning this Agreement, the Agreement's provisions will be enforceable in a court of equity by specific performance, including a month to month relationship and termination thereof as provided in Sections VII.I and J. This specific performance remedy is not exclusive and is in addition to any other remedy available to the Parties.

### 2. Cumulative Rights and Remedies

The Parties do not intend that any right or remedy given to a Party on the breach of any provision under this Agreement be exclusive; each such right or remedy is cumulative and in addition to any other remedy provided in this Agreement or otherwise available at law or in equity. If the non-breaching Party fails to exercise or delays in exercising any right or remedy, the non-breaching Party does not thereby waive that right or remedy. Furthermore, no single or partial exercise of any right, power, or privilege precludes any further exercise of a right, power, or privilege granted by this Agreement or otherwise.

### 3. Attorneys' Fees

In any adversarial proceedings between the Parties other than the dispute resolution procedure set forth below, the prevailing Party shall be entitled to recover their costs, including reasonable attorneys' fees. If there is no clear prevailing party, the Court or arbitrator shall determine the prevailing party and provide for the award of costs and reasonable attorneys' fees. In considering the reasonableness of either Party's request for attorneys' fees as a prevailing party, the Court or arbitrator shall consider the quality, efficiency, and value of the legal services and similar/prevaling rate for comparable legal services in the local community. If Los Angeles is awarded its legal fees/costs, then any proceeds therefrom shall first be applied so as to reduce legal fees/costs, if any, incurred by the Amalgamated System and then, to the extent there is any remaining balance, to the legal fees/costs incurred by Los Angeles.

## C. Dispute Resolution

### 1. Scope of Dispute Resolution

Disputes ("Disputes") between the Parties other than those constituting a "Default", or "Exclusion" (defined below), shall be resolved pursuant to the provisions of this Section.

### 2. Exclusions

#### a. Emergency

An emergency event which, if not promptly resolved, may result in imminent danger to the public health, safety or welfare shall not be subject to dispute resolution.

#### b. Complete Discretion

Those matters reserved to the complete discretion of Los Angeles or Contracting Entity under this Agreement shall not be subject to dispute resolution.

### 3. Procedures for Disputes Regarding Invoices

a. Contracting Entity may dispute any portion of a bill for service provided by Los Angeles only because it disagrees with the methodology or calculation of such charges. When disputing a bill, Contracting Entity shall tender the undisputed amount, but in no case less than 85% of the total amount billed, to Los Angeles when the payment is due, along with a written notice stating the amount of the bill which is being disputed, explaining the reason for the disputed amount and identifying the proposed banking institution for the joint account. Contracting Entity shall deposit the withheld amount in an interest bearing joint account within 10 business days of the date of the Contracting Entity's written notice. The joint account shall be at a banking institution selected by both Parties and shall be in the joint names of Contracting Entity and Los Angeles. Disbursements from the joint account shall be made only at the written direction of an authorized representative of each Party. The withheld funds shall remain in the joint account until such time as the dispute is resolved. Failure to pay at least 85% of the total amount billed by the due date and to place the withheld amount into a joint account shall invalidate the dispute and shall be considered a failure to make payment.

b. Within 30 calendar days of receipt of a written notice of the amount being disputed and the explanation for the dispute, Los Angeles shall notify Contracting Entity in writing that it: (1) agrees that Contracting Entity is correct in its assertion concerning the disputed amount; (2) disagrees with

Contracting Entity's assertion concerning the disputed amount and shall provide an explanation for its disagreement; or (3) needs an additional 15 calendar days to investigate the assertion by Contracting Entity. If requesting an additional 15 days, Los Angeles must provide an explanation as to why the additional time is required to complete its investigation. Failure to respond in writing within 30 calendar days, or within 45 days if an extension is requested, of receipt of Contracting Entity's written notice will result in Los Angeles being deemed to have agreed with the assertion of Contracting Entity.

- c. If Los Angeles notifies Contracting Entity that it disagrees with Contracting Entity's position on the disputed amount, Los Angeles shall simultaneously provide written notification to Contracting Entity of a date and time for a meet and confer. The dispute resolution process described in this Section and in Section VIII.C.4 may only be initiated if Contracting Entity has paid at least 85% of the invoice and deposited any remaining disputed amounts into an interest bearing joint account. Any costs or attorney's fees associated with pursuit of a billing dispute will be borne by the Party incurring said costs or attorney's fees.
  - d. Contracting Entity and Los Angeles shall receive interest from the joint account in proportion to the amount of principal of the joint account that they receive upon resolution of the dispute. The Parties agree to provide written authorization for release of the funds within 30 days following the resolution of the amount in dispute in accordance with the agreement. If the disputed amount was greater than the 15% withheld pursuant to Section VIII.C.3.a above, Los Angeles shall return any amounts due to Contracting Entity within 30 days following the resolution of the dispute together with interest at the same rate that the joint account was earning.
4. Other Disputes
- a. Each Party to this Agreement may submit any Dispute related to or arising under this Agreement to non-binding mediation by delivering a Notice of Dispute to the other Party.
  - b. The written Notice of Dispute prepared by the Party shall be delivered to the other Party in accordance with Section IX.O. The Notice of Dispute shall clearly describe the basis of the Dispute and the Sections of the Agreement under which the Dispute arises.
  - c. The non-binding mediation shall be conducted by Judicial Arbitration Mediation Services (JAMS) or an equivalent mediation service agreed to by the Parties.
  - d. Unless otherwise agreed, a mediator shall be appointed within forty-five (45) days of the date the Notice of Dispute is delivered to hear the Dispute and provide a written determination. The mediator shall be chosen jointly by the Parties. If the Parties cannot agree, the Los Angeles County

Superior Court shall appoint the mediator. Employees or agents of Los Angeles or Contracting Entity are ineligible to serve as the mediator.

- e. The mediation shall be held within ninety (90) days of the date the Notice of Dispute is delivered.
- f. Any statute of limitations applicable to any claims, rights, causes of action, suits, or liabilities of whatever kind or nature, in law, equity or otherwise, whether known or unknown, shall be tolled during the mediation process. For purposes of this Section, the mediation process shall commence upon the service of a Notice of Dispute to the other Party pursuant to Section VIII.C.4.a above. For purposes of this Section, the mediation process shall be deemed complete ten (10) days after service of the mediator's written notice of the conclusion of the mediation.

## IX. GENERAL PROVISIONS

### A. Supersedence

Upon execution of this Agreement, any and all existing agreements or contracts between Los Angeles and Contracting Entity concerning the use of the Amalgamated System are hereby rescinded, except for a settlement agreement relating to the Pending Actions and for those provisions relating to flow monitoring pursuant to Section IV.I.3.

### B. Applicability To Others

#### 1. Future Wastewater Service Contracts or Agreements

- a. After the Date of Execution, Los Angeles agrees that any other agreement or contract relating to wastewater service entered into by and between Los Angeles and any Entity shall comply with the Universal Terms, the Federal Clean Water Act, the Clean Water Grant Revenue Program, and the State Revolving Fund Loan Program requirements, and as they may be amended from time to time, or any other such statutes or regulations as mutually agreed by the Parties, except as otherwise provided in Section IX.B.1.b.
- b. Los Angeles may enter into wastewater service agreements or contracts with jurisdictions or organizations that do not comply with the Universal Terms provided that:
  - (1) all flow originating from any jurisdiction or entity signing such an agreement shall be considered to have originated from Los Angeles,
  - (2) any jurisdiction or entity signing such an agreement shall be billed an equivalent General Fund Reimbursement Charge unless otherwise prohibited by law, and

(3) there will be no additional costs to the Contracting Entity.

c. Los Angeles shall not authorize or permit any Entity which is not signatory to a wastewater service agreement or contract that complies with the Universal Terms to acquire or use any capacity in excess of the amount said Entity is expressly authorized to use by virtue of its wastewater service agreement or contract with Los Angeles in effect on the Date of Execution of this Agreement. If an Entity which is not signatory to a wastewater service agreement or contract complying with the Universal Terms discharges in excess of the amount of flow or Strength to which it is entitled by the wastewater service agreement or contract in effect on the Date of Execution of this Agreement, Los Angeles will undertake legal proceedings to invalidate the existing agreement or contract and/or force the Entity to return their flow to within the contract limits and/or remove their wastewater discharge from the Amalgamated System.

## 2. Copies of New Agreements

If Los Angeles, after the Date of Execution, proposes to enter into any new wastewater service agreement or contract or to supplement, revise, or add an addendum to any existing wastewater service agreement or contract, then Los Angeles shall provide Contracting Entity with a copy of the same, in its final form, at least thirty (30) days prior to either the date the matter is presented to the governing body of Los Angeles or the date of execution by Los Angeles, whichever is earlier.

## C. Revenue Program

Each Party shall prepare a Revenue Program as required by state and federal requirements. Following the initial approval of the Party's Revenue Program by the State Water Resources Control Board, or the successor agency, subsequent revisions or modifications shall only be required to maintain compliance with state and/or federal requirements.

## D. Admissions by Parties

Nothing in this Agreement constitutes an admission of liability by either Party. This Agreement and any documents prepared in connection herewith may not be used as evidence in any litigation, except as necessary to interpret or enforce the terms of this Agreement.

E. Construction of Agreement

Each Party, with the assistance of competent legal counsel, has participated in the drafting of this Agreement and any ambiguity should not be construed for or against any Party on account of such drafting.

F. Each Party Bears Own Costs

Each Party is to bear its own costs, expenses, and attorneys' fees arising out of or in connection with the subject matter of this Agreement and the negotiation, drafting, and execution of this Agreement. Each of the Parties understands that this Agreement includes all claims for loss, expense and attorneys' fees, taxable or otherwise, incurred by it or arising out of the Pending Actions.

G. Waiver of Breach

No waiver or indulgence of any breach or series of breaches of this Agreement shall be deemed or construed as a waiver of any other breach of the same or any other provision hereof or affect the enforceability of any part or all of this Agreement. No waiver shall be valid unless executed in writing by the waiving Party.

H. Awareness of Contents/Legal Effect

The Parties expressly declare and represent that they have read the Agreement and that they have consulted with their respective counsel regarding the meaning of the terms and conditions contained herein. The Parties further expressly declare and represent that they fully understand the content and effect of this Agreement and they approve and accept the terms and conditions contained herein, and that this Agreement is executed freely and voluntarily.

I. Agreement Binding on All

This Agreement shall be binding upon and shall inure to the benefit of each of the Parties, and each of their respective agents, employees, directors, officers, attorneys, representatives, principals, shareholders, sureties, parents, subsidiaries, affiliates, successors, predecessors, assigns, trustees or receivers appointed to administer their assets, and attorneys of any and all such individuals and entities. All the covenants contained in this Agreement are for the express benefit of each and all such persons described in this Section. This Agreement is not intended to benefit any third parties.

J. Counterparts

This Agreement may be executed in counterparts. This Agreement shall become operative as soon as one counterpart hereof has been executed by each Party. The counterparts so executed shall constitute one Agreement notwithstanding that the signatures of all Parties do not appear on the same page.

K. Severability

Should any non-material provision of this Agreement be held invalid or illegal, such invalidity or illegality shall not invalidate the whole of this Agreement, but, rather, the Agreement shall be construed as if it did not contain the invalid or illegal part, and the rights and obligations of the Parties shall be construed and enforced accordingly.

L. Captions

The captions contained herein are included solely for convenience and shall not be construed as part of this Agreement or as full or accurate descriptions of the terms hereof.

M. Choice of Law

This Agreement shall be construed and enforced pursuant to the laws of the State of California.

N. Authority to Enter into This Agreement

Each Party represents and warrants that its respective obligations herein are legal and binding obligations of such Party, that each Party is fully authorized to enter into this Agreement, and that the person signing this Agreement hereinafter for each Party has been duly authorized to sign this Agreement on behalf of said Party.

O. Notice

1. Any notice required under this Agreement shall be written and shall be served either by personal delivery, mail or fax.
2. In the case of service by personal delivery or fax, no additional time, in days, shall be added to the time in which a right may be exercised or an act may be done.
3. In the case of service by mail, notice must be deposited in a post office, mailbox, subpost office, substation, or mail chute, or other like facility regularly maintained by the United States Postal Service, in a sealed envelope, with postage paid, addressed to the representative(s) of the Party on whom it is to be served, at the office set forth in Section IX.O.4 below. The service is complete at the time of deposit. Any period of notice and any right or duty to do any act or make any response within any period or on a date certain after service of notice by mail shall be extended five days. Any period of notice and any right or duty to do any act or make any response within any period or on a date certain

after service of notice by Express mail or other method of delivery providing for overnight delivery shall be extended by two court days.

4. Any notice required by this Agreement shall be served on the following representative(s) of the Parties:

City of Los Angeles:

City of Los Angeles  
Bureau of Sanitation  
433 S. Spring Street, Fourth Floor  
Los Angeles, CA 90014

Attention: Financial Management

Contracting Entity:

City of Beverly Hills  
342 North Foothill Rd.  
Beverly Hills, CA 90210

The Parties may, upon written notice, add or substitute representatives or addresses.

P. Amendments and/or Changes to Agreement

Any amendments and/or changes to this Agreement must be in writing, signed by a duly authorized representative of the Parties hereto, and must expressly state the mutual intent of the Parties to amend this Agreement as set forth herein. The Parties to this Agreement recognize that the terms and conditions of this Agreement which are set forth herein in the Sections preceding this Section have been arrived at through the collective negotiations of the following entities: The City of Los Angeles and the City of Beverly Hills, the City of Culver City, County Sanitation Districts Nos. 4, 5, 9, 16 and 27 of Los Angeles County, the City of El Segundo, the City of San Fernando and the City of Santa Monica. The Parties hereby agree that no amendments and/or changes may be made to the Universal Terms of this Agreement as set forth in the Sections which appear in this Agreement preceding this Section without the negotiated, collective agreement of Los Angeles and either seventy five percent (75 %) of the Agencies or Agencies representing seventy five percent (75 %) of all the flow discharged by the Agencies. The Parties also hereby recognize that each Agreement between Los Angeles and an Agency named herein shall contain this requirement as part of said Agreement. The Parties further recognize that the Agreements between Los Angeles and each of the Agencies named herein may contain terms and conditions set forth in Sections which appear after this Section which are necessitated by the relationship between Los Angeles and the individual Contracting Entity. However, any such additional Sections shall not alter, modify or change the terms and conditions of the Agreement as set forth in the Sections preceding this Section.

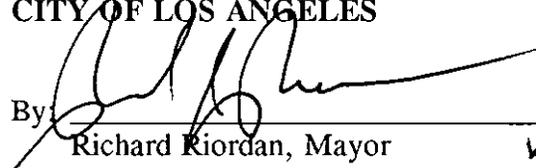
X. EFFECTIVE DATE

- A. To become effective, both this Agreement and a settlement agreement relating to the Pending Actions must be executed by Contracting Entity and Los Angeles. The effective date shall be the latter of the Date of Execution of this Agreement or the date of execution of the settlement agreement.
- B. For purposes of billing and payment, the provisions of Sections I through X of this Agreement shall not become effective until July 1, 1999. The charges for Fiscal Year 1998-99 shall be calculated in the same manner that the charges for Fiscal Year 1997-98 were determined.
  - 1. By May 1, 1999 Los Angeles shall prepare an estimated invoice for Fiscal Year 1998-99 in an amount equal to 90% of the total invoice for Fiscal Year 1997-98. By July 1, 1999 Contracting Entity shall pay the estimated invoice for Fiscal 1998-99.
  - 2. By December 1, 1999 Los Angeles shall prepare a reconciliation invoice for Fiscal Year 1998-99 in an amount equal to the total charges for Fiscal Year 1998-99 less the estimated payment previously made. Contracting Entity shall pay the reconciliation invoice within 30 days of its receipt.

ATTEST:

  
J. Michael Carey  
City Clerk  
4/21/99

CITY OF LOS ANGELES

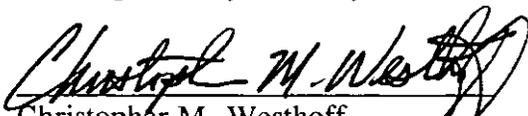
By:   
Richard Riordan, Mayor vw

Date: APR 16 1999

Approved as to Form:

James K. Hahn  
Los Angeles City Attorney

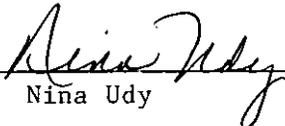


  
Christopher M. Westhoff  
Assistant City Attorney

CITY OF BEVERLY HILLS

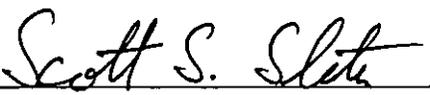
By   
Les Bronte, Mayor

ATTEST:

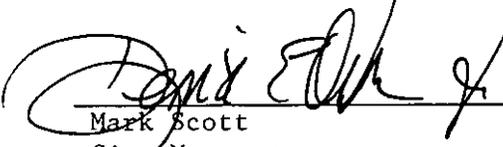
By   
Nina Udy, City Clerk

Approved as to Form:

HATCH AND PARENT

By   
Scott S. Slater, Esq., Hatch and Parent,  
Attorneys for the City of Beverly Hills

APPROVED AS TO CONTENT:

  
Mark Scott  
City Manager

  
Dan Webster  
Director of Public Works



City of Santa Monica



REACH	DESCRIPTION
LA-1 TO B	PCH FROM N'LY CITY BNDRY TO IDAHO 60" GRAVITY LINE
B TO J	PCH FROM IDAHO TO S. OF ARIZONA 60" GRAVITY LINE
J TO C	PCH/APPIAN FROM S. OF ARIZONA TO MOSS AVE. PUMPING STATION 60" GRAVITY LINE
C TO G	MOSS AVE. PUMPING STATION AND FORCE MAINS FROM STATION TO OCEAN AVE. 2-30" FORCE MAINS
G TO H	OCEAN AVE FROM FORCE MAIN TO PICO BLVD./MAIN ST. 39" GRAVITY WITH REHABILITATED 39" GRAVITY
H TO SM-1	MAIN ST. FROM PICO BLVD. TO S'LY CITY BNDRY REHABILITATED 30"+36" GRAVITY LINES WITH 54" RELIEF LINE IN NELSON AVE. FROM PICO BLVD. TO S'LY CITY LIMITS

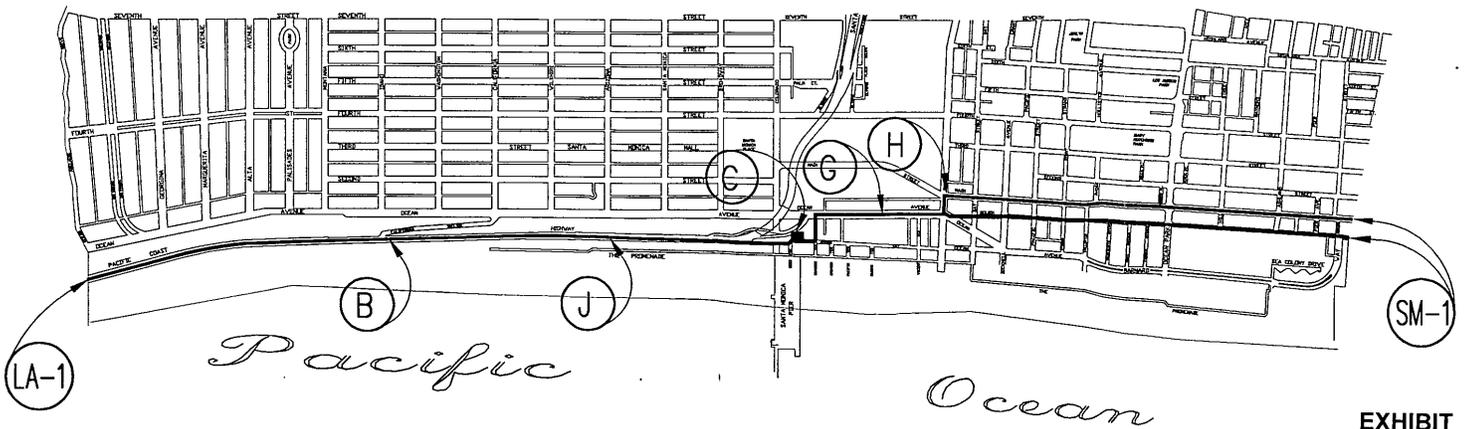


EXHIBIT A

## EXHIBIT B

$$\text{General Fund Reimbursement Charge} = (V_{\text{ERS}} - V_{\text{PI}}) \times (V_{\text{AS}} \div V_{\text{CLA}}) \times (V_{\text{PT}} \div V_{\text{DI}}) \times P_{\text{CE}}$$

Where:

- $V_{\text{ERS}}$  = Value of emergency response services based on the operating budget as set annually by the Los Angeles City Council;
- $V_{\text{PI}}$  = Value of Los Angeles pre-designated income for emergency response services operation expenses, including income from county, state or federal grants, allowances, revenue sharing, etc. which are designated or restricted to funding emergency response services operating expenses; fees and charges specifically charged by Los Angeles for emergency response services; income from any assessment or tax specifically designated for emergency responses services; and any other income which may only be used for the benefit of emergency response services operation expenses;
- $V_{\text{AS}}$  = Value of the Amalgamated System, calculated by inflating the original costs of acquiring the assets by two percent (2%) per year and then depreciating the costs using the same asset lives used by Los Angeles in its accounting reports. The value of the Amalgamated System shall exclude the value of land, easements, underground sewers and interceptors, facilities replaced by newer facilities, and unused or abandoned facilities;
- $V_{\text{CLA}}$  = Total assessed value of all real and personal property, excluding the assessed value of land, in Los Angeles. This value includes the value of all county assessed real and personal property minus the assessed value of the included land; the value of all state assessed real and personal property minus the value of the included land; and the value of all Los Angeles real and personal property minus the value of the included land. The value of Los Angeles property, excluding land, should be the total for the assets in the Los Angeles fixed asset register, excluding underground pipes and land. The asset values shall be calculated by inflating the original costs of acquiring the assets by two percent (2%) and then depreciating the costs using the same asset lives used by Los Angeles in its accounting reports;
- $V_{\text{PT}}$  = Value of property tax revenue available for general fund expenditures. This amount excludes property taxes collected for debt service as well as property tax assessments approved by a popular vote that are collected for a specific purpose, or property tax assessments collected for another agency;
- $V_{\text{DI}}$  = Value of all discretionary income received by Los Angeles from property taxes, sales taxes, business taxes, license fees, grants, allotments, income sharing, investment income, etc. This value excludes income collected for debt service and income collected for a specific service (such as water, sewer, electric service charges, etc.); and
- $P_{\text{CE}}$  = Contracting Entity's Proportionate Share

## **APPENDIX 3-C. AGREEMENTS WITH OTHER AGENCIES**



AGREEMENT BETWEEN THE CITY OF BEVERLY HILLS AND THE  
COUNTY OF LOS ANGELES FOR ENFORCEMENT OF THE CITY'S  
WASTEWATER ORDINANCE

THIS AGREEMENT is made and entered into this 14<sup>th</sup>  
day of August, 1990, by and between the CITY OF BEVERLY HILLS,  
hereinafter referred to as "CITY", and the COUNTY OF LOS ANGELES,  
hereinafter referred to as "COUNTY".

R E C I T A L S

WHEREAS, CITY has adopted Ordinance No. 90-0-2092 entitled  
the "Wastewater Ordinance of the City of Beverly Hills" governing  
the disposal of industrial wastes to the sanitary sewer and storm  
drain systems of CITY; and

WHEREAS, CITY is desirous of contracting with COUNTY for the  
enforcement of such Ordinance provisions and the performance of  
services with respect to industrial waste as set forth in the  
Ordinance; and

WHEREAS, COUNTY represents that it is capable, ready and  
willing to render such services on the terms and conditions set  
forth in this Agreement; and

WHEREAS, this contract is authorized and provided for by the  
provisions of Section 56-1/2 of the Charter of the County of  
Los Angeles and Article 1, Chapter 1, Part 2, Division 1, Title 5,  
of the California Government Code.

NOW, THEREFORE, it is agreed as follows:

Section 1. Services

A. COUNTY agrees, through its Department of Public Works  
(DEPARTMENT) of the County of Los Angeles, to provide enforcement

of the industrial waste provisions of CITY'S Wastewater Ordinance and the necessary services incident thereto. Such services shall only encompass duties and functions of the type coming within the jurisdiction of, and customarily rendered by, DEPARTMENT under the County Charter statutes of the State and various COUNTY ordinances.

B. The level of service provided shall be that same basic level of service that now is and shall be hereafter, during the term of this Agreement, provided for in the unincorporated area of the County of Los Angeles by DEPARTMENT and shall be sufficient to ensure compliance with applicable California and Federal laws.

C. COUNTY shall retain full control over providing services, establishing standards of performance governing the provision of the services and all matters incidental to the performance of such services, including, but not limited to, the controlling of personnel employed to provide the services.

D. The services provided under the terms of this Agreement shall include the enforcement of any applicable State statutes and all provisions of the above-referred to City Code Chapter as described in its current or future form. The services include, but are not limited to, providing inspections, filing of required reports and issuing permits. The services shall also include the inspection of open sanitary fills only in the event that CITY, by action of its Council, requests such services.

E. In the event a dispute arises between the parties to this Agreement, as to the extent of the duties and functions to be

rendered as a part of any service provided or the level or manner of performance of such service, the determination made by the Director of Public Works of the COUNTY shall be final and conclusive as between the parties.

Section 2. CITY Cooperation. To facilitate the performance of said functions, it is agreed that COUNTY shall receive the full cooperation and assistance from CITY, its officers, agents and employees.

Section 3. Supplies. COUNTY shall furnish and supply all necessary labor, supervision, equipment and supplies necessary to provide contract services rendered under the terms of this Agreement. Notwithstanding any other section in this Agreement, it is further agreed that in all instances wherein special supplies, stationery, notices, forms and the like must be prepared and issued in the name of CITY, CITY shall supply them at its own cost and expense.

Section 4. Status of COUNTY Employees

A. All persons employed in the performance of the services and functions described under the terms of this Agreement for CITY shall be COUNTY employees and no CITY employee shall be considered an employee of COUNTY, and no person employed hereunder shall be entitled to any CITY pension, civil service, or any other status or right as a CITY employee.

B. For the purpose of performing such services and functions and for the purpose of giving official status to the performance

thereof where necessary, every COUNTY officer and employee engaged in the performance of any service hereunder shall be deemed to be an officer or employee of said CITY while performing services for said CITY, which services are within the scope of this Agreement and are purely municipal functions.

Section 5. Liability for COUNTY Employees. CITY shall not be called upon to assume any liability for the direct payment of any salaries, wages or other compensation to any COUNTY personnel performing services hereunder for said CITY or any liability other than that provided for in this Agreement. CITY shall not be liable for compensation or indemnity to any COUNTY employee for injury or sickness arising out of his employment.

Section 6. Ordinance Compliance with COUNTY Code. This contract is entered into with the understanding that CITY will maintain in full force and effect an ordinance substantially identical with the provisions of COUNTY Code, Title 20, Division 2. This Agreement may be terminated by COUNTY without notice if CITY does not enact amendments to said ordinance in accordance with amendments to COUNTY Code, Title 20, Division 2, within 120 days after request to do so by COUNTY. The DEPARTMENT, acting on behalf of COUNTY, may use discretion and need not request CITY to adopt amendments which do not apply to CITY.

Section 7. Collection and Transfer of Fees Collected. COUNTY agrees to collect fees called for in the CITY'S ordinance and to pay CITY, within 60 days following each calendar quarter, all of the fees collected during such quarter and CITY agrees to pay COUNTY

monthly within 30 days after receipt of an invoice for expenditures relating to those services rendered during the billing period. The COUNTY'S charges for services rendered under the terms and purposes of this Agreement shall include currently effective percentages added to total salaries, wages and equipment costs to cover overhead, administration and depreciation in connection with any or all of the aforementioned items.

Section 8. Books and Records. COUNTY agrees to keep such books and records and in such form and manner as Auditor of COUNTY shall specify. Said books shall be open for examination by CITY at all reasonable times.

Section 9. Term and Termination. This Agreement shall become effective on the date first mentioned above and shall expire June 30, 1991. This Agreement shall be automatically renewed from year to year for successive one-year periods thereafter. Notwithstanding the provisions of this paragraph, COUNTY may terminate this Agreement at any time by giving 30 days prior written notice to CITY. CITY may terminate this Agreement as of the first day of July of any year upon giving 30 days prior written notice to COUNTY.

Section 10. Assumption of Liability. The Assumption of Liability Agreement executed by the parties to this Agreement and approved by the Board of Supervisors on December 27, 1977 currently in effect is hereby made a part of and incorporated into this Agreement as if set out in full herein unless said Assumption of Liability Agreement is expressly superseded by a subsequent Agreement hereafter entered into between the parties hereto.

IN WITNESS WHEREOF, the CITY by Resolution duly adopted by its City Council, caused this Agreement to be signed by its Mayor and attested by its Clerk; and the County of Los Angeles, by order of its Board of Supervisors, has caused this Agreement to be subscribed by the Chairman of said Board and the seal of said Board to be affixed thereto and attested by the Clerk of said Board, all on the day and year first above written.

ATTEST: LARRY J. MONTEILH  
EXECUTIVE OFFICER-CLERK  
OF THE BOARD OF SUPERVISORS

COUNTY OF LOS ANGELES

By \_\_\_\_\_  
CHAIRMAN, BOARD OF SUPERVISORS

By \_\_\_\_\_  
DEPUTY

APPROVED AS TO FORM  
DE WITT W. CLINTON  
County Counsel

CITY OF BEVERLY HILLS

By   
MAYOR

By   
DEPUTY

ATTEST:

By   
CITY CLERK

APPROVED AS TO FORM:

APPROVED AS TO CONTENT:

By   
asst. CITY ATTORNEY

By   
CITY MANAGER

IN WITNESS WHEREOF, the CITY by Resolution duly adopted by its City Council, caused this Agreement to be signed by its Mayor and attested by its Clerk; and the County of Los Angeles, by order of its Board of Supervisors, has caused this Agreement to be subscribed by the Chairman of said Board and the seal of said Board to be affixed thereto and attested by the Clerk of said Board, all on the day and year first above written.



ATTEST: LARRY J. MONTEILH  
EXECUTIVE OFFICER-CLERK  
OF THE BOARD OF SUPERVISORS

*Richard E. Seligson*  
CHAIRMAN, BOARD OF SUPERVISORS

BY *Lynna C. Walton*  
DEPUTY

CITY OF BEVERLY HILLS

APPROVED AS TO FORM  
BY WITT W. CLINTON  
County Counsel

BY *[Signature]*  
MAYOR

BY *Richard P. Chastang*  
DEPUTY

ATTEST:  
BY *Joan M. Gershman*  
CITY CLERK

APPROVED AS TO FORM:

APPROVED AS TO CONTENT:

BY *Kevin H. Egan*  
Asst. CITY ATTORNEY

BY *Mark Scott*  
CITY MANAGER

**ADOPTED**  
BOARD OF SUPERVISORS  
COUNTY OF LOS ANGELES

City of Beverly Hills	From Joe Brown	35
City of Los Angeles	To LA County DPL	
Phone (818) 273-1090	Phone (818) 458-3500	
	Fax (818) 458-3500	

SEP 18 1990

*[Signature]*  
LARRY J. MONTEILH  
EXECUTIVE OFFICER

## SECTION 4. OPERATION AND MAINTENANCE PROGRAM

### 4.1 Introduction

This section of the SSMP is intended to provide an overview of the City's sewer system operations and maintenance program.

### 4.2 Regulatory Requirements for the Operations and Maintenance Program Section

The requirements for the Operations and Maintenance Program section of the SSMP are:

#### **GWDR (Element 4 – Operations and Maintenance) Requirement:**

*The GWDR requirements for the Operations and Maintenance Program are:*

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

### 4.3 Operations and Maintenance Program

Operations and maintenance activities and programs are critical to ensuring the effectiveness and longevity of a healthy sanitary sewer collection system. The following sections describe the City of Beverly Hills' efforts to operate and maintain its system in the most efficient and effective manner.



#### 4.3.1 Collection System Maps

The Requirement: *Maintain an up-to-date map of sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities.*

The City of Beverly Hills currently has a hard copy atlas of its sanitary sewer system. Sewer maps are located at the City's Corporation Yard and at the Public Works office. The City's entire collection system is broken down into 21 "Districts" for ease of understanding and knowing where the crews are working. The plans show pipe sizes, manholes, and applicable storm water conveyance facilities. The atlas was prepared in 1959. The 1959 atlas has limited information and is only a paper copy version.

The 1959 atlas system is comprised of 21 sheets: Every sheet is at a scale of 1"= 500 ft. The general sewer information shown consists of the pipe size, material, manholes, cleanouts, and length between manholes/cleanouts. The scale and accuracy of the maps provide sufficient enough information to be useful to field staff in their day to day operations and maintenance of the collection system.

The City also has an updated comprehensive Atlas in an electronic format created as part of the September 2010 Sanitary Sewer Collection Master Plan. However, this map did not follow the 21 District mapping convention that the field staff are used to and it has never been integrated with the City GIS system. The City is evaluating the efforts to update/develop an electronic mapping system that follows the 21 District mapping convention. The new atlas should be prepared in a GIS format to allow for better data management. Atlas maps should be field checked on a continuous basis to ensure that the data is correct and complete. Field staff should be responsible for field-checking the atlas sheets and making corrections and should be equipped with the necessary tools to do so.

A Correction Management procedure should be adopted between the field staff and the office staff. Corrections from the field should be forwarded to the office staff for updating the appropriate database. The atlas sheet(s) impacted by the correction should be printed and distributed on at least a semi-annual basis to staff that have been identified as having an atlas book. The original atlas sheets should have a blank revision block on them. Updated sheets should include a line within the revision block that identified the date the sheet was updated.

The new atlas sheets should include the following information at a minimum: pipeline size, material type, length, date built, flow direction, rim elevation, invert elevations, manhole/cleanout locations, lateral locations, and unique identification numbers. A scale should be provided so that the length and location of pipe can quickly be identified and calculated. Approximate locations of property lines should be visible so that limits of the City owned facilities can be identified.

When new subdivisions or changes to the system are completed, data should be input by office staff using the Correction Management procedure developed to ensure that updating activities do not adversely affect the accuracy of the maps.



A complete electronic inventory of existing sewer drawings and information should be recorded and backed-up to ensure the safe storage of this valuable information for future generations.

#### 4.3.2 Preventive Operation and Maintenance

The Requirement: *Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.*

The elements of the City's sewer system Operation & Maintenance program include:

- Proactive, preventive, and corrective maintenance of gravity sewers;
- Closed-Circuit Television (CCTV) inspection;
- Rehabilitation and replacement of sewers that are in poor condition; and
- Periodic inspection and preventive maintenance for the pump stations.

The details of the City's Operation & Maintenance programs are:

##### Gravity Sewers

- Preventative maintenance is performed in every district based on problem areas. These problem areas were developed into 30 day, 60 day and 90 day maintenance efforts. This schedule has been entered into a spreadsheet/database format which includes District number, manhole numbers, pipe material type and sewer footages. This information can be found on the bulletin board at the Corporation Yard and in the Drainage Systems Supervisor's office. Every effort is made to keep the schedule updated on when the preventive maintenance has been completed.
- The City proactively cleans its problem areas utilizing a 30-60-90 maintenance schedule. The Drainage Systems Supervisor, through experience, developed this schedule, as dictated by sewer problems and permit requirements (*See Appendix 4-B: 30-60-90 Table*).
- The City contracts CCTV inspection services for periodic condition. Frequency of these assessments is determined by sewer problems and permit requirements.
- City crews correct problems identified by CCTV and sewer cleaning crews. Repairs are completed in priority order. When practical, repairs and replacement projects are placed onto a CIP program for replacement or refurbishment projects.
- The City repairs significant structural defects as they are identified.
- Gravity sewer maintenance is currently scheduled using maps and lists of "hot spot" line segments. Completed gravity sewer maintenance is recorded on field crew daily reports in a Flushing Log at the Corporation Yard.
- The City's standard operating procedure for sewer cleaning "Hydro Jet Operator" is included as Appendix 4-B.



### 4.3.3 Rehabilitation and Replacement Program

The Requirement: *Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan.*

The City's goal is to inspect the condition of its gravity sewers on a five-year cycle. This information is used as the basis for the rehabilitation and replacement program. The information gathered during the condition assessment will be used to select individual gravity sewers for repair/rehabilitation/replacement.

The City plans annual projects for rehabilitation and replacement of its sanitary sewer system. The projects included in the City's current Capital Improvement Program are shown in Table 4-1.

**Table 4-1. Capital Improvement Program, Sanitary Sewer, FY 2012/2013 through 2016/2017**

Project	Proposed Cost	Fiscal Year				
		12/13	13/14	14/15	15/16	16/17
Sewer System Repairs	\$11,300,000	\$2,000,000	\$5,000,000	\$2,250,000	\$2,400,000	\$2,450,000
Hyperion Plant - Capital Component	\$9,292,700	\$1,274,000	\$1,657,800	\$1,971,000	\$2,203,700	\$2,186,200
Public Works Asset Management System	\$182,500	\$36,500	\$36,500	\$36,500	\$36,500	\$36,500
<b>Total Maintenance Projects</b>	<b>\$20,775,200</b>	<b>\$3,310,500</b>	<b>\$3,894,300</b>	<b>\$4,257,500</b>	<b>\$4,640,200</b>	<b>\$4,672,700</b>

Funds that support the sanitary sewer portion of the Capital Improvement Program come from the City's Wastewater Enterprise Fund (Fund 84). The sewer fund is an enterprise fund by which reserves are generated from connection fees and monthly user fees based on the current rate structure.

### 4.3.4 Training

The Requirement: *Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained.*



The City uses a combination of in-house classes; on the job training; and conferences, seminars, and other training opportunities to train its wastewater collection system staff. All staff working on the City's collection system are Certified Wastewater Operators.

Staff receive confined space training, lock-out/tag-out and competent person training annually; First Aid training every three years; and CPR training every year. Staff participate in weekly safety tailgate meetings every other week; the safety meetings are documented in a safety log.

It is recommended that the City's contract language require contractors working in the wastewater collection system to provide training for their employees in the activities that may cause SSO's and in responding to contractor-caused SSO's.

#### 4.3.5 Contingency Equipment and Replacement Inventories

The Requirement: *Provide equipment and replacement part inventories, including identification of critical replacement parts.*

#### Replacement Part Inventories

The City of Beverly Hills' collections system is comprised of gravity sewer lines ranging in size from 8- to 36-inches in diameter. With regard to the gravity sewer collection system, critical replacement part inventories include replacement pipe, repair couplings, and fittings are available on site; pipe in this size range is also readily available at local supply sources.

**Table 4-2. Hydro Jet/Vacuum/Pump Trucks Emergency/On-Call List**

BUSINESS/LOCATION	PHONE NUMBER
Valley Septic Service Beverly Hills, CA 93463	



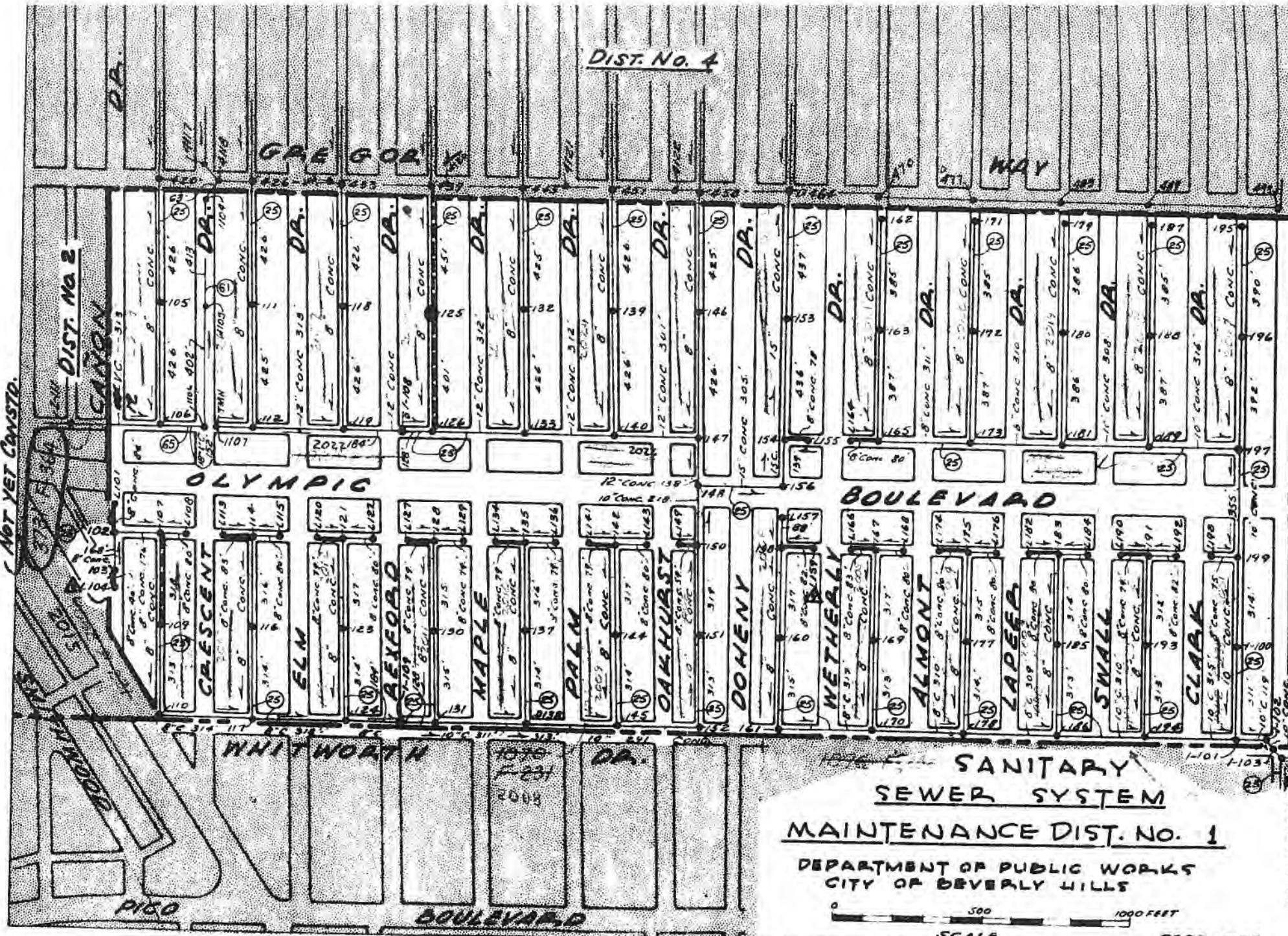
**APPENDIX 4-A. CITY OF BEVERLY HILLS SEWER ATLAS SYSTEM**



DIST. NO. 4

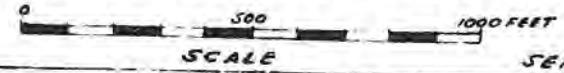
DIST. No. 2

NOT YET CONSTR.



**SANITARY SEWER SYSTEM**  
**MAINTENANCE DIST. NO. 1**

DEPARTMENT OF PUBLIC WORKS  
 CITY OF BEVERLY HILLS



SCALE SEPT 1958

M.H. # L101 TO M.H. # L109 TOTAL NO. 109

BURIED M.H. (2)

BY DISCHARGE INTO LA SEWER

ROBERTSON

OLIVE

PIASE

BOULEVARD

WHITWORTH

BOULEVARD

OLYMPIC

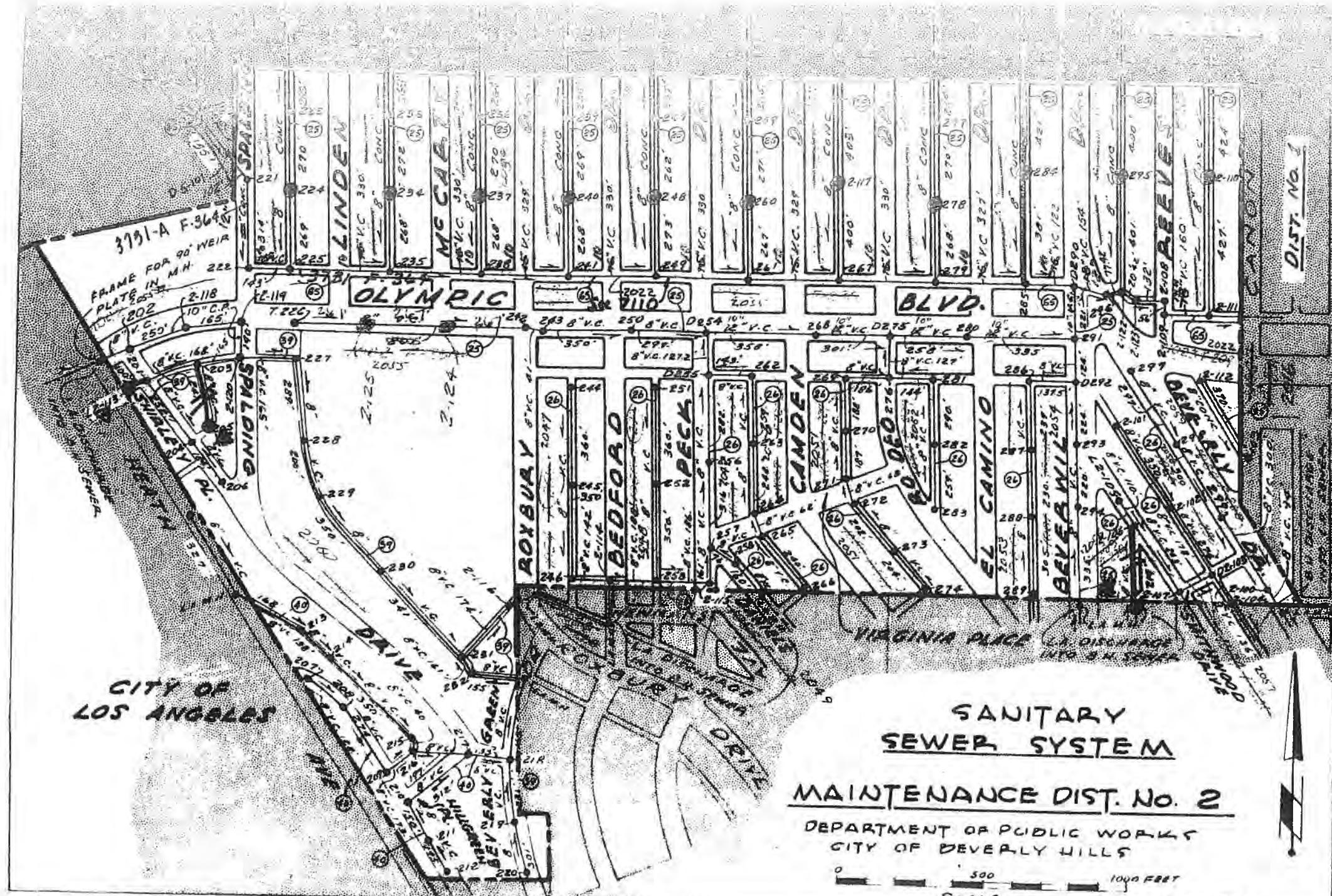
GREGORY

MAY

CANYON

DIST. No. 2

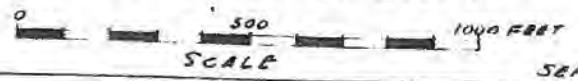
DR.



CITY OF LOS ANGELES

**SANITARY SEWER SYSTEM**  
**MAINTENANCE DIST. NO. 2**

DEPARTMENT OF PUBLIC WORKS  
 CITY OF BEVERLY HILLS



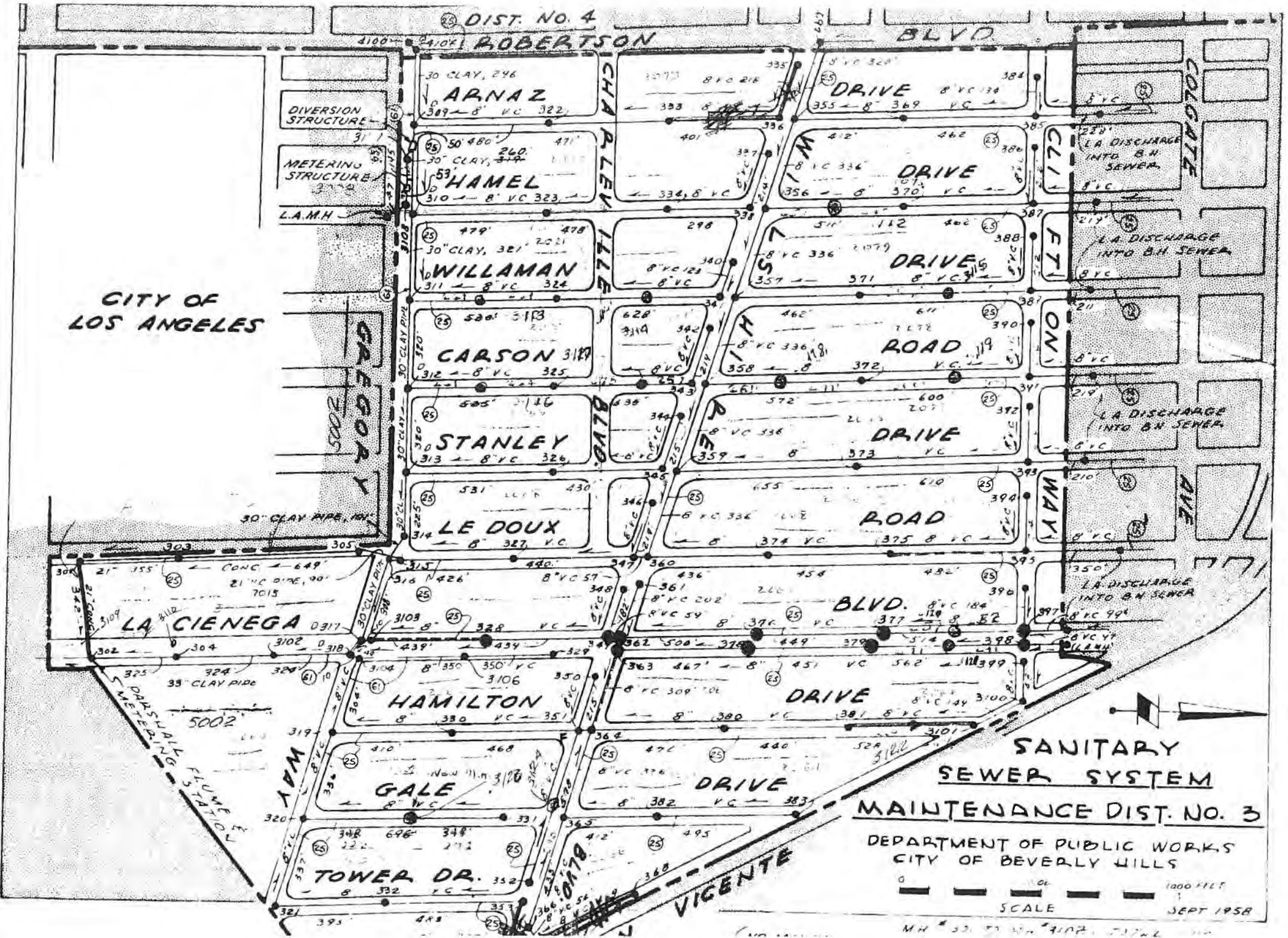
SEPT 1958

M.H. # 201 TO M.H. # 244 - TOTAL NO. = 44  
 2-123 123  
 2-125 125  
 REVISED FEB 1961

DIST. NO. 1

NOTE: 15" LINE IN ALL-CLAY PIPE NOT SHOWN  
 ACTUALLY IN PLACE

27



DIST. NO. 4

ROBERTSON BLVD

CITY OF LOS ANGELES

DIVERSION STRUCTURE

METERING STRUCTURE

L.A.M.H.

GREGORY BLVD

30" CLAY PIPE, 10'

30" CLAY PIPE

30" CLAY PIPE

35" CLAY PIPE

30" CLAY PIPE

30" CLAY PIPE

30" CLAY PIPE

30" CLAY PIPE

ARNAZ

HAMEL

WILLAMAN

CARSON

STANLEY

LE DOUX

LA CIENEGA

HAMILTON

GALE

TOWER DR.

DRIVE

DRIVE

DRIVE

ROAD

DRIVE

ROAD

BLVD.

DRIVE

DRIVE

DRIVE

SANITARY SEWER SYSTEM

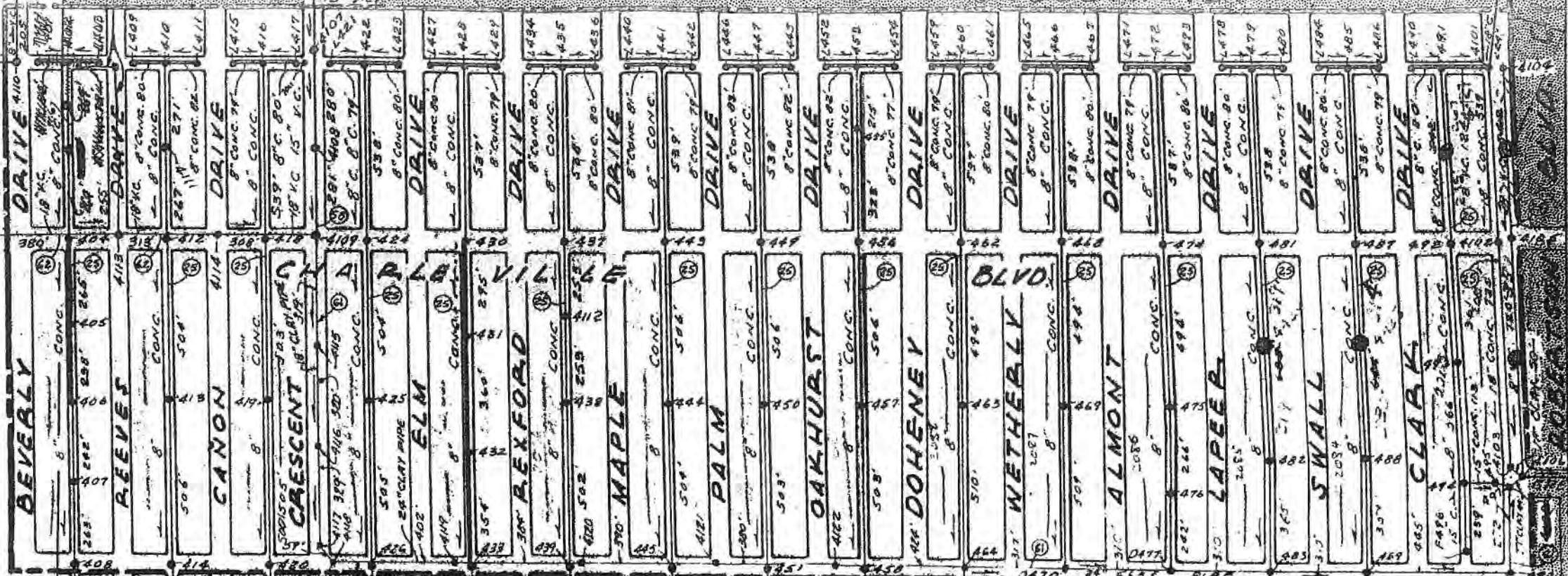
MAINTENANCE DIST. NO. 3

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS

SCALE 1" = 1000 FEET  
SEPT 1958

M.H. # 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

599 5005



DIST. No. 1

SANITARY SEWER SYSTEM

MAINTENANCE DIST. NO. 4

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS

SCALE 1"=100'  
SEPT 1958

OLYMPIC BLVD.

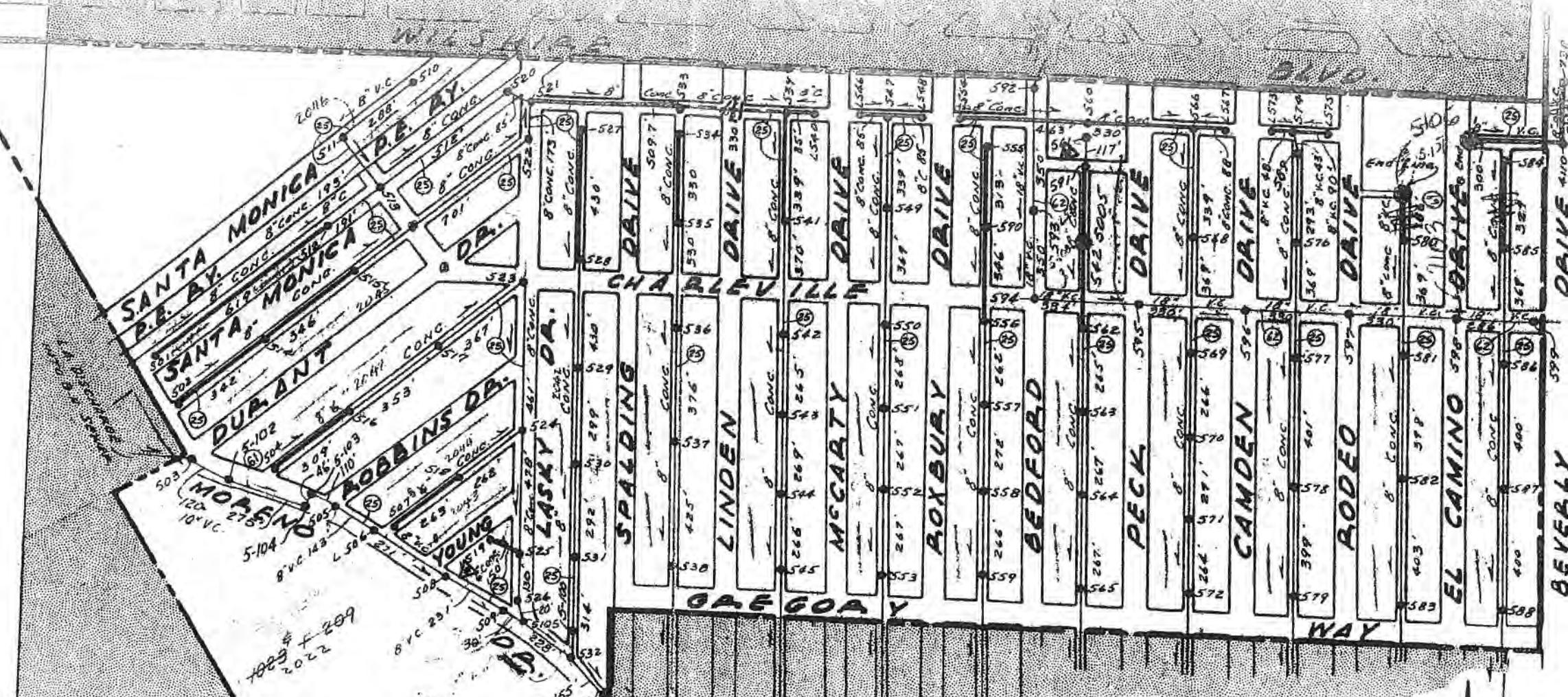
2074

5002

GREGORY WAY

CITY OF LOS ANGELES

DIST. NO. 2



DIST. NO. 2

SANITARY SEWER SYSTEM

MAINTENANCE DIST. NO. 5

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS



OLYMPIC

DIST. No. 8

DIST. No. 7

DIST. No. 4

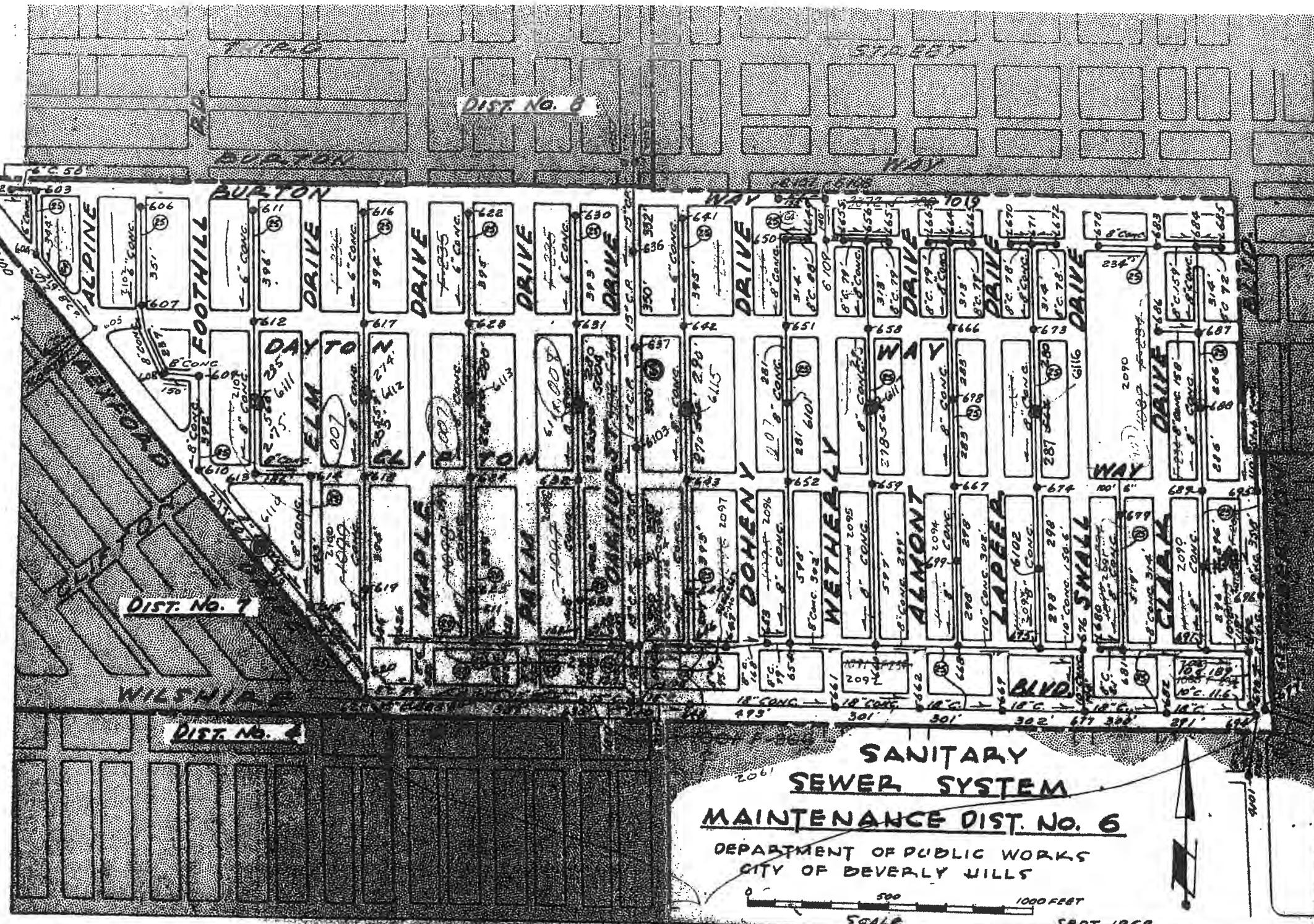
# SANITARY SEWER SYSTEM MAINTENANCE DIST. No. 6

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS



SCALE SEPT. 1958

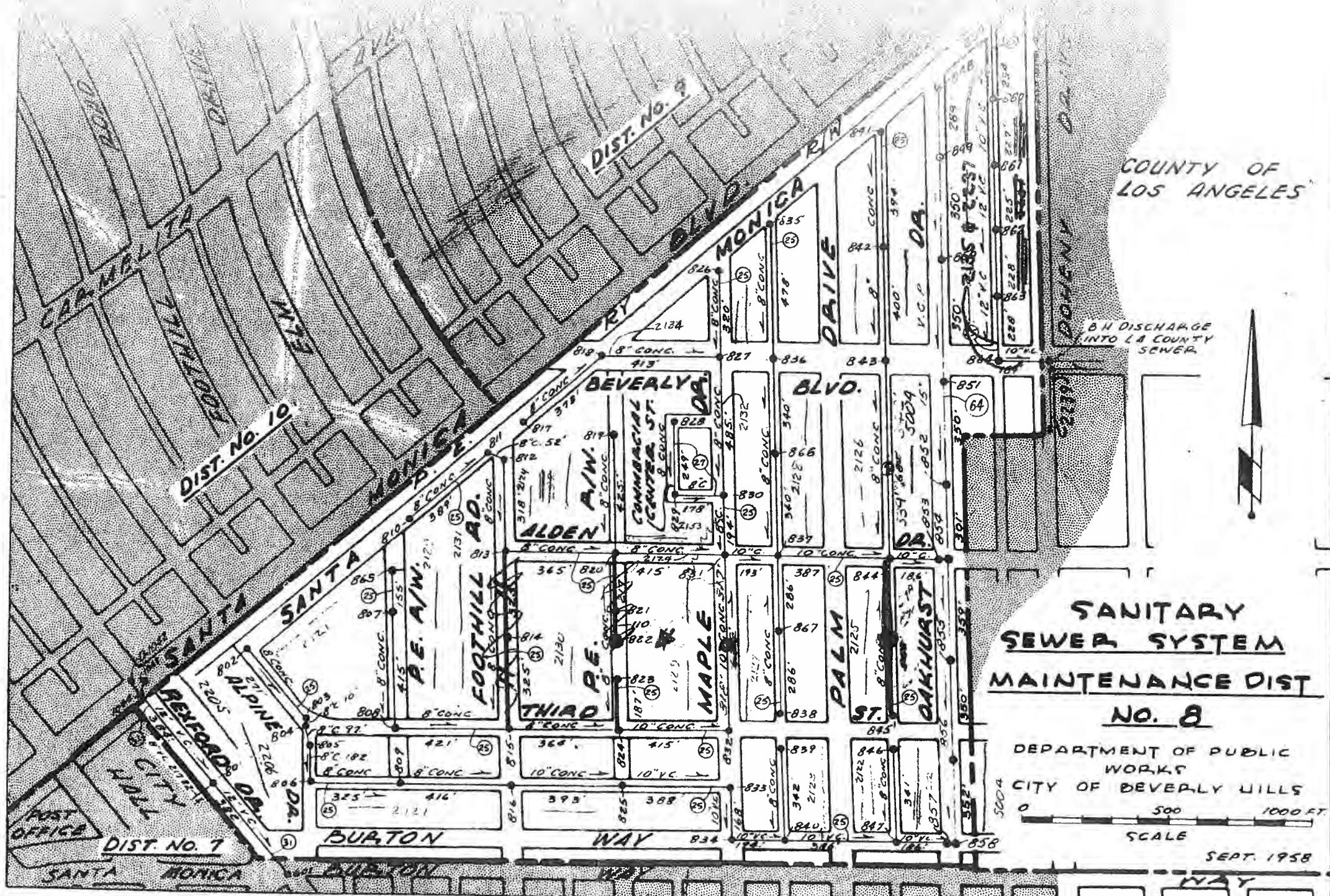
M.H. No 601 TO M.H. No 6102 TOTAL No. 402  
8109



\*1 MAY NOW BE CALLED

UNBURIED MAINS





COUNTY OF LOS ANGELES

B.H. DISCHARGE INTO LA COUNTY SEWER

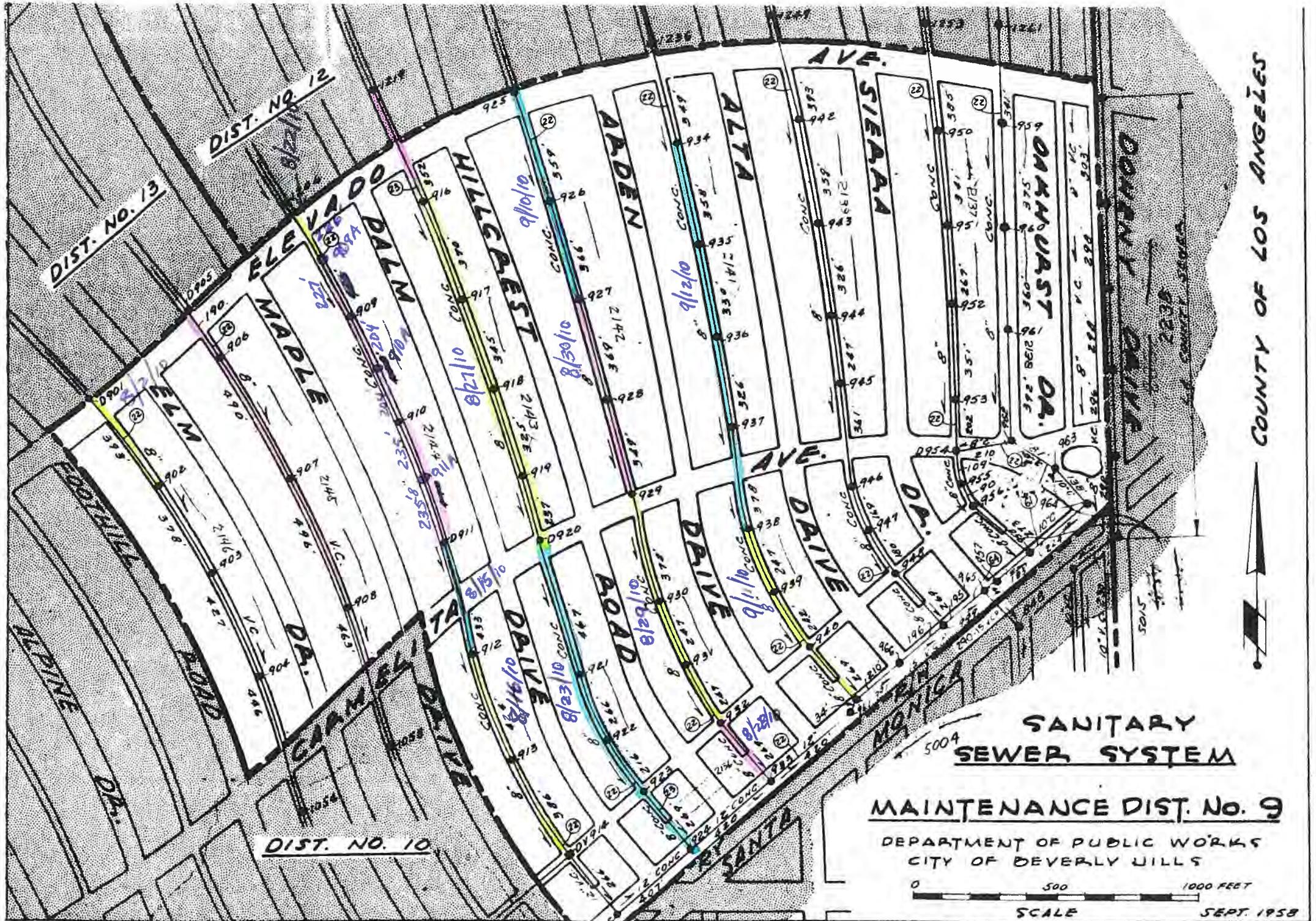
**SANITARY SEWER SYSTEM  
MAINTENANCE DIST. NO. 8**

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS

SCALE 0 500 1000 FT.

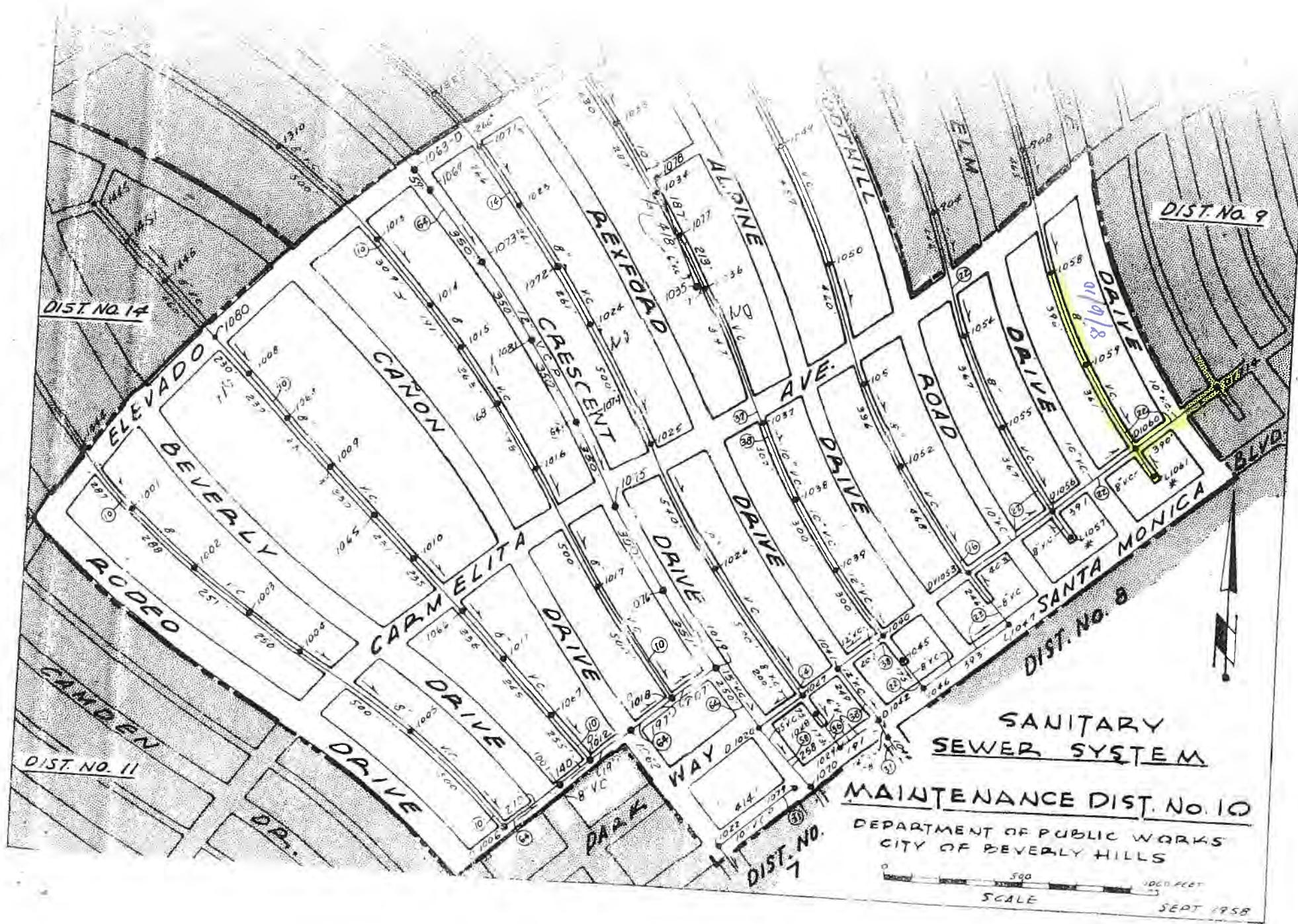
SEPT. 1958

MH N<sup>o</sup> 501 TO MH N<sup>o</sup> 866 TOTAL N<sup>o</sup> 44

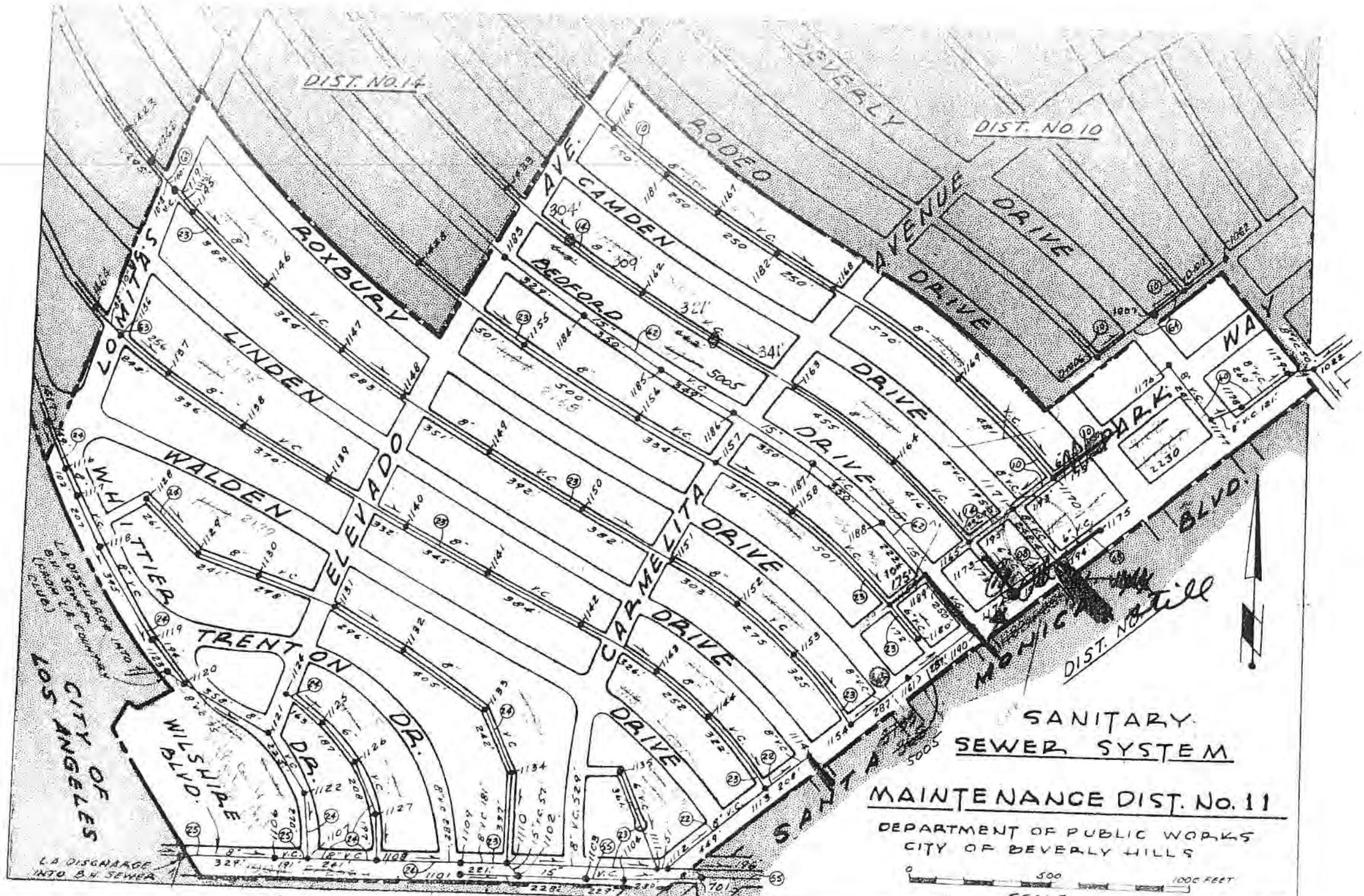


MH NO 901 TO MH NO 962 TOTAL NO = 62  
 967 67

COUNTY OF LOS ANGELES



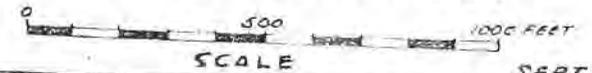
SANITARY  
 SEWER SYSTEM  
 MAINTENANCE DIST. NO. 10  
 DEPARTMENT OF PUBLIC WORKS  
 CITY OF BEVERLY HILLS  
 SCALE 0 500 1000 FEET  
 SEPT 1958



**SANITARY SEWER SYSTEM**

**MAINTENANCE DIST. NO. 11**

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS



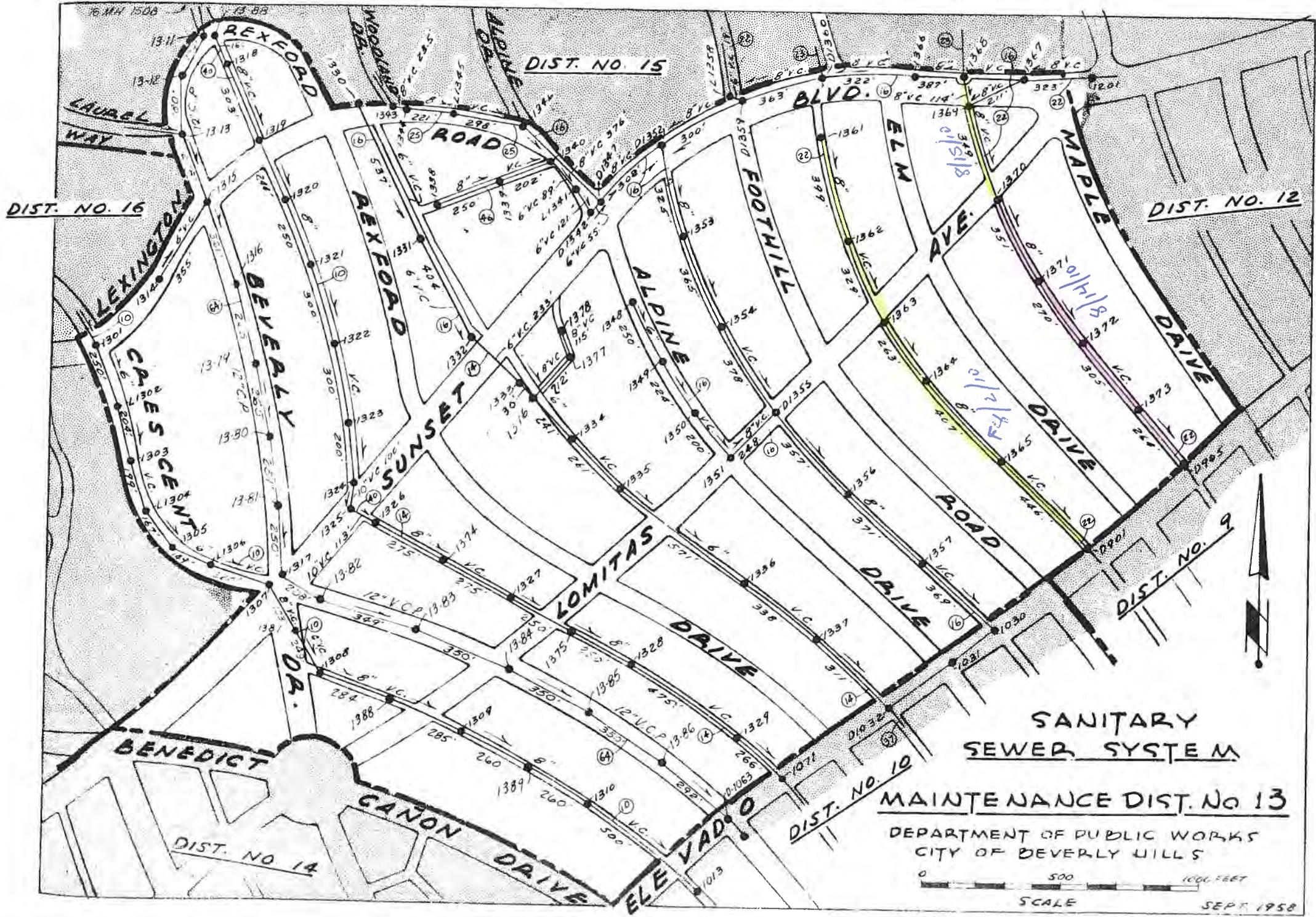
SEPT 1958

L.A. DISCHARGE INTO B.W. SEWER

2222

M.H. NO 1101 TO M.H. NO 448 TOTAL NO. 348  
(NO M.H. NOS 1105, 1116, 1117)





DIST. NO. 16

DIST. NO. 15

DIST. NO. 12

DIST. NO. 9

DIST. NO. 10

DIST. NO. 14

REXFORD ROAD

LAUREL WAY

LEXINGTON ROAD

CAPE SCENT

BENEDICT DR.

CANON DRIVE

REXFORD ROAD

SUNSET DRIVE

ALPINE DRIVE

LOMITAS DRIVE

ELE VADO

FOOTMILL BLVD.

ELM AVE.

MAPLE DRIVE

ROAD

ELM AVE.

MAPLE DRIVE

ROAD

ROAD

MAPLE DRIVE

MAPLE DRIVE

MAPLE DRIVE

MAPLE DRIVE

16 MAY 1958

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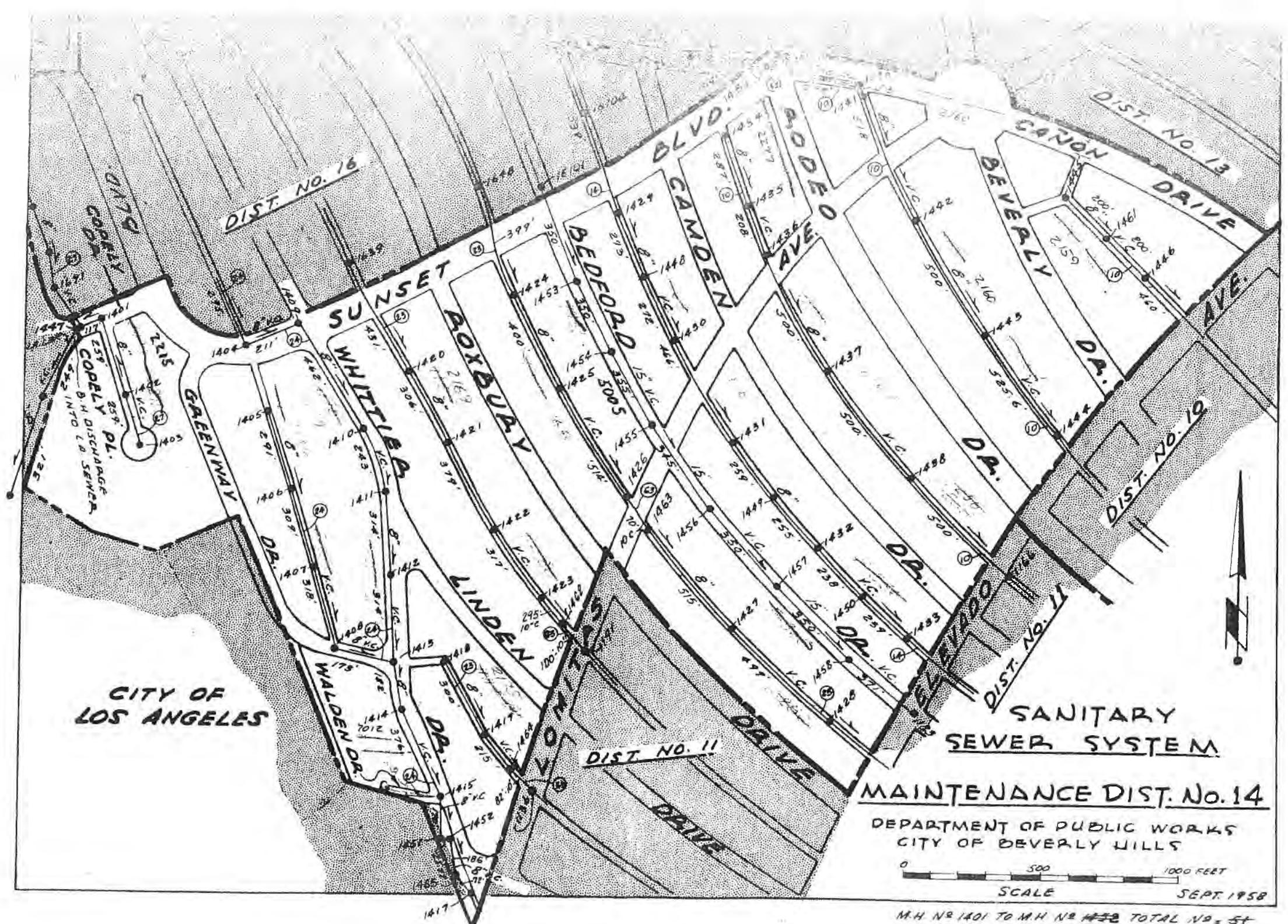
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CITY OF LOS ANGELES

SANITARY SEWER SYSTEM

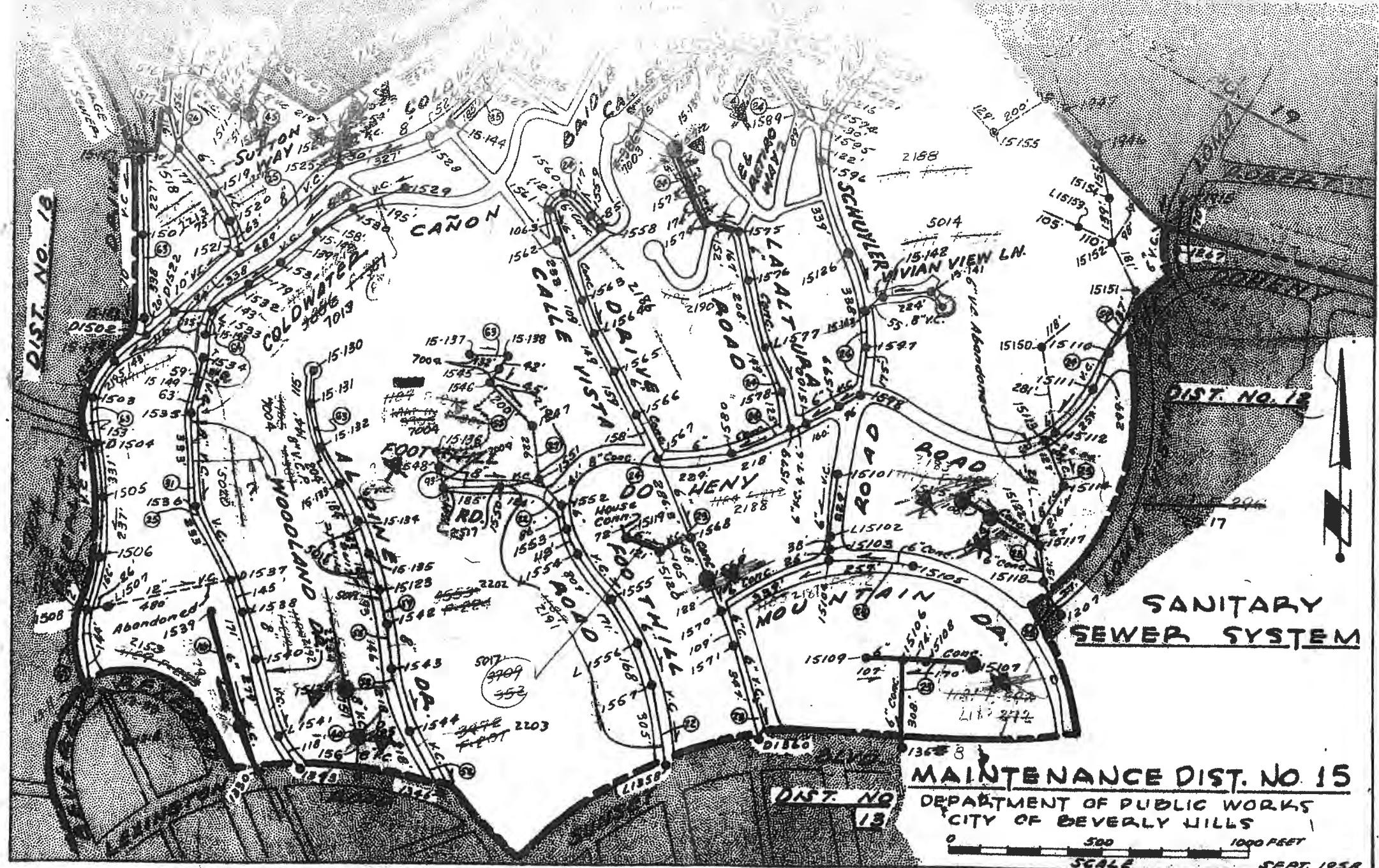
MAINTENANCE DIST. NO. 14

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS



SEPT. 1958

M.H. NR 1401 TO M.H. NR 1458 TOTAL NR = 58



**SANITARY SEWER SYSTEM**

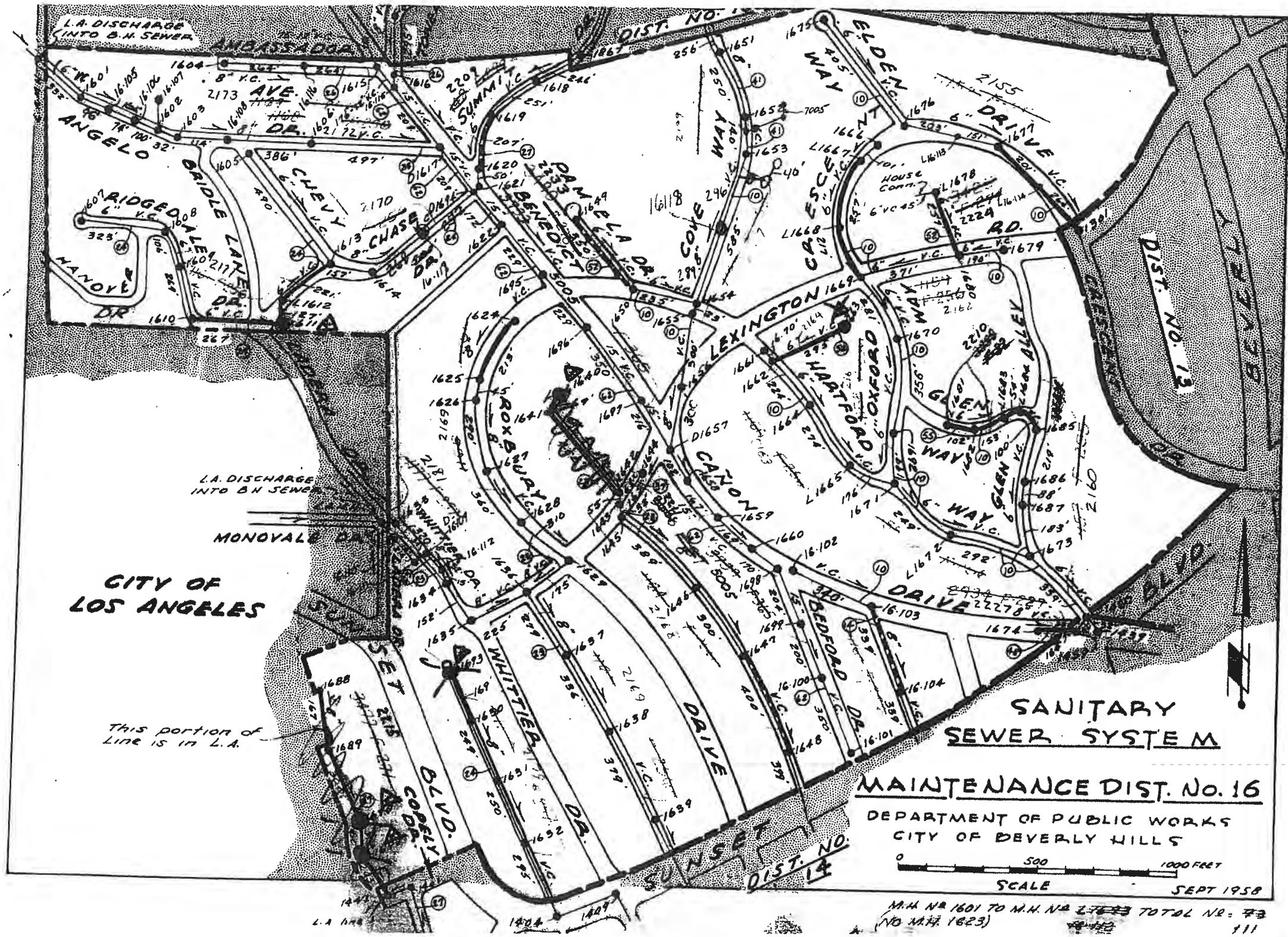
**MAINTENANCE DIST. NO. 15**

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS



SEPT. 1958

(NO M.H. 1515)  
M.H. NR 1501 TO M.H. NR 1500 TOTAL NR = 125  
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L.A. DISCHARGE INTO B.H. SEWER

L.A. DISCHARGE INTO B.H. SEWER

CITY OF LOS ANGELES

This portion of Line is in L.A.

SANITARY SEWER SYSTEM

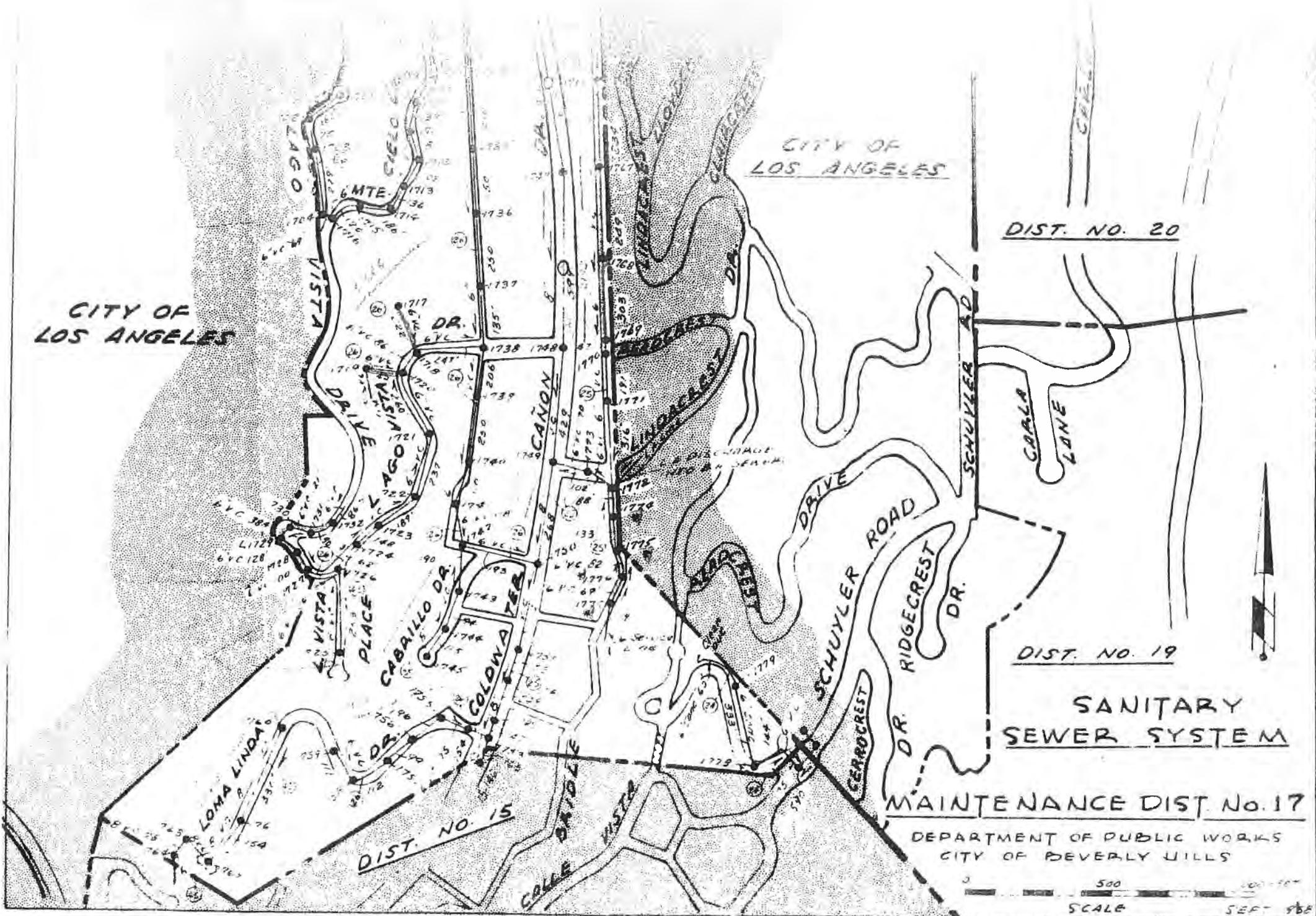
MAINTENANCE DIST. NO. 16

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS

0 500 1000 FEET

SCALE SEPT 1958

M.H. NR 1601 TO M.H. NR 2723 TOTAL NR: 73  
(NO. M.H. 1623)



CITY OF LOS ANGELES

CITY OF LOS ANGELES

DIST. NO. 20

DIST. NO. 19

SANITARY SEWER SYSTEM

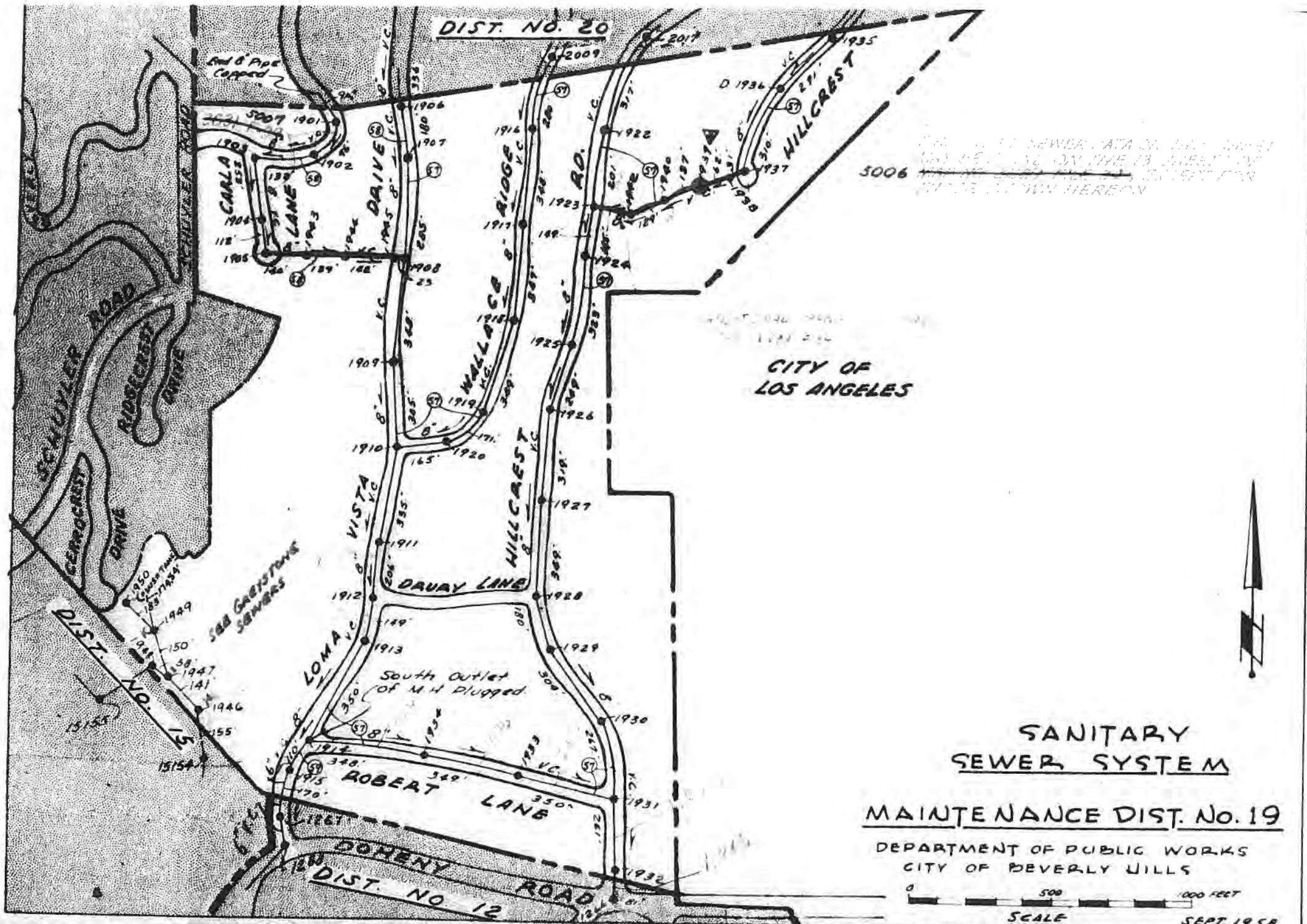
MAINTENANCE DIST. NO. 17

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS

SCALE 500 FEET

SEPT 1968





THE SANITARY SEWER DATA ON THIS MAP IS BASED ON THE 13 SHEETS OF THE SANITARY SEWER MAP, DISTRICT NO. 19, TOWN OF BEVERLY HILLS, CALIFORNIA.

CITY OF LOS ANGELES

**SANITARY SEWER SYSTEM**

**MAINTENANCE DIST. NO. 19**

DEPARTMENT OF PUBLIC WORKS  
CITY OF BEVERLY HILLS

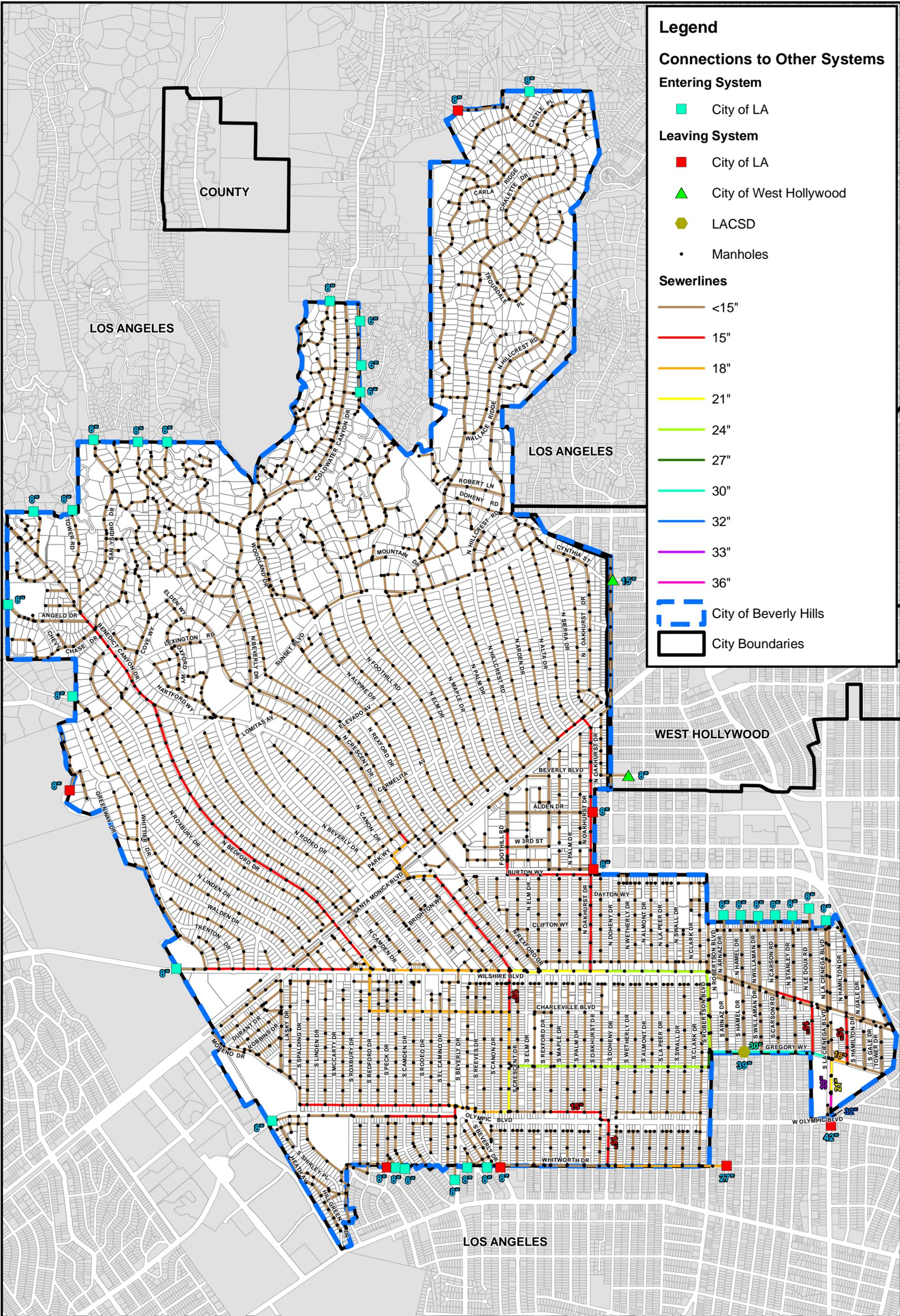


SCALE SEPT. 1958

M.H. NO. 1901 TO M.H. NO. 1944 TOTAL NO. 43  
(NO. M.H. 1921, 1941) 1950 AR







### Legend

**Connections to Other Systems**

**Entering System**

- City of LA

**Leaving System**

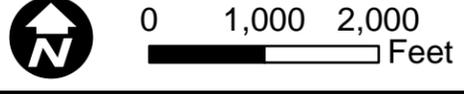
- City of LA
- City of West Hollywood
- LACSD
- Manholes

**Sewerlines**

- <15"
- 15"
- 18"
- 21"
- 24"
- 27"
- 30"
- 32"
- 33"
- 36"

City of Beverly Hills

City Boundaries



Source:  
City of Beverly Hills, 2009

City of Beverly Hills  
**Existing Large Diameter Mains**

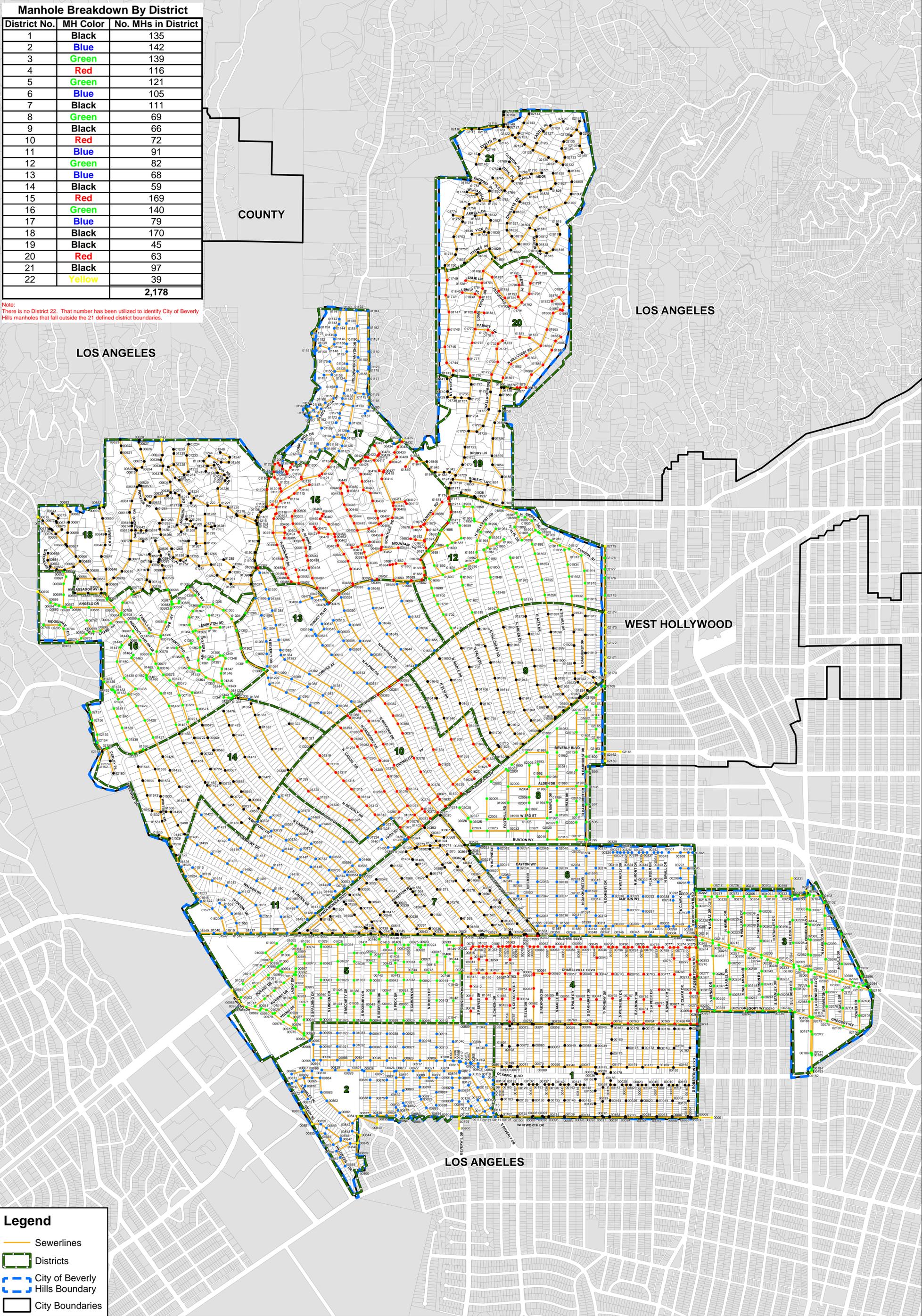


Exhibit 2-2

**Manhole Breakdown By District**

District No.	MH Color	No. MHs in District
1	Black	135
2	Blue	142
3	Green	139
4	Red	116
5	Green	121
6	Blue	105
7	Black	111
8	Green	69
9	Black	66
10	Red	72
11	Blue	91
12	Green	82
13	Blue	68
14	Black	59
15	Red	169
16	Green	140
17	Blue	79
18	Black	170
19	Black	45
20	Red	63
21	Black	97
22	Yellow	39
		<b>2,178</b>

Note:  
There is no District 22. That number has been utilized to identify City of Beverly Hills manholes that fall outside of the 21 defined district boundaries.



**Legend**

- Sewerlines
- Districts
- City of Beverly Hills Boundary
- City Boundaries



0 1,000 2,000 Feet

Source:  
City of Beverly Hills, 2009

City of Beverly Hills  
**Sewer Districts and Manholes**



Exhibit 5-1

**APPENDIX 4-B. 30-60-90 TABLE**





# SEWER MAINTENANCE DATA

Flow MH No.

Line No.	Dist No.	From	To	Line Size	Length	Main Type	Cycle	Maint. Date	Maint. Factor	Maint Oper.
2/4	3	3216	3215	10	240	VCP	30			
2/4	3	3217	3216	10	303	VCP	30			
2/4	3	3218	3217	10	305	VCP	30			
2/4	3	3210	3209	10	314	VCP	30			
2/4	3	3211	3210	10	295	VCP	30			
2/4	3	312	3211	10	305	VCP	30			
2/4	3	3213	3212	10	300	VCP	30			
2/4	3	3214	3213	10	290	VCP	30			
2/4	4	433	432	8	354	CONC	30			
2/4	4	432	431	8	360	CONC	30			
2/4	4	431	430	8	295	CONC	30			
2/4	5	547	L546	8	85	CONC	30			
2/4	5	547	L548	8	85	CONC	30			
2/4	5	583	582	8	403	CONC	30			
2/4	5	582	581	8	598	CONC	30			
2/4	7	703	707	6	346	VCP	30			
2/4	7	719	720	6	36	VCP	30			
2/4	7	720	721	6	140	VCP	30			
2/4	7	730	729	8	312	CONC	30			
2/4	7	731	730	8	260	CONC	30			
2/4	7	732	731	8	160	CONC	30			
2/4	7	782	736	8	242	CONC	30			
2/4	7	781	782	8	166	CONC	30			
2/4	7	737	781	8	87	CONC	30			
2/4	7	741	787	8	318	CONC	30			
2/4	7	744	743	8	419	CONC	30			
2/4	7	745	744	8	216	CONC	30			
2/4	7	746	745	8	203	CONC	30			
2/4	9	907	908	8	490	VCP	30			
2/4	9	934	1236	8	249	VCP	30			
2/4	9	935	934	8	358	VCP	30			
2/4	9	936	935	8	330	VCP	30			
2/4	9	937	936	8	326	VCP	30			
2/4	10	1001	1444	8	287	VCP	30			
2/4	10	1004	1003	8	250	VCP	30			
2/4	10	1005	1004	8	500	VCP	30			
2/4	10	1006	1005	8	500	VCP	30			
2/4	10	1015	1014	8	191	VCP	30			
2/4	10	1068	1015	8	263	VCP	30			
2/4	10	1074	1024	8	500	VCP	30			
2/4	10	1025	1024	8	500	VCP	30			
2/4	10	1026	1024	8	540	VCP	30			
2/4	10	1037	1036	8	547	VCP	30			
2/4	10	1038	1037	10	307	VCP	30			
2/4	10	1039	1038	10	300	VCP	30			



# SEWER MAINTENANCE DATA

Flow MH No.

Line No.	Dist No.	From	To	Line Size	Length	Main Type	Cycle	Maint. Date	Maint. Factor	Maint Oper.
2/4	10	D-1056	1055	8	367	VCP	30			
2/4	11	1192	1433	8	304	VCP	30			
2/4	11	1167	1192	8	309	VCP	30			
2/4	11	1193	1162	8	321	VCP	30			
2/4	11	1163	1193	8	341	VCP	30			
2/4	12	1217	1216	8	169	VCP	30			
2/4	13	1389	1309	8	260	VCP	30			
2/4	13	1310	1389	8	260	VCP	30			
2/4	13	D-1032	1337	8	311	VCP	30			
2/4	13	D-905	1373	8	264	VCP	30			
2/4	14	1451	1415	8	170	VCP	30			
2/4	14	1465	1452	8	186	VCP	30			
2/4	14	1442	1441	8	518	VCP	30			
2/4	14	1443	1442	8	500	VCP	30			
2/4	14	1444	1443	8	525.6	VCP	30			
2/4	15	15160	15159	8	65	VCP	30			
2/4	15	15.161	15.160	8	89	VCP	30			
2/4	15	15.138	15.137	8	132	VCP	30			
2/4	15	1545	15.138	8	42	VCP	30			
2/4	15	1546	1545	8	45	VCP	30			
2/4	15	1547	1546	8	200	VCP	30			
2/4	15	15120	15119	6	121	VCP	30			
2/4	15	1558	15120	6	105	VCP	30			
2/4	15	15152	L15153	6	110	VCP	30			
2/4	15	15152	1948	6	98	VCP	30			
2/4	15	15151	15152	6	181	VCP	30			
2/4	15	15110	15151	6	137	VCP	30			
2/4	15	15111	15110	6	299	VCP	30			
2/4	15	15112	15150	6	281	VCP	30			
2/4	15	15116	15115	6	100	VCP	30			
2/4	15	15117	15116	6	185	VCP	30			
2/4	15	15106	15109	6	107	VCP	30			
2/4	15	15108	15106	6	74	VCP	30			
2/4	15	15108	15107	6	170	VCP	30			
2/4	17	1774	1772	6	188	VCP	30			
2/4	17	1775	1774	6	133	VCP	30			
2/4	17	1777	1776	6	69	VCP	30			
2/4	18	1805	1804	6	147	VCP	30			
2/4	18	D-1806	1805	6	28	VCP	30			
2/4	18	1833	1834	8	78	VCP	30			
2/4	18	1834	1835	8	112	VCP	30			
2/4	18	1835	1836	8	103	VCP	30			
?	2	285	284	8	381	CONC	60			
?	2	284	588	8	421	CONC	60			
?	2	2-122	295	8	401	CONC	60			



# SEWER MAINTENANCE DATA

Flow MH No.

Line No.	Dist No.	From	To	Line Size	Length	Main Type	Cycle	Maint. Date	Maint. Factor	Maint Oper.
?	2	295	408	8	400	CONC	60			
?	3	397	3120	8	252	VCP	60			
?	3	377	3120	8	257	VCP	60			
?	3	376	377	8	449	VCP	60			
?	3	362	376	8	500	VCP	60			
?	3	349	362	10	59	VCP	60			
?	3	328	349	10	439	VCP	60			
?	3	3103	328	10	439	VCP	60			
?	3	3104	3-106	8	350	VCP	60			
?	3	3-106	329	8	350	VCP	60			
?	3	364	363	8	309	VCP	60			
?	3	363	378	8	467	VCP	60			
?	3	378	379	8	451	VCP	60			
?	3	379	3121	8	271	VCP	60			
?	3	3121	398	8	291	VCP	60			
?	3	354	353	8	239	VCP	60			
?	4	408	407	8	263	CONC	60			
?	4	407	406	8	242	CONC	60			
?	4	406	405	8	238	CONC	60			
?	4	405	404	8	265	CONC	60			
?	4	404	4123	8	262	CONC	60			
?	4	4123	4129	8	91.6	CONC	60			
?	5	588	587	8	400	CONC	60			
?	5	587	586	8	400	CONC	60			
?	5	586	585	8	368	CONC	60			
?	5	585	584	8	327	CONC	60			
?	5	505	?	8	110	VCP	60			
?	5	L506	?	8	143	VCP	60			
?	5	508	?	8	271	VCP	60			
?	5	509	?	8	?	VCP	60			
?	5	?	?	?	?		60			
?	5	?	?	?	?		60			
?	5	?	?	?	?		60			
?	5	526	525	8	130	CONC	60			
?	5	525	524	8	478	CONC	60			
?	5	524	523	8	461	CONC	60			
?	5	523	522	8	461	CONC	60			
?	5	532	5105	8	228	CONC	60			
?	5	532	5100	8	314	CONC	60			
?	6	677	676	10	194	CONC	60			
?	6	676	675	10	298	CONC	60			
?	6	675	668	10	302	CONC	60			
?	6	668	660	8	299	CONC	60			
?	6	660	654	8	302	CONC	60			
?	6	654	653	8	79	CONC	60			



# SEWER MAINTENANCE DATA

Flow MH No.

Line No.	Dist No.	From	To	Line Size	Length	Main Type	Cycle	Maint. Date	Maint. Factor	Maint Oper.
?	6	653	647	8	168	CONC	60			
?	6	647	646	8	951	VCP	60			
?	6	646	645	8	116	CONC	60			
?	7	718	717	8	59	PVC	60			
?	7	718	797	8	199	PVC	60			
?	7	783	718	8	273	PVC	60			
?	7	719	783	8	328	PVC	60			
?	7	716	719	8	182	PVC	60			
?	7	719	720	8	36	PVC	60			
?	7	720	721	8	121	PVC	60			
?	7	722	1172	8	201	PVC	60			
?	7	723	722	8	195	PVC	60			
?	7	784	723	8	331	PVC	60			
?	7	724	784	8	332	PVC	60			
?	7	790	724	8	355	PVC	60			
?	7	725	790	8	150	PVC	60			
?	7	D-748	F-747	8	399	PVC	60			
?	7	749	D-748	8	36	PVC	60			
?	7	792	749	8	301	PVC	60			
?	7	750	791	8	292	PVC	60			
?	7	751	750	8	330	PVC	60			
?	7	?	?	?	?		60			
?	7	?	?	?	?		60			
?	7	?	?	?	?		60			
?	7	?	?	?	?		60			
1	10	1041	1040	12	202	VCP	60			
1	10	1040	1039	12	300	VCP	60			
1	10	1039	1038	10	300	VCP	60			
1	10	1038	1037	10	307	VCP	60			
1	10	1037	1036	10	547	VCP	60			
1	11	1159	1158	8	501	VCP	60			
1	11	1158	1157	8	316	VCP	60			
1	11	1171	1165	8	195	VCP	60			
1	11	1165	1164	8	416	VCP	60			
1	11	1164	1163	8	455	VCP	60			
1	18	1810	1808	8	167	VCP	60			
1	18	1808	1807	8	171	VCP	60			
1	18	1827	1853	8	280	VCP	60			
1	18	1850	1849	8	213	VCP	60			
1	18	1878	1850	8	86	VCP	60			
1	18	1879	1878	8	208	VCP	60			
3	2	240	239	8	269	CONC	90			
3	2	D-292	291	8	124	CONC	90			
3	2	298	297	8	297	CONC	90			
3	2	299	298	8	300	CONC	90			



# SEWER MAINTENANCE DATA

Flow MH No.

Line No.	Dist No.	From	To	Line Size	Length	Main Type	Cycle	Maint. Date	Maint. Factor	Maint Oper.
3	2	2-100	299	8	300	CONC	90			
3	4	451	450	8	503	CONC	90			
3	4	458	457	8	503	CONC	90			
3	4	456	455	8	323	CONC	90			
3	4	455	453	8	215	CONC	90			
3	4	453	L452	8	82	CONC	90			
3	4	L454	453	8	77	CONC	90			
3	4	462	460	8	537	CONC	90			
3	4	460	459	8	79	CONC	90			
3	4	L4661	460	8	80	CONC	90			
3	4	482	4-126	8	319	CONC	90			
3	4	4-126	481	8	319	CONC	90			
3	4	481	471	8	538	CONC	90			
3	4	4-125	487	8	314	CONC	90			
3	5	529	528	8	430	CONC	90			
3	6	607	606	6	351	CONC	90			
3	6	608	607	8	237	CONC	90			
3	8	857	847	10	186	VCP	90			
3	8	847	840	10	326	VCP	90			
3	8	840	834	10	194	VCP	90			
3	8	834	830	10	168	VCP	90			
3	10	D-1012	1067	8	255	VCP	90			
3	10	1067	1011	8	245	VCP	90			
3	10	1009	1064	8	231	VCP	90			
3	10	1025	1024	8	500	VCP	90			
3	12	1236	1235	8	392	CONC	90			
3	12	1246	1245	8	195	CONC	90			
3	13	1325	1324	10	100	VCP	90			
3	13	1336	1335	10	113	VCP	90			
3	14	1406	1405	8	291	VCP	90			
3	14	1407	1406	8	309	VCP	90			
3	14	1408	1407	8	318	VCP	90			
3	14	1461	1455	8	200	VCP	90			
3	14	1446	1461	8	200	VCP	90			
3	15	L 1538	D 7537	8	145	VCP	90			
3	15	1540	L 1538	8	171	VCP	90			
3	15	L 1541	1540	8	279	VCP	90			
3	15	1570	15104	6	339	CONC	90			
3	15	15104	15105	6	257	CONC	90			
3	15	15104	15103	6	26	VCP	90			
3	15	15103	L 15102	6	38	VCP	90			
3	15	L 15102	15101	6	229	VCP	90			
3	16	1680	L1678	8	257	VCP	90			
3	16	1632	1631	8	250	VCP	90			
3	16	1631	1630	8	249	VCP	90			



# SEWER MAINTENANCE DATA

Flow MH No.

Line No.	Dist No.	From	To	Line Size	Length	Main Type	Cycle	Maint. Date	Maint. Factor	Maint Oper.
3	18	1883	1882	8	304	VCP	90			
3	18	18101	18100	8	330	VCP	90			
3	18	18100	1899	8	94	VCP	90			
3	18	1899	1898	8	259	VCP	90			
3	18	1898	1897	8	122	VCP	90			
3	18	1897	1896	8	220	VCP	90			
3	18	1897	1894	8	286	VCP	90			
3	18	1894	1893	8	102	VCP	90			
3	18	1893	1892	8	331	VCP	90			
3	18	1892	1891	8	239	VCP	90			
3	19	1937	D 1936	8	310	VCP	90			
3	19	D 1936	1935	8	291	VCP	90			
3	20	2008	2007	8	202	VCP	90			
3	20	2007	2006	8	107	VCP	90			
3	20	2017	2016	8	350	VCP	90			
3	20	1935	2020	8	374	VCP	90			
3	20	2020	2019	8	186	VCP	90			
3	21	2146	2147	8	238	VCP	90			
3	21	2141	2140	8	346	VCP	90			
3	21	21-69	21-70	8	246	VCP	90			

## **APPENDIX 4-C. STANDARD OPERATING PROCEDURES “HYDRO JET OPERATOR”**

### **City of Beverly Hills Wastewater Division Standard Operating Procedures**

#### **Hydro Jet Operator**

##### **Connecting the trailer to the truck**

- The 2011 Ford F 450 is the sanitary sewer truck.
- Select the proper size hitch ball.
- Assure the two safety chains are connected to the class III hitch.
- Assure the electrical plug is properly connected, and check the operation of the lights.
- Install the pin in the hitch latching mechanism.
- Check the engine oil, hydraulic fluid, and the fuel.

##### **Driving the trailer**

- Assure the mirrors on the truck are adjusted properly.
- Have a spotter when backing.
- Adjust the trailer brakes.
- Give more time for stopping due to the heavy weight of the trailer.
- Give more of a turning radius.
- Perform driver test prior to pulling the trailer.

##### **Work site safety**

- Wear an orange traffic vest at all times.
- Identify potential traffic hazards.
- Use flashers and overhead warning lights.
- Use traffic cones at all times when in the street.
- Use the Stop/Slow sign when controlling traffic, do not use hand signals.
- Use the vehicle as a barrier between workers and traffic.
- Use warning signs when appropriate, Ex. ROAD WORK AHEAD.
- Be aware of your surroundings at all times.
- It's your responsibility to control the flow of traffic.

##### **Hydro Jet operation**

- Use a spotter, back the hydro jet, centering the hose reel over the manhole.
- Use proper lifting technique when removing the manhole cover.
- Start the engine and bleed the air from the pump.
- Select the proper nozzle for cleaning.
- Insert the leader hose into the tiger tail, and insert nozzle into the sewer line, running to the upstream manhole.
- Assure the nozzle is in the line, and engage the pump and slowly throttle up the engine.
- Run the hose out slowly (keep in mind the footage of the run).
- When at the end of the run, begin retracting the hose slowly to assure a good clean.
- Inspect the hose condition when retracting.
- Once the leader hose is in sight, run the unit for a few minutes to clear debris from the end of the line.



- Throttle down the engine and disengage the pump.
- Retract the hose the rest of the way.
- Remove the nozzle and wash down the inside of the manhole.
- Replace the manhole cover and pick up all traffic equipment.

**Clean up**

- Prior to returning the hydro jet to the shop, wash it down and ensure the water tank is  $\frac{3}{4}$  full.
- Close the water feed valve and clean the pump water filter.
- Remove any nozzles from the hose.
- Return the keys to 2011 Ford F 450. (A spare key is located at the WWTP in the key lock box.)

**\*Wear the proper Personal Protective Equipment at all times, including gloves, boots, safety glasses, and hearing protection.**



## SECTION 5. DESIGN AND PERFORMANCE PROVISIONS

### 5.1 Introduction

This section of the SSMP provides standards for installation, rehabilitation and repair of the sewer collection system, as well as standards for inspection and testing of new, rehabilitated, and repaired facilities. The standards are intended to ensure that new construction, replacement and rehabilitation of the sewer collection system uses the most recent and relevant standards of the industry.

### 5.2 Regulatory Requirements for Design and Performance Provisions

The requirements for the Design and Performance Provisions section of the SSMP are:

#### **GWDR (Element 5 – Design and Performance Provisions) Requirement:**

*The GWDR requirements for the Design and Performance Provisions are:*

- *Identify design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and*
- *Identify procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.*

### 5.3 Design and Construction Standards for Sewers, Pump Stations, and Appurtenances

The Requirement: *The SSMP must identify design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems.*

#### 5.3.1 Design Standards for Sewers, Pump Stations, and Appurtenances

Currently, the City of Beverly Hills has a limited amount of design criteria (such as material type, location within the street corridor, etc. – City Standard Detail Drawings, Section II) but does not have City-specific design criteria for new pipe, manhole spacing, etc. With the exception of a few parcels on the outskirts of the City limits, the City is at near full build-out condition and the need for design criteria for new construction is limited. Despite this, it is recommended that the City adopt minimum design criteria as described in Appendix 5-A for use in evaluating future design submittals and for evaluating the effectiveness of repair methods discussed below.

With respect to system rehabilitation and repair, the City utilizes a combination of measures (spot repairs, linings, coatings, etc.) depending on site-specific conditions to restore system performance to acceptable levels. Part 5, System Rehabilitation, of the Standard Specifications for Public Works Construction (Greenbook) is used as the basis of design. It is recommended that verification of the minimum design criteria discussed above be conducted and evaluated prior to implementing these rehabilitation procedures.



### 5.3.2 Construction Standards for Sewers, Pump Stations, and Appurtenances

Currently, the City of Beverly Hills has established construction standards for the major components of the City's sewer system. The requirement for conforming to the City's construction standards is described in the City Code, Section 9, Articles 9-B-1 and 9-2B-5. The City's Director of Public Works and Transportation and engineering staff review the construction standards for accuracy and update the standards as needed. The last full issuance of all the City's construction standard details was in July 2009. Many of the City's standards have since been revised as recently as November 2010 and November 2011.

The City relies on a number of base standards to supplement their standard details, including *the State of California, Department of Transportation (Caltrans) Standards, ASTM Standard Specifications, and the Standard Specifications for Public Works Construction (Greenbook)*. In the event that no City of Beverly Hills Standard Detail addresses a certain aspect of construction, the standards of the County of Los Angeles, Caltrans, or the Design Engineering Firm performing the design are utilized to develop appropriate details.

The City's standard details for construction are located on the City's website at <http://www.beverlyhills.org>. The standard details are specifically located at <http://www.beverlyhills.org/citygovernment/departments/publicworkstransportation/civilengineeri ng/>, and include the following list of drawings (a copy of each is also included in Appendix 5-B.)

#### Section II – Sewer and Sanitation

BH 201	Drop Manhol "S"
BH 202	Large Manhole "B"
BH 203	Junction Chamber "F"
BH 204	Junction Chamber "G"
BH 205	Junction Chamber "H"
BH 206	Terminal Manhole "Q"
BH 207	Modified Junction Chamber "F"
BH 208	Non-Rocking Manhole Frame and Cover
BH 209	Large Manhole Frame and Cover
BH 210	Pipe Supports Across Trenches
BH 211	Pipe Bedding in Trenches
BH 212	Sewer and Water Main Separation (Parallel and Perpendicular) < 10'
BH 213	Cradling and Encasement
BH 214	Lateral Connect to Lined Sewer Main



#### **5.4 Inspection and Testing Standards for the Installation of Sewers, Pump Stations, and Appurtenances**

The Requirement: *The SSMP must identify the procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.*

All components of the sewer system are inspected, and tests are reviewed before a system (or component of the system) is accepted by the City. Inspection and testing requirements for sewer system components are fully described in appropriate sections of the Greenbook and include closed-circuit video inspection, air-pressure and mandrel testing of gravity sewer mains, and hydrostatic testing of pressure mains. The most frequently used sections of the Greenbook include:

- Section 207 – Pipe
- Section 306 – Underground Conduit Construction
- Section 500 – System Rehabilitation

The City has the authority to enforce inspection and testing for new, rehabilitated, and repaired facilities, as described in Section 3 of this SSMP. The City employs full-time Public Works staff to perform inspections and also contracts-out for additional inspectors as needed.



## APPENDIX 5-A. SEWER SYSTEM DESIGN CRITERIA

Alignment: Sewer pipelines shall be designed so as to have a minimum of curvature both horizontal and vertical.

Whenever possible, sewer lines shall be laid out in a straight line between structures. Curved sewer lines will be allowed under the following conditions:

- All curve data shall be shown on the plans.
- Minimum radius of curvature and joint deflections shall be as recommended by the pipe manufacturer and approved by the City Engineer.
- All deflections shall be at the pipe joints or by specially manufactured mitered pipe sections.

Pipeline Location: Whenever possible the pipe is to be located along the street centerline. Pipe shall not be located in median strips or parking lanes. However, in all cases the pipeline location shall comply with applicable county and state requirements.

Minimum Depth: Minimum depth from finish street grade to top of sewer main pipe shall be 5 feet. If 5 feet of cover is not feasible due to the depth of the existing Main Connection Point, the City will consider lesser depths on a case-by-case basis and may require appropriate protective cover such as slurry.

Manhole Criteria: Manhole locations are at:

- Changes of slope in sewers.
- Changes of direction of sewers.
- Junctions of main sewers.
- Termination of sewers.
- Junction of main sewer and lateral sewer if lateral is same size as main sewer.
- Pipe size change.
- Other locations specified by the City.

Maximum manhole spacing shall be 400 feet.

Allowable head losses in manholes:

- Straight run through manholes based on 0.00 foot loss.
- Right angle turn in manholes based on 0.5 velocity head loss, or 0.10 foot, whichever is greater.

Horizontal and Vertical Separation: The City, in accordance with requirements of the State of California, Department of Health Services, requires minimum horizontal and vertical separation



between sewer and water mains. The regulations in place at the time of construction shall apply to the work.

Additional Sewer Design Criteria is outlined in Section 4 of the September 2010 Master Plan.

Section 4 is included on the following page.





## Section 4—Sewer Design Criteria

The use of design criteria and standards are to ensure that sewer facilities meet a certain requirement in order to maintain a properly functioning sewer system. Design criteria for a sewer system is the basis for determining if a pipeline is deficient and requires improvement.

### 4.1 Existing City Design Criteria

Design criteria was established in the 1997 Master Plan as the basis for the system analysis and recommendation for capital improvement projects. The design criteria included flow coefficients, collection system design criteria, and inflow and infiltration assumptions.

#### 4.1.1 Wastewater Flow Coefficients

Wastewater flow coefficients are developed to determine the quantity of wastewater flow generated by a specific land use type. Flow coefficients can be based on the land use area, dwelling count, population or building square footage. Flow coefficients are used to help estimate existing flows and predict future flows. They are used to allocate system flow inputs at manholes/nodes in a hydraulic model. The 1997 Master Plan derived individual flow coefficients for the major land uses throughout the City based on published data and other local agency standards. The flow coefficients utilized in the 1997 Master Plan are listed in Table 4-1. The flow coefficients are provided in ranges depending on the density.

**Table 4-1: 1997 Wastewater Flow Coefficients**

Land Use Type	Flow Coefficient (gpd/ac)
Single Family Res.	700 - 900
Multi Family Res.	5,700 - 6,500
Commercial	10,000 – 13,600
Municipal/Industrial	7,000 - 8,725
Education/Religious	500 – 1,000





#### 4.1.2 Collection System Design Criteria

The 1997 Master Plan established “depth to diameter” (d/D) criteria for both dry weather and wet weather conditions. The d/D ratio represents the depth of flow in relation to the overall diameter of the pipe. The following d/D criteria from the 1997 Master Plan were used as the basis for determining hydraulic deficiencies.

**Table 4-2: 1997 Master Plan Collection System Design Criteria**

Criteria	Dry Weather	Wet Weather
≤ 15”	d/D = 0.50	d/D = 0.90
> 15”	d/D = 0.75	d/D = 0.90

#### 4.1.3 Inflow and Infiltration

There are two components to inflow and infiltration used in the 1997 Master Plan. Base inflow and infiltration (BII) refers to the additional flow in the sewer system that is not a direct result of water usage. It typically is a result of pipe cracks and faulty plumbing. BII is present in the sewer system at all times. Rainfall induced inflow and infiltration (RFII) is the additional flow in the sewer system that is a direct result of rainfall, and is only accounted for in the wet weather analysis.

## 4.2 Recommended City Design Criteria

The design criteria established in this report was used as the basis for the system analysis, as discussed in Section 6. Flow coefficients were developed based on water billing data and refined with flow monitoring data. Flow loading based on the anticipated defect flow was also refined with the flow monitoring data. Collection system criteria was used to determine deficient pipelines and as the basis for the capital improvement program. Inflow and infiltration was determined based on flow monitoring data during storm events.

#### 4.2.1 Wastewater Flow Coefficients

As a part of this analysis, the previously established wastewater flow coefficients were evaluated. The City provided water billing data for the previous three complete fiscal years (07/08, 08/09, 09/10). The water billing data was evaluated to determine annual water use and water usage per land use. On average, the metered records indicate City customers use 8.7 million gallons of water per day. Based on the system-wide wastewater generation determined from flow monitoring data, it was





calculated that approximately 73% of the billed water is returned to the sewer system. The calculations did not include water specifically used for irrigation purposes and it excluded wastewater generated from the treatment plant. The return to sewer ratios for each major land use type were calculated and identified in Table 4-3.

**Table 4-3: Return to Sewer Ratios**

Land Use Type	Return to Sewer Ratio (%)
Single Family Res.	60
Multi Family Res.	90
Commercial	95
Municipal/Industrial	95
Education/Religious	90
Total	73

The return to sewer ratios were multiplied by the billed water data for each land use type to calculate a wastewater flow coefficient. The calculated wastewater coefficients are identified in Table 4-4.

**Table 4-4: Wastewater Flow Coefficients**

Land Use Type	Flow Coefficient (gpd/ac)
Single Family Res.	1,000 -1,500
Multi Family Res.	6,500 -8,000
Commercial	5,000 – 6,600
Municipal/Industrial	10,000 – 13,500
Education/Religious	2,500 – 3,000

Wastewater flow loading for the hydraulic model was based on anticipated defect and wastewater flow. The defect flow analysis used the data from the temporary and permanent flow monitors. The model was





loaded with wastewater flows to replicate the results of the temporary flow monitors.

4.2.2 Collection System Design Criteria

Table 4-5 identifies the design criteria used in this master plan and as the basis for the Capital Improvement Program (CIP), based on future (2030) wet weather flow.

Table 4-5: Design Criteria for Existing Pipelines

Pipe Size (inches)	d/D Ratio		
	0.50 to 0.75	0.75 to 0.90	≥ 0.90
< 18"	Watch	Schedule	Replace
≥ 18"	OK	Watch	Replace

Notes:

1. "Watch" indicates that special attention needs to be paid to increased flows that are tributary to this pipe. A proposed development may create a situation where the performance criteria is exceeded.
2. "Schedule" indicates that a replacement project needs to be considered but can be scheduled at some point in the future.
3. "Replace" indicates that an immediate project funding and design should begin.

Table 4-6 identifies the minimum design criteria to be used for all new pipelines.

Table 4-6: Design Criteria for New Pipelines

Pipe Dia. (in)	Min. Slope	Max. d/D	Min. Velocity (ft/s)
8	0.0040	d/D = 0.50	2.0
10	0.0028	d/D = 0.50	2.0
12	0.0022	d/D = 0.50	2.0
≥15	0.0015	d/D = 0.75	2.0

The maximum allowable slope shall be the slope which generates a maximum flow velocity of 8.0 feet per second at the peak flow rate.

4.2.3 Inflow and Infiltration

The effect of inflow and infiltration on the City sewer system was determined based on evaluation of previous reports and studies, as well as the flow monitoring that took place from January 16, 2009 to February 12, 2009 (28 days). An extensive inflow and infiltration analysis was described in Section 3. For future analyses, average dry weather flows shall be increased by a factor of 1.5 to predict defect flows, or flows





arising from inflow and infiltration. This factor is consistent with the design storm event discussed in Section 6.5.3.

#### 4.2.4 Mannings Roughness Coefficient (“n”)

For future analyses, a value of 0.013 shall be used for Manning’s Roughness Coefficient (“n”). This is the industry accepted value for vitrified clay pipe and concrete pipe, which represent essentially all of the sewer system.



## **APPENDIX 5-B. CITY CONSTRUCTION STANDARDS**



**CITY OF BEVERLY HILLS  
CALIFORNIA**



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**STANDARD DETAIL DRAWINGS**

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**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
CIVIL ENGINEERING DIVISION**

**345 Foothill Road  
Beverly Hills, CA 90210  
Tel: 310-285-2452  
Fax: 310-278-1838**

**<http://www.beverlyhills.org/government/pwtrans/default.asp>**

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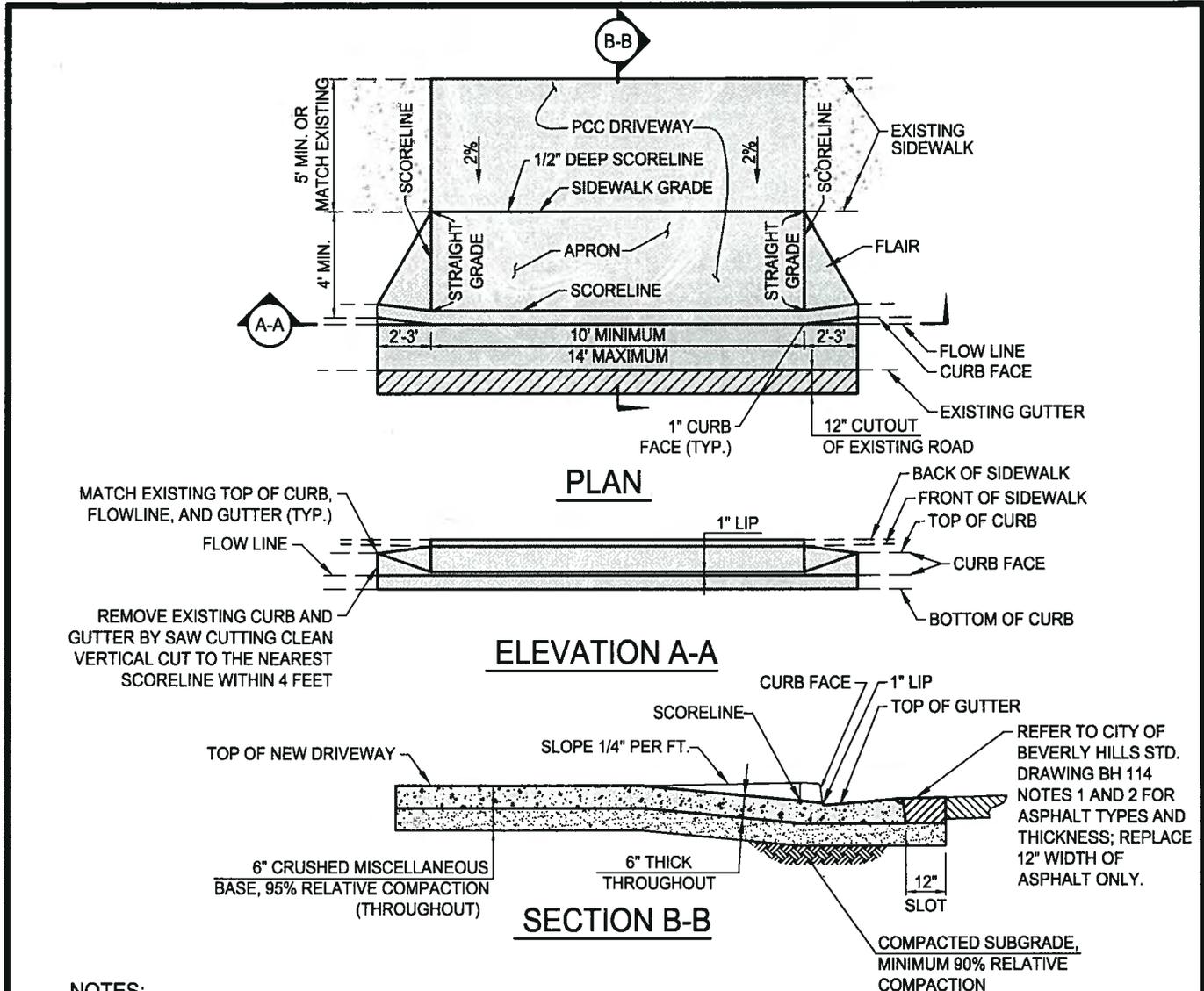
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# **Section I**

## **Street Improvements**



- NOTES:
- 1. DRIVEWAY APPROACH, INCLUDING SIDEWALK SHALL BE CLASS 520-C-2500 PCC MONOLITHIC POUR.**
  2. ANY EXISTING TRAFFIC OR ELECTRICAL BOXES SHALL BE RELOCATED OUTSIDE OF DRIVEWAY APPROACH.
  3. NO PORTION OF A PROPOSED DRIVEWAY APPROACH SHALL BE CONSTRUCTED CLOSER THAN TEN (10) FEET FROM THE CENTER OF ANY CITY TREE WITHOUT A WRITTEN APPROVAL OF THE CITY ARBORIST.
  4. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
  5. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE. NOT TO SCALE

# RESIDENTIAL DRIVEWAY APPROACH

REVISIONS		
MARK	DATE	DESCRIPTION
△	11/4/2010	NO JOINT BETWEEN CURB AND GUTTER



## CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER

APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 101**  
 SHEET 1 OF 2

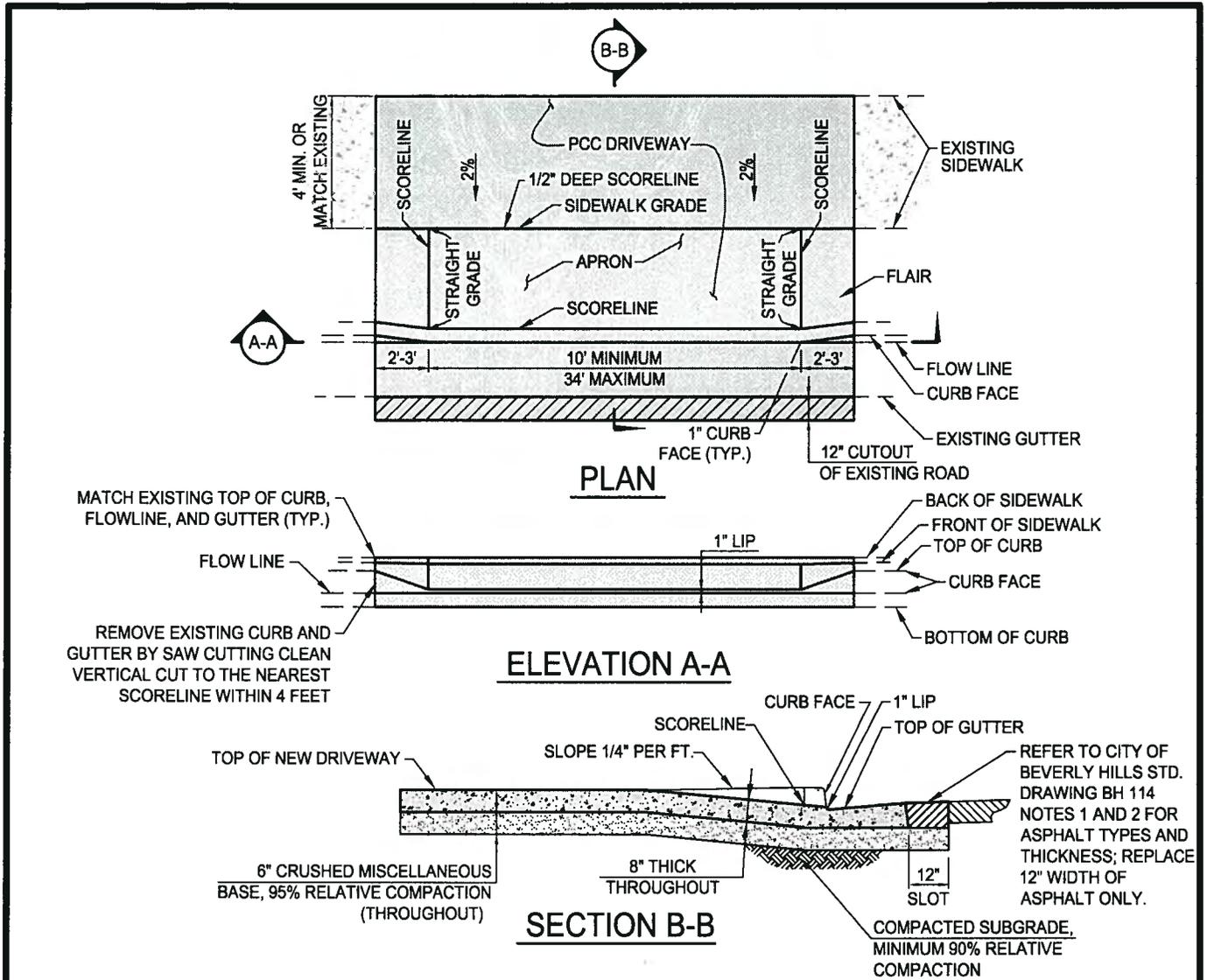
**CITY OF BEVERLY HILLS  
RESIDENTIAL DRIVEWAY APPROACH SPECIFICATIONS AND GENERAL REQUIREMENTS  
IN REFERENCE TO BEVERLY HILLS MUNICIPAL CODE SEC. 8-4-4**

**Definition:** An approach is located between the edge of the gutter and property line. It is composed of an apron and flairs (see sheet 1 of 2).

1. Any variation from this Driveway Approach Standard must be approved in writing by the City Director of Public Works or his designee. Permits are required for all activities on public right-of-way.
2. **Proposal Plan:** A drawing shall be provided by the applicant to include: Width of proposed apron(s), width of proposed transitional flair areas at side of apron(s), measurement to nearest trees, street lights, other curb cuts, location of property line extension at each side of the site, location of any adjacent neighboring approach, height of the street curb in front of the property, width of the sidewalk, width of the parkway (landscaped area) and any other useful information.  
**Note:** If the project is part of a work to be performed on a private property, the drawing submitted must be stamped with the approval of the Building and Safety Department prior to issuance of an Engineering Driveway Approach permit.
3. **Location:** No portion of a driveway approach shall be closer than three feet (3') from any lighting standard, public utility, another driveway, or other device erected in the parkway. Except in single family residential zones, driveway approaches are restricted to access which lead directly to a carport, garage, or parking area located beyond the setback area. Two (2) driveway approaches authorized for any lot or parcel shall not be less than twenty eight feet (28') apart, and each such driveway approach shall be a minimum of two feet (2') from the side property line as measured at the beginning of the full height curb. Any circular driveway shall have a minimum outer radius of twenty six (26') feet. The transportation/engineering official may approve a driveway approach closer to the side property line, or closer to any tree, lighting standard, public utility, another driveway or a device erected in the parkway where necessary to accommodate existing topography or nonremovable objects, such as buildings, walls, trees, or natural rock outcroppings. No portion of a proposed driveway approach shall be constructed closer than ten (10) feet from the center of any city tree without written approval of the City Arborist.
4. **Concrete Finish:** Approaches shall have a wood float, rotor finish. Sidewalk and curb face shall be troweled and light broom finished. Broken or defective public sidewalk, curb, and gutter adjacent to approaches shall be replaced if found necessary during the inspection of the work by Public Works inspectors.
5. **Adjacent Approach:** No raised curb will be permitted between two approaches which are adjacent to a common property line and less than 4 feet apart. The approaches shall be continuous. A written consent of adjacent property owner is required to construct a joint approach. Construction of a joint approach includes the removal of the existing adjacent approach and reconstruction of the entire shared approach.
6. **Width:** The maximum overall width of any residential driveway approach shall not exceed twenty feet (20'), and the maximum width of two (2) adjacent residential driveway approaches which are combined shall not exceed twenty six feet (26'). The minimum overall width of any driveway approach shall be sixteen feet (16'). The transportation/engineering official may approve driveway approaches which vary from the widths designated herein to accommodate existing topography, or nonremovable objects, such as buildings, walls, trees, or natural rock outcroppings. Driveway approach widths shall be the transition distance, measured along the curb, from the full height curb on one side to on the opposite side.  
  
**Number:** Only one driveway approach shall be permitted in any residential zone on any lot or parcel with less than seventy five feet (75') of frontage, or with a front setback of less than twenty five feet (25'); with the exception that a circular driveway requiring two (2) driveway approaches shall be permitted where the parcel frontage is within four percent (4%) of the seventy five feet (75') minimum required for two (2) driveway approaches, and further, that no other deviation from the provisions of this code or discretionary action is required for such circular driveway.
7. **Materials and Workmanship:** Shall fully comply with the requirements of the "Standard Specifications for Public Works Construction", ("Greenbook"), latest edition, sections 201-1 and 303-5 respectively.

## RESIDENTIAL DRIVEWAY APPROACH

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	
				<b>RECOMMENDED</b> 	<b>DATE</b> 11-18-10
			<b>APPROVED</b> 	<b>DATE</b> 11-18-10	<b>STANDARD DRAWING</b> <span style="font-size: 2em; font-weight: bold;">BH 101</span> SHEET 2 OF 2



- NOTES:
- 1. DRIVEWAY APPROACH, INCLUDING SIDEWALK SHALL BE CLASS 520-C-2500 PCC MONOLITHIC POUR.**
  2. ANY EXISTING TRAFFIC OR ELECTRICAL BOXES SHALL BE RELOCATED OUTSIDE OF DRIVEWAY APPROACH.
  3. NO PORTION OF A PROPOSED DRIVEWAY APPROACH SHALL BE CONSTRUCTED CLOSER THAN TEN (10) FEET FROM THE CENTER OF ANY CITY TREE WITHOUT A WRITTEN APPROVAL OF THE CITY ARBORIST.
  4. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. ("GREENBOOK")
  5. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE. NOT TO SCALE

## NON-RESIDENTIAL DRIVEWAY APPROACH

REVISIONS			 <b>CITY OF BEVERLY HILLS, CALIFORNIA</b> DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	STANDARD DRAWING
MARK	DATE	DESCRIPTION		
△	11/4/2010	NO JOINT BETWEEN CURB AND GUTTER	RECOMMENDED <i>[Signature]</i> DATE <i>11-18-10</i> CITY ENGINEER	<b>BH 102</b> SHEET 1 OF 2
			APPROVED <i>[Signature]</i> DATE <i>11-18-10</i> PUBLIC WORKS DIRECTOR	

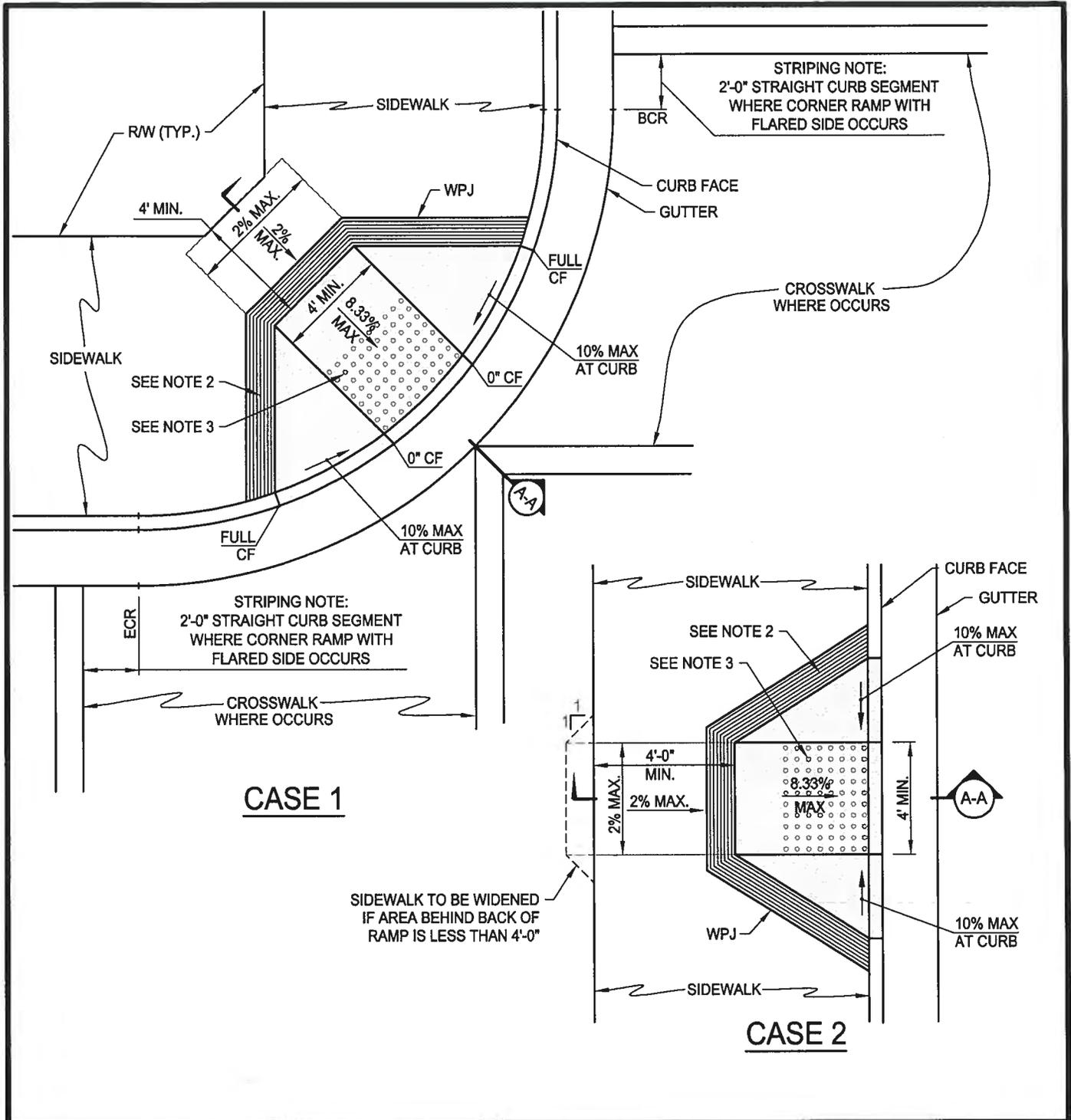
**CITY OF BEVERLY HILLS  
NON-RESIDENTIAL DRIVEWAY APPROACH SPECIFICATIONS AND GENERAL REQUIREMENTS  
IN REFERENCE TO BEVERLY HILLS MUNICIPAL CODE SEC. 8-4-4**

**Definition:** An approach is located between the edge of the gutter and property line. It is composed of an apron and flairs (see sheet 1 of 2).

1. Any variation from this Driveway Approach Standard must be approved in writing by the City Director of Public Works or his designee. Permits are required for all activities on public right-of-way.
2. **Proposal Plan:** A drawing shall be provided by the applicant to include: Width of proposed apron(s), width of proposed transitional flair areas at side of apron(s), measurement to nearest trees, street lights, other curb cuts, location of property line extension at each side of the site, location of any adjacent neighboring approach, height of the street curb in front of the property, width of the sidewalk, width of the parkway (landscaped area) and any other useful information.  
**Note:** If the project is part of a work to be performed on a private property, the drawing submitted must be stamped with the approval of the Building and Safety Department prior to issuance of an Driveway Approach permit.
3. **Location:** No portion of a driveway approach shall be closer than three feet (3') from any lighting standard, public utility, another driveway, or other device erected in the parkway. Except in single family residential zones, driveway approaches are restricted to access which lead directly to a carport, garage, or parking area located beyond the setback area. Two (2) driveway approaches authorized for any lot or parcel shall not be less than twenty eight feet (28') apart, and each such driveway approach shall be a minimum of two feet (2') from the side property line as measured at the beginning of the full height curb. Any circular driveway shall have a minimum outer radius of twenty six (26') feet. The transportation/engineering official may approve a driveway approach closer to the side property line, or closer to any tree, lighting standard, public utility, another driveway or a device erected in the parkway where necessary to accommodate existing topography or nonremovable objects, such as buildings, walls, trees, or natural rock outcroppings. No portion of a proposed driveway approach shall be constructed closer than ten (10) feet from the center of any city tree without written approval of the City Arborist.
4. **Concrete Finish:** Approaches shall have a wood float, rotor finish. Sidewalk and curb face shall be troweled and light broom finished. Broken or defective public sidewalk, curb, and gutter adjacent to approaches shall be replaced if found necessary during the inspection of the work by Public Works Inspectors.
5. **Adjacent Approach:** No raised curb will be permitted between two approaches which are adjacent to a common property line and less than 4 feet apart. The approaches shall be continuous. A written consent of adjacent property owner is required to construct a joint approach. Construction of a joint approach includes the removal of the existing adjacent approach and reconstruction of the entire shared approach..
6. **Width:** The maximum overall width of any non-residential driveway approach shall not exceed forty feet (40'). The minimum overall width of any driveway approach shall be sixteen feet (16'). The transportation/engineering official may approve driveway approaches which vary from the widths designated herein to accommodate existing topography, or nonremovable objects, such as buildings, walls, trees, or natural rock outcroppings. Driveway approach widths shall be the transition distance, measured along the curb, from the full height curb on one side to on the opposite side.
7. **Materials and Workmanship:** Shall fully comply with the requirements of the "Standard Specifications for Public Works Construction", ("Greenbook"), latest edition, sections 201-1 and 303-5 respectively.

## NON-RESIDENTIAL DRIVEWAY APPROACH

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	
				<b>RECOMMENDED</b> 	<b>DATE</b> 11-18-10
			<b>APPROVED</b> 	<b>CITY ENGINEER</b>	<b>DATE</b> 11-18-10
<b>PUBLIC WORKS DIRECTOR</b>				<b>STANDARD DRAWING</b> <b>BH 102</b> <b>SHEET 2 OF 2</b>	



# CURB RAMPS

REVISIONS		
MARK	DATE	DESCRIPTION

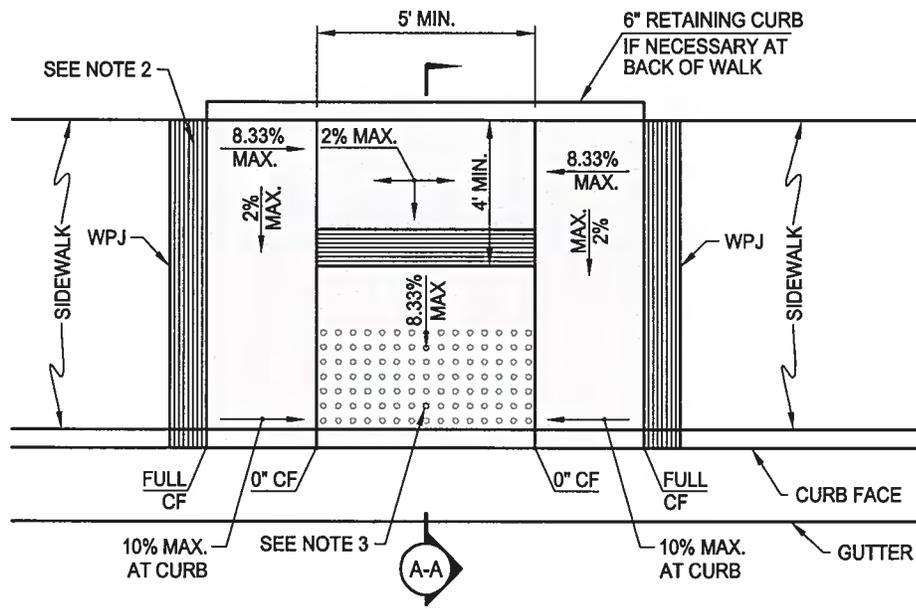


**CITY OF BEVERLY HILLS, CALIFORNIA**  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

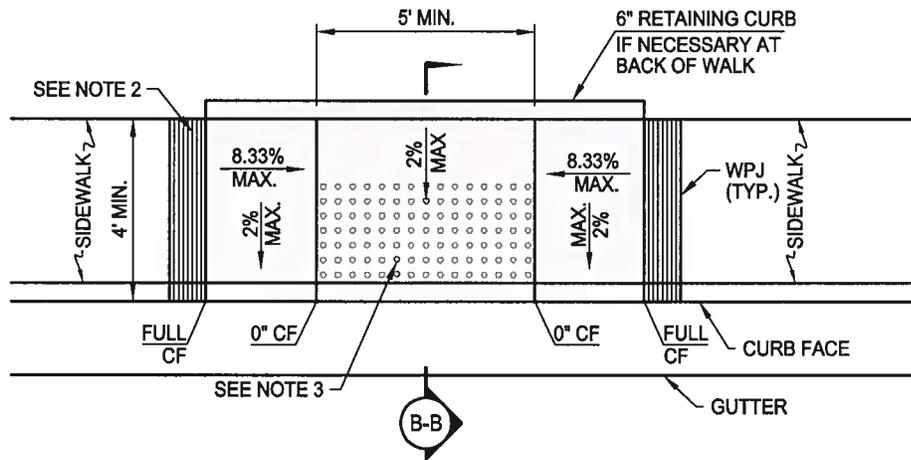
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CITY ENGINEER  
APPROVED *[Signature]* DATE 11-18-11  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 103**  
SHEET 1 OF 4





**CASE 5**



**CASE 6**

# CURB RAMPS

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE 11/18/2011

APPROVED

*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 11-18-11

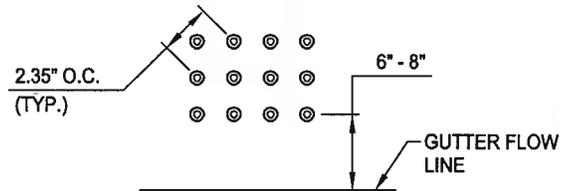
STANDARD DRAWING

**BH 103**

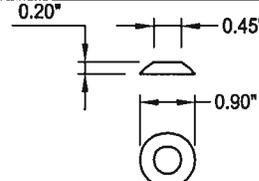
SHEET 3 OF 4

**NOTES:**

1. CONCRETE SHALL BE CLASS 520-C-2500 AND SHALL BE 4" THICK OVER 4" CRUSHED MISCELLANEOUS BASE AT 90% RELATIVE COMPACTION.
2. THE CURB RAMP SHALL BE OUTLINED, AS SHOWN WITH A 12" WIDE BORDER WITH 1/4" GROOVES APPROXIMATELY 3/4" ON CENTER. SEE GROOVING DETAIL.
3. CURB RAMPS SHALL HAVE A RECESSED YELLOW DETECTABLE WARNING SURFACE THAT EXTENDS THE FULL WIDTH AND 3' DEPTH OF THE RAMP. EDGES SHALL BE FLUSH WITH THE SURFACE OF THE RAMP. SEE DETECTABLE WARNING DETAIL FOR SIZE AND PATTERN. THE EDGE OF THE DETECTABLE WARNING NEAREST TO THE STREET SHALL BE BETWEEN 6" AND 8" FROM THE GUTTER FL.
4. UTILITY PULL BOXES, MANHOLES, VAULTS AND OTHER UTILITY FACILITIES WITHIN THE BOUNDARIES OF THE CURB RAMP WILL BE RELOCATED BY THE OWNER PRIOR TO, OR IN CONJUNCTION WITH, THE CONSTRUCTION OF THE RAMP.
5. TRANSITIONS FROM RAMPS AND LANDING TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
6. MAXIMUM SLOPES OF ADJOINING GUTTERS, THE ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP OR ACCESSIBLE ROUTE SHALL NOT EXCEED 5 PERCENT WITHIN 48" OF THE TOP AND BOTTOM OF CURB RAMP.
7. THE BOTTOM OF THE RAMP SHALL HAVE A 0 INCH LIP AT CURB FACE.
8. IF DISTANCE FROM CURB TO BACK OF SIDEWALK IS TOO SHORT TO ACCOMMODATE RAMP AND 4' - 0" LANDING AS SHOWN IN CASE 1 AND CASE 2, THE SIDEWALK MAY BE DEPRESSED LONGITUDINALLY AS IN CASE 5 OR 6, OR SIDEWALK MAY BE WIDENED AS SHOWN IN CASE 2.
9. AS SITE CONDITIONS DICTATE, THE RETAINING CURB SIDE AND THE FLARED SIDE OF CASE 4 RAMP SHALL BE CONSTRUCTED IN REVERSE POSITION.
10. IF LOCATED ON A CURVE, THE SIDES OF THE RAMP NEED NOT BE PARALLEL, BUT THE MINIMUM WIDTH OF THE RAMP SHALL BE 4' - 0".
11. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
12. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

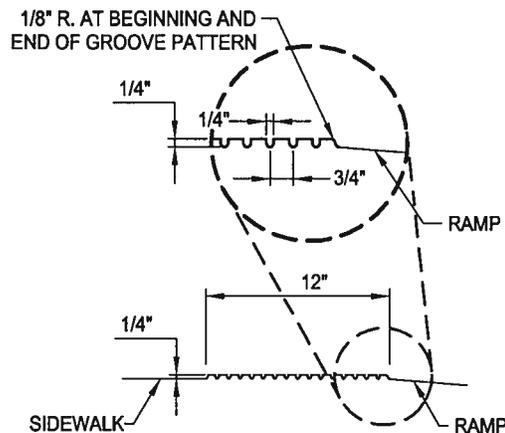


**TRUNCATED DOME PATTERN**

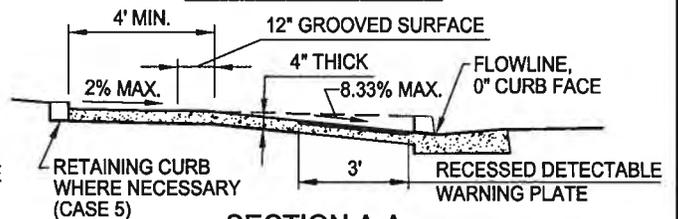


**SINGLE TRUNCATED DOME**

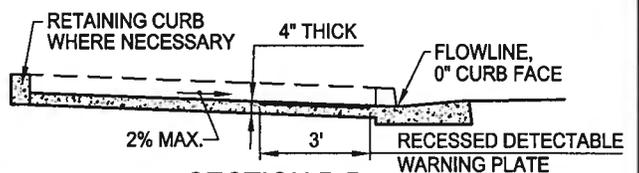
**DETECTABLE WARNING DETAIL**



**GROOVING DETAIL**



**SECTION A-A**



**SECTION B-B**

**CURB RAMPS**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 11/18/2011  
CITY ENGINEER

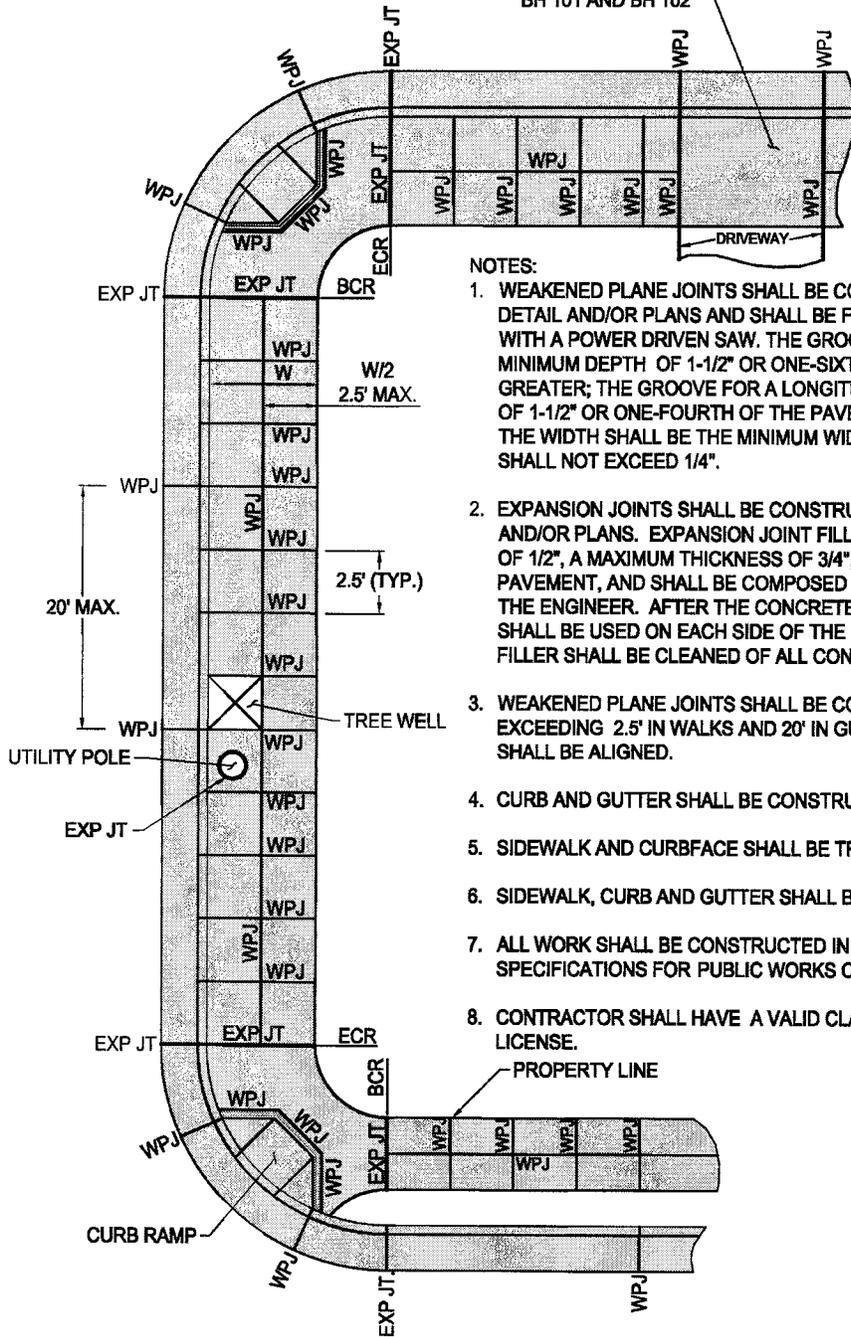
APPROVED *[Signature]* DATE 11-18-11  
PUBLIC WORKS DIRECTOR

DATE 11/18/2011

DATE 11-18-11

STANDARD DRAWING  
**BH 103**  
SHEET 4 OF 4

JOINTS PER STANDARD DRAWINGS  
BH 101 AND BH 102



**ABBREVIATIONS:**

- WPJ - WEAKENED PLANE JOINT
- EXP JT - EXPANSION JOINT
- BCR - BEGINNING OF CURB RETURN
- ECR - END OF CURB RETURN

**NOTES:**

1. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT LOCATIONS SHOWN ON THE DETAIL AND/OR PLANS AND SHALL BE FORMED BY CUTTING A GROOVE IN THE PAVEMENT WITH A POWER DRIVEN SAW. THE GROOVE FOR A TRANSVERSE JOINT SHALL BE CUT TO A MINIMUM DEPTH OF 1-1/2" OR ONE-SIXTH OF THE PAVEMENT THICKNESS, WHICHEVER IS GREATER; THE GROOVE FOR A LONGITUDINAL JOINT SHALL BE CUT TO A MINIMUM DEPTH OF 1-1/2" OR ONE-FOURTH OF THE PAVEMENT THICKNESS, WHICHEVER IS GREATER; AND THE WIDTH SHALL BE THE MINIMUM WIDTH POSSIBLE WITH THE SAW BEING USED, BUT SHALL NOT EXCEED 1/4".
2. EXPANSION JOINTS SHALL BE CONSTRUCTED AT LOCATIONS SHOWN ON THE DETAIL AND/OR PLANS. EXPANSION JOINT FILLER MATERIAL SHALL HAVE A MINIMUM THICKNESS OF 1/2", A MAXIMUM THICKNESS OF 3/4", A DEPTH EQUAL TO THE THICKNESS OF THE PAVEMENT, AND SHALL BE COMPOSED OF MATERIALS AS SPECIFIED OR APPROVED BY THE ENGINEER. AFTER THE CONCRETE HAS BEEN FINISHED, AN EDGER OF 1/4" RADIUS SHALL BE USED ON EACH SIDE OF THE EXPANSION JOINT FILLER. THE EXPANSION JOINT FILLER SHALL BE CLEANED OF ALL CONCRETE MORTAR.
3. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT REGULAR INTERVALS NOT EXCEEDING 2.5' IN WALKS AND 20' IN GUTTERS. JOINTS IN CURB, GUTTER, AND WALK SHALL BE ALIGNED.
4. CURB AND GUTTER SHALL BE CONSTRUCTED SEPARATELY FROM SIDEWALK.
5. SIDEWALK AND CURBFACE SHALL BE TROWELED AND LIGHT BROOM FINISHED.
6. SIDEWALK, CURB AND GUTTER SHALL BE CONSTRUCTED OF CLASS 520-C-2500 PCC.
7. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
8. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

# CURB AND SIDEWALK JOINTS

**REVISIONS**

MARK	DATE	DESCRIPTION



## CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
CITY ENGINEER

APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

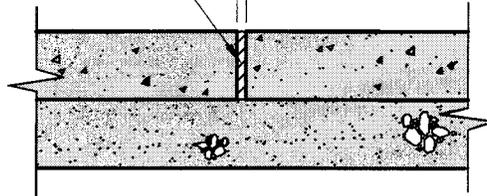
STANDARD DRAWING

**BH 104**

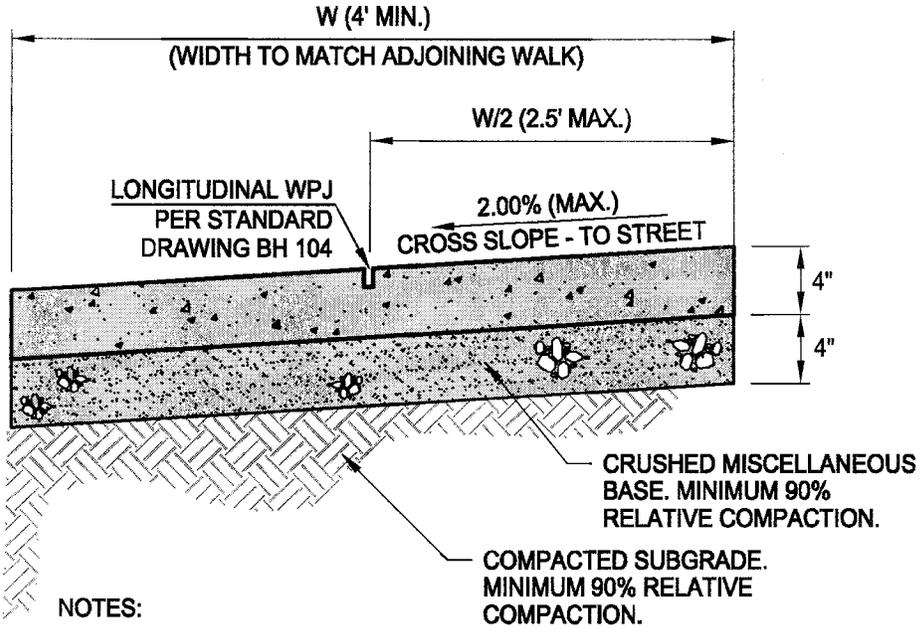
SHEET 1 OF 1

TRANSVERSE EXPANSION  
JOINT PER STANDARD  
DRAWING BH 104

1/2" MIN.  
3/4" MAX.



**EXPANSION JOINT SECTION**



**NOTES:**

1. SIDEWALK SHALL BE CONSTRUCTED OF CLASS 520-C-2500 PCC.
2. SEE BH 104 FOR JOINT LOCATION PLACEMENT.
3. CRUSHED MISCELLANEOUS BASE TO BE APPROVED BY THE CITY ENGINEER.
4. SIDEWALK SHALL BE TROWLED AND LIGHT BROOM FINISHED.
5. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
6. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

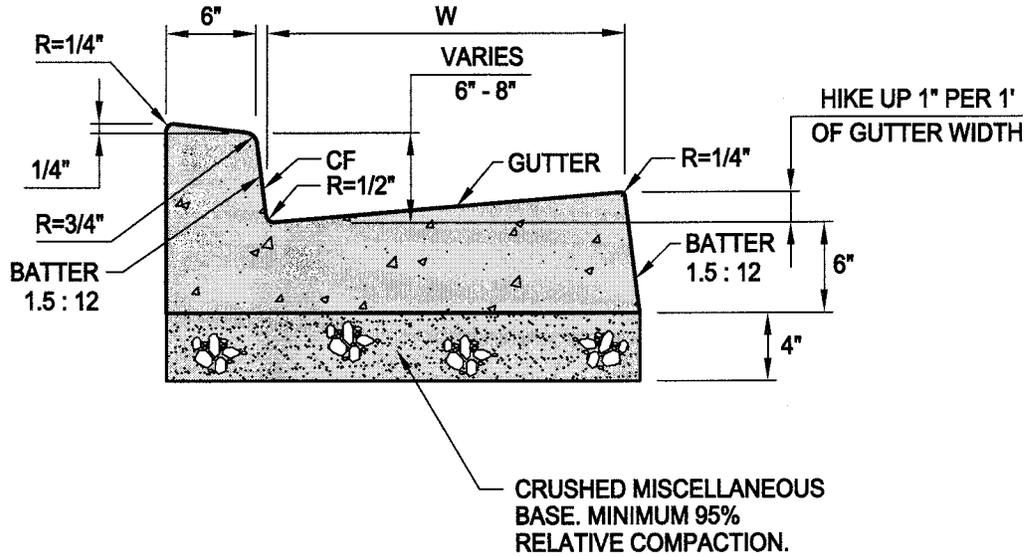
## STANDARD SIDEWALK SECTION

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	

RECOMMENDED  DATE 7-30-09  
CITY ENGINEER

APPROVED  DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 105**  
SHEET 1 OF 1



**RESIDENTIAL  
INTEGRAL CURB AND GUTTER SECTION**

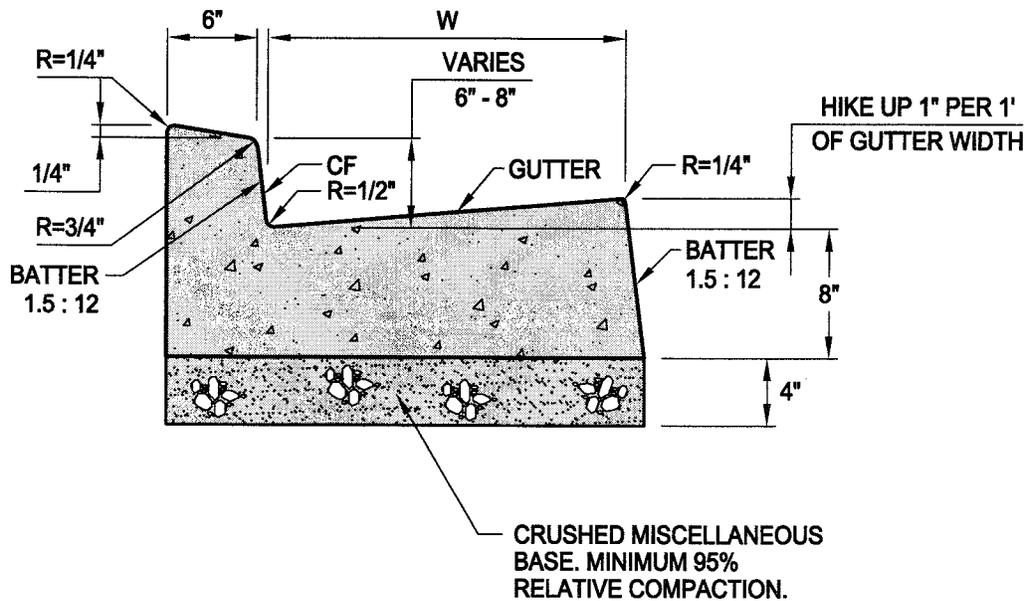
NOT TO SCALE

**NOTES:**

1. CURB AND GUTTER SHALL BE CONSTRUCTED OF CLASS 520-C-2500 PCC.
2. GUTTER WIDTH, W, SHALL MATCH EXISTING OR 24" MINIMUM, UNLESS OTHERWISE SPECIFIED.
3. AFTER THE CONCRETE HAS BEEN THOROUGHLY TAMPED TO FORCE THE LARGER AGGREGATE INTO THE CONCRETE AND BRING TO THE TOP SUFFICIENT FREE MORTAR FOR FINISHING, THE SURFACE SHALL BE WORKED TO A TRUE AND EVEN GRADE BY MEANS OF A FLOAT, TROWELED WITH A LONG HANDLED TROWEL OR "FRESNO", AND WOOD-FLOAT FINISHED. THE FLOWLINE OF THE GUTTER SHALL BE TROWELED SMOOTH FOR A WIDTH OF 4 INCHES FOR INTEGRAL CURB AND GUTTER. SIDE FORMS SHALL REMAIN IN PLACE FOR AT LEAST 24 HOURS AFTER COMPLETION OF THE GUTTER, BUT MUST BE REMOVED BEFORE THE WORK WILL BE ACCEPTED.
4. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
5. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

**RESIDENTIAL INTEGRAL CURB AND GUTTER DETAIL**

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	
			RECOMMENDED	 CITY ENGINEER	DATE 7-30-09
			APPROVED	 PUBLIC WORKS DIRECTOR	DATE 7-31-09
STANDARD DRAWING					<b>BH 106</b>
SHEET 1 OF 1					



**NON-RESIDENTIAL  
INTEGRAL CURB AND GUTTER SECTION**

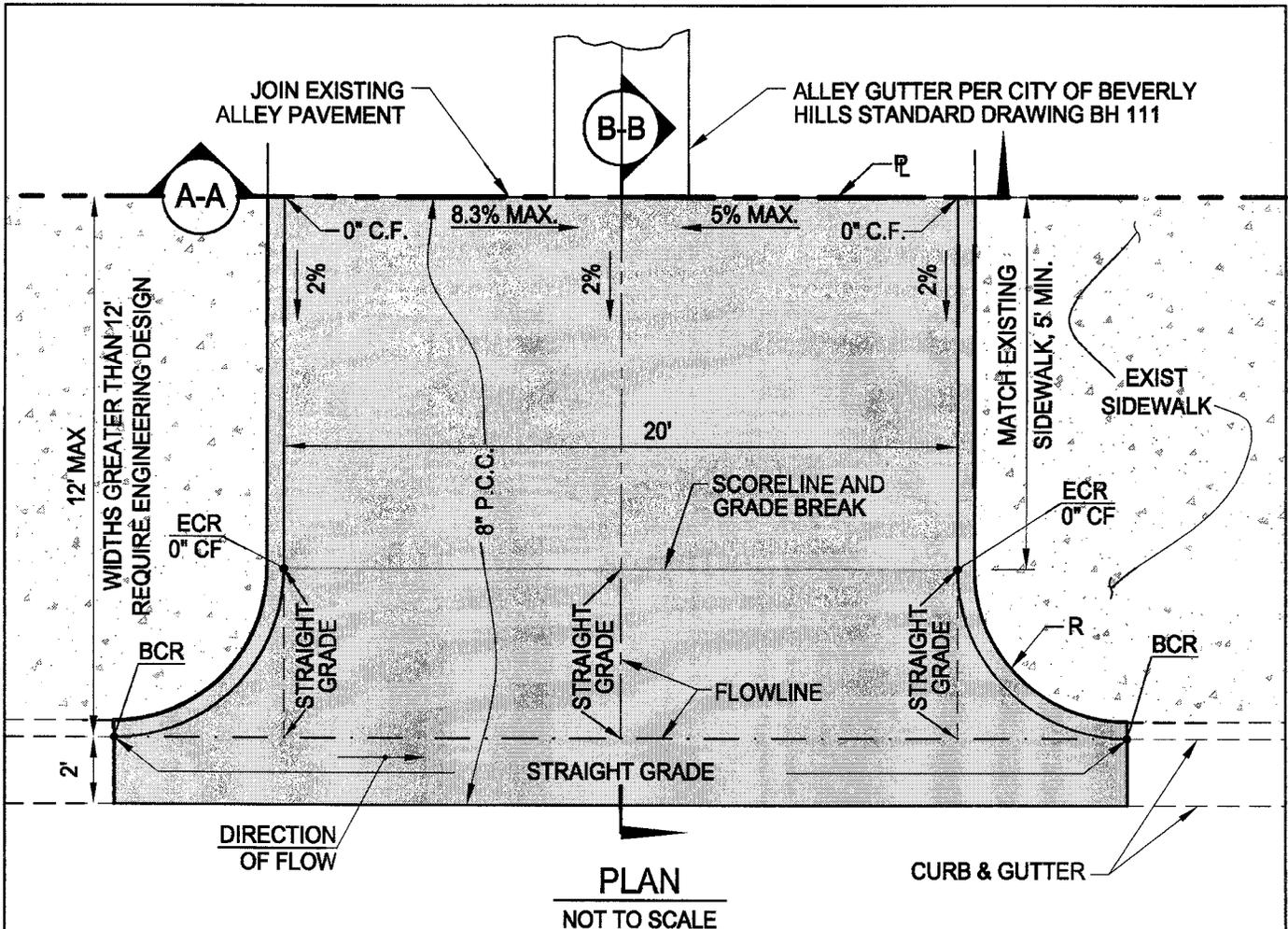
NOT TO SCALE

**NOTES:**

1. CURB AND GUTTER SHALL BE CONSTRUCTED OF CLASS 520-C-2500 PCC.
2. GUTTER WIDTH, W, SHALL MATCH EXISTING OR 24" MINIMUM, UNLESS OTHERWISE SPECIFIED.
3. AFTER THE CONCRETE HAS BEEN THOROUGHLY TAMPED TO FORCE THE LARGER AGGREGATE INTO THE CONCRETE AND BRING TO THE TOP SUFFICIENT FREE MORTAR FOR FINISHING, THE SURFACE SHALL BE WORKED TO A TRUE AND EVEN GRADE BY MEANS OF A FLOAT, TROWELED WITH A LONG HANDLED TROWEL OR "FRESNO", AND WOOD-FLOAT FINISHED. THE FLOWLINE OF THE GUTTER SHALL BE TROWELED SMOOTH FOR A WIDTH OF 4 INCHES FOR INTEGRAL CURB AND GUTTER. SIDE FORMS SHALL REMAIN IN PLACE FOR AT LEAST 24 HOURS AFTER COMPLETION OF THE GUTTER, BUT MUST BE REMOVED BEFORE THE WORK WILL BE ACCEPTED.
4. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
5. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

**NON-RESIDENTIAL INTEGRAL CURB AND GUTTER DETAIL**

REVISIONS			 <p align="center"><b>CITY OF BEVERLY HILLS, CALIFORNIA</b> DEPARTMENT OF PUBLIC WORKS &amp; TRANSPORTATION CIVIL ENGINEERING DIVISION</p>	<p align="right">STANDARD DRAWING <b>BH 107</b> SHEET 1 OF 1</p>
MARK	DATE	DESCRIPTION		
			<p>RECOMMENDED <i>[Signature]</i> DATE 7-30-09 CITY ENGINEER</p> <p>APPROVED <i>[Signature]</i> DATE 7-31-09 PUBLIC WORKS DIRECTOR</p>	



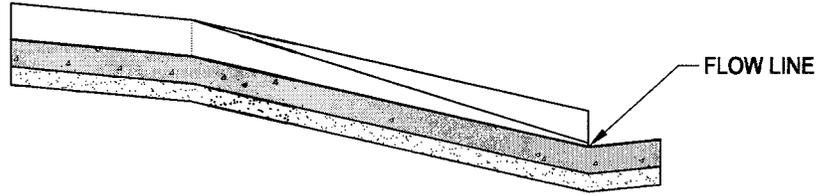
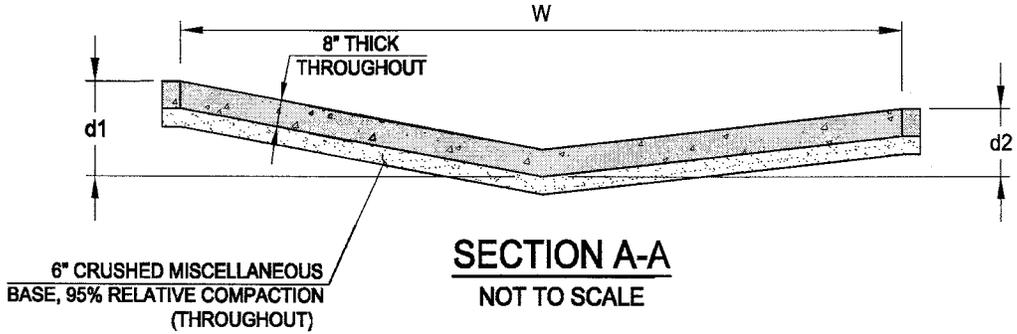
**NOTES:**

1. CURB RETURN RADIUS, R, SHALL BE 5' TYPICAL, UNLESS OTHERWISE SPECIFIED.
2. TOP OF CURB ELEVATIONS SHALL MATCH EXISTING SIDEWALK ELEVATIONS.
3. ALLEY APPROACH WITH A SLOPE EXCEEDING 16.66% SLOPE SHALL REQUIRE A SPECIAL PERMIT FROM THE TRANSPORTATION/ ENGINEERING OFFICIAL.
4. ACTUAL SHAPE AND LOCATION OF ALLEY APPROACH SHALL BE DETERMINED IN THE FIELD BY THE CITY ENGINEER.
5. ALLEY APPROACH AND NEW SIDEWALK WITHIN ALLEY APPROACH SHALL BE A CLASS 520-C-2500 8" THICK MONOLITHIC POUR OVER 6" CRUSHED MISCELLANEOUS BASE AT 95% RELATIVE COMPACTION.
6. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
7. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

## ALLEY APPROACH DETAIL

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	
				RECOMMENDED <i>Chris T. [Signature]</i> DATE 7-30-09 <small>CITY ENGINEER</small>	STANDARD DRAWING <b>BH 108</b> SHEET 1 OF 2
				APPROVED <i>[Signature]</i> DATE 7-31-09 <small>PUBLIC WORKS DIRECTOR</small>	

W	8'	10'	15'	20'	25'	30'
d1, MAX	4"	5"	7.5"	10"	12.5"	15"
d2, MIN	2"	3"	3"	3"	3"	3"



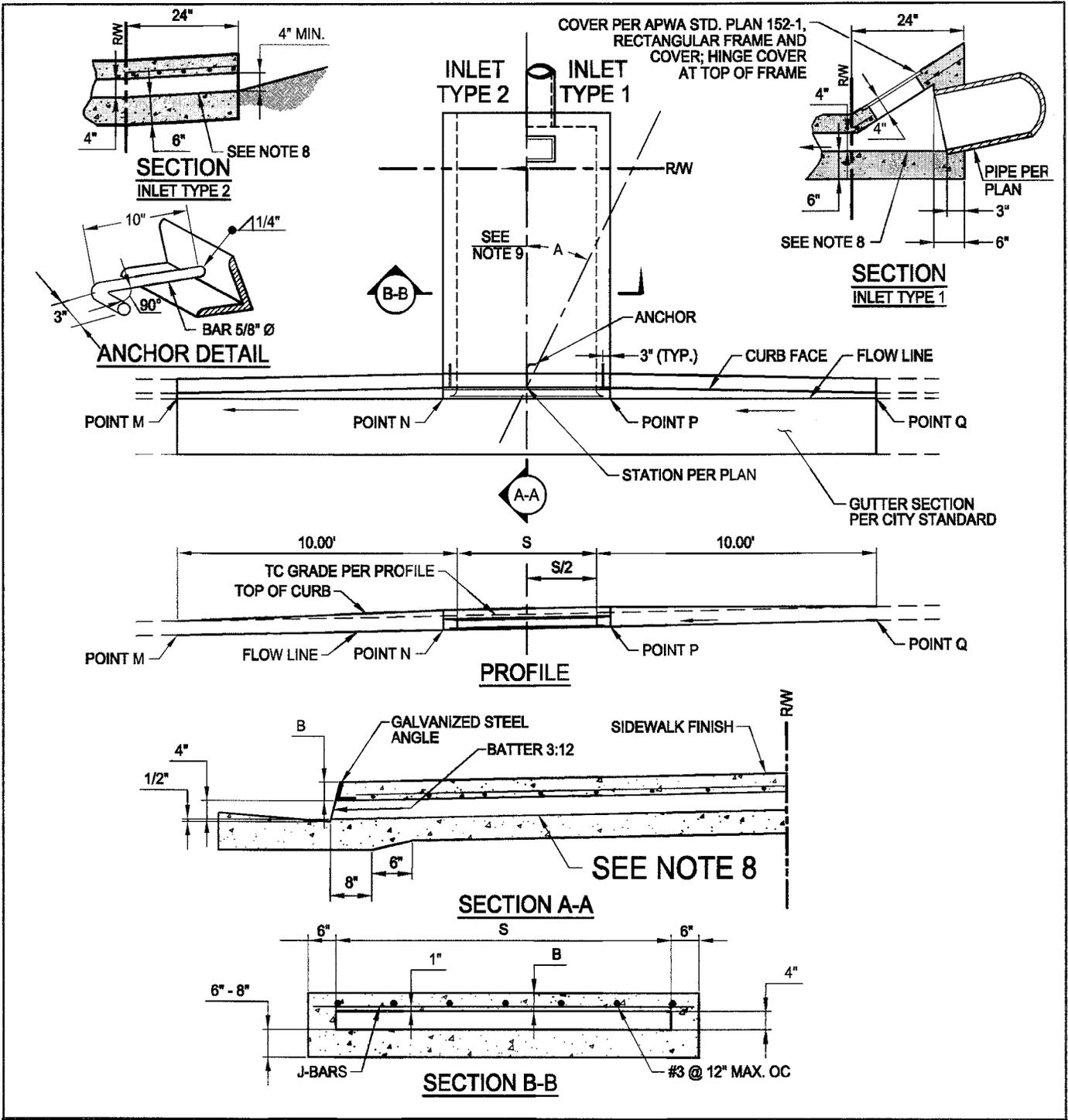
## ALLEY APPROACH DETAIL

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	

RECOMMENDED		DATE	7-30-09
APPROVED		DATE	7-31-09
	CITY ENGINEER		
	PUBLIC WORKS DIRECTOR		

STANDARD DRAWING
<b>BH 108</b>
SHEET 2 OF 2





# PARKWAY DRAIN

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
 CITY ENGINEER

APPROVED *[Signature]* DATE 7-31-09  
 PUBLIC WORKS DIRECTOR

STANDARD DRAWING

**BH 110**

SHEET 1 OF 2

S	J BAR SPACING
12"	7"
18"	7"
24"	7"
30"	7"
36"	7"
42"	6"
48"	5"
54"	6-12"
60"	5"
66"	4"
72"	3-1/2"

FOR S = 30" AND LESS, USE 2 ANCHORS. OTHERWISE, USE 3 ANCHORS

FOR S = 48" AND LESS, B=3" USE 2-1/2"x2"x1/2" GALVANIZED STEEL ANGLE. OTHERWISE, B = 4".

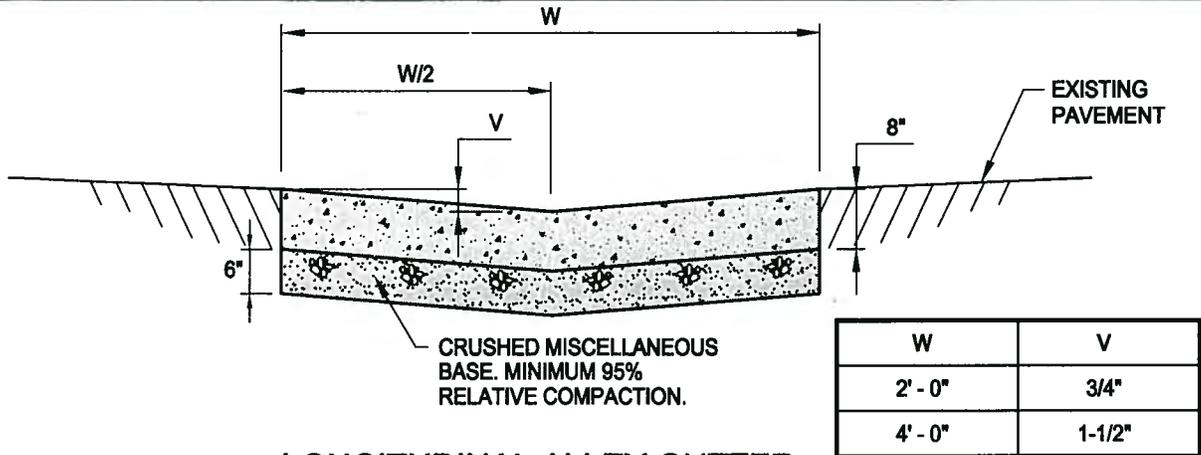
USE 3-1/2"x3"x1/2" GALVANIZED STEEL ANGLE

**NOTES:**

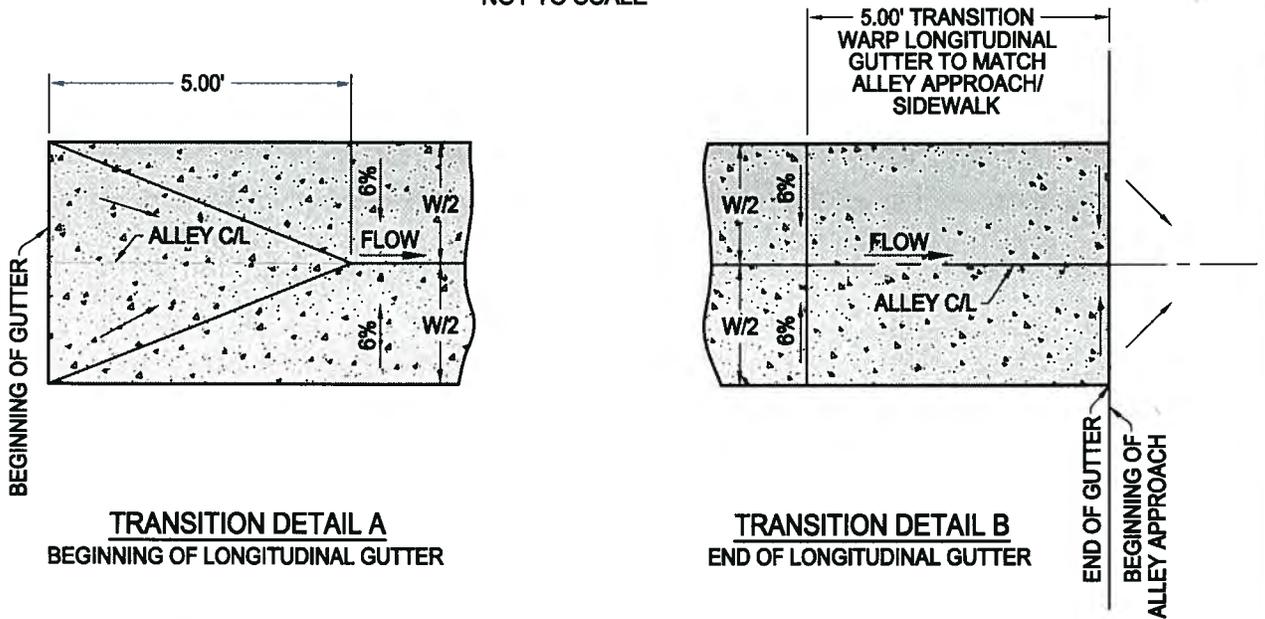
1. FLOOR OF BOX SHALL BE TROWELED SMOOTH.
2. IF TOE OF SLOPE IS ALLOWED WITHIN THE R/W, INLET TYPE 1 BEGINS AT THE TOE RATHER THAN AT THE R/W LINE.
3. FOR OPEN DITCH (TYPE 2), THE 24" EXTENSION BEYOND THE R/W LINE IS NOT REQUIRED WHEN BACK OF WALK IS 24" OR MORE FROM THE R/W LINE; HOWEVER, THE PIPE SHALL EXTEND TO THE R/W LINE IN ANY EVENT.
4. TOP OF INLET STRUCTURE (TYPE 1 & 2) SHALL BE FLUSH WITH ADJACENT SURFACE WHERE PRACTICAL.
5. A HEADED STEEL STUD, 5/8" x 6-3/8" WITH A 1" HEAD ATTACHED BY A FULL PENETRATION BUTT WELD MAY BE USED AS AN ALTERNATE ANCHOR.
6. NORMAL CURB FACE AT POINT M AND Q. CURB FACE IS B + 5" AT POINT N AND P.
7. THE 3" LEG OF THE 5/8" DIA. ANCHORS SHALL BE PARALLEL TO THE TOP OF SIDEWALK.
8. SLOPE = 2.0%
9. ANGLE 'A' SHALL BE 30° MINIMUM WHEN ROADWAY SLOPE IS GREATER THAT 5.0%.
10. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
11. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

## PARKWAY DRAIN

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA		
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION		
			RECOMMENDED	 CITY ENGINEER	DATE 7-30-09	STANDARD DRAWING
			APPROVED	 PUBLIC WORKS DIRECTOR	DATE 7-31-09	<b>BH 110</b>
						SHEET 2 OF 2



**LONGITUDINAL ALLEY GUTTER**  
NOT TO SCALE



**TRANSITION DETAIL A**  
BEGINNING OF LONGITUDINAL GUTTER

**TRANSITION DETAIL B**  
END OF LONGITUDINAL GUTTER

**NOTES:**

1. LONGITUDINAL ALLEY GUTTER SHALL BE CLASS 520-C-2500 PCC.
2. CONTROL JOINTS SHALL BE PLACED AT 10' INTERVALS FOR FULL LENGTH OF LONGITUDINAL GUTTER.
3. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
4. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

**LONGITUDINAL ALLEY GUTTER DETAIL**

REVISIONS		
MARK	DATE	DESCRIPTION

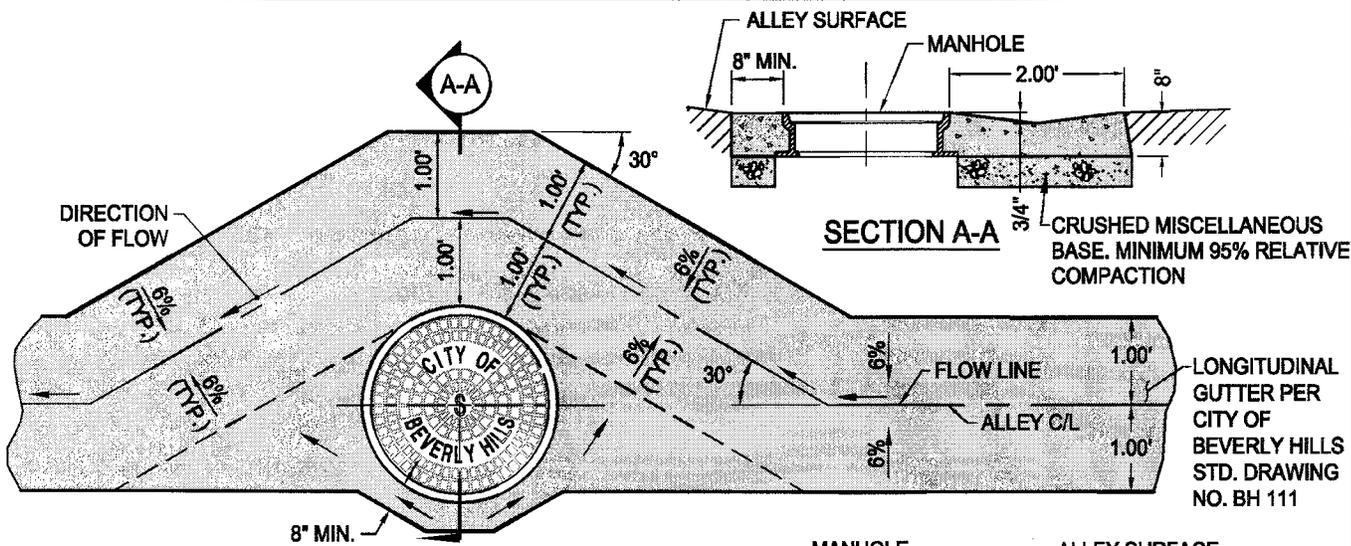


**CITY OF BEVERLY HILLS, CALIFORNIA**

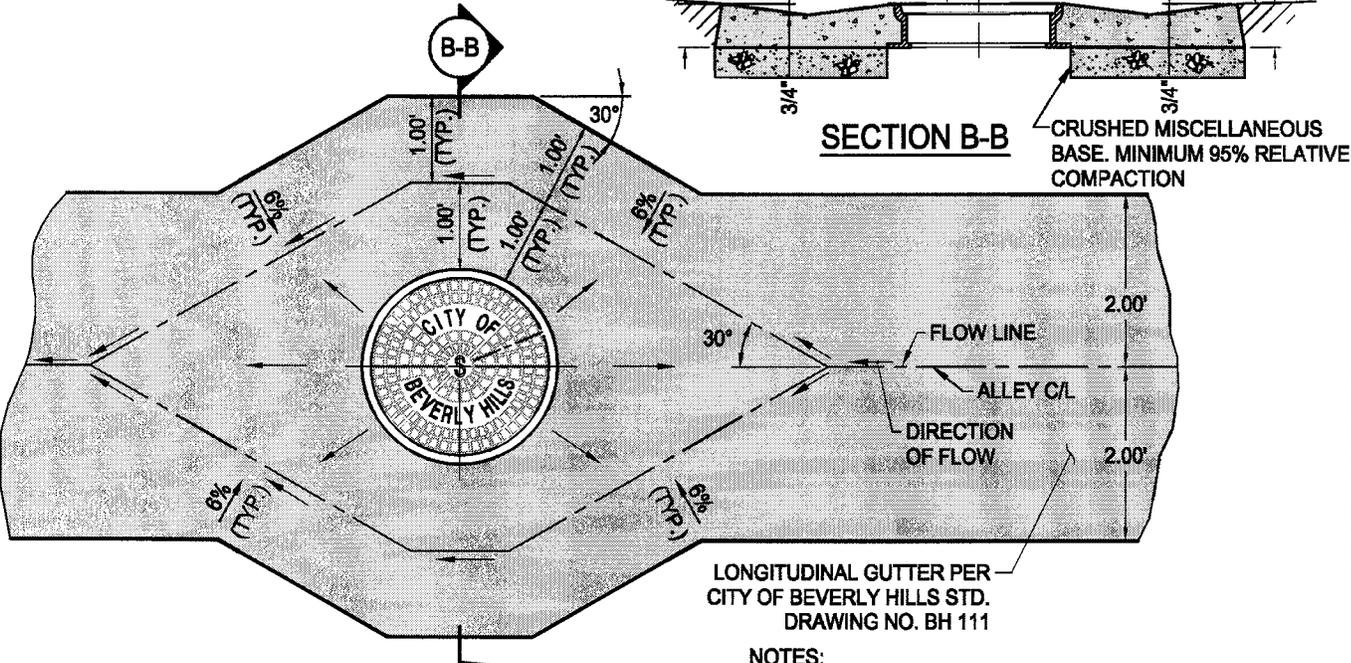
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER  
APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 111**  
SHEET 1 OF 1



**CASE 1 (2'-0" LONGITUDINAL GUTTER)**



**CASE 2 (4'-0" LONGITUDINAL GUTTER)**

- NOTES:**
1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
  2. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

**LONGITUDINAL ALLEY GUTTER AT MANHOLE**

REVISIONS		
MARK	DATE	DESCRIPTION

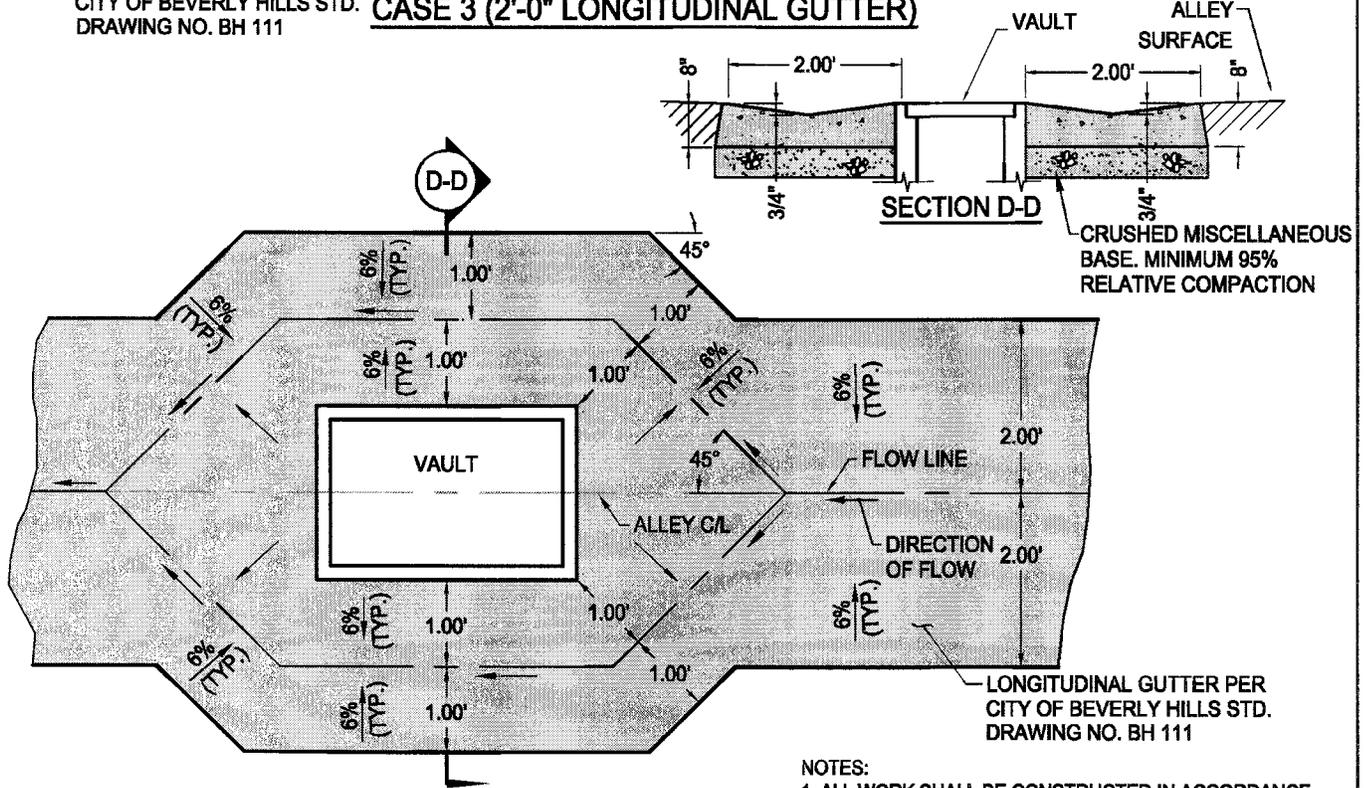
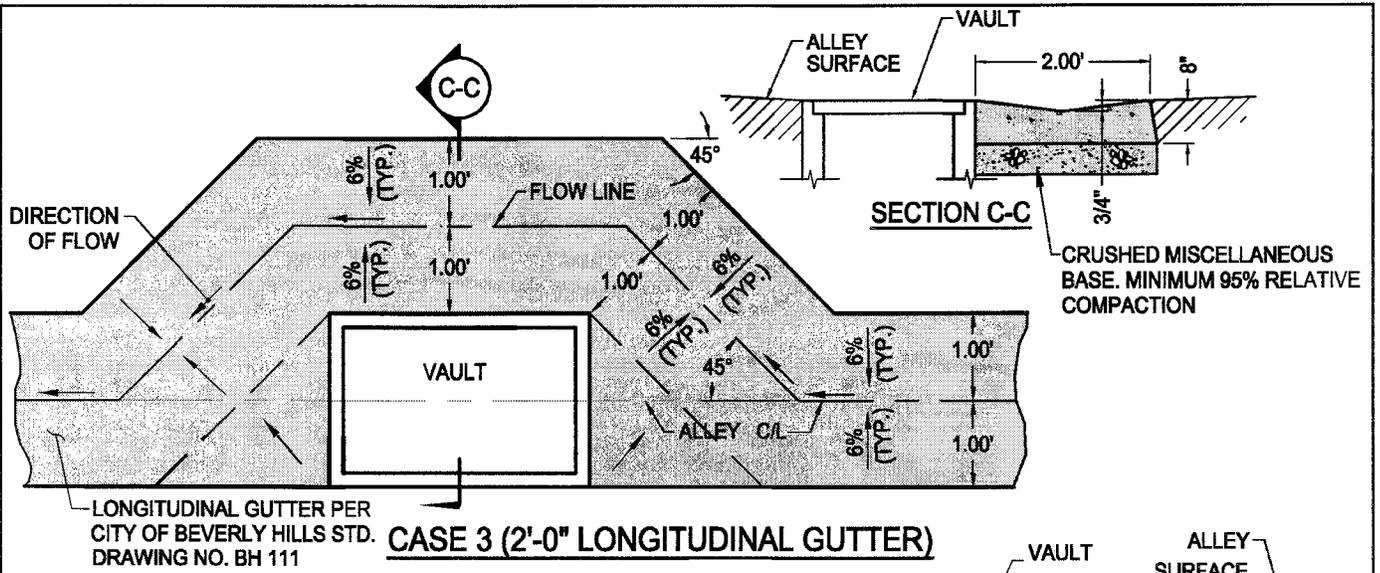
**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
CITY ENGINEER

APPROVED *[Signature]* DATE 7-27-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 112**  
SHEET 1 OF 2



- NOTES:
1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
  2. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

# LONGITUDINAL ALLEY GUTTER AT VAULT

REVISIONS		
MARK	DATE	DESCRIPTION



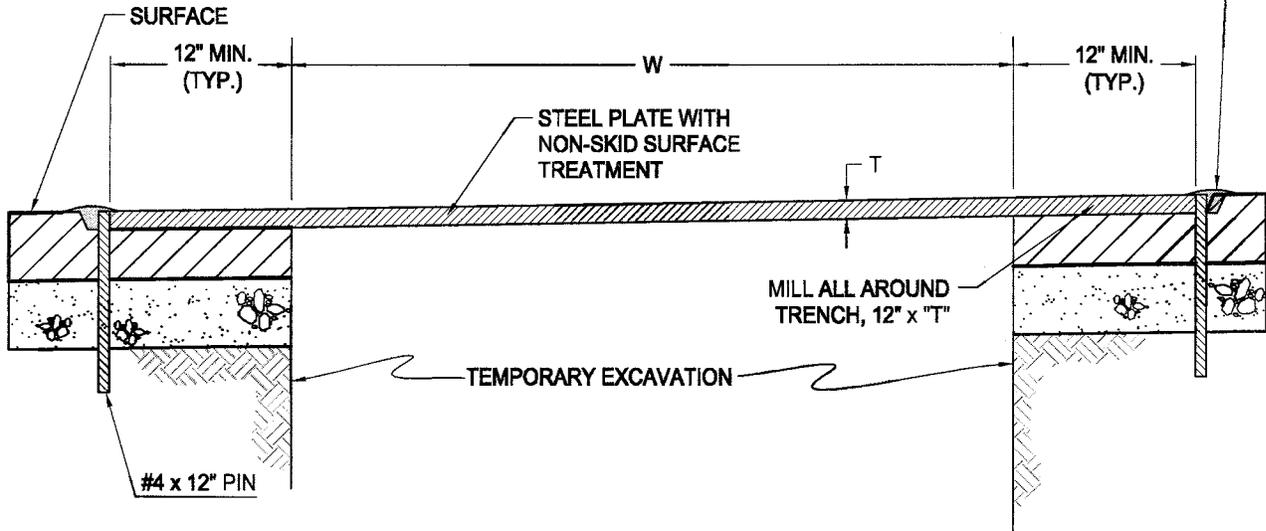
**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE *7-30-09*  
 CITY ENGINEER

APPROVED *[Signature]* DATE *7-31-09*  
 PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 112**  
 SHEET 2 OF 2

TEMPORARY PAVING OR COLD-MIX ASPHALT CONCRETE (CUTBACK) PLACED AROUND ALL EDGES OF PLATE AND ROAD SURFACE. USE WEDGES TO PREVENT RATTLING.



"W" TRENCH WIDTH	"T" MINIMUM STEEL PLATE THICKNESS
≤ 3' - 0"	1 INCH
> 3' - 0", UP TO 4' - 0"	1-1/4 INCH

NOTES:

1. ALL STEEL TRENCH PLATES SHALL BE FULLY SUPPORTED AROUND THE PERIMETER TO PREVENT TIPPING.
2. TRENCHES AND EXCAVATIONS SHALL BE ADEQUATELY SHORED OR BRACED TO WITHSTAND HIGHWAY TRAFFIC LOADS.
3. WHEN TWO OR MORE PLATES ARE USED, THE PLATES SHALL BE TACK WELDED AT EACH CORNER OR AS REQUIRED BY THE CITY ENGINEER.
4. ALL TRENCH PLATES SHALL BE PINNED IN EACH CORNER WITH PINS MADE OF #4 REBAR, OR EQUIVALENT DIAMETER STEEL ROD, WITH A MINIMUM LENGTH OF 12"
5. ALL TRENCH PLATING SHALL BE DESIGNED FOR HS20-44 TRUCK LOADING.
6. FOR TRENCHES AND EXCAVATIONS WITH SPANS GREATER THAN FOUR FEET (4'), A STRUCTURAL DESIGN SHALL BE PREPARED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER AND REVIEWED BY THE CITY.
7. TRENCH PLATES SHALL BE USED WHEN TRENCH WORK CAN NOT BE COMPLETED WITHIN THE SAME WORKING DAY TO MAINTAIN ALL VEHICULAR, BICYCLE AND PEDESTRIAN TRAFFIC FLOW.
8. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

# STEEL PLATE FOR OPEN TRENCH DETAIL

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

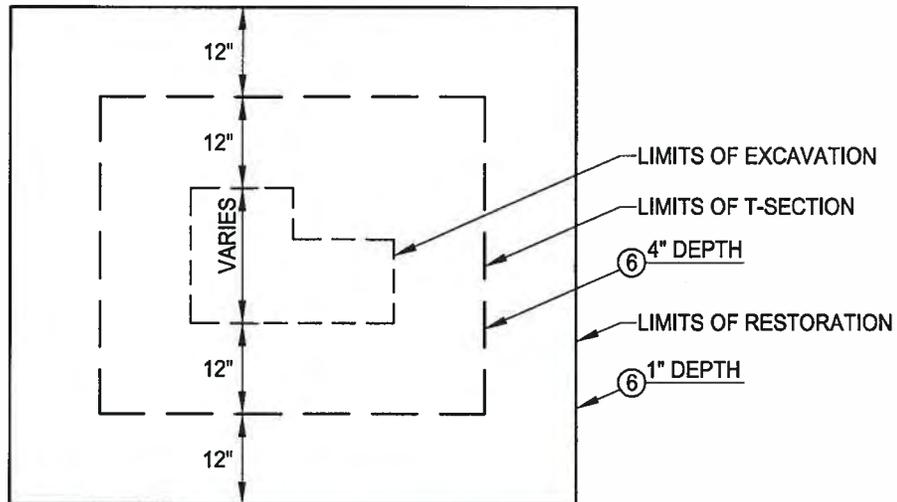
RECOMMENDED *[Signature]*  
 CITY ENGINEER

APPROVED *[Signature]*  
 PUBLIC WORKS DIRECTOR

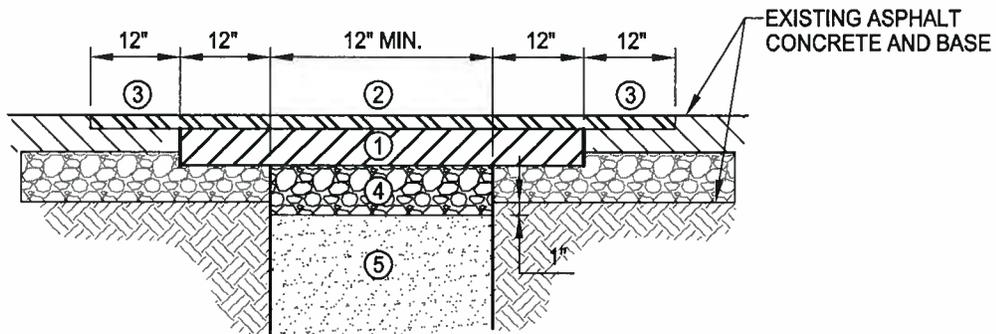
DATE 7-30-09

DATE 7-31-09

STANDARD DRAWING  
**BH 113**  
 SHEET 1 OF 1



**CASE I - PLAN**



**CASE I - EXISTING SECTION: ASPHALT CONCRETE**

- ① CONSTRUCT NEW ASPHALT CONCRETE BASE COURSE, TYPE B, PG 64-10, 1" THICKER THAN THE EXISTING SECTION.
- ② CONSTRUCT NEW ASPHALT CONCRETE WEARING COURSE:

TYPES OF STREETS	DEPTH	ASPHALT CONCRETE
LOCAL RESIDENTIAL STREETS	1"	TYPE D2, PG-64-10
STREETS WITH RUBBERIZED ASPHALT	2" MIN	ARHM-GG PG-64-16
COLLECTOR/MAJOR STREETS	1-1/2"	TYPE C2, PG-64-10

① AND ②: THE TOTAL THICKNESS OF ① + ② SHALL BE 4" MINIMUM FOR LOCAL OR COLLECTOR STREETS AND 6" MINIMUM FOR MAJOR STREETS. ASPHALT CONCRETE LAYERS SHALL BE COMPACTED TO 95% OF MAXIMUM THEORETICAL SPECIFIC GRAVITY.

## PAVEMENT REPLACEMENT SECTION - CASE I

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE 11/18/2011

APPROVED

*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 11-18-11

STANDARD DRAWING

**BH 114**

SHEET 1 OF 4

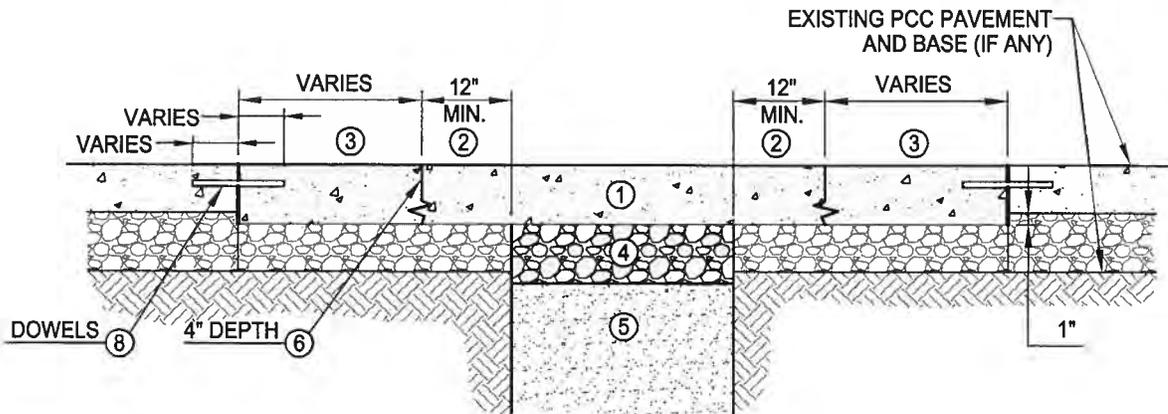
- ③ A. THE LIMITS OF THE RESTORATION SHALL BE A RECTANGULAR AREA EXTENDING A MINIMUM OF 12" BEYOND THE OUTER EDGE OF THE WIDEST PORTION OF THE T-SECTION. THE LIMITS SHALL BE SAWCUT AFTER BACKFILL OF TRENCH IS COMPLETED. THE EXISTING A.C. SHALL BE REMOVED TO A DEPTH EQUAL TO THE THICKNESS OF THE WEARING COURSE. REMOVAL BY COLD MILLING OR PNEUMATIC HAMMER IS ACCEPTABLE. IF THE REMOVALS ARE LESS THAN 5' APART OR LESS THAN 2' FROM A CONCRETE CURB, GUTTER OR CROSS GUTTER, THE RESTORATION SHALL BE CONTINUOUS BETWEEN EXCAVATIONS AND/OR THE EDGE OF THE CONCRETE.
- ④ CONSTRUCT NEW CRUSHED AGGREGATE BASE TO MATCH EXISTING THICKNESS OR 4" THICKNESS, WHICHEVER IS GREATER. COMPACT TO 95% OF RELATIVE DENSITY.
- ⑤ TRENCH BACKFILL SHALL BE EITHER:
  - A. NATIVE MATERIAL OR IMPORTED SOIL (IF NATIVE IS UNSUITABLE)
  - B. CRUSHED AGGREGATE BASE
  - C. TWO SACK CEMENT SAND SLURRY

COMPACTION TEST (USING CITY APPROVED METHOD) ARE REQUIRED UNLESS SLURRY IS USED.
- ⑥ SAWCUTTING WILL BE REQUIRED AROUND THE PERIMETER OF THE FINAL EDGE OF ALL EXCAVATIONS TO PROVIDE CLEAN, STRAIGHT, VERTICAL SIDES.
- 7. T-SECTIONS ARE 12" WIDE AS MEASURED FROM THE FINAL EDGE OF TRENCH (AFTER SLUFFING).
- 8. ALL TRAFFIC STRIPING AND/OR MARKINGS REMOVED BY RESTORATION WORK SHALL BE REPLACED.
- 9. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS ("GREENBOOK").
- 10. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

## PAVEMENT REPLACEMENT SECTION - CASE I

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	

RECOMMENDED	 <small>CITY ENGINEER</small>	DATE <u>11/18/2011</u>	STANDARD DRAWING
APPROVED	 <small>PUBLIC WORKS DIRECTOR</small>	DATE <u>11-18-11</u>	BH 114
			SHEET 2 OF 4



**CASE II - EXISTING SECTION: PORTLAND CONCRETE CEMENT**

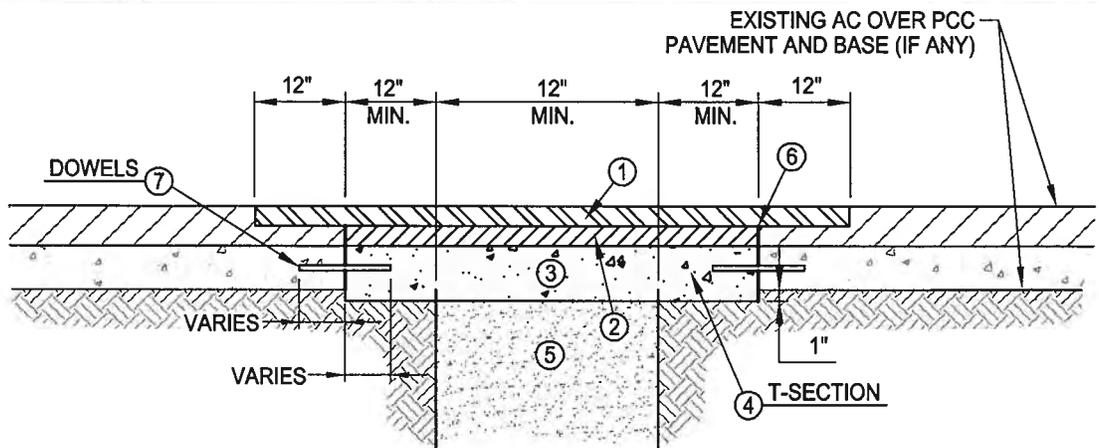
- ① CONSTRUCT NEW PCC PAVEMENT 1" THICKER THAN THE EXISTING CONCRETE, 6" MINIMUM.
- ② THE EXACT LIMITS FOR REMOVAL SHALL BE DETERMINED BY THE CITY ENGINEER SUCH THAT JOIN LINES ARE NOT WITHIN 2'-6" OF EXISTING PAVEMENT JOINTS OR SIGNIFICANT CRACKS. IF THE EXCAVATIONS ARE LESS THAN 5' APART OR LESS THAN 2'-6" FROM A CONCRETE CURB, GUTTER OR EXPANSION JOINT, THE RESTORATION SHALL BE CONTINUOUS BETWEEN EXCAVATIONS AND/OR THE EDGE OF CONCRETE.
- ③ FOR PCC STREETS OR INTERSECTIONS THE LIMITS OF THE RESTORATION SHALL BE A RECTANGULAR AREA EXTENDING TO THE NEAREST CONSTRUCTION JOINT. THE STRUCTURAL SECTION OUTSIDE THE UTILITY TRENCH AREA SHALL BE EQUAL TO ① + ④.
- ④ CONSTRUCT NEW CRUSHED AGGREGATE BASE TO MATCH EXISTING THICKNESS OR 4" THICKNESS, WHICHEVER IS GREATER. COMPACT TO 95% OF RELATIVE DENSITY.
- ⑤ TRENCH BACKFILL SHALL BE EITHER:
  - A. NATIVE MATERIAL OR IMPORTED SOIL (IF NATIVE IS UNSUITABLE)
  - B. CRUSHED AGGREGATE BASE
  - C. TWO SACK CEMENT SAND SLURRY
 COMPACTION TEST (USING CITY APPROVED METHOD) ARE REQUIRED UNLESS SLURRY IS USED.
- ⑥ SAWCUTTING WILL BE REQUIRED AROUND THE PERIMETER OF THE FINAL EDGE OF ALL EXCAVATIONS TO PROVIDE CLEAN, STRAIGHT, VERTICAL SIDES.
- ⑦ DOWEL SIZE, SPACING, AND EMBEDMENT SHOULD BE AS FOLLOWS:

CONCRETE THICKNESS	SIZE AND SPACING	EMBEDMENT
6"	#4 @ 16" O.C.	4"
8"	#5 @ 16" O.C.	6"
10"	#6 @ 16" O.C.	8"

- 8. ALL TRAFFIC STRIPING AND/OR MARKINGS REMOVED BY RESTORATION WORK SHALL BE REPLACED.
- 9. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS ("GREENBOOK").
- 10. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

**PAVEMENT REPLACEMENT SECTION - CASE II**

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA		STANDARD DRAWING
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION		
			RECOMMENDED  <small>CITY ENGINEER</small>	DATE <u>11/18/2011</u>	BH 114	
			APPROVED  <small>PUBLIC WORKS DIRECTOR</small>	DATE <u>11-18-11</u>	SHEET 3 OF 4	



### CASE III - EXISTING SECTION: ASPHALT OVER CONCRETE

- ① CONSTRUCT 1" NEW ASPHALT CONCRETE WEARING COURSE TYPE D2, PG 64-10. FOR STREETS WITH RUBBERIZED ASPHALT USE ARHM-GG PG-64-16, 2" MIN.
- ② CONSTRUCT NEW ASPHALT CONCRETE BASE COURSE, TYPE B, PG 64-10.
- ③ CONSTRUCT NEW PCC PAVEMENT BASE, 560-C-3250, 1" THICKER THAN THE EXISTING CONCRETE, 6" MINIMUM. ASPHALT CONCRETE LAYERS SHALL BE COMPACTED TO 95% OF MAXIMUM THEORETICAL SPECIFIC GRAVITY.
- ④ THE EXACT LIMITS FOR REMOVAL SHALL BE DETERMINED BY THE CITY ENGINEER SUCH THAT JOIN LINES ARE NOT WITHIN 2'-6" OF EXISTING PAVEMENT JOINTS OR SIGNIFICANT CRACKS. IF THE EXCAVATIONS ARE LESS THAN 5' APART OR LESS THAN 2'-6" FROM A CONCRETE CURB, GUTTER OR EXPANSION JOINT, THE RESTORATION SHALL BE CONTINUOUS BETWEEN EXCAVATIONS AND/OR THE EDGE OF CONCRETE.
- ⑤ TRENCH BACKFILL SHALL BE EITHER:
  - A. NATIVE MATERIAL OR IMPORTED SOIL (IF NATIVE IS UNSUITABLE)
  - B. CRUSHED AGGREGATE BASE
  - C. TWO SACK CEMENT SAND SLURRY
 COMPACTION TEST (USING CITY APPROVED METHOD) ARE REQUIRED UNLESS SLURRY IS USED.
- ⑥ SAWCUTTING WILL BE REQUIRED AROUND THE PERIMETER OF THE FINAL EDGE OF ALL EXCAVATIONS TO PROVIDE CLEAN, STRAIGHT, VERTICAL SIDES.
- ⑦ DOWEL SIZE, SPACING, AND EMBEDMENT SHOULD BE AS FOLLOWS:

CONCRETE THICKNESS	SIZE AND SPACING	EMBEDMENT
6"	#4 @ 16" O.C.	4"
8"	#5 @ 16" O.C.	6"
10"	#6 @ 16" O.C.	8"

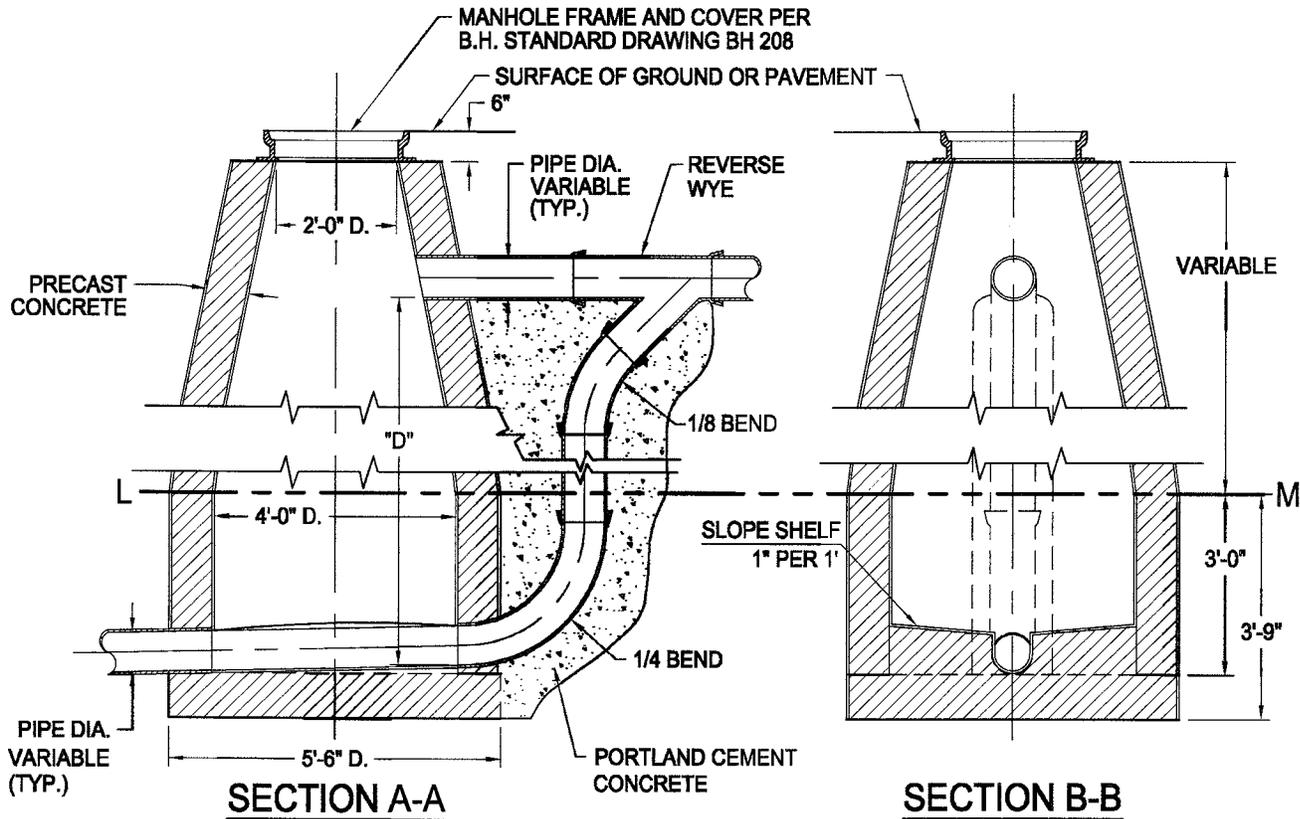
8. ALL TRAFFIC STRIPING AND/OR MARKINGS REMOVED BY RESTORATION WORK SHALL BE REPLACED.
9. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS ("GREENBOOK").
10. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

## PAVEMENT REPLACEMENT SECTION - CASE III

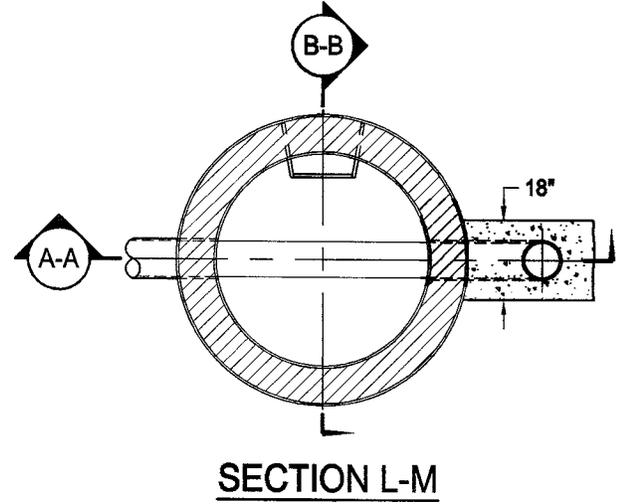
REVISIONS			 <b>CITY OF BEVERLY HILLS, CALIFORNIA</b> DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	STANDARD DRAWING <b>BH 114</b> SHEET 4 OF 4
MARK	DATE	DESCRIPTION		
			RECOMMENDED  DATE 11/18/11 CITY ENGINEER	
			APPROVED  DATE 11-18-11 PUBLIC WORKS DIRECTOR	

# **Section II**

## **Sewer and Sanitation**



**CASE I**



**NOTES:**

1. MANHOLE SHALL BE CONSTRUCTED USING PRE-CAST CONCRETE BARRELS, CONES (CONCENTRIC OR ECCENTRIC), AND PRE-CAST CONCRETE GRADE RINGS.
2. PRECAST UNITS SHALL BE ASSEMBLED USING CLASS "B" MORTAR.
3. THE DEPTH OF THE CHANNEL SHALL BE THE FULL DIAMETER OF THE PIPE.
4. IF DEPTH OF SEWER INVERT FROM THE RIM IS LESS THAN 6 FEET, THE HEIGHT OF THE MANHOLE ABOVE THE LINE L-M IS TO BE 3 FEET AND THE HEIGHT BELOW LINE L-M WILL THEN BECOME VARIABLE.

**DROP MANHOLE "S"**

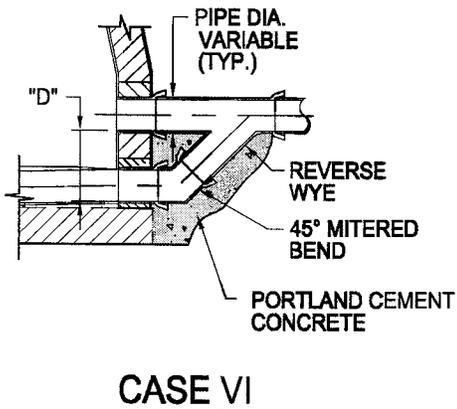
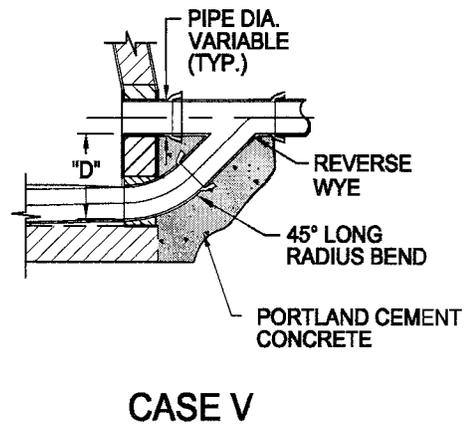
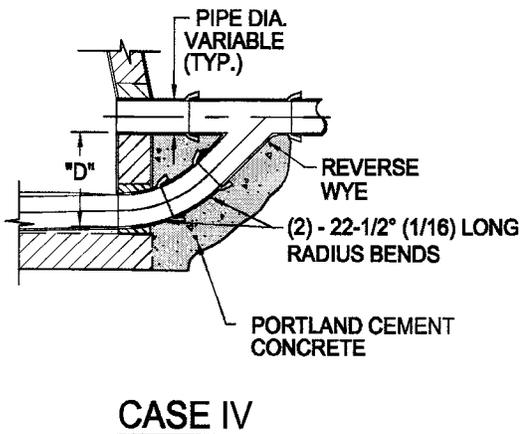
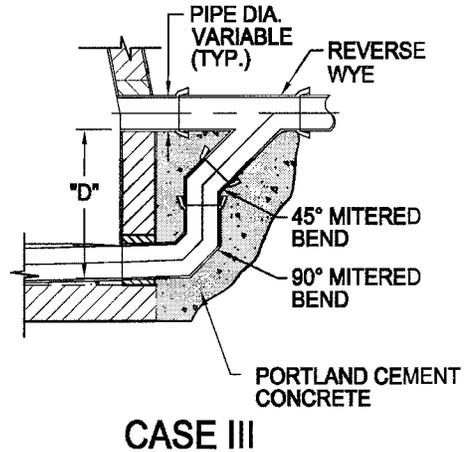
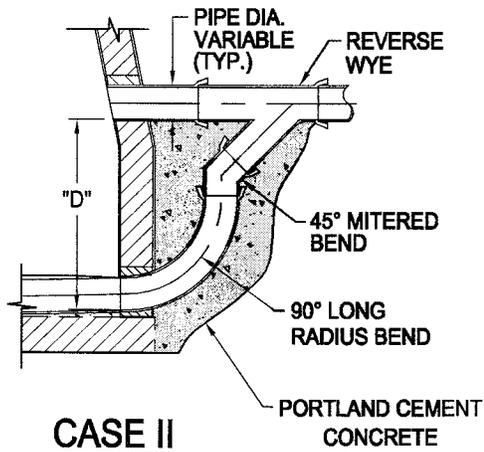
REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE *7-30-09*  
 CITY ENGINEER  
 APPROVED *[Signature]* DATE *7-31-09*  
 PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 201**  
 SHEET 1 OF 2



	DROP HEIGHT "D"	
	6" PIPE	8" PIPE
CASE I	3' - 3"	4' - 0"
CASE II	N.A.	3' - 6"
CASE III	N.A.	2' - 7"
CASE IV	1' - 3"	2' - 1"
CASE V	1' - 2"	1' - 7"
CASE VI	N.A.	1' - 4"

NOTE:  
FOR LARGER SIZE PIPES, "D" PER PROJECT PLAN

## DROP MANHOLE "S"

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

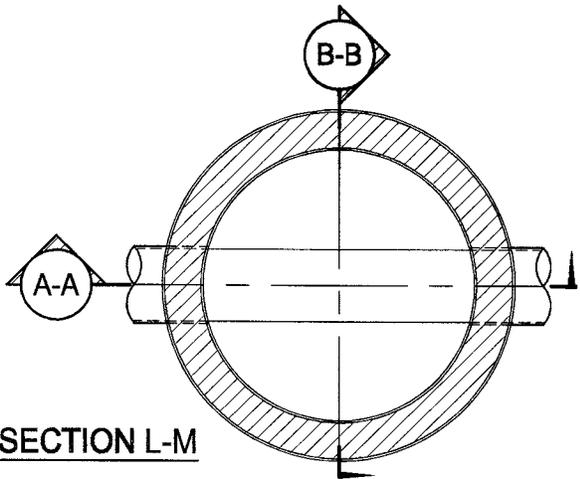
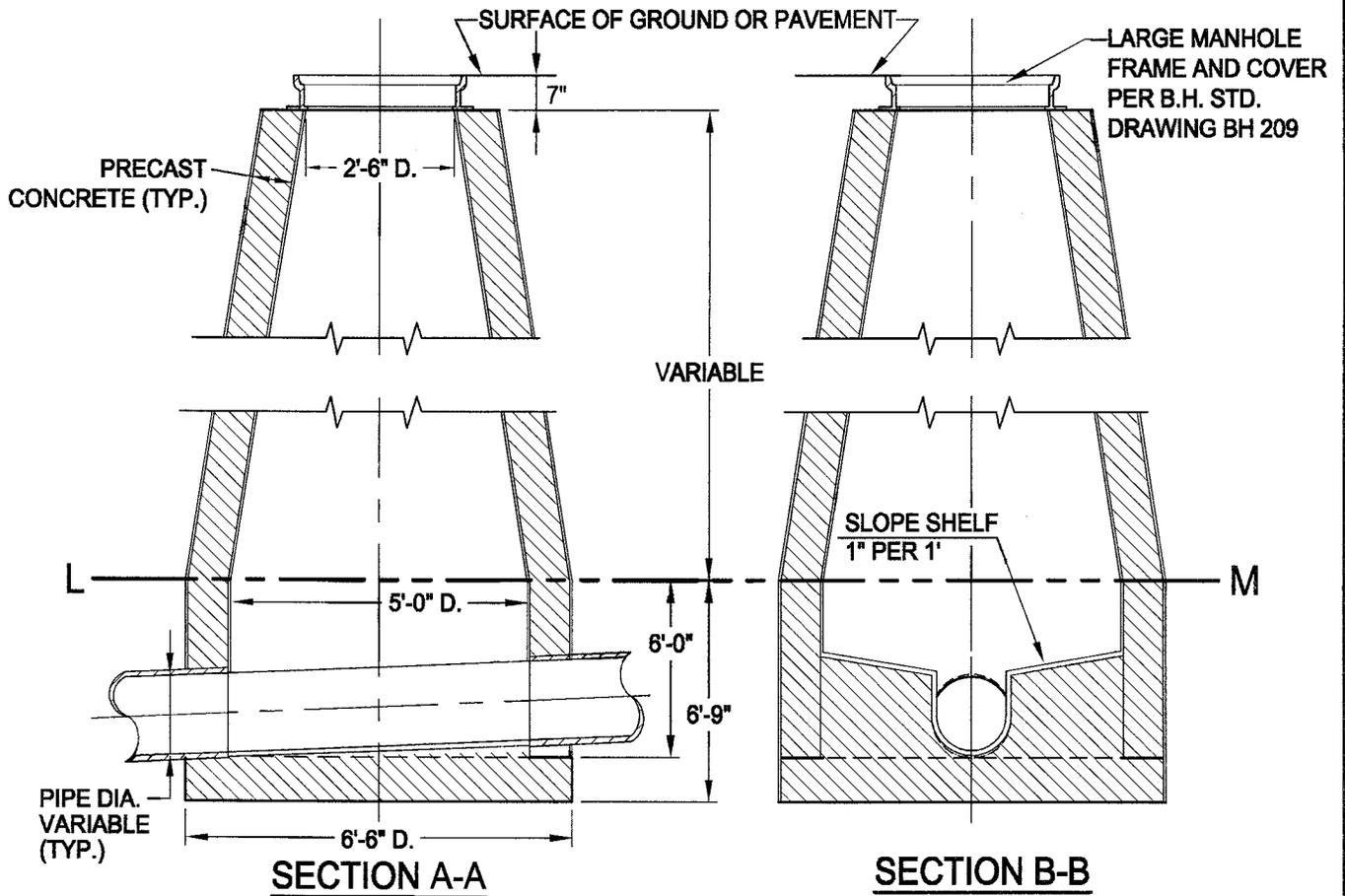
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
CITY ENGINEER  
APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING

**BH 201**

SHEET 2 OF 2



**NOTES:**

1. MANHOLE SHALL BE CONSTRUCTED USING PRE-CAST CONCRETE BARRELS, CONES (CONCENTRIC OR ECCENTRIC), AND PRE-CAST CONCRETE GRADE RINGS.
2. PRECAST UNITS SHALL BE ASSEMBLED USING CLASS "B" MORTAR.
3. THE DEPTH OF THE CHANNEL SHALL BE THE FULL DIAMETER OF THE PIPE.
4. IF DEPTH OF SEWER INVERT FROM THE RIM IS LESS THAN 6 FEET, THE HEIGHT OF THE MANHOLE ABOVE THE LINE L-M IS TO BE 3 FEET AND THE HEIGHT BELOW LINE L-M WILL THEN BECOME VARIABLE.

# LARGE MANHOLE "B"

REVISIONS		
MARK	DATE	DESCRIPTION

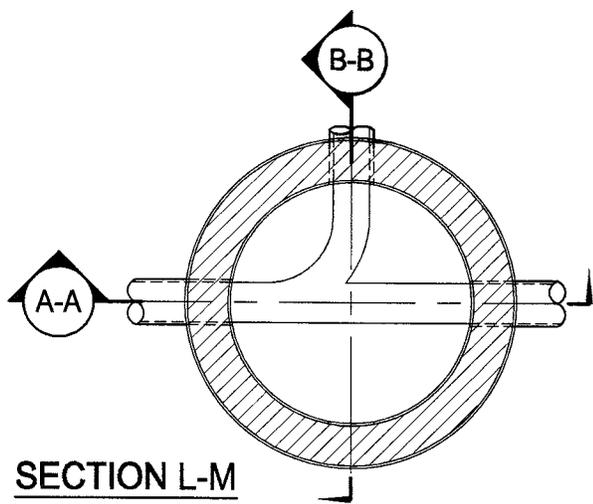
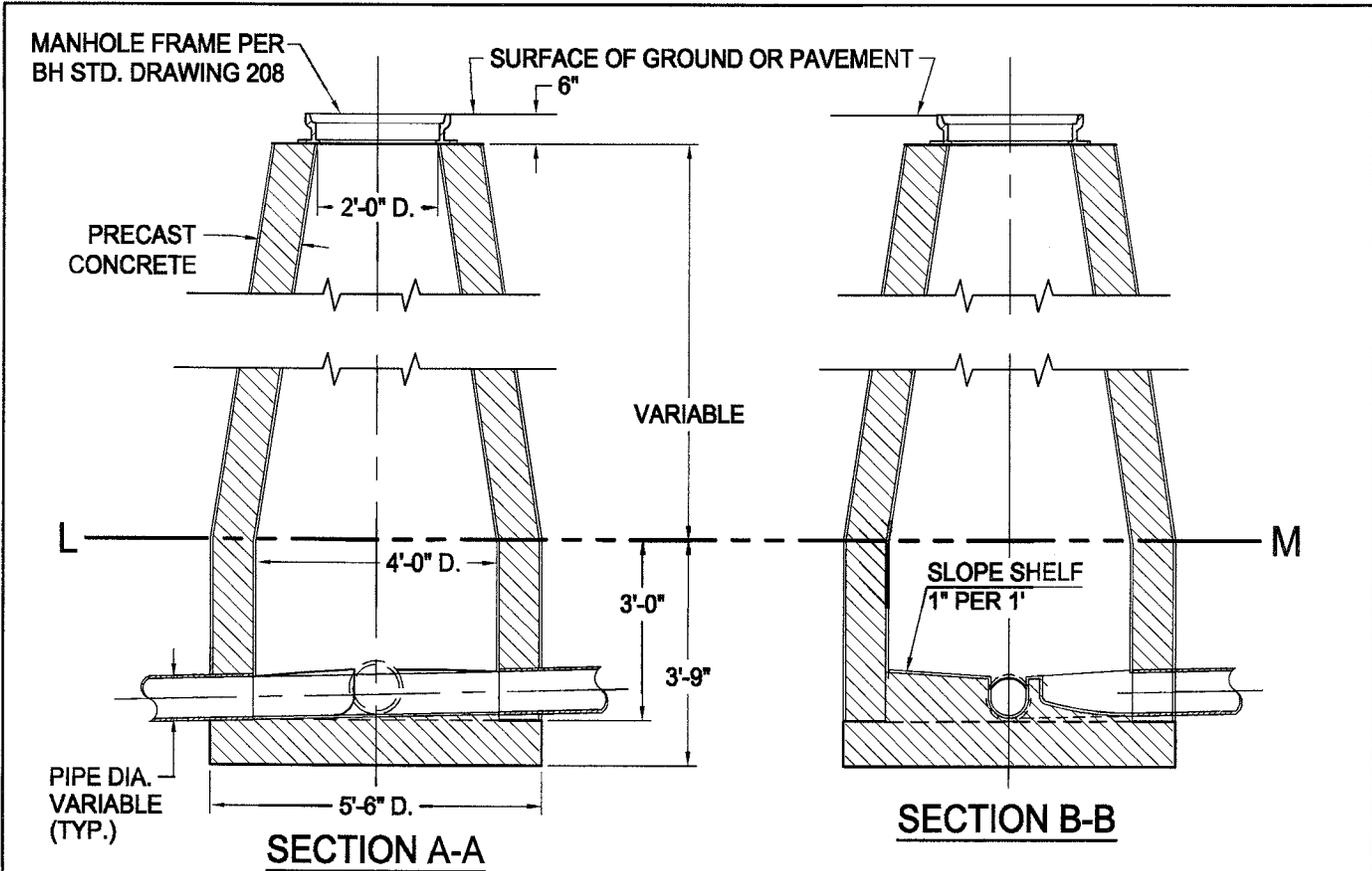


**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-20-09  
CITY ENGINEER

APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 202**  
 SHEET 1 OF 1



**NOTES:**

1. MANHOLE SHALL BE CONSTRUCTED USING PRE-CAST CONCRETE BARRELS, CONES (CONCENTRIC OR ECCENTRIC), AND PRE-CAST CONCRETE GRADE RINGS.
2. PRECAST UNITS SHALL BE ASSEMBLED USING CLASS "B" MORTAR.
3. THE DEPTH OF THE CHANNEL SHALL BE THE FULL DIAMETER OF THE PIPE.
4. IF DEPTH OF SEWER INVERT FROM THE RIM IS LESS THAN 6 FEET, THE HEIGHT OF THE MANHOLE ABOVE THE LINE L-M IS TO BE 3 FEET AND THE HEIGHT BELOW LINE L-M WILL THEN BECOME VARIABLE.

## JUNCTION CHAMBER "F"

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
CITY ENGINEER

APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 203**  
 SHEET 1 OF 1

MANHOLE FRAME PER  
BH STD. DRAWING 208

SURFACE OF GROUND OR PAVEMENT

PRECAST  
CONCRETE (TYP.)

2'-0" D.

6"

VARIABLE

4'-0" D.

3'-0"

3'-9"

PIPE DIA.  
VARIABLE  
(TYP.)

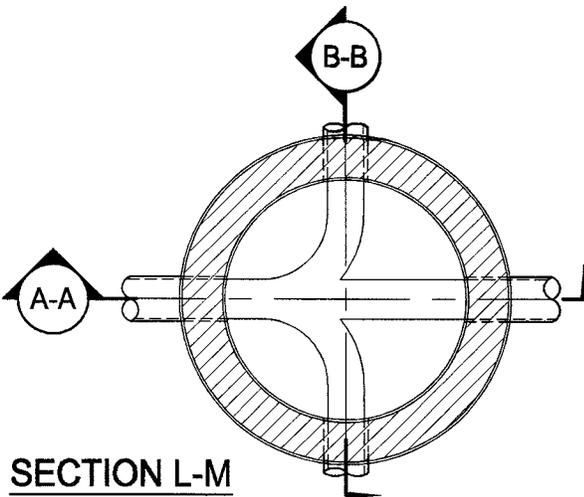
5'-6" D.

SLOPE SHELF

1" PER 1'

**SECTION A-A**

**SECTION B-B**



**SECTION L-M**

**NOTES:**

1. MANHOLE SHALL BE CONSTRUCTED USING PRE-CAST CONCRETE BARRELS, CONES (CONCENTRIC OR ECCENTRIC), AND PRE-CAST CONCRETE GRADE RINGS.
2. PRECAST UNITS SHALL BE ASSEMBLED USING CLASS "B" MORTAR.
3. THE DEPTH OF THE CHANNEL SHALL BE THE FULL DIAMETER OF THE PIPE.
4. IF DEPTH OF SEWER INVERT FROM THE RIM IS LESS THAN 6 FEET, THE HEIGHT OF THE MANHOLE ABOVE THE LINE L-M IS TO BE 3 FEET AND THE HEIGHT BELOW LINE L-M WILL THEN BECOME VARIABLE.

**JUNCTION CHAMBER "G"**

**REVISIONS**

MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*Clint...*  
CITY ENGINEER

DATE 7-30-09

APPROVED

*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 7-31-09

STANDARD DRAWING

**BH 204**

SHEET 1 OF 1

MANHOLE FRAME PER  
BH STD. DRAWING 208

SURFACE OF GROUND OR PAVEMENT

PRECAST  
CONCRETE (TYP.)

2'-0" D.

6"

VARIABLE

L

4'-0" D.

3'-0"

3'-9"

SLOPE SHELF  
1" PER 1'

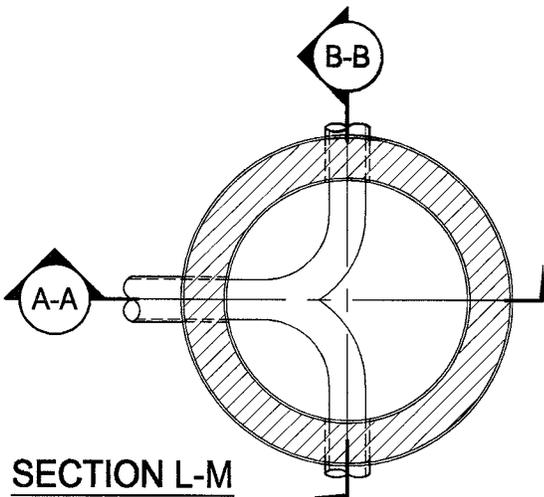
M

PIPE DIA.  
VARIABLE  
(TYP.)

5'-6" D.

**SECTION A-A**

**SECTION B-B**



**SECTION L-M**

**NOTES:**

1. MANHOLE SHALL BE CONSTRUCTED USING PRE-CAST CONCRETE BARRELS, CONES (CONCENTRIC OR ECCENTRIC), AND PRE-CAST CONCRETE GRADE RINGS.
2. PRECAST UNITS SHALL BE ASSEMBLED USING CLASS "B" MORTAR.
3. THE DEPTH OF THE CHANNEL SHALL BE THE FULL DIAMETER OF THE PIPE.
4. IF DEPTH OF SEWER INVERT FROM THE RIM IS LESS THAN 6 FEET, THE HEIGHT OF THE MANHOLE ABOVE THE LINE L-M IS TO BE 3 FEET AND THE HEIGHT BELOW LINE L-M WILL THEN BECOME VARIABLE.

**JUNCTION CHAMBER "H"**

**REVISIONS**

MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE 7-30-09

APPROVED

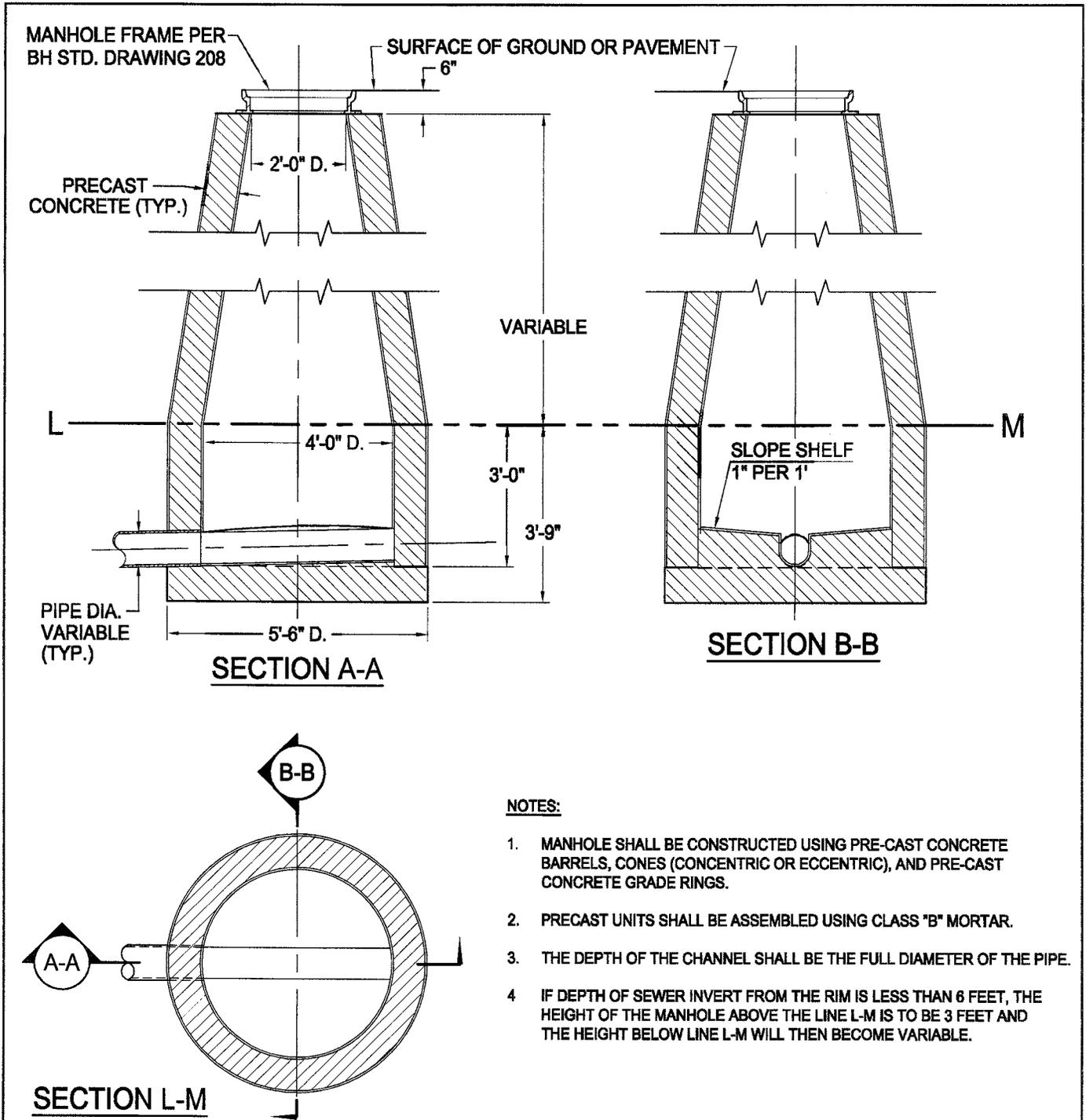
*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 7-31-09

STANDARD DRAWING

**BH 205**

SHEET 1 OF 1



**NOTES:**

1. MANHOLE SHALL BE CONSTRUCTED USING PRE-CAST CONCRETE BARRELS, CONES (CONCENTRIC OR ECCENTRIC), AND PRE-CAST CONCRETE GRADE RINGS.
2. PRECAST UNITS SHALL BE ASSEMBLED USING CLASS "B" MORTAR.
3. THE DEPTH OF THE CHANNEL SHALL BE THE FULL DIAMETER OF THE PIPE.
4. IF DEPTH OF SEWER INVERT FROM THE RIM IS LESS THAN 6 FEET, THE HEIGHT OF THE MANHOLE ABOVE THE LINE L-M IS TO BE 3 FEET AND THE HEIGHT BELOW LINE L-M WILL THEN BECOME VARIABLE.

## TERMINAL MANHOLE "Q"

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED

*Christina*  
 CITY ENGINEER

DATE 7-30-09

APPROVED

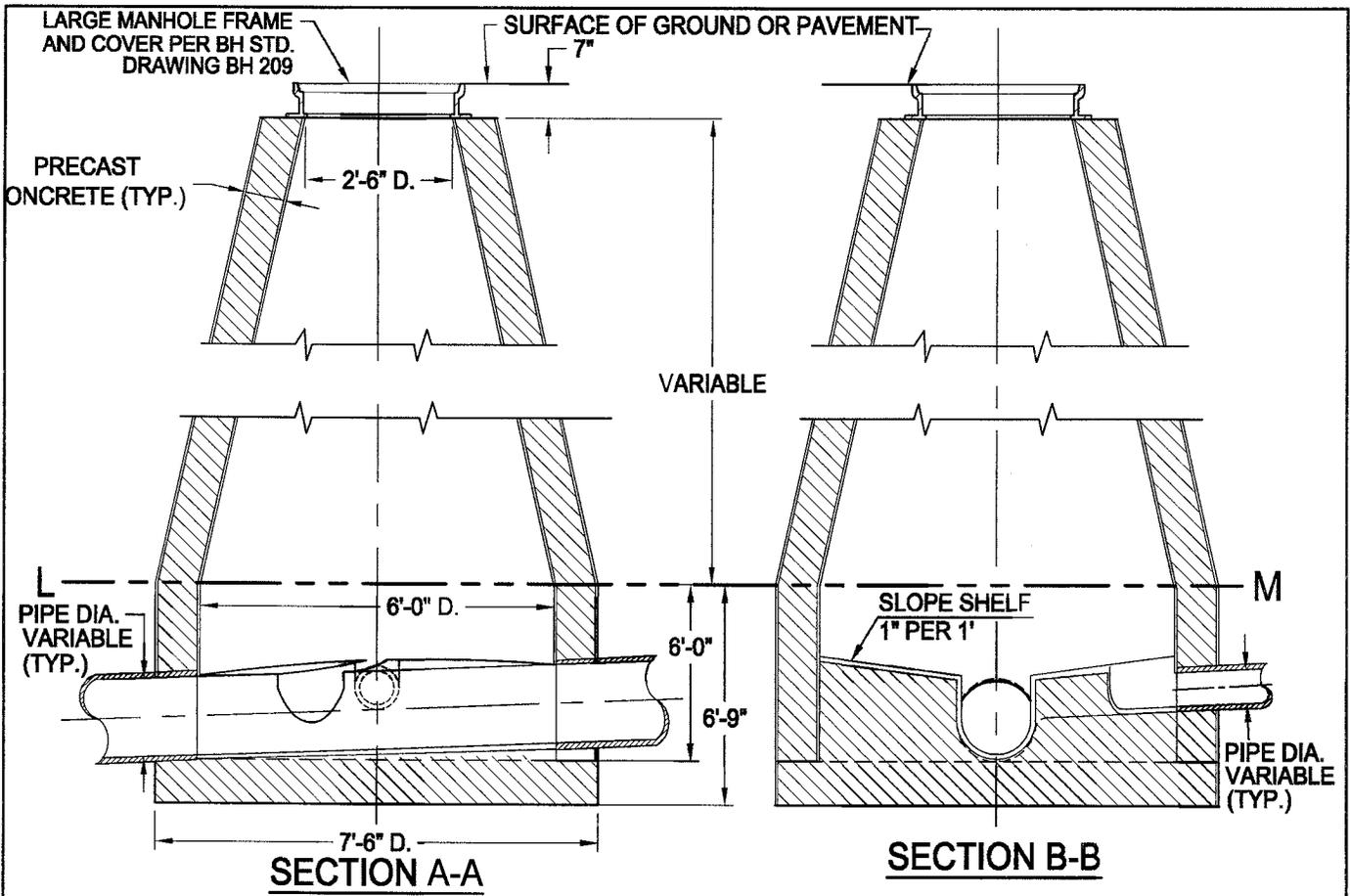
*Public Works Director*  
 PUBLIC WORKS DIRECTOR

DATE 7-31-09

STANDARD DRAWING

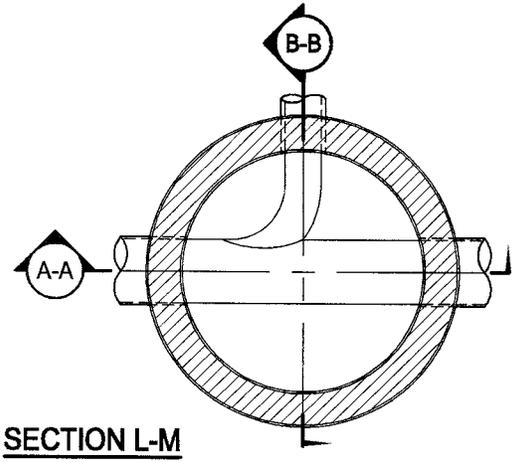
**BH 206**

SHEET 1 OF 1



**NOTES:**

1. MANHOLE SHALL BE CONSTRUCTED USING PRE-CAST CONCRETE BARRELS, CONES (CONCENTRIC OR ECCENTRIC), AND PRE-CAST CONCRETE GRADE RINGS.
2. PRECAST UNITS SHALL BE ASSEMBLED USING CLASS "B" MORTAR.
3. THE DEPTH OF THE CHANNEL SHALL BE THE FULL DIAMETER OF THE PIPE.
4. IF DEPTH OF SEWER INVERT FROM THE RIM IS LESS THAN 6 FEET, THE HEIGHT OF THE MANHOLE ABOVE THE LINE L-M IS TO BE 3 FEET AND THE HEIGHT BELOW LINE L-M WILL THEN BECOME VARIABLE.



## MODIFIED JUNCTION CHAMBER "F"

REVISIONS		
MARK	DATE	DESCRIPTION

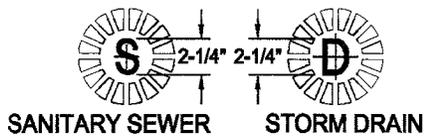


**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

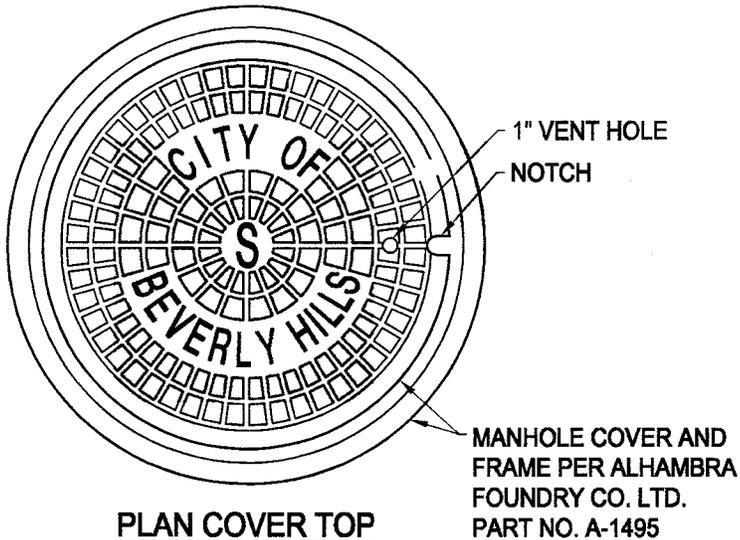
RECOMMENDED *[Signature]* DATE *7-30-09*  
CITY ENGINEER

APPROVED *[Signature]* DATE *7-31-09*  
PUBLIC WORKS DIRECTOR

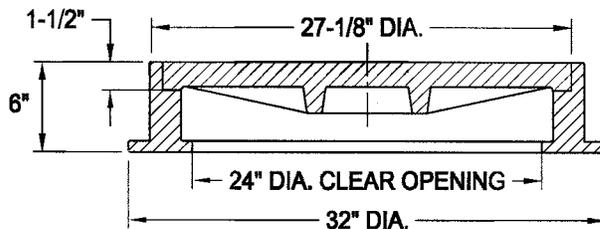
STANDARD DRAWING  
**BH 207**  
 SHEET 1 OF 1



DETAIL OF LETTERS



PLAN COVER TOP

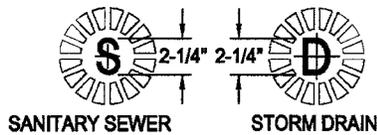


**INSTALLATION NOTES:**

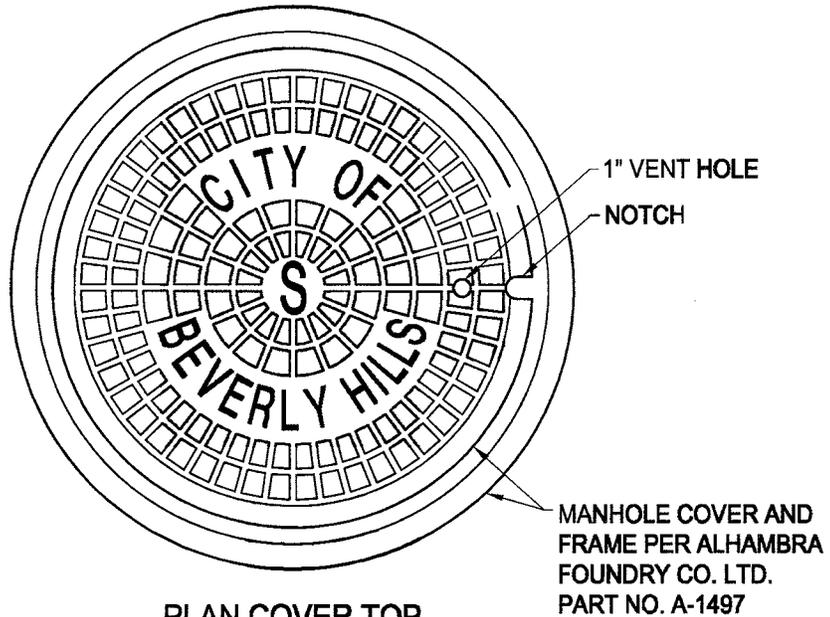
1. THE MANHOLE FRAME AND COVER SHALL BE MADE OF GRAY CAST IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-48, CLASS 30.
2. ALL PARTS OF THE MANHOLE FRAME AND COVER EXCEPT MACHINED SURFACES SHALL BE COATED WITH ASPHALTUM PAINT.
3. THE MANHOLE FRAME AND COVER SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY. THE COVER SHALL FIT THE FRAME SNUGLY BUT NOT TIGHTLY.
4. RAISED SURFACES OF LETTERS SHALL BE FLUSH WITH SURFACES OF THE RAISED BLOCK TREAD.
5. ALL RADII 1/8" UNLESS OTHERWISE SPECIFIED.
6. DRAFT TO BE 1-1/2° UNLESS OTHERWISE SPECIFIED.

## NON-ROCKING MANHOLE FRAME AND COVER

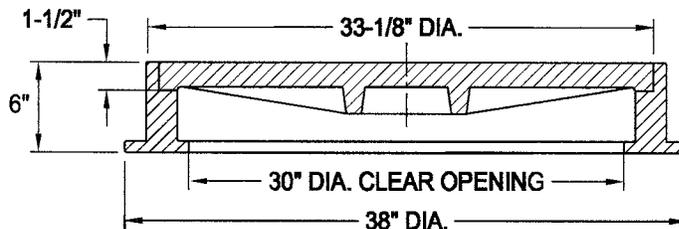
REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION
MARK	DATE	DESCRIPTION				
			RECOMMENDED  CITY ENGINEER	DATE 7-30-09	STANDARD DRAWING	
			APPROVED  PUBLIC WORKS DIRECTOR	DATE 7-31-09	<b>BH 208</b> SHEET 1 OF 1	



**DETAIL OF LETTERS**



**PLAN COVER TOP**



**INSTALLATION NOTES:**

1. THE MANHOLE FRAME AND COVER SHALL BE MADE OF GRAY CAST IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-48, CLASS 30.
2. ALL PARTS OF THE MANHOLE FRAME AND COVER EXCEPT MACHINED SURFACES SHALL BE COATED WITH ASPHALTUM PAINT.
3. THE MANHOLE FRAME AND COVER SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY. THE COVER SHALL FIT THE FRAME SNUGLY BUT NOT TIGHTLY.
4. RAISED SURFACES OF LETTERS SHALL BE FLUSH WITH SURFACES OF THE RAISED BLOCK TREAD.
5. ALL RADII 1/8" UNLESS OTHERWISE SPECIFIED.
6. DRAFT TO BE 1-1/2" UNLESS OTHERWISE SPECIFIED.

**LARGE MANHOLE FRAME AND COVER**

REVISIONS				<b>CITY OF BEVERLY HILLS, CALIFORNIA</b> DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	
MARK	DATE	DESCRIPTION			

RECOMMENDED *Christina* DATE 7-30-09

CITY ENGINEER

APPROVED *Robert* DATE 7-31-09

PUBLIC WORKS DIRECTOR

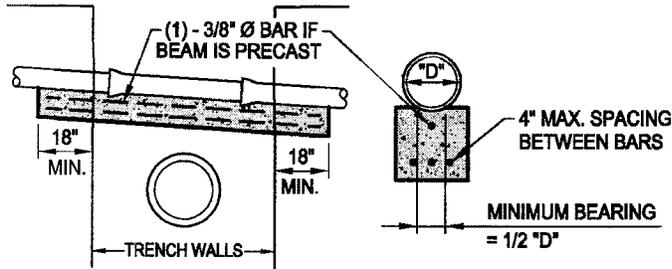
STANDARD DRAWING

BH 209

SHEET 1 OF 1

### CASE I

#### REINFORCED CONCRETE BEAM



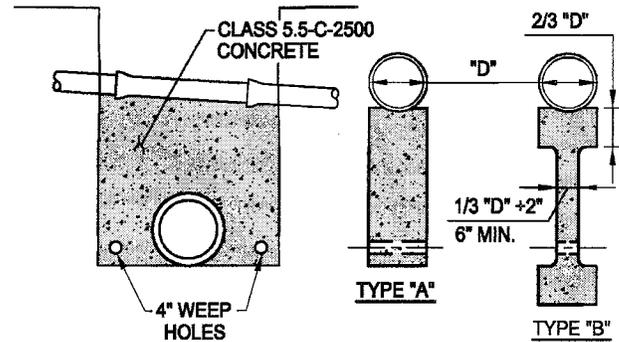
CLASS 6.0-C-3000 REINFORCED CONCRETE BEAM DIMENSIONS

TRENCH WIDTH	DEPTH OF BEAM	BAR SIZE	BEAM LENGTH
4'-0" or LESS	8"	5/8" Ø	7'-0"
4'-6"	9"	3/4" Ø	7'-6"
5'-0"	9-1/2"	3/4" Ø	8'-0"
6'-0"	10-1/2"	3/4" Ø	9'-0"
7'-0"	12"	7/8" Ø	10'-0"
8'-0"	13"	7/8" Ø	11'-0"

1. WIDTH OF BEAMS SHALL BE NOMINAL DIAMETER OF PIPE PLUS 2".
2. REINFORCING STEEL SHALL BE PLACED 1-1/2" CLEAR FROM THE SIDE AND BOTTOM OF BEAMS.
3. IF BEAMS ARE PRECAST, 18" AT ENDS OF BEAMS SHALL BE BEDDED IN CLASS 4.5-C-2000 CONCRETE. CLASS "C" MORTAR SHALL BE PLACED BETWEEN TOP OF BEAMS AND BOTTOM OF PIPE TO GIVE BEARING.

### CASE II

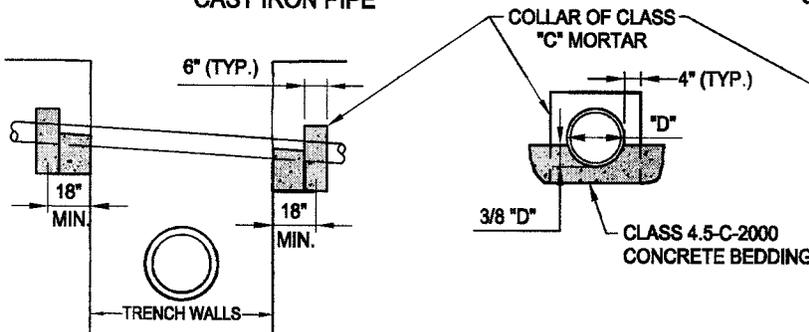
#### CONCRETE SUPPORT WALL



1. SUPPORTING WALL SHALL HAVE A FIRM BEARING ON THE SUBGRADE AND AGAINST THE SIDES OF THE EXCAVATION.
2. WALL SHALL BE AT LEAST 2" FREE AND CLEAR OF ANY GAS OR WATER MAIN OR OTHER CONDUIT OR DUCT.
3. EITHER TYPE "A" OR "B" CROSS SECTION MAY BE USED AT THE CONTRACTORS OPTION.

### CASE III

#### CAST IRON PIPE

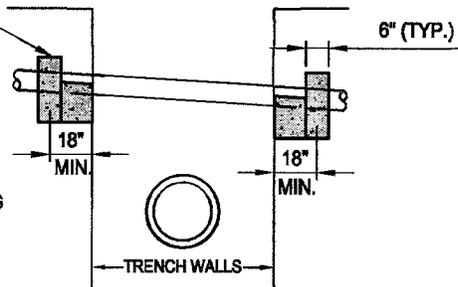


CLASS OF CAST IRON PIPE

	CLASS 150 PIPE			CLASS 250 PIPE		
	6"	8"	10"	6"	8"	10"
INSIDE DIAMETER	6"	8"	10"	6"	8"	10"
MAXIMUM TRENCH WIDTH	4'-6"	5'-6"	7'-0"	5'-0"	6'-0"	8'-0"

### CASE IV

#### SPUN REINFORCED CONCRETE PIPE (STORM DRAINS ONLY)



1. CLASS 2000-D SPUN REINFORCED CONCRETE PIPE OF THE SAME DIAMETER AS STORM DRAIN MAY BE USED FOR STORM DRAINS ONLY WHERE WIDTH OF TRENCH IS 5'-0" OR LESS.
2. BEARING OF THE PIPE ENDS AND JOINT CLOSURE SHALL BE THE SAME AS FOR CASE III.

## PIPE SUPPORTS ACROSS TRENCHES

#### REVISIONS

MARK	DATE	DESCRIPTION



### CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*Antonio*  
CITY ENGINEER

DATE 7-30-09

APPROVED

*Robert J. ...*  
PUBLIC WORKS DIRECTOR

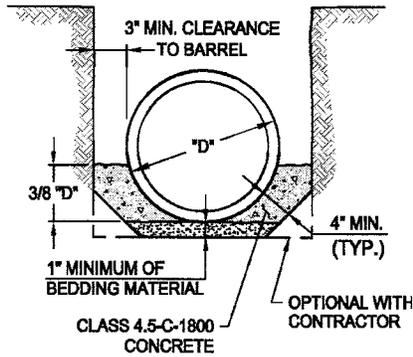
DATE 7-31-09

STANDARD DRAWING

**BH 210**

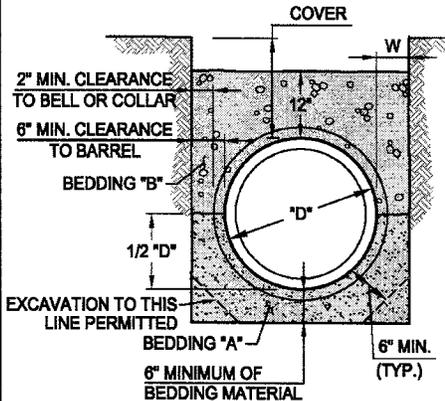
SHEET 1 OF 1

### CASE I



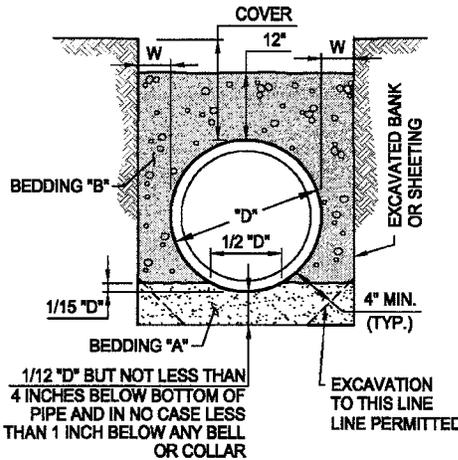
- CASE I BEDDING (LOAD FACTOR 2.1)** SHALL BE USED WHERE SPECIFIED ON THE PLANS OR WHERE REQUIRED AS AN ALTERNATIVE TO CASE II OR CASE III BEDDING AS PROVIDED HEREON. CASE IV BEDDING SHALL BE USED INSTEAD OF CASE I AGAINST SHEETING OR UNSTABLE TRENCH SIDES IF SO REQUIRED BY THE ENGINEER.

### CASE II CLAY AND CONCRETE PIPE



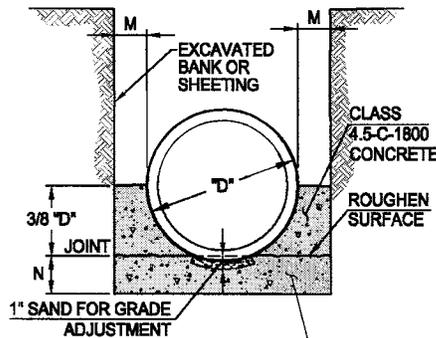
- CASE II BEDDING (LOAD FACTOR 1.8)**
  - "W" AT THE SPRING LINE SHALL NOT BE LESS THAN 8 INCHES FOR ANY DEPTH OF TRENCH.
  - WHERE THE COVER IS LESS THAN 8 FEET, "W" MEASURED AT THE TOP OF THE PIPE MAY BE ANY DIMENSION GREATER THAN 6 INCHES.
  - WHERE THE COVER IS GREATER THAN 8 FEET, "W" MEASURED AT THE TOP OF PIPE SHALL NOT BE GREATER THAN 8 INCHES UNLESS THE CONTRACTOR AT HIS OWN EXPENSE PROVIDES CASE I BEDDING. THE STATED 8 INCHES INCLUDES THE THICKNESS OF ANY SHEETING

### CASE III REINFORCED CONCRETE PIPE



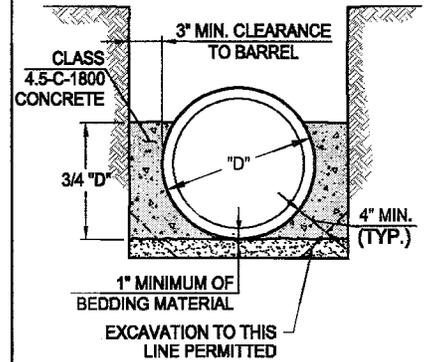
- CASE III BEDDING (LOAD FACTOR 1.8)**
  - "W" AT THE SPRING LINE SHALL NOT BE LESS THAN 3 INCHES FOR ANY DEPTH OF TRENCH.
  - WHERE THE COVER IS LESS THAN 8 FEET, "W" MEASURED AT THE TOP OF THE PIPE MAY BE ANY DIMENSION GREATER THAN 3 INCHES.
  - WHERE THE COVER IS GREATER THAN 8 FEET, "W" MEASURED AT THE TOP OF PIPE SHALL NOT BE GREATER THAN 10 INCHES UNLESS THE CONTRACTOR AT HIS OWN EXPENSE PROVIDES CASE I BEDDING. THE STATED 10 INCHES INCLUDES THE THICKNESS OF ANY SHEETING.

### CASE IV



- CASE IV BEDDING (LOAD FACTOR 3.0)** WHERE REQUIRED BY THE ENGINEER AS AN ALTERNATIVE TO CASE I OR CASE V TO MEET CONDITIONS ARISING DURING CONSTRUCTION.

### CASE V



- CASE V BEDDING (LOAD FACTOR 2.7)** SHALL BE USED WHERE SPECIFIED ON THE PLANS. CASE IV BEDDING SHALL BE USED INSTEAD OF CASE V AGAINST SHEETING OR UNSTABLE TRENCH WALLS IF SO REQUIRED BY THE ENGINEER.

#### GENERAL NOTES

- USE CASE III FOR RCP AND CASE II FOR VITRIFIED CLAY AND PLAIN CONCRETE PIPE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE PROJECT DRAWINGS.
- BEDDING "A" SHALL BE COMPOSED OF SAND, NO. 3 OR NO. 4 CRUSHED ROCK OR GRAVEL, OR OTHER GRANULAR MATERIAL AS MAY BE SPECIFIED OR OTHERWISE APPROVED BY THE ENGINEER. THE MAXIMUM SIZE ROCK OR GRAVEL SHALL BE NO. 3 FOR PIPES 27 INCHES IN DIAMETER AND LARGER, AND NO. 4 FOR PIPES SMALLER THAN 27 INCHES IN DIAMETER. BEDDING "B" SHALL BE COMPOSED OF SAND OR OTHER GRANULAR MATERIAL AS MAY BE SPECIFIED OR OTHERWISE APPROVED BY THE ENGINEER AND SHALL BE COMPLETED PRIOR TO PLACING BALANCE OF BACKFILL.
- CONCRETE ENCASEMENT, WHERE CALLED FOR ON THE PROJECT DRAWINGS, SHALL BE CLASS 5.5-C-2500 CONCRETE POURED FROM A MINIMUM OF 4" BELOW BOTTOM OF PIPE TO A MINIMUM OF 6" ABOVE TOP OF PIPE.

## PIPE BEDDING IN TRENCHES

#### REVISIONS

MARK	DATE	DESCRIPTION



### CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09

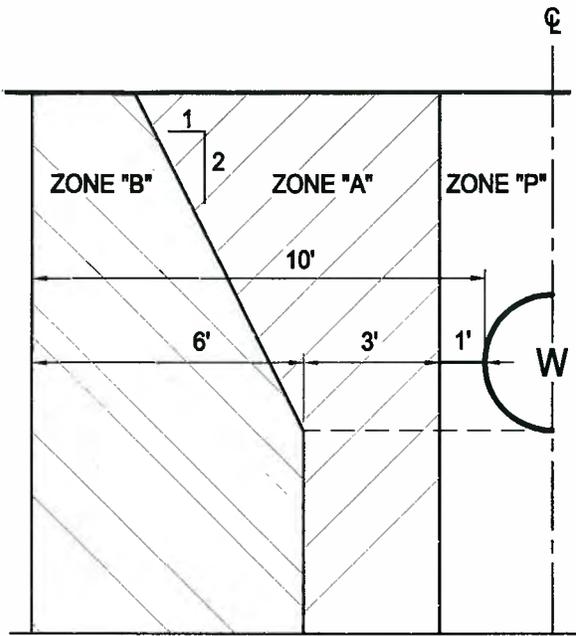
APPROVED *[Signature]* DATE 7-31-09

CITY ENGINEER  
PUBLIC WORKS DIRECTOR

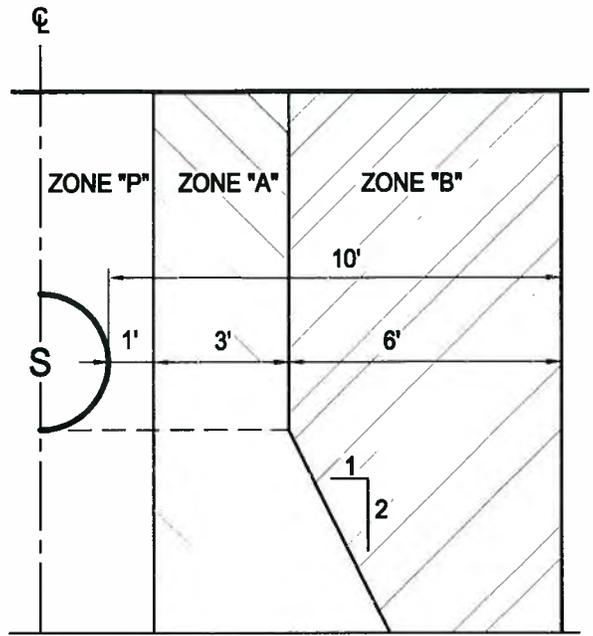
STANDARD DRAWING

**BH 211**

SHEET 1 OF 1



**CASE 1**  
NEW SEWER



**CASE 2**  
NEW WATER MAIN

**ZONE SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

- A. SEWER LINES PARALLEL TO WATER MAINS SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT APPROVAL FROM THE CITY OF BEVERLY HILLS.
- B. A SEWER LINE PLACED PARALLEL TO A WATER LINE SHALL BE CONSTRUCTED OF:
  - 1. EXTRA STRENGTH VITRIFIED CLAY PIPE WITH COMPRESSION JOINTS.
  - 2. PLASTIC SEWER PIPE WITH RUBBER RING JOINTS (PER ASTM D 3034) OR EQUIVALENT.
  - 3. CAST OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS.
  - 4. REINFORCED CONCRETE PRESSURE PIPE WITH COMPRESSION JOINTS (PER AWWA C302-74).
- P. PROHIBITED ZONE - NO SEWER MAINS ARE ALLOWED TO BE INSTALLED IN THIS ZONE.

**ZONE SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

- A. NO WATER MAINS PARALLEL TO SEWERS SHALL BE CONSTRUCTED WITHOUT APPROVAL FROM THE CITY OF BEVERLY HILLS.
- B. A WATER LINE PLACED PARALLEL TO A SEWER LINE SHALL BE CONSTRUCTED OF STEEL PIPE, CML, AND CMC WITH WELDED JOINTS.
- P. PROHIBITED ZONE - NO WATER MAINS ARE ALLOWED TO BE INSTALLED IN THIS ZONE.

**ADDITIONAL NOTES:**

- 1. ZONES IDENTICAL ON EITHER SIDE OF CENTER LINES,
- 2. WATER MAINS AND SEWER MAINS MUST NOT BE INSTALLED IN THE SAME TRENCH.
- 3. SEPARATION DISTANCES SPECIFIED SHALL BE MEASURED FROM THE NEAREST EDGE OF FACILITIES.
- 4. STEEL PIPE SHALL BE A MINIMUM OF 10 GAGE THICKNESS.

**SEWER AND WATER MAIN PARALLEL SEPARATION < 10'**

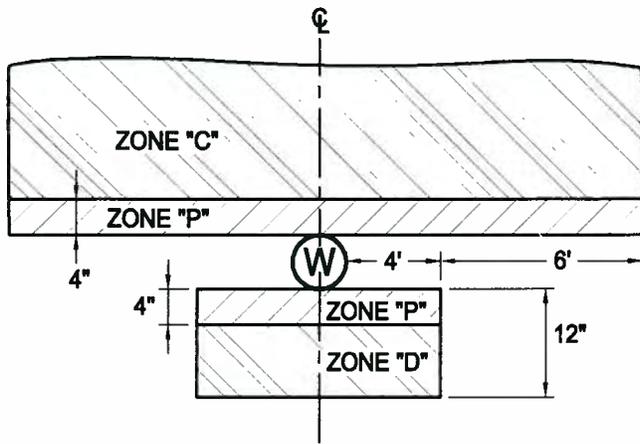
REVISIONS		
MARK	DATE	DESCRIPTION



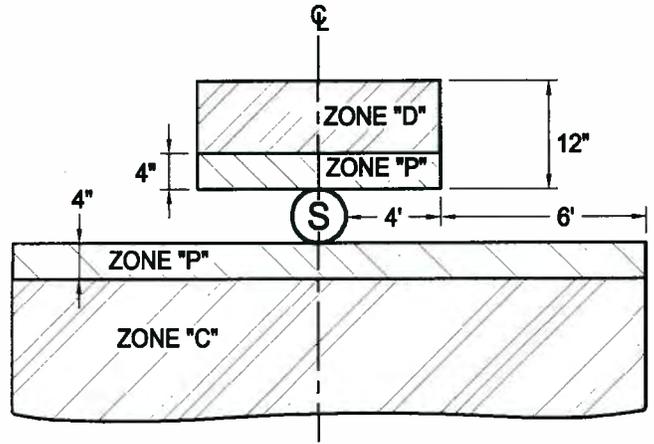
**CITY OF BEVERLY HILLS, CALIFORNIA**  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER  
APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 212**  
SHEET 1 OF 2



**CASE 1**  
NEW SEWER



**CASE 2**  
NEW WATER MAIN

**ZONE SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

- C. A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF:
1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS.
  2. A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA 0990) PLASTIC PIPE OR EQUIVALENT. CENTERED OVER THE PIPE BEING CROSSED.
  3. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-74) CENTERED OVER THE PIPE BEING CROSSED.
  4. ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE.
- D. A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF:
1. A CONTINUOUS SECTION OF DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
  2. A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA 0990) PLASTIC PIPE OR EQUIVALENT. CENTERED OVER THE PIPE BEING CROSSED.
  3. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-74) CENTERED OVER THE PIPE BEING CROSSED.
  4. ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE
  5. ANY SEWER PIPE SEPARATED BY A 10"x10"x4" THICK REINFORCED CONCRETE SLAB.
- P. PROHIBITED ZONE - NO SEWER MAINS ARE ALLOWED TO BE INSTALLED IN THIS ZONE.

**ZONE SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

- C. NO JOINTS WITHIN 10 FEET OF EITHER SIDE OF SEWER LINE. USE DUCTILE IRON PIPE, CML, AND POLYETHYLENE WRAPPED, OR STEEL PIPE, CML, AND CMC.
- D. NO JOINTS WITHIN 4 FEET OF EITHER SIDE OF SEWER LINE. USE DUCTILE IRON PIPE, CML, AND POLYETHYLENE WRAPPED, OR STEEL PIPE, CML, AND CMC.
- P. PROHIBITED ZONE - NO WATER MAINS ARE ALLOWED TO BE INSTALLED IN THIS ZONE.

**ADDITIONAL NOTES:**

1. WATER MAINS AND SEWER MAINS MUST NOT BE INSTALLED IN THE SAME TRENCH.
2. SEPARATION DISTANCES SPECIFIED SHALL BE MEASURED FROM THE NEAREST EDGE OF FACILITIES.
3. STEEL PIPE SHALL BE A MINIMUM OF 10 GAGE THICKNESS.

**SEWER AND WATER MAIN PERPENDICULAR SEPARATION < 10'**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE

11-18-10

APPROVED

*[Signature]*  
PUBLIC WORKS DIRECTOR

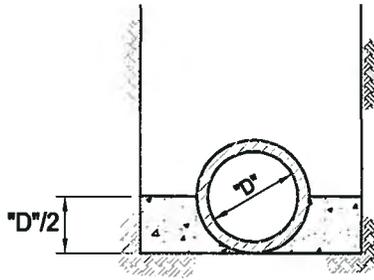
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11-18-10

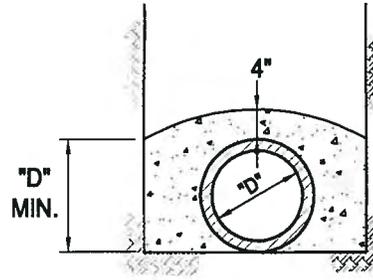
STANDARD DRAWING

**BH 212**

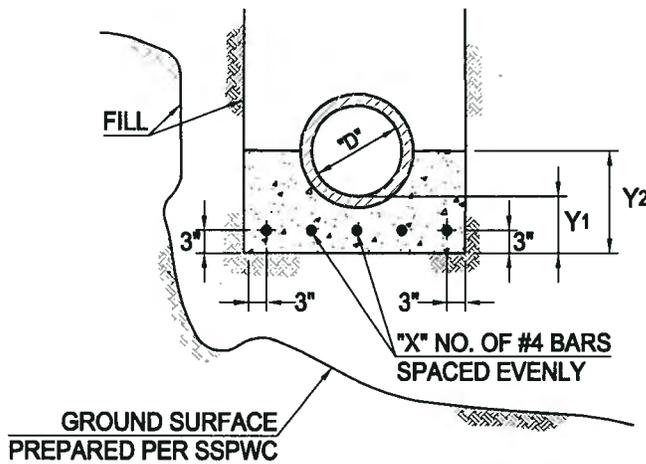
SHEET 2 OF 2



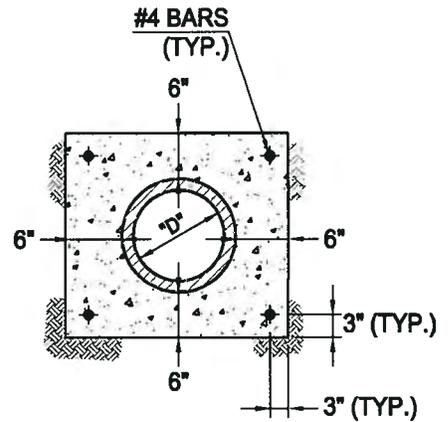
**CASE I  
CONCRETE CRADLE**



**CASE II  
CONCRETE ENCASEMENT**



**CASE III  
SPECIAL CRADLE**



**CASE IV  
SPECIAL ENCASEMENT**

SCHEDULE OF DIMENSIONS AND REINFORCING BARS FOR SPECIAL CRADLE - CASE III			
"D" DIAMETER	"X" NO. OF #4 BARS	THICKNESS	
		Y <sub>1</sub>	Y <sub>2</sub>
6"	2	4"	8"
8"	4	5"	10"
10"	4	6"	12"
12"	4	7"	15"
15"	5	9"	19"
18"	5	10"	22"
21"	6	12"	26"
24"	6	13"	28"

# CRADLING AND ENCASEMENT FOR SEWER LINE

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE

11-18-10

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*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE

11-18-10

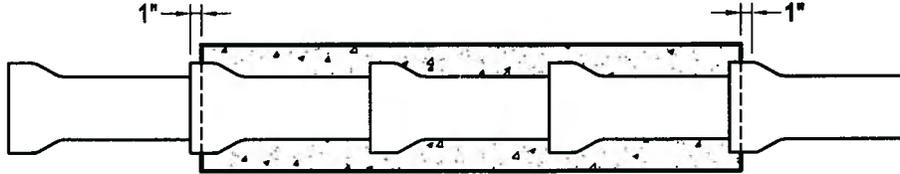
STANDARD DRAWING

**BH 213**

SHEET 1 OF 2

**NOTES:**

1. EXTEND BOTH ENDS OF CRADLE OR ENCASEMENT TO A POINT 1" SHORT OF FIRST PIPE JOINT BEYOND LOCATIONS SPECIFIED ON PLANS.



**PLAN VIEW**

2. APPLY FORM OIL. THIN PLASTIC SHEET, OR OTHER ACCEPTABLE MATERIAL TO PIPE, TO PREVENT BOND BETWEEN PIPE AND CONCRETE.
3. USE CLASS 420-C-2000 CONCRETE FOR ALL CASES.
4. CONDITIONS OF REQUIRED USE:
  - a. CASE I - CONCRETE CRADLE
    1. WHEN OVERBURDEN DEPTH IS GREATER THAN 20'.
    2. AS A SUPPORT WHEN CROSSING OVER A STRUCTURE WITH A CLEARANCE LESS THAN 1.5' AND GREATER THAN 0.5'.
    3. WHEN WITHIN A 45° ANGLE DOWNWARD FROM THE BOTTOM OF A FOOTING.
  - b. CASE II - CONCRETE ENCASEMENT
    1. WHEN CROSSING UNDER A STRUCTURE WITH A CLEARANCE LESS THAN 1.5' AND GREATER THAN 0.5'.
    2. WHEN COVER DIRT IS LESS THAN 4'.
    3. WHEN LESS THAN 3' FROM A POWER POLE.
  - c. CASE III - SPECIAL CRADLE
    1. AS A SUPPORT WHEN CROSSING OVER A TRENCH GREATER THAN 4' IN WIDTH, SEE APWA STANDARD PLAN 224.
  - d. CASE IV - SPECIAL ENCASEMENT
    1. WHEN CROSSING UNDER A STRUCTURE WITH A WIDTH GREATER THAN 5' AND A CLEARANCE LESS THAN 1.5' AND GREATER THAN 0.5'.
    2. WHEN WITHIN 10' OF A PRESSURIZED WATER MAIN, OR WITHIN 25' OF A GRAVITY FLOW WATER MAIN.

## CRADLING AND ENCASEMENT

REVISIONS		
MARK	DATE	DESCRIPTION



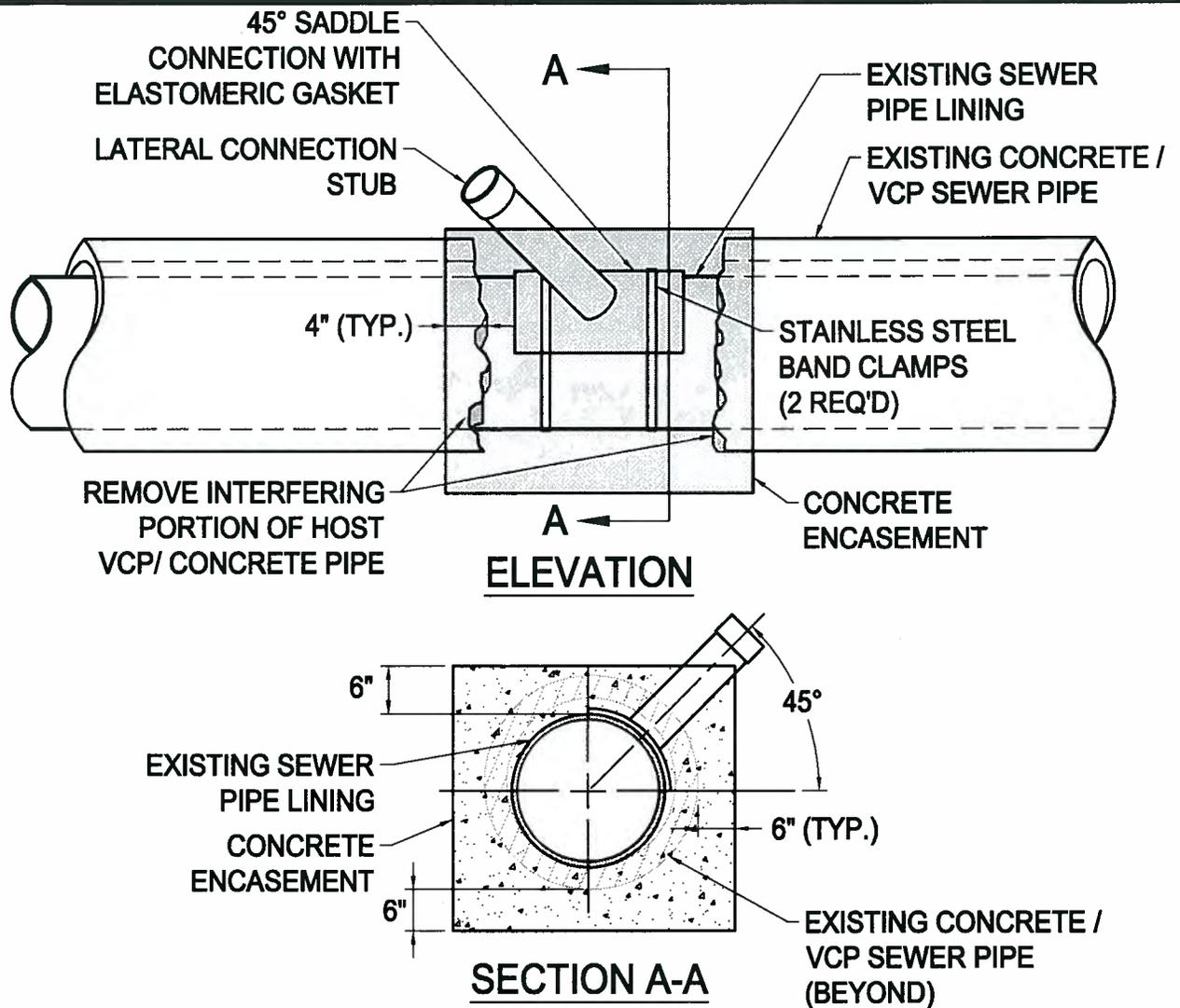
### CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER

APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 213**  
SHEET 2 OF 2



**ADDITIONAL NOTES:**

1. MATERIALS SHALL BE SELECTED FROM THE CITY OF BEVERLY HILLS APPROVED MATERIALS LIST.
2. IN NO CASE SHALL CONNECTION BE MADE DIRECTLY ON TOP OF SEWER MAIN.
3. NO MORE THAN ONE CUT-IN LATERAL CONNECTION WILL BE ALLOWED FOR EACH LENGTH OF VCP SEWER MAIN.
4. LINING SHALL BE CORED THE EXACT DIAMETER OF THE LATERAL.
5. LATERAL SHALL BE FLUSH WITH THE LINING MATERIAL AND SHALL NOT PROTRUDE WITHIN THE LINING.

## LATERAL CONNECT TO LINED SEWER MAIN

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

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CITY ENGINEER

DATE

11-18-10

APPROVED

*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE

11-18-10

STANDARD DRAWING

**BH 214**

SHEET 1 OF 1

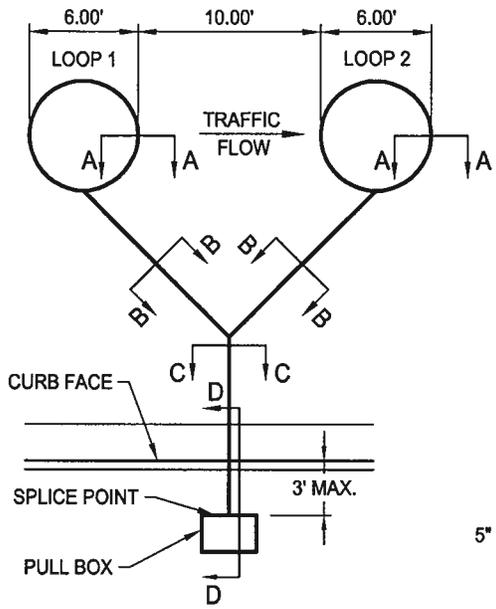
# Section III

## Flood Control and Storm Drain Facilities

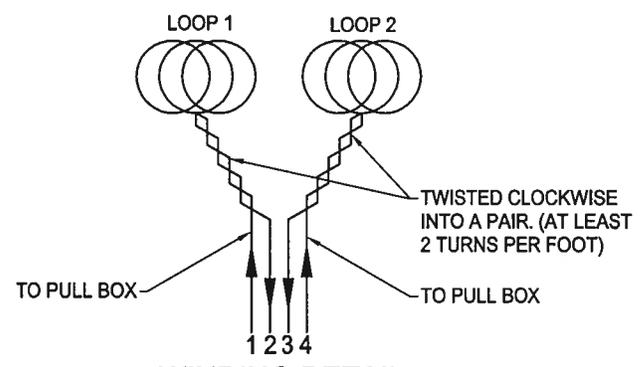
**(RESERVED)**

# **Section IV**

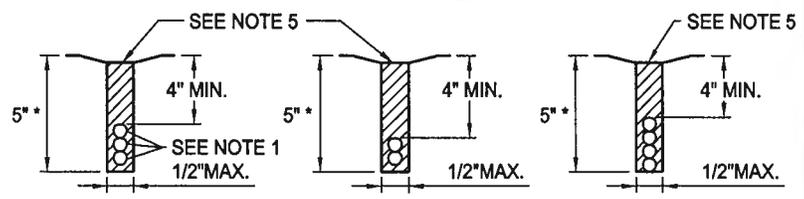
## **Street Lighting and Traffic Signals**



**PLAN**  
NOT TO SCALE

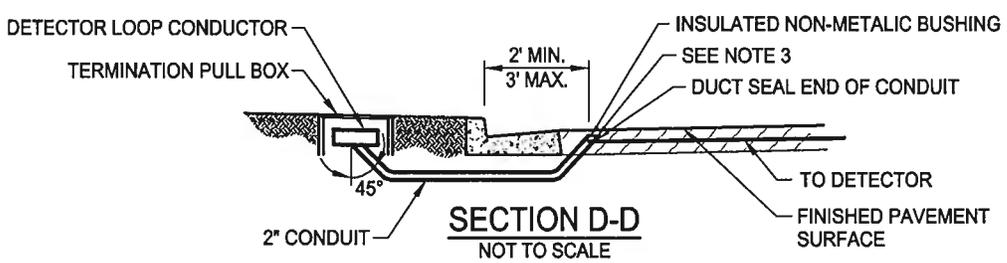


**WINDING DETAIL**  
NOT TO SCALE



**SECTION A-A** NOT TO SCALE      **SECTION B-B** NOT TO SCALE      **SECTION C-C** NOT TO SCALE

\* DEPTH OF SLOT NOT TO EXCEED DEPTH OF PAVEMENT



**SECTION D-D**  
NOT TO SCALE

- NOTES:**
1. THREE TURNS OF DETECTA-DUCT OR TYPE 2 LOOP WIRE STACKED ONE WIRE ON TOP OF ANOTHER. A PRE-WOUND LOOP WIRE SHALL BE USED IN SLOTS GREATER THAN 1/4" IN WIDTH.
  2. LOOP DETECTOR LEAD-IN CABLE EXTENDING FROM THE PULL BOX ADJACENT TO THE LOOP TO THE FIELD TERMINAL IN THE CONTROLLER CABINET SHALL BE TWO, THREE, OR FOUR PAIR #1B AWG INDIVIDUALLY TWISTED, INDIVIDUALLY SHIELDED, FILLED (WATER BLOCKED) CABLE. EACH CABLE SHALL BE IDENTIFIED BY THE INSTALLATION OF A RIGID PLASTIC TAG HELD IN PLACE WITH TWO NYLON TIES.
  3. STUB OUT SHALL BE LOCATED AT THE EDGE OF GUTTER IN PAVEMENT, 4" BELOW FINISHED SURFACE OR INSTALL DETECTOR HANDHOLE (CITY OF BH, STANDARD DRAWING BH 402) AS DIRECTED BY CITY ENGINEER.
  4. IF THE "STUB OUT" EXCAVATION AREA FOR LOOP HOMERUNS IS GREATER THAN 6" IN DIAMETER, BACKFILL WITH ASPHALT CONCRETE. IF EXCAVATION AREA IS LESS THAN OR EQUAL TO 6" IN DIAMETER, SEAL AREA WITH HOT RUBBERIZED ASPHALT SEALANT.
  5. FILL SLOT WITH HOT MELT RUBBERIZED ASPHALT SEALANT IN ACCORDANCE WITH SECTION 86-5.01A OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS. POUR POTS ARE NOT ACCEPTABLE TO APPLY SEALANT.
  6. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

# ROUND INDUCTIVE LOOP DETECTOR INSTALLATION

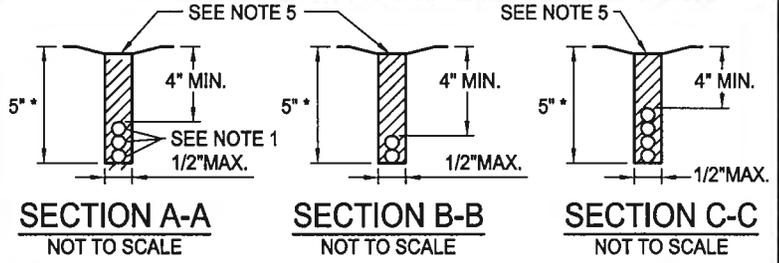
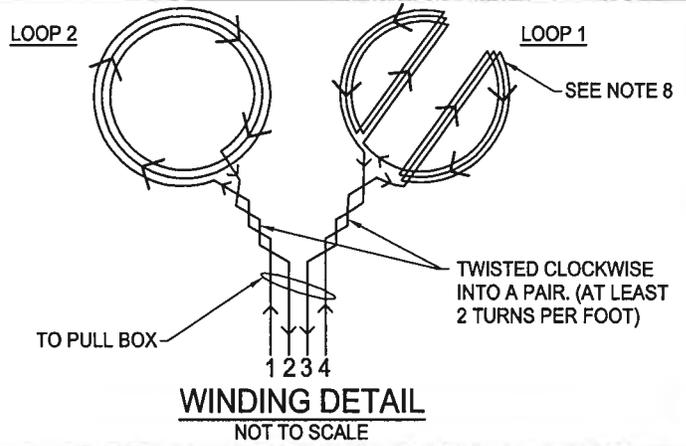
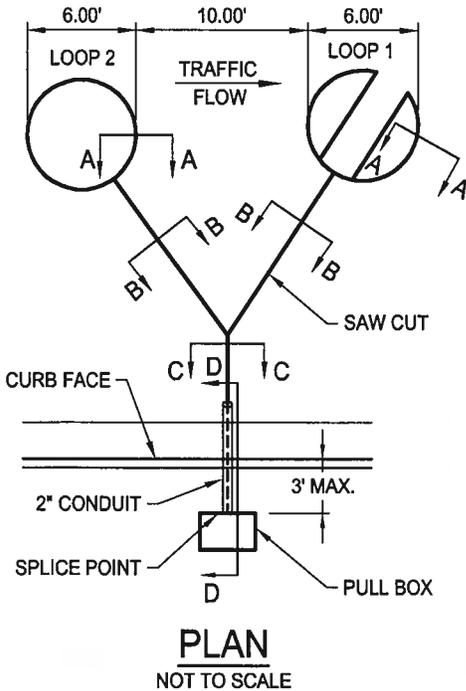
REVISIONS		
MARK	DATE	DESCRIPTION



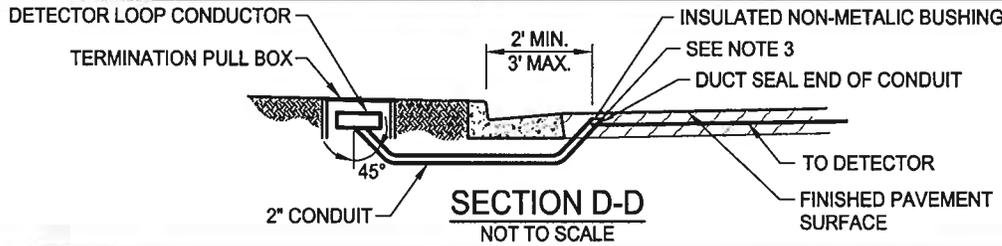
**CITY OF BEVERLY HILLS, CALIFORNIA**  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 11/18/11  
CITY ENGINEER  
APPROVED *[Signature]* DATE 11-18-11  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 401**  
SHEET 1 OF 1



\* DEPTH OF SLOT NOT TO EXCEED DEPTH OF PAVEMENT



**NOTES:**

1. THREE TURNS OF DETECTA-DUCT OR TYPE 2 LOOP WIRE STACKED ONE WIRE ON TOP OF ANOTHER. A PRE-WOUND LOOP WIRE SHALL BE USED IN SLOTS GREATER THAN 1/4" IN WIDTH.
2. LOOP DETECTOR LEAD-IN CABLE EXTENDING FROM THE PULL BOX ADJACENT TO THE LOOP TO THE FIELD TERMINAL IN THE CONTROLLER CABINET SHALL BE TWO, THREE, OR FOUR PAIR #1B AWG INDIVIDUALLY TWISTED, INDIVIDUALLY SHIELDED, FILLED (WATER BLOCKED) CABLE. EACH CABLE SHALL BE IDENTIFIED BY THE INSTALLATION OF A RIGID PLASTIC TAG HELD IN PLACE WITH TWO NYLON TIES.
3. STUB OUT SHALL BE LOCATED AT THE EDGE OF GUTTER IN PAVEMENT, 4" BELOW FINISHED SURFACE OR INSTALL DETECTOR HANDHOLE (CITY OF BH, STANDARD DRAWING BH 402) AS DIRECTED BY CITY ENGINEER.
4. IF THE "STUB OUT" EXCAVATION AREA FOR LOOP HOMERUNS IS GREATER THAN 6" IN DIAMETER, BACKFILL WITH ASPHALT CONCRETE. IF EXCAVATION AREA IS LESS THAN OR EQUAL TO 6" IN DIAMETER, SEAL AREA WITH HOT RUBBERIZED ASPHALT SEALANT.
5. FILL SLOT WITH HOT MELT RUBBERIZED ASPHALT SEALANT IN ACCORDANCE WITH SECTION 86-5.01A OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS. POUR POTS ARE NOT ACCEPTABLE TO APPLY SEALANT.
6. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
7. FRONT LOOP (LOOP 1) SHALL EXTEND INTO CROSSWALK 12" WHERE APPLICABLE.
8. ROUND CORNERS OF ACUTE ANGLE SAWCUTS TO PREVENT DAMAGE TO CONDUCTORS.

# BIKE LOOP DETECTOR INSTALLATION

REVISIONS		
MARK	DATE	DESCRIPTION



## CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED \_\_\_\_\_

*[Signature]*  
CITY ENGINEER

DATE 11/15/2011

APPROVED \_\_\_\_\_

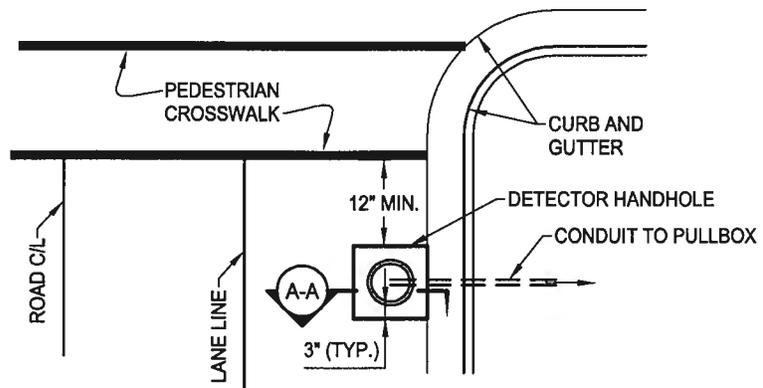
*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 11-18-11

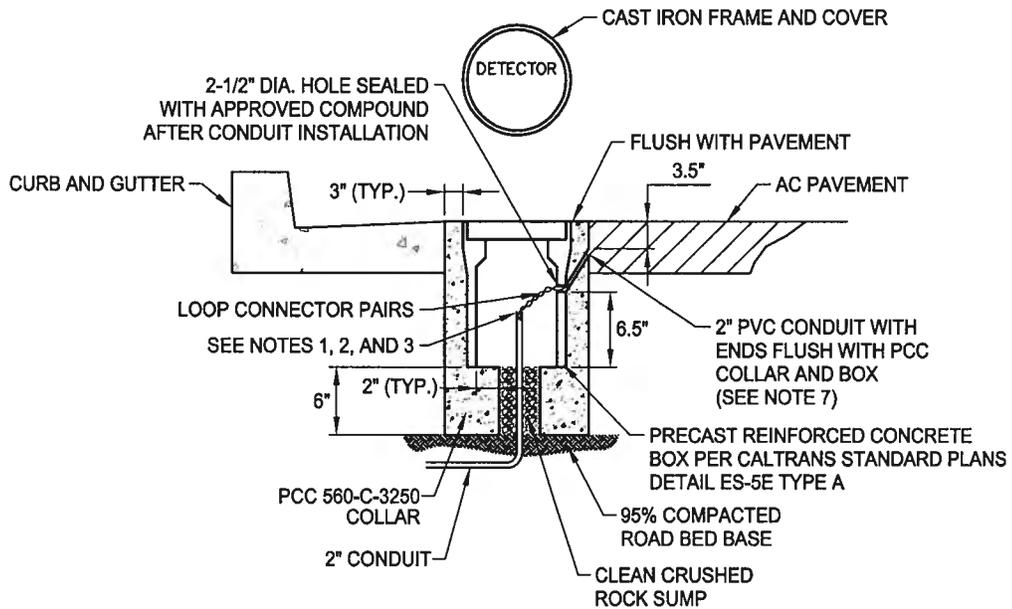
STANDARD DRAWING

# BH 402

SHEET 1 OF 1



**PLAN VIEW**  
NOT TO SCALE



**SECTION A-A**  
NOT TO SCALE

**NOTES:**

1. NON-METALLIC BUSHING SHALL BE USED AT ROADWAY END OF CONDUIT.
2. TAPE WIRE 3" EACH SIDE OF ROADWAY BUSHING.
3. INSTALL DUCT SEAL COMPOUND TO EACH END OF ROADWAY CONDUIT BEFORE INSTALLING EPOXY OR OTHER APPROVED MATERIALS.
4. ROUND ALL SHARP EDGES WHERE WIRE HAS TO PASS.
5. SPLICE DETECTOR CONDUCTORS OR CABLE TO LEAD-IN CABLE FOR RUN TO CONTROLLER CABINET.
6. 2" PVC CONDUIT ENDS SEALED WITH APPROVED COMPOUND AFTER CONDUCTOR INSTALLATION.
7. EXACT LOCATION OF THE DETECTOR HANDHOLE WILL BE DETERMINED BY THE CITY ENGINEER IN THE FIELD.
8. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

# TRAFFIC SIGNAL DETECTOR HANDHOLE

REVISIONS		
MARK	DATE	DESCRIPTION



## CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED \_\_\_\_\_

*[Signature]*  
CITY ENGINEER  
*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 11/18/2011

DATE 11-18-11

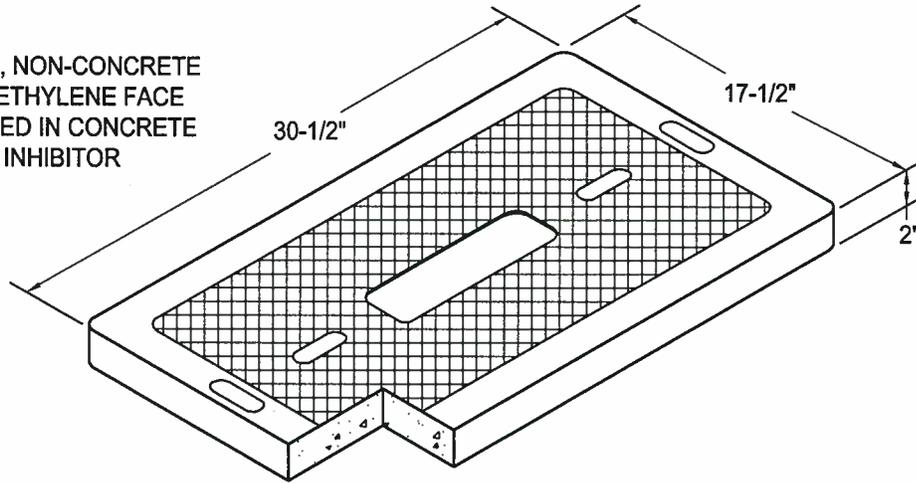
STANDARD DRAWING

# BH 403

SHEET 1 OF 1

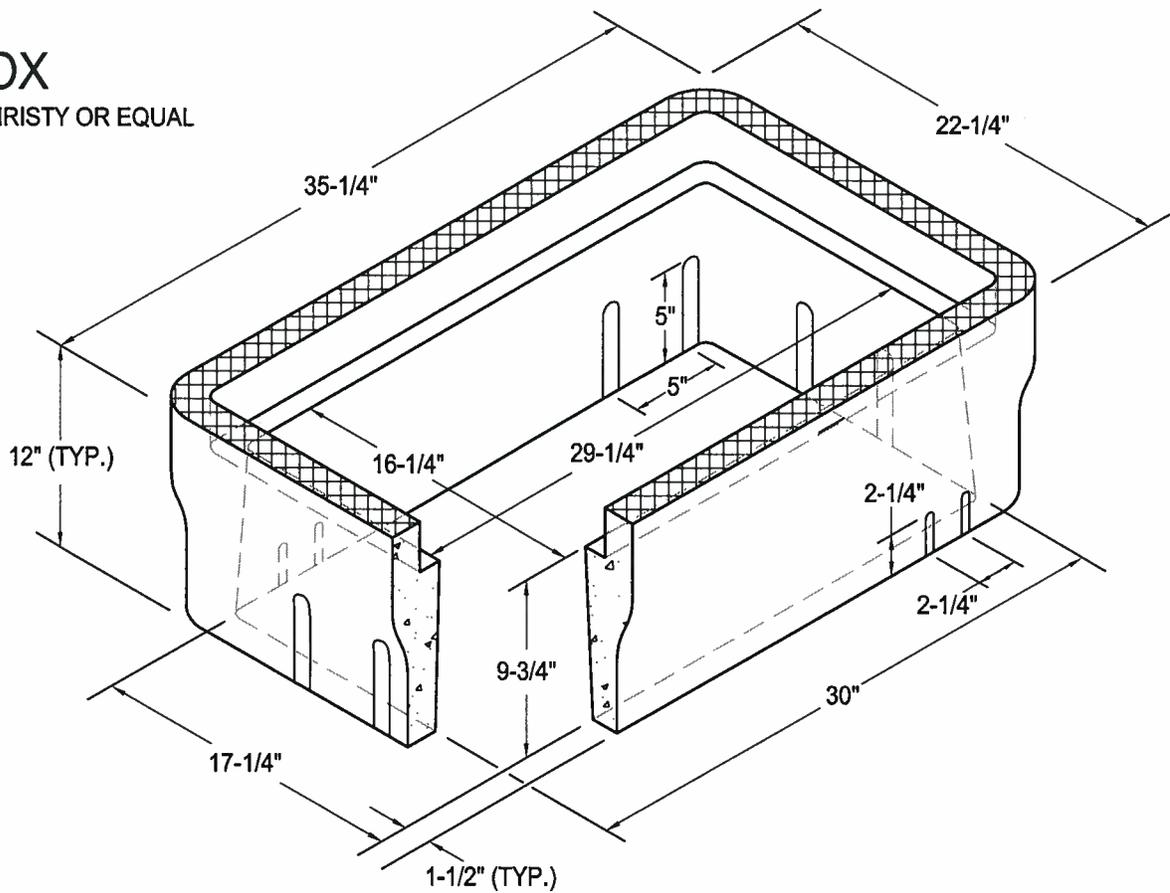
# LID

- FIBRELYTE LID, NON-CONCRETE
- ETCHED POLYETHYLENE FACE
- FACE ANCHORED IN CONCRETE
- ULTRA-VIOLET INHIBITOR



# BOX

- CHRISTY OR EQUAL



## TRAFFIC SIGNAL PULL BOX & LID

REVISIONS		
MARK	DATE	DESCRIPTION



### CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE 11/18/11

APPROVED

*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 11-18-11

STANDARD DRAWING

**BH 404**

SHEET 1 OF 1

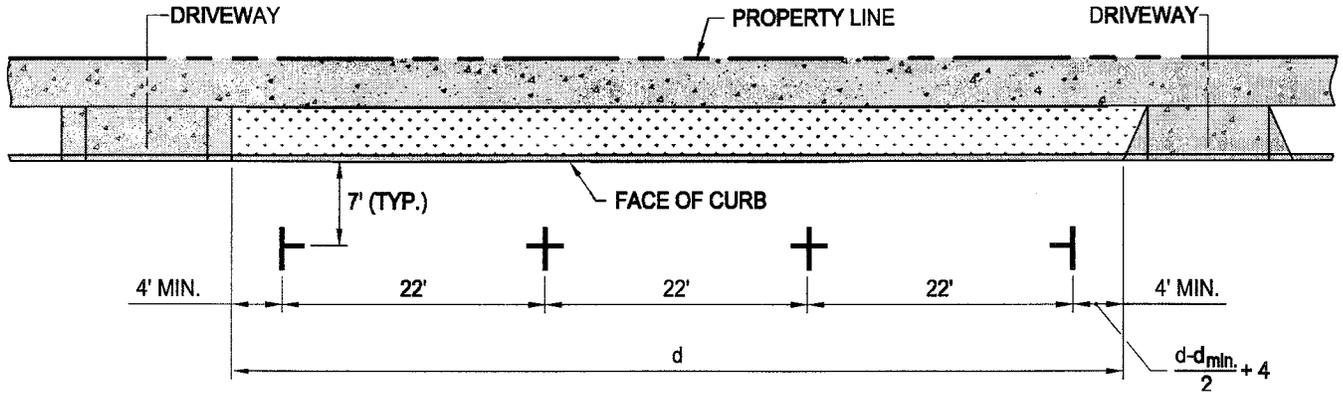
# **Section V**

## **Landscaping and Irrigation**

**(RESERVED)**

# **Section VI**

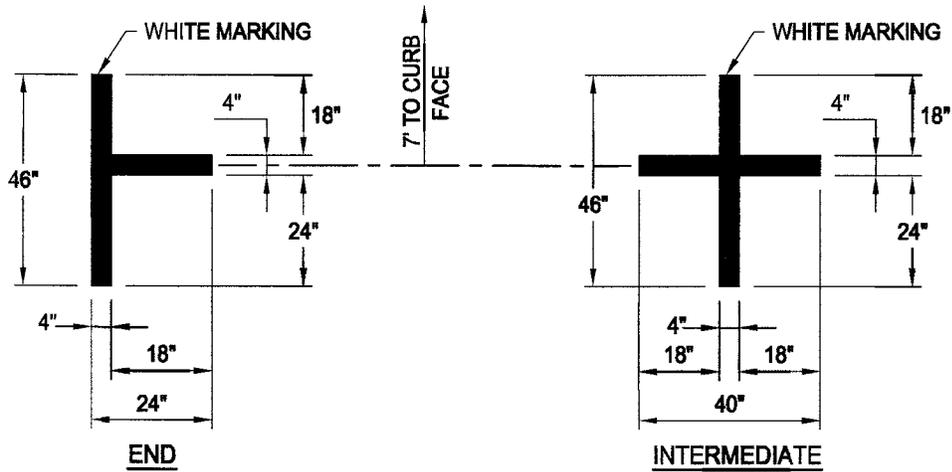
## **General Facilities**



d (IN FEET)	NUMBER OF SPACES	d (IN FEET)	NUMBER OF SPACES
0-30	1	140-162	7
30-52	2	162-184	8
52-74	3	184-206	9
74-96	4	206-228	10
96-118	5	228-250	11
118-140	6	250-272	12

**SYMMETRICAL**

RESIDENTIAL AND COMMERCIAL FRONTAGE



**PAINTING DETAILS**

**PARKING SPACE MARKINGS**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

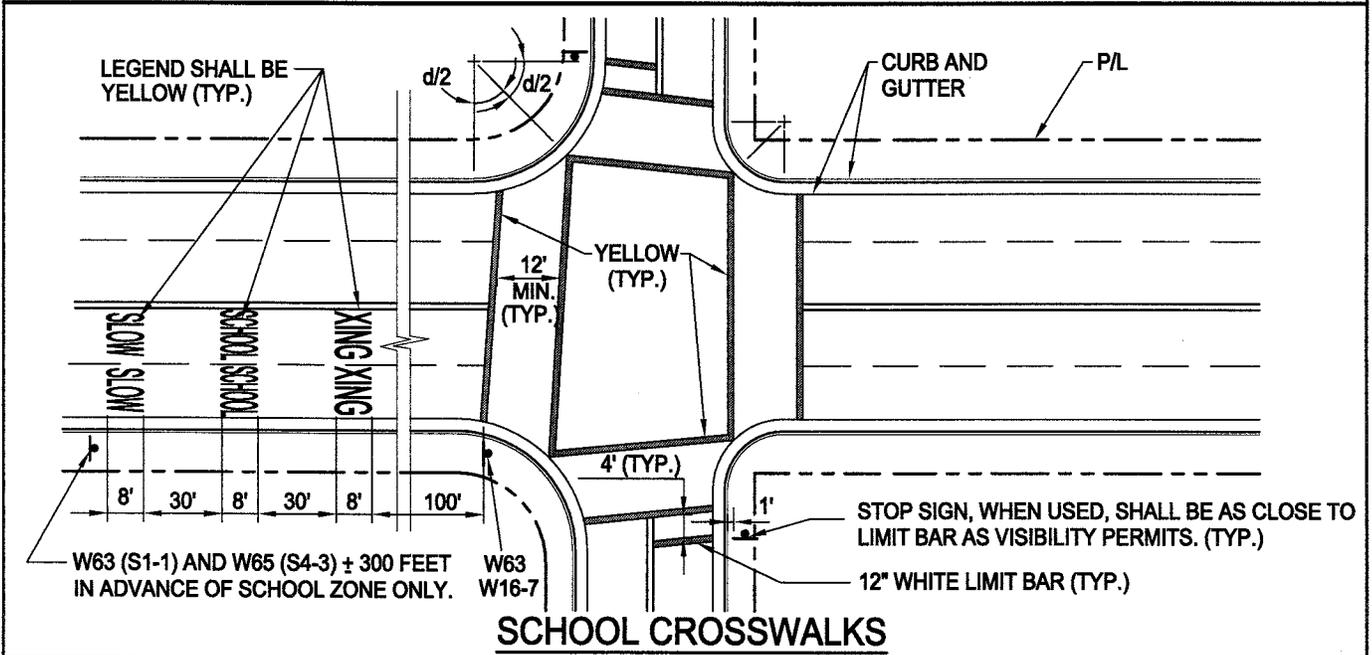
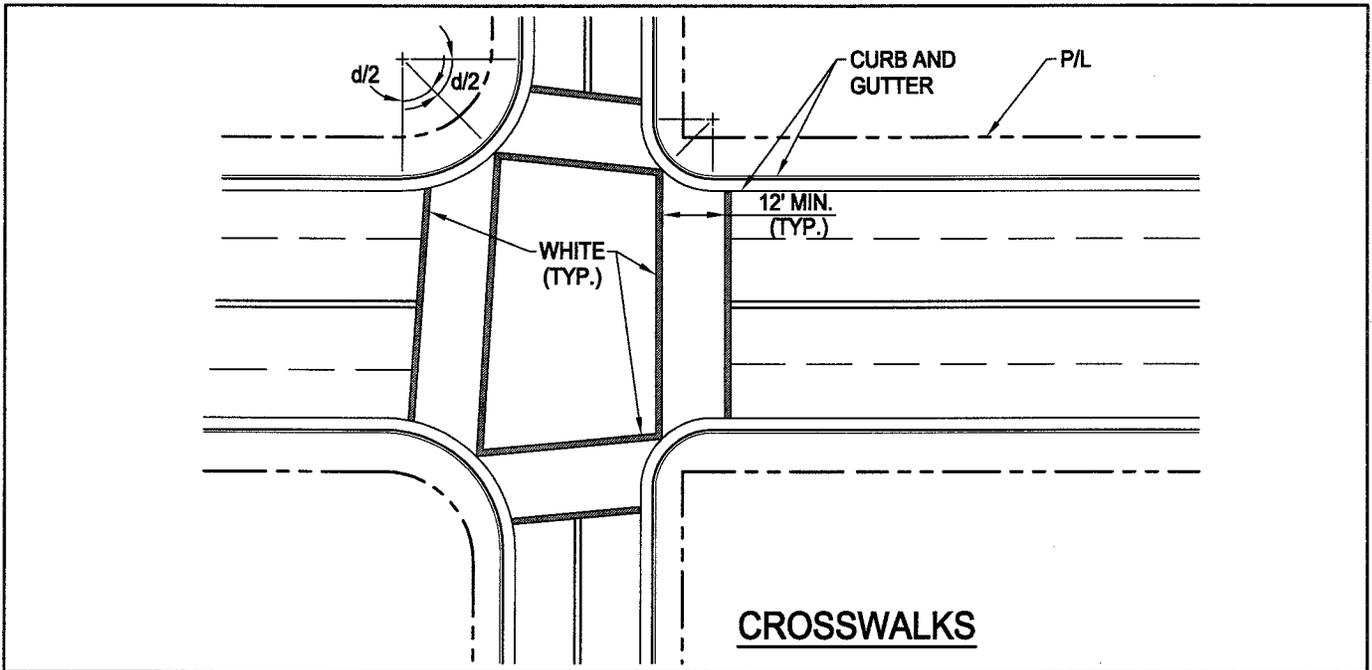
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
CITY ENGINEER  
APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING

**BH 601**

SHEET 1 OF 1



**NOTES:**

1. ALL CROSSWALK LINES SHALL BE 12" STROKE.
2. CROSSWALK WIDTH SHALL BE EQUAL TO ADJACENT MAXIMUM SIDEWALK WIDTH, BUT NO LESS THAN 12 FEET.
3. OMIT LEGEND ON INTERSECTION APPROACHES WHEN SIGNALS, STOP OR YIELD SIGNS ARE IN PLACE.
4. REFER TO M.U.T.C.D CA SUPPLEMENT (LATEST EDITION).

# CROSSWALKS STRIPING

REVISIONS		
MARK	DATE	DESCRIPTION



## CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE 7-30-09

APPROVED

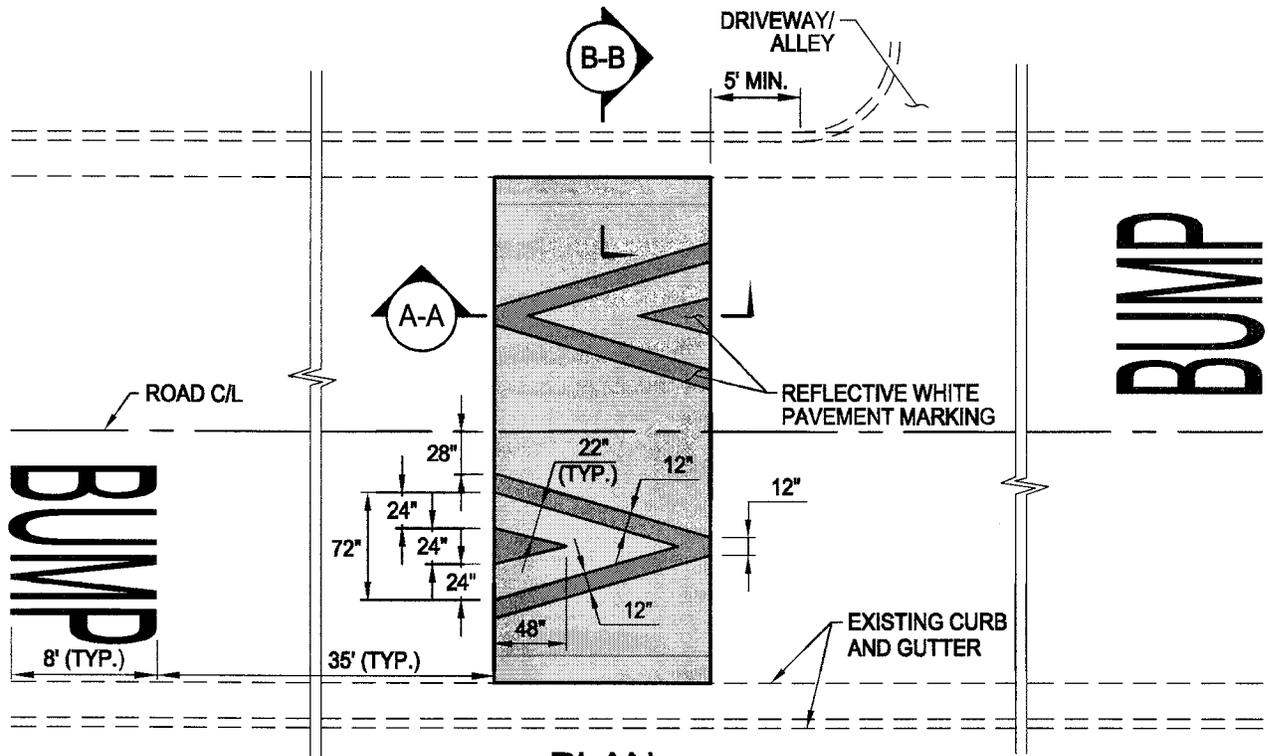
*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 7-31-09

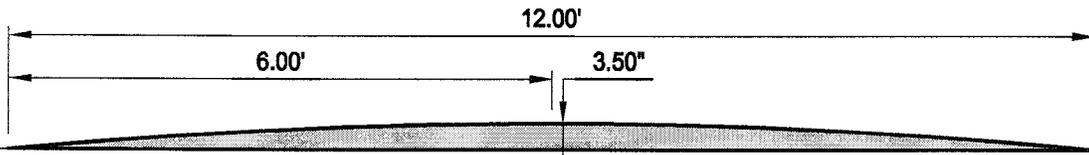
STANDARD DRAWING

**BH 602**

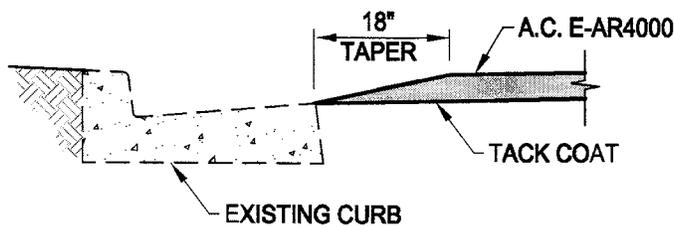
SHEET 1 OF 1



**PLAN**



**SECTION A-A**



**SECTION B-B**

**INSTALLATION NOTES:**

1. SPEED HUMPS SHALL NOT BE PLACED OVER MANHOLES, WATERGATES, JUNCTION CHAMBERS, ETC.
2. EDGE OF SPEED HUMP SHALL BE 5 FEET MINIMUM FROM EDGE OF DRIVEWAY.
3. WHENEVER POSSIBLE SPEED HUMPS SHALL BE PLACED AT PROPERTY LINES INSTEAD OF MID-LOT.
4. WHENEVER POSSIBLE SPEED HUMPS SHALL BE PLACED ADJACENT TO STREET LIGHTS.

**SPEED HUMP DETAIL**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE 7-30-09

APPROVED

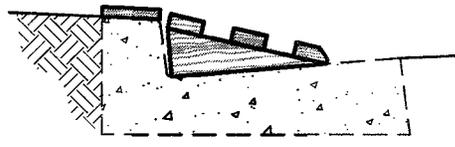
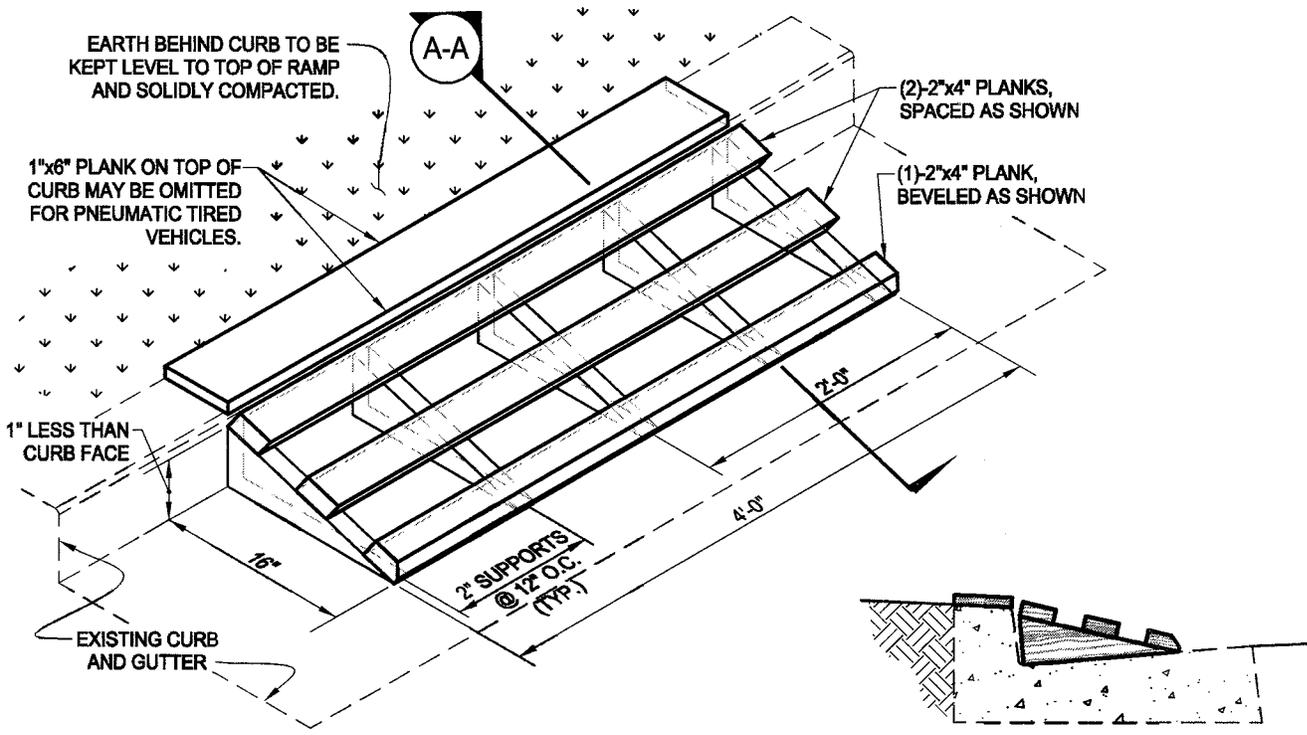
*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE 7-31-09

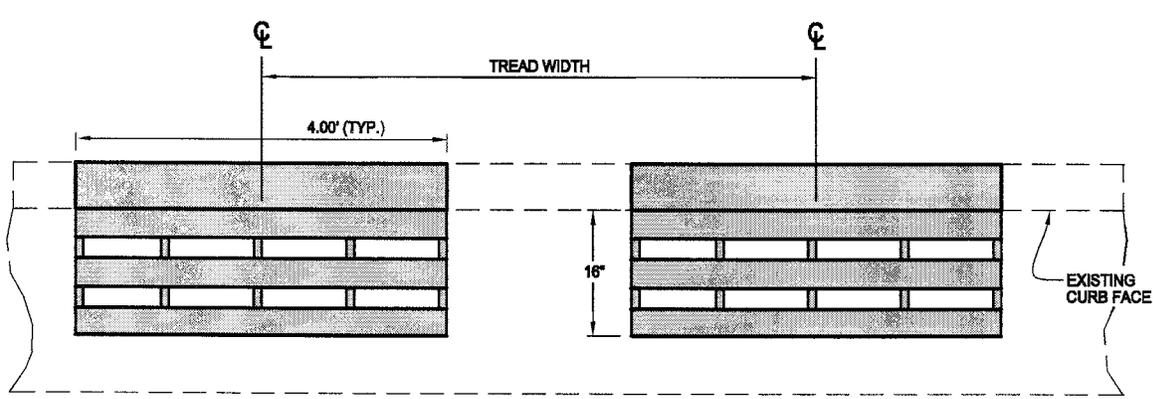
STANDARD DRAWING

**BH 603**

SHEET 1 OF 1



**TEMPORARY CURB RAMP DETAIL**



TWO RAMPS SPACED FOR VEHICLES

**TEMPORARY CURB RAMP PLAN**  
NOT TO SCALE

**TEMPORARY CURB RAMP**

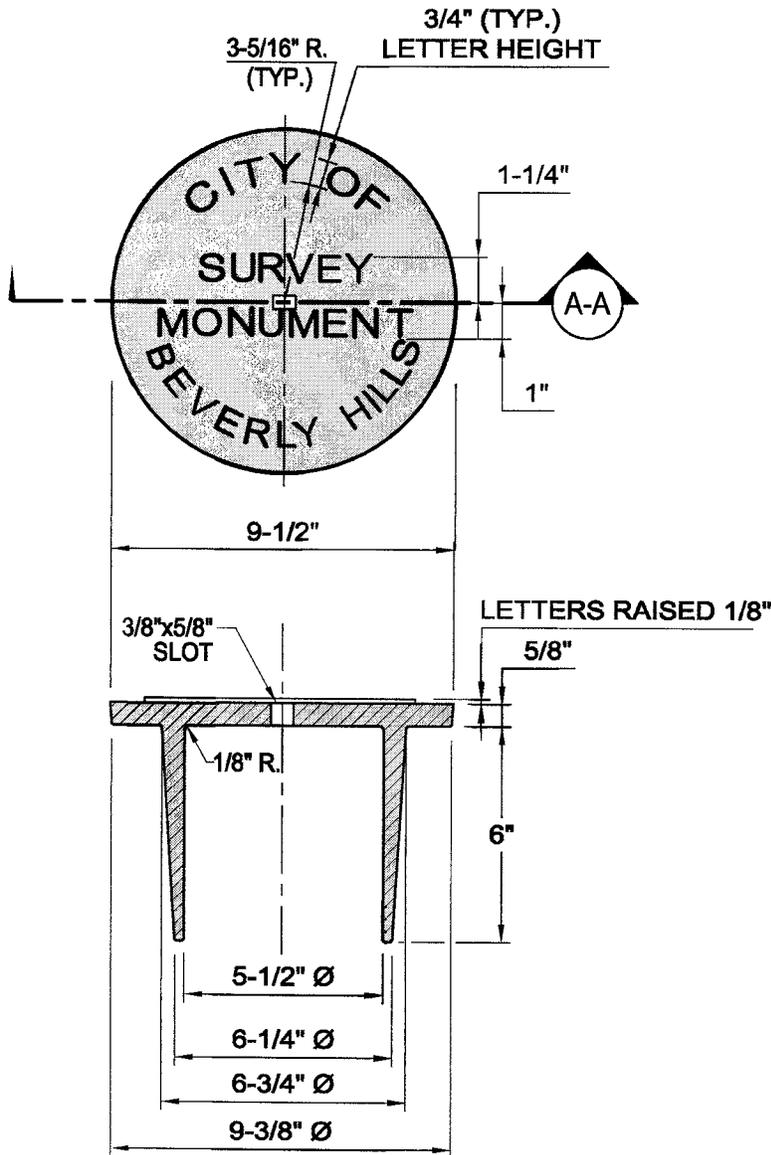
REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *Chris T...* DATE 7-30-09  
CITY ENGINEER  
APPROVED *Russell...* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 604**  
SHEET 1 OF 1



**SPECIFICATIONS:**

ALL MONUMENT COVERS SHALL BE MADE OF CAST IRON IN ACCORDANCE WITH A.S.T.M STANDARD SPECIFICATIONS A48M-03, CLASS 30, EXCEPT THAT NO TRANSVERSE TEST WILL BE REQUIRED.

ALL MONUMENT COVERS SHALL BE MADE TO THE DIMENSIONS AS SHOWN HEREON, SHALL BE OF UNIFORM THICKNESS AND FREE FROM FLAWS OR DEFECTS. ALL LETTERING SHALL BE RADIALY PLACED, UNIFORM IN SIZE AND SHALL CONFORM TO THE DIMENSIONS AS SHOWN HEREON WITHOUT FLAWS OR IRREGULAR LETTERING.

**SECTION A-A**

**NOTES:**

1. ALL RADII TO BE 1/16" UNLESS OTHERWISE SPECIFIED.
2. ALL DRAFT TO BE 1-1/2° UNLESS OTHERWISE SPECIFIED.

# SURVEY MONUMENT COVER

REVISIONS		
MARK	DATE	DESCRIPTION



## CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

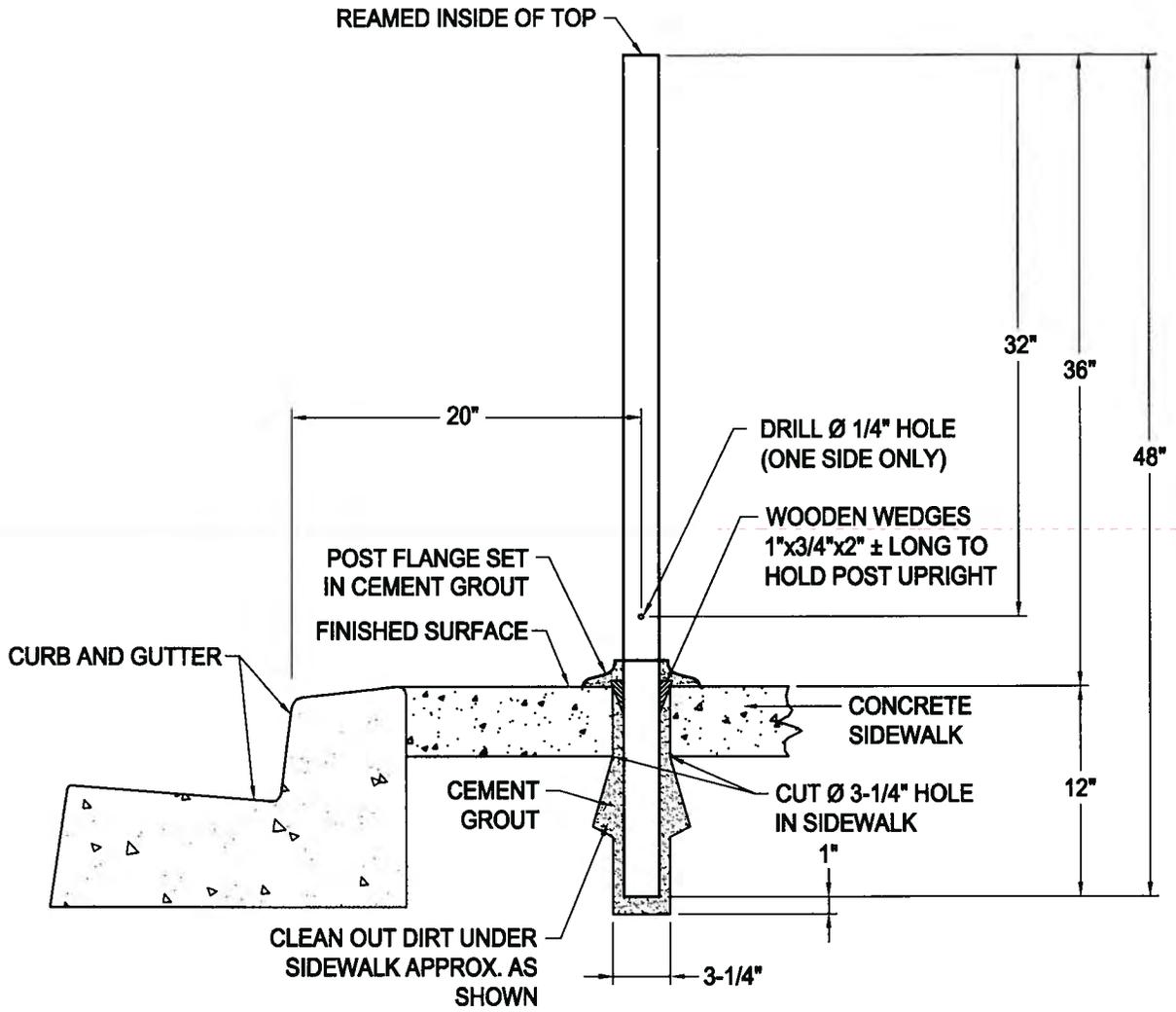
RECOMMENDED *Clinton* DATE 7-30-09  
CITY ENGINEER

APPROVED *Rogers* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING

**BH 605**

SHEET 1 OF 1



**SPECIFICATIONS FOR POST:**

STEEL PIPE, STANDARD WEIGHT, 2" X 48" LONG, ASTM-A120-63T, NEW AND UNUSED, HOT DIPPED GALVANIZED, TOP REAMED

**ADDITIONAL NOTES:**

1. POST TO BE LEVEL AND STRAIGHT
2. AREA TO BE LEFT CLEAN
3. CEMENT GROUT - 1 CEMENT : 2-1/2 SAND
4. TOP OF INSTALLED METER COIN/CARD SLOT SHALL NOT EXCEED 48" ABOVE FINISHED GRADE.

**PARKING METER POST INSTALLATION - CONCRETE SETTING**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*[Signature]*  
CITY ENGINEER

DATE

11-18-10

APPROVED

*[Signature]*  
PUBLIC WORKS DIRECTOR

DATE

11-18-10

STANDARD DRAWING

**BH 606**

SHEET OF

# **Section VII**

## **Water Pipe Line Installations**

## LEGEND

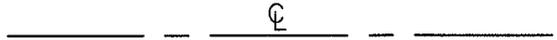
PROPOSED WATER MAIN



EXISTING WATER MAIN



ROAD CENTER LINE



DEPT. OF WATER & POWER SERVICE



P.T. & T.



SOUTHERN CALIFORNIA EDISON



SOUTHERN CALIFORNIA GAS



STORM DRAIN AND MANHOLE



SANITARY SEWER AND MANHOLE



CURB LINE



O.L.C.



## LEGEND

REVISIONS		
MARK	DATE	DESCRIPTION



### CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
CITY ENGINEER

APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 701**  
 SHEET 1 OF 1

## ABBREVIATIONS

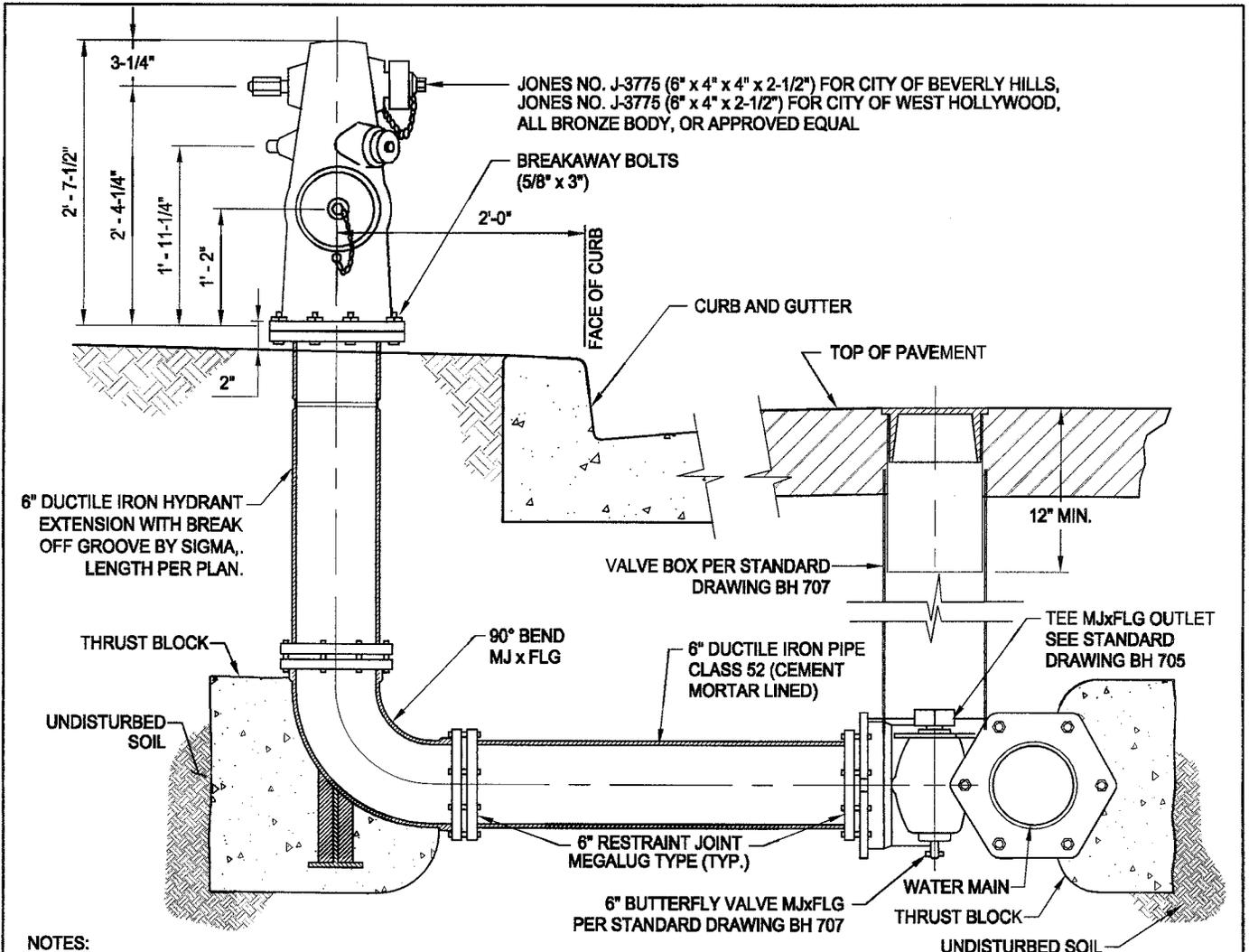
B.H.W.	BEVERLY HILLS WATER
D.W. & P.-W.S.	DEPARTMENT OF WATER & POWER, WATER SERVICE
P.T. & T	PACIFIC TELEPHONE & TELEGRAPH COMPANY
S.C.E.	SOUTHERN CALIFORNIA EDISON
S.C.G.	SOUTHERN CALIFORNIA GAS
S.D.M.H.	STORM DRAIN MAINTENANCE HOLE
S.S.M.H.	SANITARY SEWER MAINTENANCE HOLE
M.W.D.	METROPOLITAN WATER DISTRICT
O.L.C.	ORNAMENTAL LIGHTING CONDUIT
F.A.C.	FIRE ALARM CONDUIT
C.I.	CAST IRON
F.H.	FIRE HYDRANT
P/L	PROPERTY LINE

## ABBREVIATIONS

REVISIONS				<b>CITY OF BEVERLY HILLS, CALIFORNIA</b> DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	
MARK	DATE	DESCRIPTION			

RECOMMENDED	 CITY ENGINEER	DATE	7-30-09
APPROVED	 PUBLIC WORKS DIRECTOR	DATE	7-31-09

STANDARD DRAWING
<b>BH 702</b>
SHEET 1 OF 1



**NOTES:**

1. HYDRANT OUTLETS SHALL FACE THE STREET AT 45° OR AS DIRECTED BY THE CITY ENGINEER.
2. FINAL HYDRANT LOCATION TO BE DETERMINED BY THE CITY ENGINEER.
3. CONNECTION OF THE FIRE HYDRANT TO THE WATER MAIN MAY REQUIRE FITTING AND COUPLINGS NOT SHOWN HEREON. THE CONTRACTOR SHALL PROVIDE AND INSTALL AT NO EXTRA COST.
4. BREAKAWAY BOLTS SHALL BE USED TO INSTALL THE HYDRANT HEAD ON THE BURY.
5. THRUST BLOCKS SHALL BE PLACED PER STANDARD DRAWING BH 709 OR AS DIRECTED BY THE CITY ENGINEER.
6. FIRE HYDRANTS SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIFICATIONS.
7. ALL HYDRANTS WATER OUTLET CAP MATERIAL SHALL BE BRONZE.
8. ALL FITTINGS USED TO CONNECT THE FIRE HYDRANT TO THE WATER MAIN SHALL BE PROPERLY RESTRAINED WITH APPROVED STANDARD METHODS OR AS DIRECTED BY THE CITY ENGINEER.
9. TRENCHES WITHIN THE ROADWAY FOR LATERAL INSTALLATIONS OR REMOVALS SHALL BE BACKFILLED WITH A SAND SLURRY MIX AS DIRECTED BY THE CITY ENGINEER.
10. EXPOSED BOLT AND NUT ASSEMBLIES ON FLEXIBLE COUPLINGS AND/OR MECHANICAL JOINT FITTINGS SHALL BE COATED WITH TAR BITUMASTIC ENAMEL PRIOR TO BACKFILL.
11. SURFACE CONDITIONS SHALL BE RESTORED TO THE SATISFACTION OF THE CITY ENGINEER.

# FIRE HYDRANT ASSEMBLY (TYPICAL)

REVISIONS		
MARK	DATE	DESCRIPTION

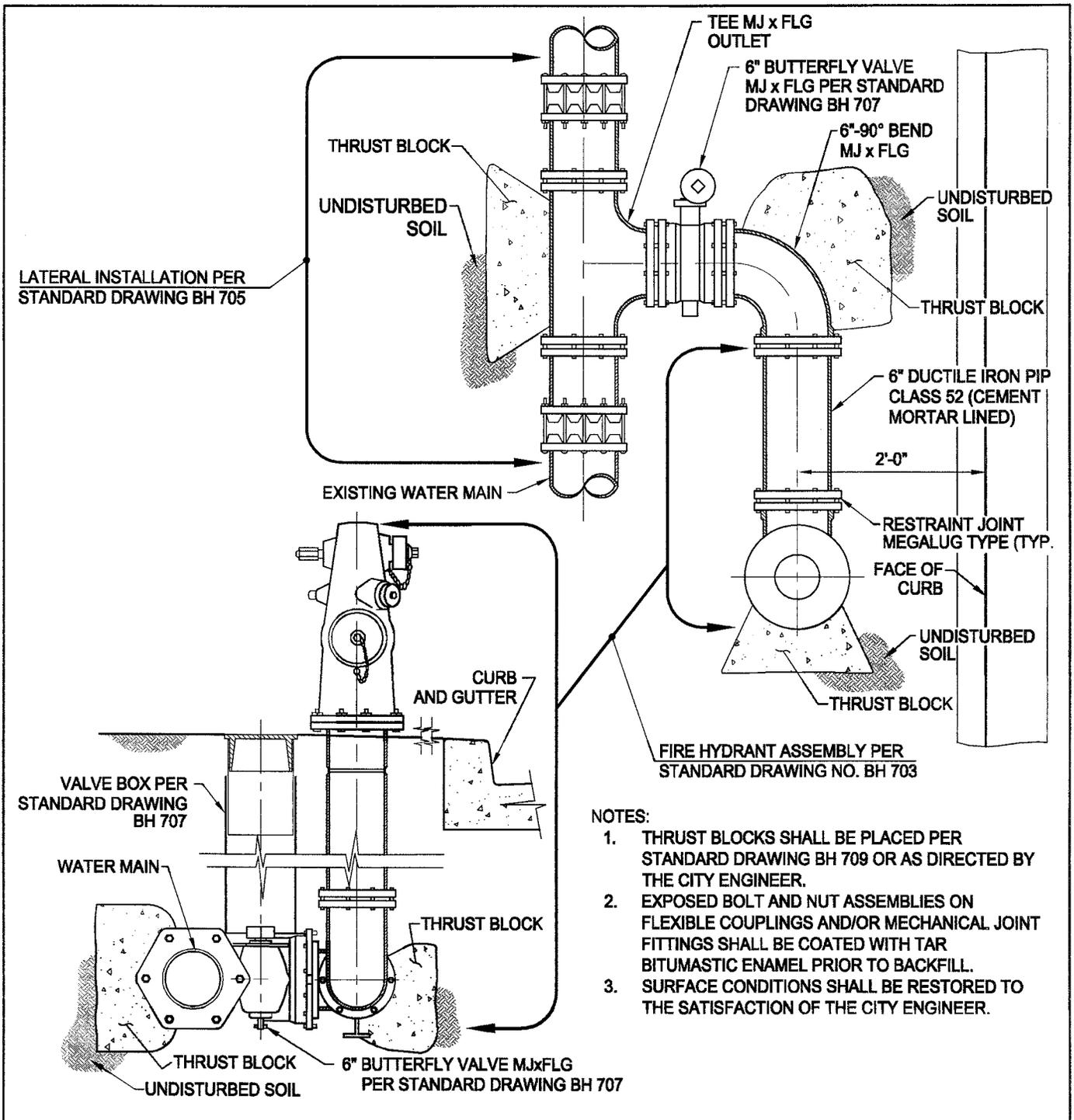


**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *Christina* DATE 7-30-09  
CITY ENGINEER

APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 703**  
 SHEET 1 OF 1



- NOTES:
1. THRUST BLOCKS SHALL BE PLACED PER STANDARD DRAWING BH 709 OR AS DIRECTED BY THE CITY ENGINEER.
  2. EXPOSED BOLT AND NUT ASSEMBLIES ON FLEXIBLE COUPLINGS AND/OR MECHANICAL JOINT FITTINGS SHALL BE COATED WITH TAR BITUMASTIC ENAMEL PRIOR TO BACKFILL.
  3. SURFACE CONDITIONS SHALL BE RESTORED TO THE SATISFACTION OF THE CITY ENGINEER.

## FIRE HYDRANT INSTALLATION WITH WATER MAIN BEHIND THE CURB

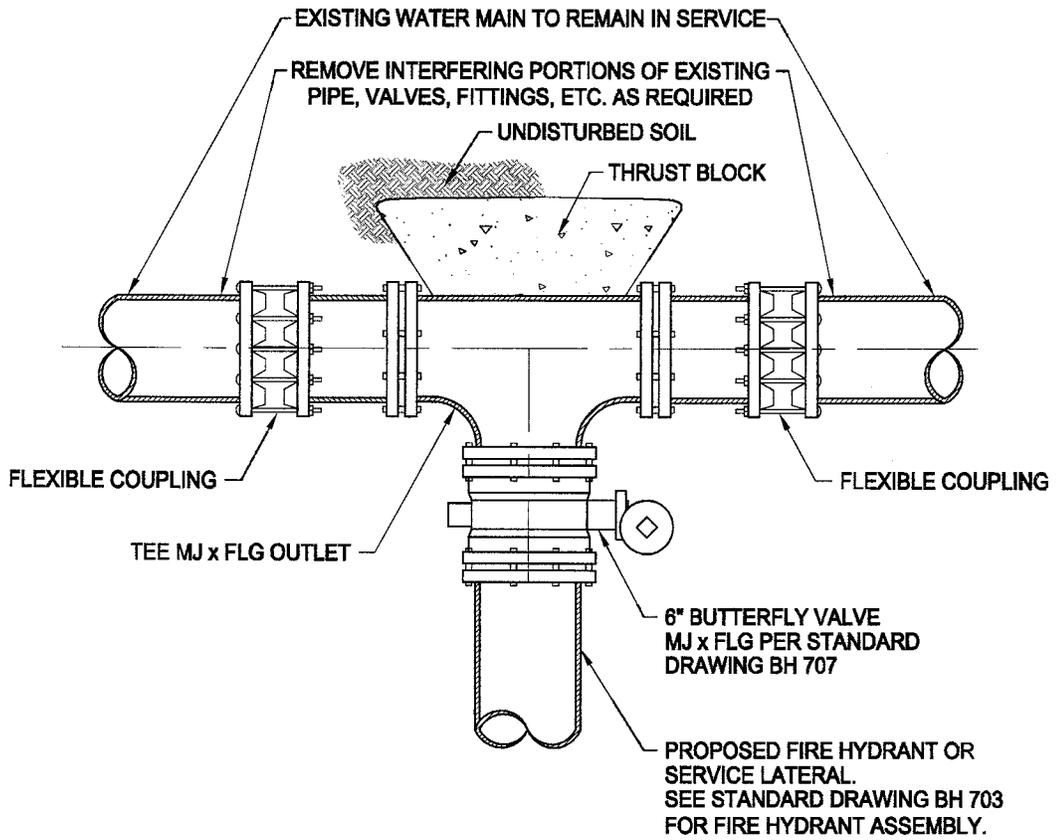
REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *Christina* DATE *7-30-09*  
CITY ENGINEER  
APPROVED *John K. ...* DATE *7-31-09*  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 704**  
SHEET 1 OF 1



**NOTES:**

1. THRUST BLOCKS SHALL BE PLACED PER STANDARD DRAWING BH 709 OR AS DIRECTED BY THE CITY ENGINEER.
2. EXPOSED BOLT AND NUT ASSEMBLIES ON FLEXIBLE COUPLINGS AND/OR MECHANICAL JOINT FITTINGS SHALL BE COATED WITH TAR BITUMASTIC ENAMEL PRIOR TO BACKFILL.
3. TRENCHES WITHIN THE ROADWAY FOR LATERAL INSTALLATIONS OR REMOVALS SHALL BE BACKFILLED WITH A SAND SLURRY MIX AS DIRECTED BY THE CITY ENGINEER.
4. SURFACE CONDITIONS SHALL BE RESTORED TO THE SATISFACTION OF THE CITY ENGINEER.

## LATERAL INSTALLATION (FIRE HYDRANT)

REVISIONS		
MARK	DATE	DESCRIPTION

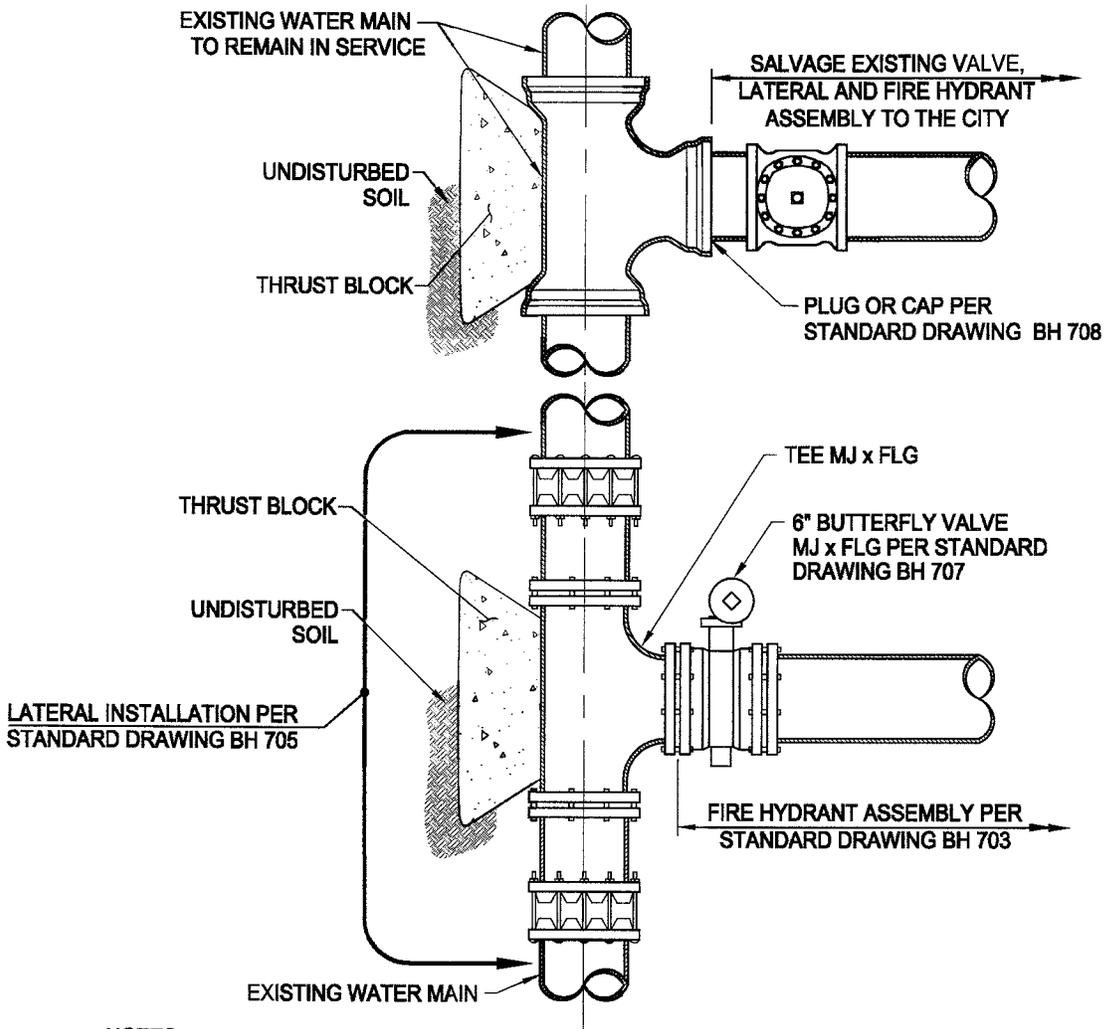


**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *C. J. ...* DATE *7-30-09*  
CITY ENGINEER

APPROVED *[Signature]* DATE *7-31-09*  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 705**  
 SHEET 1 OF 1



- NOTES:
1. THRUST BLOCKS PER STANDARD DRAWING NUMBER BH 709, ARE REQUIRED AT ALL PLUGS, TEES AND ENDS, OR AS DIRECTED BY THE CITY ENGINEER.
  2. EXPOSED BOLT AND NUT ASSEMBLIES ON FLEXIBLE COUPLINGS AND/OR MECHANICAL JOINT FITTINGS SHALL BE COATED WITH TAR BITUMASTIC ENAMEL PRIOR TO BACKFILL.
  3. ALL PERMANENT PLUGS OR CAPS, PER STANDARD DRAWING NO. BH 708, SHALL BE CAPABLE OF WITHSTANDING A 200 PSI TEST PRESSURE.
  4. FINAL FIRE HYDRANT LOCATION TO BE DETERMINED BY THE CITY ENGINEER.
  5. REMOVE EXISTING TEE, VALVE, LATERAL AND FIRE HYDRANT ASSEMBLY IF LOCATION REMAINS THE SAME.
  6. TRENCHES WITHIN THE ROADWAY FOR LATERAL INSTALLATIONS OR REMOVALS SHALL BE BACKFILLED WITH A SAND SLURRY MIX AS DIRECTED BY THE CITY ENGINEER.
  7. SURFACE CONDITIONS SHALL BE RESTORED TO THE SATISFACTION OF THE CITY ENGINEER.

## CONNECTION FOR UPGRADED FIRE HYDRANT INSTALLATION

REVISIONS		
MARK	DATE	DESCRIPTION



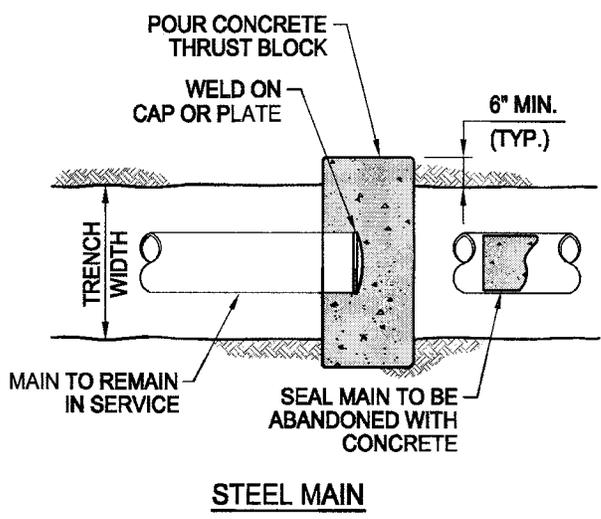
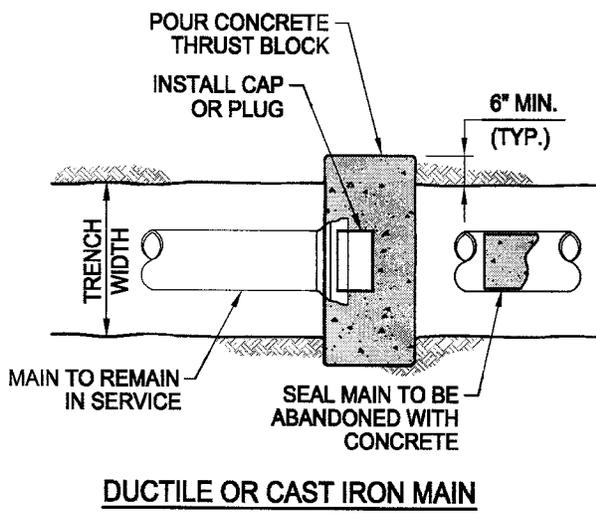
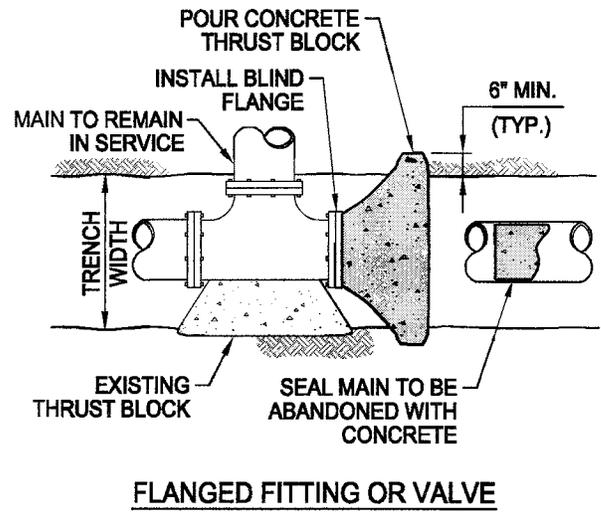
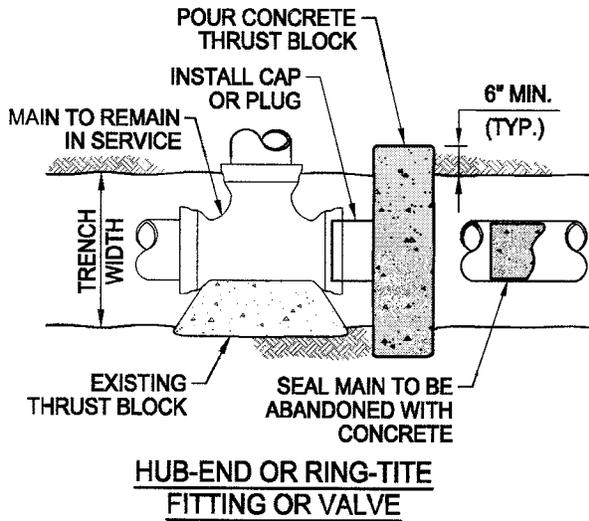
**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
CITY ENGINEER

APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 706**  
 SHEET 1 OF 1





**NOTES:**

1. CONCRETE SHALL BE 2000 P.S.I.
2. POUR CONCRETE THRUST BLOCKS AGAINST UNDISTURBED SOIL.
3. REMOVE INTERFERING PORTIONS OF MAIN TO BE ABANDONED.
4. USE STEEL ANCHOR RODS OR STRAPS ONLY WHERE PERMITTED BY THE ENGINEER.

## TYPICAL CAPS AND PLUGS

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *Clint...* DATE *7-30-09*  
CITY ENGINEER

APPROVED *Roy...* DATE *7-31-09*  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING

**BH 708**

SHEET 1 OF 1

### HORIZONTAL BENDS

NOMINAL PIPE SIZE (INCHES)	TEST PRESSURE (P.S.I.)	DEAD ENDS AND TEES			BENDS LESS THAN OR EQUAL TO ANGLE:								ALL BENDS
					11 - 1/4°		22 - 1/2°		45°		90°		
		A	B	C	A	B	A	B	A	B	A	B	
6	200	2'-6"	1'-6"	6"	1'-0"	1'-0"	2'-0"	1'-0"	3'-0"	1'-0"	3'-6"	1'-6"	8"
8	200	4'-6"	1'-6"	8"	1'-6"	1'-0"	3'-0"	1'-0"	3'-6"	1'-6"	5'-0"	2'-0"	10"
10	200	5'-6"	2'-0"	10"	2'-0"	1'-0"	3'-0"	1'-6"	4'-0"	2'-0"	6'-0"	2'-6"	1'-0"
12	200	7'-6"	2'-0"	1'-0"	2'-0"	1'-6"	3'-0"	2'-0"	4'-6"	2'-6"	7'-0"	3'-0"	1'-0"

### VERTICAL BENDS

NOMINAL PIPE SIZE (INCHES)	TEST PRESSURE (P.S.I.)	BENDS LESS THAN OR EQUAL TO ANGLE:											ALL BENDS	
		11 - 1/4°			22 - 1/2°			45°			90°			
		D	E	F	D	E	F	D	E	F	D	E		F
6	200	1'-6"	3'-0"	1'-0"	2'-0"	4'-0"	1'-0"	3'-0"	5'-6"	1'-0"	4'-0"	7'-0"	2'-0"	8"
8	200	2'-0"	4'-0"	1'-0"	2'-6"	5'-0"	1'-0"	3'-6"	7'-0"	2'-0"	5'-0"	10'-0"	3'-6"	10"
10	200	2'-0"	4'-6"	1'-0"	3'-0"	6'-0"	1'-6"	4'-0"	9'-0"	3'-0"	6'-0"	12'-0"	5'-0"	1'-0"
12	200	2'-6"	5'-0"	1'-0"	3'-6"	7'-0"	2'-0"	5'-0"	10'-0"	4'-0"	7'-0"	14'-0"	7'-0"	1'-0"

## CONCRETE THRUST BLOCK SCHEDULE

**NOTE:**

1. THRUST BLOCK SIZES ARE BASED ON A BEARING CAPACITY OF 1500 P.S.F., WITH A MINIMUM SOIL COVER OF 3'-0". IF SOIL COVER IS LESS THAN 3'-0", MULTIPLY BEARING AREA BY A FACTOR OF 1.5 FOR SOIL COVER OF 2'-0" TO 3'-0", OR BY A FACTOR OF THREE (3) FOR SOIL COVER OF 1'-0" TO 2'-0".
2. DIMENSIONS SHOWN REFER TO THRUST BLOCK TYPES SHOWN IN DETAIL, AND ARE MINIMUM VALUES ONLY.
3. CONCRETE MIX SHALL BE IN ACCORDANCE WITH SPECIFICATIONS FOR 3000 LBS. STRENGTH AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM 039.
4. ALL THRUST BLOCKS SHALL BE POURED SOLIDLY AGAINST FIRM, UNDISTURBED SOIL.
5. IF SOILS HAVE BEEN PREVIOUSLY EXCAVATED AND BACKFILLED, CONTRACTOR SHALL NOTIFY CITY ENGINEER, WHO MAY DIRECT THAT THE DIMENSIONS SHOWN SHALL BE INCREASED BY A FACTOR OF 1.5.
6. CONCRETE POURED AGAINST PIPE FITTINGS SHALL NOT EXTEND BEYOND THE FITTING JOINTS WITHOUT THE APPROVAL OF THE CITY ENGINEER.
7. THRUST REACTION BACKING TYPE (SEE DRAWING) SHALL BE AS DIRECTED BY THE CITY ENGINEER.
8. THE ANGLE (θ) SHOWN IN THE DETAILS SHALL BE GREATER THAN 45° IN ALL CASES.

## CONCRETE THRUST BLOCKS

REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	

RECOMMENDED  DATE 7-30-09

APPROVED  DATE 7-31-09

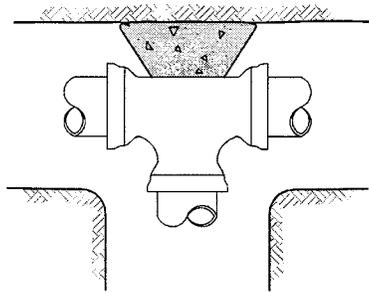
CITY ENGINEER

PUBLIC WORKS DIRECTOR

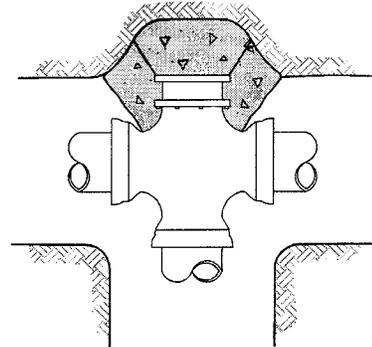
STANDARD DRAWING

# BH 709

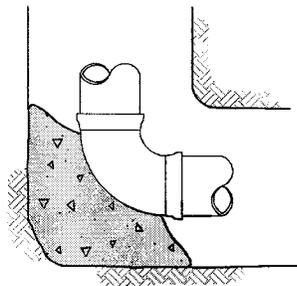
SHEET 1 OF 4



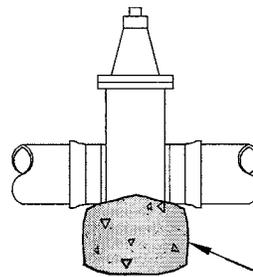
TEE



CROSS



90 DEGREE ELBOW



GATE VALVE

FOR AREA ON SIDE  
FACES USE VALVES  
REQUIRED FOR TEES

NOTE:

1. CONCRETE FOR THRUST BLOCK TO BE 2000 P.S.I.

## CONCRETE THRUST BLOCKS

REVISIONS		
MARK	DATE	DESCRIPTION



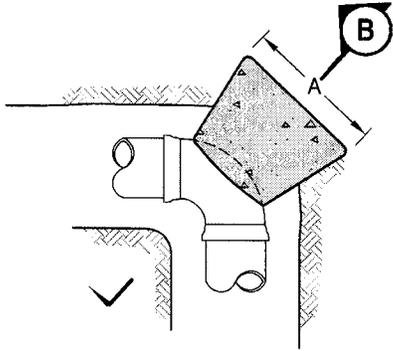
### CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

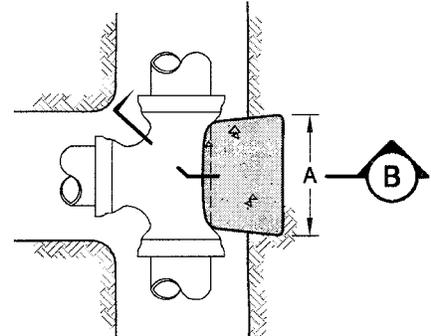
RECOMMENDED *Christina* DATE 7-30-09  
CITY ENGINEER

APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

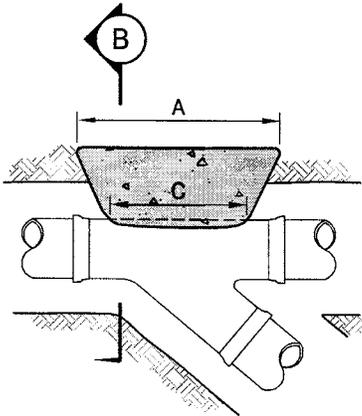
STANDARD DRAWING  
**BH 709**  
SHEET 2 OF 4



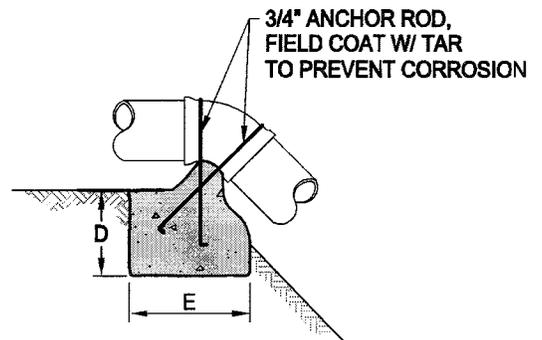
TYPE I



TYPE II

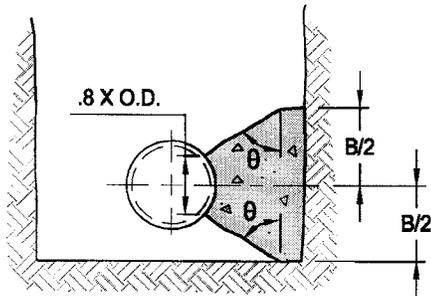


TYPE III



MAKE BLOCK WIDTH OF TRENCH

TYPE IV



SECTION B

**NOTE:**

1. SEE STANDARD DRAWING NO. BH 711, SHT. 1 FOR THRUST BLOCK SCHEDULE AND NOTES.

# CONCRETE THRUST BLOCKS

**REVISIONS**

MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*Clint...*  
CITY ENGINEER

DATE 7-20-09

APPROVED

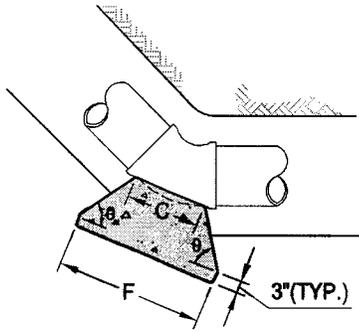
*...*  
PUBLIC WORKS DIRECTOR

DATE 7-31-09

STANDARD DRAWING

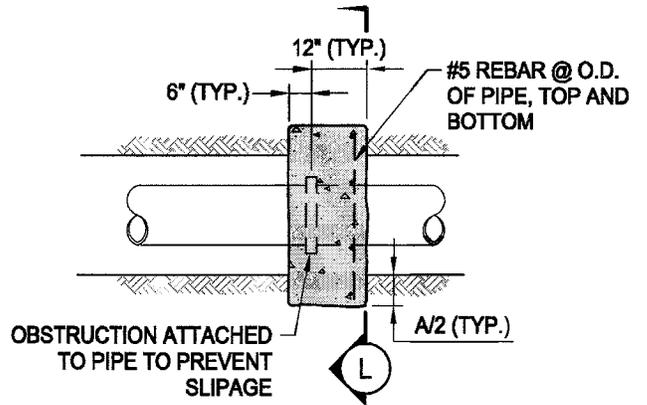
**BH 709**

SHEET 3 OF 4



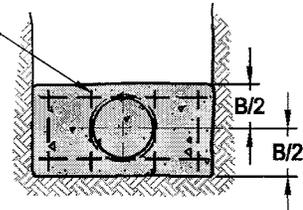
MAKE BLOCK FULL WIDTH OF TRENCH

**TYPE V**



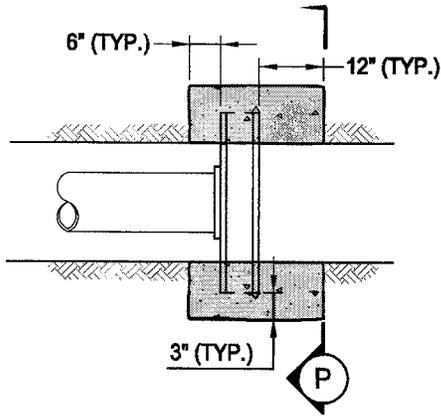
OBSTRUCTION ATTACHED TO PIPE TO PREVENT SLIPAGE

#5 @ 12" O.C. MAX. MIN. 2 REQUIRED EACH SIDE

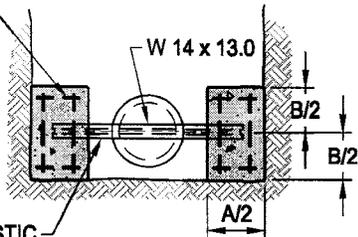


**SECTION L**

**TYPE VI**



#5 @ 12" O.C. MAX. MIN. 2 REQUIRED, TOP AND BOTTOM EACH SIDE



WRAP WITH PLASTIC LINER TO PREVENT CORROSION

**SECTION P**

**TYPE VII**

NOTE:

1. SEE STANDARD DRAWING NO. BH 711, SHT. 1 FOR THRUST BLOCK SCHEDULE AND NOTES.

# CONCRETE THRUST BLOCKS

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

*Oliver J. ...*  
CITY ENGINEER

DATE 7-30-09

APPROVED

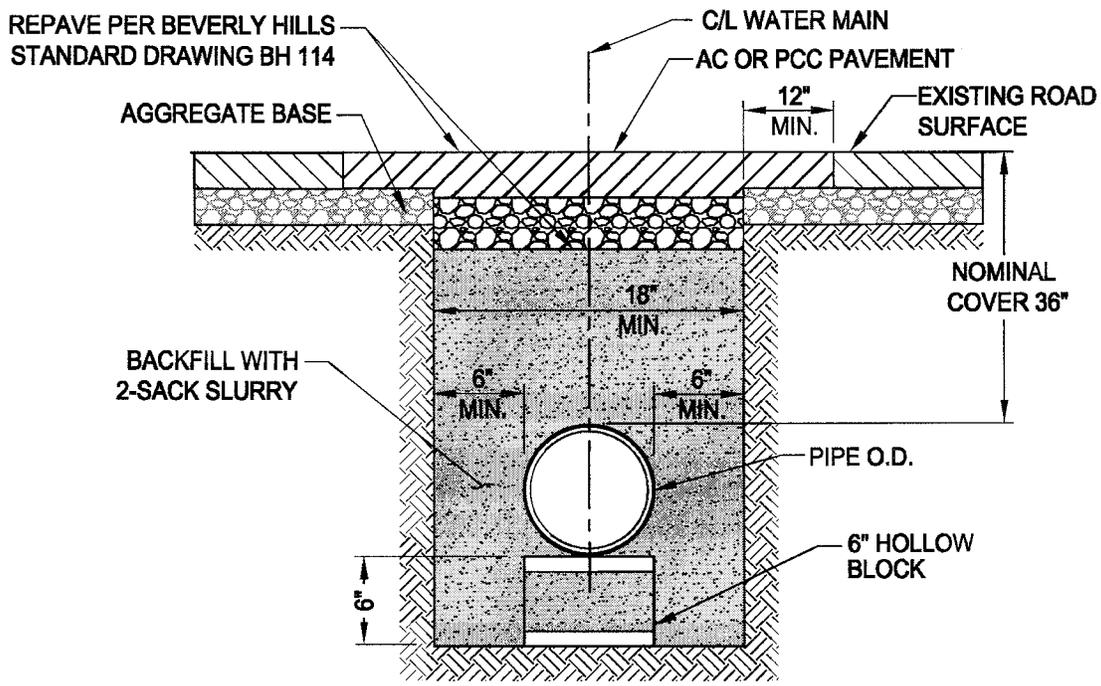
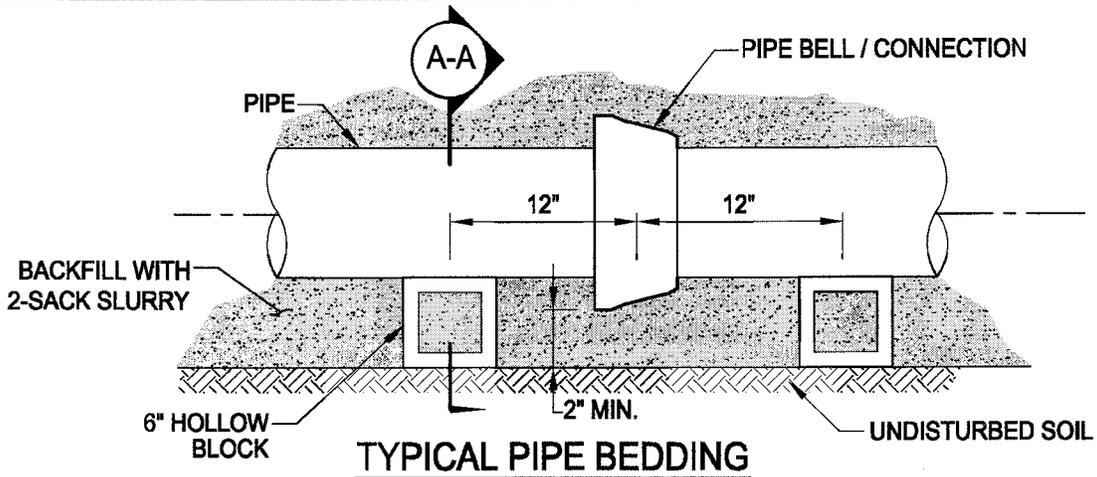
*Roger ...*  
PUBLIC WORKS DIRECTOR

DATE 7-31-09

STANDARD DRAWING

**BH 709**

SHEET 4 OF 4



**NOTES:**

1. WHEN TRENCH WORK CAN NOT BE COMPLETED WITHIN THE SAME WORKING DAY SEE BEVERLY HILLS STANDARD DRAWING BH 113 FOR STEEL PLATE PLACEMENT.
2. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").

**TRENCH FOR WATER LINE**

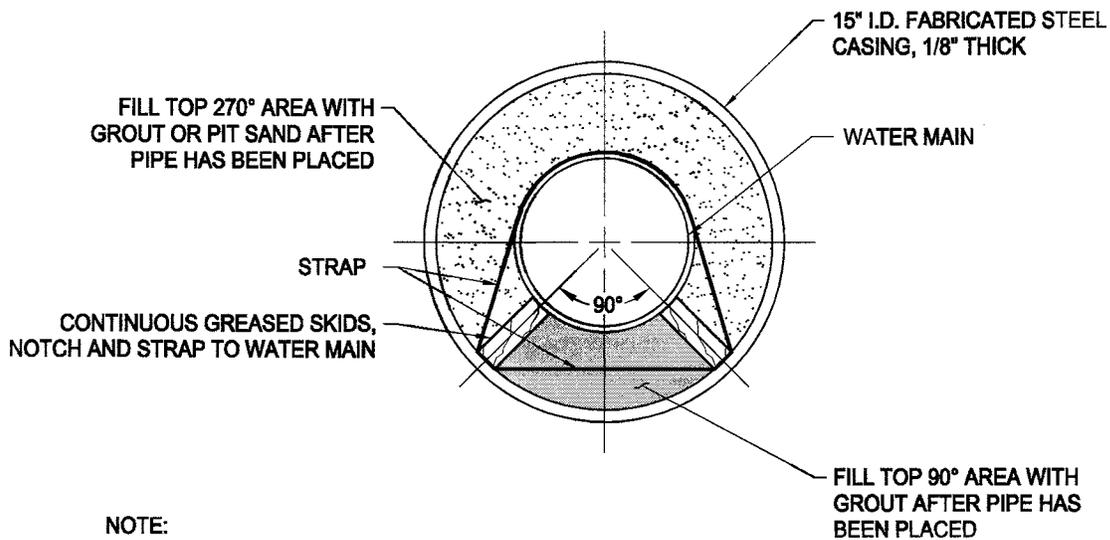
REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 7-30-09  
CITY ENGINEER  
 APPROVED *[Signature]* DATE 7-31-09  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 710**  
 SHEET 1 OF 1



NOTE:  
GROUT HOLES SHALL BE PROVIDED AT LOCATIONS ACCEPTABLE TO THE ENGINEER. FILL VOIDS OUTSIDE CASING PIPE WITH GROUT.

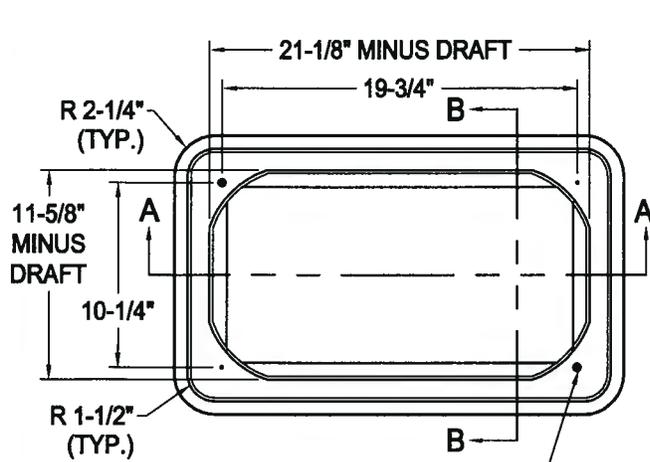
**JACKED CASING WITH WATER MAIN**  
NOT TO SCALE

**JACKED CASING WITH WATER MAIN DETAIL**

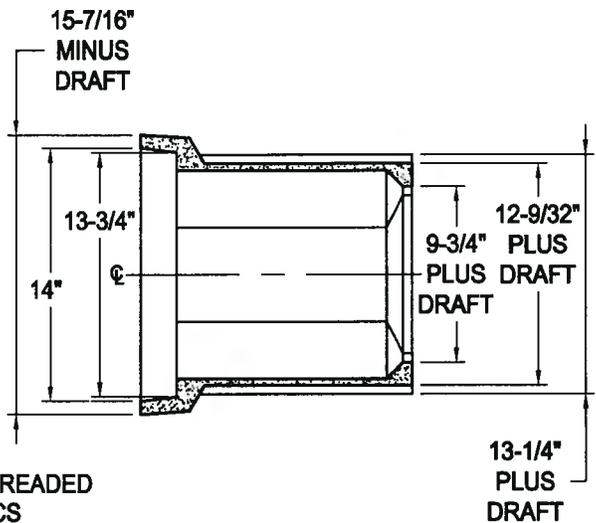
REVISIONS				CITY OF BEVERLY HILLS, CALIFORNIA	
MARK	DATE	DESCRIPTION		DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION CIVIL ENGINEERING DIVISION	

RECOMMENDED	 CITY ENGINEER	DATE	7-30-09
APPROVED	 PUBLIC WORKS DIRECTOR	DATE	7-31-09

STANDARD DRAWING
<b>BH 711</b>
SHEET 1 OF 1

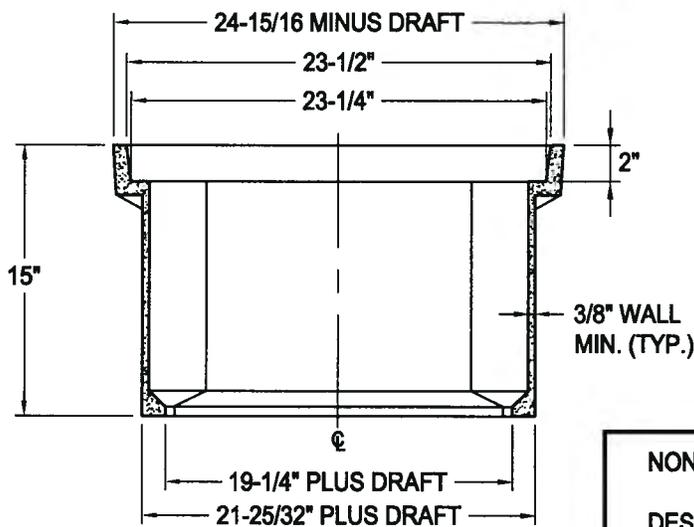


**PLAN VIEW**

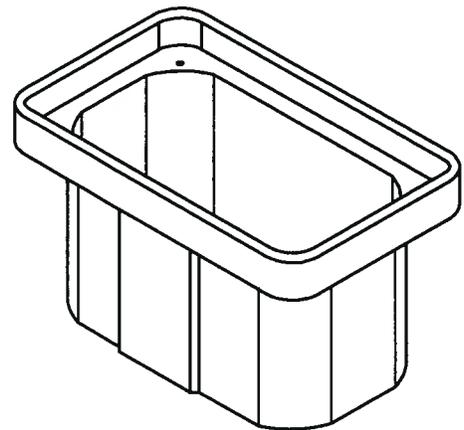


**SECTION B-B**

3/8-16 SST THREADED INSERT, 2 PLCS  
(4 PLCS OR FLOATING NUT ALSO AVAILABLE)



**SECTION A-A**



NON-TRAFFIC RATED	
DESCRIPTION OF MATERIAL:	POLYMER CONCRETE (GRAY)
TOLERANCE:	±1/8"
ESTIMATED PART WEIGHT:	65.0 LBS.

**WATER METER BOX & LID - 13" x 24"**

REVISIONS		
MARK	DATE	DESCRIPTION

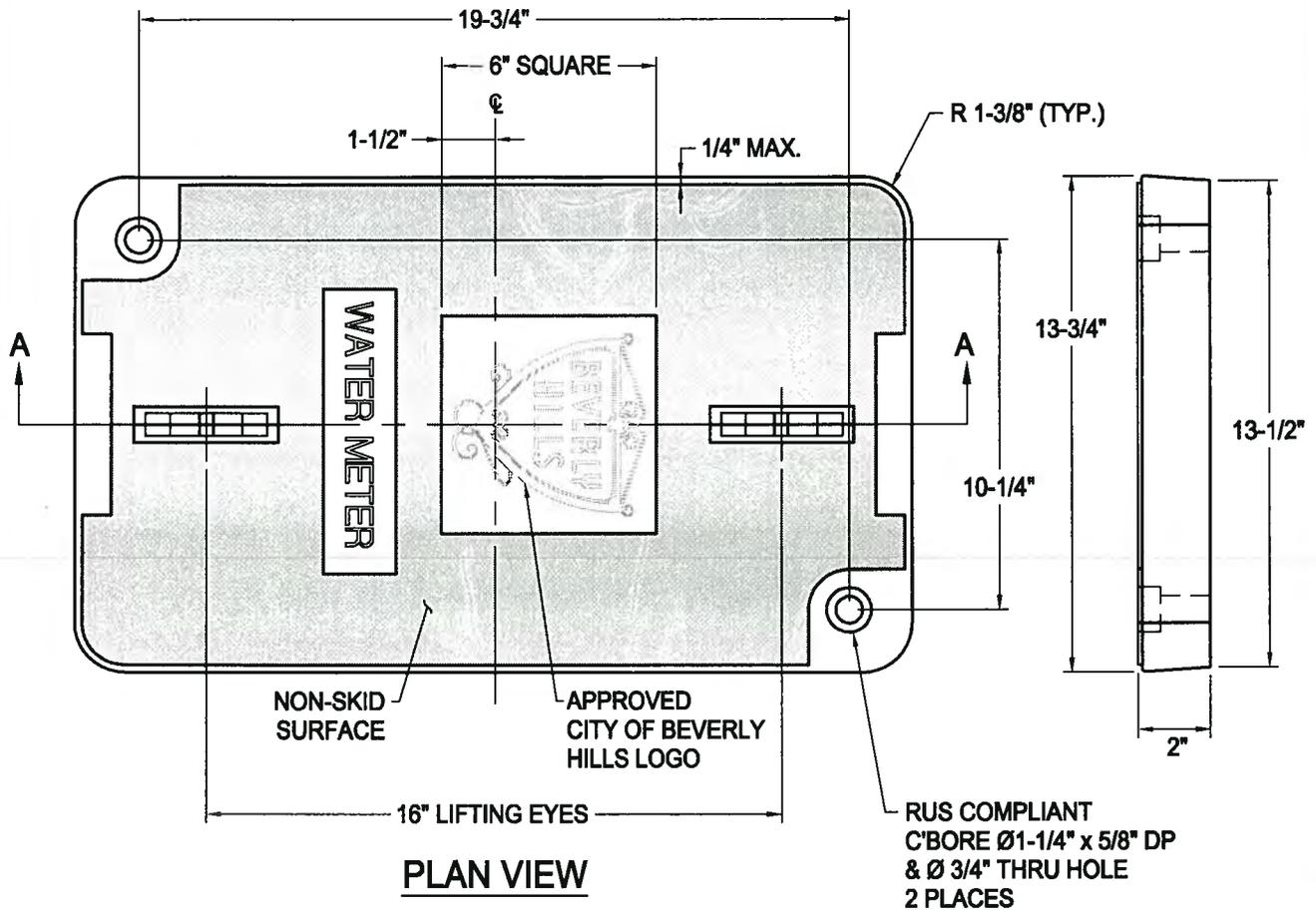


**CITY OF BEVERLY HILLS, CALIFORNIA**

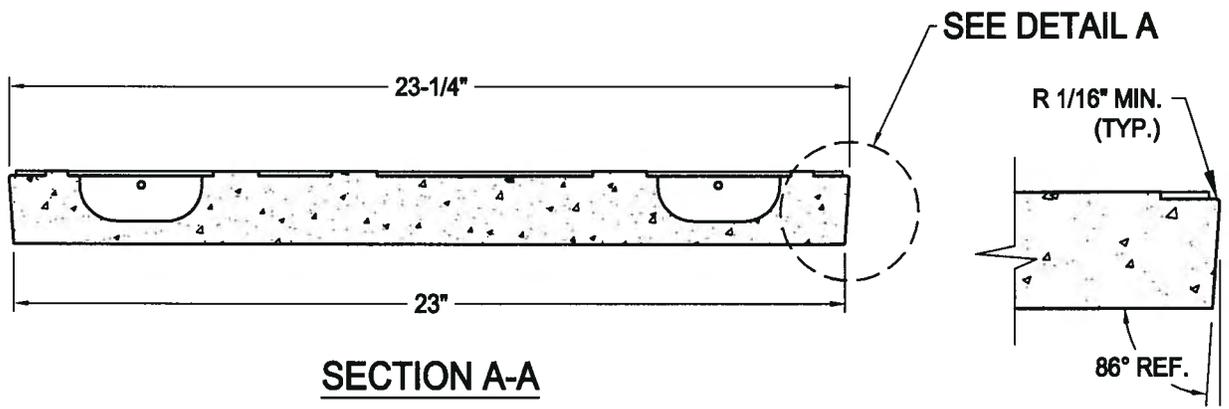
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *Chris T...* DATE 11-18-10  
CITY ENGINEER  
APPROVED *...* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 712**  
SHEET 1 OF 2



**PLAN VIEW**



**SECTION A-A**

**DETAIL A**

**WATER METER BOX & LID - 13" x 24"**

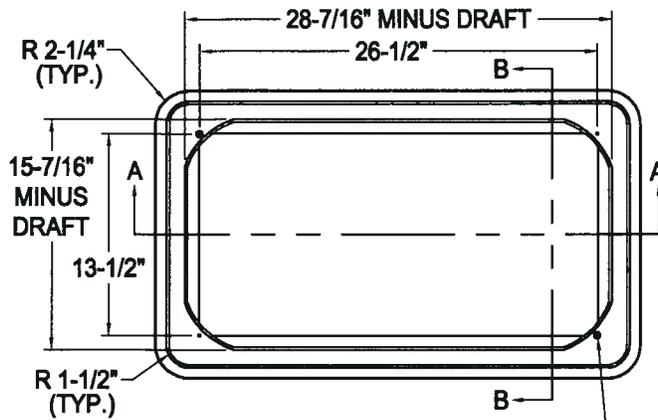
REVISIONS		
MARK	DATE	DESCRIPTION



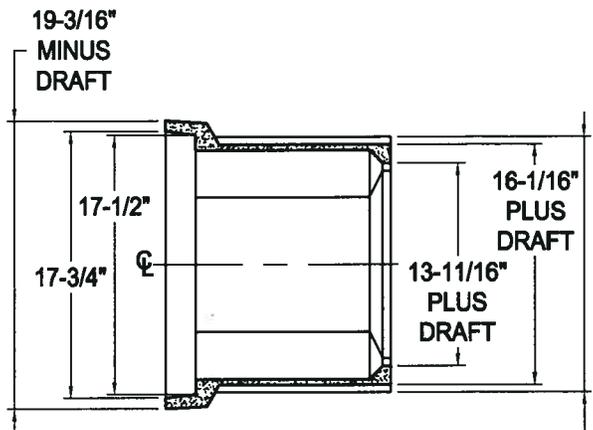
**CITY OF BEVERLY HILLS, CALIFORNIA**  
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *Christina* DATE *11-8-10*  
 CITY ENGINEER  
 APPROVED *Russell* DATE *11-18-10*  
 PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 712**  
 SHEET 2 OF 2

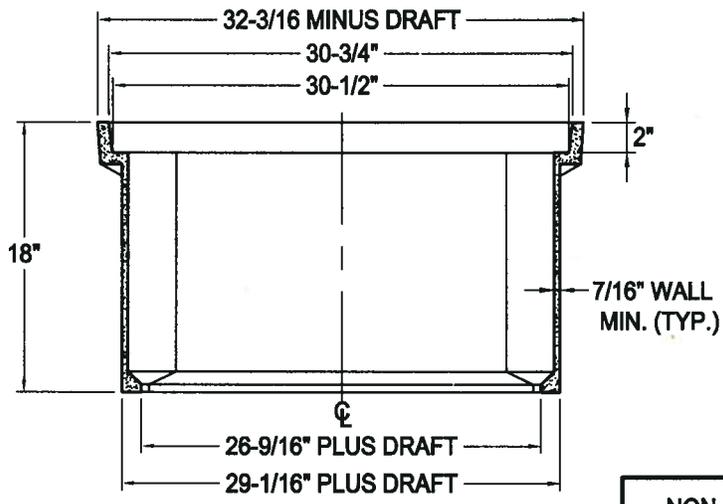


**PLAN VIEW**

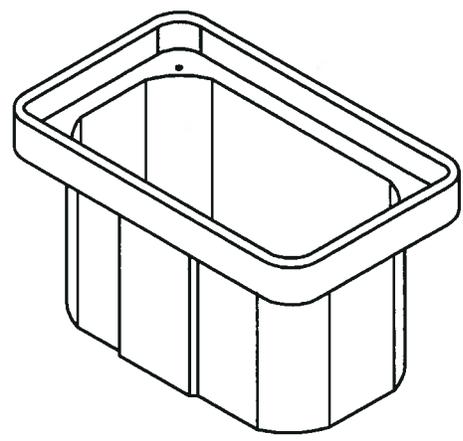


**SECTION B-B**

3/8-16 SST THREADED INSERT, 2 PLCS  
(4 PLCS OR FLOATING NUT ALSO AVAILABLE)



**SECTION A-A**



NON-TRAFFIC RATED	
DESCRIPTION OF MATERIAL:	POLYMER CONCRETE (GRAY)
TOLERANCE:	±1/8"
ESTIMATED PART WEIGHT:	99.0 LBS.

**WATER METER BOX & LID - 17" x 30"**

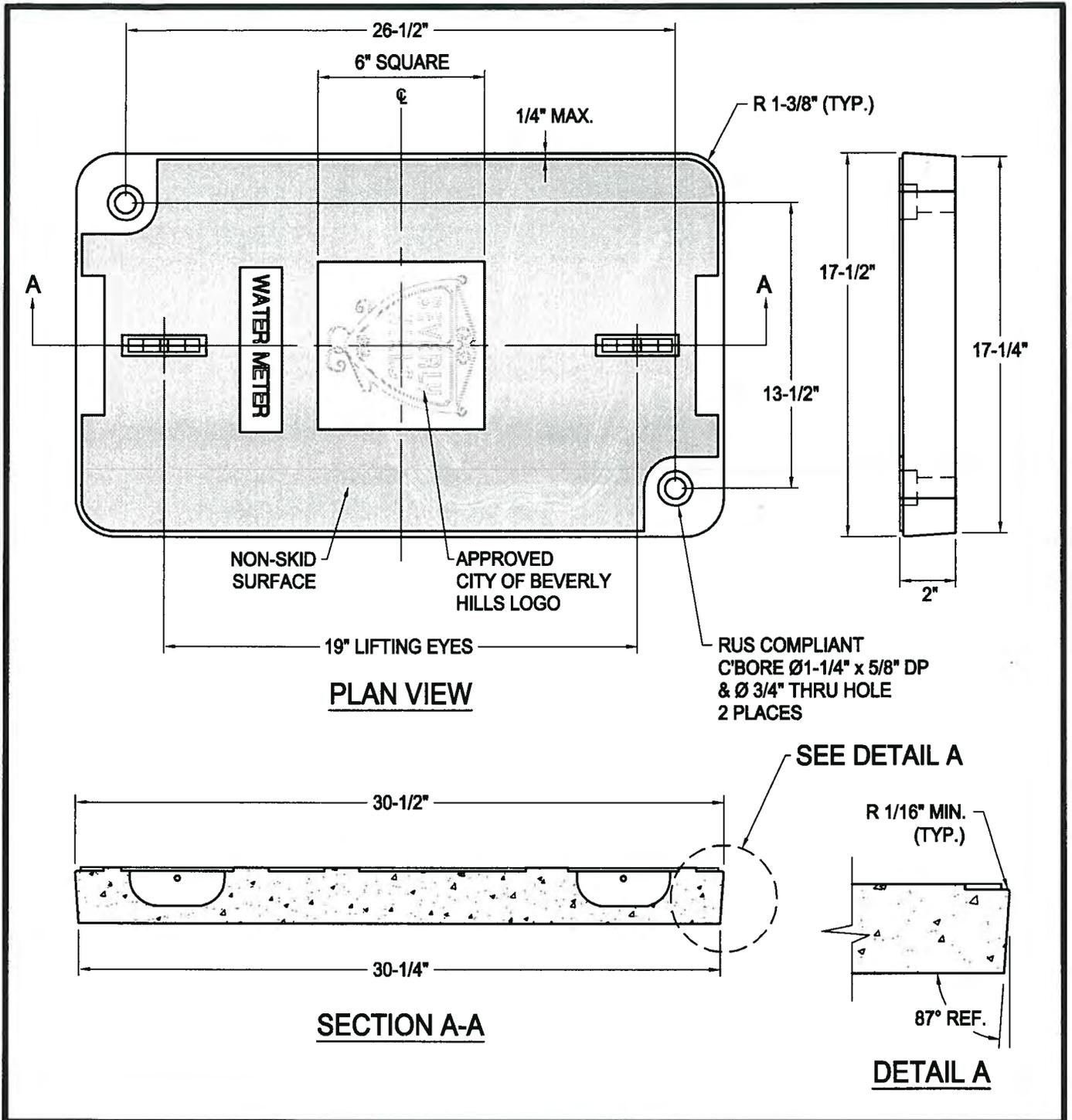
REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER  
APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

STANDARD DRAWING  
**BH 713**  
SHEET 1 OF 2



## WATER METER BOX & LID - 17" x 30"

REVISIONS		
MARK	DATE	DESCRIPTION



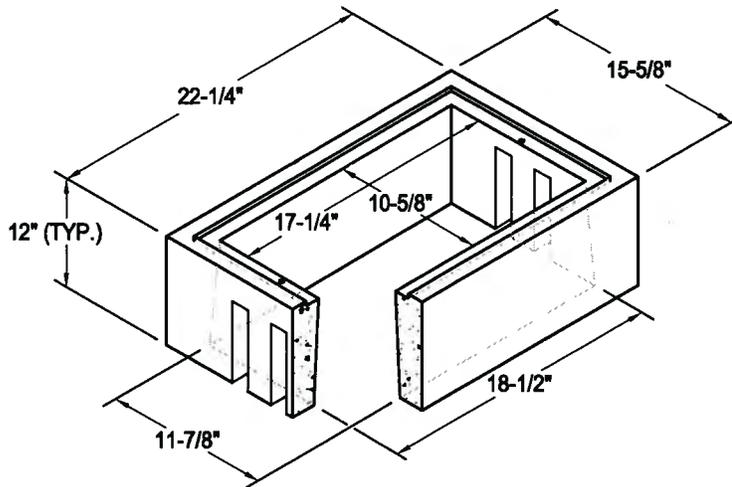
**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

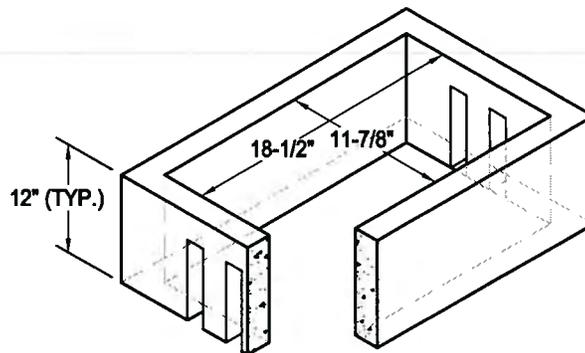
RECOMMENDED *Christina* DATE 11-18-10  
CITY ENGINEER

APPROVED *Ray Kent* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

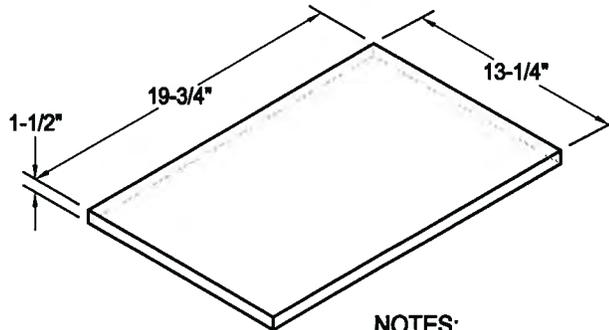
STANDARD DRAWING  
**BH 713**  
SHEET 2 OF 2



**TRAFFIC BOX**  
 REINFORCED CONCRETE  
 H-20 LOADING  
 130 lbs.



**EXTENSION**  
 REINFORCED CONCRETE  
 H-20 LOADING  
 129 lbs.



**SLAB**  
 REINFORCED CONCRETE  
 32 lbs.

NOTES:

- CALTRANS No. 3-1/2T STATE SPECIFICATIONS.

**10" x 17" WATER METER BOX & LID - H/20 LOADING**

REVISIONS		
MARK	DATE	DESCRIPTION

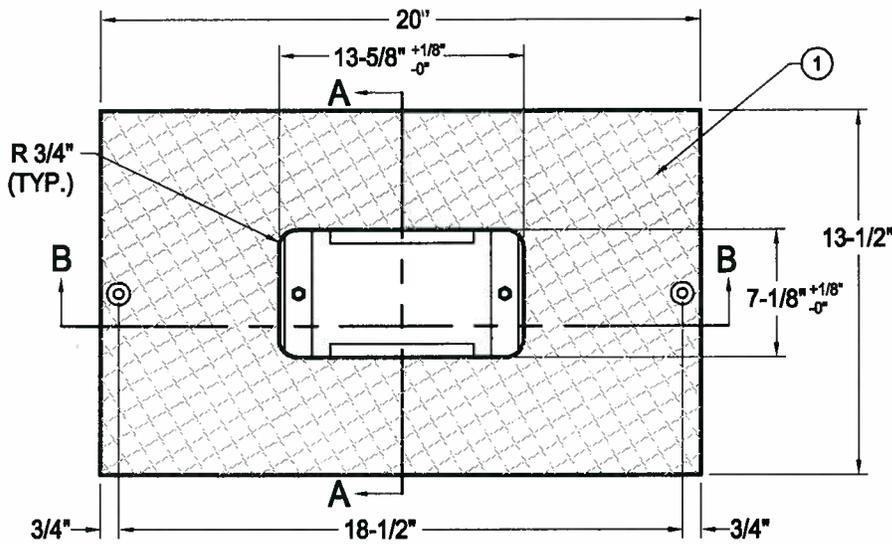


**CITY OF BEVERLY HILLS, CALIFORNIA**

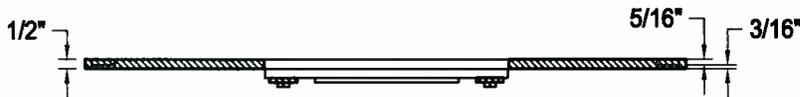
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *Christina* DATE *11-18-10*  
CITY ENGINEER  
 APPROVED *Mark Cut* DATE *11-18-10*  
PUBLIC WORKS DIRECTOR

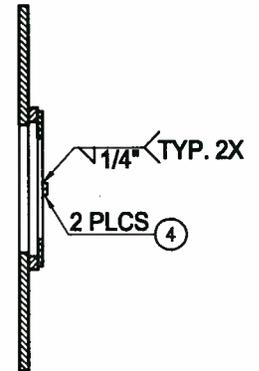
STANDARD DRAWING  
**BH 714**  
 SHEET 1 OF 2



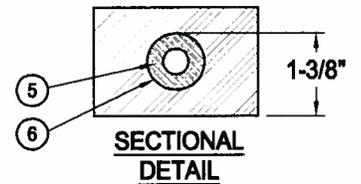
PLAN VIEW



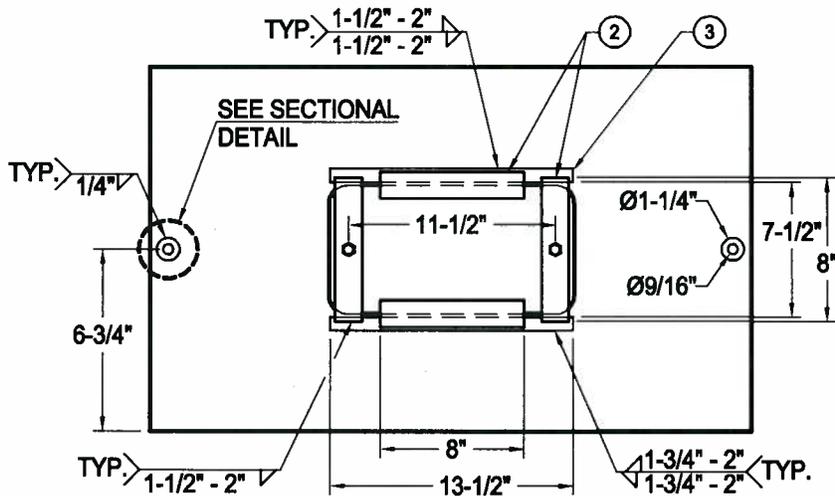
SECTION B-B



SECTION A-A



SECTIONAL  
DETAIL



**MATERIALS**

- ① - 1/2" DIAMOND CHECKER PLATE
- ② - 1/4" x 1-1/2" STEEL FLAT STOCK
- ③ - 3/4" x 1/2" STEEL FLAT STOCK
- ④ - 3/8" - 16 STEEL NUT
- ⑤ - 3/16" THICK WASHER TO BE WELDED PER ASTM A-706
- ⑥ - SURFACE AROUND WELD TO BE FLAT

**10" x 17" WATER METER BOX & LID - H/20 LOADING**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

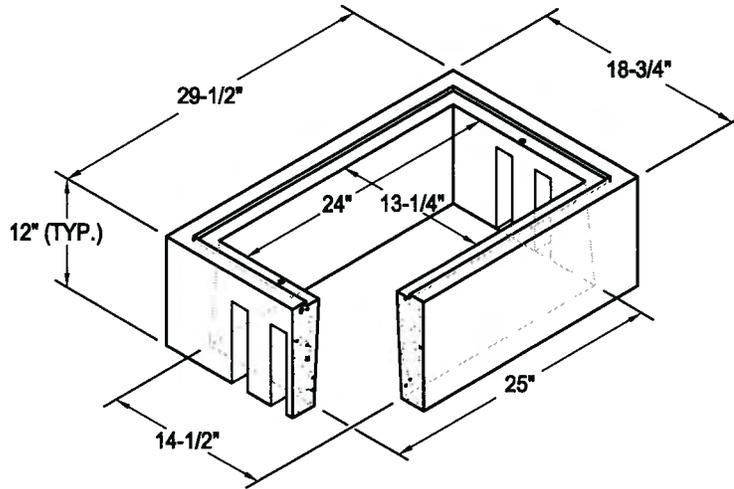
RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER

APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

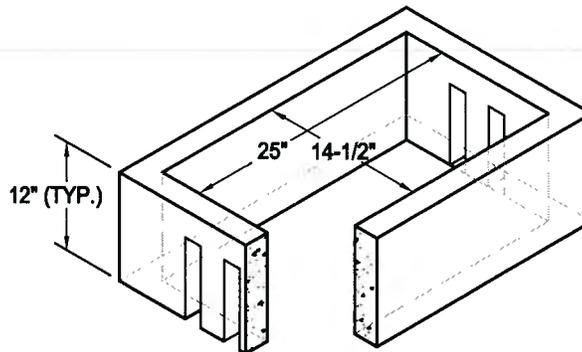
DATE 11-18-10

DATE 11-18-10

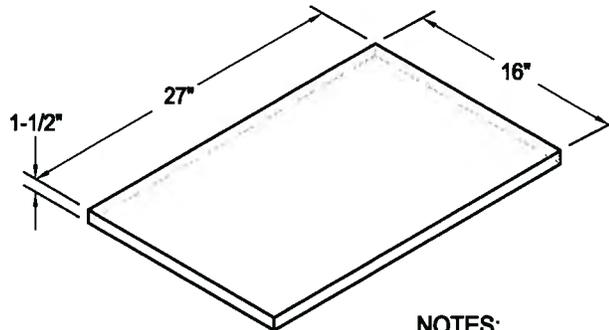
STANDARD DRAWING  
**BH 714**  
SHEET 2 OF 2



**TRAFFIC BOX**  
 REINFORCED CONCRETE  
 H-20 LOADING  
 166 lbs.



**EXTENSION**  
 REINFORCED CONCRETE  
 H-20 LOADING  
 163 lbs.



**SLAB**  
 REINFORCED CONCRETE  
 52 lbs.

**NOTES:**

- CALTRANS No. 5T STATE SPECIFICATIONS.

**13" x 24" WATER METER BOX & LID - H/20 LOADING**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

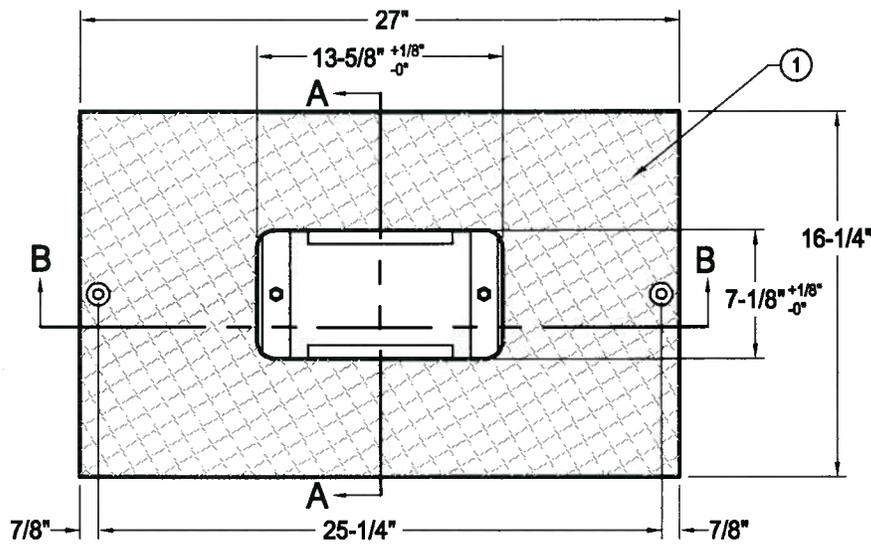
RECOMMENDED *[Signature]*  
 CITY ENGINEER

APPROVED *[Signature]*  
 PUBLIC WORKS DIRECTOR

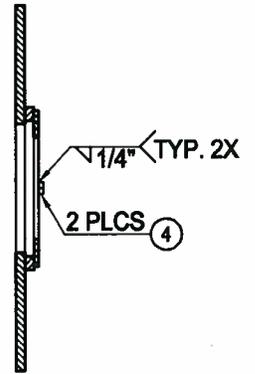
DATE 11-18-10

DATE 11-18-10

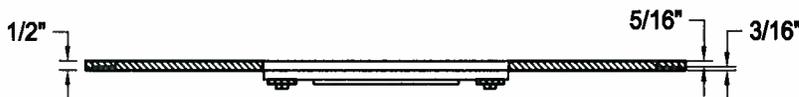
STANDARD DRAWING  
**BH 715**  
 SHEET 1 OF 2



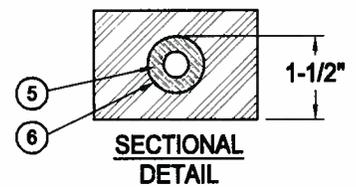
PLAN VIEW



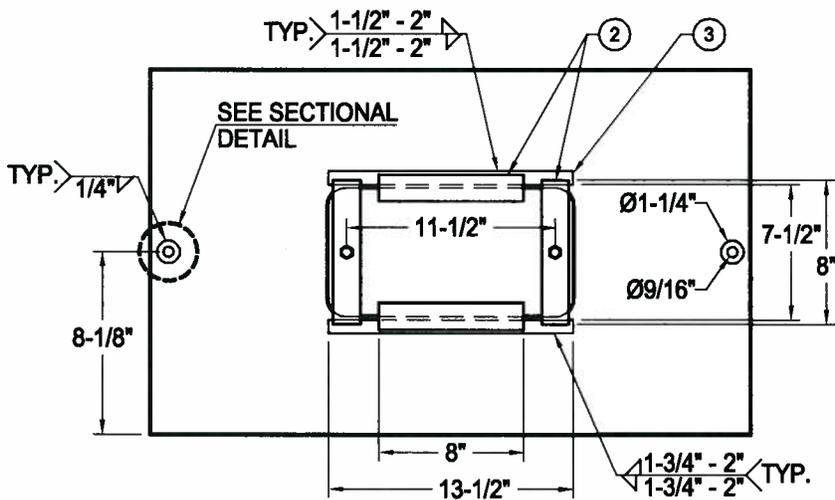
SECTION A-A



SECTION B-B



SECTIONAL  
DETAIL



**MATERIALS**

- ① - 1/2" DIAMOND CHECKER PLATE
- ② - 1/4" x 1-1/2" STEEL FLAT STOCK
- ③ - 3/4" x 1/2" STEEL FLAT STOCK
- ④ - 3/8" - 16 STEEL NUT
- ⑤ - 3/16" THICK WASHER TO BE WELDED PER ASTM A-706
- ⑥ - SURFACE AROUND WELD TO BE FLAT

**13" x 24" WATER METER BOX & LID - H/20 LOADING**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

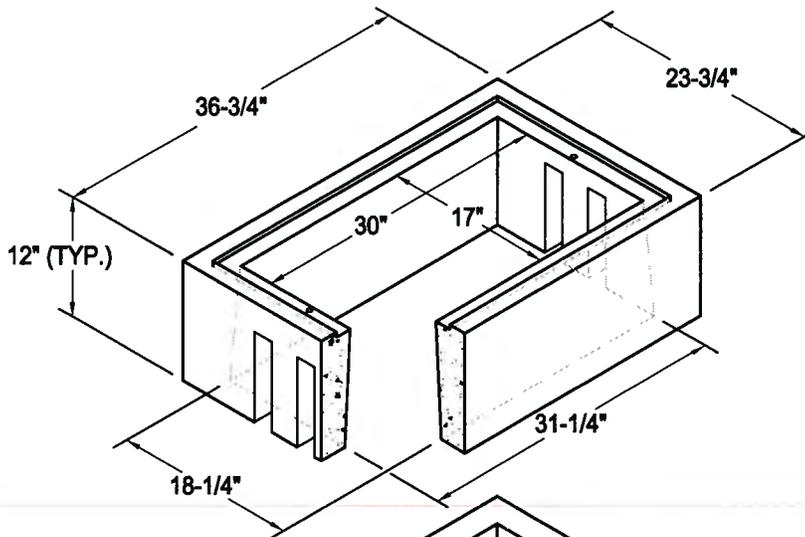
RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER

APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

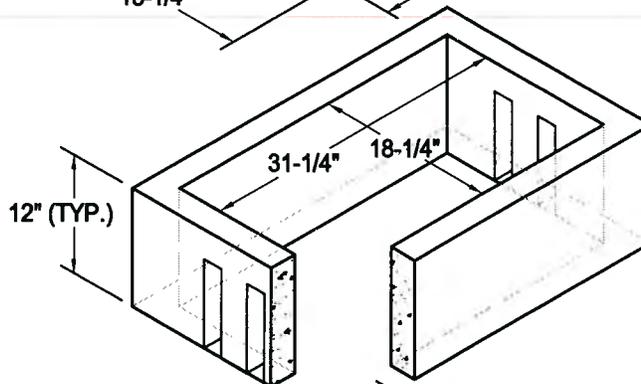
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DATE 11-18-10

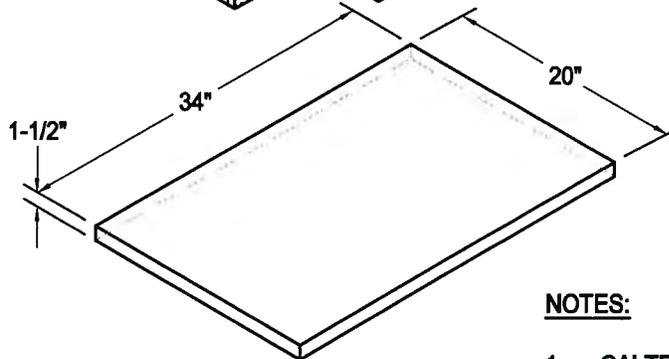
STANDARD DRAWING  
**BH 715**  
SHEET 2 OF 2



**BOX**  
 REINFORCED CONCRETE  
 H-20 LOADING  
 268 lbs.



**EXTENSION**  
 REINFORCED CONCRETE  
 H-20 LOADING  
 250 lbs.



**SLAB**  
 REINFORCED CONCRETE  
 108 lbs.

**NOTES:**

1. CALTRANS No. 6T STATE SPECIFICATIONS.

**17" x 30" WATER METER BOX & LID - H/20 LOADING**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

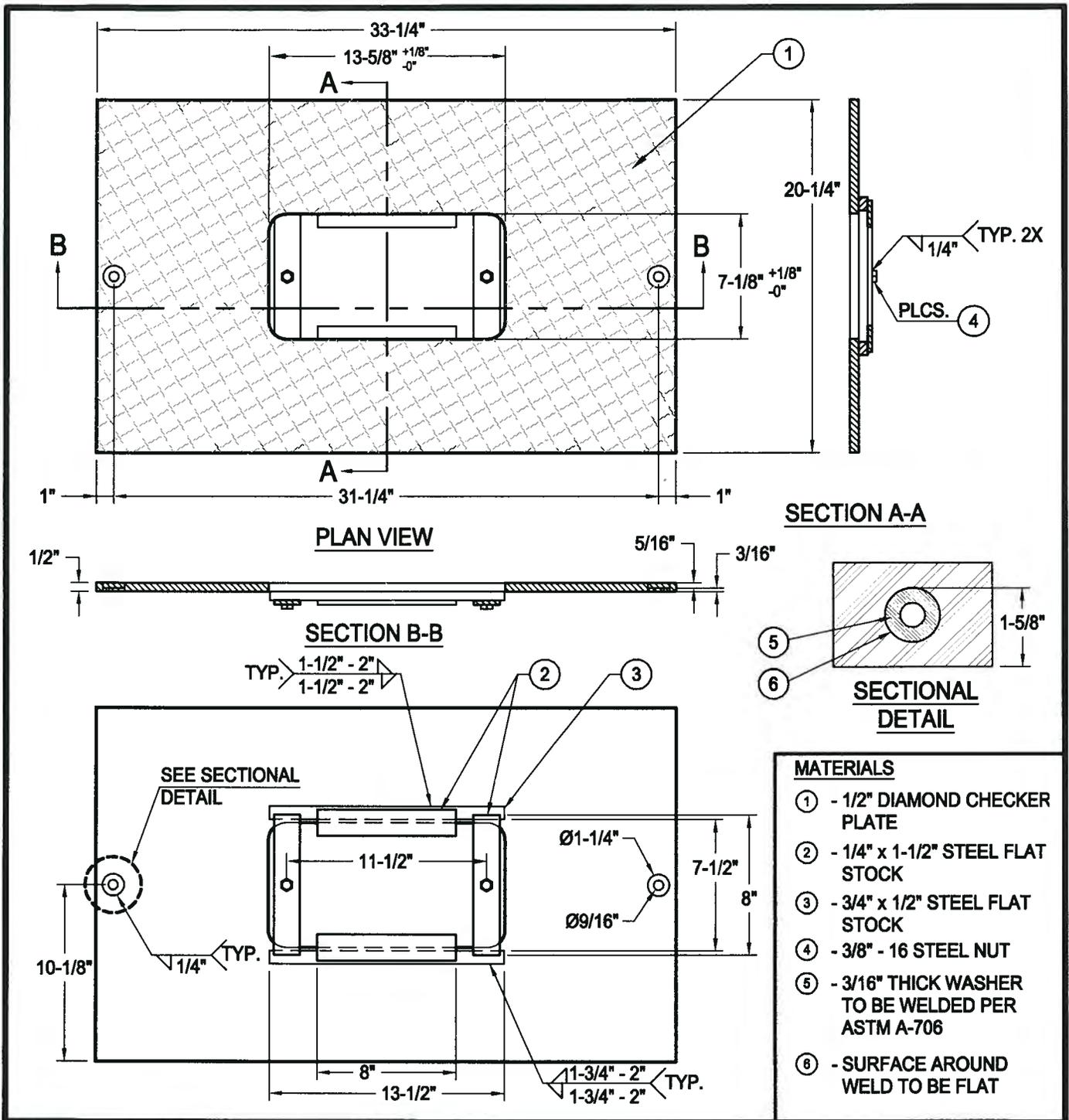
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
 CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE *11-18-10*  
 CITY ENGINEER  
 APPROVED *[Signature]* DATE *11-18-10*  
 PUBLIC WORKS DIRECTOR

STANDARD DRAWING

**BH 716**

SHEET 1 OF 2



# 17" x 30" WATER METER BOX & LID - H/20 LOADING

REVISIONS		
MARK	DATE	DESCRIPTION



## CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

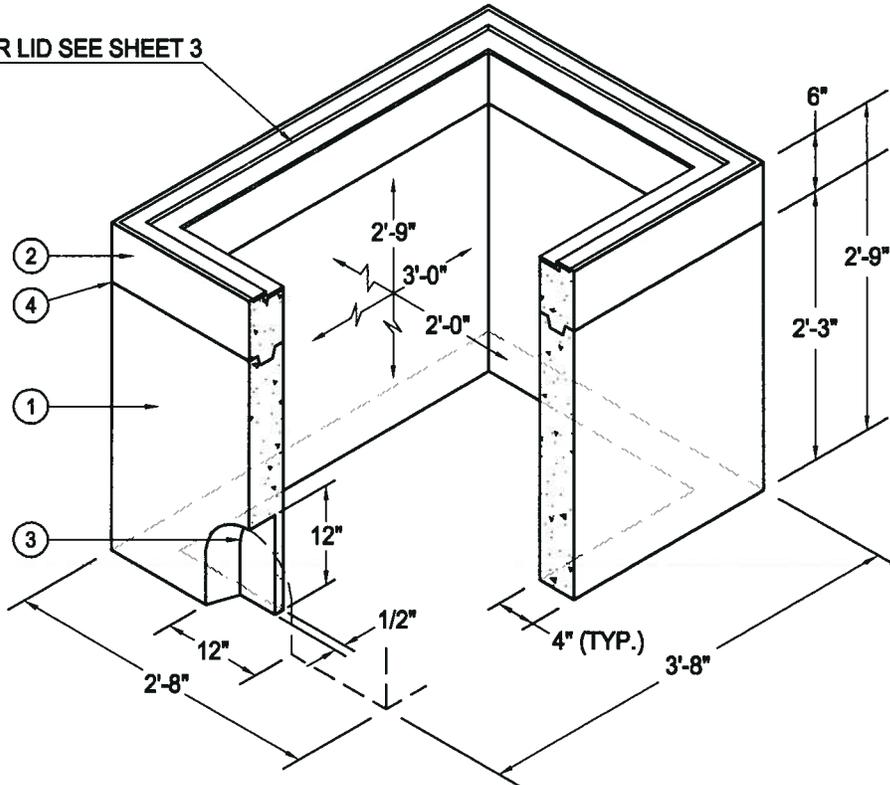
RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER

APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

DATE 11-18-10

STANDARD DRAWING  
**BH 716**  
SHEET 2 OF 2

FOR LID SEE SHEET 3



**NOTES:**

1. DESIGNED FOR PEDESTRIAN/PARKWAY LOADS OR TRAFFIC AASHTO H20 FOR USE IN OFF-STREET LOCATIONS ONLY.  
  
STRUCTURE DESIGNED IN ACCORDANCE WITH:  
- AASHTO H-20 TRAFFIC BRIDGE LOADING  
- ASTM C-857 STANDARD PRACTICE FOR MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES  
- AMERICAN CONCRETE INSTITUTE ACI 318-05
2. CONCRETE COMPRESSIVE STRENGTH  $F_c = 5500$  PSI.
3. REINFORCEMENT IN ACCORDANCE WITH ASTM A-706 WITH A YIELD STRENGTH OF  $F_y = 60,000$  PSI.
4. 6" MINIMUM COMPACTED GRANULAR MATERIAL RECOMMENDED FOR SUB-BASE FOR EASE OF INSTALLATION AND EVEN LOAD DISTRIBUTION.
5. MINIMUM EXCAVATION SIZE: 3'-2" x 4'-2" x REQUIRED DEPTH.

**MATERIALS:**

- ① 27" HIGH LOWER SECTION.
- ② 6" TOP SECTION WITH GALVANIZED CAST-IN FRAME.
- ③ 12" x 12" KNOCK OUT x 3-1/2" DEEP ON EACH END WALL
- ④ 6" OR 12" EXTENSION SECTIONS AVAILABLE.

## 2' x 3' WATER VAULT BOX & LID

REVISIONS		
MARK	DATE	DESCRIPTION



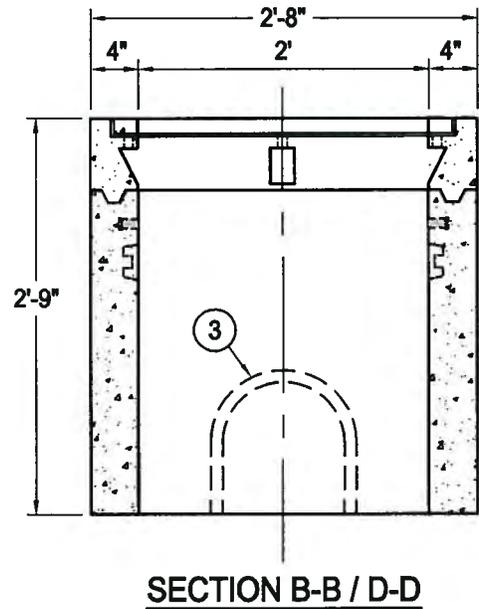
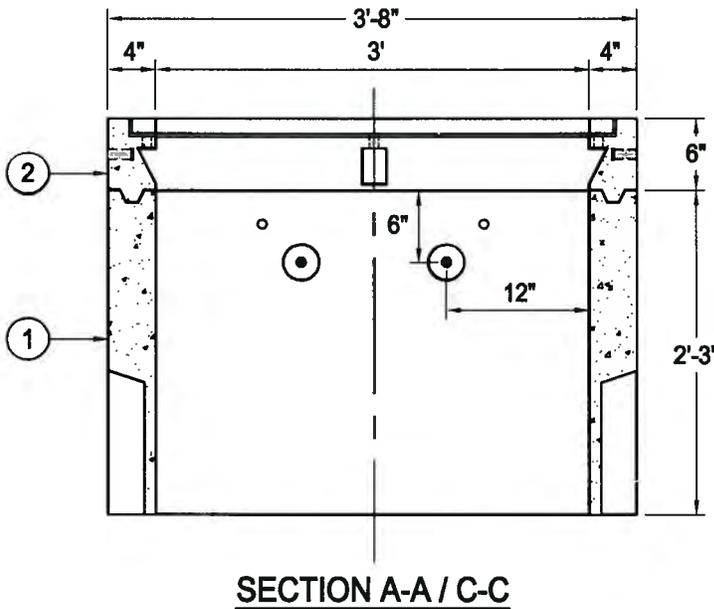
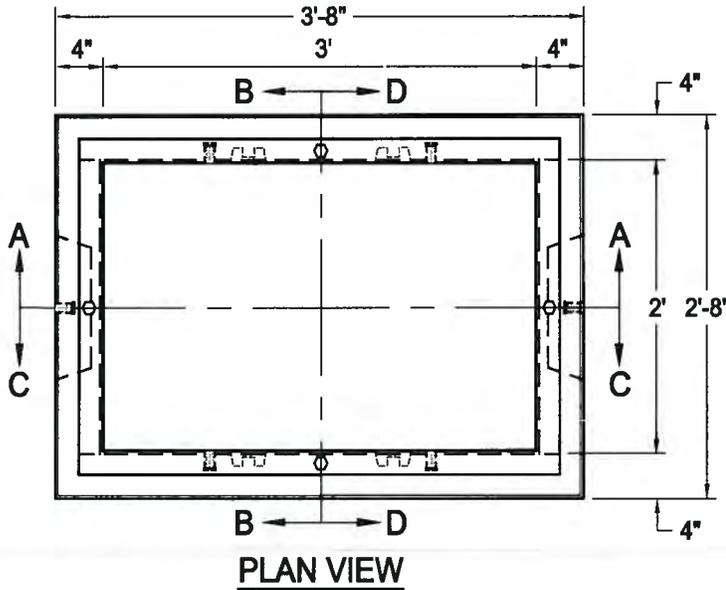
### CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

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CITY ENGINEER

APPROVED  DATE 11-18-10  
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 SHEET 1 OF 3



## 2' x 3' WATER VAULT BOX & LID

REVISIONS		
MARK	DATE	DESCRIPTION



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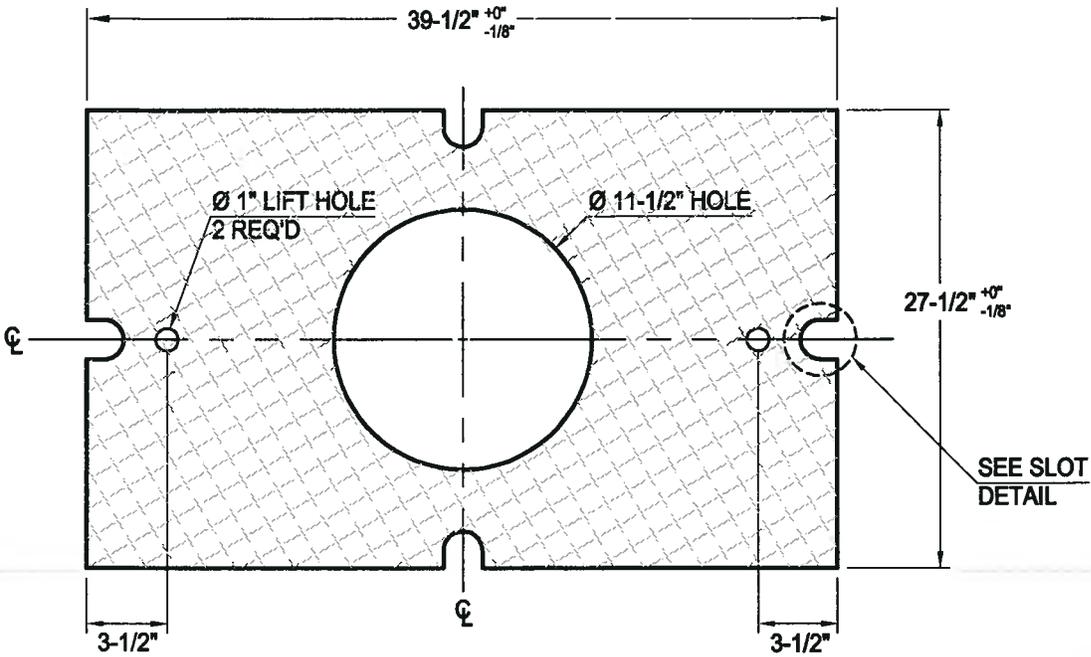
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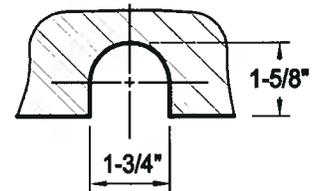
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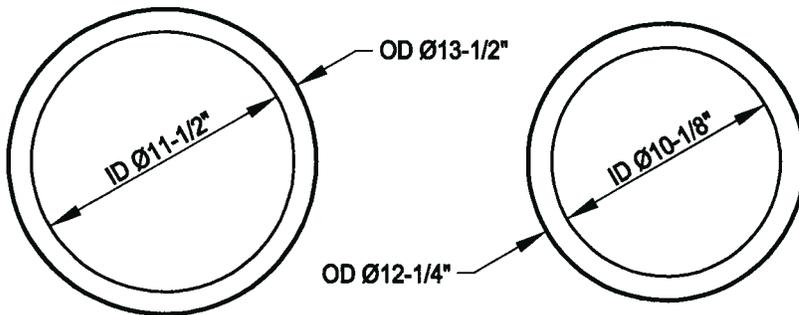
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**BH 717**  
SHEET 2 OF 3



PLAN VIEW



SLOT DETAIL  
4 PLACES



1/4" PLATE (1)

1/4" PLATE (1)

APPROX. 104 lbs.

QTY.	MATERIALS
1	5/16" DIAMOND PLATE 27-1/2" x 39-1/2"
1	10-1/8" ID x 12-1/4" OD 1/4" PLATE
1	11-1/2" ID x 13-1/2" OD 1/4" PLATE

## 2' x 3' WATER VAULT BOX & LID

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

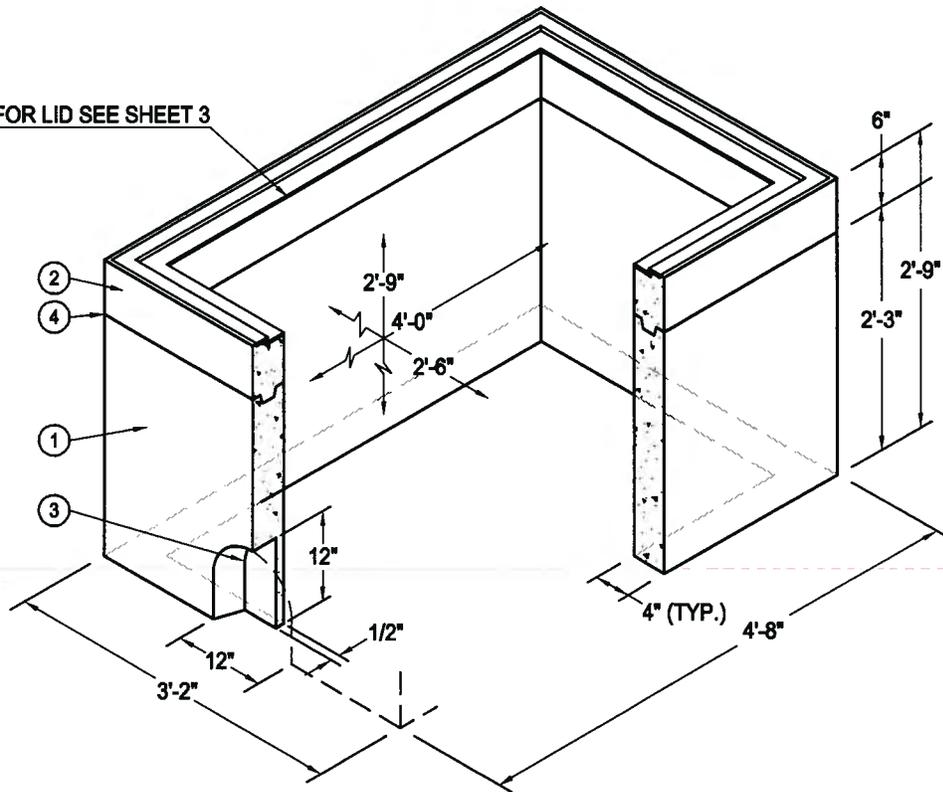
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CIVIL ENGINEERING DIVISION

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CITY ENGINEER

APPROVED *[Signature]* DATE *11-18-10*  
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**BH 717**  
SHEET 3 OF 3

FOR LID SEE SHEET 3



**NOTES:**

1. DESIGNED FOR PEDESTRIAN/PARKWAY LOADS OR TRAFFIC AASHTO H20 FOR USE IN OFF-STREET LOCATIONS ONLY.  
  
STRUCTURE DESIGNED IN ACCORDANCE WITH:  
  - AASHTO H-20 TRAFFIC BRIDGE LOADING
  - ASTM C-857 STANDARD PRACTICE FOR MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES
  - AMERICAN CONCRETE INSTITUTE ACI 318-05
2. CONCRETE COMPRESSIVE STRENGTH  $F_c = 5500$  PSI.
3. REINFORCEMENT IN ACCORDANCE WITH ASTM A-706 WITH A YIELD STRENGTH OF  $F_y = 60,000$  PSI.
4. 6" MINIMUM COMPACTED GRANULAR MATERIAL RECOMMENDED FOR SUB-BASE FOR EASE OF INSTALLATION AND EVEN LOAD DISTRIBUTION.
5. MINIMUM EXCAVATION SIZE: 3'-8" x 5'-2" x REQUIRED DEPTH.

**MATERIALS:**

- ① 27" HIGH LOWER SECTION.
- ② 6" TOP SECTION WITH GALVANIZED CAST-IN FRAME.
- ③ 12" x 12" KNOCK OUT x 3-1/2" DEEP ON EACH END WALL
- ④ 6" OR 12" EXTENSION SECTIONS AVAILABLE.

## 2'-6" x 4' WATER VAULT BOX & LID

REVISIONS		
MARK	DATE	DESCRIPTION



### CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED

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CITY ENGINEER

DATE

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APPROVED

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PUBLIC WORKS DIRECTOR

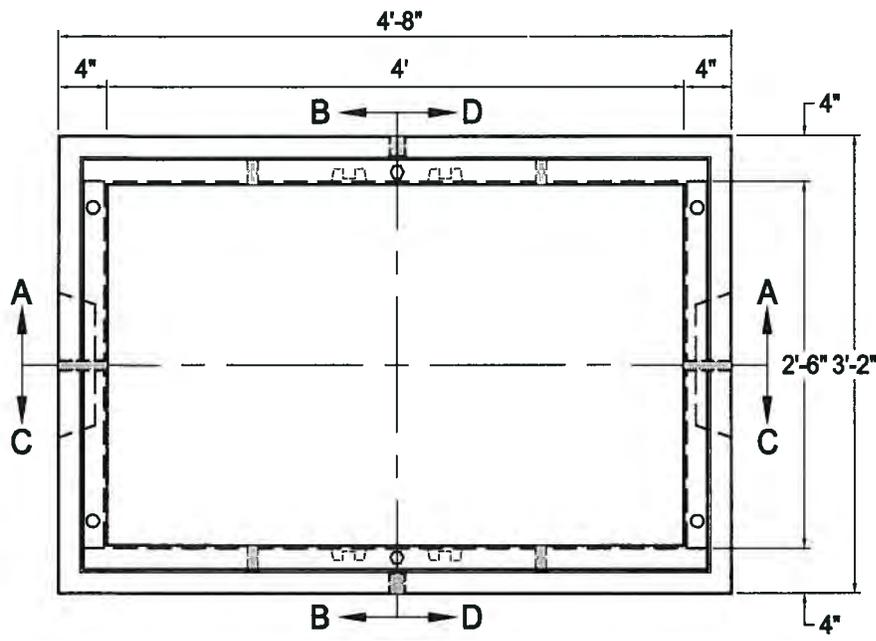
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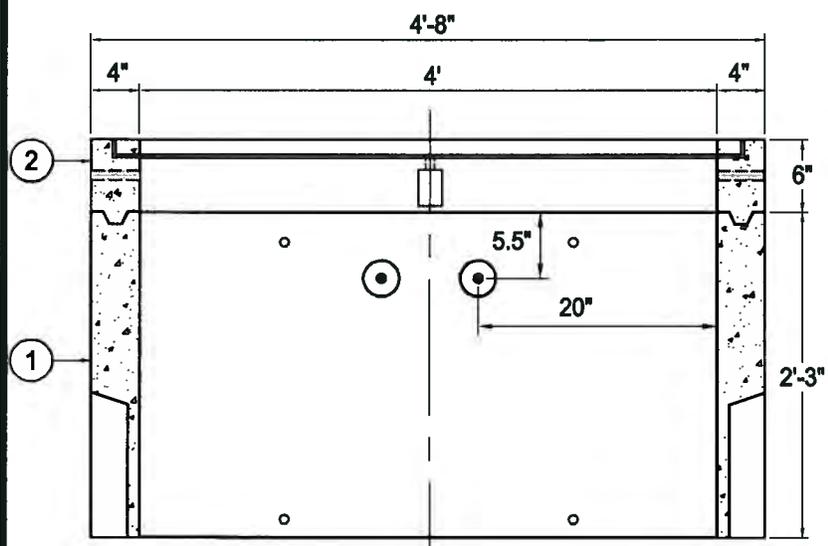
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## BH 718

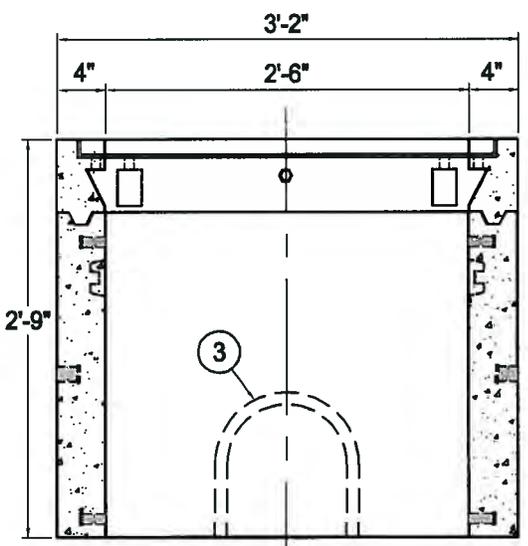
SHEET 1 OF 3



**PLAN VIEW**



**SECTION A-A / C-C**



**SECTION B-B / D-D**

## 2'-6" x 4' WATER VAULT BOX & LID

REVISIONS		
MARK	DATE	DESCRIPTION

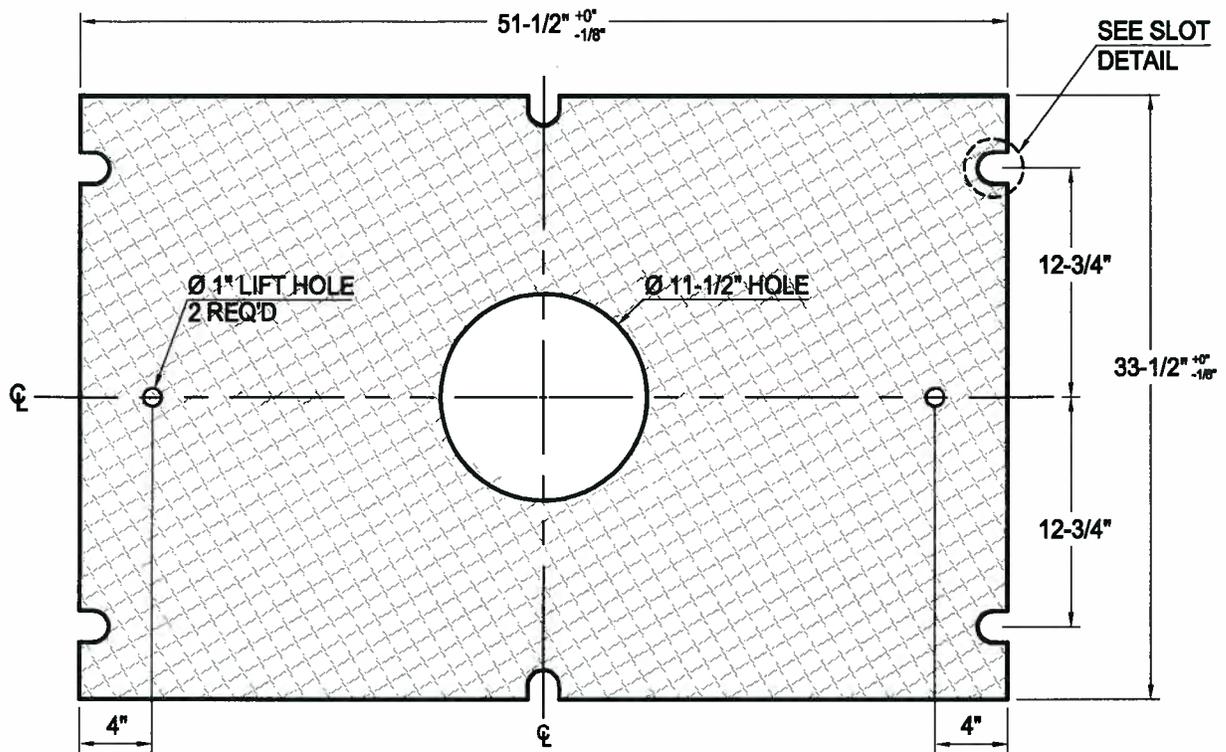


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 CIVIL ENGINEERING DIVISION

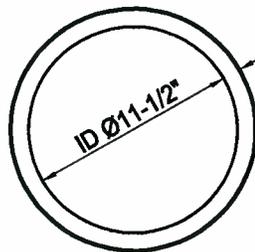
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CITY ENGINEER

APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

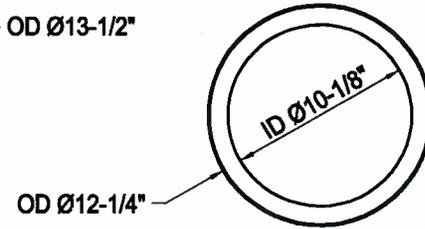
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 SHEET 2 OF 3



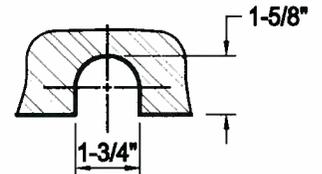
**PLAN VIEW**



1/4" PLATE (1)



1/4" PLATE (1)



**SLOT DETAIL**  
6 PLACES

**QTY. MATERIALS**

1	5/16" DIAMOND PLATE 33-1/2" x 51-1/2"
1	10-1/8" ID x 12-1/4" OD 1/4" PLATE
1	11-1/2" ID x 13-1/2" OD 1/4" PLATE

**2'-6" x 4' WATER VAULT BOX & LID**

REVISIONS		
MARK	DATE	DESCRIPTION

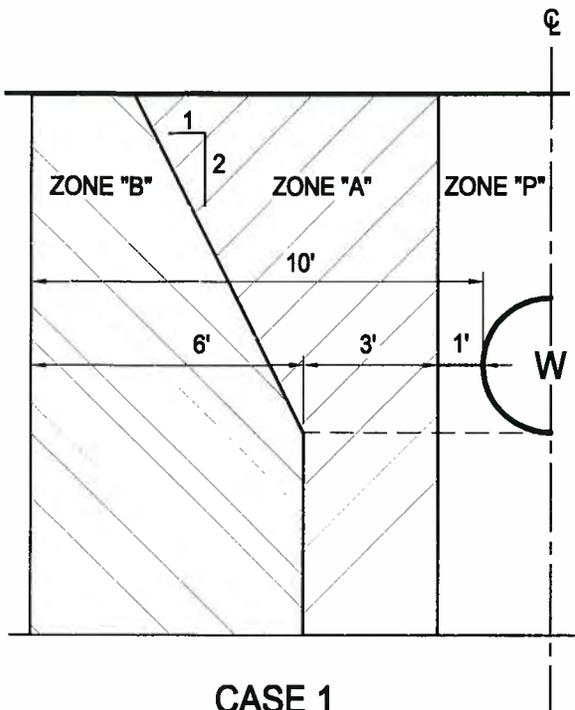


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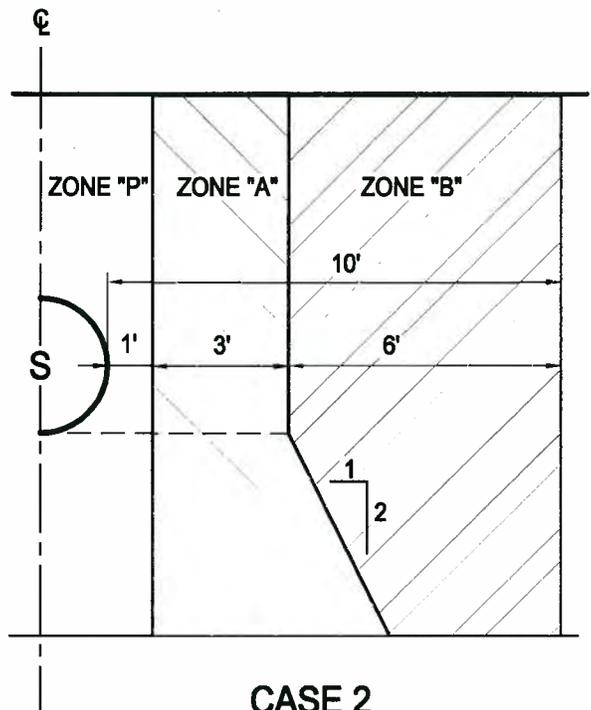
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APPROVED *[Signature]* DATE 11-18-10  
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**BH 718**  
SHEET 3 OF 3



**CASE 1**  
NEW SEWER



**CASE 2**  
NEW WATER MAIN

**ZONE SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

- A. SEWER LINES PARALLEL TO WATER MAINS SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT APPROVAL FROM THE CITY OF BEVERLY HILLS.
- B. A SEWER LINE PLACED PARALLEL TO A WATER LINE SHALL BE CONSTRUCTED OF:
  1. EXTRA STRENGTH VITRIFIED CLAY PIPE WITH COMPRESSION JOINTS.
  2. PLASTIC SEWER PIPE WITH RUBBER RING JOINTS (PER ASTM D 3034) OR EQUIVALENT.
  3. CAST OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS.
  4. REINFORCED CONCRETE PRESSURE PIPE WITH COMPRESSION JOINTS (PER AWWA C302-74).
- P. PROHIBITED ZONE - NO SEWER MAINS ARE ALLOWED TO BE INSTALLED IN THIS ZONE.

**ZONE SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

- A. NO WATER MAINS PARALLEL TO SEWERS SHALL BE CONSTRUCTED WITHOUT APPROVAL FROM THE CITY OF BEVERLY HILLS.
- B. A WATER LINE PLACED PARALLEL TO A SEWER LINE SHALL BE CONSTRUCTED OF STEEL PIPE, CML, AND CMC WITH WELDED JOINTS.
- P. PROHIBITED ZONE - NO WATER MAINS ARE ALLOWED TO BE INSTALLED IN THIS ZONE.

**ADDITIONAL NOTES:**

1. ZONES IDENTICAL ON EITHER SIDE OF CENTER LINES,
2. WATER MAINS AND SEWER MAINS MUST NOT BE INSTALLED IN THE SAME TRENCH.
3. SEPARATION DISTANCES SPECIFIED SHALL BE MEASURED FROM THE NEAREST EDGE OF FACILITIES.
4. STEEL PIPE SHALL BE A MINIMUM OF 10 GAGE THICKNESS.

**SEWER AND WATER MAIN PARALLEL SEPARATION < 10'**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

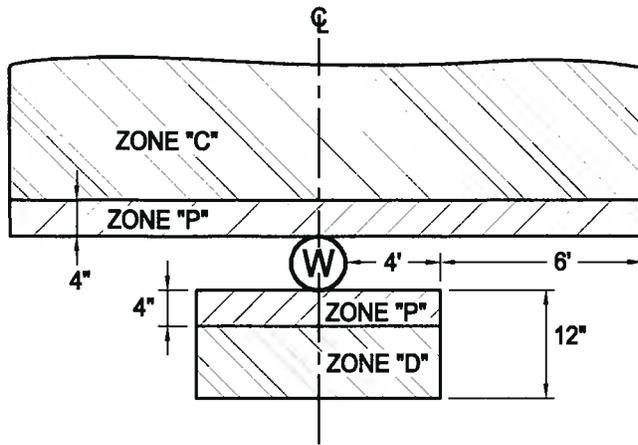
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CIVIL ENGINEERING DIVISION

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CITY ENGINEER  
APPROVED *[Signature]* DATE *11-18-10*  
PUBLIC WORKS DIRECTOR

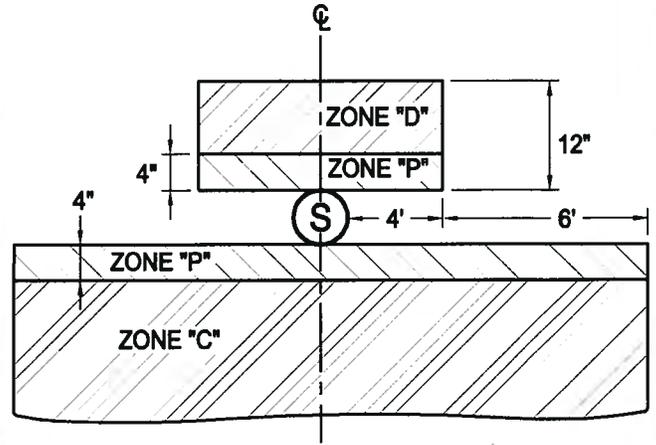
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**BH 719**

SHEET 1 OF 2



**CASE 1**  
NEW SEWER



**CASE 2**  
NEW WATER MAIN

**ZONE SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

- C. A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF:
1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS.
  2. A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA 0990) PLASTIC PIPE OR EQUIVALENT. CENTERED OVER THE PIPE BEING CROSSED.
  3. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-74) CENTERED OVER THE PIPE BEING CROSSED.
  4. ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE.
- D. A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF:
1. A CONTINUOUS SECTION OF DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING.
  2. A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA 0990) PLASTIC PIPE OR EQUIVALENT. CENTERED OVER THE PIPE BEING CROSSED.
  3. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-74) CENTERED OVER THE PIPE BEING CROSSED.
  4. ANY SEWER PIPE WITHIN A CONTINUOUS SLEEVE
  5. ANY SEWER PIPE SEPARATED BY A 10"x10"x4" THICK REINFORCED CONCRETE SLAB.
- P. PROHIBITED ZONE - NO SEWER MAINS ARE ALLOWED TO BE INSTALLED IN THIS ZONE.

**ZONE SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

- C. NO JOINTS WITHIN 10 FEET OF EITHER SIDE OF SEWER LINE. USE DUCTILE IRON PIPE, CML, AND POLYETHYLENE WRAPPED, OR STEEL PIPE, CML, AND CMC.
- D. NO JOINTS WITHIN 4 FEET OF EITHER SIDE OF SEWER LINE. USE DUCTILE IRON PIPE, CML, AND POLYETHYLENE WRAPPED, OR STEEL PIPE, CML, AND CMC.
- P. PROHIBITED ZONE - NO WATER MAINS ARE ALLOWED TO BE INSTALLED IN THIS ZONE.

**ADDITIONAL NOTES:**

1. WATER MAINS AND SEWER MAINS MUST NOT BE INSTALLED IN THE SAME TRENCH.
2. SEPARATION DISTANCES SPECIFIED SHALL BE MEASURED FROM THE NEAREST EDGE OF FACILITIES.
3. STEEL PIPE SHALL BE A MINIMUM OF 10 GAGE THICKNESS.

**SEWER AND WATER MAIN PERPENDICULAR SEPARATION < 10'**

REVISIONS		
MARK	DATE	DESCRIPTION



**CITY OF BEVERLY HILLS, CALIFORNIA**

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION  
CIVIL ENGINEERING DIVISION

RECOMMENDED *[Signature]* DATE 11-18-10  
CITY ENGINEER

APPROVED *[Signature]* DATE 11-18-10  
PUBLIC WORKS DIRECTOR

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**BH 719**

SHEET 2 OF 2

## SECTION 6. OVERFLOW EMERGENCY RESPONSE PLAN

### 6.1 Introduction

This section of the SSMP is intended to provide an overview of the City's sanitary sewer system Overflow Emergency Response Plan. This Overflow Emergency Response Plan has been developed pursuant to State Water Resources Control Board guidelines requiring all public wastewater collection system agencies in California be regulated under General Waste Discharge Requirements.

### 6.2 Regulatory Requirements for the Overflow Emergency Response Plan Section

The requirements for the Operations and Maintenance Program section of the SSMP are:

#### **GWDR (Element 6 - Overflow Emergency Response Plan) Requirement:**

The GWDR requirements for the Overflow Emergency Response Plan are: *Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:*

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



### 6.3 SSO Notification Procedure

The Requirement: *Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSO's in a timely manner.*

Section 2.3.2 of this SSMP introduces the process and individuals responsible for reporting and notification of a sanitary sewer overflow. Table 2-1 provides contacts and phone numbers for City staff who need to be notified of SSO's. Figure 2-2 depicts the chain of communication for responding to SSO's. Beverly Hills keeps a large "Call" poster at the City's Corporation Yard for clear reminders.

For Category 1 spills (overflow greater than 1,000 gallons), the Stand-by Operator immediately notifies the Drainage Systems Supervisor. In the absence of the Drainage Systems Supervisor (after hours), Operators are responsible to respond as required for collection system and wastewater treatment plant emergencies. A situation may occur where an Operator will need specialized equipment, physical assistance, and (or) technical advice. If needed, Operators may call in water system operators, other employees, and/or contractors for assistance during an emergency. Operators are instructed to contact the Drainage Systems Supervisor in case of any emergency. If the Drainage Systems Supervisor cannot be reached, Operators are instructed to contact the Utilities Manager. If the Director of Public Works and Transportation is not available, contact the City Manager.

For Category 1 spills and any overflow that enters the storm drain system, staff are directed to call the Drainage Systems Supervisor immediately. If not available, then staff is directed to call the **California Office of Emergency Services**, (800) 852-7550, the **Los Angeles Regional Water Quality Control Board**, (213) 576-6657 during business hours and (213) 305-2253 after business hours, and the **Los Angeles Public Health**, (213) 974-1234, within two hours of the start of the overflow.

Time frame for contacting local and other regulatory agencies is addressed in Section 6.5 of this SSMP.

### 6.4 SSO Emergency Response Procedure

The Requirement: *A program to ensure appropriate response to all overflows.*

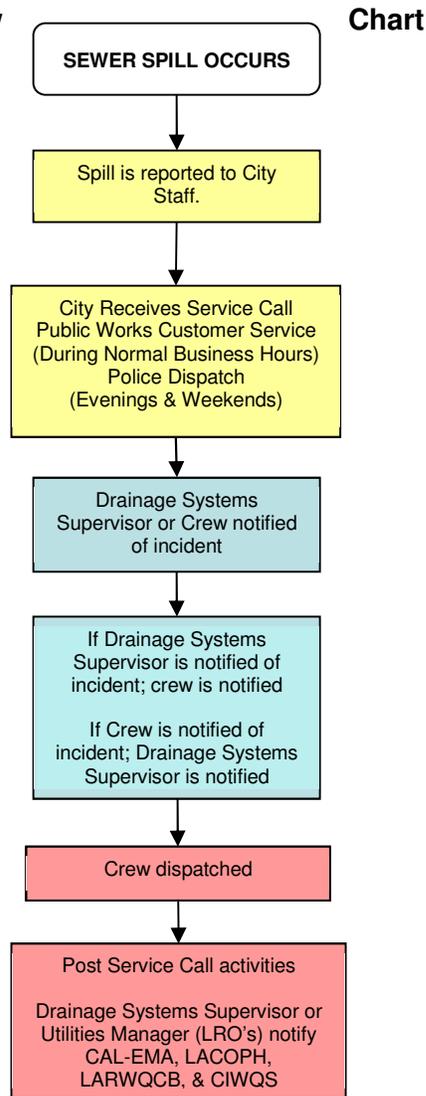
The City responds to all spills within City limits. Wastewater Division staff must be familiar with these overflow emergency response procedures prior to being assigned "Stand-by." Stand-by Operators are to respond immediately. Section 2 of this SSMP addresses the responsibilities and authority of City staff during an emergency.

Additional Standby Operators who are notified that raw sewage spills have occurred will voluntarily respond if available and will take immediate corrective actions. Raw sewage (wastewater) spills may be caused by a blockage in the sewer line, broken sewer lines, pump failures or other unforeseen situations.



Figure 6-1 contains a flowchart depicting the chain of communication for notification of and reporting SSO's.

**Figure 6-1. SSO Response Flow**



#### 6.4.1 Secure the Area

The Requirement: *Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities.*

Wastewater Division staff respond to all sewer emergencies within City limits. Other departments within the City may provide assistance for traffic and crowd control depending on the severity of the situation, including the Public Works Department, Streets Division, and Fire and Police Departments.

To secure the wastewater spill area:

- Place warning signs
- Barricades and cones (lighted barricades if needed)
- Safety tape
- Sand or other available means

#### 6.4.2 Control the Cause of the Wastewater Spill

The Requirement: *A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSO's, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.*

City Wastewater Division staff are trained to use procedures identified in the City of Beverly Hills' Wastewater Division Standard Operating Procedure "Wastewater Spill Control Procedures." Staff are trained to use best management practices.

City staff will do what is necessary to stop the cause of the spill. If the overflow is caused by a stoppage in the main line, City staff will use the hydro jet or mechanical rotor truck to relieve the stoppage immediately.

One method to contain spills includes plugging of storm water lines and directing sewer spill flow to storm drain for use as a temporary catch basin. If this procedure is used, the storm drain will be cleaned and disinfected after the spill is relieved. (Pumper trucks or pumps can be used to remove the wastewater from the catch basin.) If necessary, the City will report spills immediately to the **Los Angeles County Public Health (LACOPH)** for monitoring water quality and posting hazard notices.

The City of Beverly Hills has all the major equipment (cranes, fencing, pumping) to respond to most emergencies. Additional Contracts/Emergency Resources are listed in Table 6-1 Contractors/Emergency Resources.



Beverly Hills has an internal Public Information Office (PIO) that is responsible for informing all the necessary media outlets during Emergency responses. Therese Kosterman is the current PIO for Beverly Hills. She can be contacted at (310) 285-2456.

**Table 6-1. Contractors/Emergency Resources**

SERVICE/PHONE NUMBER	
<b>Contractors</b>	
a. Insituform Technologies, LLC.....	(714) 278-1900
b. Pro Pipe.....	(877) 251-9345

**6.4.3 Clean Up the Wastewater Spill**

To minimize health impacts to the public and to protect the environment, the City will begin cleaning the wastewater spill site as soon as possible or immediately after the overflow stops.

The City will remove debris found in the wastewater spill surfaced area and return to the collection system, or collect and dispose of debris properly.

The City will disinfect the area exposed to the spilled material using a mild chlorine solution applied over the affected area with a Hudson Sprayer. During clean up, Operators wear personal protective clothing, including rubber boots, rubber gloves, coveralls, and goggles. Ultraviolet rays and heat from the sun will help sterilize any threatening organisms that are present.

The City will conduct a final inspection of the collection system and the wastewater spill area before leaving.

The affected area will remain isolated until all necessary steps are taken to eliminate possible health hazards.

**6.5 Sanitary Sewer Overflow Reporting**

*The Requirement: Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected agencies (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSO's that potentially affect public health or reach water of the State in accordance with the MRP. All SSO's shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDR's or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification.*

City policy is to report spills, depending upon size, significance, and/or containment, to the **Los Angeles Regional Water Quality Control Board, Los Angeles County Public Health,** and the **California Emergency Management Agency.** The City has a responsibility to provide full disclosure of its operations and performance, and has adopted the spill reporting format referenced in the reporting requirements of the State General Permit.



Reporting time frames vary by agency. Table 6-2 identifies the reporting time frame for each agency involved.

**Table 6-2. SSO Reporting Time Frame by Agency**

AGENCY	SSO REPORTING TIME FRAME
State Water Resources Control Board	<ul style="list-style-type: none"> <li>• Verbal notification within 24 hours of reportable spill</li> <li>• Written report within 72 hours of reportable spill</li> </ul>
Los Angeles Regional Water Quality Control Board	<ul style="list-style-type: none"> <li>• Written report within 30 days of reportable spill (required for any sewer spill)</li> </ul>
Los Angeles County Public Health (LACOPH)	<ul style="list-style-type: none"> <li>• Verbal notification within 24 hours of reportable spill</li> <li>• Written report within 72 hours of reportable spill</li> </ul>
California Emergency Management Agency	<ul style="list-style-type: none"> <li>• Verbal notification within 24 hours of reportable spill</li> </ul>

Category 1 spills must be reported to the Online SSO System within 3 business days of the sanitary sewer overflow. Information about the SSO Online Reporting system is included in Appendix 6-A Monitoring and Reporting Program No. 2006-0003-DWQ. Appendix 6-A also includes reporting requirements for other SSO Categories, including Category 2 and Private Lateral Sewage Discharges.

- Category 2 – All discharges of sewage other than Category 1 resulting from a failure in the City’s sanitary sewer system.
- Private Lateral Sewage Discharges – Sewage discharges caused by blockages or other problems within a privately owned lateral.

For these same overflows, a Sewage Spill Report shall be prepared and faxed to the **Regional Water Quality Control Board**, (213) 576-6657, and the **Los Angeles County Public Health** within 24 hours. A sample Sewage Spill Report form is included in Appendix 6-B.

## 6.6 Emergency Response Plan Distribution and Training

The Requirement: *Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Overflow Emergency Response Plan and are appropriately trained.*

The role of the Wastewater Division staff is clearly established and described in Section 2 of this SSMP. The City’s previous Sewer Spill Prevention Contingency Plan and SSMP are available digitally and in printed form for the Wastewater Division staff.



All Wastewater Division staff are required to be familiar with this SSMP prior to fulfilling On-Call and Stand-by assignments. In addition, the Collection Operator trains the additional staff that assists on the collection truck.



## **APPENDIX 6-A. MONITORING AND REPORTING PROGRAM**

### **Monitoring and Reporting Program No. 2006-0003-DWQ Statewide General Waste Discharge Requirements For Sanitary Sewer Systems**

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

#### **A. SANITARY SEWER OVERFLOW REPORTING**

##### **SSO Categories**

1. Category 1 – All discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system that:
  - a. Equal or exceed 1,000 gallons, or
  - b. Result in a discharge to a drainage channel and/or surface water; or
  - c. Discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.
2. Category 2 – All other discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system.
3. City does not report

##### **SSO Reporting Timeframes**

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

The above reporting requirements do not preclude other emergency notification requirements and timeframes mandated by other regulatory agencies (local County



Health officers, local Director of Environmental Health, Regional Water Boards, or California Emergency Management Agency or State law.

5. Category 2 SSO's – All SSO's that meet the above criteria for Category 2 SSO's must be reported to the Online SSO Database within three days after the end of the calendar month in which the SSO occurs (e.g. all SSO's occurring in the month of January must be entered into the database by March 1<sup>st</sup>).
6. Private Lateral Sewage Discharges – All sewage discharges that meet the above criteria for Private Lateral sewage discharges may be reported to the Online SSO Database based upon the Enrollee's discretion. If a Private Lateral sewage discharge is recorded in the SSO Database, the Enrollee must identify the sewage discharge as occurring and caused by a Private Lateral, and a responsible party (other than the Enrollee) should be identified, if known.
7. If there are no SSO's during the calendar month, the Enrollee will provide, within 30 days after the end of each calendar month, a statement through the Online SSO Database certifying that there were no SSO's for the designated month.
8. In the event that the SSO Online Database is not available, the enrollee must fax all required information to the appropriate Regional Water Board office in accordance with the time schedules identified above. In such event, the Enrollee must also enter all required information into the Online SSO Database as soon as practical.

#### **Mandatory Information to be Included in SSO Online Reporting**

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

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

9. Category 2 SSO's:
  - a. Location of SSO by entering GPS coordinates;
  - b. Applicable Regional Water Board, i.e. identify the region in which the SSO occurred;
  - c. County where SSO occurred;
  - d. Whether or not the SSO entered a drainage channel and/or surface water;
  - e. Whether or not the SSO was discharged to a storm drain pipe that was not fully captured and returned to the sanitary sewer system;



- f. Estimated SSO volume in gallons;
  - g. SSO source (manhole, cleanout, etc.);
  - h. SSO cause (mainline blockage, roots, etc.);
  - i. Time of SSO notification or discovery;
  - j. Estimated operator arrival time;
  - k. SSO destination;
  - l. Estimated SSO end time; and
  - m. SSO Certification. Upon SSO Certification, the SSO Database will issue a Final SSO Identification (ID) Number.
10. Private Lateral Sewage Discharge:
- a. All information listed above (if applicable and known), as well as;
  - b. Identification or sewage discharge as a private lateral sewage discharge; and
  - c. Responsible party contact information (if known).
11. Category 1 SSO's:
- a. All information listed for Category 2 SSO's, as well as;
  - b. Estimated SSO volume that reached surface water, drainage channel, or not recovered from a storm drain;
  - c. Estimated SSO amount recovered;
  - d. Response and corrective action taken;
  - e. If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA must be selected.
  - f. Parameters that samples were analyzed for (if applicable);
  - g. Identification of whether or not health warnings were posted;
  - h. Beaches impacted (if applicable). If no beach was impacted, NA must be selected;
  - i. Whether or not there is an ongoing investigation;
  - j. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
  - k. OES control number (if applicable);
  - l. Date OES was called (if applicable);
  - m. Time OES was called (if applicable);
  - n. Identification of whether or not County Health Officers were called;
  - o. Date County Health Officer was called (if applicable); and
  - p. Time County Health Officer was called (if applicable).

### **Reporting to Other Regulatory Agencies**

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



1. The Enrollee shall report SSO's to CAL-EMA, in accordance with California Water Code Section 13271.

California Office of Emergency Services  
Phone (800) 852-7550

2. The Enrollee shall report SSO's to County Health officials in accordance with California Health and Safety Code Section 5410 et seq.
3. The SSO database will automatically generate an e-mail notification with customized information about the SSO upon initial reporting of the SSO and final certification for all Category 1 SSO's. E-mails will be sent to the appropriate County Health Officer and/or Environmental Health Department if the County desires this information, and the appropriate Regional Water Board.

## **B. RECORD KEEPING**

1. Individual SSO Records shall be maintained by the Enrollee for a minimum of five years from the date of the SSO. This period may be extended when requested by a Regional Water Board Executive Officer;
2. All records shall be made available for review upon State or Regional Water Board staff's request;
3. All monitoring instruments and devices that are used by the Enrollee to fulfill the prescribed monitoring and reporting program shall be properly maintained and calibrated as necessary to ensure their continued accuracy;
4. The Enrollee shall retain records of all SSO's, such as, but not limited to and when applicable:
  - a. Record of Certified report, as submitted to the online SSO database;
  - b. All original recordings for continuous monitoring instrumentation;
  - c. Service call records and complaint logs of calls received by the Enrollee;
  - d. SSO calls;
  - e. SSO records;
  - f. Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps.
  - g. Work orders, work completed, and any other maintenance records from the previous 5 years which are associated with responses and investigations of system problems related to SSO's;
  - h. A list and description of complaints from customers or others from the previous 5 years; and
  - i. Documentation of performance and implementation measures for the previous 5 years.
5. If water quality samples are required by an environmental or health regulatory agency or State law, or if voluntary monitoring is conducted by the Enrollee or its agent(s), as a result of any SSO, records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The individual(s) who performed the sampling or measurements;



- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical technique or method used; and,
- f. The results of such analyses.

**C. CERTIFICATION**

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

Monitoring and Reporting Program No. 2006-0003 will become effective on the date of adoption by the State Water Board.

**CERTIFICATION**

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



**APPENDIX 6-B. SEWAGE SPILL REPORT FORM (SAMPLE)**





**City of Beverly Hills  
Wastewater Disposal Services**

# SSO Volume Estimating Worksheet

**Did an overflowing manhole reach a storm drain?**

**Yes/No**  
(circle one)

If **yes** – Go to Step 1.

If **no** – perform wetted street volume calculations on reverse.

**Step 1. Determine Estimated Spill Volume to Street from overflowing Manhole.**

**A. Estimated spill start date/time:** \_\_\_\_\_  
MM/DD/YY Time 24 hr

**B. Estimated spill end date/time:** \_\_\_\_\_  
MM/DD/YY Time 24 hr

**C. Total spill time in minutes = B. – A.** \_\_\_\_\_  
Minutes

**D. Estimated Overflow Rate**

	_____	_____
	<b>Reference</b>	<b>GPM</b>
<b>References</b>	(P, A, B, C)	

1. Pictures (P), 2. Table A, 3. Table B, 4. Table C

**E. Estimated Spill Volume to Street =** \_\_\_\_\_ **X** \_\_\_\_\_ **=** \_\_\_\_\_  
C. D. gals.

**Did sewer overflow inside a building or residence?**

**Yes/No**  
(circle one)

If **yes** – Go to Step 2.

If **no** – Go to Step 3.

**Step 2. Estimate Spill Volume to Building or Residence.**

**F. Determine total wetted floor area in sq. feet.**

1. Room Inventory	Length (ft.)	X	Width (ft.)	=	Area (ft. <sup>2</sup> )
a. _____	_____		_____	=	_____
b. _____	_____		_____	=	_____
c. _____	_____		_____	=	_____
d. _____	_____		_____	=	_____
e. _____	_____		_____	=	_____

**G. Total wetted floor area (add 1. a thru 1. e.)** \_\_\_\_\_ **=** \_\_\_\_\_

H. Estimated average depth of wetted floor in inches = \_\_\_\_\_  
( in.)

**Note:** If can't actually measure, make a reasonable assumption 1/4" -1/2".

I. Convert depth in inches to ft. H. / 12 = \_\_\_\_\_  
(ft.)

J. Estimated Spill Volume (Building or Residence) = G. x I. = \_\_\_\_\_  
(ft<sup>3</sup>)

K. Convert Estimated Spill Volume (Building or Residence) to gals.

J. x 7.48 = \_\_\_\_\_  
(gals.)

**Step 3. Determine Total Estimated Spill Volume**

L. Total Estimated Spill Volume = E. + K. = \_\_\_\_\_  
(gals.)

**Step 4. Determine Estimated Volume of Spill Vacuum Recovered**

M. Estimated Vacuum Recovery Start date/time: \_\_\_\_\_  
MM/DD/YY Time 24 hr

N. Total Vacuum Recovery Time in minutes B. - M. = \_\_\_\_\_  
(mins.)

O. Est. Volume of Spill Vacuum Recovered = \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_  
N. D. (gals.)

**Step 5. Estimated volume of spill that reached surface water, drainage channel, or not recovered from storm drain:**

P. [Est. Spill Volume to Street] - [Est. Volume of Spill Vacuum Recovered] - [Est. Spill Volume Captured] =

E. - O. - Volume Captured (below) = \_\_\_\_\_  
(gals.)

**Determine Wetted Street Volume or Volume Captured**

1. Attach copy of sketch from stoppage report.

**Depth Information in Ft.**  
**1/8" = 0.01 FT**

Length (L) = \_\_\_\_\_ ft.

**1/4 " = 0.021 FT**

Width (W) = \_\_\_\_\_ ft.

**3/8" = 0.031 FT**

Depth (D) = Average Observed (in.) = \_\_\_\_\_ / 12 = \_\_\_\_\_ ft.

wetted street volume = \_\_\_\_\_ X \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ ft.<sup>3</sup> X 7.48 = \_\_\_\_\_  
L W D gals.



City of Beverly Hills
Wastewater Disposal Services

SSO Field Worksheet

Location of SSO: \_\_\_\_\_
(closest street address to overflow/cross street)

Date and time sanitary sewer system agency (Time drainage staff was informed)
was notified or discovered spill: \_\_\_\_\_ MM/DD/YY Time 24 hr

Estimated spill start date/time: \_\_\_\_\_ MM/DD/YY Time 24 hr
(Same as time immediately above unless you have reliable info of earlier start)

Estimated operator arrival date/time: \_\_\_\_\_ MM/DD/YY Time 24 hr

- Spill appearance point (Check one):
o Building or structure
o Force main or pressure sewer
o Gravity sewer
o Manhole
o Other sewer system structure
o Pump station
o Other (Specify) \_\_\_\_\_

Private lateral spill? (circle one) Yes/No

If no - move on to Estimated spill end date/time:

If yes - move on to County Health Department notification if private lateral spill
reached public right of way. No further notification is required. Clean-up sewage on
public right of way. Notify property owner/resident of requirement to correct or risk
water shutoff. Private lateral spills are NOT SSO's as of this revision.

Estimated spill end date/time: \_\_\_\_\_ MM/DD/YY Time 24 hr

Health Department notified within 15 mins of arrival on scene? (circle one) Yes/No

24 Hour Number (213) 974-1234

Note: Health Dept. Notification required for all SSO's even if they never make it to a public right
of way.

Time County Health Department notified: \_\_\_\_\_

Operator # \_\_\_\_\_ Ticket # \_\_\_\_\_ MM/DD/YY Time 24 hr

Continue on Reverse

**Spill response activities (Check all that apply):**

- Cleaned-up (mitigated effects of spill)
- Contained all or a portion of spill
- Inspected sewer using CCTV to determine cause
- Restored flow
- Returned all or a portion of the spill to the sanitary sewer system
- Other (Specify)\_\_\_\_\_.

**Answer the following three questions about this event:**

**#1. Is the spill volume greater than or equal to 1,000 gals? Yes/No**

**#2. Did the spill discharge to a drainage channel or surface water? Yes/No**

**#3. Did the spill discharge to a storm drain pipe that was not fully captured and returned to the sanitary sewer system? Yes/No**

**Did you answer "yes" to any of the above questions? Yes/no**

**If Yes** SSO is-----→ Category 1

**If No** SSO is-----→ Category 2  
(circle one)

**Final spill destination(Check all that apply):**

- Building or structure
- Other paved surface
- Storm drain
- Street/curb and gutter
- Surface water
- Unpaved surface
- Other (Specify)\_\_\_\_\_.

**Estimated total spill volume: (Attach Calculations) A. \_\_\_\_\_gallons**

**Estimated volume of spill recovered: B. \_\_\_\_\_gallons**

**Estimated volume of spill that reached surface water, drainage channel, or not recovered from storm drain: C. \_\_\_\_\_gallons**

**Did you answer yes to either question #2 or #3 above?..... Yes/No**

**If Yes** call OES within 2 hrs of time agency notified or discovered spill.  
**OES Phone # 1-800-852-7550**

**OES Control # \_\_\_\_\_ Time OES notified: \_\_\_\_\_**  
MM/DD/YY Time 24 hr

**Call supervisor to review circumstances and reporting. \_\_\_\_\_**  
**Supervisor called: \_\_\_\_\_**  
MM/DD/YY Time 24 hr

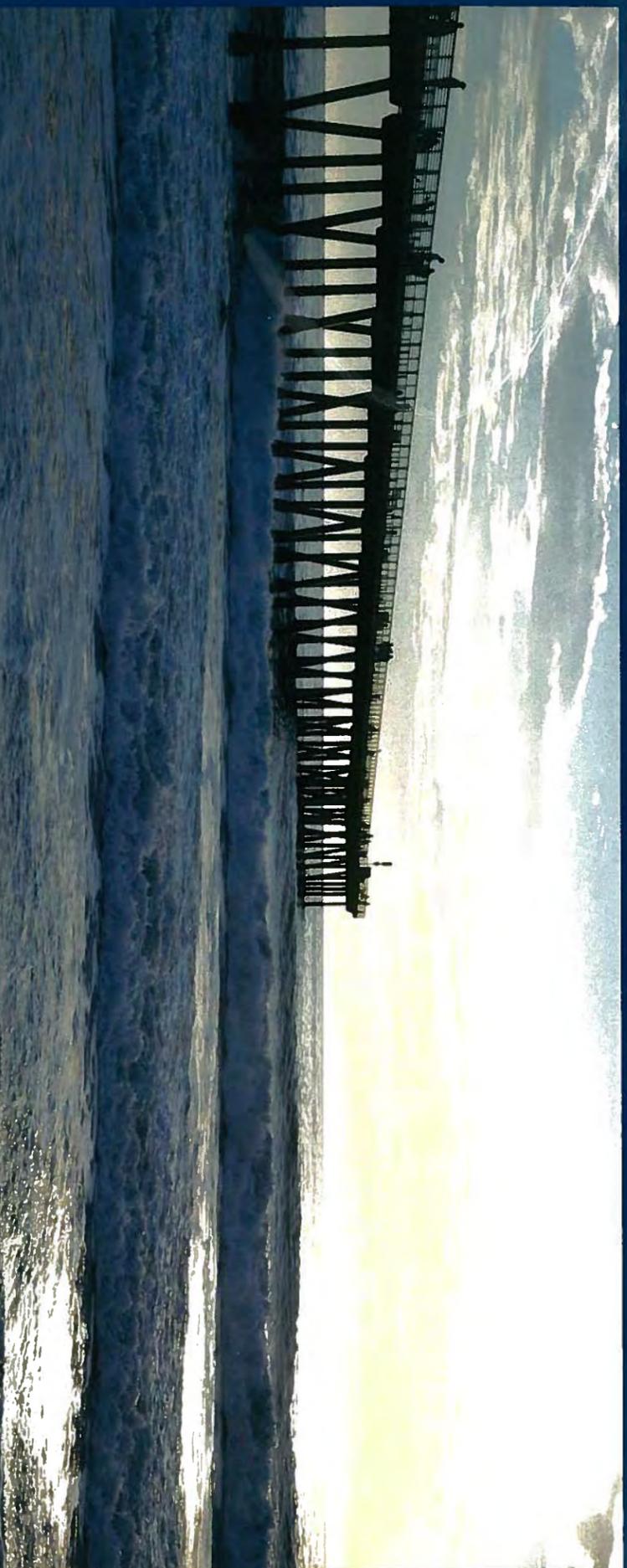
**Special circumstances/Comments:\_\_\_\_\_**

**Attach This Worksheet to the Stoppage Report Package for This Event**



# Help Protect Public Health and the Environment

Los Angeles County Department of Public Health  
 Environmental Health Division  
 5050 Commerce Drive  
 Baldwin Park, CA 91706



<p><b>California Office of Emergency Services</b></p> <p><b>(800) 852-7550</b> <i>(24-hour reporting)</i></p>	<p><b>Los Angeles County Public Health</b></p> <p><b>(213) 974-1234</b> <i>(24-hour reporting)</i></p>	<p><b>Los Angeles Regional Water Quality Control Board</b></p> <p><b>(213) 576-6657</b> <i>(business hours)</i> <b>(213) 305-2253</b> <i>(non-business hours)</i></p>
<p>Report sewage discharges greater than 1,000 gallons which have entered, or may enter the <b>waters of the state</b>. (discharge has passed the curb into the gutter, flowing towards the storm drain)</p> <p><b>Immediate notification</b> Immediate notification to the OES as soon as that person has knowledge of the discharge, notification is possible and notification can be provided without substantially impeding clean-up or other emergency measures.</p>	<p>Report sewage discharges which have entered, or may enter the <b>waters of the state</b>. (discharge has passed the curb into the gutter, flowing towards the storm drain)</p> <p><b>Notification within 15 minutes</b> Fifteen minutes after an agency confirms that a sanitary sewer overflow has occurred or is occurring from the agency's sewer collection system.</p>	<p>Report all sewage discharges when public contact is likely.</p> <p><b>Notification within 2 hours</b> Applies only to Los Angeles County Publicly Owned Treatment Works (POTW) NPDES permittees.</p>
<ol style="list-style-type: none"> <li>Contact information</li> <li>Location of the discharge</li> <li>Amount of the discharge</li> <li>Start time and end time of the discharge</li> <li>Disposition of the discharge (contained, sent into a storm drain or waterway, soaked into the ground etc.)</li> </ol> <p><b>Authority</b> California Water Code Section 13271</p>	<ol style="list-style-type: none"> <li>Contact information</li> <li>Location of the discharge</li> <li>Amount of the discharge</li> <li>Start time and end time of the discharge</li> <li>Disposition of the discharge (contained, sent into a storm drain or waterway, soaked into the ground etc.)</li> </ol> <p><b>Authority</b> California Health &amp; Safety Code, Section 5411.5</p>	<ol style="list-style-type: none"> <li>Contact information</li> <li>Location of the discharge</li> <li>Amount of the discharge</li> <li>Start time and end time of the discharge</li> <li>Disposition of the discharge (contained, sent into a storm drain or waterway, soaked into the ground etc.)</li> </ol> <p><b>Authority</b> Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems and NPDES permits applicable.</p>

## SECTION 7. FATS, OILS, AND GREASE (FOG) CONTROL PROGRAM

### 7.1 Introduction

This section of the SSMP describes the development and implementation of FOG source control measures for all known sources of FOG discharged to the City's sanitary sewer system. The City currently contracts with the County of Los Angeles to implement the FOG Control Program under their agreement with the County as outlined in Section 3 of this SSMP.

### 7.2 Regulatory Requirements for the Fats, Oils, & Grease Control Program

Summarized requirements for the FOG Control Program section of the SSMP are:

#### **GWDR (Element 7 – Fats, Oils, and Grease (FOG) Control Program) Requirements:**

The GWDR requirements for the FOG Control Program are: *Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification as to why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:*

- *An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;*
- *A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system area;*
- *The legal authority to prohibit discharges to the system and identify measures to prevent SSO's and blockages caused by FOG;*
- *Requirements to install grease removal devices (such as traps or interceptors) design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;*
- *Authority to inspect grease producing facilities, enforcement authorities, and whether the District has sufficient staff to inspect and enforce the FOG ordinance;*
- *An identification of sewer system sections subject to FOG blockages and establish a cleaning maintenance schedule for each section; and*
- *Development and implementation of source control measures, for all sources of FOG discharged to the sewer system, for each sewer system subject to FOG blockages.*

### 7.3 Nature and Extent of FOG Problem

The City's sanitary sewer collection system serves approximately 34,000 residents and can reach up to 200,000 people due to business, shopping and tourism. Several restaurants are located within the City as well. Food service establishments (FSE's) are the largest population of FOG producers within the City. Most FSE's are located near or in the heart of town near the



Golden Triangle shopping district bound by Wilshire Blvd., Santa Monica Blvd., and Rexford Avenue. Figure 7-1 identifies general locations of FSE's in Beverly Hills.

**Figure 7- 1. General Locations of FSE's in Beverly Hills. (Image source: Beverly Hills GIS)**



Existing FOG-control measures have prevented FOG-related SSO's for the last several years. Grease traps or interceptors are installed at all of the excessive grease-producing FSE's.

#### 7.4 Public Outreach

The Requirement: *An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG.*

The County proactively reaches out to customers throughout the service area about the FOG program. Information on proper disposal of FOG and other SSO prevention measures, including installation of backflow valves, house lateral maintenance, etc., is disseminated through publication of an Annual Report, brochures, articles in Cities' newsletters, and individual notices to property owners. The County also utilizes personal contacts with home and business owners by field crews and the County's Industrial Waste Inspectors. The County has also initiated the distribution of FOG door hangers in neighborhoods with sewer lines prone to heavy grease problems. These methods have proven to be very effective in relaying information on proper



disposal of FOG and other SSO prevention methods to stakeholders. The County is continuously seeking additional ways to communicate with the public. Expanded use of the County's home webpage, use of radio and television announcements, and other means would be pursued in the future.

#### **7.4.1 Residential Service Areas**

The City funds the purchase of promotional materials about the FOG Control Program, proper disposal methods, and Best Management Practices (BMP's) for residents. Promotional items include flyers and brochures. These items are periodically distributed as needed by City staff through mailers or community events such as Restaurant Week (March), Taste of Beverly Hills Food & Wine Festival (March), Farmers' Market during National Public Works Week (May), Wine and Food Festival in Beverly Hills Park (May), and United States Independence Day Parade and BBQ (July). The City may also use public service announcements for distribution of promotional materials.

The public outreach program for Residential Service Areas will be evaluated yearly for effectiveness. If needed, adjustments will be made regarding program implementation and cost of promotional items and communication methods.

#### **7.4.2 Commercial Service Areas**

The City funds the purchase and distribution of FOG control material for commercial service areas. FOG-control materials include:

- Brochure "Good Cleaning Practices" (See Appendix 7-A)
- Trap the Grease (See Appendix 7-B)
- The City's BMP's are also found on-line:  
<http://www.beverlyhills.org/living/utilities/stormwaterprogram/>

The City provides FOG-control material to new FSE's and existing businesses experiencing FOG problems. Currently, there is a low incidence of FOG-related SSO's in commercial service areas; however, formalizing the public outreach program to FSE's will aid in keeping the City incident free. The Environmental Compliance Inspector may periodically organize and facilitate workshops for restaurant owners and managers depending on need.

The public outreach program focused on Commercial Service Areas and FSE's will be evaluated yearly for effectiveness. If needed, adjustments will be made regarding program implementation and cost of FOG-control materials and methods.

### **7.5 Plan and Schedule for Disposal of FOG**

The Requirement: *A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area.*



Solidified fats found in the collection system during cleaning operations are trapped, collected, and taken to the maintenance yard dump bins. These and other debris collected from the system are taken to the County Sanitation Districts of Los Angeles County (CSD) facilities.

The City provides restaurant owners a list of acceptable local septic haulers for removing FOG. These haulers are identified in Table 7-1.

**Table 7-1. Local Septic Haulers**

BUSINESS/LOCATION	PHONE NUMBER
Baker Commodities 4020 Bandini Blvd. Vernon, CA 90058	(800) 427-0696
Jesus Grease	(323) 262-7315

## 7.6 Legal Authority

The Requirement: *The legal authority to prohibit discharges to the system and identify measures to prevent SSO's and blockages caused by FOG.*

The City's legal authority to prohibit discharges to the system and identify measures to prevent SSO's and blockages caused by FOG are handled by their agreement with Los Angeles County as outlined in Section 3. The County's authority is as follows:

The Director of Public Works and Transportation under the LACO Plumbing Code, Title 28, has the legal authority to require the installation of grease interceptors at restaurants and other food establishments that generate grease. Section 20.36.560 of LACO Code also gives the Director of Public Works and Transportation the authority to require the installation of treatment facilities, including grease interceptors, at any facility that generates FOG in the amount that will damage or increase the maintenance costs of the sewer collection system. The LACO Code Section 20.24.090 gives the Director of Public Works and Transportation the legal authority to inspect mainline sewers, sewage pumping plants, interceptors, etc., as often as he deems necessary, to ascertain whether such facilities are maintained and operated in accordance with the provisions of Division 2 of the LACO Code. Section 20.36.400 of the LACO Code prohibits the discharge of Fats, Oils, and Grease (FOG) and other substances that may, among other things, clog, obstruct, fill, or necessitate frequent repairs, cleaning out, or flushing of sewer facilities in the sewer system.

## 7.7 Grease Removal Device Requirements

The Requirement: *Requirements to install grease removal devices (such as traps or interceptors), design standards for removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.*



The County of Los Angeles Department of Public Works supplies Standard Plans for Grease Interceptors, Standard Plan 2046-0 and 2041-0 (See Appendix 7-C).

### **7.7.1 Maintenance Requirements**

The Requirement: *Requirements to install grease removal devices (such as traps or interceptors), design standards for removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.*

Each restaurant is responsible for scheduling maintenance of their grease traps.

### **7.8 Inspection Authority**

The Requirement: *Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance.*

Section 3 of the SSMP addresses legal authority to conduct inspections and enforce sewer ordinances.

The County Environmental Compliance Inspector performs inspections on a weekly basis.

When sizable grease deposits are discovered during cleaning or inspection of the sanitary sewer system, the City's Inspector notifies the FOG-producer and documents the incident in writing.

### **7.9 FOG Hot Spots and Preventive Maintenance**

The Requirement: *An identification of sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section.*

#### **7.9.1 FOG Hot Spots**

FOG Hot Spots are sections of the City's sanitary sewer system that are prone to FOG blockages and FOG-related SSO's. The City's FOG Hot Spots are identified on Figure 7-2.

#### **7.9.2 Preventive Maintenance of Sanitary Sewer System**

The City's Wastewater Division of the Public Works Department is responsible for maintenance of the sanitary sewer collection system. The City is currently undergoing a Citywide sewer system upgrade to address Hot Spots and aging infrastructure. The Wastewater Division provides routine maintenance for FOG Hot Spots sections. Given the low incidence of FOG-related SSO's, the maintenance schedule is effective and does not need adjustment at this time.

### **7.10 Implementation of Source Control Measures**

The City's program for developing and implementing FOG control measures is described above. Elements of the program include the following:

- Public Outreach,
- Plan and Schedule for Disposal of FOG,

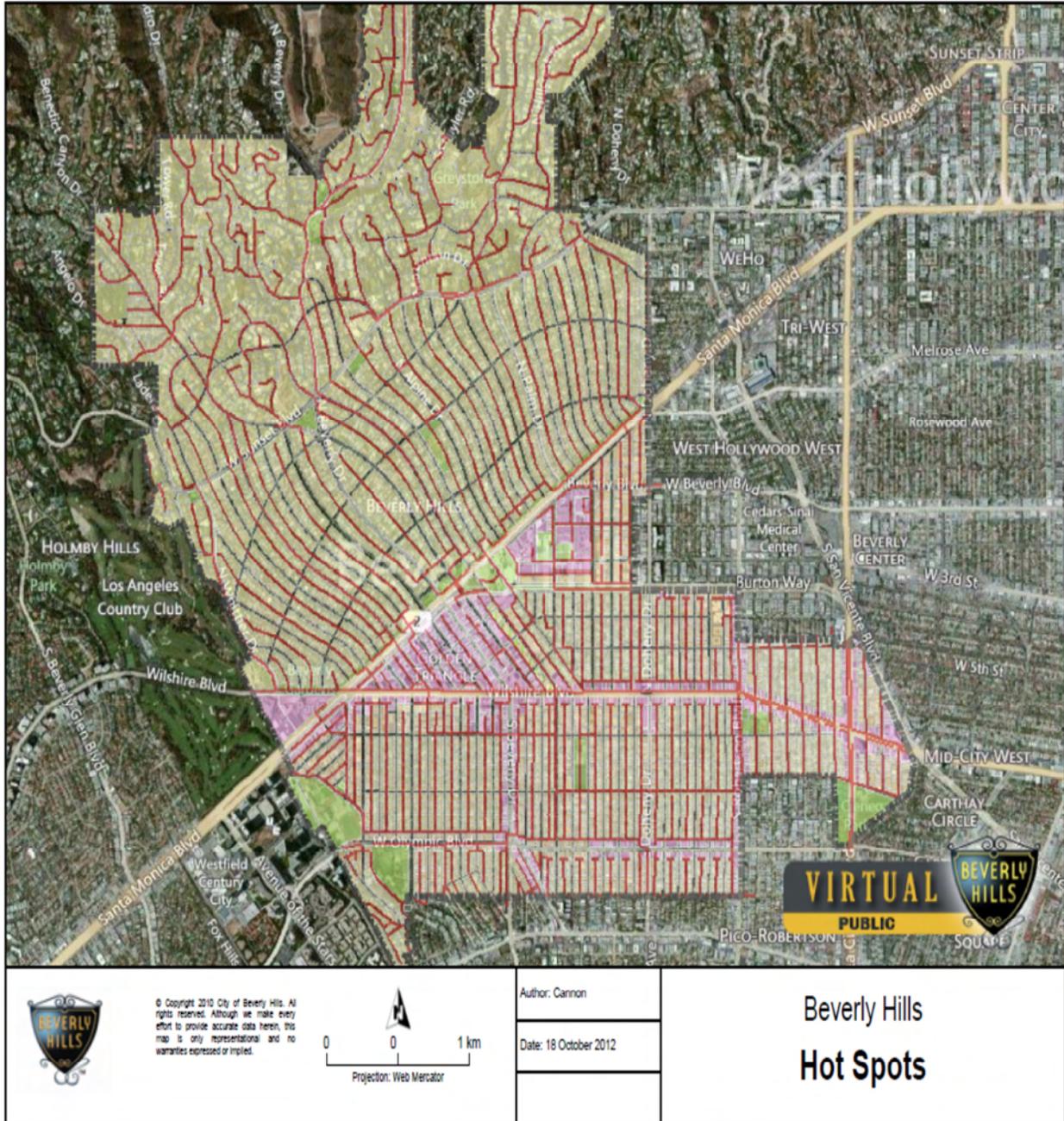


- Legal Authority,
- Grease Removal Device Requirements,
- Inspection Authority, and
- FOG Hot Spots and Preventive Maintenance.

The program will be evaluated periodically by the City and adjusted as needed.



Figure 7-2. Annual Sewer Hot Spot Jetting Locations, (Image source: Beverly Hills GIS)



**APPENDIX 7-A. BROCHURE**



# GOOD CLEANING PRACTICES

## Managing **FATS**, **OIL** and **GREASE**

POST IN CLEANUP/WORK AREA

### THE **RIGHT WAY**



**1** Wipe pots, pans, and work areas prior to washing.



**2** Dispose of food waste directly into the trash.



**3** Collect waste oil and store for recycling.



**4** Clean mats inside over a utility sink. Use dry clean up for spills.

### THE **WRONG WAY**



**1** Do not pour cooking residue directly into the drain.



**2** Avoid using the garbage disposal. Place greasy food in the trash.



**3** Do not pour waste oil directly into the drain, parking lot or street.



**4** Do not wash floor mats outside where water will run off directly into the storm drain. Do not rinse spills into the street.

For more information call (888) CLEAN LA or visit [www.888CleanLA.com](http://www.888CleanLA.com)



## **APPENDIX 7-B. TRAP THE GREASE**



## Do's and Don'ts



*Check out the Do's and Don'ts of FOG.*

### **DON'T**

Wash food scraps (solid or liquid) down the drain, dump them in the toilet, or grind them up in the garbage disposal.

Wash contents of soaking pots and pans down the drain.

Pour used oil down the drain.

Pour hot grease (including poultry skimming) down the drain.

Pour grease down the storm drain.

### **DO**

Use mesh drain strainers to catch solid food scraps for disposal in a trash can.  
Pour liquid food scraps, e.g. sauces, milkshakes, into a container and place in the trash can.

Scrape plates over the trash can or dry wipe with a paper towel.

Pour used oil into a container with a top (the original if available) so it can be reused, recycled, or placed in the trash can for disposal.

Pour cooled grease into a grease can or other container for disposal and/or absorb with paper towels or newspaper.

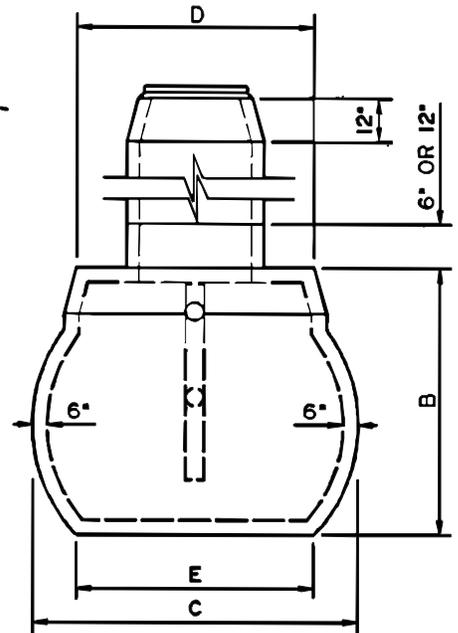
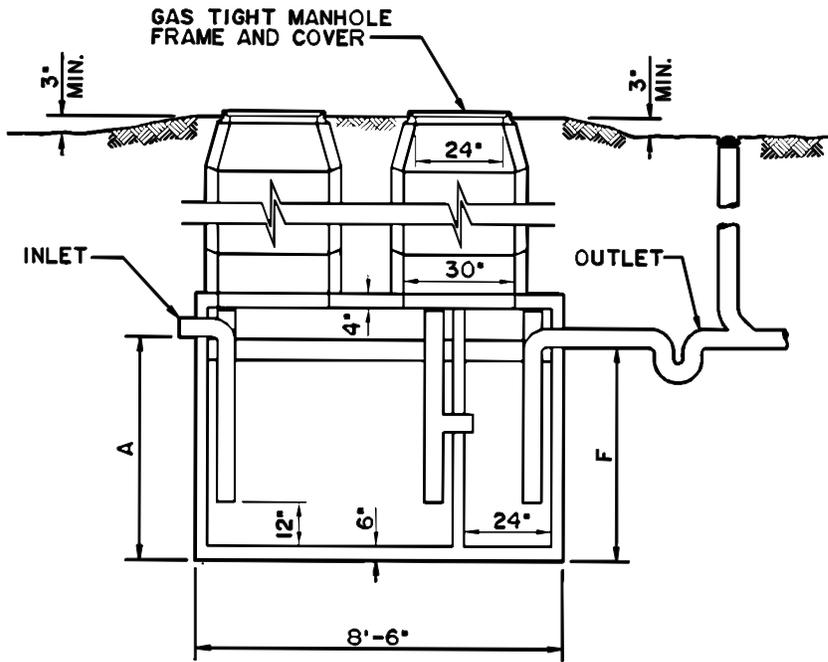
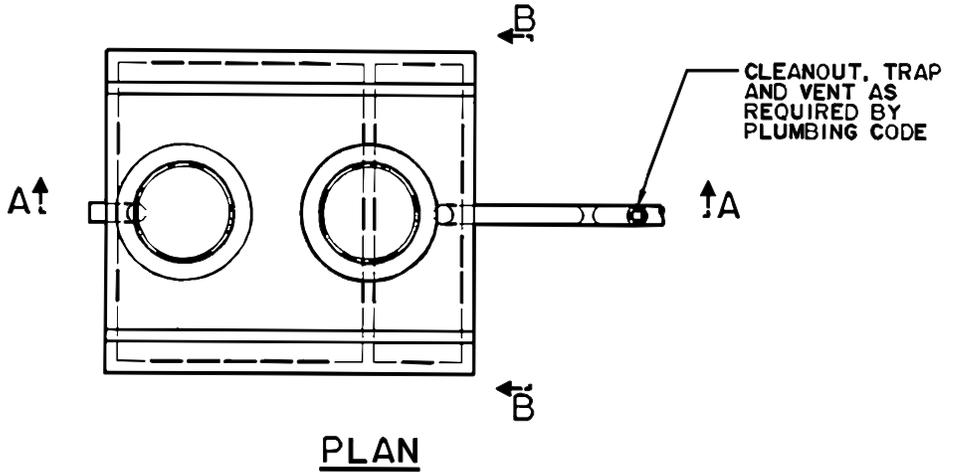
Pour cooled grease into a container, seal it and place it in the trash.

Mesh drain screens, paper towels and original oil containers are good tools for fighting FOG.

Other ways to be a part of the FOG solution include reporting any illegal dumping or spills immediately. You can also help by educating your neighbors and others in your community by sharing this website.

## **APPENDIX 7-C. GREASE TRAP STANDARD DETAILS**





CAPACITY IN GALLONS	DIMENSIONS						EXCAVATION SPECIFICATIONS		
	A	B	C	D	E	F	DEPTH BELOW INLET	LENGTH	WIDTH
750	4'-1"	5'-3"	5'-10"	4'-4"	4'-0"	3'-11"	4'-11"	9'-6"	6'-10"
1000	4'-7"	5'-7"	6'-5"	4'-9"	4'-7"	4'-5"	4'-7"	9'-6"	7'-5"
1200	5'-3"	6'-3"	6'-5"	4'-9"	4'-5"	5'-1"	5'-3"	9'-6"	7'-5"
1500	5'-3"	6'-3"	7'-5"	5'-9"	5'-5"	5'-1"	5'-3"	9'-6"	8'-5"

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

GREASE INTERCEPTOR

STANDARD PLAN

2046-0

APPROVED

*James A. Robinson*  
DIRECTOR OF PUBLIC WORKS

5/31/1992  
DATE

SHEET 1 OF 2

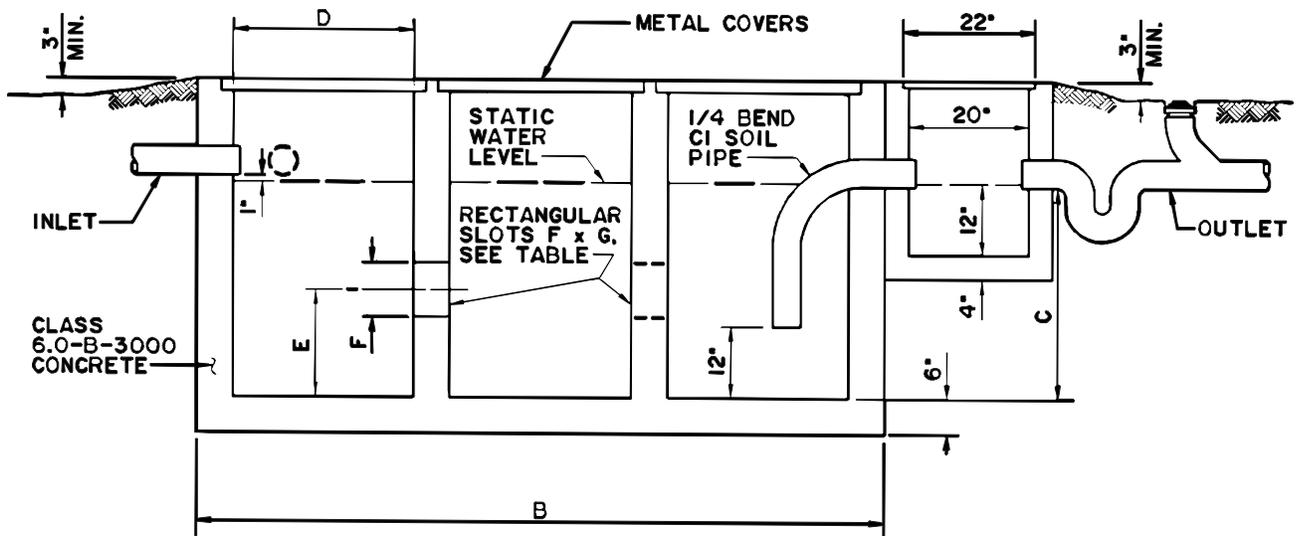
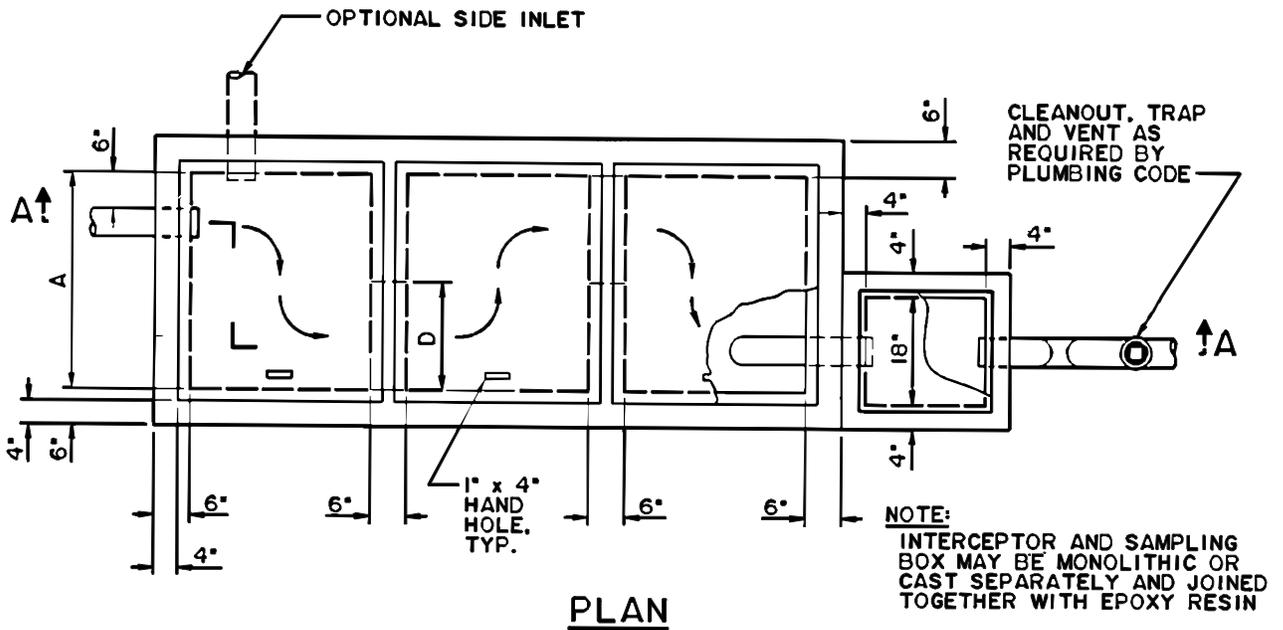
**NOTES**

1. THE APPROVAL OF THE COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS MUST BE OBTAINED BEFORE INSTALLATION.
2. THE INTERCEPTOR IS TO BE CONSTRUCTED OF TYPE II PORTLAND CEMENT CONCRETE.
3. INTERCEPTOR EXCEEDING 6'-6" IN DEPTH MUST BE CONSTRUCTED OF REINFORCED CONCRETE.
4. IF INSTALLED INSIDE OF BUILDING THE TOP OF INTERCEPTOR MAY BE LEVEL WITH FLOOR PROVIDED THAT WASTES ENTER THROUGH INLET PIPE ONLY.
5. ALL SURFACE WATER MUST DRAIN AWAY FROM INTERCEPTOR TO EXCLUDE RAIN WATER TO PUBLIC SEWERS.
6. ALL PIPING SHALL BE CAST IRON.
7. MANHOLE COVERS SHALL BE OF METAL.
8. STRUCTURE NOT FOR TRAFFIC LOADING.

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

GREASE INTERCEPTOR

STANDARD PLAN  
**2046-0**  
SHEET 2 OF 2



CAPACITY GALLONS	DIMENSIONS							COVER SIZE	METAL COVERS	PIPE SIZE
	A	B	C	D	E	F	G			
510	3'-0"	9'-6"	3'-0"	2'-6"	18"	4 1/2"	18"	2'-10"x3'-4"	1/4" STEEL PLATE	4" MIN.
866	3'-6"	10'-3"	4'-0"	2'-9"	24"	6"	21"	3'-1"x3'-10"	3/8" ALUMINUM PLATE	4" MIN.
1260	4'-0"	12'-6"	4'-0"	3'-6"	24"	6"	24"	3'-10"x4'-4"	3/8" ALUMINUM PLATE	4" MIN.

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

SAND & GREASE INTERCEPTOR

APPROVED

*Thomas R. Gilmanson*  
DIRECTOR OF PUBLIC WORKS

5/31/1992  
DATE

STANDARD PLAN  
2041-0  
SHEET 1 OF 2

SUPERSEDES COUNTY ENGINEER STD. 1-2

**NOTES**

1. THE APPROVAL OF THE COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS MUST BE OBTAINED BEFORE INSTALLATION.
2. THE INTERCEPTOR TO BE CONSTRUCTED OF TYPE II PORTLAND CEMENT CONCRETE.
3. INTERCEPTOR EXCEEDING 6'-6" IN DEPTH MUST BE CONSTRUCTED OF REINFORCED CONCRETE.
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5. ALL SURFACE WATER MUST DRAIN AWAY FROM INTERCEPTOR TO EXCLUDE RAIN WATER FROM PUBLIC SEWERS.
6. STRUCTURE NOT FOR TRAFFIC LOADING.

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

SAND & GREASE INTERCEPTOR

STANDARD PLAN

2041-0

SHEET 2 OF 2

## SECTION 8. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

### 8.1 Introduction

This section of the SSMP outlines the City's programs and activities to provide adequate hydraulic capacity in its collection system.

### 8.2 Regulatory Requirements for the System Evaluation and Capacity Assurance Plan Section

The requirements for the System Evaluation and Capacity Assurance Plan section of the SSMP are:

#### **GWDR (Element 8 – System Evaluation and Capacity Assurance Plan) Requirement:**

*The GWDR requirements for the System Evaluation and Capacity Assurance Plan are: Enrollee shall prepare and implement a capital improvement plan that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:*

- **Evaluation:** *Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSO's that escape the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events.*
- **Design Criteria:** *Where design criteria do not exist or are deficient, undertake the evaluation identified in the Evaluation requirement above to establish appropriate design criteria.*
- **Capacity Enhancement Measures:** *The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.*
- **Schedule:** *The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed above in Evaluation, Design Criteria, and Capacity Enhancement Measures requirements. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D.14 (of the GWDR).*

### 8.3 System Evaluation

In order to analyze the City's sewer collection system and plan for upgrades, the City completed a Sanitary Sewer Collection System Master Plan Document. This document was completed in September 2010 and recommendations for the collection system improvements were made. A copy of this Master Plan is kept with this SSMP document.



The major elements completed as a part of the master plan project are:

- An update of City's GIS of the sewer system
- The scanning of all sewer system record drawings and linking to the GIS
- GPS survey of every manhole in the system for location and rim elevations
- Flow monitoring to analyze inflow and infiltration within the City
- Recommendations for City design criteria
- Evaluating the condition of representative portions of the City of Beverly Hills sewer system through closed circuit television (CCTV) pipeline inspections and manhole inspections
- Extended period modeling analysis to evaluate hydraulic capacity in various design conditions
- Determining necessary capital improvement projects
- Providing a financial plan for proposed improvements and maintenance

The City of Beverly Hills sewer system is a gravity flow system consisting primarily of vitrified clay pipe constructed from the 1920s to the present. The local sewer collection pipelines are predominantly 8-inch in diameter, but diameters range from 6-inch to 36-inch and total over 100 miles. Approximately 34,000 residents are served by the City's sewer system. Wastewater generated in the City of Beverly Hills is conveyed by the City owned gravity sewer (mains) pipelines into the sewer system owned by the City of Los Angeles and finally into the Hyperion Treatment Plant in Playa del Rey.

Flow monitoring was conducted for a period of 28-days to evaluate the normal flow conditions within the system and an extended flow data analysis was performed to assess the amount of rainfall entering the sanitary sewer collection system through defects. The analysis found the majority of the water entering the sewer system is through inflow directly into the sewer system. Included in the Capital Improvement Program (CIP), is an Inflow and Infiltration Study to develop a plan to reduce defect flows into the sewer system.

A system analysis was conducted with the use of the updated and calibrated hydraulic model. The software used for the hydraulic model is Hydra by Pizer Incorporated. The purpose of the analysis was to simulate varying scenarios of different flow conditions to identify system deficiencies. As a result of the hydraulic model analysis, three projects were identified to alleviate the hydraulic capacity problems.



**Recommended Projects from Capacity Analysis**

<b>Priority</b>	<b>Street</b>	<b>Diameter</b>	<b>Proposed Diameter</b>	<b>Total Length (LF)</b>
<b>1</b>	Peck Drive	8"- 21"	12"- 27"	5,891
<b>2</b>	Gregory Way	24"- 30"	30"- 39"	4,286
<b>3</b>	Oakhurst Drive	10"-15"	15"- 21"	2,915

**8.4 Planning and Design Criteria**

The 2010 Sanitary Sewer Master Plan established several criteria to model and evaluate the City’s sewer system, as described in this section. For a more detailed account of the planning and design criteria refer to Chapter 3 (Inflow and Infiltration Analysis and Chapter 6 System Analysis) of the 2010 Master Plan.

**8.4.1 Flow Monitoring**

As part of the Sanitary Master Plan, five temporary flow monitoring locations were installed and monitored for 28 days. Additionally, the City has eight permanent flow monitors in the collection system (owned by the City of Los Angeles) that monitor at four locations throughout the collection system and four locations where the flow leaves the City limits. These flows were utilized to determine Dry Weather, Wet Weather (with further analysis) and Storm Events. Rainfall during the 28 day monitoring totaled 2.7 inches.

**8.4.2 Dry Weather flow**

The average dry weather flow is defined as wastewater production (WWP) and base infiltration and inflow (BI/I). The wastewater production is the actual wastewater flow that is generated as a result of water use. The BWW factor varies from 1.0 to 0.75 and averages to 0.80 for predominately residential basins like Beverly Hills. BI/I occurs from naturally high ground water tables, irrigation drainage or faulty plumbing. BI/I are considered to be constant.

**8.4.3 Wet Weather Flow**

Wet weather is the total flow as a result of how the collection system responds to rainfall events. Therefore, this is considered Rainfall Infiltration and Inflow (RFI/I) and it can be dominated by quick inflow (defects in system) or by slow infiltration (rainfall induced).

**8.4.4 Flow Allocation**

In the hydraulic model, the flow allocation is completed with two techniques based on dry weather and wet weather flow conditions. The dry weather flow used the sub-basin manhole flow allocation. The wet weather flow used the parameter Inch Diameter Mile (IDM) method for allocating flow.

**8.4.5 Future Population and Projected Flows**

The projected population and corresponding flow projections were used for the future flow conditions. The California Department of Finance and the Southern California Council of Governments were consulted for existing and future projections. The ultimate future flow



scenario represents the sanitary flow increase of only 7.2 percent from existing flows to year 2030. Redevelopment Project Flow Projections for various identified projects were also considered with the flow projections. The Redevelopment flow projections are located in Table 6-7 of the Sanitary Master Plan.

#### 8.4.6 Flow Depth Criteria

Flow depth criteria were established as part of the master planning effort. These criteria are typically expressed in terms of maximum flow depth to pipe diameter (d/D) ratio. The following table indicates the classifications considered in the analysis of pipe capacity.

Pipe Diameter (in)	d/D Ratio		
	0.50 to 0.75	0.75 to 0.90	≥ 0.90
<18 "	Watch	Schedule	Replace
≥18"	OK	Watch	Replace

#### 8.5 Current Projects

As a result of the Sanitary Sewer Master Plan and concurrent CCTV of the collection system, the City has identified various components throughout the City that needed to be addressed. These components include CCTV of areas, lining of pipe and spot repair pipe. A project was designed and bid and a contractor was retained to complete the work. The work will be completed at a cost of \$4.7 million. The sewer improvements to be completed in the 2012-2013 fiscal year are shown below.

Item	Estimated Quantity	Unit	Description
1	7,000	Linear Ft	Clean & CCTV – 6" to 30"
2	18,5000	Linear Ft	6 -inch lining
3	103,300	Linear Ft	8 -inch Lining
4	5,800	Linear Ft	10-inch Lining
5	5,900	Linear Ft	12-inch Lining
6	2,000	Linear Ft	15-inch Lining
7	250	Linear Ft	24-inch Lining
8	420	Linear Ft	6-inch line repair
9	610	Linear Ft	8-inch line repair
10	30	Linear Ft	10-inch line repair
11	20	Linear Ft	12-inch line repair
12	10	Linear Ft	15-inch line repair
13	563	Each	Brick Manhole Rehabilitation



## SECTION 9. MONITORING MEASUREMENT AND PLAN MODIFICATION

### 9.1 Introduction

This section of the SSMP outlines the process that the City will follow to evaluate the effectiveness of the SSMP and to identify updates that may be needed for a more effective program. The City proposes the following methods for verifying that the SSMP goals are being met and that these goals are adequate for meeting the intent of the program, which is to minimize sanitary sewer overflows.

### 9.2 Regulatory Requirements for Monitoring Measurement and Plan Modification

The requirements for the Monitoring Measurement and Plan Modification section of the SSMP are:

#### **GWDR (Element 9 – Monitoring Measurement and Plan Modification) Requirement:**

*The GWDR requirements for the Monitoring Measurement and Plan Modification are: Enrollee shall:*

- *Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;*
- *Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;*
- *Assess the success of the preventive maintenance program;*
- *Update program elements, as appropriate, based on monitoring or performance evaluations; and*
- *Identify and illustrate SSO trends, including: frequency, location, and volume.*

### 9.3 Operations and Maintenance Monitoring

The City uses a spreadsheet database to monitor, record, and track maintenance activities in the sewer collection system. The City tracks sanitary sewer overflows, blockages and their causes, sewer line cleaning and videoing, and FOG control activities. The data captured during these activities will be used to evaluate the effectiveness of this program.

### 9.4 Performance Measurement

The indicators that the City will use to measure the performance of its wastewater collection system and the effectiveness of its SSMP are:

- Total number of SSO's on an annual basis
- Number of SSO's by each cause (roots, grease, debris, pipe failure, inadequate capacity, pump station failure, other)
- Portion of Sewage Contained compared to Total Volume Spilled
- Volume of Spilled Sewage Discharged to Surface Water



- Planned # of Preventative Maintenance Activities vs. Actual # of Preventative Maintenance Activities

### 9.5 Performance Evaluation

The City has limited historical performance data for the selected performance measures. The data that is available is shown below in Tables 9-1 through 9-4. Trends will be added when the quantity of data is adequate. The goal is to keep the number of overflows to below the industry standard of less than six overflows per year per 100 miles of pipe. Given that the City has approximately 100 miles of pipe, this equates to approximately six overflows per year.

The City will evaluate the performance of its wastewater collection system as it relates to SSO's at least annually using the measurements identified above. The City will update the data and analysis in this section at the time of the evaluation.

**Table 9-1. Number of SSO's based on Facility Type**

CALENDAR YEAR	GRAVITY SEWER SSO'S
2010	3
2011	5
2012	12
2013	
2014	

**Table 9-2. Number of SSO's based on Cause**

CALENDAR YEAR	ROOTS	GREASE	DEBRIS	HYDRAULIC CAPACITY	PIPE FAILURE	OTHER	TOTAL
2010							3
2011							5
2012							12
2013							
2014							



**Table 9-3. Volume of SSO's (gallons)**

CALENDAR YEAR	VOLUME CONTAINED	VOLUME DISCHARGED TO SURFACE WATER	TOTAL VOLUME SPILLED
2010			7075
2011			8545
2012			8309
2013			
2014			

**Table 9-4. Maintenance Activity, Planned vs. Actual**

CALENDAR YEAR	# OF PLANNED ACTIVITIES <sup>1</sup>	# OF ACTUAL ACTIVITIES <sup>2</sup>	% OF PLANNED COMPLETED
2010			
2011			
2012			
2013			
2014			

1. Number of scheduled "Hot Spots" activities.
2. Number of hydro-jettings accomplished.

## 9.6 Program Modifications

The City will prioritize its actions and initiate changes to this SSMP and the related programs based on the results of the evaluation. If data indicates that certain elements of the program are not effective, staff will make adjustments to the program to ensure that overall goals can be met.



## SECTION 10. SSMP PROGRAM AUDITS

### 10.1 Introduction

This section of the SSMP outlines the process that the City will follow to audit the completeness and effectiveness of the SSMP and to identify updates that may be needed for a more effective program.

### 10.2 Regulatory Requirements for SSMP Program Audits

The requirements for the SSMP Program Audits section of the SSMP are:

#### **GWDR (Element 10 – SSMP Program Audits) Requirement:**

*The GWDR requirements for the SSMP Program Audits are:*

- *As part of the SSMP, Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSO's.*
- *At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.*

### 10.3 Audits

The City of Beverly Hills will conduct periodic internal audits at a minimum of at least once every two calendar years. The audit will be conducted by a team consisting of City staff selected from the Public Works Department and may include members from outside sister agencies and/or consultants.

The scope of the audit will cover each of the major sections of the SSMP and will be summarized through the completion of Table 10-1, Audit Checklist and an accompanying Audit Report. The Report will address the following topics and will be submitted to the RWQCB by March 15<sup>th</sup> following the calendar year that was the subject of the audit.

- A brief summary of the effectiveness of implementing SSMP elements;
- A description of the additions and improvements made to the sanitary sewer collection system during the reporting period; and,
- A description of the additions and improvements planned for the upcoming reporting year with an estimated schedule for implementation.

### 10.4 Updates

The City will determine the need to update its SSMP based on the results of the audit and the performance of its wastewater collection system determined from the Monitoring and Measurement Program Modification Section 9 of the SSMP. In the event the City decides that an update is warranted, the process to complete the update will be identified in the Audit Report. The City will then strive to complete the update within the same calendar year as the audit takes place.



**Table 10-1. Audit Checklist**

SECTION	TITLE	REQUIREMENT	Is SSMP CURRENT?	RECOMMENDED IMPROVEMENT	IMPLEMENTATION SCHEDULE
1	Goals	Reduce, prevent, and mitigate SSO's			
2	Organization	Designate LRO			
		Names and phone numbers for key management personnel			
		Names and phone numbers for key administrative personnel			
		Names and phone numbers for key maintenance personnel			
		Chain of communication for reporting SSO's			
3	Legal Authority	Prevent illicit discharges to sanitary sewer system			
		Require sewers and connection be properly designed and constructed			
		Ensure access for inspection, maintenance, and repairs (includes public portion of lateral)			
		Limit discharge of FOG and debris that may cause blockages			
		Require the installation of grease removal devices			
		Ability to inspect FOG producing facilities			
		Enforce violations of the City's sewer ordinances			
4	O&M Program	Maintain up-to-date maps of sanitary sewer system			
		Describe routine preventive maintenance program			
		Document completed preventive maintenance using system such as work orders			
		Rehabilitation and replacement plan that identifies and prioritizes sanitary sewer system defects			



SECTION	TITLE	REQUIREMENT	IS SSMP CURRENT?	RECOMMENDED IMPROVEMENT	IMPLEMENTATION SCHEDULE
		Provide regular technical training for City sanitary sewer system staff			
		Require contractors to provide training for their workers who work in the City's sanitary sewer system facilities			
		Maintain equipment inventory			
		Maintain critical spare part inventory			
5	Design and Performance Provisions	Design and construction standards for new sanitary sewer system facilities			
		Design and construction standards for repair and rehabilitation of existing sanitary sewer system facilities			
		Procedures for the inspection and acceptance of new sanitary sewer system facilities			
		Procedures for the inspection and acceptance of repaired and rehabilitated sanitary sewer system facilities			
6	OERP (SSORP)	Procedures for the notification of primary responders			
		Procedures for the notification of regulatory agencies			
		Program to ensure appropriate response to all SSO's			
		Proper reporting of all SSO's			
		Procedure to ensure City staff are aware of and follow SSORP			
		Procedure to ensure City staff are trained in the SSORP procedures			
		Procedure to ensure contractor personnel are aware of and follow SSORP			



SECTION	TITLE	REQUIREMENT	IS SSMP CURRENT?	RECOMMENDED IMPROVEMENT	IMPLEMENTATION SCHEDULE
		Procedure to ensure contractor personnel are trained in the SSORP procedures			
		Procedures to address emergency operations such as traffic and crowd control			
		Program to prevent the discharge of sewage to surface waters			
		Program to minimize or correct the impacts of any SSO's that occur			
		Program of accelerated monitoring to determine the impacts of any SSO's that occur			
7	FOG Control Program	Public outreach program that promotes the proper disposal of FOG			
		Plan for the disposal of FOG generated within the City's service area			
		Demonstrate that the City has allocated adequate resources for FOG control			
		Identification of sanitary sewer system facilities that have FOG-related problems			
		Program of preventive maintenance for sanitary sewer system facilities that have FOG-related problems			
8	SECAP	Identification of elements of the sanitary sewer system that experience or contribute to SSO's caused by hydraulic deficiencies			
		Established design criteria that provide adequate capacity			
		Short-term CIP that address known hydraulic deficiencies			
		Long-term CIP that address known hydraulic deficiencies			



SECTION	TITLE	REQUIREMENT	IS SSMP CURRENT?	RECOMMENDED IMPROVEMENT	IMPLEMENTATION SCHEDULE
		Procedures that provide for the analysis, evaluation, and prioritization of hydraulic deficiencies			
		The short- and long-term CIP's include schedules for the correction of each identified hydraulic deficiency			
9	Monitoring, Measurement, and Program Modifications	Maintain relevant information to establish, evaluate, and prioritize SSMP activities			
		Monitor implementation of the SSMP			
		Measure, where appropriate, performance of the elements of the SSMP			
		Assess success of the preventive maintenance program			
		Update SSMP program elements based on monitoring or performance			
		Identify and illustrate SSO trends			
10	SSMP Program Audits	Conduct periodic audits			
		Record the results of the audit in a report			
		Record the changes made and/or corrective actions taken			
11	Communications Program	Communicate with the public regarding the preparation of the SSMP			
		Communicate with the public regarding the performance of the SSMP			
		Communicate with tributary or satellite sewer systems			



## SECTION 11. COMMUNICATION PROGRAM

### 11.1 Introduction

This section of the SSMP outlines the process involved in communicating with interested members of the public regarding the development, implementation, and performance of this plan.

### 11.2 Regulatory Requirements for Communication Program

The requirements for the Communication Program section of the SSMP are:

#### **GWDR (Element 11 – Communication Program) Requirement:**

*The GWDR requirements for the Communication Program are:*

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

### 11.3 Communication during SSMP Development (and Updates)

The City of Beverly Hills City staff announced that it was requesting proposal for the development of an SSMP Document. Proposals were received on June 7, 2012. Cannon Corporation was retained to develop a comprehensive document. Future updates will be announced in a similar manner or completed in-house.

### 11.4 Communication regarding Sewer System Performance

The City will make information on the performance of its sanitary sewer system performance available for review. The performance information will include the performance indicators listed in Section 9 of the SSMP and will be compiled annually. Notice that the performance information is available for review will be posted on the City's website. The notice shall read:

The most recent compilation of the City's sanitary sewer system performance information is available for review during normal business hours. Interested parties can contact Christian Di Renzo ([cdirenzo@beverlyhills.org](mailto:cdirenzo@beverlyhills.org) & 310-288-2821) or Ken Gettler ([kgettler@beverlyhills.org](mailto:kgettler@beverlyhills.org) & 310-285-2469) for additional information.

The City reports SSO's electronically to the California Integrated Water Quality System (CIWQS). The electronic SSO data, as well as information regarding regulatory actions, is available at:

[http://www.waterboards.ca.gov/water\\_issues/programs/ciwqs/publicreports.shtml](http://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.shtml)



The City will direct interested parties to the CIWQS public access website. In addition, the City will report the performance of its sanitary sewer system to its City Council annually at a regularly scheduled meeting and the performance information will be included in the minutes of that public meeting. The performance information will include the performance indicators listed in Section 9 of the SSMP and will be compiled annually as stated above.

### **11.5 Communication with Satellite Collection Systems**

**City of Los Angeles:** The City of Beverly Hills entered into an agreement with the City of Los Angeles on March 9, 1999 for the conveyance, treatment and disposal of wastewater. This agreement is included as Appendix 3-B in this SSMP.

**County of Los Angeles:** The City of Beverly Hills entered into an agreement with the County of Los Angeles on August 14, 1990 for the enforcement of the industrial waste provisions of the City's Municipal Code. These services include, but are not limited to providing inspections, filing of required reports, and issuing permits. The services shall also include the inspection of open sanitary spills only in the event that the City, by action of City Council, requests such services. This agreement is included as Appendix 3-C in this SSMP.

