

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

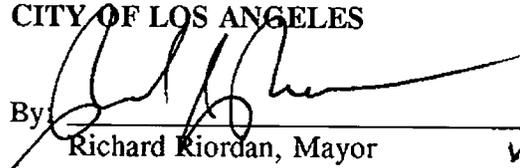
- A. To become effective, both this Agreement and a settlement agreement relating to the Pending Actions must be executed by Contracting Entity and Los Angeles. The effective date shall be the latter of the Date of Execution of this Agreement or the date of execution of the settlement agreement.
- B. 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 

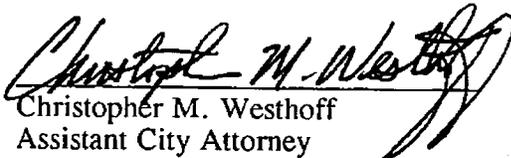
Richard Riordan, Mayor van

Date: APR 16 1999

Approved as to Form:

James K. Hahn
Los Angeles City Attorney



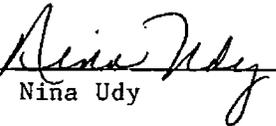


Christopher M. Westhoff
Assistant City Attorney

CITY OF BEVERLY HILLS

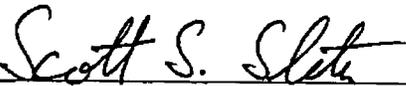
By 
Les Bronte, Mayor

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



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

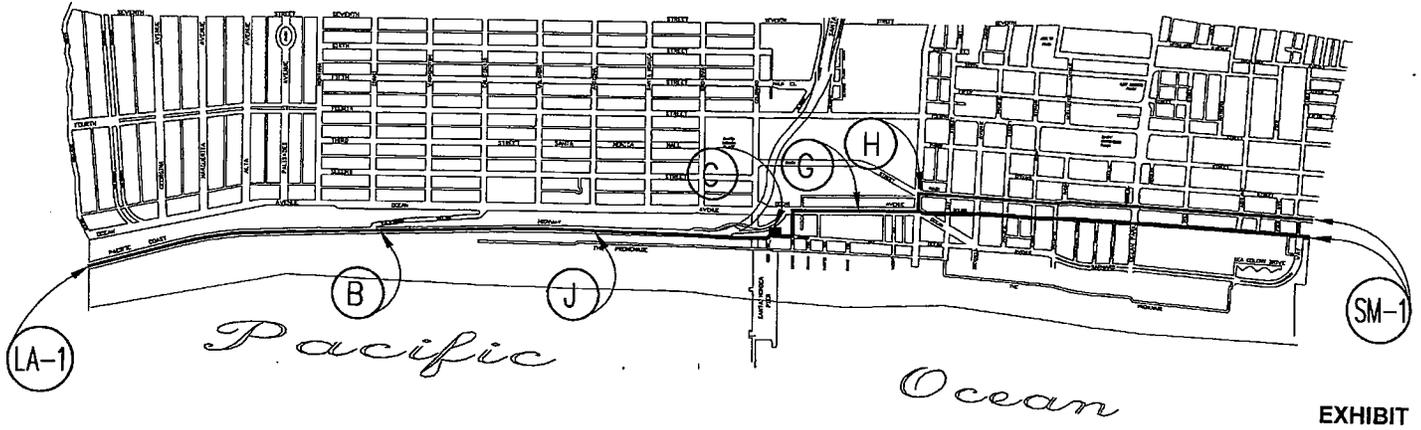


EXHIBIT A

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_{ERS} = Value of emergency response services based on the operating budget as set annually by the Los Angeles City Council;
- V_{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_{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_{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_{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_{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_{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 14th
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 *[Signature]*
MAYOR

By *Richard P. Chastany*
DEPUTY

ATTEST:

By *Jan M. Eschberger*
CITY CLERK

APPROVED AS TO FORM:

APPROVED AS TO CONTENT:

By *Kevin H. Ennis*
asst. CITY ATTORNEY

By *Mark Scott*
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



John E. Sisk
CHAIRMAN, BOARD OF SUPERVISORS

BY *Luzma C. Walton*
DEPUTY

CITY OF BEVERLY HILLS

APPROVED AS TO FORM
DE WITT W. CLINTON
County Counsel

BY *W. W. Clinton*
MAYOR

BY *Richard P. Chestnut*
DEPUTY

ATTEST:
BY *Jean M. Gushjain*
CITY CLERK

APPROVED AS TO FORM:

APPROVED AS TO CONTENT:

BY *Richard H. Garcia*
asst. CITY ATTORNEY

BY *Mark Scott*
CITY MANAGER

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

"If" Grand fax transmitted memo 7671		# of pages	1
Francis	From	Joe Rowland	35
City of Beverly Hills	To	LA County DPH	
	Phone	(818) 558-3500	
30) 273-10910	Fax	(818) 458-3500	

SEP 18 1990

Larry J. Monteilh
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
Total Maintenance Projects	\$20,775,200	\$3,310,500	\$3,894,300	\$4,257,500	\$4,640,200	\$4,672,700

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.

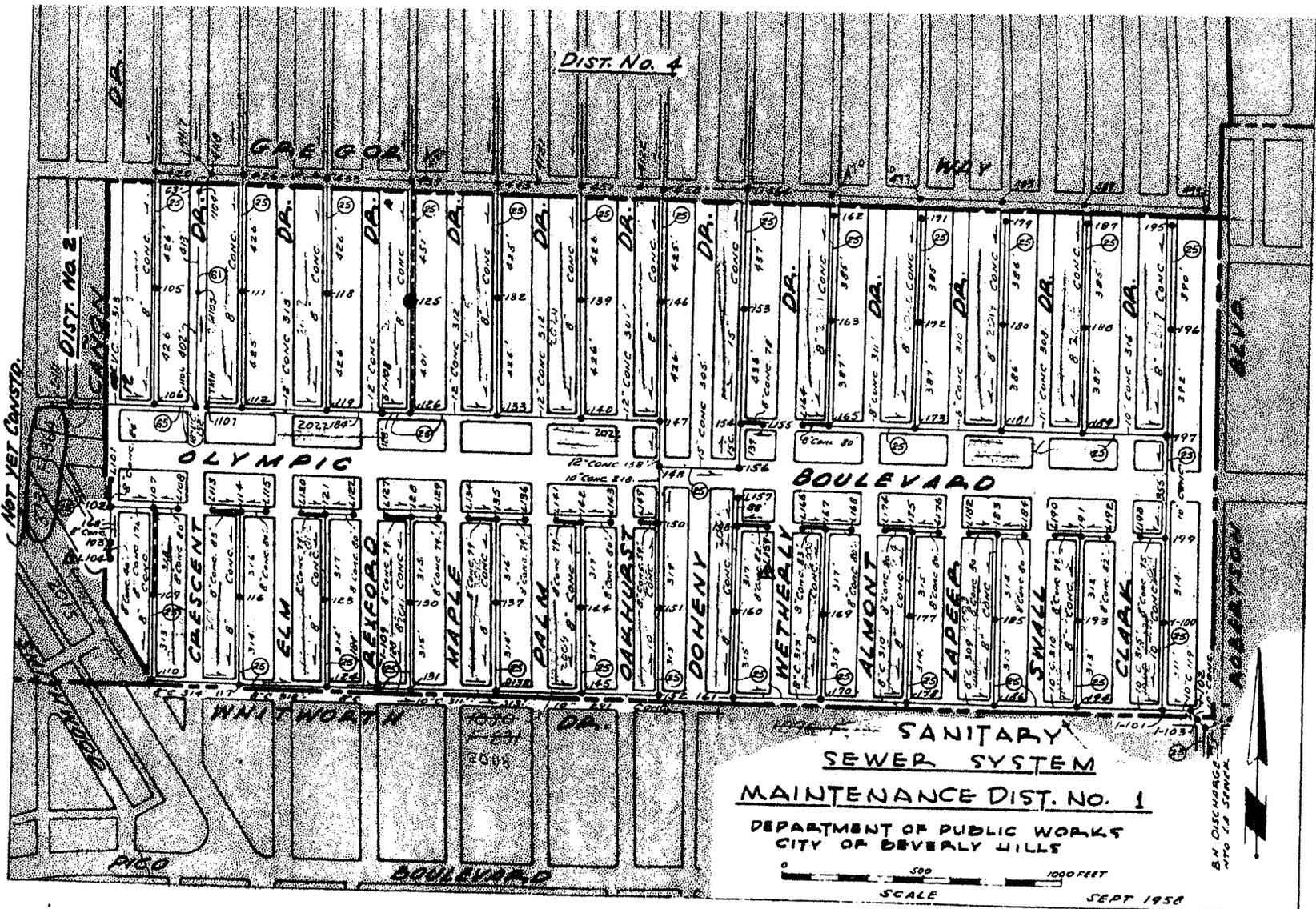
Table 4-2. Hydro Jet/Vacuum/Pump Trucks Emergency/On-Call List

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



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





NOT YET CONSTR.

DIST. No. 4

DIST. No. 2

SANITARY
SEWER SYSTEM
MAINTENANCE DIST. NO. 1

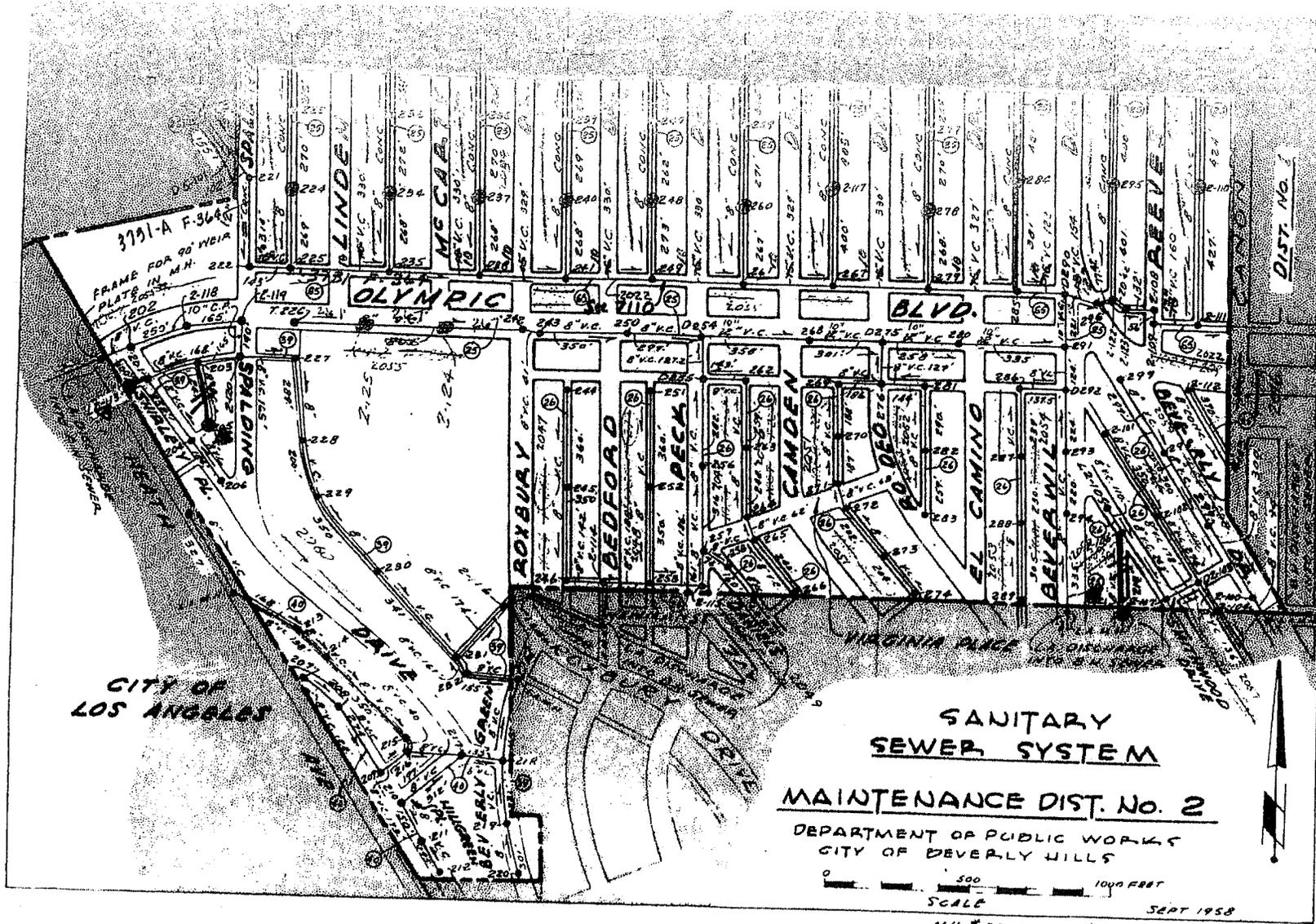
DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

0 500 1000 FEET
SCALE

SEPT 1958

M.H. # L101 TO M.H. # 4105 TOTAL NO. 105
1109
BURIED M.H. (2)

BY DISCHARGE
INTO THE STREET



CITY OF LOS ANGELES

SANITARY SEWER SYSTEM
MAINTENANCE DIST. NO. 2
 DEPARTMENT OF PUBLIC WORKS
 CITY OF BEVERLY HILLS

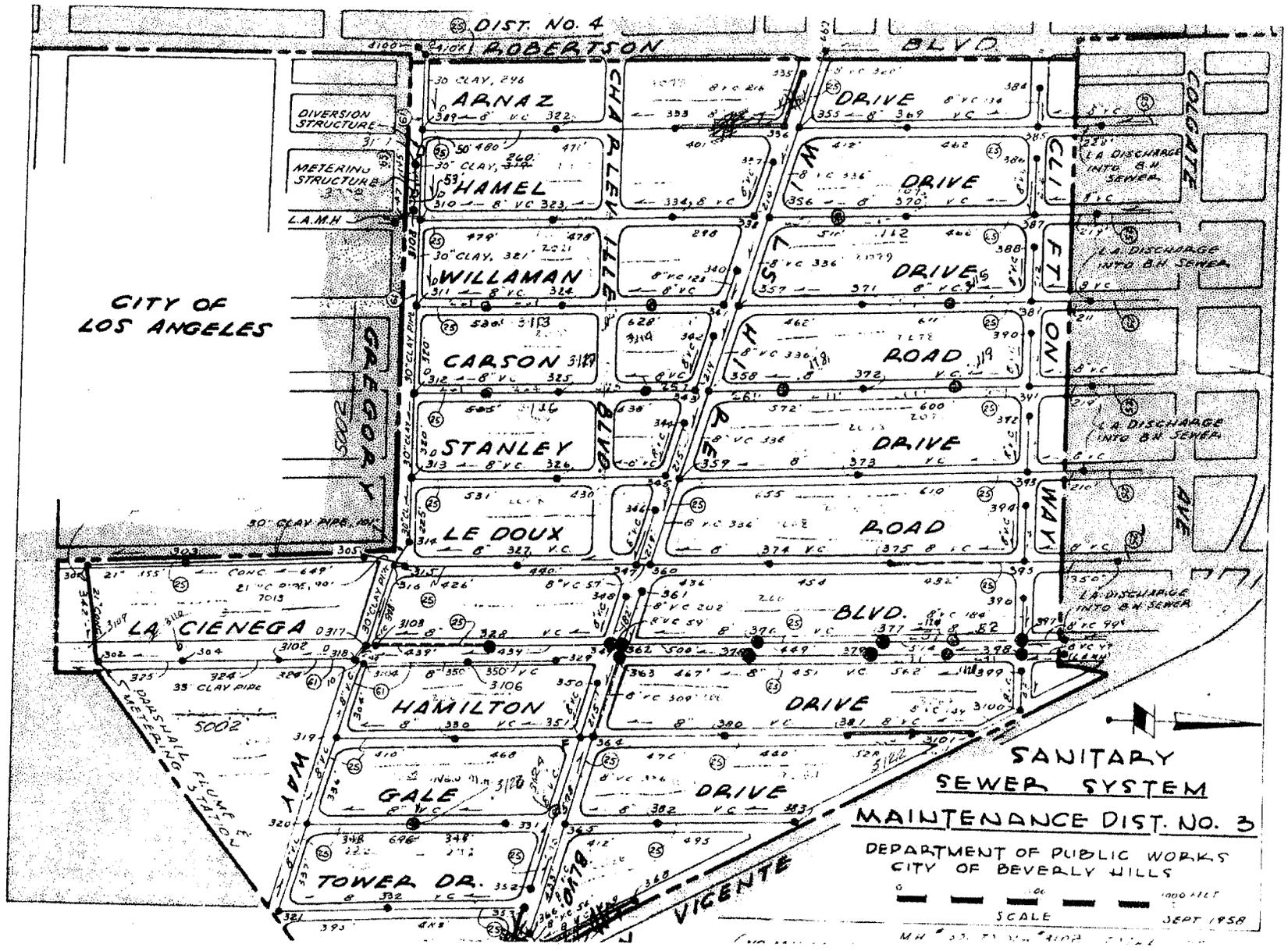
0 500 1000 FEET
 SCALE

SEPT 1958

MH # 201 TO MH # 242 - TOTAL NO = 119
 2-183-
 2-125
 REVISED FEB 1961

DIST. NO. 1

NOTE: 15" LINE IN AREA OF 150' DIST. NO. 1



CITY OF LOS ANGELES

DIST. NO. 4

ROBERTSON BLVD

BLVD

DIVERSION STRUCTURE

METERING STRUCTURE

L.A.M.H.

CALIFORNIA

5002

50\"/>

LA CIENEGA

5002

5002

HAMILTON

GALE

TOWER DR.

CHAFFIN AVE

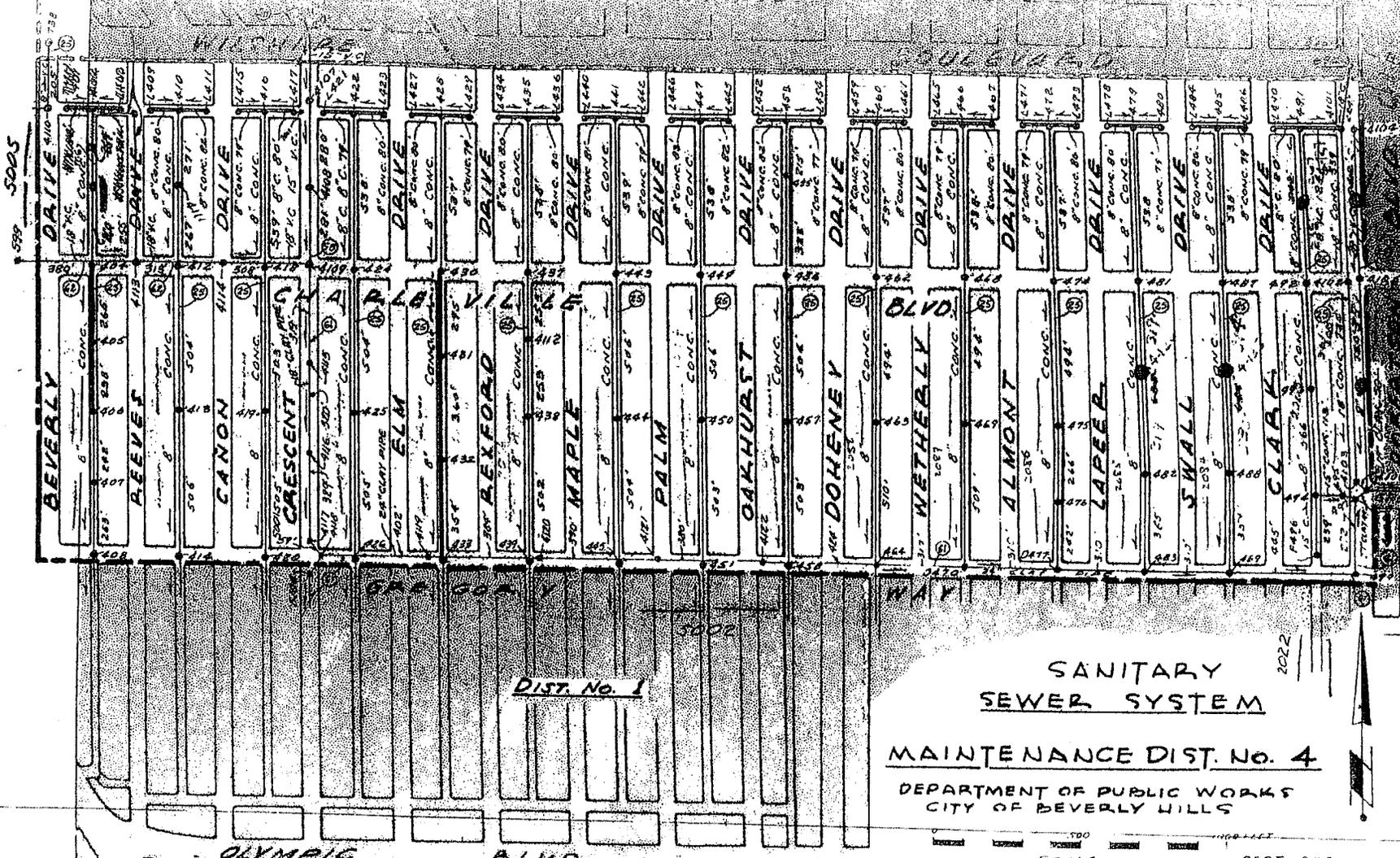
SANITARY SEWER SYSTEM MAINTENANCE DIST. NO. 3

DEPARTMENT OF PUBLIC WORKS CITY OF BEVERLY HILLS

SCALE 1" = 100' 1" = 100' 1" = 100'

SEPT 1958

M.H. 5002



DIST. No. 1

SANITARY
SEWER SYSTEM
MAINTENANCE DIST. No. 4
DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

SCALE SEPT 1958

OLYMPIC BLVD.

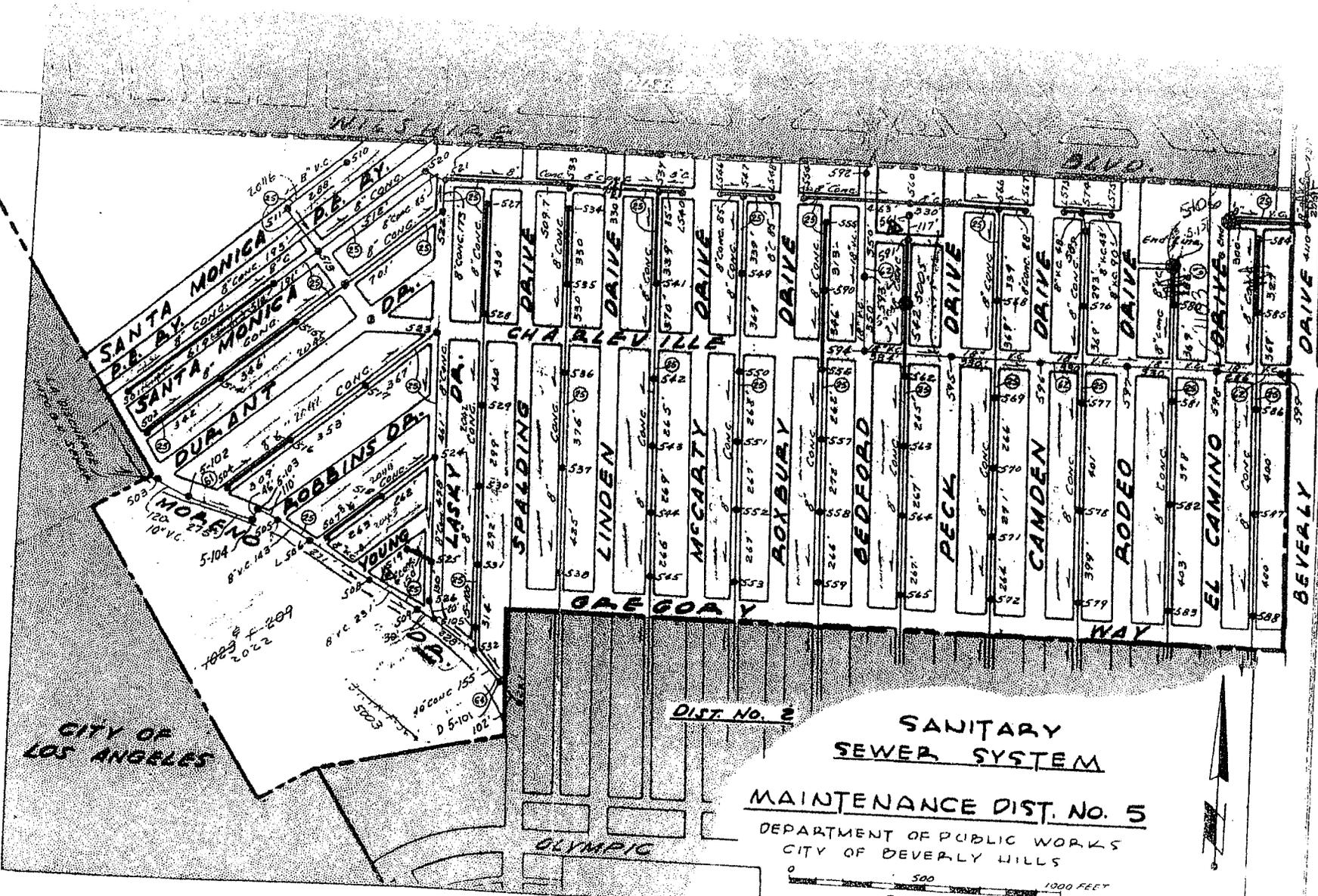
GORY WAY

5002

5005

5005

2022



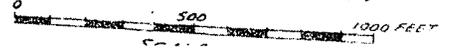
CITY OF LOS ANGELES

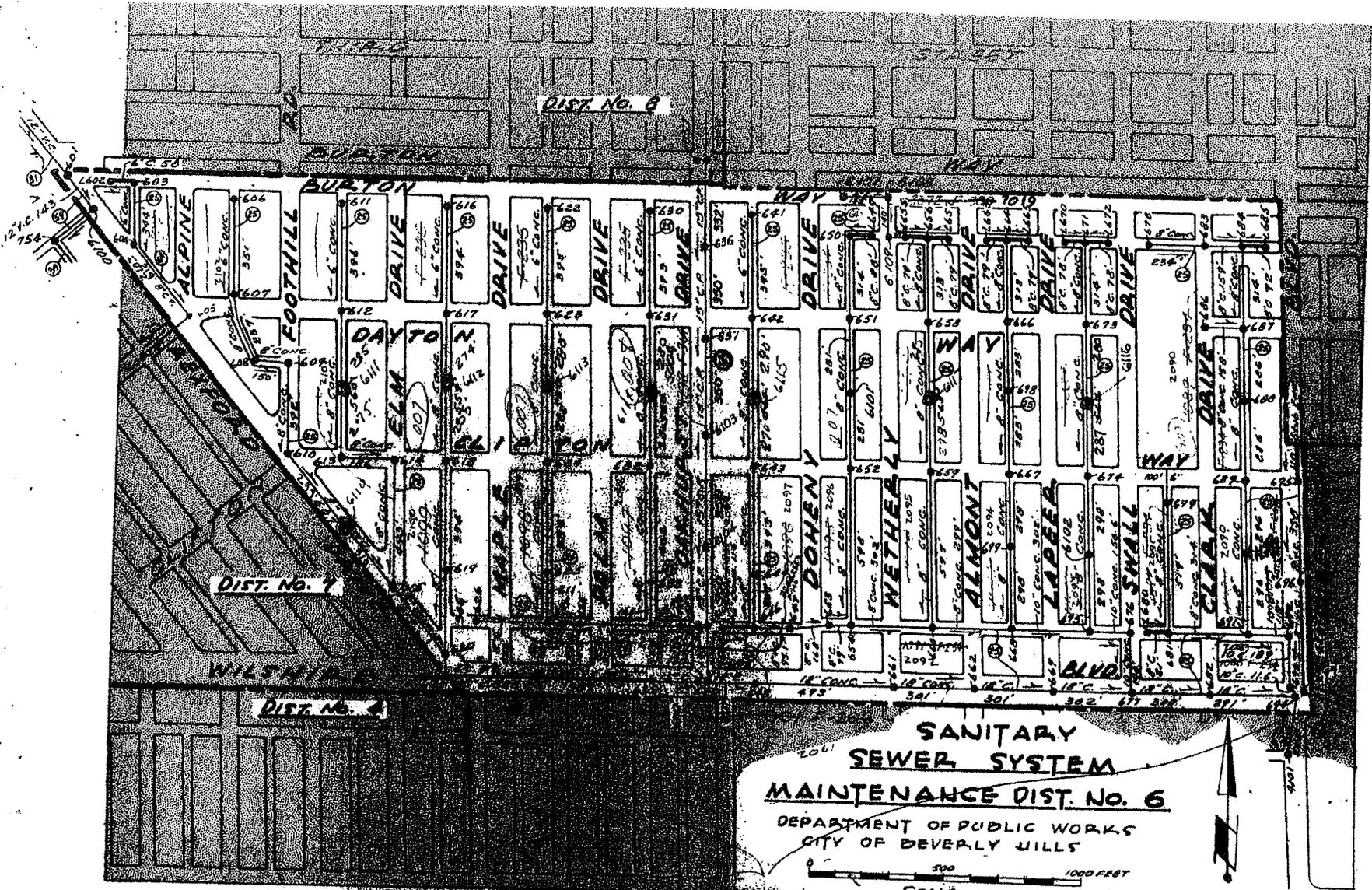
DIST. NO. 2

SANITARY SEWER SYSTEM

MAINTENANCE DIST. NO. 5

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS





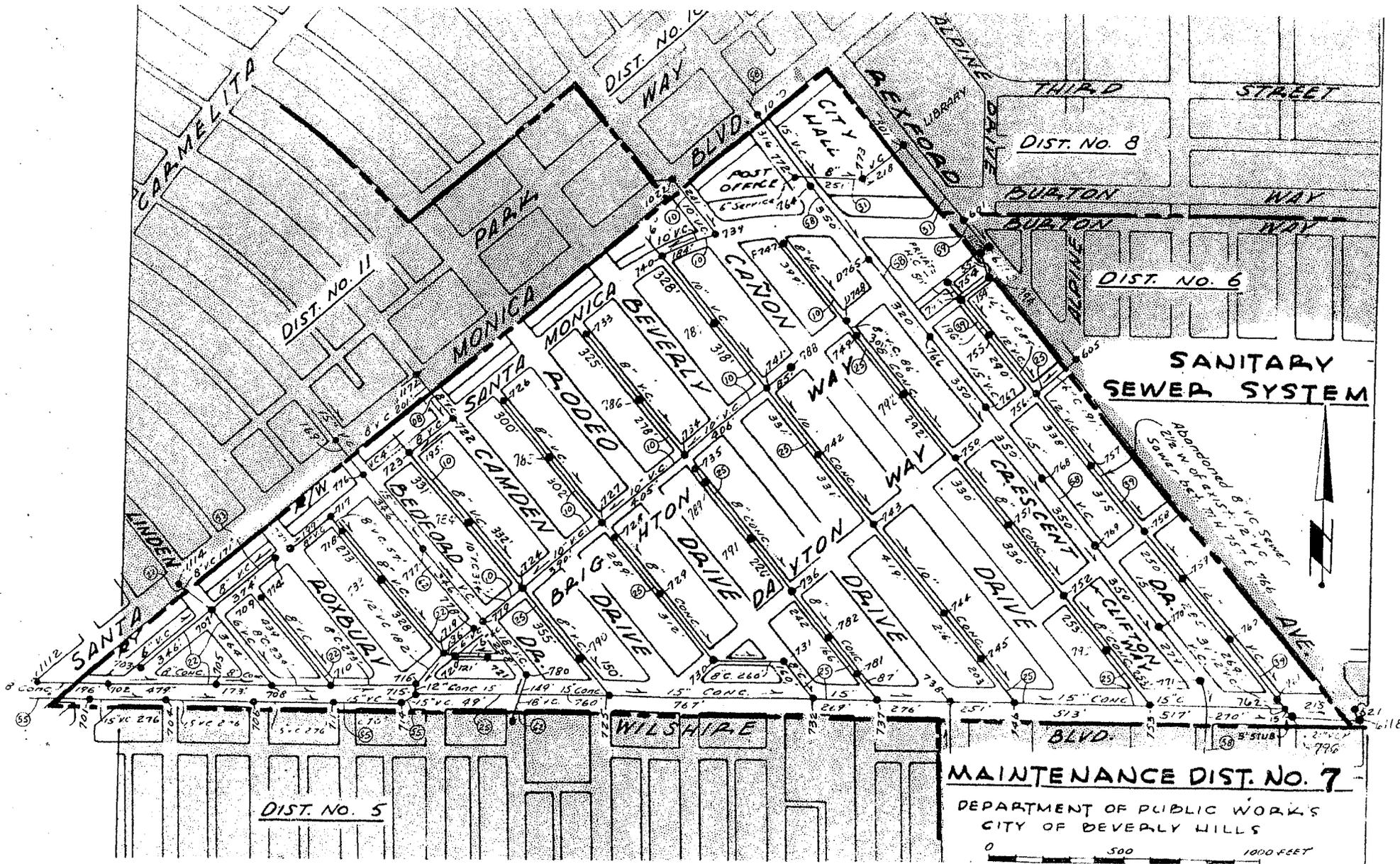
**SANITARY
SEWER SYSTEM
MAINTENANCE DIST. NO. 6**

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS



SEPT. 1958

M.H. NO. 601 TO M.H. NO. 6102 TOTAL NO. 1402
BURIED MARKERS 8109

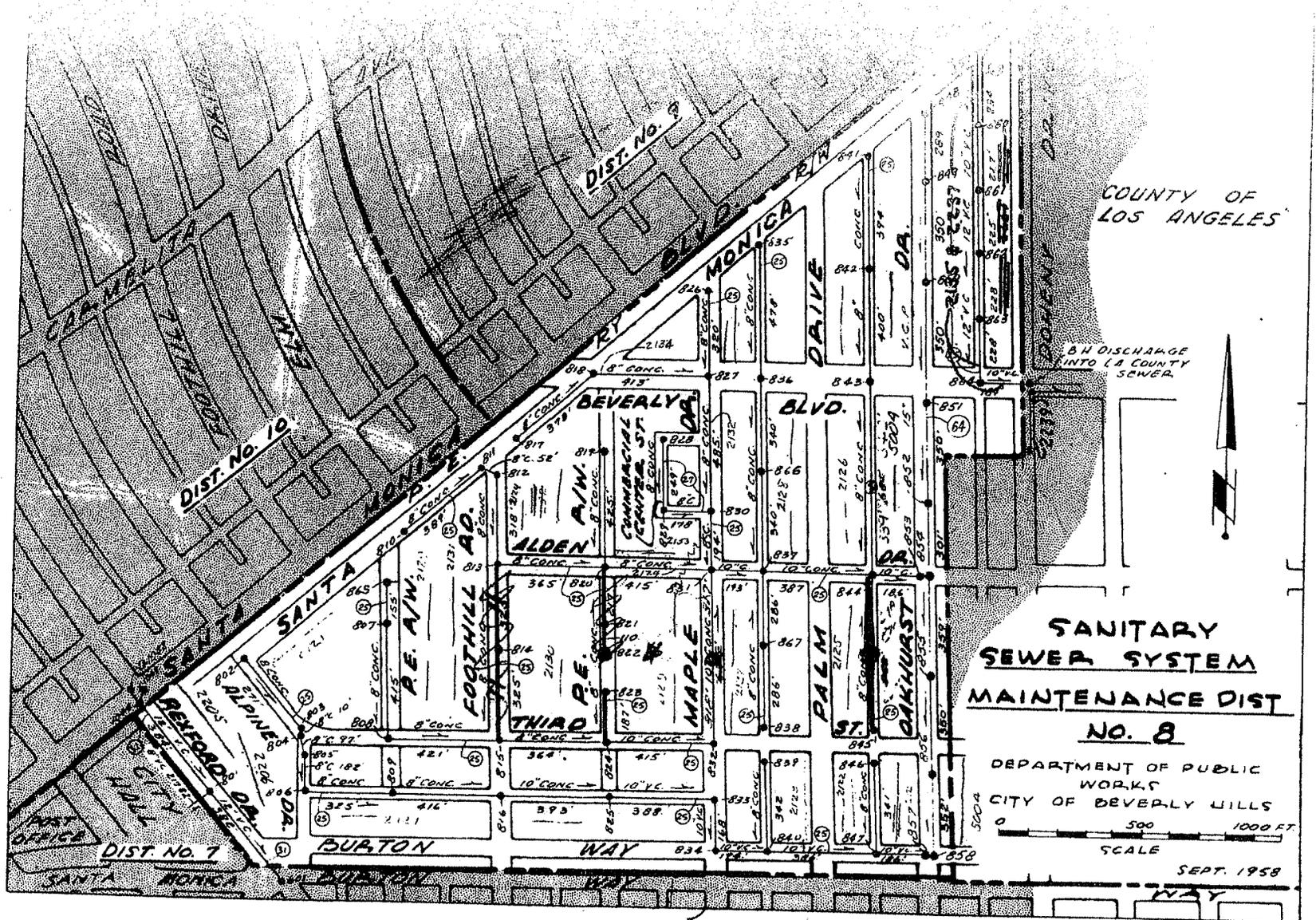


SANITARY SEWER SYSTEM

MAINTENANCE DIST. NO. 7

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

0 500 1000 FEET



COUNTY OF LOS ANGELES

5 1/4 DISCHARGE INTO L.A. COUNTY SEWER.

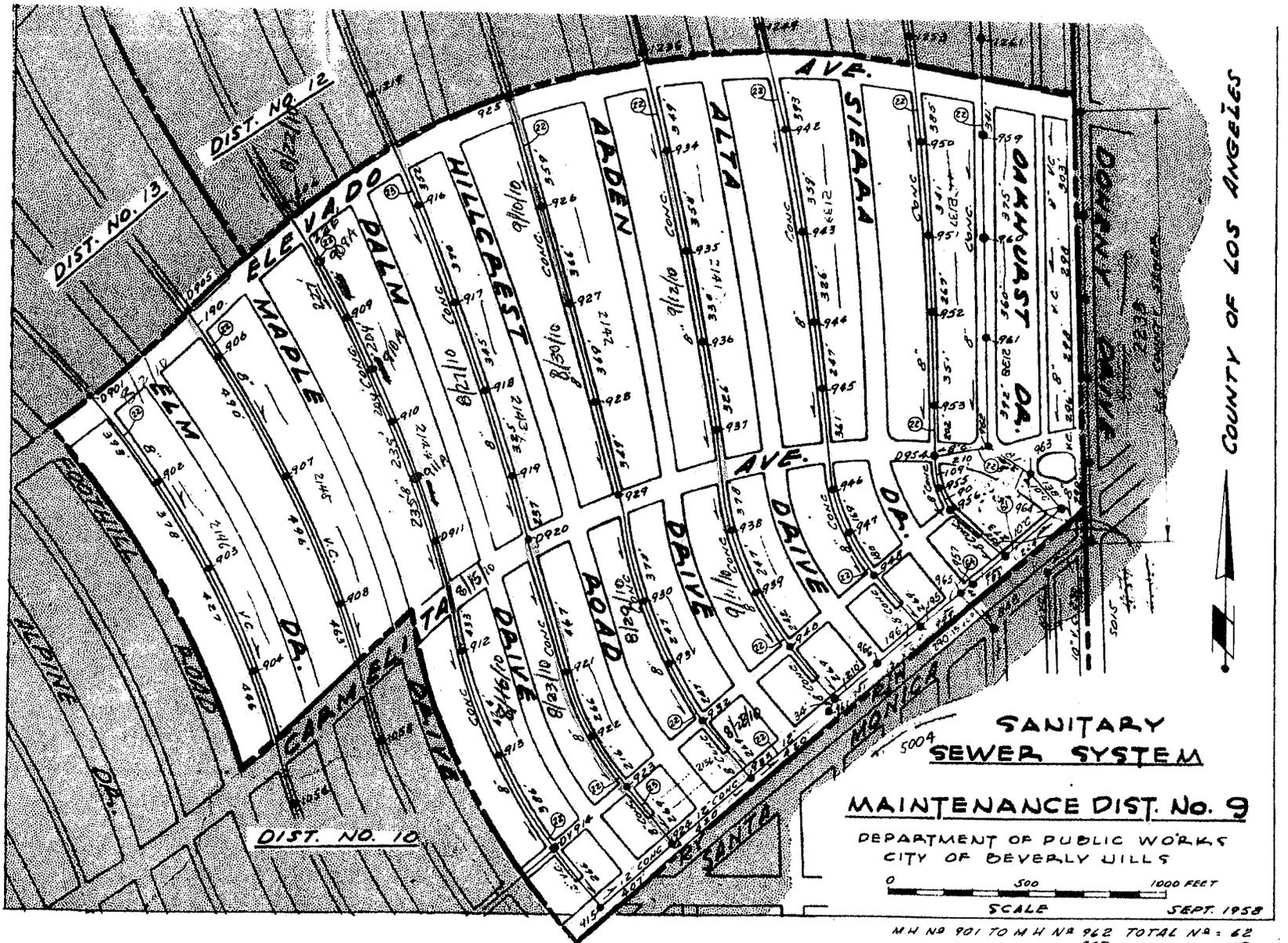
**SANITARY SEWER SYSTEM
MAINTENANCE DIST NO. 8**

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

0 500 1000 FT
SCALE

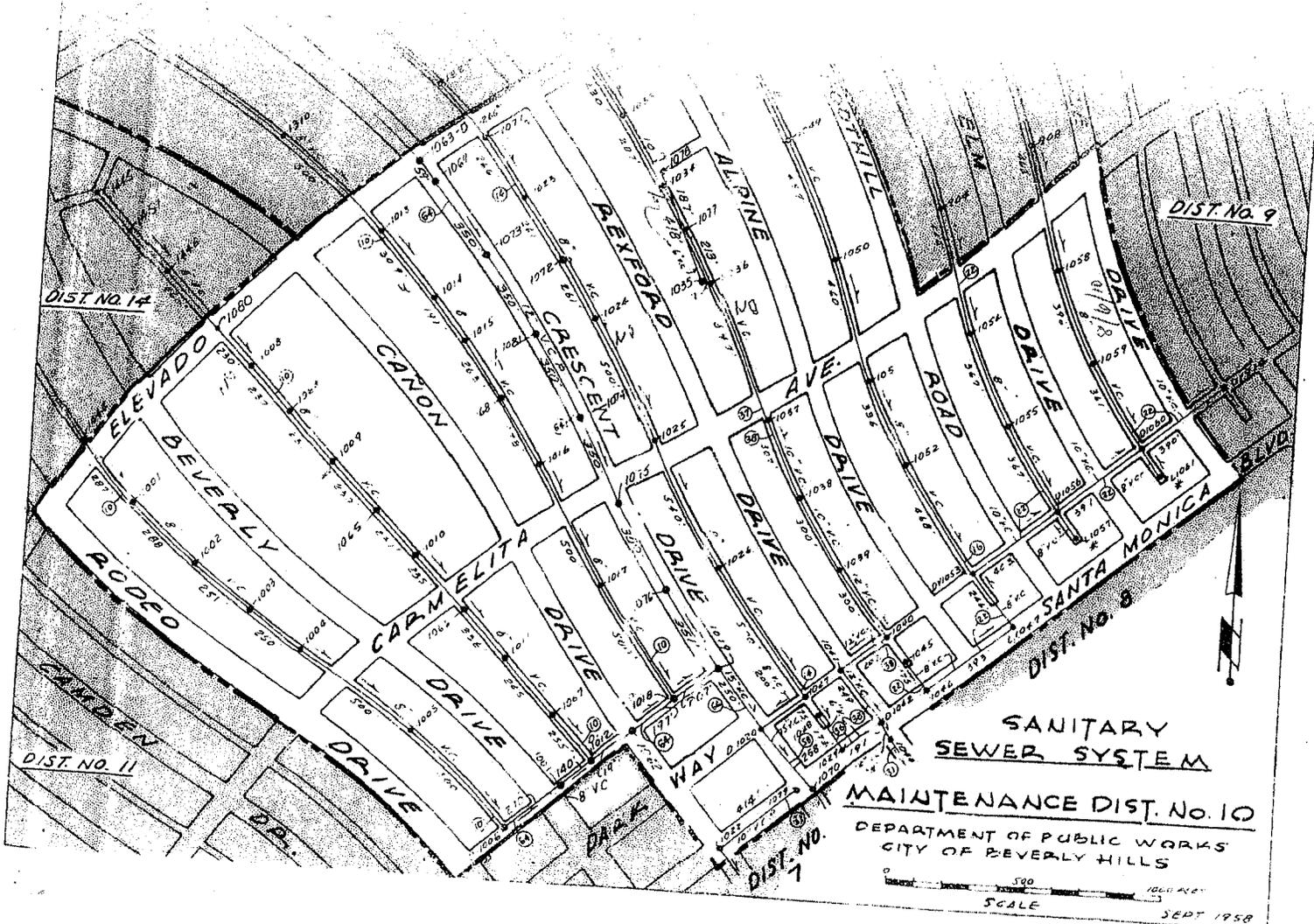
SEPT. 1958

M.H. NO. 301 TO M.H. NO. 864 TOTAL NO. 564

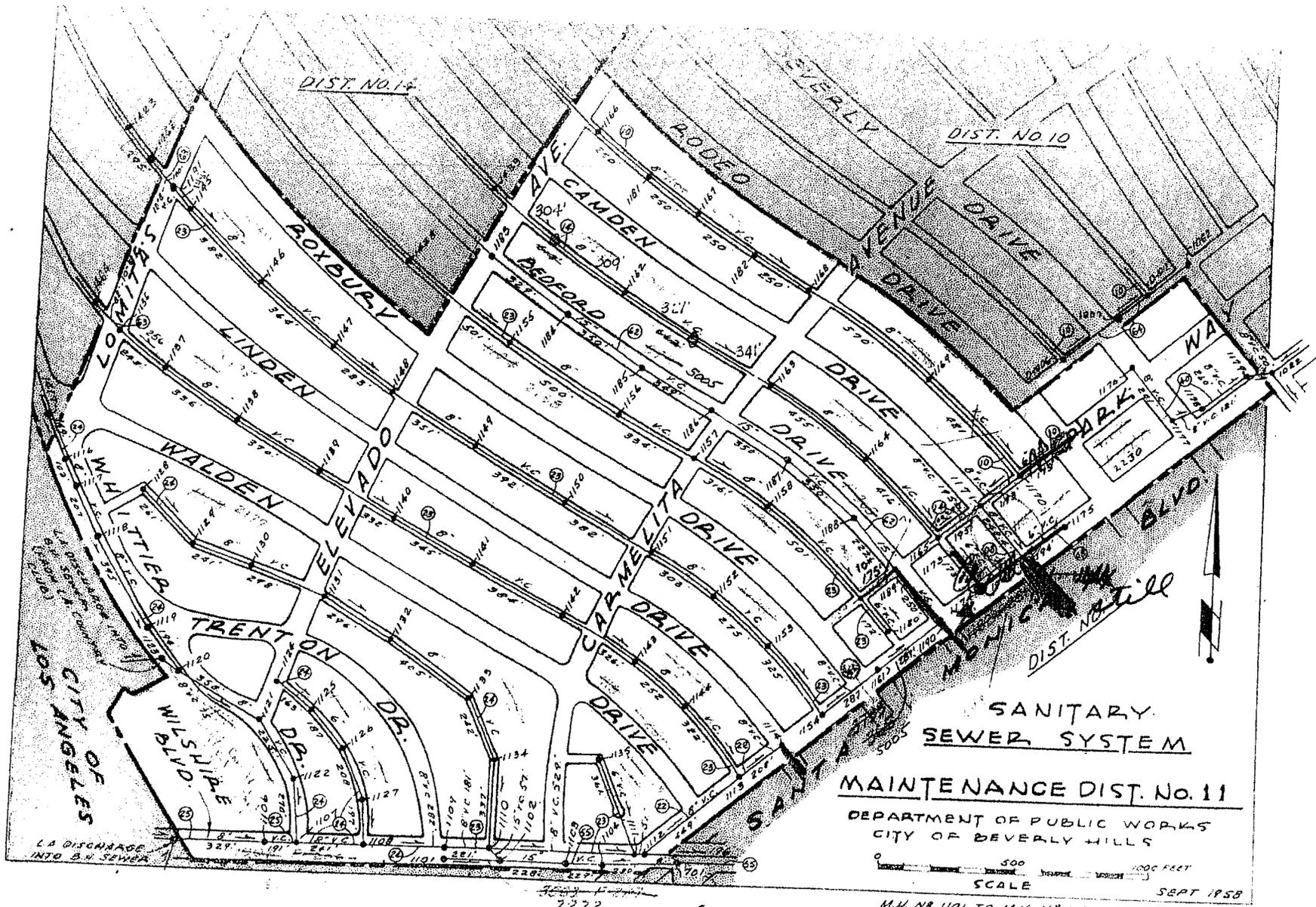


COUNTY OF LOS ANGELES





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



SANITARY SEWER SYSTEM

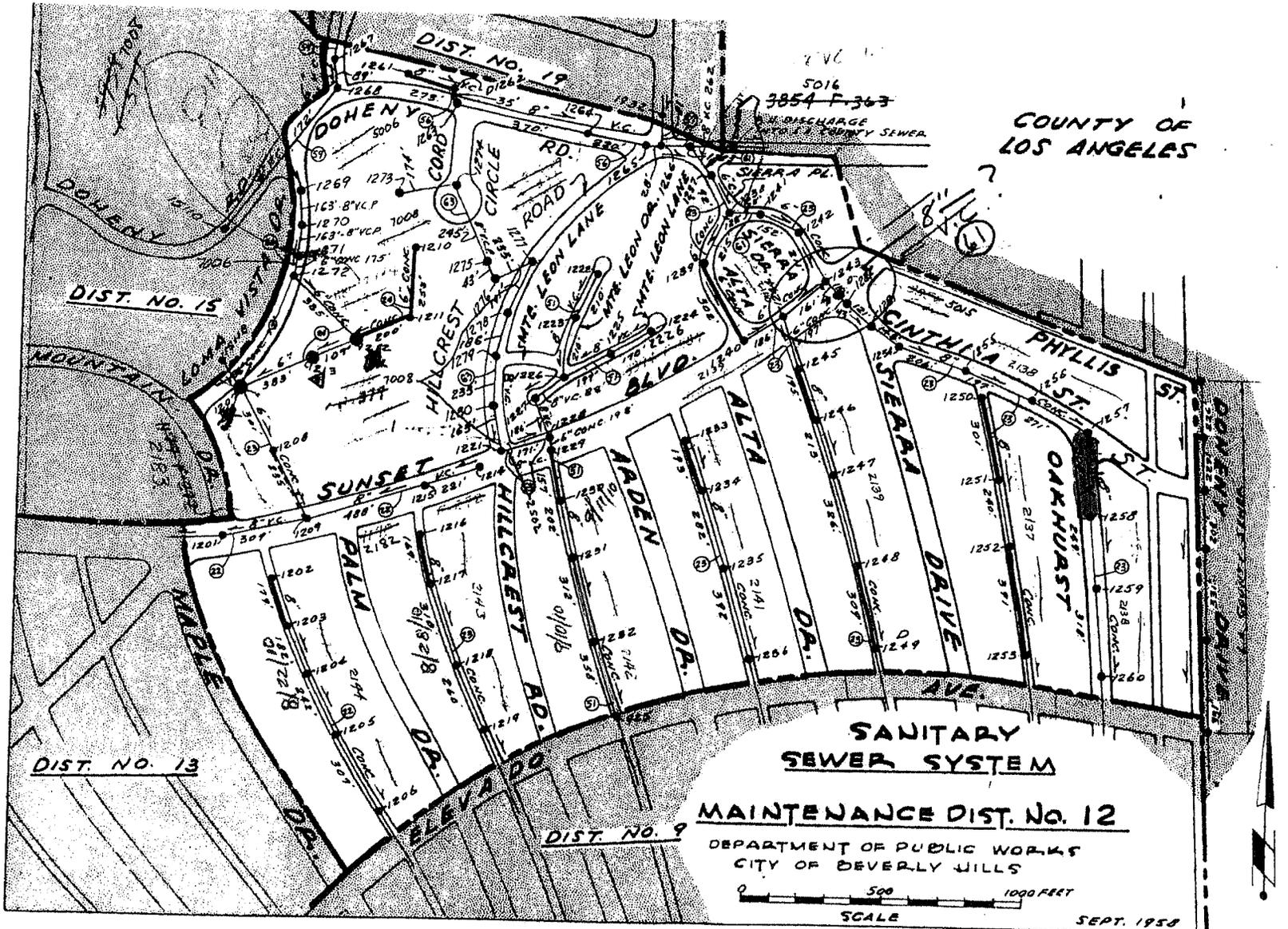
MAINTENANCE DIST. NO. 11

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

500 FEET
1000 FEET
SCALE

SEPT 1958

(NO. 1101 AND 1102 ARE 115' DIA.)



COUNTY OF
LOS ANGELES

**SANITARY
SEWER SYSTEM**

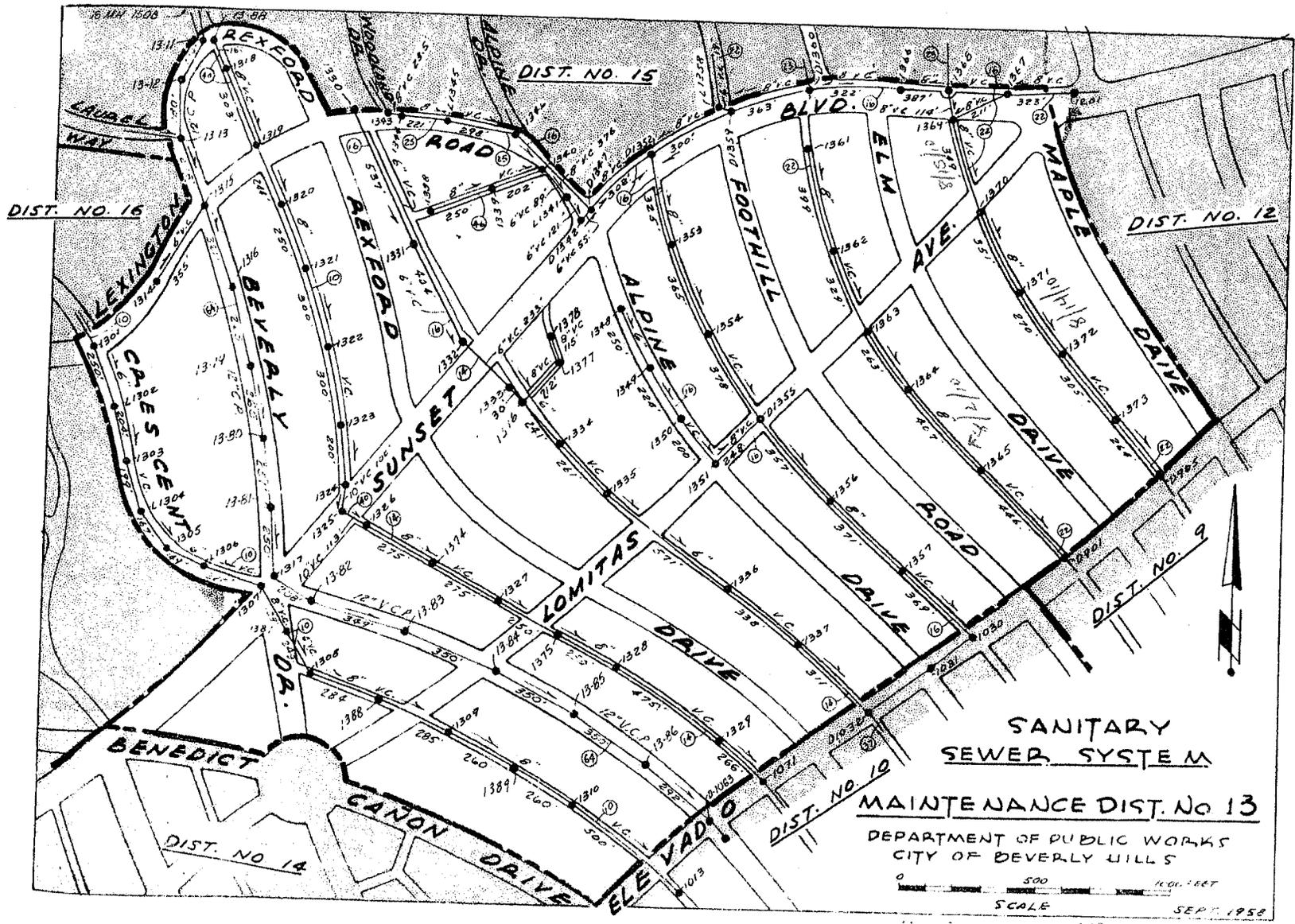
MAINTENANCE DIST. NO. 12

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

SCALE 0 500 1000 FEET

SEPT. 1950

M.H. NO 1201 TO M.H. NO 1270 TOTAL NO. = 70



**SANITARY
SEWER SYSTEM**

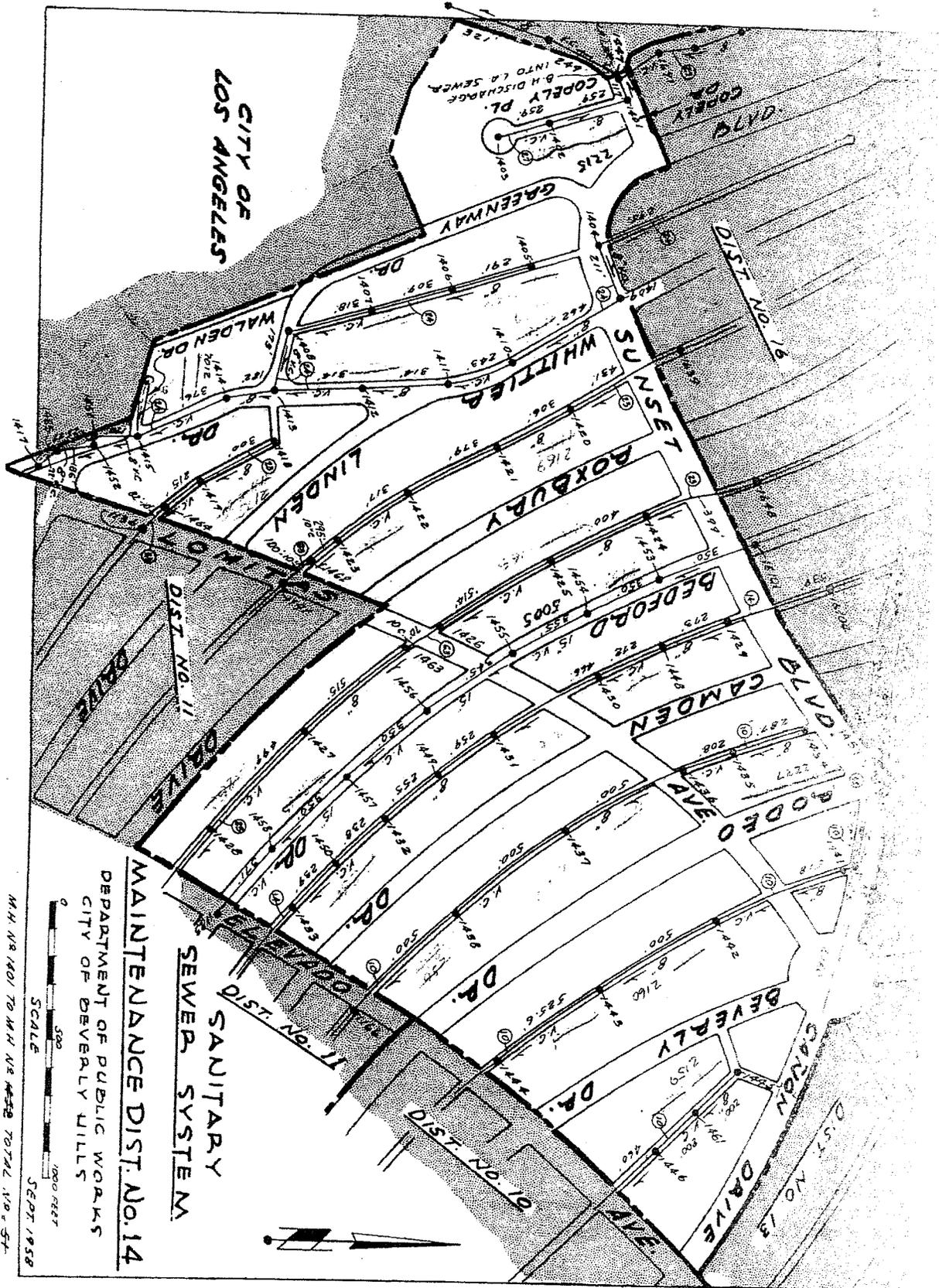
MAINTENANCE DIST. NO. 13

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

0 500 1000 FEET

SCALE

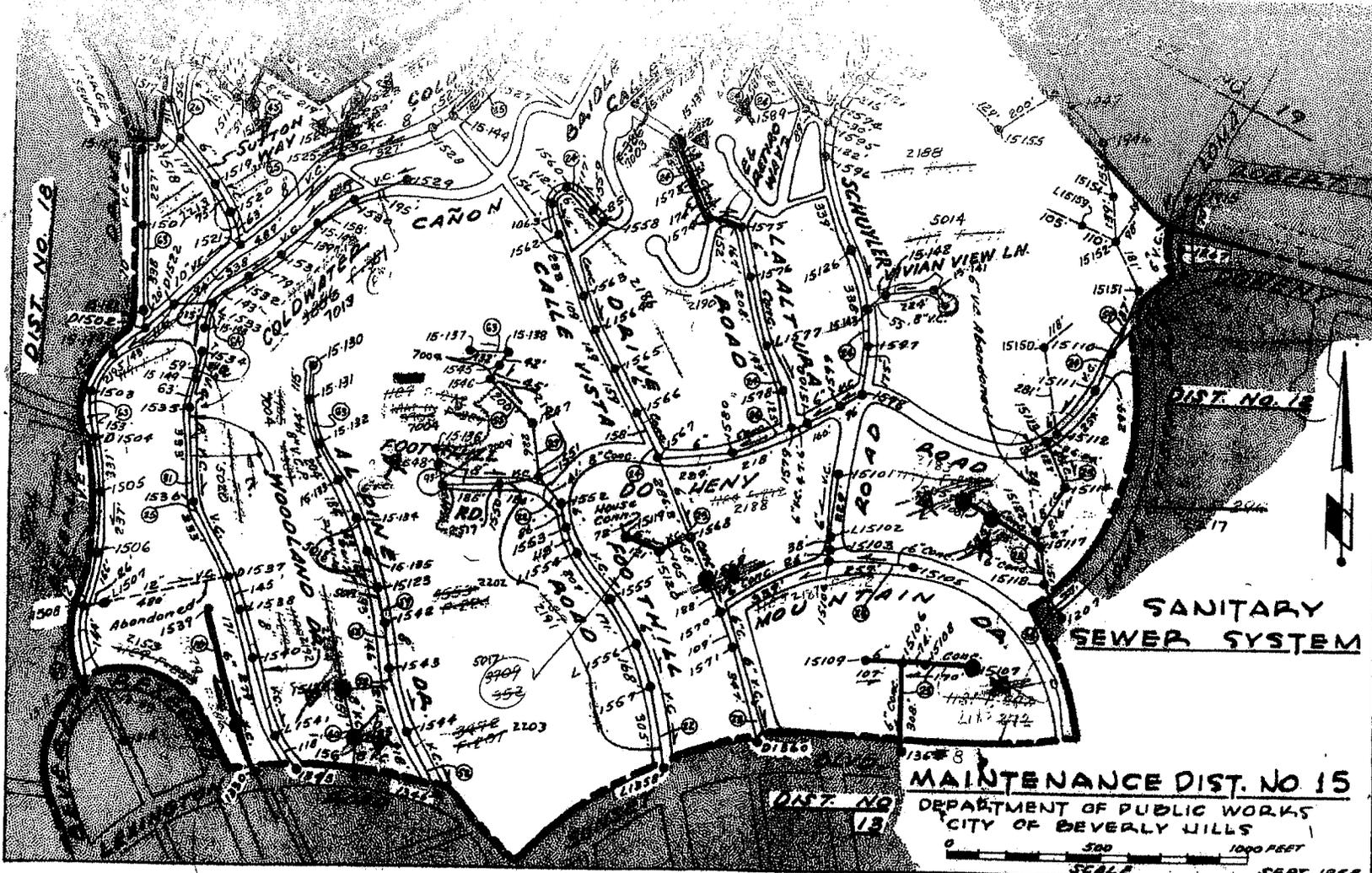
SEP. 1958



CITY OF
LOS ANGELES

MAINTENANCE DIST. NO. 14
DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

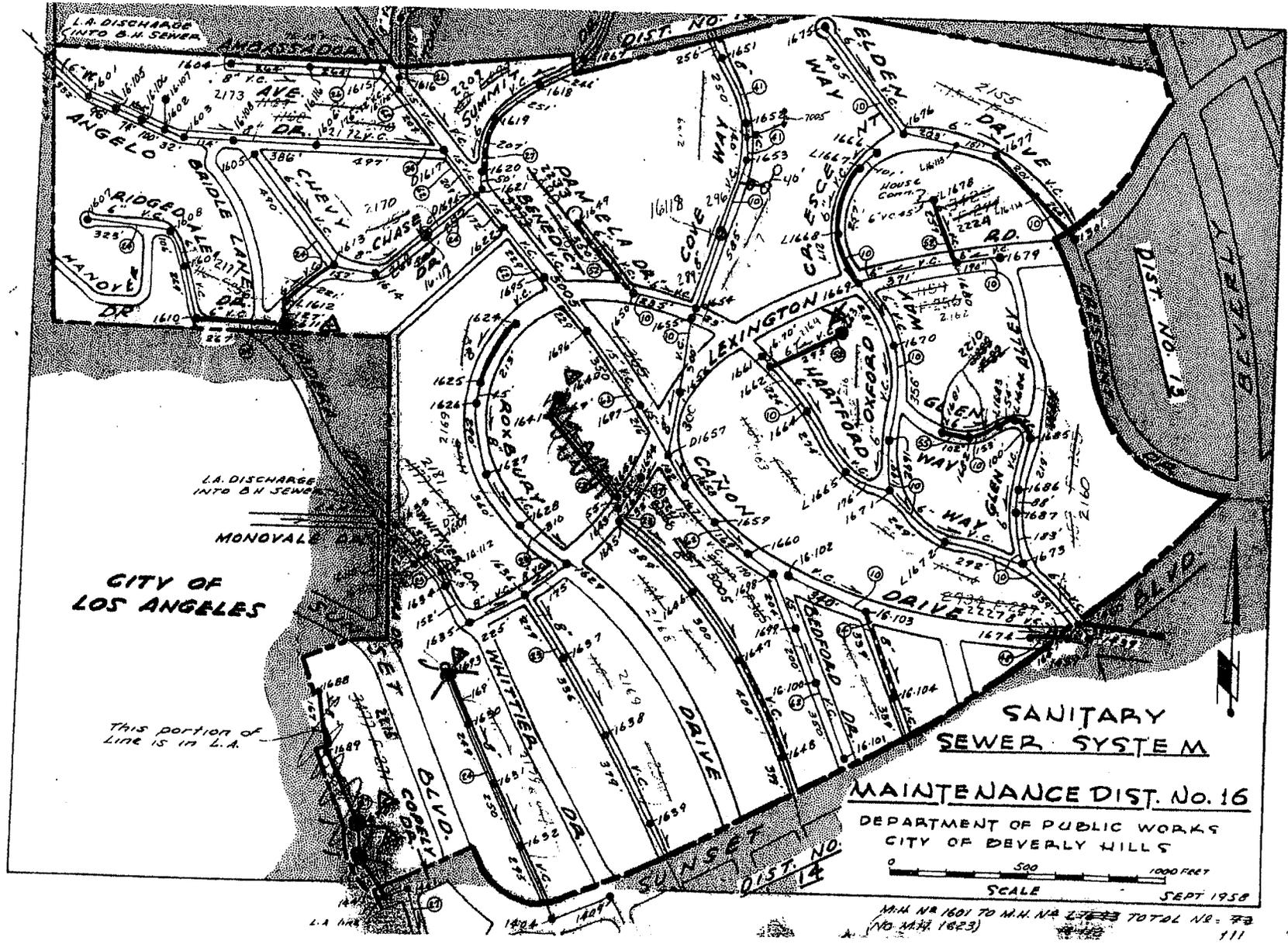
SCALE
0 500 1000 FEET
SEPT. 1958
M.H. NR. 1401 TO M.H. NR. 1458 TOTAL 100 - 51



SANITARY SEWER SYSTEM

MAINTENANCE DIST. NO. 15
 DEPARTMENT OF PUBLIC WORKS
 CITY OF BEVERLY HILLS

(NO. M.H. 1512)
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 2000



CITY OF LOS ANGELES

L.A. DISCHARGE INTO B.H. SEWER

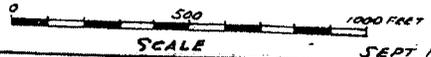
MONOVALLE BLVD

This portion of Line 15 in L.A.

SANITARY SEWER SYSTEM

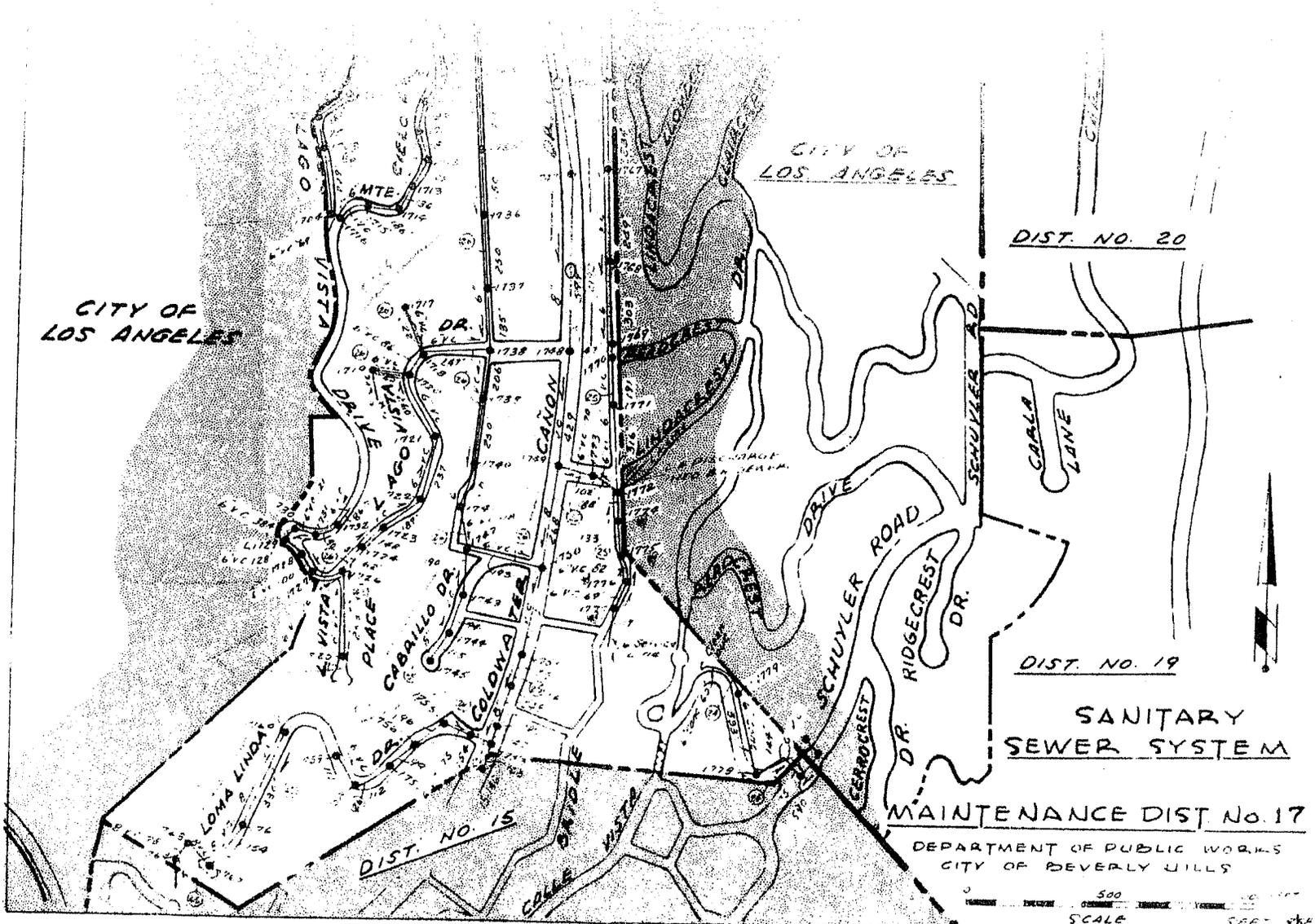
MAINTENANCE DIST. NO. 16

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS



SCALE SEPT 1958

M.H. NR 1601 TO M.H. NR 1623 TOTAL NR = 23
(NO. 1623 1623)



CITY OF LOS ANGELES

CITY OF LOS ANGELES

DIST. NO. 20

DIST. NO. 19

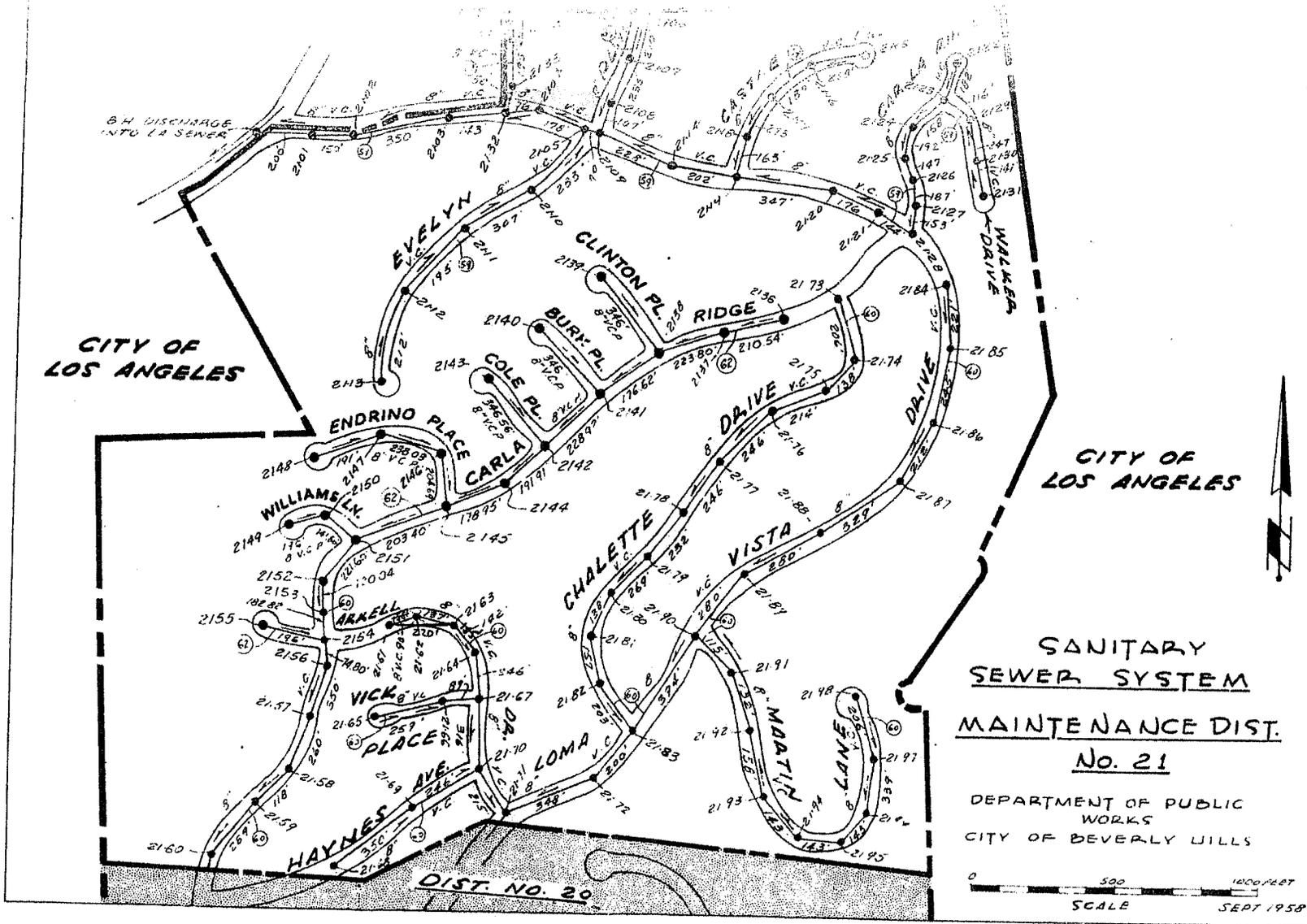
SANITARY SEWER SYSTEM

MAINTENANCE DIST. NO. 17

DEPARTMENT OF PUBLIC WORKS
CITY OF BEVERLY HILLS

0 500 1000
SCALE SEP 1968

112 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 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



CITY OF
LOS ANGELES

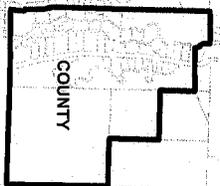
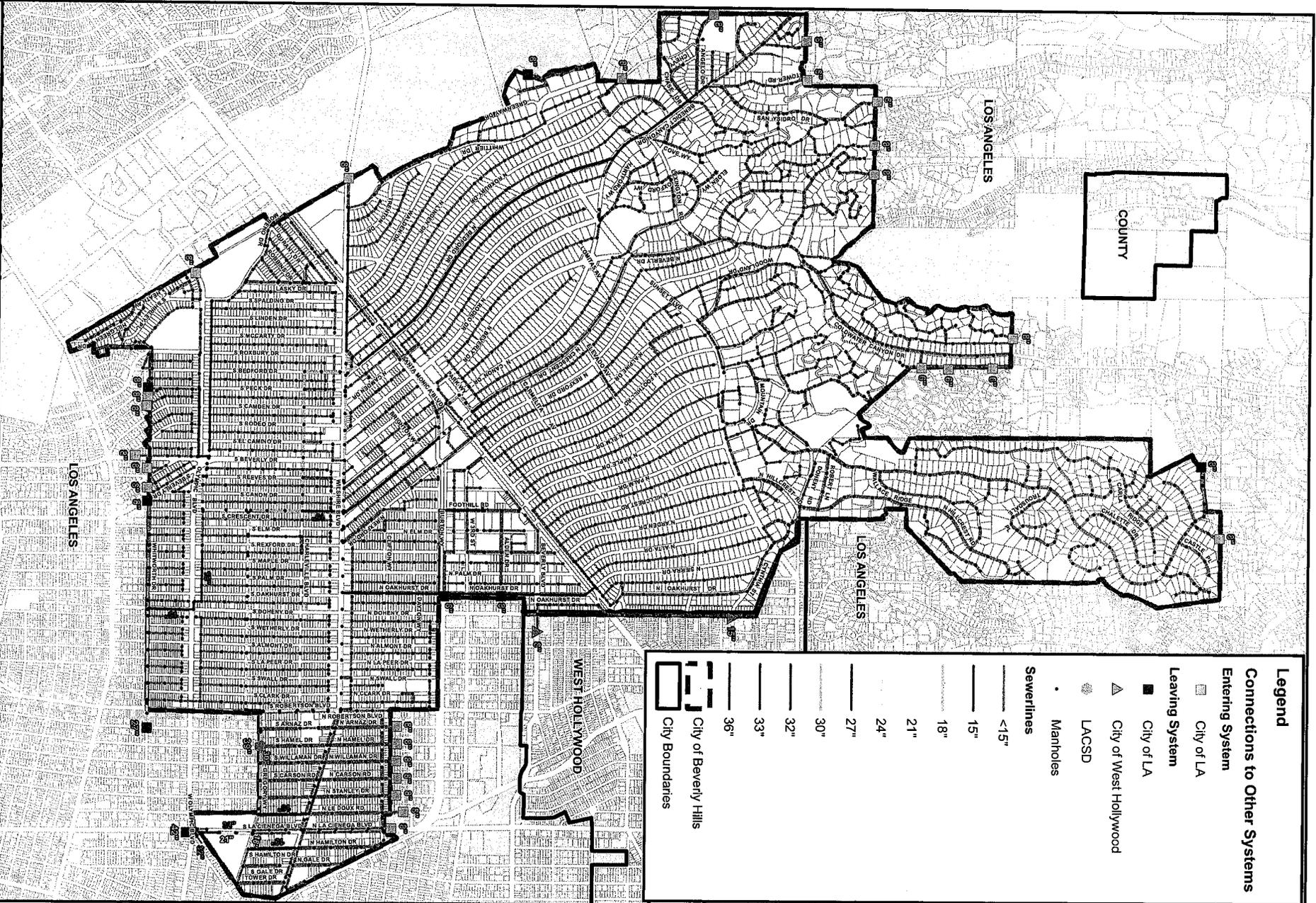
CITY OF
LOS ANGELES

**SANITARY
SEWER SYSTEM
MAINTENANCE DIST.
No. 21**

DEPARTMENT OF PUBLIC
WORKS
CITY OF BEVERLY HILLS



DIST. NO. 20



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 Boundaries
 - City of Beverly Hills
 - City Boundaries



0 1,000 2,000 Feet

Source: City of Beverly Hills, 2009

City of Beverly Hills
Existing Large Diameter Mains

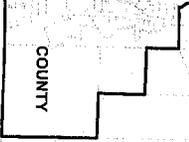
Exhibit 2-2



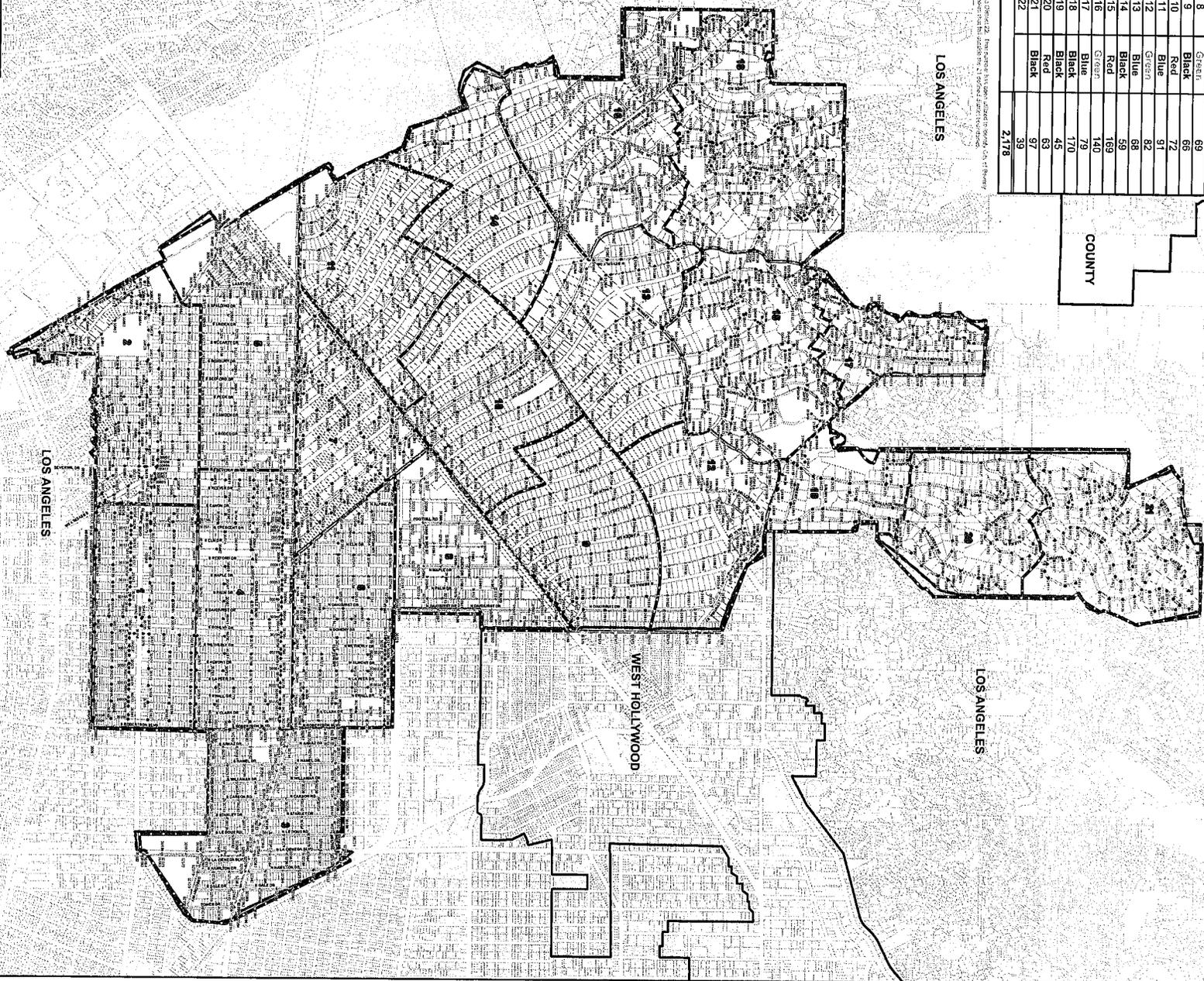
Manhole Breakdown By District

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	99
9	Black	90
10	Red	92
11	Blue	72
12	Blue	91
13	Green	82
14	Blue	68
15	Black	59
16	Red	169
17	Blue	140
18	Blue	79
19	Black	170
20	Black	45
21	Red	63
22	Black	97
		39
		2,178

Notes:
 1. District 22: This district is only used for the City of Beverly Hills.
 2. District 21: This district is only used for the City of Beverly Hills.
 3. District 20: This district is only used for the City of Beverly Hills.



COUNTY



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/civilengineering/>, 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**



STANDARD DETAIL DRAWINGS

**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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- BH 104 Curb and Sidewalk Joints
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- BH 208 Non-Rocking Manhole Frame and Cover
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- 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

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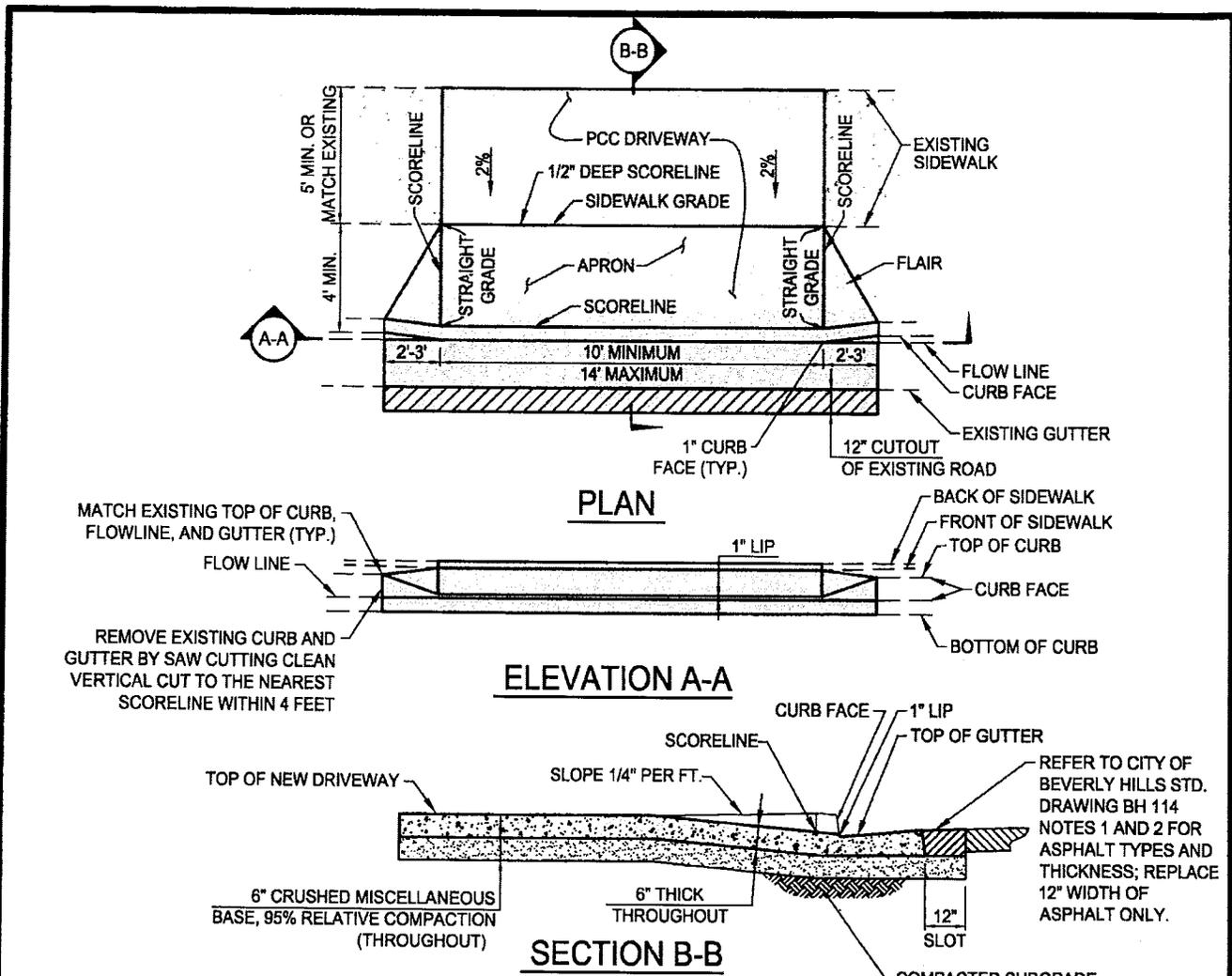
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Section I

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 *Christina* DATE *11-18-10*
CITY ENGINEER

APPROVED *Robert* DATE *11-18-10*
PUBLIC WORKS DIRECTOR

STANDARD DRAWING
BH 101
 SHEET 1 OF 2

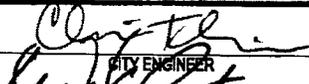
**CITY OF BEVERLY HILLS
RESIDENTIAL DRIVEWAY APPROACH SPECIFICATIONS AND GENERAL REQUIREMENTS
IN REFERENCE TO BEVERLY HILLS MUNICIPAL CODE SEC. 8-4-4**

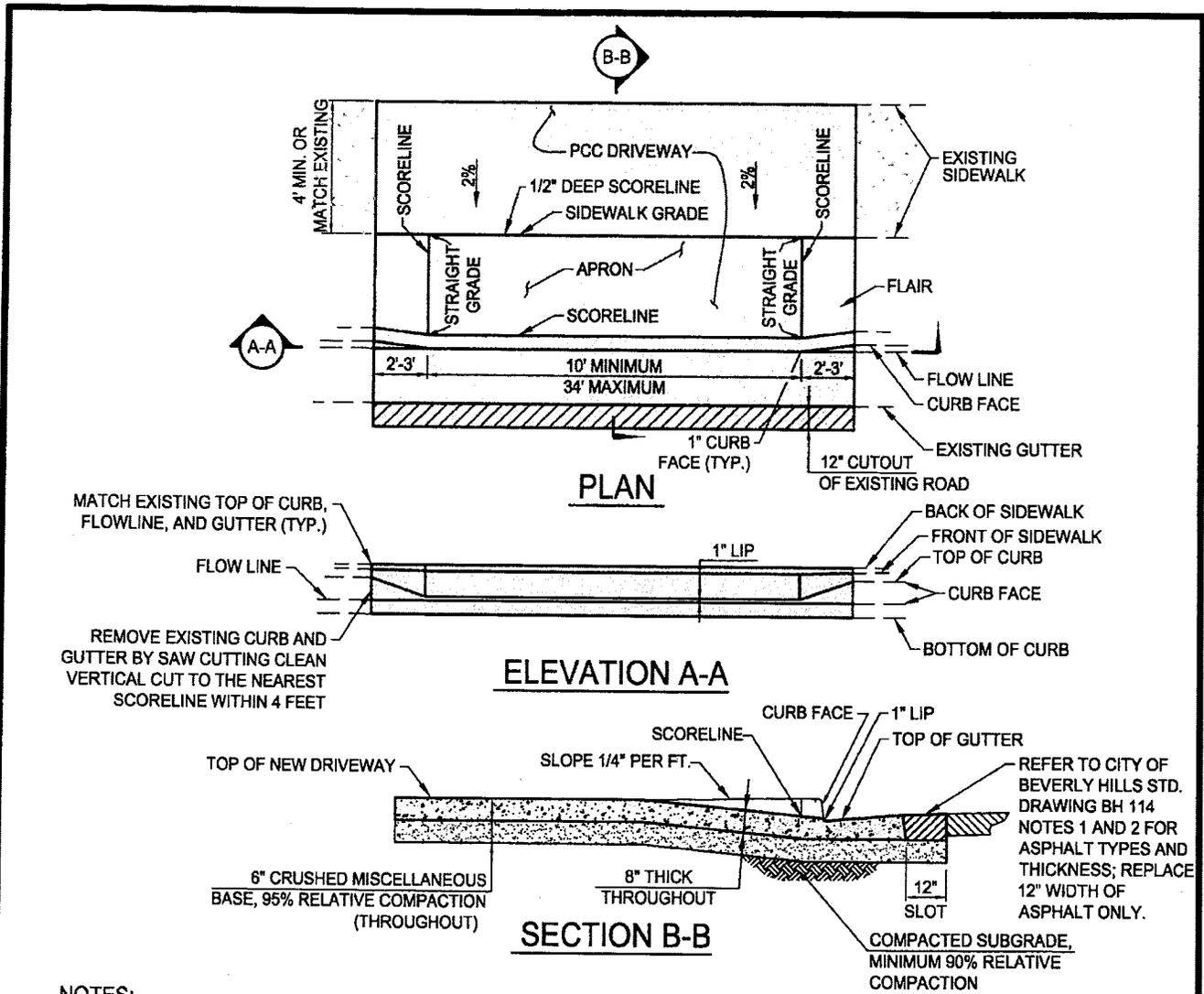
Definition: An approach is located between the edge of the gutter and property line. It is composed of an apron and flairs (see sheet 1 of 2).

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	
			RECOMMENDED  CITY ENGINEER	DATE 11-18-10	STANDARD DRAWING BH 101 SHEET 2 OF 2
			APPROVED  PUBLIC WORKS DIRECTOR	DATE 11-18-10	



NOTES:

1. DRIVEWAY APPROACH, INCLUDING SIDEWALK SHALL BE CLASS 520-C-2500 PCC MONOLITHIC POUR.
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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		
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 102
 SHEET 1 OF 2

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

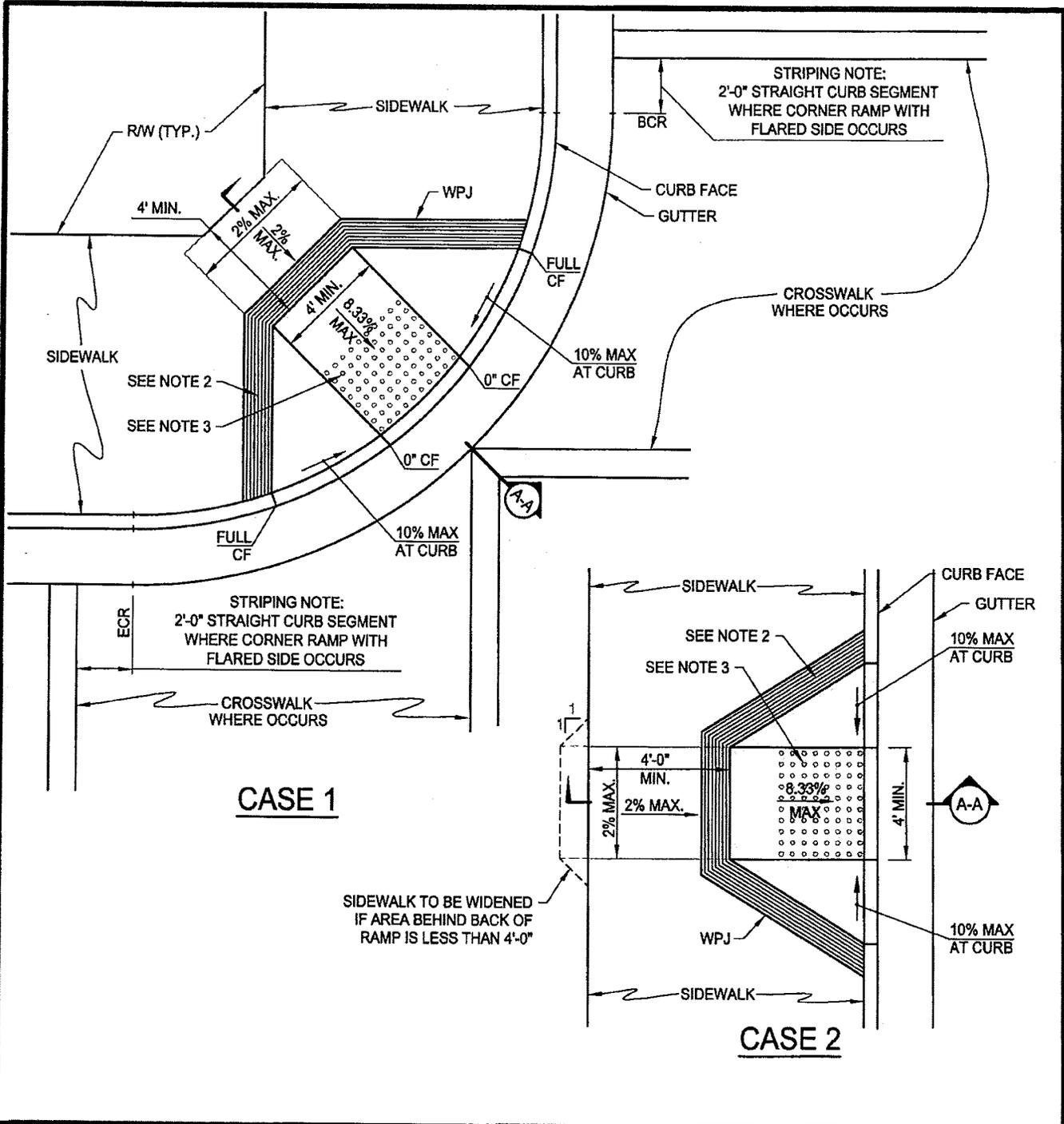
Definition: An approach is located between the edge of the gutter and property line. It is composed of an apron and flairs (see sheet 1 of 2).

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.
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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.
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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	

RECOMMENDED	 <small>CITY ENGINEER</small>	DATE 11-18-10	STANDARD DRAWING BH 102 SHEET 2 OF 2
APPROVED	 <small>PUBLIC WORKS DIRECTOR</small>	DATE 11-18-10	



CURB RAMPS

REVISIONS		
MARK	DATE	DESCRIPTION

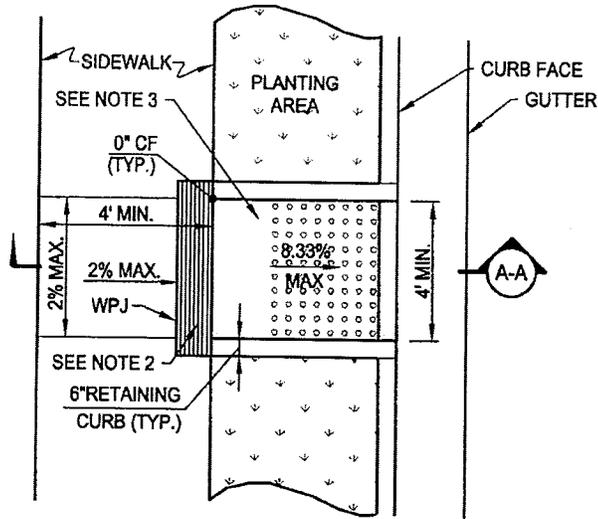


CITY OF BEVERLY HILLS, CALIFORNIA
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
CIVIL ENGINEERING DIVISION

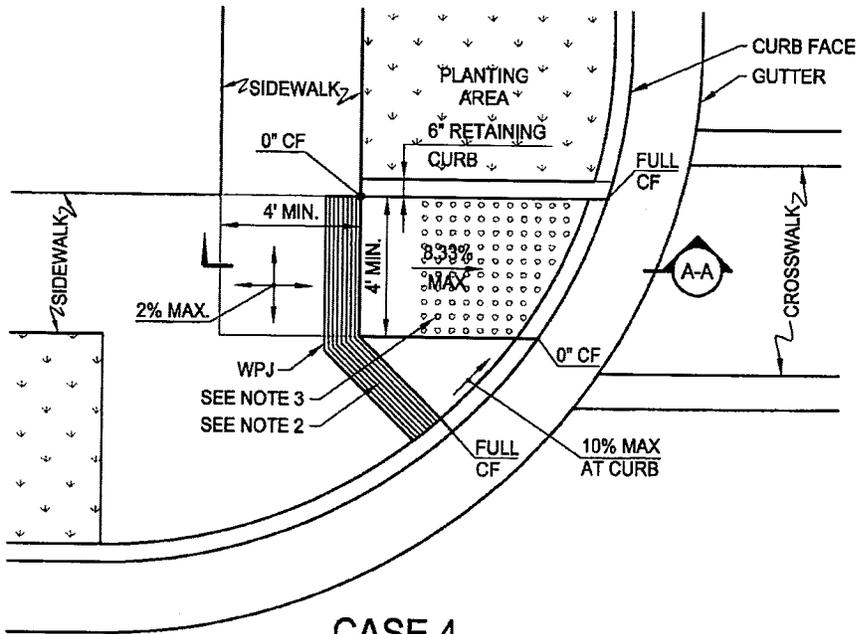
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CITY ENGINEER

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

STANDARD DRAWING
BH 103
SHEET 1 OF 4



CASE 3



CASE 4

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

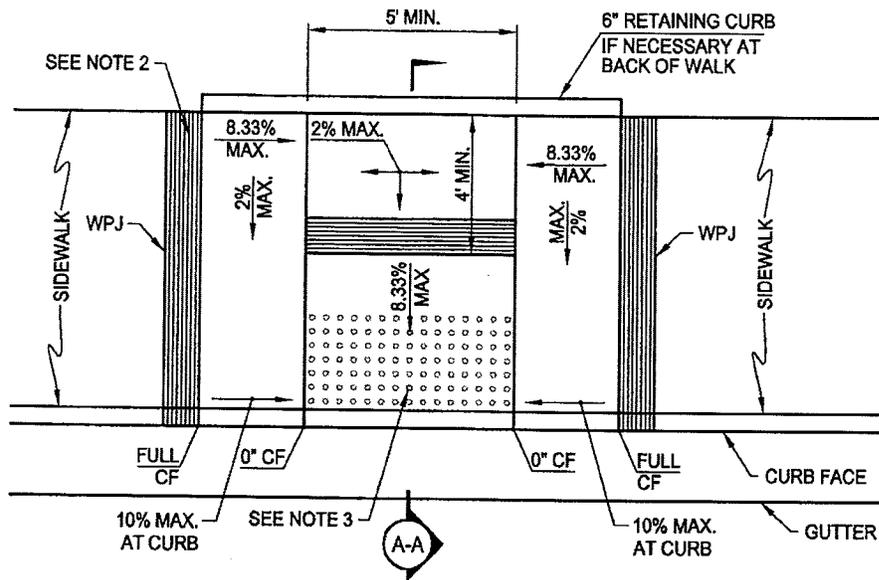
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DATE 11-18-11

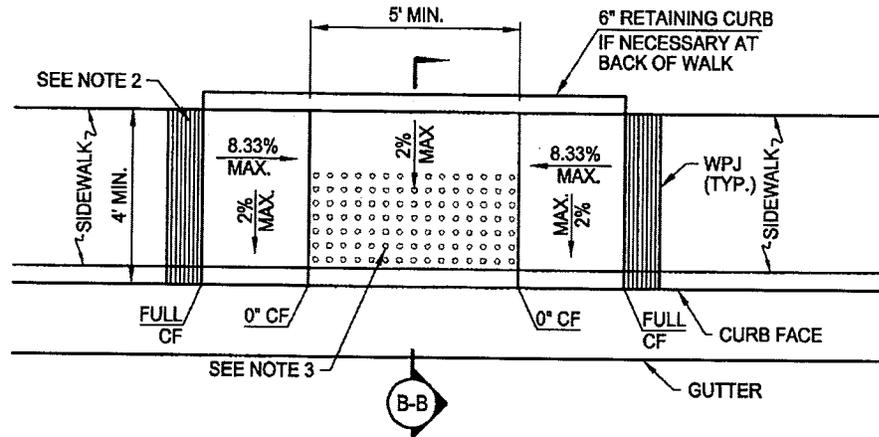
STANDARD DRAWING

BH 103

SHEET 2 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

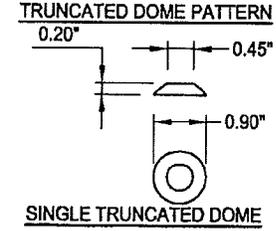
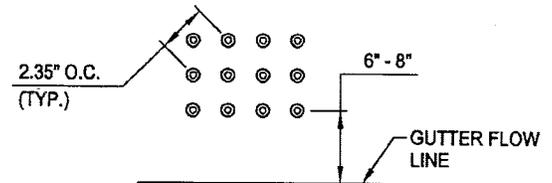
RECOMMENDED *[Signature]* DATE 11/18/2011
CITY ENGINEER

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

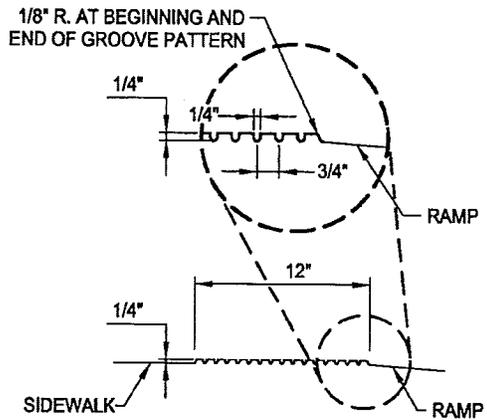
STANDARD DRAWING
BH 103
 SHEET 3 OF 4

NOTES:

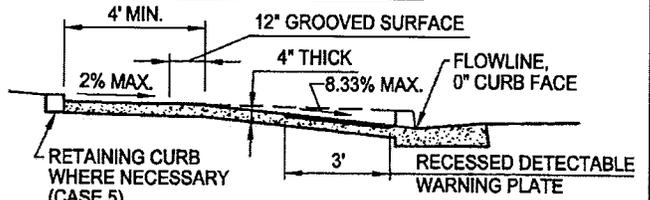
1. CONCRETE SHALL BE CLASS 520-C-2500 AND SHALL BE 4" THICK OVER 4" CRUSHED MISCELLANEOUS BASE AT 90% RELATIVE COMPACTION.
2. THE CURB RAMP SHALL BE OUTLINED, AS SHOWN WITH A 12" WIDE BORDER WITH 1/4" GROOVES APPROXIMATELY 3/4" ON CENTER. SEE GROOVING DETAIL.
3. CURB RAMPS SHALL HAVE A RECESSED YELLOW 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.



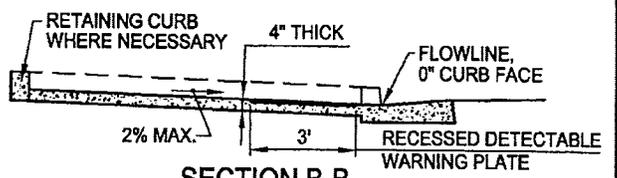
DETECTABLE WARNING DETAIL



GROOVING DETAIL



SECTION A-A



SECTION B-B

CURB RAMPS

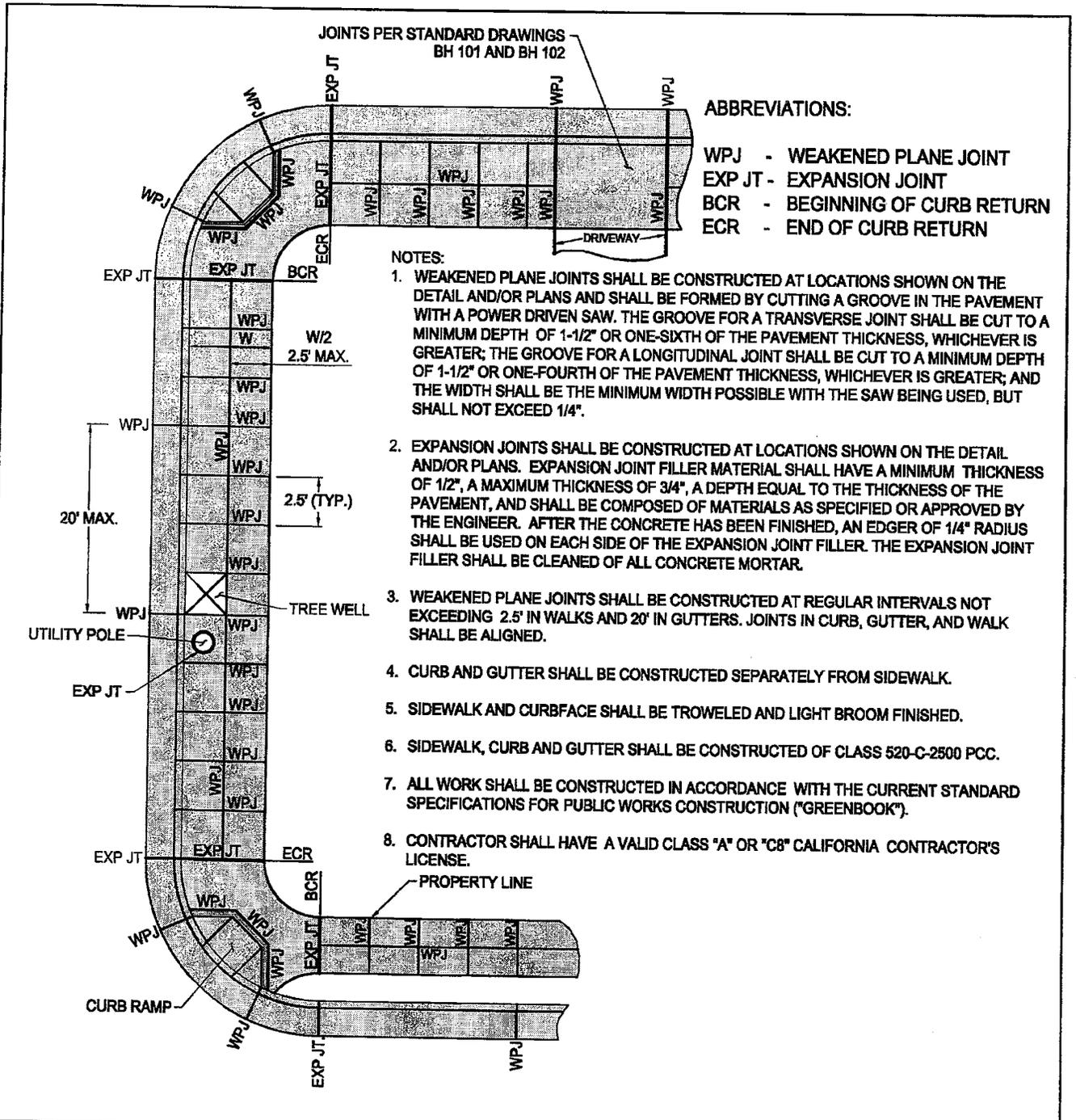
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CITY OF BEVERLY HILLS, CALIFORNIA
 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
 CIVIL ENGINEERING DIVISION

RECOMMENDED _____ DATE 11/18/2011
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STANDARD DRAWING
BH 103
 SHEET 4 OF 4



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

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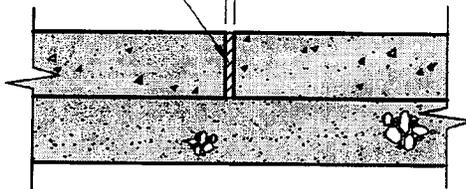
RECOMMENDED *[Signature]* DATE *7-30-09*
CITY ENGINEER

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

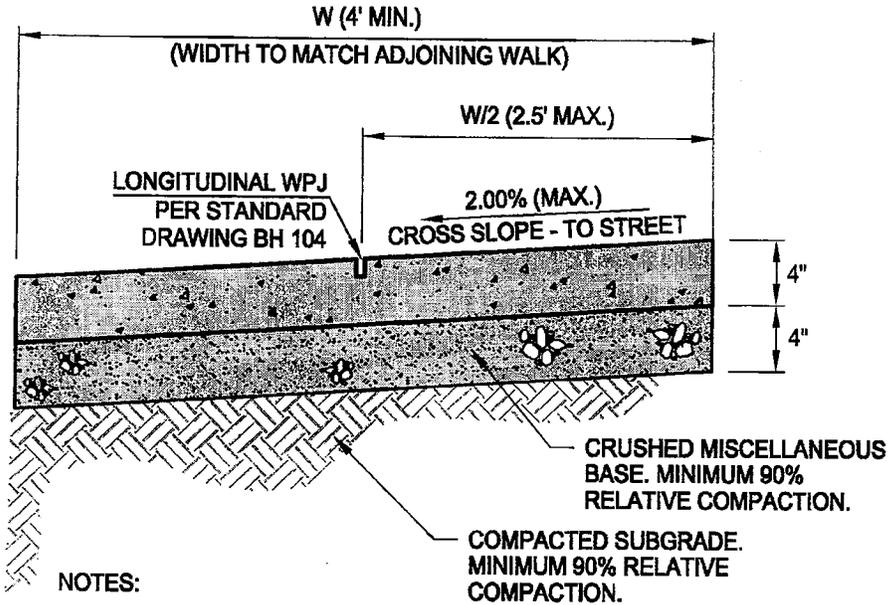
STANDARD DRAWING
BH 104
 SHEET 1 OF 1

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

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CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
CIVIL ENGINEERING DIVISION

RECOMMENDED

Clint Teri
CITY ENGINEER

DATE 7-30-09

APPROVED

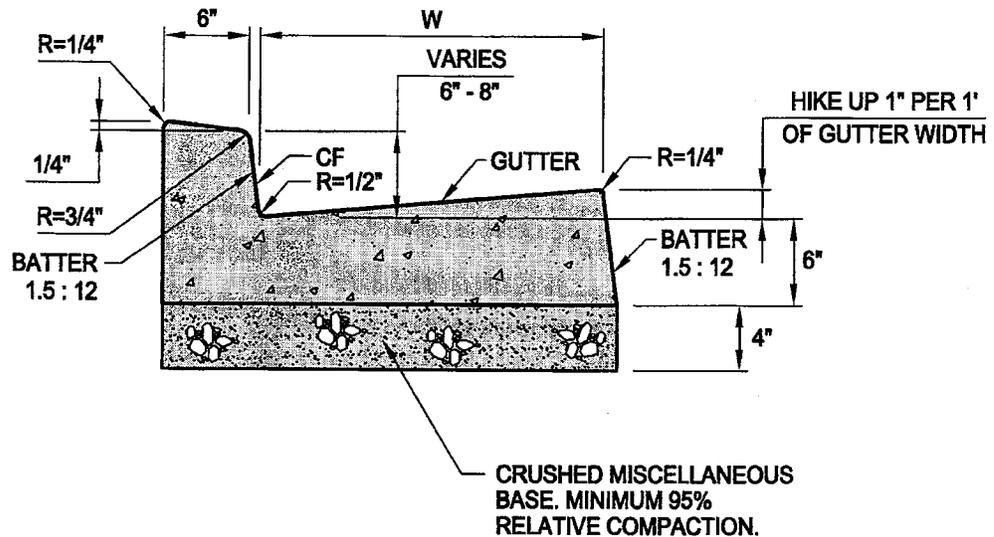
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PUBLIC WORKS DIRECTOR

DATE 7-31-09

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		
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CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
CIVIL ENGINEERING DIVISION

RECOMMENDED

[Signature]
CITY ENGINEER

DATE 7-30-09

APPROVED

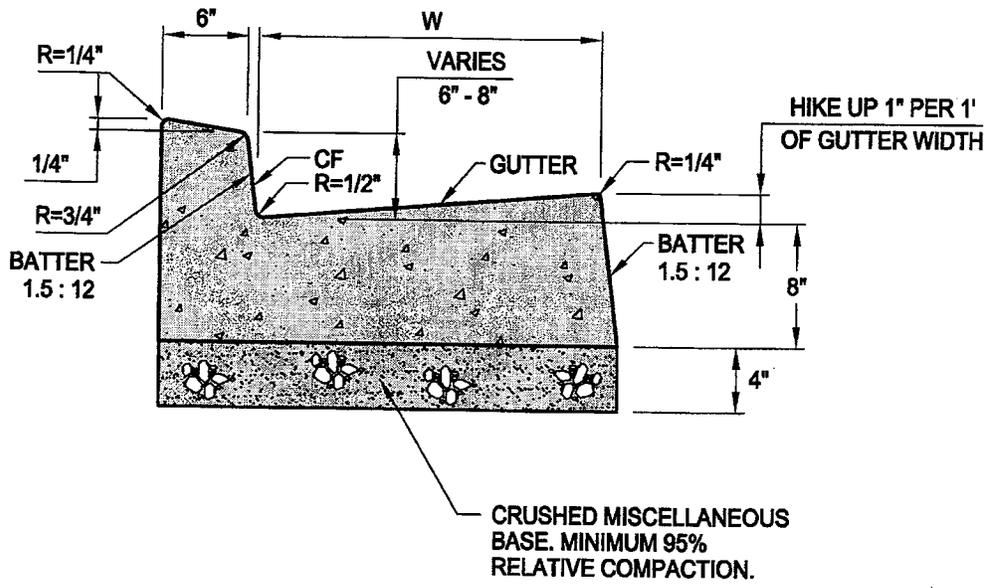
[Signature]
PUBLIC WORKS DIRECTOR

DATE 7-31-09

STANDARD DRAWING

BH 106

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

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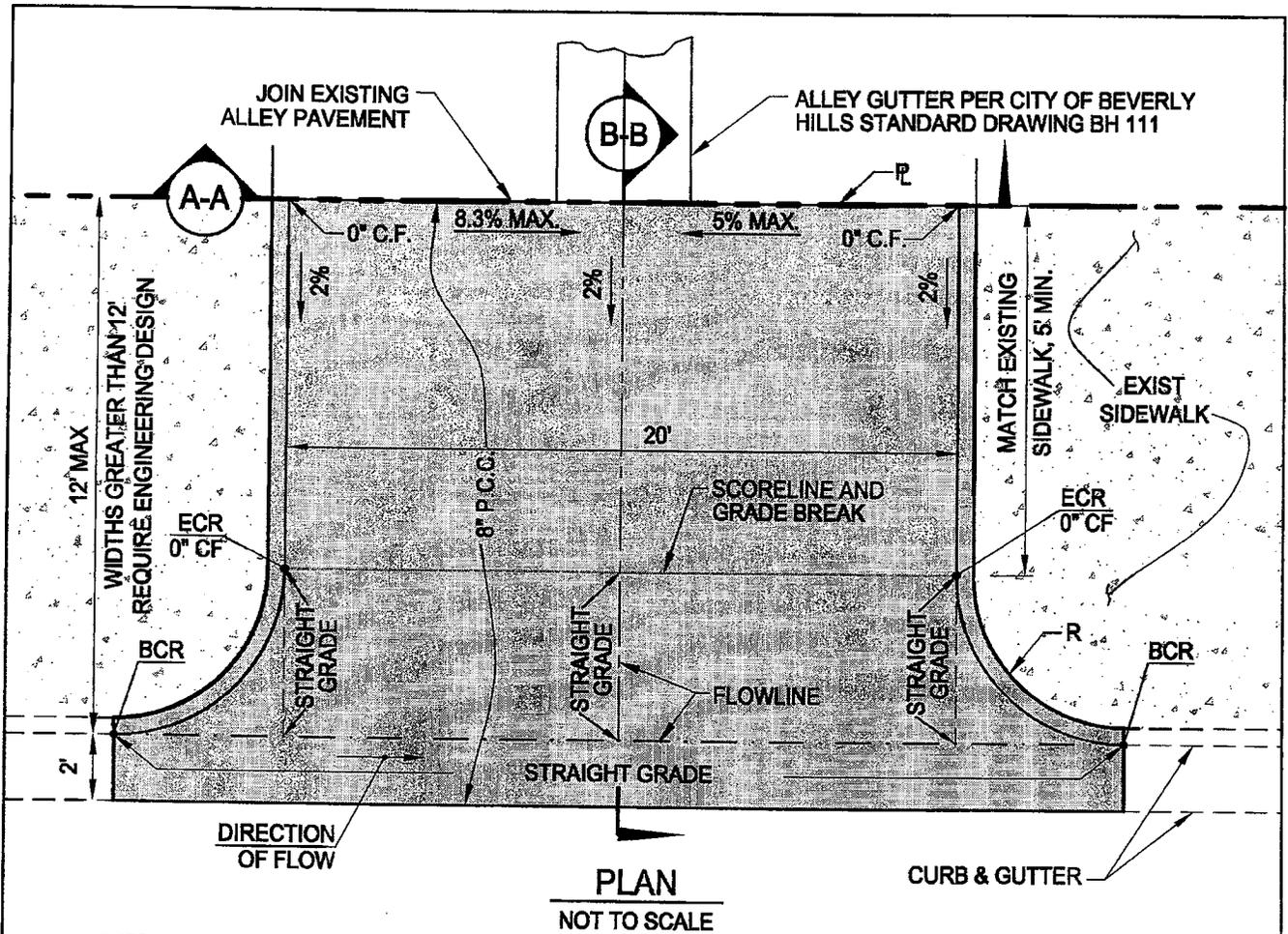
CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
CIVIL ENGINEERING DIVISION

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

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STANDARD DRAWING
BH 107
 SHEET 1 OF 1

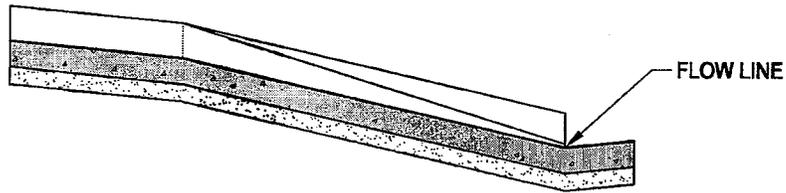
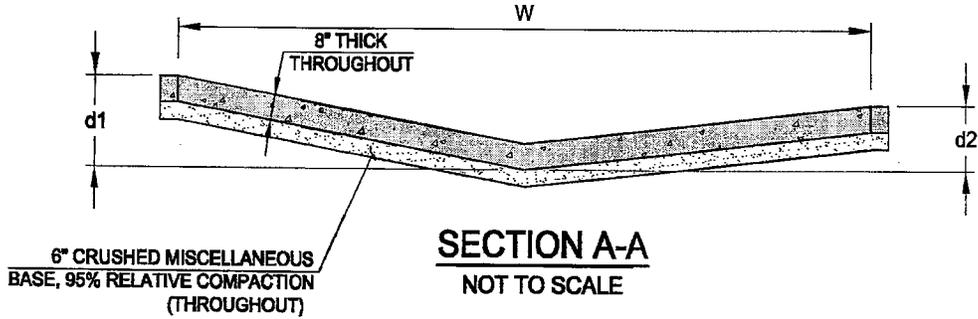


- NOTES:**
1. CURB RETURN RADIUS, R, SHALL BE 5' TYPICAL, UNLESS OTHERWISE SPECIFIED.
 2. TOP OF CURB ELEVATIONS SHALL MATCH EXISTING SIDEWALK ELEVATIONS.
 3. ALLEY APPROACH WITH A SLOPE EXCEEDING 16.66% SLOPE SHALL REQUIRE A SPECIAL PERMIT FROM THE TRANSPORTATION/ ENGINEERING OFFICIAL.
 4. ACTUAL SHAPE 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>			CITY ENGINEER	DATE 7-30-09	STANDARD DRAWING BH 108 SHEET 1 OF 2
APPROVED <i>[Signature]</i>			PUBLIC WORKS DIRECTOR	DATE 7-31-09	

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		
MARK	DATE	DESCRIPTION



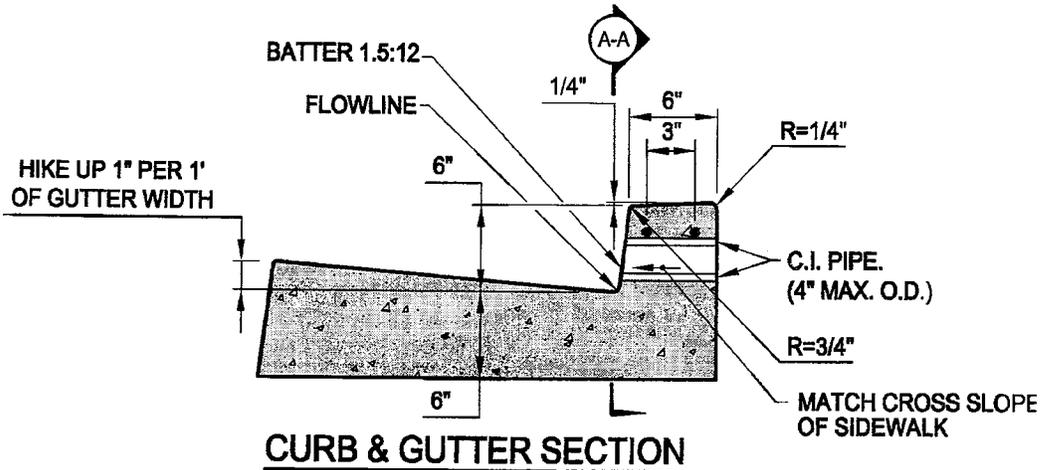
CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
CIVIL ENGINEERING DIVISION

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

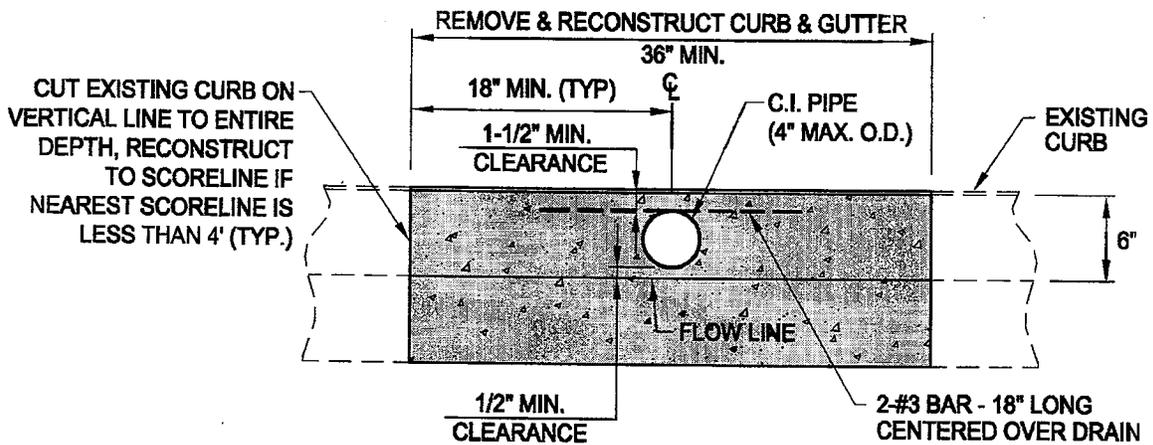
APPROVED *[Signature]* DATE 7-31-09
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STANDARD DRAWING
BH 108
SHEET 2 OF 2



CURB & GUTTER SECTION

NOT TO SCALE



ELEVATION "A-A"

NOT TO SCALE

NOTES:

1. MINIMUM CURB BREAK AND RECONSTRUCTION IS 3'-0" IN LENGTH.
2. CURB & GUTTER SHALL BE CLASS 520-C-2500 PCC MONOLITHIC POUR.
3. FOR MULTIPLE CURB DRAINS, SPACING BETWEEN C.I. PIPES SHALL BE A MINIMUM OF 6" O.C.
4. 3" PIPE IN 6" CURB IS ALLOWED BY CORING.
5. FOR OTHER CONDITIONS SEE APWA STANDARD PLAN 150-2.
6. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
7. CONTRACTOR SHALL HAVE A VALID CLASS "A" OR "C8" CALIFORNIA CONTRACTOR'S LICENSE.

4" CURB DRAIN IN 6" CURB

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CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
CIVIL ENGINEERING DIVISION

RECOMMENDED

Alvin D. ...
CITY ENGINEER

DATE 7-30-09

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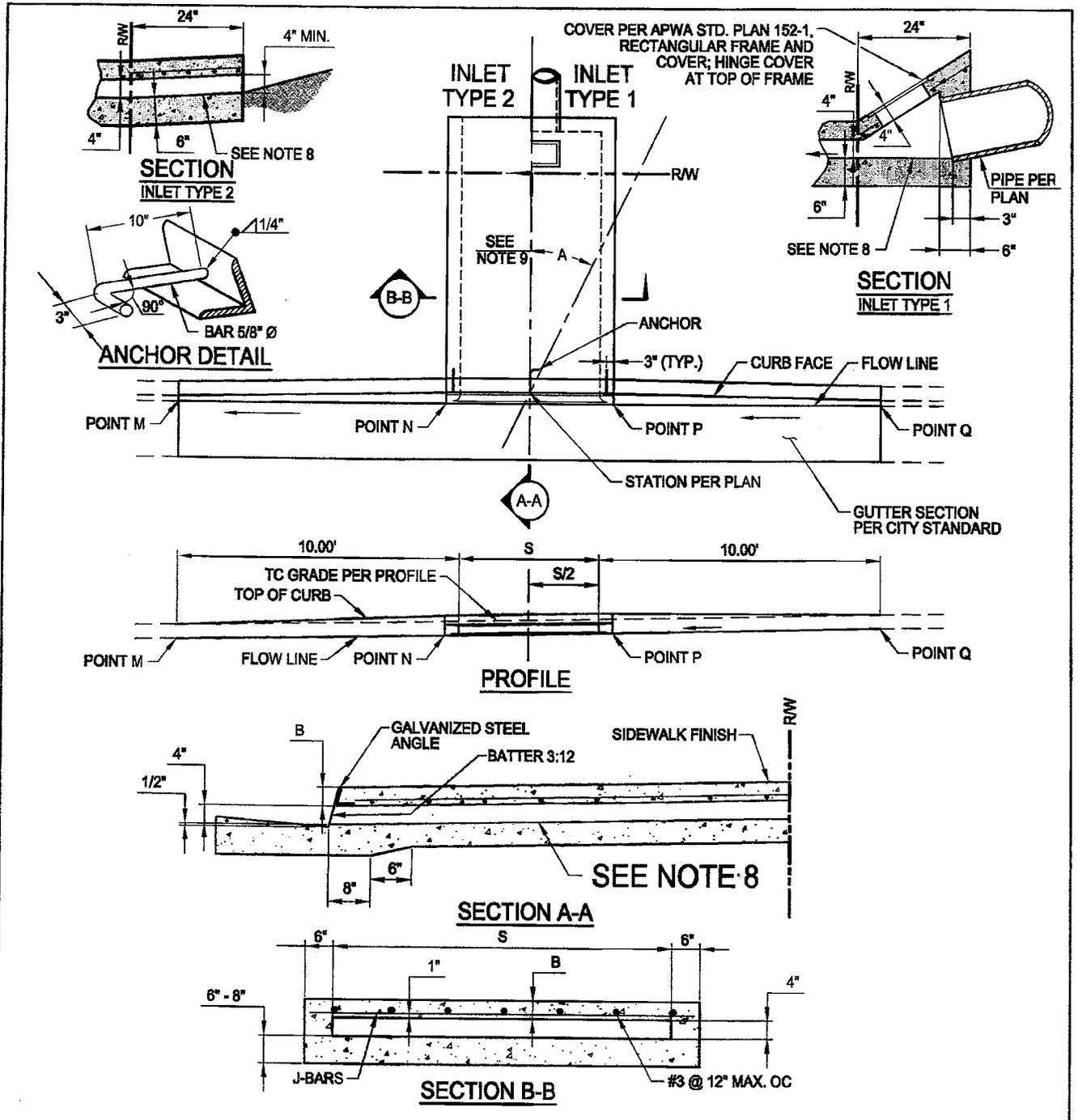
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DATE 7-31-09

STANDARD DRAWING

BH 109

SHEET 1 OF 1



PARKWAY DRAIN

REVISIONS		
MARK	DATE	DESCRIPTION



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 DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
 CIVIL ENGINEERING DIVISION

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

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 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".

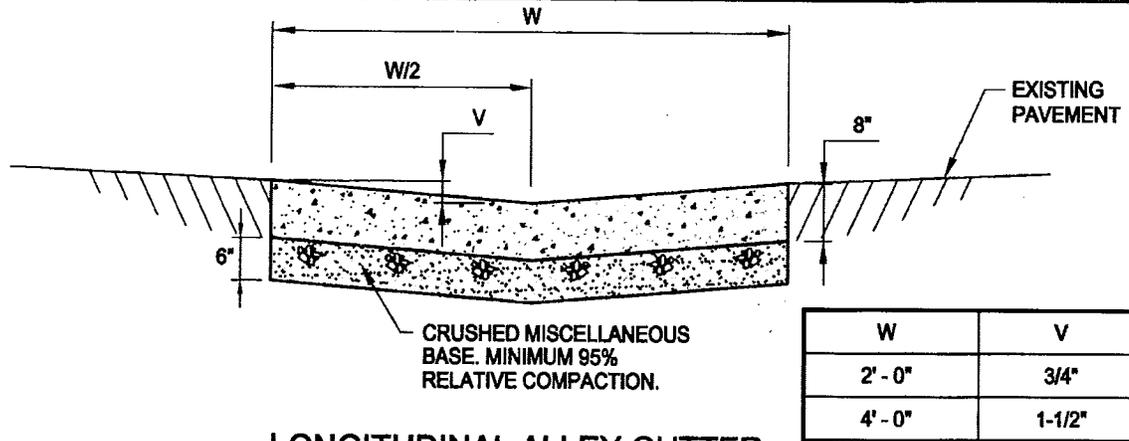
USE 3-1/2"x3"x1/2" GALVANIZED STEEL ANGLE

NOTES:

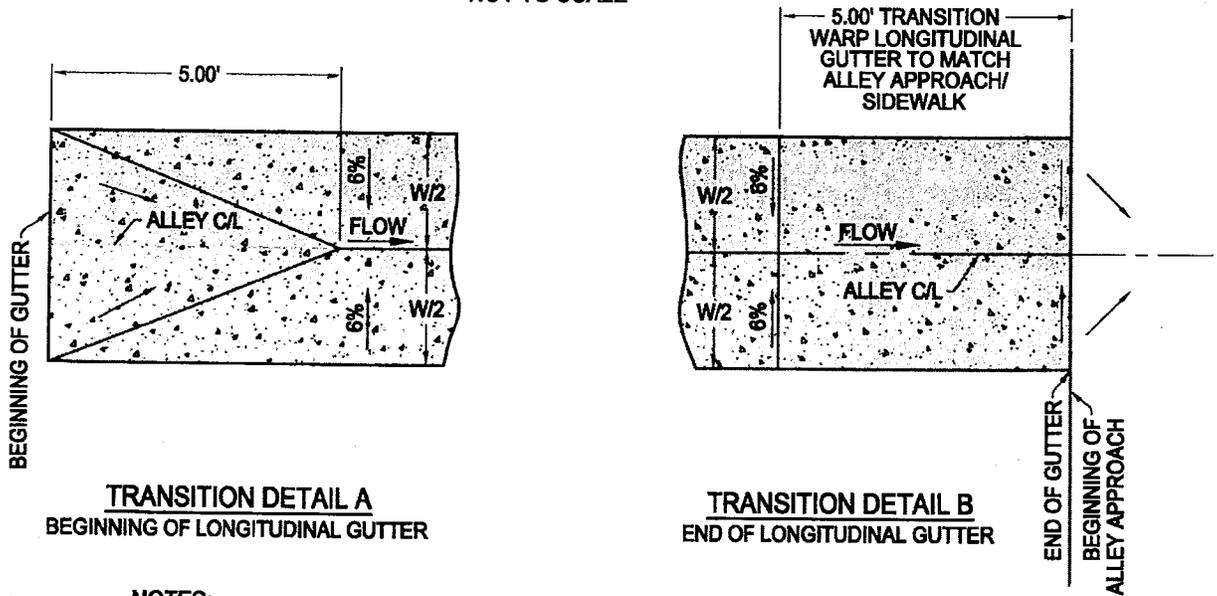
- FLOOR OF BOX SHALL BE TROWELED SMOOTH.
- IF TOE OF SLOPE IS ALLOWED WITHIN THE R/W, INLET TYPE 1 BEGINS AT THE TOE RATHER THAN AT THE R/W LINE.
- FOR OPEN DITCH (TYPE 2), THE 24" EXTENSION BEYOND THE R/W LINE IS NOT REQUIRED WHEN BACK OF WALK IS 24" OR MORE FROM THE R/W LINE; HOWEVER, THE PIPE SHALL EXTEND TO THE R/W LINE IN ANY EVENT.
- TOP OF INLET STRUCTURE (TYPE 1 & 2) SHALL BE FLUSH WITH ADJACENT SURFACE WHERE PRACTICAL.
- 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.
- NORMAL CURB FACE AT POINT M AND Q. CURB FACE IS B + 5" AT POINT N AND P.
- THE 3" LEG OF THE 5/8" DIA. ANCHORS SHALL BE PARALLEL TO THE TOP OF SIDEWALK.
- SLOPE = 2.0%
- ANGLE 'A' SHALL BE 30° MINIMUM WHEN ROADWAY SLOPE IS GREATER THAT 5.0%.
- ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK").
- 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  <small>CITY ENGINEER</small>	DATE <u>7-30-09</u>	STANDARD DRAWING
			APPROVED  <small>PUBLIC WORKS DIRECTOR</small>	DATE <u>7-31-09</u>	BH 110
					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

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CITY OF BEVERLY HILLS, CALIFORNIA

DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION
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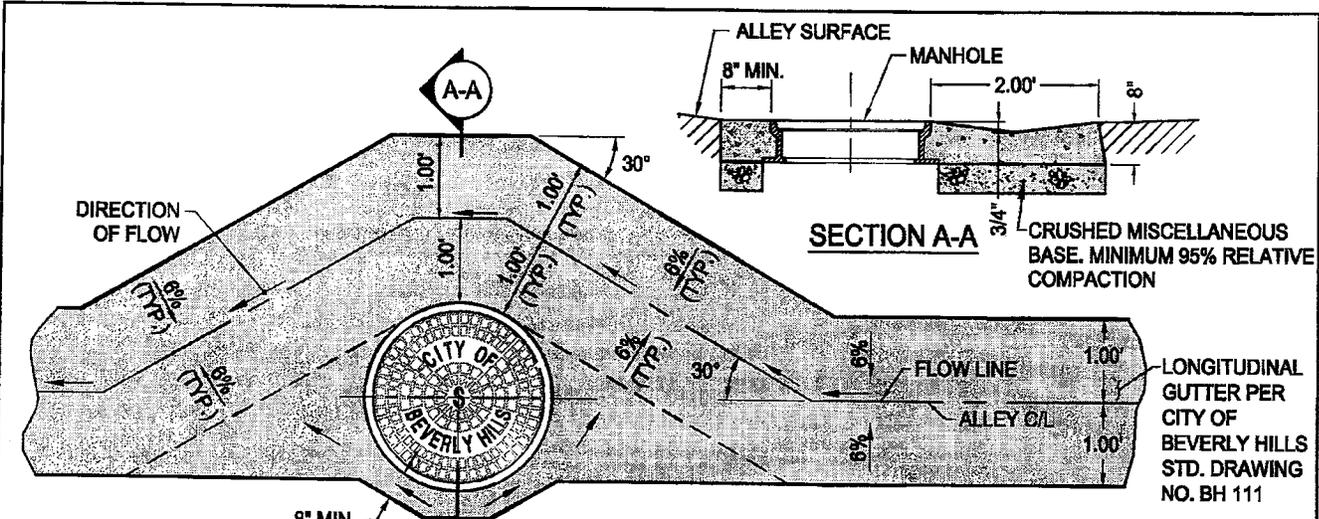
RECOMMENDED *[Signature]* DATE 11-18-10
CITY ENGINEER

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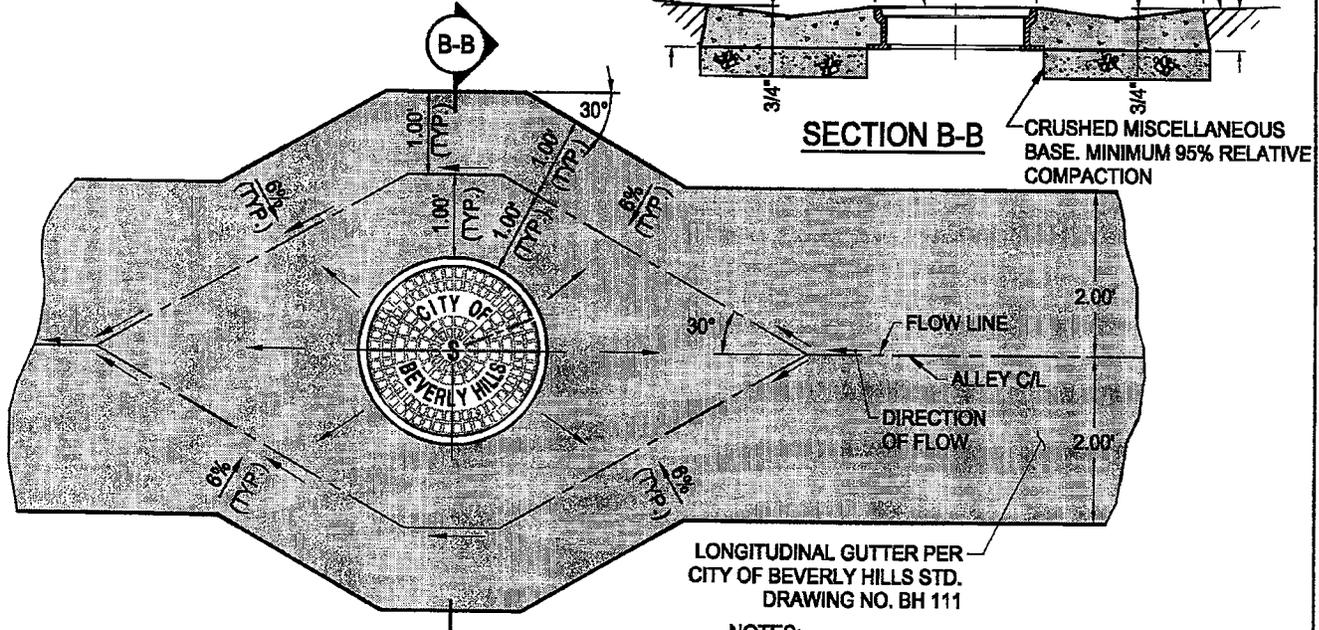
STANDARD DRAWING

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

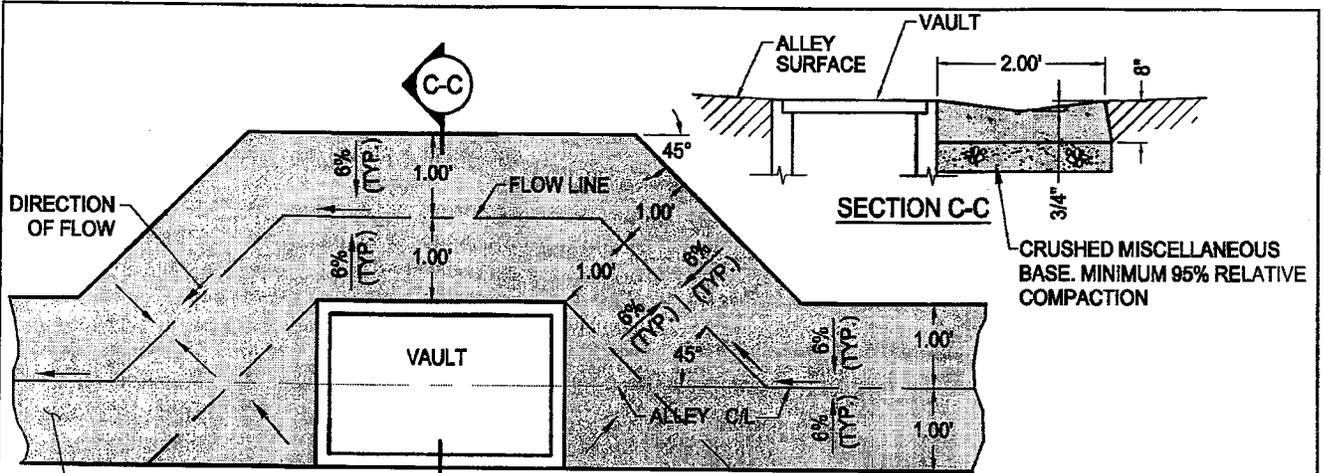
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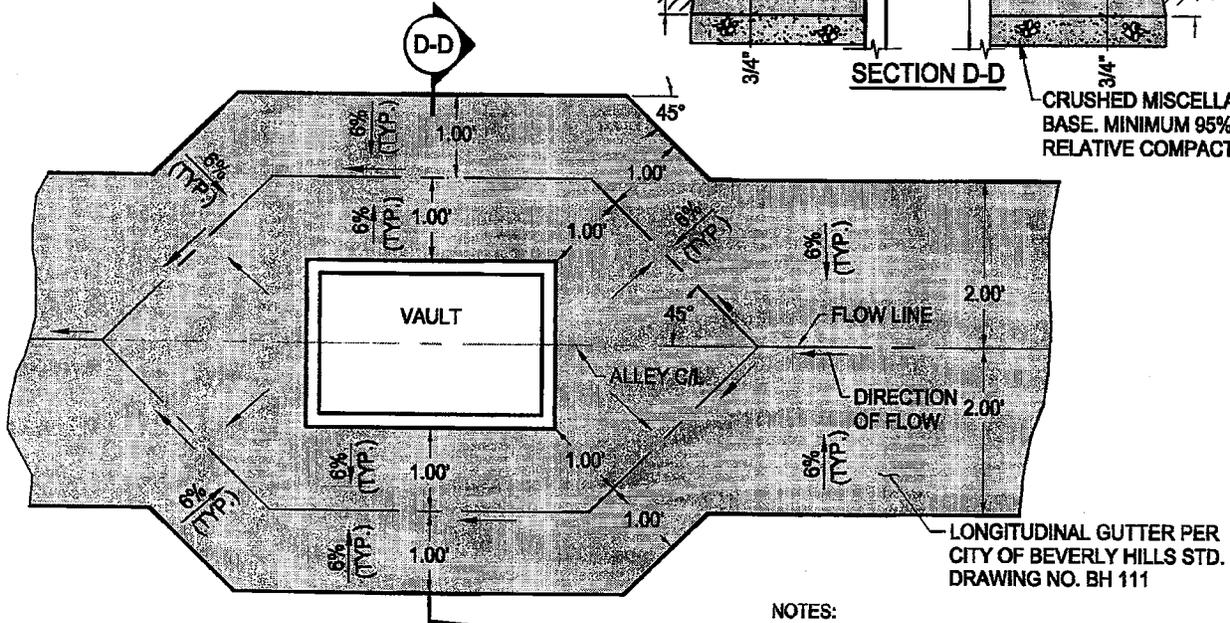
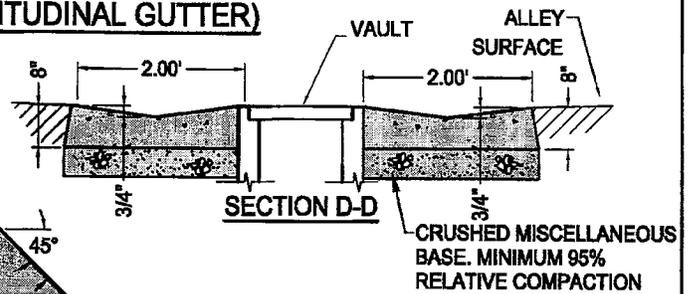
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 CITY ENGINEER
 APPROVED *[Signature]* DATE 7-27-09
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STANDARD DRAWING
BH 112
 SHEET 1 OF 2



LONGITUDINAL GUTTER PER CITY OF BEVERLY HILLS STD. DRAWING NO. BH 111 **CASE 3 (2'-0" LONGITUDINAL GUTTER)**



CASE 4 (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 VAULT

REVISIONS		
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CITY OF BEVERLY HILLS, CALIFORNIA

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CIVIL ENGINEERING DIVISION

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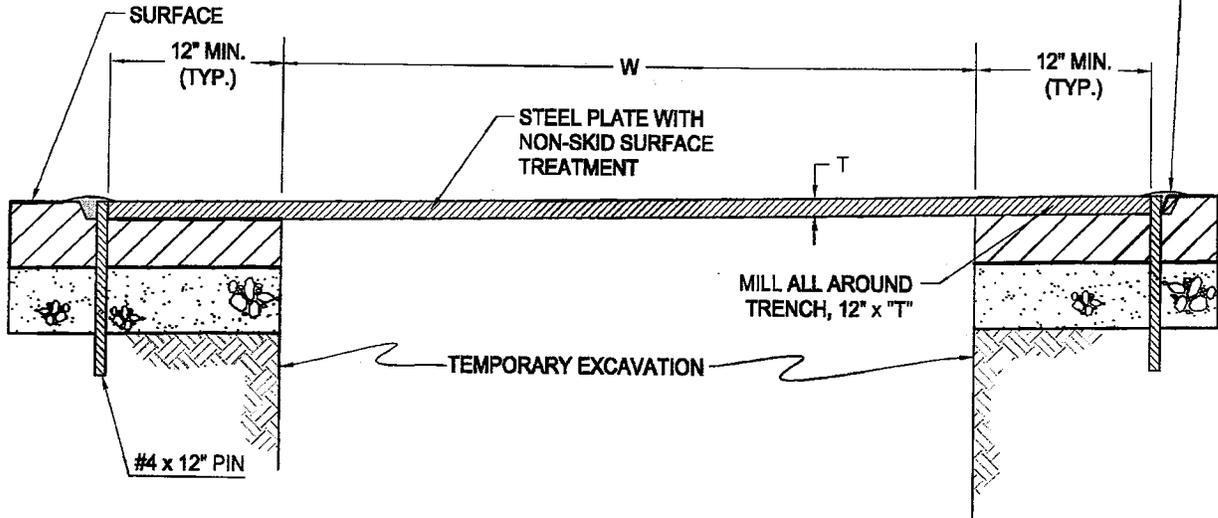
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PUBLIC WORKS DIRECTOR

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

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CIVIL ENGINEERING DIVISION

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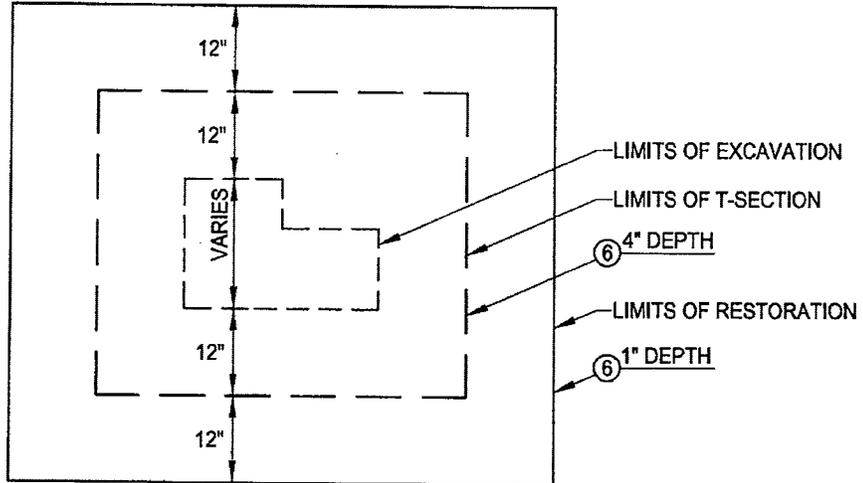
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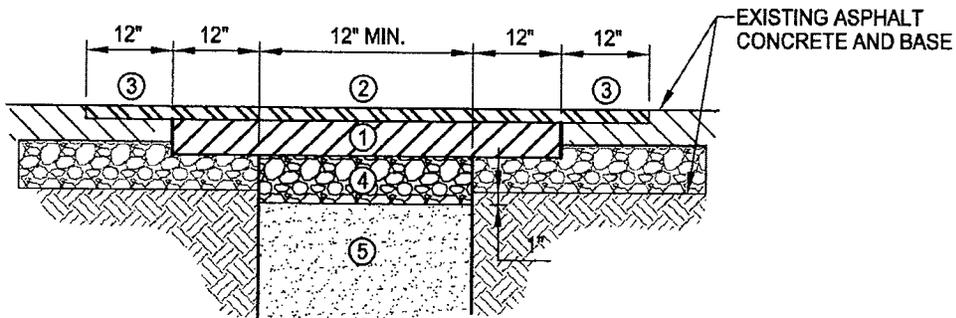
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SHEET 1 OF 1



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

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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

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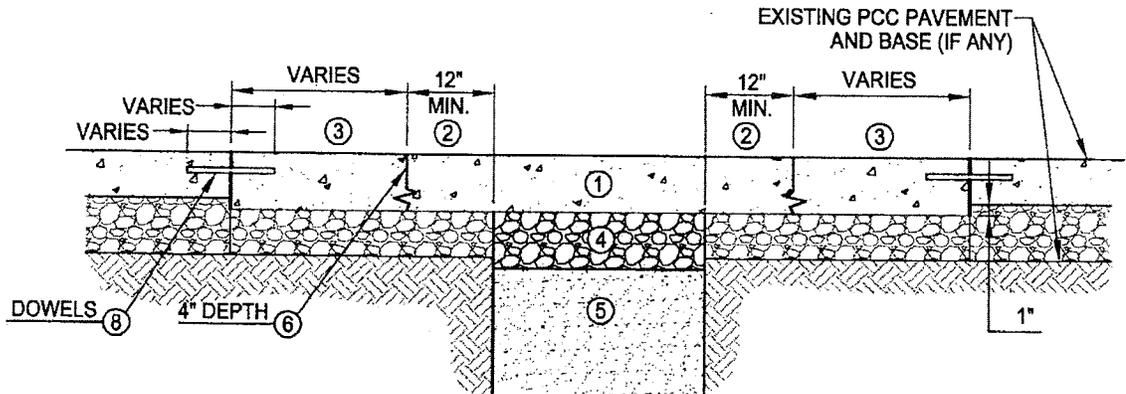
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BH 114
 SHEET 2 OF 4



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

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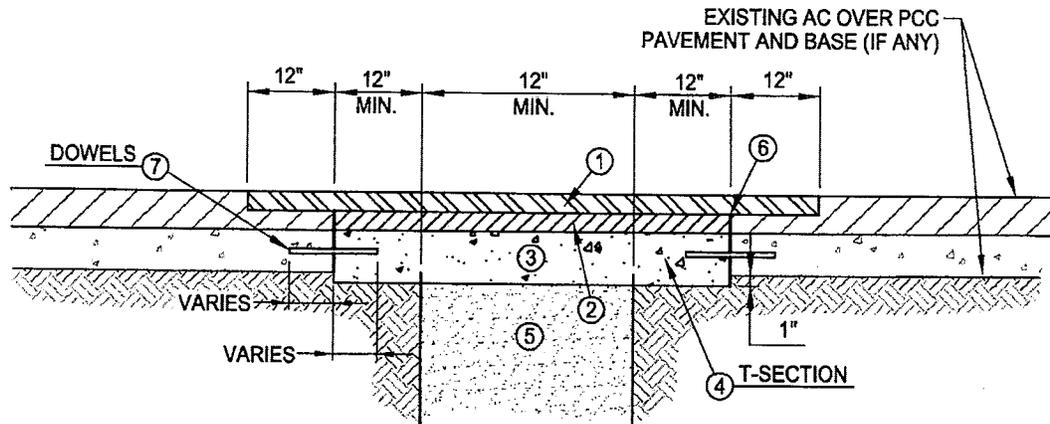
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SHEET 3 OF 4



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

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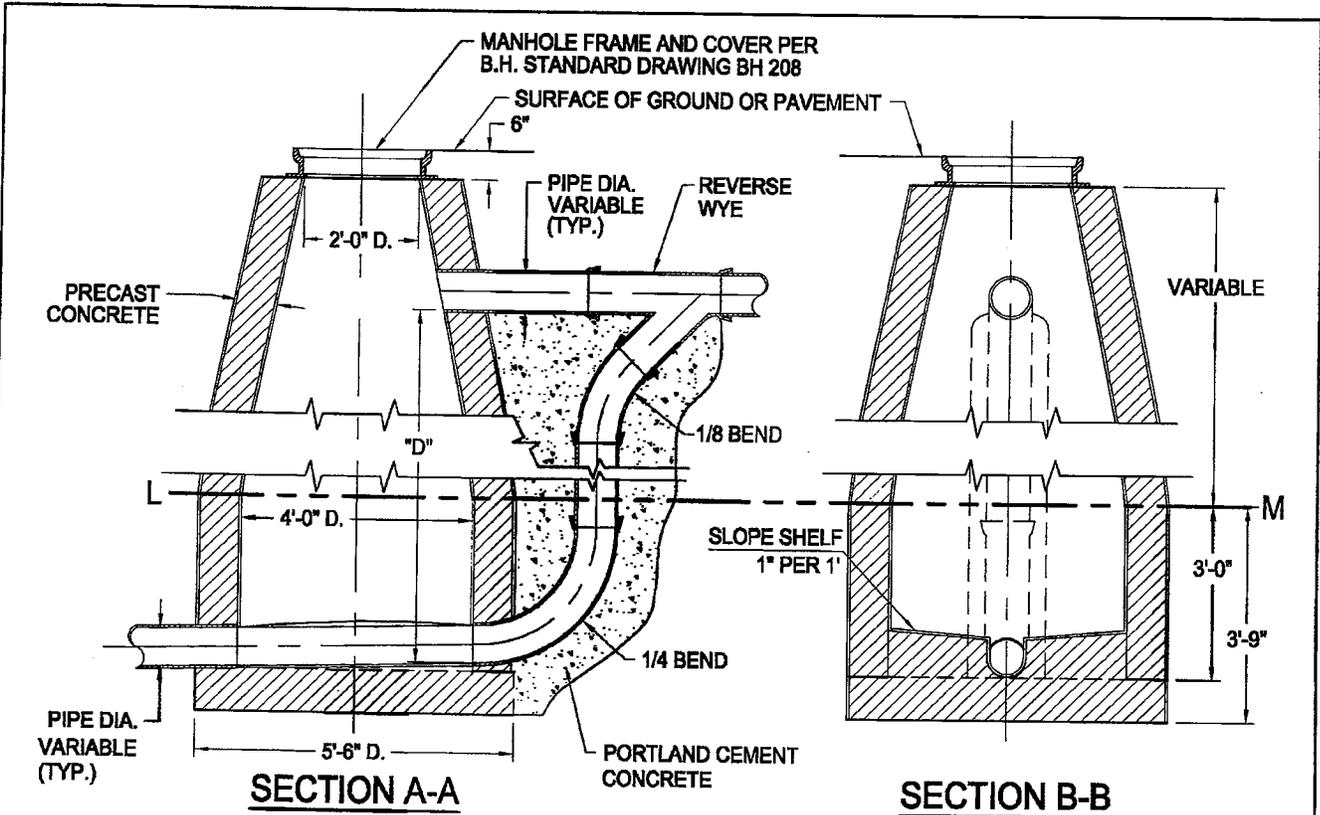
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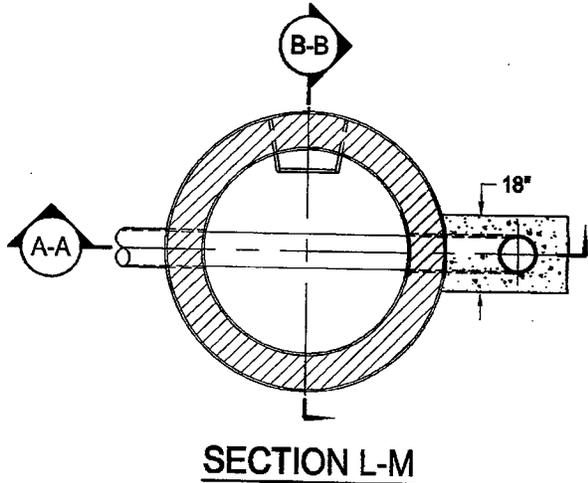
SHEET 4 OF 4

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"

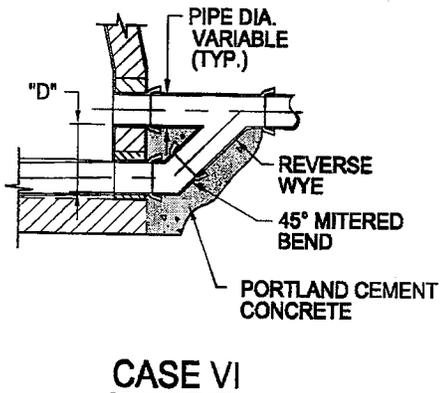
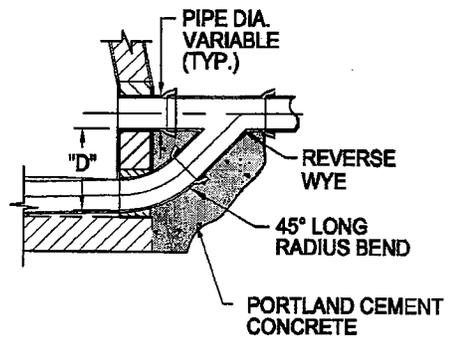
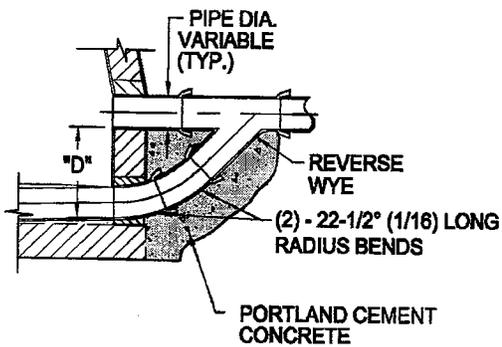
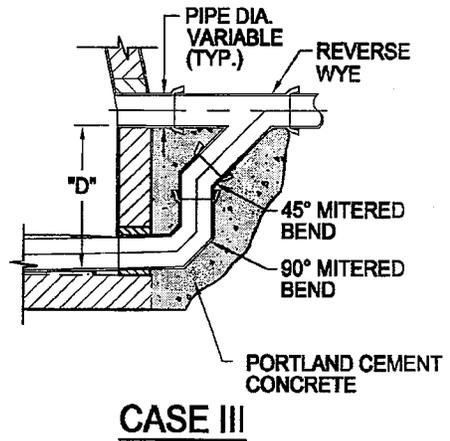
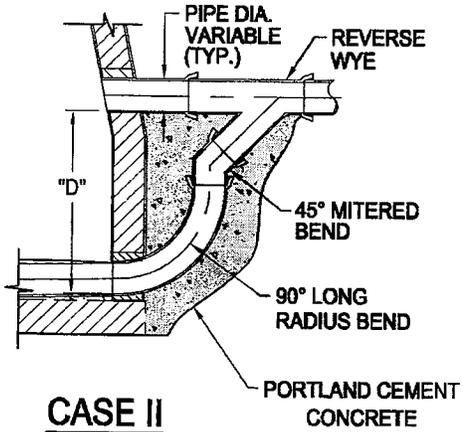
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BH 201
 SHEET 1 OF 2



	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"

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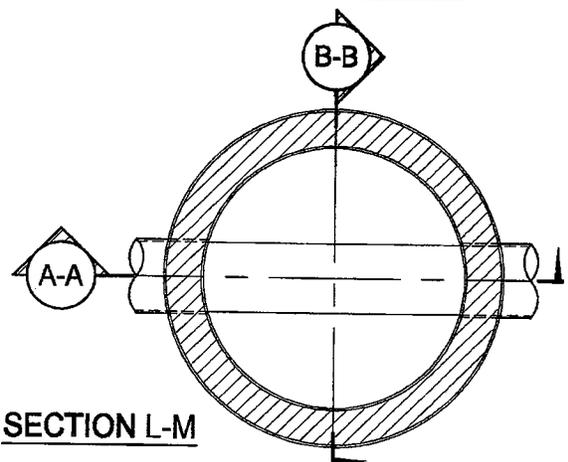
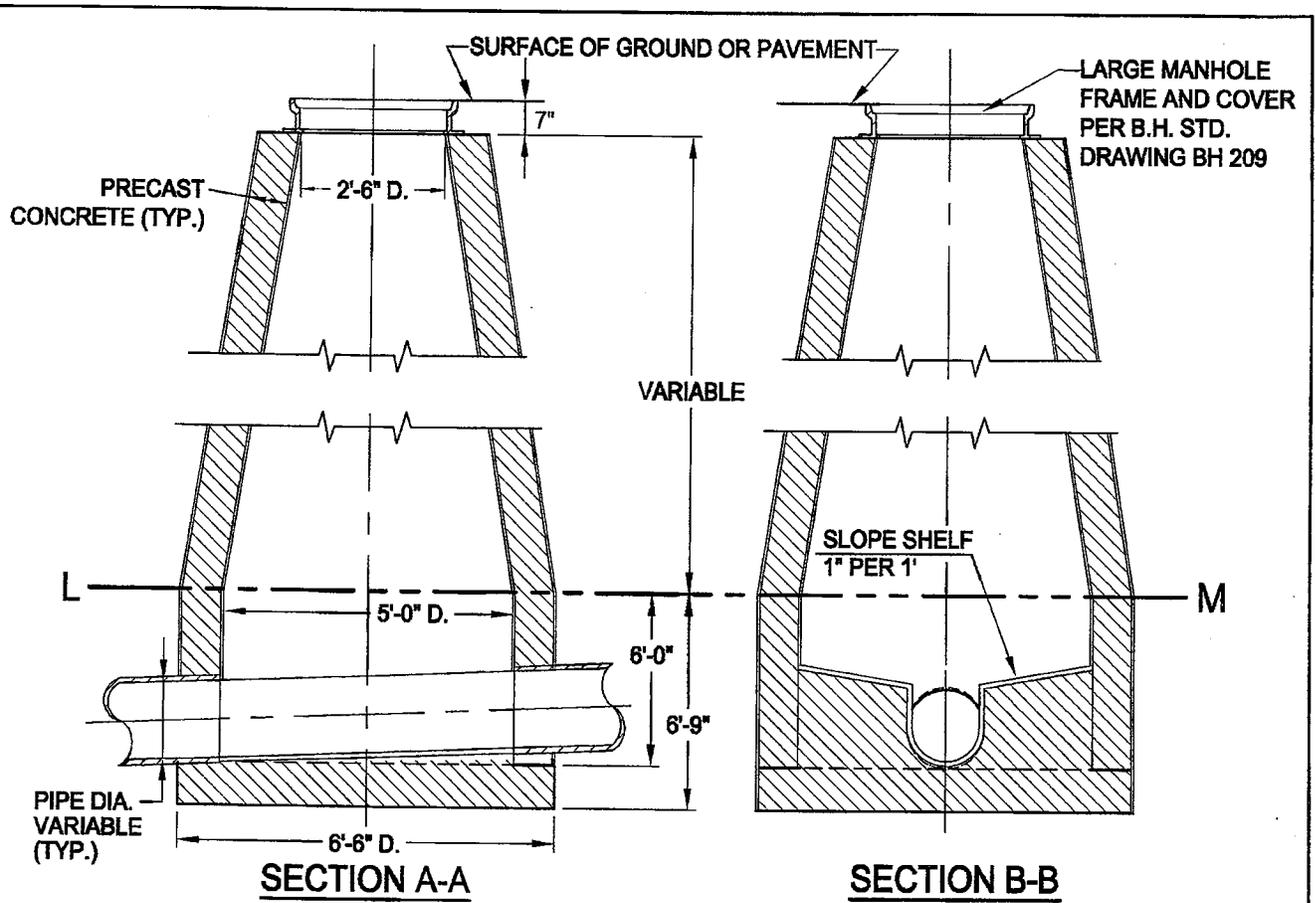
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BH 201

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"

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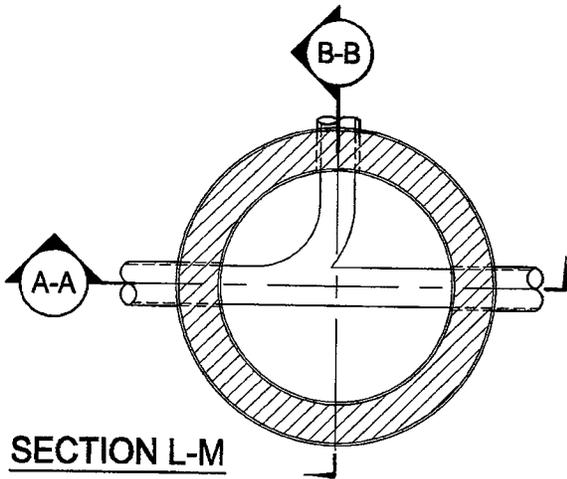
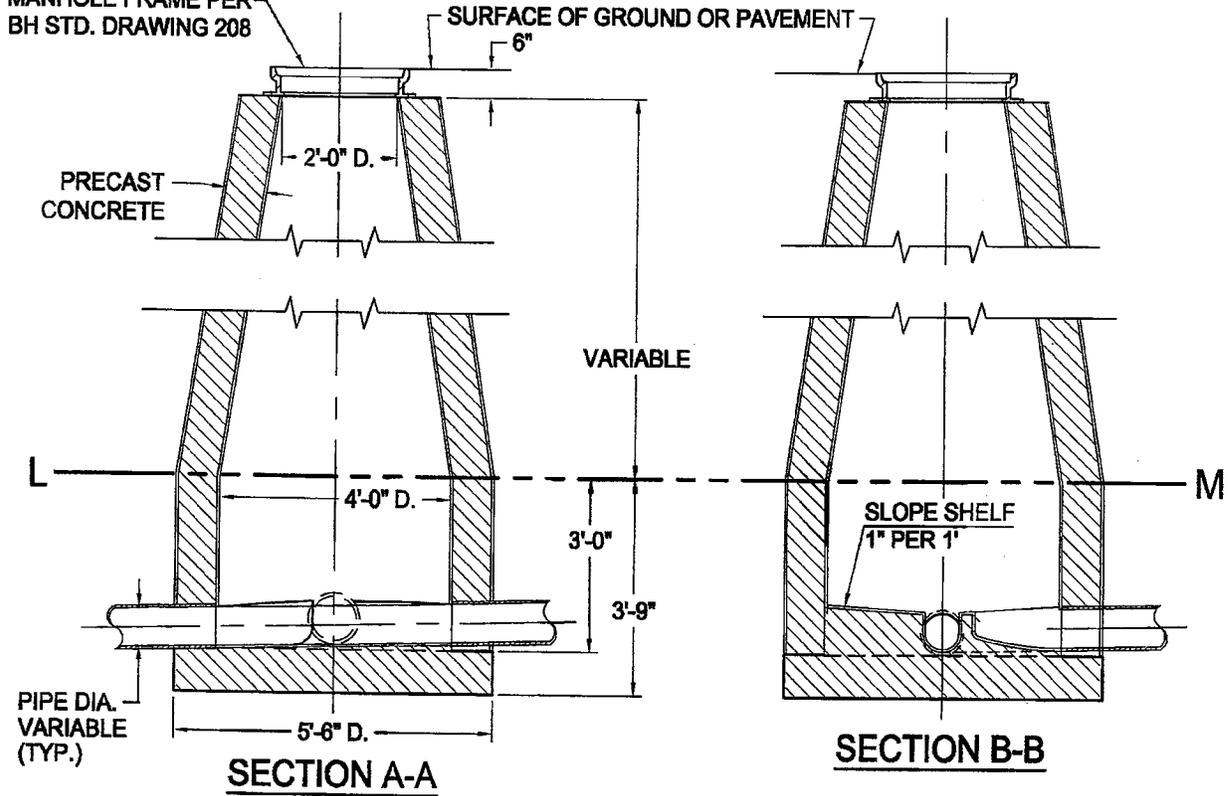
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BH 202
 SHEET 1 OF 1

MANHOLE FRAME PER
BH STD. DRAWING 208



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"

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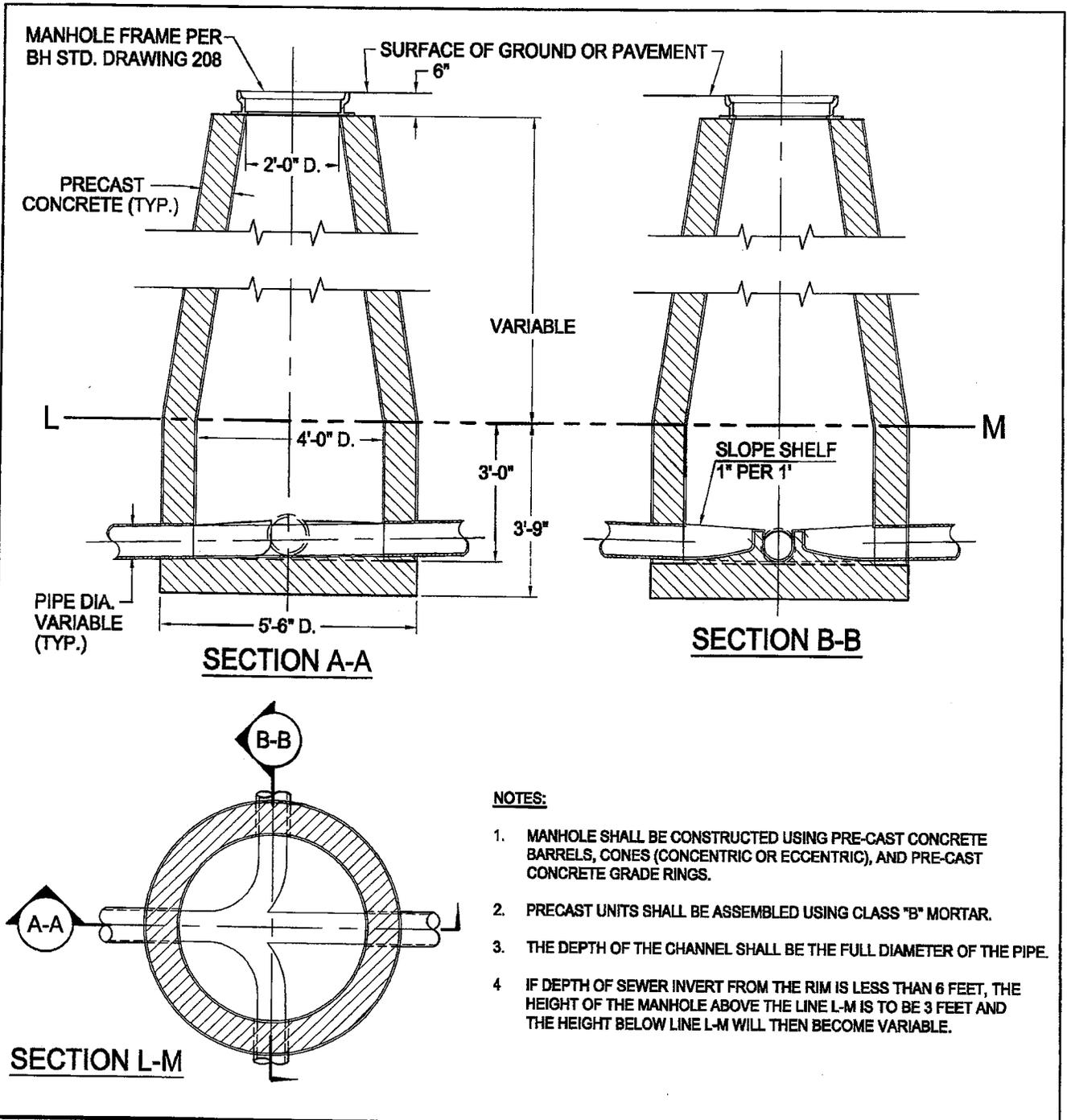
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BH 203

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 "G"

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 SHEET 1 OF 1