

**CUPERTINO SANITARY DISTRICT
SANTA CLARA COUNTY
CALIFORNIA**

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STANDARD SPECIFICATIONS

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These specifications approved and adopted by the Sanitary Board of the Cupertino Sanitary District, Santa Clara County, California

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WORK CONTRACTED BY DISTRICT

GENERAL CONDITIONS

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SECTION I

WORK CONTRACTED BY DISTRICT

GENERAL CONDITIONS

1.01 WORK AND PLANS

All work to be performed within the Service Area of the Cupertino Sanitary District shall conform to these Specifications and shall include the furnishing of all labor, materials, tools and equipment, methods and processes to construct sanitary sewers in accordance with the approved Plans and these Specifications. The Plans are hereby referred to and made a part of these Specifications and all work shall, during its progress and upon its completion, conform to the lines and grades on said Plans. The work shall be done in a thorough, workmanlike manner under the general review and to the satisfaction of the District Engineer of Cupertino Sanitary District and all materials used in completion of the work shall conform to the requirements of these Specifications.

1.02 DEFINITION OF TERMS

Whenever any work or expression defined below, or pronoun use in its stead, occurs in these Specifications, it shall have and it is mutually understood to have the meaning given:

“Abbreviations”

ASTM – American Society for Testing and Materials

AWWA – American Water Works Association

“District Engineer” shall mean the District Engineer of the Cupertino Sanitary District acting personally or through assistants acting within the scope of the particular duties entrusted to them.

“Contractor” shall mean the party entering into contract for the performance of the work covered by these specifications and his authorized agents or legal representatives.

“District” shall mean the Cupertino Sanitary District, Santa Clara County, California.

“Engineer of Work” shall mean Engineer responsible for the design of the sewers and appurtenances to be constructed.

1.03 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK:

The Contractor must inform himself through personal examination of the site of the proposed work, by due consideration of the Plans and Specifications, and by such other means as he may prefer as to the actual conditions and requirements of the work

and to any unusual difficulties that may be encountered in the prosecution of the work and as to all circumstances and conditions affecting the work.

1.04 INSPECTION:

The District Engineer shall have access to the work at all times during its construction, and shall be furnished with every reasonable facility for ascertaining that the materials and the workmanship are in accordance with the requirements and intentions of the Contract. All work done and all materials furnished shall be subject to his inspection.

The inspection of the work or materials by the District Engineer shall not relieve the Contractor of any of his obligations to fulfill his contract as prescribed. Work and materials not meeting District requirements shall be made good and unsuitable work or materials may be rejected, notwithstanding that such work or materials have been inspected previously by the District Engineer or that payment therefore has been included in a progress estimate.

The Contractor shall give the District Engineer two (2) working days notice prior to commencement of any portion of the work so that proper inspection may be provided. Any work done in the absence of the District Engineer shall be subject to rejection.

No labor, except for the protection of the public or the work, shall be performed between 5p.m. and 7a.m., nor on Saturdays, Sundays, or legal holidays, except with the express consent of the District Engineer.

Any Work performed by the Contractor outside the normal District working hours will require inspection. All extra costs incurred by the District for this purpose shall be paid by the Contractor, unless written authorization to waive such charges is given by the District Engineer.

1.05 CONSTRUCTION STAKES:

Construction stakes are to be set by the Engineer of Work and checked by the District Engineer. Cuts are not to be marked on the cut stakes by the Engineer of Work. Four (4) copies of the cut sheets are to be supplied to the District Engineer two (2) working days before Contractor desires to start work. Stationing of the construction stakes is to be the same as shown on the plans except on curvilinear streets or on curved sewers, stationing shall be along the center line of the sewer with equations at manholes. Grade stakes to be marked up station, up grade. Maximum distance between stakes to be fifty (50) feet on tangents and twenty-five (25) feet on horizontal and vertical curves.

1.06 MATERIALS AND SAMPLES:

All materials must be of specified quality and fully equal to samples, when samples are required.

The Contractor shall furnish to the District Engineer for test, whenever requested, and free of charge, samples of all materials proposed to be used in the work; also samples of

finished concrete work or pavement. The Contractor shall furnish competent labor, free of charges, to screen material samples as directed by the District Engineer. Rejected material must be immediately removed from the work by Contractor at his expense, and shall not again be brought upon the work.

1.07 CHARACTER OF THE WORKERS:

The Contractor shall employ only competent workers. Any person employed on the work by the Contractor who is intemperate, incompetent or who fails or refuses to perform the work in the manner specified herein, shall be discharged immediately from the project and that person shall not again be employed on the project.

1.08 SUPERINTENDENCE:

In the absence of the Contractor from the work, whether permanent or temporary, he must provide and leave a competent and reliable agent or foreman in charge who shall receive instructions from the District Engineer, who shall have full authority from the Contractor to execute orders without delay, and to supply materials, equipment, labor and tools. All notices, communications, orders or instructions given or sent to, or served upon such agent or foreman shall be taken as served upon the Contractor. If, at any time, any such known and authorized personnel are not present on the project site to receive instructions from the District Engineer, the District Engineer shall have authority to stop the work.

1.09 PRESERVATION OF MONUMENTS:

The Contractor shall not disturb any monuments or stakes found on the line of improvements without permission from the District Engineer, and shall bear the expense of resetting any monument or stakes, which may be disturbed without such permission. The Contractor shall reset all street names, signs, monument boxes, etc., disturbed by him during the progress of the work.

1.10 PRESERVATION OF TREES, UNDERGROUND UTILITIES, BENCH MARKS, FENCESWALLS, WALLS, ETC:

The Contractor shall anticipate all underground obstructions such as water lines, gas lines, sewer lines, utility lines, concrete and debris. No extra payment will be allowed for the removal, replacement, repair, or possible increased cost caused by underground obstructions. Any such lines or obstructions indicated on the map show only the approximate location and must be verified in the field by the Contractor. The District Engineer will endeavor to familiarize the Contractor with all known underground utilities and obstructions, but this will not relieve the Contractor from full responsibility in anticipating all underground obstructions.

The Contractor's attention is particularly called to the necessity of preserving those trees, shrubs, plants, grass, etc., which are to remain and to the underground utilities, conduits, drains, fences, walls, etc., which, if removed, taken down or disturbed during construction, are to be rebuilt to the satisfaction of the property owner and the District Engineer without incurring any claim for extra compensation on the part of the

Contractor. No tree roots of three (3) inches diameter or larger shall be cut or severed without prior written approval of owner.

1.11 REMOVING OBSTRUCTIONS:

On Country roads or on easements, no obstructions shall be removed without specific permission of the County Engineer and the District Engineer.

On State highways no obstructions shall be removed without specific permission from the California Department of Transportation Engineer.

On city streets no obstructions shall be removed without specific permission of the city engineer of that city and the District Engineer.

1.12 OBSERVING ORDINANCES AND CODES:

The Contractor shall observe all applicable ordinances, rules, regulations and codes of the District, City, and the County or the State (whichever shall have jurisdiction) in relation to disposal of waste material, obstruction of streets, keeping open passageways, and protecting the same where they are exposed or dangerous to travel, and other ordinances, rules, regulations and codes relating to the comfort and convenience of the public.

1.13 SAFETY PROVISIONS

The Contractor shall comply with the Construction Safety Orders, Title 8, Chapter 4, Subchapter 4 (commencing with Section 1500) of the Administrative Code of the State of California and safety procedures commencing with Section 6700 of the Labor Code of the State of California.

1.14 CLOSING STREETS:

No road shall be closed without the written permission of the City, County or State authority having jurisdiction over said road or street. Whenever a street or a road is closed, the Contractor shall notify the appropriate fire district in advance of the closing and immediately upon reopening, and also shall provide for adequate detours with sufficient signs for rerouting traffic.

1.15 BARRIERS, LIGHTS, ETC:

The Contractor shall take all necessary measures to protect the work and prevent accidents during construction. He shall provide and maintain all necessary barriers, guards, temporary bridges, watchmen, flags, and lights, in accordance with applicable ordinances or codes.

1.16 PUBLIC UTILITIES:

Where it shall be necessary to remove the property of any owner of a public utility or franchise, the Contractor shall make such arrangements as are required to have such property removed. The Contractor shall arrange his work that the moving of the property or utilities shall not interfere with his operations.

It shall be the responsibility of the Contractor to negotiate and enter into any contract, pay any costs or expenses required and comply with any standard regulations of any owner of a public utility or franchise for the removal or relocation of property or for the right to work within any property or right-of-way owned by the public utility or franchise.

The right is reserved to the District for owners of public utilities and franchises to enter upon the road or street for the purpose of making necessary repairs, or for making changes in their property made necessary by the work.

1.17 SUB-SURFACE SOIL DATA:

If the sub-surface soil investigations were made at the site, the logs of these test holes and soils report are available for inspection at the District Engineer's office. No responsibility is assumed by the District for the subsoil quality or conditions other than at the locations and at the time the exploration was made. No claim for extra compensation or for extension of time will be allowed on account of sub-surface conditions inconsistent with the data shown unless otherwise provided elsewhere herein.

1.18 PROTECTION OF THE WORK AND CLEANING UP:

The Contractor shall care for all work until final completion and acceptance. All damage done to existing improvements by the Contractor shall be repaired by him. He shall remove all spoil material and rubbish from the work after his completion, and before he makes application for acceptance of the work.

If the Contractor fails to comply with any requirements of this section, the District, at its option, may do so at the Contractor's expense, and the surety on the Contractor's performance bond shall be liable therefore.

1.19 DEFECTIVE WORK OR MATERIALS:

The Contractor shall promptly remove from the premises all work and materials condemned by the District Engineer as failing to conform to the Contract, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the District and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned work or materials within a reasonable time after notice, the District may remove them and store the materials at the expense of the Contractor. If the Contractor does not pay the expense of such removal within ten (10) days time after such removal, the District may, upon thirty (30) days written notice, sell such materials at auction or private sale and shall account for the net proceeds thereof after de-ducting all the costs and expenses that should have been borne by the Contractor.

No work or materials which are defective in its construction or in any of the requirements of these specifications will be considered as accepted in consequence of the failure of the District Engineer to point out such defects or deficiency during construction. The Contractor shall correct any imperfect work discovered at any time prior to one (1) year

after filing Notice of Completion by the District for work contracted by the District or acceptance by the Sanitary Board for work contracted by others.

Neither the final certificate of completion, acceptance by the Sanitary Board, final payment, or any provision in the Contract shall relieve the Contractor of responsibility for faulty materials or workmanship, and he shall remedy any defects due thereto and pay for any damage to other work resulting therefrom, which may appear or be discovered up to one (1) year after filing of said Notice of Completion or said acceptance by the Sanitary Board. The District Engineer shall give notice of observed defects with reasonable promptness, and the Contractor shall proceed to remedy such defects immediately upon receiving such notifications.

1.20 LOSS AND DAMAGE

All loss or damage arising from any unforeseen obstruction or difficulties, either natural or artificial, which may be encountered in the prosecution of the work, or from any action of the elements prior to the final acceptance of the work, or from any act or omission not authorized by these Specifications, on the part of the Contractor or any agent or person employed by him, shall be sustained by the Contractor.

1.21 FINAL INSPECTION

The Contractor shall notify the District Engineer when he desires a final inspection of the work. The District Engineer will, as soon thereafter as possible, make the necessary examination. If the work is found in compliance with these Specifications, the District Engineer will furnish the Contractor with an approval to that effect.

1.22 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC:

The Contractor shall keep himself fully informed of all State and Federal Laws, municipal and County ordinances, regulations, orders and decrees, which in any manner affect those engaged or employed on the work, or the materials or appliance used in or on the work, or which in any way affect the conduct of the work, and of all orders decrees and bodies or tribunals having any jurisdiction or authority over the same. He shall, at all times, himself observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees, and shall protect and indemnify the owner and his representatives, the District, the City or County in which work is performed, and all of their officers and employees against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by himself or his employees insofar as they relate to the work.

1.23 PATENTS:

The Contractor shall assume all responsibilities and pay all royalties arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work.

1.24 RESPONSIBILITY FOR DAMAGE:

The District, the Sanitary Board, the District Engineer, any city having jurisdiction, and the County of Santa Clara (including the officers and employees of the

forenamed), shall not, in any manner, be answerable or accountable for any loss or damage that shall or may happen to the work or any part thereof, respectively, or for any of the materials or other things used or employed in finishing or completing the work; or for injury to any person or persons, either workers or the public; or for damage to adjoining property from any cause that might have been prevented by the Contractor, or his workers, or by anyone employed by him, against all of which injuries or damages to persons or property the Contractor having control over such work shall properly guard and shall make good all damages from whatever cause, being strictly responsible for the same. The Contractor shall be responsible for any damage to any person or property resulting from defects or obstructions from any cause whatsoever during the progress of the work, or at any time before its completion and final acceptance.

1.25 CONTRACTOR NOT AN AGENT OF THE DISTRICT:

The Contractor is not an agent of the District or of the District Engineer. The Contractor is employed herein by the District as an independent contractor to provide the materials and to do the work according to the terms and conditions herein contained and referred to for the prices set forth in the Contract, and all persons employed by the Contractor in connection with this Contract shall be employees of the Contractor, and not employees of the District or the District Engineer in any respect. The liability of the Contractor for all damages to persons or to public property, arising from the Contractor's execution of the work, shall be his sole responsibility.

1.26 PLANS AND SPECIFICATIONS MUTUALLY EXPLANATORY:

The plans and specifications are intended to be explanatory of each other. Any work indicated in the plans and not in the specifications, or vice-versa, is to be executed as is indicated in both. Should any such discrepancy appear, or misunderstanding arise as to the import of anything contained in either, the explanation or interpretation of the District Engineer in relation thereto shall be final and conclusive.

1.27 DATUM:

The datum, to which all elevations mentioned herein or shown on the plans are referred, is the official datum of the U.S.G.S. (United States Geological Survey)

1.28 AUTHORITY OF THE DISTRICT ENGINEER:

All work shall be performed in a workmanlike manner and to the satisfaction of the District Engineer. To prevent disputes and litigation, the District Engineer shall in all cases determine the quality, acceptability, and fitness of the several kinds of work and materials; shall decide all questions relative to the true construction, meaning and intent of the plans and specifications; shall have the power to reject or condemn all work or material which does not conform to the plans and specifications; and shall have the power to stop work until fulfillment of all plans and specification requirements is assured.

1.29 CHANGES IN ALIGNMENT:

The District reserves the right to make changes in alignment of the sewer line, or the introduction of curves in the sewer line or changes in location of manholes, from the alignment and location shown on the plans, so long as the average depth of cut is not

increased thereby, and so long as no increased difficulty of manhole construction results, without incurring any claim for extra compensation on the part of the Contractor.

1.30 QUALITY OF MATERIALS AND WORKMANSHIP:

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

1.31 PURSUANCE OF WORK UNDER UNFAVORABLE WEATHER AND OTHER CONDITIONS:

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

1.32 APPROVAL OF CONTRACTOR'S PLANS NO RELEASE OF LIABILITY:

The Approval by the District Engineer of any plans or any method of work proposed by the Contractor shall not relieve the Contractor of any of his responsibilities for any error therein, and shall not be regarded as any assumption of risk or liability by the District Engineer, or the District, or officers or employees thereof, and the Contractor shall have no claim against the District on account of the failure or partial failure or deficiency of any plan or method so approved. Such approval shall be considered to mean purely that there is no objection to the Contractor's using, upon his own full responsibility, the plan or method the Contractor proposes.

1.33 PERMITS AND FEES:

The Contractor shall, at his expense, obtain all necessary permits and licenses for the construction of the project, give all necessary notices, pay all fees required by law, and comply with all laws, ordinance rules, and regulations relating to the work and to the reservation of public health and safety.

1.34 SANITARY REGULATIONS:

The operations of the Contractor shall be in full conformity with all the rules and regulations of the boards and bodies having competent jurisdiction with respect to sanitation.

The necessary sanitary conveniences for the use of the laborers on the work, properly obscured from public observance, shall be constructed and maintained by the Contractor

in such manner and at such points as shall be approved by the District Engineer, and their use shall be strictly enforced. The collections in the same shall be removed when and where, in the opinion of the District Engineer, it is advisable.

The Contractor shall obey and enforce such sanitary regulations and orders, and shall take such precautions against contagious or infectious diseases, as the District Engineer may deem necessary. In case any contagious or infectious disease occurs among his employees, the Contractor shall arrange for immediate removal of the employee from the work, and for his isolation from all parties connected with the work.

The Contractor shall keep and maintain in good condition at some convenient point all articles necessary for giving first aid to the injured.

1.35 CONTRACTOR TO REPORT ERRORS OR DISCREPENCIES:

If the Contractor, in the course of work, discovers any discrepancies between the plans and the conditions of the ground, or any errors or omissions in the plans or instruction, it shall be his duty to inform the District Engineer immediately in writing, and the District Engineer shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

1.36 REMOVAL OR REPLACEMENT OF WORK DONE WITHOUT LINES, GRADES, OR LEVELS:

Any work done without lines, levels, or grades being checked by the District Engineer, or without the inspection of the District Engineer, may be ordered removed and replaced at the Contractor's sole cost and expense, except when such work is authorized by the District Engineer in writing.

1.37 RIGHTS-OF-WAY ACQUISITION:

Rights-of-way or easements for work to be constructed will be provided by the District. The Contractor shall make his own arrangements and pay all expenses for additional area required by him outside the limits of said rights-of-way or easements, unless otherwise specifically provided.

In the event of delay on the part of the District, its officers, agents, or employees, in obtaining any such rights-of-way or easements for the work to be constructed, then the Contractor shall have additional time for completion of his Contract for the period, or periods of time embraced by such delay, but shall have no claim for damage against the District, its officers, its agents, or employees by reason of said delay or delays.

1.38 EASEMENTS:

Where the work is to be constructed in easements which have been improved by the installation of fences, lawns, trees, shrubs, orchards, gardens, imported topsoil, etc., the Contractor shall remove such improvements as may be necessary for the prosecution of the work and give them proper care and attention until the work has been satisfactorily backfilled and jetted, after which the Contractor shall replace them in as nearly to the

original condition and location as possible, said replacement to be done to the satisfaction of the District Engineer.

When the work is to be constructed in easement which include or are alongside existing improvements, the excavation shall be so braced and supported that the ground adjacent to the excavation will not slide or settle, and all existing improvements of any kind shall be fully protected from damage. If any damage does result to such improvement, the Contractor shall make the necessary repairs, or reconstruction at his own expense and as directed by the District Engineer.

All trees specifically designated to be removed shall be removed by the Contractor. Any trees not so designated for removal shall be considered "existing improvement" as provided for in the preceding paragraph.

Where sewers are to be constructed in easements through orchard lands, no boulders or large rock shall be returned to the trench within two (2) feet of the ground surface, unless directed otherwise by the District Engineer. In any case, the ground surface over and adjacent to the trench shall be left free and clear of all boulders and large rock. All such unsuitable material shall be disposed of at an approved site.

All manholes and flushing inlets situated within easements shall be marked with a single four-inch (4") steel post as shown on the District Standard Detail Sheets.

All work on easements is to be completed as soon as possible after the beginning of same.

1.39 REGISTRATION

Any Contractor performing work on public sewers under the jurisdiction of the Cupertino Sanitary District shall hold a proper State License to perform such work, register with the District and provide insurance as indicated in Section 1.40.

1.40 CONTRACTOR'S INSURANCE

The Contractor shall take out and maintain, during the life of the Contract, such public liability and property damage insurance as shall protect him, and with endorsements to said policy naming the City of Cupertino; City of Saratoga; County of Santa Clara; the District; Mart Thomas & Co. Inc., District Engineer; and the Officers, Directors and employees of aforementioned as additional insured.

The Contractor shall require the Subcontractors, if any, to take out and maintain similar public liability and property damage insurance. The amounts of such insurance shall be hereinafter set forth.

In case any of the work under the Contract is to be performed on or at the site of the project by a Subcontractor, the Contractor shall also take out and maintain such Contractor's contingent or protective insurance as will protect him; the city of Cupertino; City of Saratoga; County of Santa Clara; The District; Mark Thomas & Co. Inc., District

Engineer; and the Officers and Employees of the aforementioned from damage claims arising from the operations of any subcontractor. The amounts of such insurance shall be hereinafter set forth.

If any Subcontractor shall subcontract any portion of his subcontract, the Contractor shall require him to take out and maintain such contingent or protective insurance as will protect such Subcontractor from damage claims arising from the operations of the second subcontract. Such contingent or protective insurance shall be in the same amount as the primary Subcontractor's public liability and property damage insurance.

A. Public Liability and Property Damage:

The Contractor shall procure and maintain Insurance for Public Liability, including accidental death, and Property Damage in amounts not less than \$ 1,000,000

The Contractor shall require all Subcontractors, whether primary or secondary, if any, to procure and maintain Public Liability, including accidental death, and Property Damage Insurance in amounts not less than \$ 500,000

B. Compensation Insurance:

The Contractor shall procure and shall maintain, during the life of the Contract, Workers' Compensation Insurance for all of his employees to be engaged in work. In case any of the work is subcontracted, the Contractor shall require the Subcontractor similarly to provide Workers' Compensation Insurance for all of the Subcontractor's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workers Compensation Insurance.

All insurance required to be carried shall be written with such company as will be acceptable to the District. Satisfaction certificates of said insurance shall be filed with the District prior to commencement of operations by the Contractor.

In the event the form of any policy or certificate, or the amount of the insurance or the companies writing same are not satisfactory to the District, the Contractor shall be furnish other policies or certificates in form and amount, and with companies satisfactory to the District. The Contractor shall not cause any policy to be cancelled or permit it to lapse, and all policies shall include a clause to the effect that the policy or certificate shall not be subject to cancellation or to a reduction in the required limits of liability or amounts of insurance until notice has been mailed to the District not less than thirty-five (35) days before such cancellation or reduction shall be effective. All certificates of insurance, authenticated by the proper officer of the insurer, shall state in particular those insured, the extent of the insurance, the location

and operations to which the insurance applies, the expiration date, and the above-mentioned notice of cancellation or reduction.

1.41 LIQUIDATED DAMAGES:

Should the Contractor fail to complete the work, on any part thereof, in the time agreed upon in the Contract, or within such extra time as may have been allowed for delays by extensions granted as provided in the Contract, the Contractor shall reimburse the District for the additional expense and damage for every day that the Contract remains uncompleted after the date of completion given in the Contract. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work is the per diem rate stipulated in the Contract. The said amounts are hereby agreed upon as liquidated damages for the loss to the inspectors, and other employees, after expiration of the time for completion, and on account of the value of operation of the works dependent thereon. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the Contractor, and the District is authorized to deduct the amount of such damages from any moneys due the Contractor for work performed or material furnished under this Contract, and the Contractor and his sureties shall be liable for any excess.

1.42 TRADE NAMES:

Trade names which may be specified in this Contract are for the purpose of establishing quality and performance. The Contractor shall have thirty-five (35) days to submit information to the District Engineer supporting his request to substitute for "original" materials in accordance with Section 4380 of the Government Code. The District Engineer shall be responsible for determining if the proposed substitute is equal in quality and performance.

1.43 MEASUREMENT OF QUANTITIES:

A. Sewer Pipe

In the final determination of the quantities of sewer pipe constructed, main sewers shall be measured horizontally along the centerline of the sewer from center of manhole to center of manhole or flushing inlet, without deduction for wye branches, manholes, or flushing inlets. Lateral sewers shall be measured horizontally from the centerline of main sewer to end of lateral at property line or easement line.

The unit bid price paid per linear foot of pipe of whatever kind or class and for the various sizes thereof for any and all sewer lines constructed under the project shall include full compensation for furnishing all materials and all work for the installation of the sewer pipes, complete as follows:

- (1) Furnishing and delivering all materials to be furnished and/or installed by the Contractor.

- (2) Cutting of pavement, curbs, sidewalks, and other existing improvements required to be cut or removed to install sewer lines.
- (3) Excavation of trenches, bell holes, and bed for pipes.
- (4) All shoring, sheeting, bracing, removal of trench water, and all other such incidental work.
- (5) Laying and jointing of pipe.
- (6) Backfilling and compaction of backfill.
- (7) Restoring all landscaping, driveways, curbs, gutters, sidewalks, culverts, drains, and all other original improvements involved in the work of construction. Payment for restoring road surfaced of varying types shall be included in the applicable unit prices bid under terms "Pavement Replacement and Untreated Rock Base Material."
- (8) All other work necessary or incidental to constructing and marking sewer lines and appurtenances as shown on the plans and as specified here.

B. Wye Branches or Saddles:

The cost of wye branches or saddles and one-eighth bends shall be considered as included in the unit price bid for lateral sewer pipe and no additional compensation will be made therefore.

C. Manholes and Flushing Inlets to be Constructed:

The unit bid price paid for manholes or flushing inlets shall include full compensation for furnishing all materials for, and doing all work necessary or incidental to the complete construction of all manholes or flushing inlets, complete to the heights shown on the plane, and in accordance with the plans and specifications.

All manholes shall be eccentric manholes.

D. Metal Pipe Casting:

The unit bid price paid per lineal foot of metal pipe casing shall include full compensation for furnishing all materials and all work necessary for the installation of the metal pipe casing including the sand when required and concrete bulkheads at each end of the casing. The length of the pipe inside the casing shall be included in the unit bid price paid for the casing and no additional compensation shall be allowed therefore.

E. Compacted Wet Sand, Imported Clean Rock or Gravel Fill:

Pay item limits for this item will be the product of the depth of material required, multiplied by the length required, multiplied by the trench width (or pipe diameter plus twenty inches (20’), whichever is lesser). Payment per yard for this item shall include removal and disposal of existing material with no additional compensation therefore.

F. Oil and Screening Over Trenches:

The bid price per lineal foot shall be for the full width opening of the trench and shall include cost of doing such work and furnishing labor, equipment and materials therefore.

G. Plant Mix Surfacing Over Trenches:

The bid price per lineal foot shall be for the full width opening of the trench and consisting of three inches (3’)* of hot plant mix surfacing and required tack coat shall include cost of doing such work and furnishing labor, equipment and materials therefore, all as herein specified.

H. Imported Untreated Rock Base Over Trenches:

The bid price per lineal foot shall be for the full width opening the trench, and consisting of twelve inches (12’)* of compacted, imported, untreated rock base in place, including temporary paving where required.

The unit price for imported, untreated rock base material shall include full compensation for furnishing and placing all material and the removal of unsuitable excavated material from the job site.

*These thicknesses of material shall apply unless otherwise noted in plans or bid item.

I. Seal Coat (Oil and Screenings):

The bid price per square foot shall include all labor, equipment, and materials for the application of asphaltic oil and crushed granite screenings.

When specified, all streets where any trenching is done shall be sealed and screened as herein specified for the full width of the streets (from lip of gutter to lip of gutter).

All brooming and cleanup shall be included with no extra compensation on the part of the Contractor.

1.44 PAYMENT:

Payment shall be made to the Contractor for work performed under this Contract for the quantities of work as determined in accordance with Sections 1.43, 1.46 and 1.47 of these Specifications. Payment for extra work will be made in accordance with Sections 1.45, 1.46, and 1.47 of these Specifications.

1.45 EXTRA WORK AND CHANGES:

Extra work means work which was not included in the Plans or Specifications or in any bid schedule. Extra work does not include any items for which a unit price was stated in the bid even if the estimated quantity differs from the actual quantity. The District, without invalidating the Contract, may order additional work or make changes in or deletions from the work and increase or decrease the Contract price accordingly. All such work shall be executed under the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such extra work or change. In giving instructions, the District Engineer shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purpose of the work, but otherwise, except in the case of emergency endangering life or property, no extra work or change shall be made unless agreed to and recorded on a "Contract Change Order" and no claim for an addition to the Contract price shall be valid unless so agreed to and recorded. Before becoming effective, all Change Orders must be signed by the District Engineer.

The value of such extra work or change shall be determined in one or both of the following ways:

- (1) By estimate and acceptance in a lump sum.
- (2) By any unit prices named in the Contract or subsequently agreed upon.

The Contract price shall be adjusted by considering separately any work added and any work deleted. The Contractor agrees that he shall not be entitled to claim damages for anticipated profits on any portion of the work that may be deleted. The amount of any adjustment for work deleted shall be estimated at the time deletion of work is ordered and the estimated adjustment will be deducted from the subsequent monthly pay estimates.

The District reserves the right to contract with any person or firm other than the Contractor for any or all extra work.

1.46 CLAIMS FOR EXTRA WORK:

If the Contractor claims that any changes in the work or any instructions by means of Plans or otherwise involve extra cost, he shall give the District Engineer written notice thereof within a reasonable time after receipt of such instructions or notice of such changes, and, in any event, before proceeding to carry out such instructions or to put such changes into effect, except in case of an emergency endangering life or property. In all such cases, the Contractor shall keep a correct account of the extra costs in such form as the District Engineer may direct and shall present such account supported by receipts to the District Engineer. The District shall be entitled to reject any claim for extra cost if the foregoing procedure is not followed.

1.47 PAYMENTS FOR WORK COMPLETED:

Partial payments will be made on or before the 24th of each month, as the work progresses, on estimates filed by the Contractor on or before the 10th of the month and as approved by the District Engineer provided that the Contractor is performing the overall job in a diligent manner. In making partial payment, there shall be retained ten percent of the amount of each estimate until final completion and acceptance of all the work. Upon completion and acceptance of the work, the District Engineer shall issue a certificate that the work has been completed and accepted by him under conditions of this Contract, and shall make and approve the final estimate of work. A Notice of Completion shall then be filed, in full compliance with the applicable statutory requirements. Thirty-five (35) days after filing or recording the Notice of Completion, the entire balance found to be due the Contractor, including the retained percentages, but excepting such sums as may be lawfully retained by the District, shall then be paid to the Contractor. Such payment shall be conditioned, however, upon the submission by the Contractor of evidence satisfactory to the District that all claims for labor, materials, and any other outstanding indebtedness in connection with the Contract have been paid.

If after the work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and the District Engineer so certifies, the District shall upon the certification of the District Engineer and, without terminating the Contract, make payment for the balance due for that portion of the work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claim.

1.48 SUBSTITUTION OF SECURITIES FOR WITHHELD AMOUNTS:

Pursuant to Chapter 13 (commencing with Section 4590, Division 5, Title 1 of the Government Code of the State of California), securities may be substituted for any moneys withheld by a public agency to ensure performance under a contract. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the public agency, or with a state or federally chartered bank as the escrow agent, who shall pay such moneys to the Contractor upon satisfactory completion of the Contract.

Securities eligible for substitution under this section shall include those listed in Section 16430 of the Government Code of the State of California or bank or savings and loan certificate of deposit.

The Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

Any escrow agreement entered into pursuant to this section shall contain as a minimum, the following provisions

- (1) The amount of securities to be deposited;
- (2) The terms and conditions of conversion to cash in case of the default of the Contractor; and

(3) The termination of the escrow upon completion of the Contract.

1.49 PAYMENTS WITHHELD:

The District Engineer may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any estimate to such extent as may be necessary to protect the District from loss on account of:

- (1) Defective work not remedied.
- (2) Claims Filed on reasonable evidence indicating probable filing of claims.
- (3) Failure of the Contractor to make payments properly to Subcontractors for material or labor.
- (4) A reasonable doubt that the Contract can be completed for the balance then unpaid.
- (5) Damage to or interference with another Contractor.
- (6) Failure of the Contractor to keep his work progressing in accordance with his time schedule.
- (7) Where work on the unit price items are substantially complete but lack cleanup and/or corrections ordered by the District Engineer, amounts shall be deducted from unit prices in partial payment estimates to amply cover such cleanup and corrections.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

1.50 ASSIGNMENT AND TRANSFER OF THE CONTRACT:

The Contractor shall not assign or transfer this Contract or any part thereof or any interest therein without consent in writing of the District, and the Contractor's surety, and any such assignment or transfer without such written consent shall be null and void.

1.51 INDEMNITY:

The Contractor shall indemnify and save harmless the District, and its agents and employees, from and against all losses and claims, demands, payments, suits, actions, recoveries and judgments of every nature and description brought or recovered against them by reason of any act or omission of the said Contractor, his agents, or employees, in the execution of the work or in making or failing to make payments therefore, or in guarding the same.

1.52 SUBCONTRACTS:

- (1) The Contractor may, to the extent permitted by law, without additional expense to the District, utilize the services of Subcontractors on those parts of the work which are specified to be performed by Subcontractors.
- (2) Nothing contained in the Specifications or Plans shall be construed as creating any contractual relationship between any Subcontractor and the District. The divisions or sections of the Specifications are not intended to control the Contractor in dividing the work among Subcontractors or to limit the work performed by any trade.
- (3) The Contractor shall be as fully responsible to the District for the acts and omissions of Subcontractors and of persons employed by them as he is for acts and omissions of persons directly employed by him.
- (4) The Contractor shall be responsible for the coordination of the trades, Subcontractors, and material suppliers engaged upon his work. Neither the District nor the District Engineer will undertake to settle any difference between the Contractor and his Subcontractors or between Subcontractors. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of this Contract insofar as applicable to the work of Subcontractors.
- (5) The District and the District Engineer reserve the right to approve all Subcontractors. Such approval shall be a consideration to the awarding of the Contract and unless notification to the contrary is given to the Contractor prior to the signing of the Contract, the list of Subcontractors which is submitted with his proposal will be deemed to be acceptable.

1.53 OTHER CONTRACTS:

The District may award other contracts. The Contractor shall fully cooperate with such other contractors and carefully fit his own work to that provided under other contracts as may be directed by the District Engineer. The Contractor shall be liable for any act which will damage or interfere with the performance of work by any other contractor.

1.54 DISTRICT'S RIGHT TO TAKE OVER THE WORK:

If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed to take over his affairs, or if he would fail to prosecute the work with due diligence and carry the work forward in accordance with his work schedule and the time limit set forth in the Contract Documents, or if he should fail to substantially perform one or more of the provisions of the Contract, the District may serve written notice on the Contractor and on

the surety on his performance bond, stating its intention to exercise one of the remedies hereinafter set forth and the grounds upon which the District bases its right to exercise such remedy.

In any event, unless the matter complained of is satisfactorily cleared within ten (10) days after service of such notice, the District may, without prejudice to any other right or remedy, exercise one of such remedies at once, having first obtained a certificate from the District Engineer that sufficient cause exists to justify such action.

A. TERMINATE:

The District may terminate the service of the Contractor which termination shall take effect immediately upon service of notice thereof on the Contractor and his surety, whereupon the surety shall have the right to take over and perform the Contract. If the surety does not commence performance of the Contract within ten (10) days after service on surety of the notice of termination, the District may itself take over the work, take possession of and use all materials, tools, equipment, and appliances on the premises and prosecute the work to completion by such means as it shall deem best.

In the event of such termination of his service, the contractor shall not be entitled to any further payment under the Contract until the work is completed and accepted. If the District takes over the work and if the unpaid balance of the Contract price when the District takes over the work exceeds the cost of completing the work, including compensation for any damage or expenses incurred by the District through the Contractor, such excess shall be paid to the Contractor. In such event, if such cost, expenses and damages shall exceed such unpaid balance of the Contract price, the Contractor and his surety shall pay the difference to the District. Such cost, expenses and damages shall be certified by the District Engineer.

B. TAKE CONTROL OF WORK:

The District may take control of the work and either make good the deficiencies of the Contractor itself or direct the activities of the Contractor in doing so, employing such additional help as the District deems advisable. In such event the District shall be entitled to collect from the Contractor and his surety, or to deduct from any payment then or thereafter due the Contractor, the costs incurred by it through the default of the Contractor, provided the District Engineer approves the amount thus charged to the Contractor.

C. REQUIRE SURETY TO TAKE CONTROL:

The District may require the surety on the Contractor's performance bond to take control of the work at once and see to it that all deficiencies of the Contractor are made good with due diligence. As between the District and the surety, the cost of making good such deficiencies shall all be borne by the surety. If the surety takes over the work, either upon termination of the services of the Contractor or upon instructions from the District to do so, the provisions of the surety being substituted for the Contractor as to such provisions, including provisions as to payment for the work itself or to take control of the work.

In the event of a National Emergency, the District and the Contractor may by written agreement terminate the Contract in accordance with Section 4410 of the Government Code.

1.55 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT:

If the work shall be stopped under an order of any court or other public authority for a period of three (3) months through no act or fault of the Contractor or of anyone employed by him, then the Contractor may on seven (7) days written notice to the District and the District Engineer stop work or terminate this Contract and recover from the District payment for all work executed, losses sustained on any plant or materials and a reasonable profit. If the District Engineer shall fail to issue any certificate for payment within ten (10) days after it is due, or if the District shall fail to pay the Contractor within fifteen (15) days after its maturity and presentation any sum certified by the District Engineer, then the Contractor may on seven (7) days written notice to the District and the District Engineer stop work and give written notice of intention to terminate the Contract. If the District shall thereafter fail to pay the Contractor within seven (7) days after receipt of such notice, then the Contractor may terminate the Contract and recover from the District payment for all work executed, any losses sustained upon any plant or materials, and a reasonable profit.

1.56 DELAYS AND EXTENSION OF TIME:

If the Contractor be delayed at any time in the progress of the work by an act or neglect of the District or the District Engineer, or of any employee, or by any separate contractor employed by the District, or by changes ordered in the work, or by the strike, lockouts, fire, unusual delay in transportation, unavoidable casualties, or any causes beyond the Contractor's control, or by delay authorized by the District Engineer, or by any cause which the District Engineer shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the District Engineer may decide. No extension of time shall be valid unless recorded on a properly completed Contract Change Order Form.

No such extension shall be made for delay occurring more than seven (7) days before claim therefore is made in writing to the District Engineer. In the case of a continued

cause of delay, only one claim is necessary. This section does not exclude the recovery of damages for delay by either party under other provisions of the Contract.

1.57 RIGHT OF OCCUPANCY:

The District shall have the right, if necessary to take possession of and to use any completed or partially completed portions of the work, if such use be approved by the District Engineer even if the time for completing the entire work or such portions of the work has not expired and even if the work has not been finally accepted. Such possession and use shall not constitute and acceptance of such portions of the work. The District shall not have the right of such possession and use if it materially interferes with the Contractor's operations. The District shall also have the right to enter the premises for the purpose of doing work not covered by the Contract.

1.58 UTILITIES:

The Contractor shall arrange for utility service as required for work under this Contract, and shall pay the cost of all utilities until the date of acceptance of the work by the District.

1.59 AIR POLLUTION:

The Contractor shall comply with local Air Pollution Control Rules and regulations.

1.60 TIME OF COMPLETION:

The project shall be completed within the time limitation designated in the Contract.

The Sanitary Board shall have the authority to extend the time of the Contract upon the written request of the Contractor. The granting of any extension of time on account of delays shall in no way operate as a waiver on the part of the District of its rights under the Contract.

In the event an extension of time is granted, all costs deemed by the Sanitary Board as resulting from the time extension shall be paid to the District by the Contractor.

SECTION II
WORK CONTRACTED BY OTHERS
GENERAL CONDITIONS

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SECTION II

WORK CONTRACTED BY OTHERS

GENERAL CONDITIONS

2.01 WORK AND SPECIFICATIONS

All work to be performed in the service area of the Cupertino Sanitary District shall conform to these specifications except Sections 1.17, 1.19, 1.25, 1.37, 1.41, 1.43, 1.44, 1.45, 1.46, 1.47, 1.48, 1.49, 1.50, 1.52, 1.54, 1.55, 1.56, 1.58, 1.60 and shall include the furnishing of all labor, materials, tools and equipment, methods and processes to construct sanitary sewers in accordance with approved plans and these specifications to the extent applicable. The work shall be done in a thorough workmanlike manner but under the general review and to the satisfaction of the District Engineer of the Cupertino Sanitary District and all materials used in the completion of the work shall conform to the requirements of these Specifications.

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SECTION III

MATERIALS

3.01 PORTLAND CEMENT CONCRETE: (P.C.C.)

Portland Cement shall conform to the Standard Specifications for Portland Cement, ASTM Designation: C150-46, Type II.

Aggregate and water shall conform to the following subsection of Section 90 of the Standard Specifications of the State of California, Department of Transportation, dated January, 1988. "(90-2) Materials . . . (90-2.02) Coarse Aggregate; (90-2.02B) Fine Aggregate; and (90-2.03) Water."

VITRIFIED CLAY PIPE: (V.C.P.)

All vitrified clay sewer pipe shall conform to the Standard specifications for Clay Pipe, ASTM Designation: C200-44 for extra strength clay pipe. Each length of pipe shall be sound and durable, free from objectionable defects. All pipe shall be hard burned and free from cracks, warps, and blisters. The pipe shall be smooth and the ends of each length shall be square with the longitudinal axis. Each length of pipe shall produce a clear metallic ring when placed on end and struck with a light hammer. The Pipe shall not absorb moisture in excess of eight percent (8%) of its dry weight. All vitrified clay pipe shall conform to the standards of the Clay Pipe Institute with respect to dimensions.

When tested for crushing strength by the three-edge bearing test, the pipe shall withstand a pressure in pounds per linear foot of pipe equal to at least two thousand two hundred fifty (2,250) times the net inside diameter of the pipe expressed in feet. The thickness of pipe, as set forth in the ASTM Specifications hereinabove referred to, shall be increased where necessary to produce pipe of the physical strength herein stipulated in relation to pipe diameter.

The District Engineer reserves the right to test sections of pipe at the site of manufacture, and the supplier will furnish all materials and equipment necessary to conduct such tests.

3.03 VITRIFIED CLAY PIPE JOINTS:

Joints for Bell and Spigot vitrified clay pipe shall be preformed plastisol joints, as manufactured by International Pipe and Ceramics Corporation (Gladding, McBean Pipe Products) (speed-Sea;), or Pacific Clay Products (Wedge-Lock), or approved equal.

Joints for plain and Vitrified Clay Pipe shall be a rubber sleeved with stainless steel bands as manufactured by Mission Clay Products (Band-Seal) or approved equal.

3.04 CAST IRON PIPE: (C.I.P.)

Cast Iron Pipe and fittings shall be Class 150, Federal Specifications WW-P-421-b and the latest amendments thereto. Wall thickness to be standard unless otherwise specified.

The District Engineer reserves the right to test sections of pipe at the site of manufacture, and the supplier will furnish all materials and equipment necessary to conduct such tests.

3.05 DUCTILE IRON PIPE: (P.I.P.)

Ductile Iron Pipe and fittings shall be Class 150, AWWA C151-76 and the latest amendments thereto. Wall thickness to be standard unless otherwise specified.

3.06 CAST IRON PIPE AND DUCTILE IRON PIPE JOINTS:

All joints shall be Tyton, or approved equal, or mechanical joints as specified on the plans.

3.07 POLYVINYL CHLORIDE PIPE: (P.V.C.)

All Polyvinyl Chloride Pipe and fittings shall conform to ASTM Specifications D3034-SDR35 (unless otherwise noted on the plans) and shall be of the Uni-Bell Type. Approved water stop methods shall be used where "P.V.C." enters the manhole base.

The District Engineer reserves the right to test sections of pipe at the site of manufacture, and the supplier will furnish all materials and equipment necessary to conduct such tests.

3.08 POLYVINYL CHLORIDE PIPE JOINTS:

All Polyvinyl Chloride Pipe Joints shall be rubber gasket such as Ring Tite, Fluid Tite, etc.

3.09 METAL PIPE CASING:

Metal casing to be bored and jacked shall be smooth steel pipe or casing, with a minimum wall thickness of three-eighths inch (3/8"). Joints shall be welded.

3.10 CASTINGS:

All castings for manhole rings, covers and other purposes, shall conform accurately to the form and dimensions shown on the detailed drawings. They must be of workmanlike finish, free from blow and sand-holes or defects of any kind, and shall be made from a superior quality of rough even-grained gray iron, and shall possess a tensile strength of not less than thirty thousand (30,000) pounds per square inch and shall conform to the requirements of ASTM A48, Class 30B. Before leaving the foundry they shall be thoroughly cleaned and coated in dipping in asphalt applied at a temperature of 300 degrees Fahrenheit in such a manner as to provide a firm, durable and tenacious coating.

3.11 MANHOLES:

Eccentric Precast Portland Cement concrete manhole sections conforming to the Specifications for "Materials for Construction" of these Specifications shall be used for the standard manhole as shown on the standard drawings.

Taper sections shall be the eccentric type.
Manhole steps are to be installed in manhole sections during manufacturing.

3.12 MORTAR AND PLASTER:

Mortar shall be composed of one (1) part cement and two (2) parts Structural Grade sand.

3.13 COMPACTED WET SAND:

When required or used as backfill material, the sand shall comply with the standard requirements of the governmental agency having jurisdiction over the street in which the sand backfill is used.

3.14 IMPORTED CLEAN ROCK OR GRAVEL FILL:

The imported clean rock or gravel fill material shall consist of hard durable particles or fragments of granular aggregates mixed or blended with fine sand, clay, stone dust, or other similar binding materials, produced from an approved source to provide a uniform mixture complying with the requirements of these specifications as to gradation, soil constants, and the capability of being compacted into a dense and stable sub-base. The material shall be free of vegetable matter, lumps, or excessive amounts of clay and other objectionable or foreign substances. Pit run material may be used, provided the material meets the requirements specified below.

<u>Sieve Designation</u>	<u>Passing, Percent by Weight</u>
3-inch	100
No. 40	Not more than 70

The material passing the No. 10 mesh sieve shall meet the following requirements:

<u>Sieve Designation</u>	<u>Passing, Percent by Weight</u>
No. 10	100
No. 40	25-70
No. 200	0-35

Liquid Limit - - - - - not more than 35

Plasticity Index - - - - not more than 6

3.15 UNTREATED BASE:

Materials for untreated base shall conform with Subparagraph "1.02B Materials" of section 26 of the Standard Specifications of the State of California, Department of Transportation, dated January, 1988, or as superseded by newer editions.

3.16 PLANT MIXED SURFACING:

- A. **Description:** Plant-mixed Surfacing shall be a Type "B" and shall consist of a mixture of mineral aggregate and bituminous binder.

B. Materials:

- (1) Mineral Aggregate shall conform with Subparagraph "2.02" of Section 39 of the Standard Specifications of the State of California, Department of Transportation, dated January, 1988, or as superseded by newer additions.
- (2) Bituminous Binder shall be paving asphalt, and shall conform to the requirements of Section 39 of the Standard Specifications referred to above, and the penetration shall be 85-100.

C. Drying, Proportioning and Mixing Materials: The drying, proportioning and mixing shall conform to Section 39-3 of the aforementioned Standard Specifications referred to herein.

3.17 SEAL COAT (OIL AND SCREENINGS):

- A. **Single Seal Coat:** A single seal coat shall consist of one (1) application of bituminous binder and a cover of 1/4" x No. 10 crushed granite screenings. Material for single seal coat shall conform with Section 37-1 of the Standard Specifications of the State of California, Department of Transportation, dated January, 1988, or as superseded by newer additions.
- B. **Double Seal Coat:** A double seal coat shall consist of two (2) complete applications of bituminous binder and a cover of crushed granite screenings. Materials for Double Seal Coat shall conform with Section 37-1 of the Standard Specifications of the State of California, Department of Transportation, dated January, 1988, or superseded by newer additions.

3.18 REINFORCING STEEL:

Reinforcing steel shall conform to the latest requirements of ASTM specifications for deformed bars. All bars shall be bent cold and fabrication shall be accurately done to the dimensions shown on the plans. At the time of concrete pouring, the bars shall be free from rust, scale, oil, paint or other coating which would reduce or destroy the bond between the steel and concrete.

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SECTION IV

CONSTRUCTION PROCEDURE

4.01 EXCAVATION FOR PIPE LINES:

Trenches shall be excavated either by hand or by machine, beginning at the outlet and proceeding up grade. All trenches shall be excavated vertically and shall be of open construction. Tunneling will not be permitted except where permission is given by the District Engineer and the dimensions and method of construction and backfilling have been definitely approved by him.

All trenches shall be of sufficient width to provide free working space on each side of the pipe and in no case shall such space be less than six inches (6"). Where bracing and shoring is necessary, an additional width as directed by the District Engineer will be allowed. In all cases, there shall be sufficient space between the pipe and the sides of the trench to thoroughly backfill and compact around the pipe.

In firm ground the trench shall be cut no deeper than the thickness of the pipe below the flow line and to its true line and grade. The intent of the construction requirement is to insure a uniform and full bearing of the sewer pipe in solid ground. A bell hole shall be dug at the end of each pipe to accommodate the bell and facilitate the making of the joint.

If the trench should be cut deeper than necessary, it shall be brought up to grade by mechanical tamping native material or with sand as directed by the District Engineer.

When natural ground does not provide a firm support in the bottom of the trench, the Contractor shall provide a stable bed or foundation for the pipe by removing the soft material and replacing it by importing fill consisting of crushed rock, or coarse, clean gravel. The District Engineer shall be the sole judge of the suitability of the bottom of the trench and as to the amount of rock or gravel fill required. The Contractor shall remove any such soft material and replace it with imported fill when ordered to do so by the District Engineer.

No pipe shall be laid until the District Engineer inspects and approves the condition of the bottom of the trench.

No more trench shall be opened than can be properly and completely backfilled in one (1) day.

One traffic lane each way shall be kept open and in a safe condition at all times. Whenever the Contractor's operations create conditions hazardous to traffic or to the

public, the Contractor shall take the necessary precaution to provide adequate means to protect those who must pass over or through the work.

4.02 BRACING TRENCHES:

All excavations shall be supported in the manner set forth in the rules, orders and regulations prescribed by the State of California Construction Safety Orders. Sheet piling and other timbers shall be placed in such a manner as to prevent caving of the walls of excavation. Also, all timbering and bracing shall be adequate to protect and prevent movement either horizontally or vertically of water lines, gas lines, telephone conduit and any and all other underground pipelines and other facilities adjacent to the trench or other excavation.

4.03 ACCESS TO TRENCHES:

Safe and suitable ladders shall be provided for all excavations over 5 feet (5') in depth. The ladders shall project a minimum of two feet (2') above the top of the trench and a minimum of one (1) such ladder shall be provided for each individual excavation and other requirements, as set forth in the rules, orders and regulations prescribed by the State of California Construction Safety Orders.

4.04 ACCESS TO MAILBOXES AND PRIVATE DRIVEWAYS:

No mailbox shall be inaccessible for the delivery of mail at any time during the progress of the work. Contractor shall so organize his operations that all affected private driveways shall be accessible at all times, unless otherwise approved by the District Engineer.

4.05 LOCATION OF EXISTING UNDERGROUND UTILITIES:

Prior to commencement of any grading or trenching operations, the Contractor shall, without fail, consult with all public utility companies affected. Such consultations shall include, but not be limited to, the following:

USA, Water, Gas, Electric, Telephone and Cable TV Companies

Contractor shall, if need be, walk the affected area accompanied by a representative of the public utility.

The Contractor shall excavate around existing underground utilities at least seven hundred feet (700') ahead of his trenching to check for possible conflict of grade or alignment.

4.06 CLOSING AND REMOVING ABANDONED CONDUITS:

Whenever existing pipes or other conduits are to be cut or abandoned the open ends of such pipe, or conduits shall be securely closed by a tight fitting plug or wall of 4-sack concrete not less than six inches (6") thick, or by a tight brick wall eight inches (8") thick with cement mortar joints.

4.07 REMOVAL OF WATER FROM TRENCHES:

The Contractor shall at all times have at his job site sufficient pumping machinery ready for immediate use. The trenches and excavations shall be kept entirely free of water while concrete is being poured or pipe is being laid, and until the concrete or mortar has set hard. Water shall be disposed of in such a manner as will not cause injury to public or private property, nor be a menace to public health.

4.08 DISPOSAL OF MATERIALS:

All materials excavated in street and roadways or rights-of-way, not suitable or required for backfilling shall be immediately removed and disposed by the Contractor as directed by the District Engineer.

4.09 JACKING STEEL CASING:

The method and equipment used in jacking a steel casing will be optional with the Contractor, but the Contractor shall submit to the District Engineer for approval a description of his proposed operations before proceeding with the jacking operation. Approval of the proposed method by the District Engineer will not relieve the Contractor of the responsibility for damages of any nature, which occur as a result of the method used.

Sections of casing to be jacked shall be joined by welding the joints with a continuous weld for the full circumference.

The Contractor shall be responsible for any jacking the casing into place with sufficient accuracy to permit installation of the pipe within it to the grade shown on the plans.

After the pipe has been installed in the casing, the annular space between the pipe and the casing shall be filled with sand, or as directed by the District Engineer. Ends of casing shall be sealed with brick and cement grout. Should appreciable loss of ground occur outside the perimeter of the casing being jacked, the voids shall be backpacked promptly to the extent practical with soil cement. After jacking is completed, the Contractor shall drill holes in the casing at the locations of ground loss and force grout into such voids to refusal at pressures directed by the District Engineer, but not to exceed 50psi.

4.10 LAYING OF SEWER PIPE:

Following the digging of the trench, a string line or approved substitute shall be drawn between the stakes (50' max.) at a predetermined height above the flow line. The bottom of the trench shall then be graded to a flat grade and the bottom of the trench shall be compacted to the satisfaction of the District Engineer.

All pipe shall be laid without break, upgrade from structure to structure, true to line and grade, with a uniform bearing under the full length of the barrel of the pipe, and suitable excavation shall be made to receive the bell of the pipe, which shall not bear upon the subgrade. All adjustments to line and grade must be made by scrapping away of earth or tamping under the body of the pipe and not be wedging or blocking.

At the close of each day's work, and at such other times when pipe is not being laid, the end of the pipe shall be protected with a close fitting stopper. Whenever the pipe is constructed with an end not joined to an existing pipe or structure, it shall be closed by a cap, or plug that will provide a watertight seal. When connecting to an existing sewer line or structure, the pipe shall be sealed in a manner to prevent water and debris from entering the existing line until the new construction is completed to a point where water and debris will not enter the system.

4.11 JOINTING SECTIONS OF SEWER PIPE:

A. Vitrified Clay Pipe (V.C.P.)

(1) Speed Seal – Wedgelock

Joints shall be thoroughly cleaned and lubricated with a soft vegetable soap compound or approved compound supplied by a manufacture, and pipe shall be joined by hand or barring method with a wood block across bell end of pipe. Pipe shall be shoved firmly home to indicator line, forming a watertight joint.

(2) Band Seal or Equal

Joints shall be thoroughly cleaned. Entering spigot end into rubber coupling pipe should be rotated for best alignment and stainless steel band tightened to sixty (60) pounds, forming a watertight joint.

B. Cast Iron Pipe (C.I.P.) Ductile Iron Pipe (D.I.P.)

(1) Class No. 150 Tyton Joints:

Tyton joints shall use same procedure as V.C.P. except rubber gasket is placed in bell of pipe and operation shall comply to AWWA specifications.

(2) Class No. 150 Mechanical Joints:

Thoroughly clean socket and plain end of pipe and lubricate with soapy water. Slip gland and rubber gasket on plain end of pipe with small end of gasket and lip side of gland facing socket. Insert plain end of pipe into socket seating rubber and gland. After placing bolts, tighten with ratchet wrench to eighty (80) pounds.

C. Polyvinyl Chloride Pipe (P.V.C.)

Bell shall be thoroughly cleaned, then rubber gasket placed in the bell end of the pipe and lubricated with a soft vegetable soap compound before entering the spigot end, which shall have also been wiped clean. Pipe shall be barred home or a jacking device used to form a watertight joint.

4.12 JOINTING OF TWO DIFFERENT TYPES OF PIPE

The jointing of two different types of pipe shall be made by the use of an adaptor coupling as manufactured by Dresser, or Smith Blair, or a rubber sleeve type coupling with stainless steel bands.

4.13 LOCATOR FOR CURVED SEWER

A continuous six (6) gauge copper wire shall be placed in the trench on all curved sewer lines and shall terminate at the top of the manhole at each end of run.

4.14 LATERAL SEWER AND CONNECTION TO MAIN:

The term "lateral sewer" as used in these Specifications, on the Plan, or on other drawings, is used to designate the portion of the side sewer laid from the main sewer to the property line.

Lateral sewers shall be laid either from the upper end of a wye branch or "Y" saddle connected to the main sewer to the property line and plugged into a watertight plug. Wye branches or saddles are to be inclined upward at angle of approximately 45 degrees from the horizontal. Wye branch connections must be used on new main sewers. "Y" saddles may be used to connect laterals to existing sewers. Where "Y" saddles are used, the hole in the sewer shall be carefully made of the proper size to receive the saddle. The hole shall be formed in the sewer by machine and the joint between the saddle and the main shall be made watertight by an approved method. The use of the words wye branch or "Y" saddle shall also include the use of tee or "T" saddle.

The District Engineer may, at his discretion, require a wye branch to be cut into the main when connecting a four inch (4") lateral to a six inch (6") main or a six inch (6") lateral to an eight inch (8") main.

The pipe shall be laid at a slope of two percent (2%), but this slope may be increased in order that the depth at the property line shall be approximately five feet (5'). In cases where the trunk sewer is deep, the lateral may be brought up at a 45 degree angle and then leveled off to a slope of four percent (4%), but the depth at the property line shall remain approximately five feet (5') unless otherwise directed by the District Engineer. End of lateral is to be sealed with a plug to insure watertightness.

1" x 2" x depth of lateral redwood markers shall be buried flush with the ground at the end of all lateral sewers.

Refer to Standard Construction Details for dimensions and other construction details.

4.15 MANHOLES

Bases for manholes shall be poured against undisturbed native material. Before concrete has set, a forming ring shall be placed on the top of the base, worked into concrete to form a matching joint for the precast manhole sections. Said ring shall be level. Channels shall be formed in the concrete and dressed up with grout. When

Polyvinyl Chloride Pipe is used, an approved water stop shall be used where pipe enters the manhole base.

After the concrete base has set up, the rings shall be set. Base and rings shall be cleaned and washed with water at the joint before setting and sufficient grout shall be placed in the joint before setting to insure complete filling of the joint. Joints shall be banded both on inside and outside.

Preformed, high-adhesion gasketing material (Ram-Nek or equal) with primer, may be substituted for grouting and outside banding.

Steps, when present, shall be placed on the upstream side of the Manhole unless otherwise directed by District Engineer.

Refer to Standard Construction Details for dimensions and other construction details.

4.16 PROTECTION OF MANHOLES

A. Plywood Covers:

As soon as the base has set up in new manholes, channels shall be protected by Plywood Covers. Covers shall remain in manholes until all work is completed and ready for acceptance.

When any construction is to be performed around existing manholes i.e., adjusting manhole casting to grade, street construction around manhole, connection to or modification of manhole, etc., the channels shall be protected by plywood covers, and shall remain in manholes until all work is complete and ready for acceptance.

Plywood covers shall not be less than ½” thick and cut to fit the inside of the manhole. Covers to be in two pieces to permit installation or removal through a standard manhole casting.

B. Steel Covers:

At all times when a manhole is not complete with a standard casting and cover, it shall be covered with a suitable steel plate over the top in addition to the plywood cover at the base.

4.17 BACKFILLING:

After the pipe installation has been inspected and approved, the trench shall be filled immediately afterwards to a depth of at least six inches (6”) above the pipe. During this process of backfilling, the earth shall be placed carefully around and under the pipe. When Polyvinyl Chloride Pipe is used, the backfill, up to springline of the pipe, must be sand or gravel and compacted before placing additional backfill. The space forming this first backfill shall be free from rock or clods. Care should be taken to carry the backfill material up evenly on both sides of the pipe so as to keep an even pressure around the

pipe. Asphalt concrete pavement which has been previously cut shall not be used as backfill.

Excavated material composed of saturated clay, muck or other material not suitable for backfill shall not be used in the backfill of the trench. Where such unsuitable material is encountered, it shall be replaced with quarry waste, compacted in place as required below. The excavated material not suitable for backfill shall be removed from the job site.

Compaction of backfill shall be made by mechanical means in eight inch (8") lifts. Backfill shall be a minimum of two & one-half feet (2.5') above the top of the pipe before mechanical tamping is permitted. Jetting will be permitted on written permission of the City or County Engineer and the District Engineer. No jetting will be allowed within two feet (2') of the surface. Other methods of mechanical compaction may be used subject to approval by the City or County Engineer and the District Engineer. Final relative compaction of backfill shall not be less than ninety-five percent (95%).

4.18 LIMITATION OF LEAKAGE INTO SEWER LINES:

In view of the fact that in the operation of the District's system or sewers and appurtenances, it will be necessary to treat the sewage, it is particularly important that all sewer lines constructed be substantially watertight.

The Contractor shall take note of this fact and shall exercise every precaution to secure watertightness throughout the component parts of the system, particularly as regarding the jointing of all pipe lengths. The Contractor shall follow the detailed Specifications and shall conform with the intent thereof to secure the highest quality of workmanship in the laying of all sewer lines under the Contract. All jointing of pipe shall be subject to rigorous inspection of the District Engineer.

4.19 TESTING OF SANITARY SEWER LINE:

Before backfilling, but after shading the pipe, all sewers laid on a curve (vertical or horizontal) shall be given a preliminary air test as described in Section 4.19b.

After the sewer lines have been installed and after the trench has been backfilled and compacted and before paving, the lines shall be given the following test:

A. Deflection Test:

The District may, at its option, require a "go-no-go" Deflection device to be pulled through selected sections of Polyvinyl Chloride Pipe.

B. Air Test:

The Contractor shall plug all side sewers as described in Section 4.10. He shall plug the ends of the main, and if buildings have been connected, the Contractor shall plug at the cleanout.

The District will supply the necessary metering equipment for the test. The Contractor shall supply hoses and a compressor or blower with adequate capacity to perform the test.

The line shall be supplied with air until approximately 4 psi has been reached, at which time the flow to the pipe shall be shut off. The District Engineer will then accurately determine the time of loss of 1 psi pressure in the range from 3.5 psi to 2.5 psi, or the amount of drop in pressure during allotted time for the test, if loss is less than one (1) pound.

Allowable rate for the loss of one (1) pound pressure (between 3.5 psi and 2.5 psi) per 100' of line is as follows:

4" – 11.6 seconds	12" – 104.4 seconds	18" – 235.0 seconds
6" – 26.1 seconds	14" – 145.5 seconds	21" – 320.0 seconds
8" – 46.4 seconds	15" – 163.2 seconds	24" – 418.0 seconds
10" – 72.5 seconds	16" – 185.7 seconds	27" – 529.0 seconds

If the time for one (1) pound drop is less than above, the Contractor shall make such repairs as are necessary to eliminate the excessive leakage. The test shall be repeated after the repairs are made. The line shall not be accepted until this test is passed.

For the convenience of the Contractor, he may request a test as set forth in this section to determine the condition of the sewer at any time during the progress of construction. Such tests shall not constitute the final test.

NOTE: The District Engineer may, at his discretion, require a Hydrostatic Test of manholes in addition to Air Testing on sewer lines. Permission may be granted to conduct Hydrostatic Test of Manholes during flushing operations. When Hydrostatic Test of manholes is required, all sewer lines shall be plugged at manhole to be tested and manhole filled to at least four feet (4') above flow line. (Greater depths may be required in areas subject to a higher ground water level). Loss of water shall not exceed two (2) gallons per hour for any depth up to and including eight feet (8').

C. Hydrostatic Test: (Alternate to Air Test)

In the event a section of line will not pass the air test or the Contractor does not have the equipment for an air test, permission may be granted to test the line with water.

The Contractor shall furnish the water and all equipment necessary to make the required tests.

The method of testing any section of the line shall be as follows:

The lower end of a section of line at the manhole shall be plugged watertight. Water shall be inserted in the line and the air in the line allowed to escape. A minimum of four feet (4') and a maximum of five feet (5') of head above the invert at the upper end of the line shall be used in conducting the test. If ground water is encountered, the head above the invert of the pipe at the upper end of the line shall be increased so that the net hydrostatic head shall be a minimum of four feet (4') and a maximum of five feet (5'). The water level at the upper manhole shall be marked and after two hours, the amount of water required to keep the line filled to the original water level shall be the measure of leakage in the line. This leakage shall be reduced to the equivalent leakage in gallons per square inch of pipe diameter per mile of pipe per twenty-four (24) hours. The maximum leakage allowed shall be two hundred (200) gallons per inch of diameter per mile of pipe per twenty-four (24) hours.

4.20 RESTORING PAVEMENT, CURBS, GUTTERS, SIDEWALKS, ETC:

Whenever such existing improvements as pavement, curbs, gutters, sidewalks, driveways, utilities, etc., have been cut or damaged in order to construct sewer pipe and appurtenances, the backfill shall be thoroughly compacted and all improvements restored to the condition in which they were before the excavation was made.

4.21 RESTORATION OF SURFACE OF SEWER TRENCHES IN EXISTING ROADS:

After the trenches have been backfilled and prepared as specified herein, the surface shall be finished by restoring to as nearly as possible its original condition, restoring the cushion or base or watering surface, or any combination of the above named in accordance with the requirements and to the satisfaction of the governing body having jurisdiction over the road in which work is being performed.

Temporary pavement shall be placed over trench area until such time as permanent pavement can be installed.

4.22 FLUSHING AND CLEANING SEWER LINES:

After all surface restoration operations and repairs have been completed, the Contractor shall flush and clean all sanitary sewer lines in the following manner:

A heavy rubber ball such as "MacWane Ball" manufactured by Sidu Company, Long Beach, California, or approved equal, inflated with air and having an outside diameter equal to the interior diameter of the pipe to be cleaned, shall be furnished by the Contractor. The ball shall be inflated so that it will fit snugly into the sewer line. The ball shall be placed in the last (upper) manhole on the line and water introduced into the manhole back of the ball. The ball shall pass through the pipe with only the pressure of the water behind it. The rate at which the ball is allowed to pass through the pipe shall be controlled by a rope at all times. A suitable sand trap shall be placed in the down stream side of the down stream manhole. Debris flushed out ahead of the ball shall be removed before balling the next section. The ball shall not be permitted to move through the pipe

at too rapid a rate. In addition to balling and flushing new lines installed, the Contractor shall also ball and flush all existing lines to which taps are made for laterals and in the event the District Engineer feels that excessive amounts of debris have passed into the existing down stream line, he may be require one or more additional sections to be balled and flushed at the Contractor's expense.

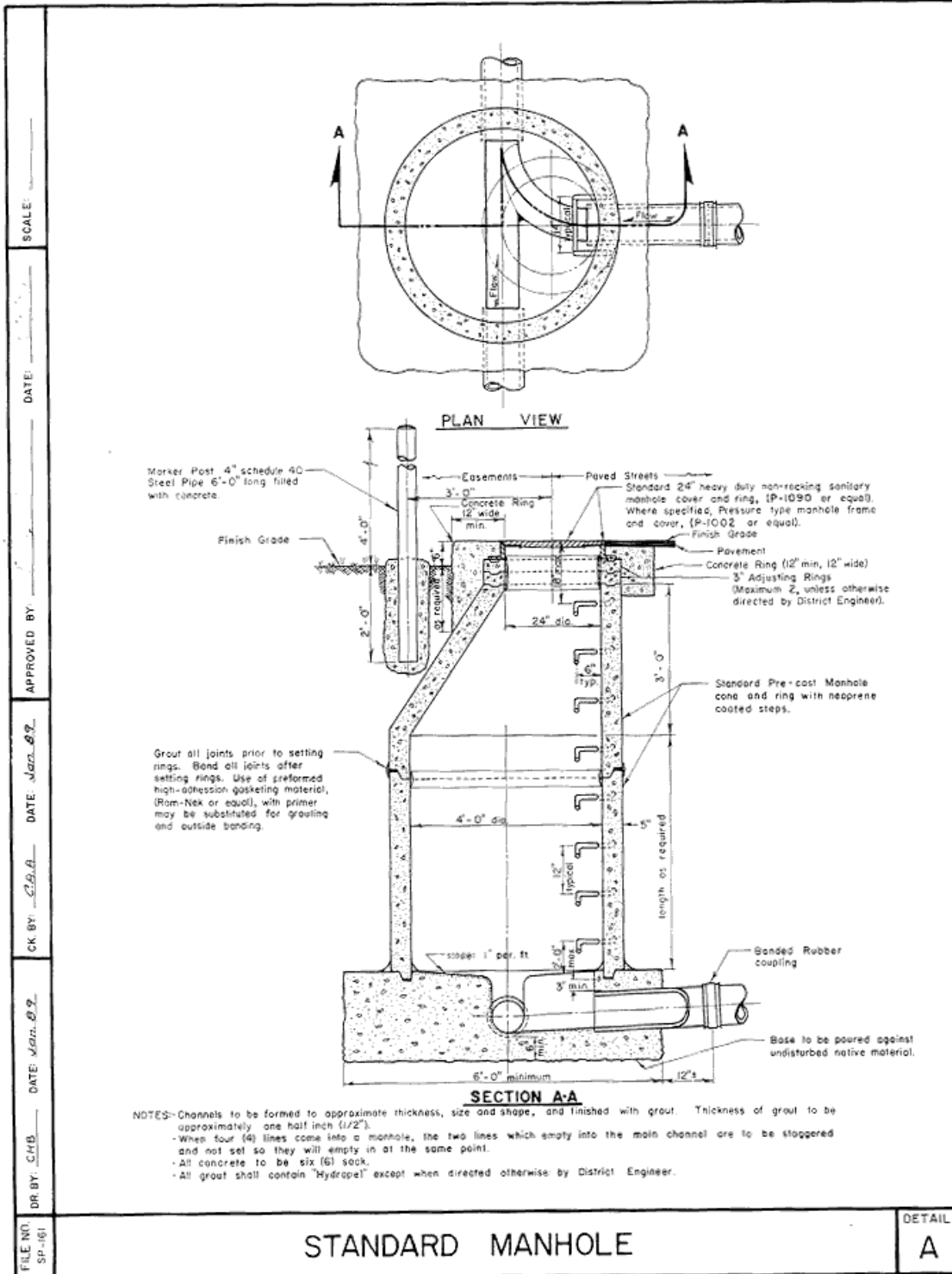
SECTION V

STANDARD CONSTRUCTION DETAILS

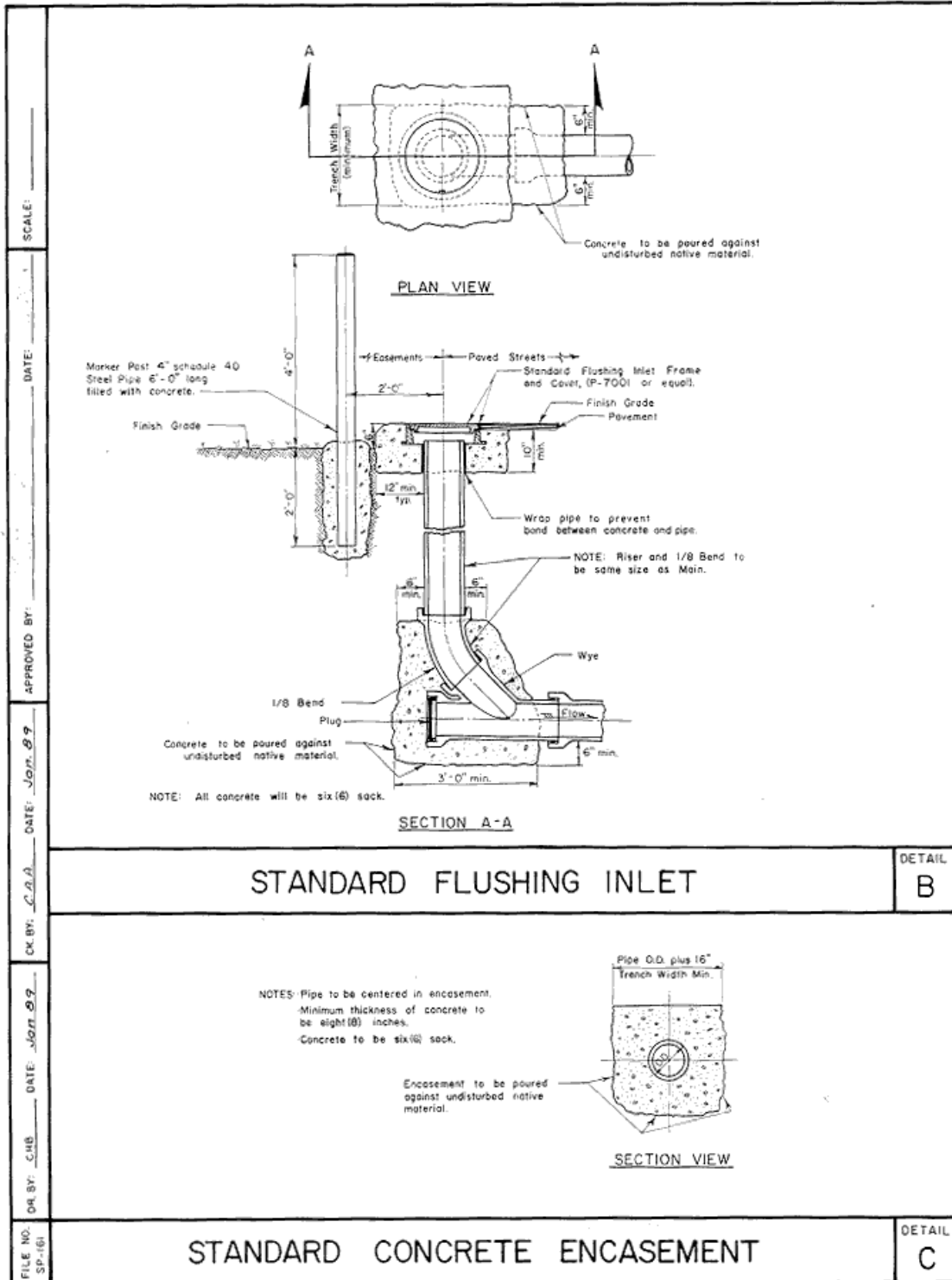
Note - Use Revised Details Only

DETAIL	PAGE
A. STANDARD MANHOLE	V-1
B. STANDARD FLUSHING INLET	V-2
C. STANDARD CONCRETE ENCASEMENT	V-2
D. STANDARD LATERAL SEWER BORING & JACKING	V-3
E. STANDARD LATERAL SEWER	V-3
F. STANDARD SYNTHETIC RUBBER WEGED INSERT TEE	V-4
G. STANDARD BANDED WYE INSTALATION	V-4
H. STANDARD SOLVENT WELD WYE INSTALLATION	V-4
I. STANDARD BACKFLOW PROTECTIVE DEVICE INSTALLATION	V-5
J. STANDARD CLEANOUT FOR LATERAL SEWER	V-5

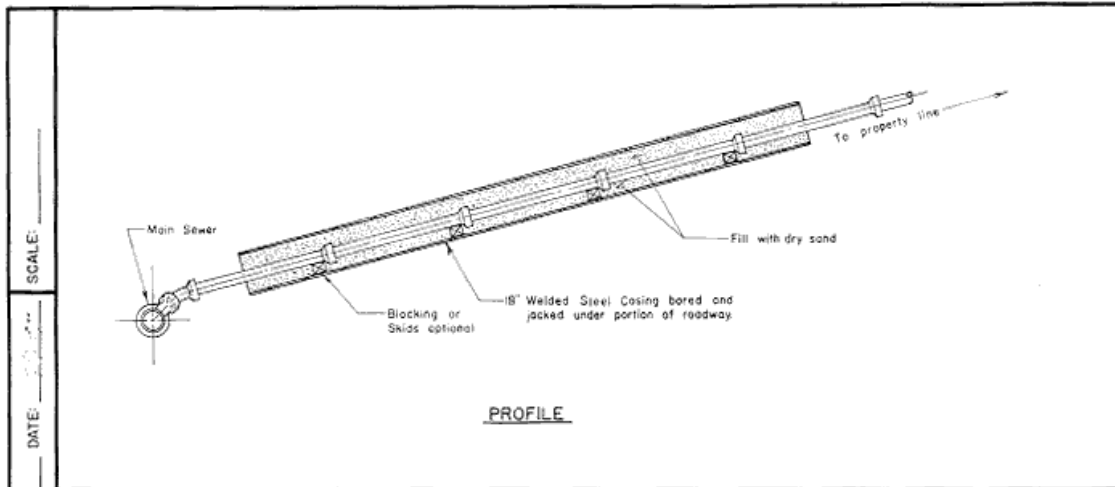
CUPERTINO SANITARY DISTRICT



CUPERTINO SANITARY DISTRICT



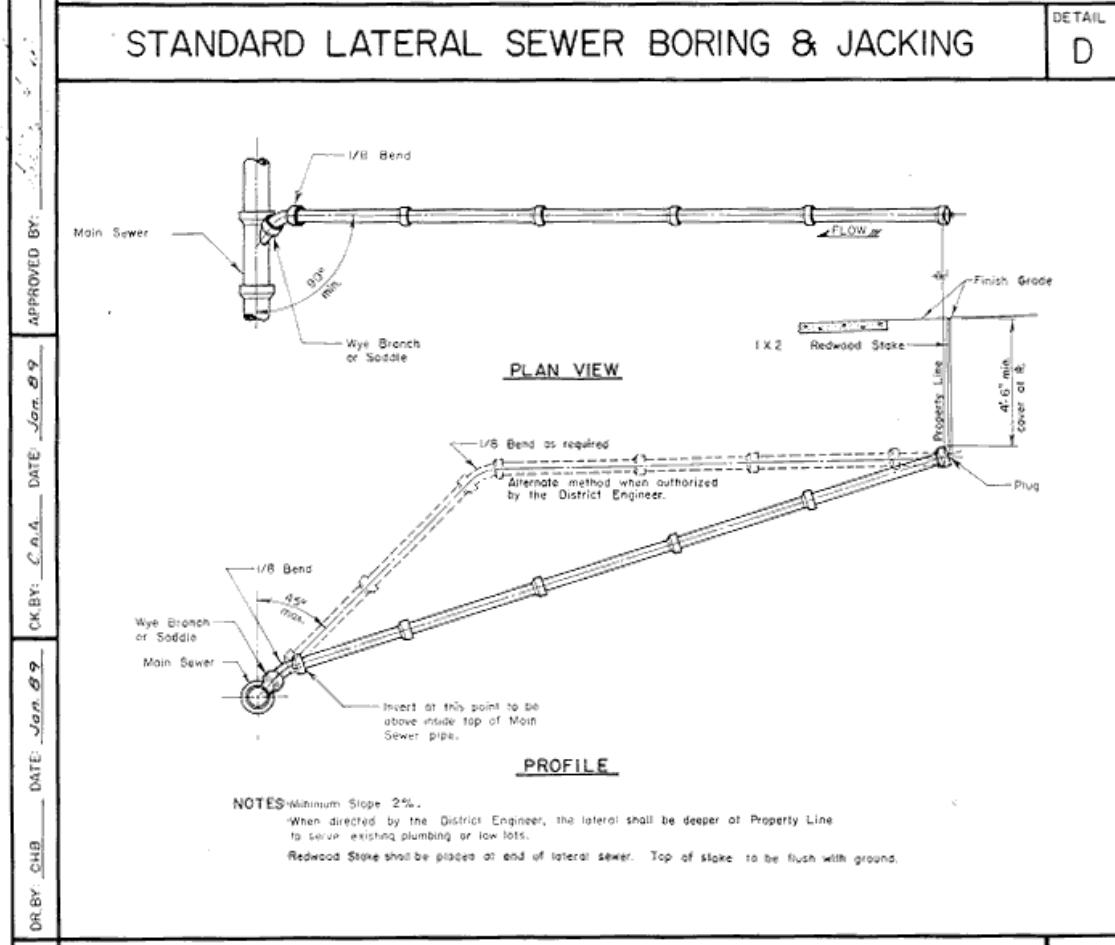
CUPERTINO SANITARY DISTRICT



PROFILE

STANDARD LATERAL SEWER BORING & JACKING

DETAIL
D



PLAN VIEW

PROFILE

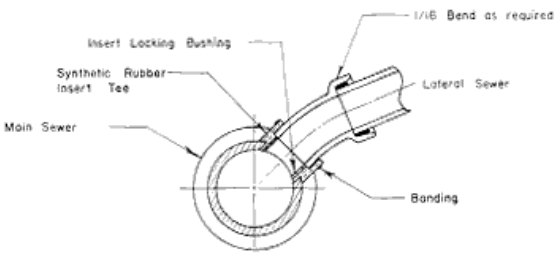
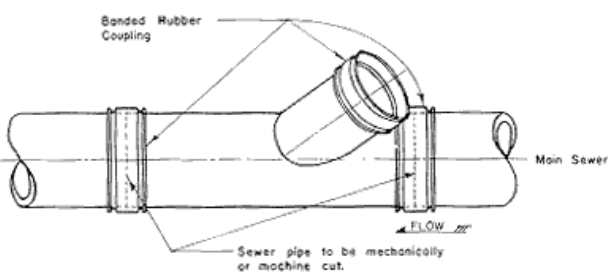
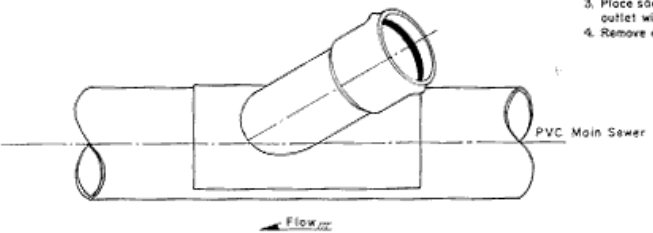
NOTES—Minimum Slope 2%.
 *When directed by the District Engineer, the lateral shall be deeper at Property Line to serve existing plumbing or low lots.
 Redwood Stake shall be placed at end of lateral sewer. Top of stake to be flush with ground.

STANDARD LATERAL SEWER

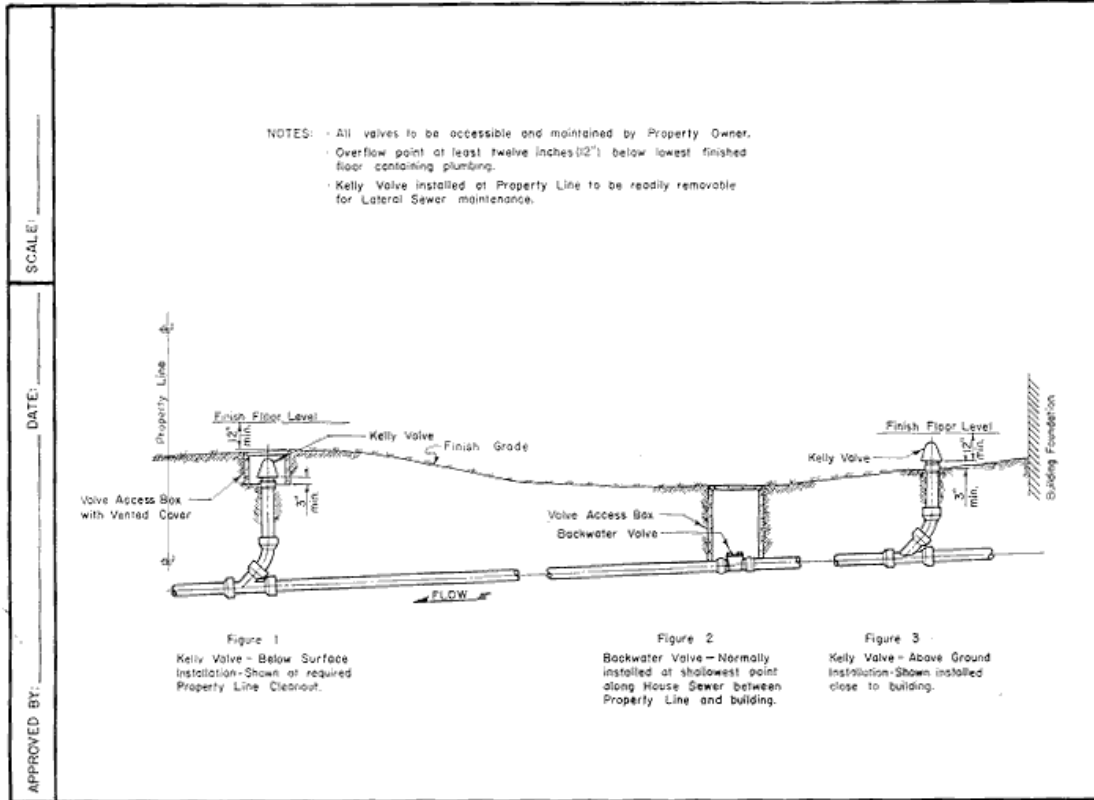
DETAIL
E

SCALE: _____
 DATE: _____
 APPROVED BY: _____
 CK BY: C.A.A. DATE: Jan. 29
 DATE: Jan. 29
 DR BY: CHB
 FILE NO. SP-161

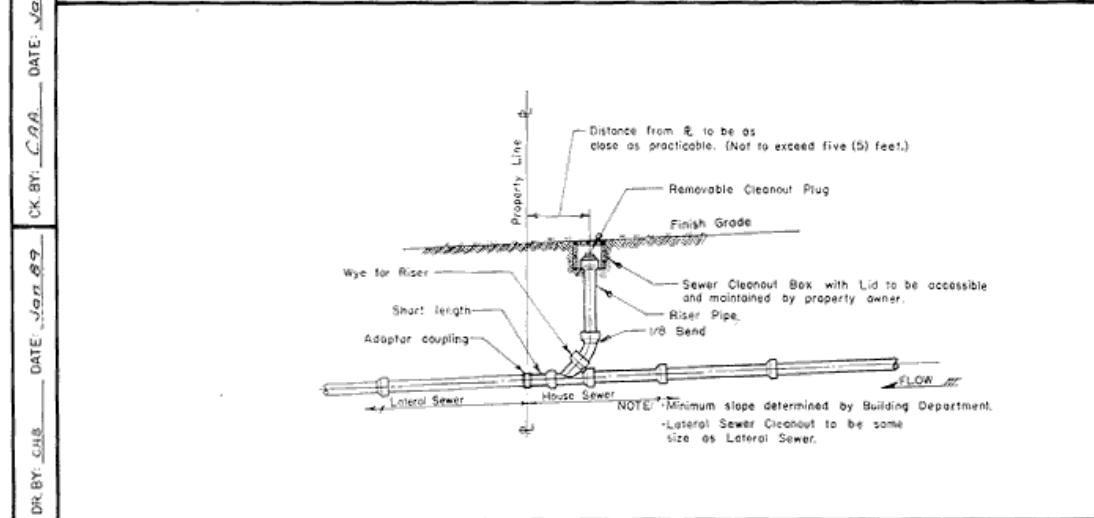
CUPERTINO SANITARY DISTRICT

SCALE: _____ DATE: _____ APPROVED BY: _____ CK BY: <u>C.F.A.</u> DATE: <u>Jan 89</u> OR BY: <u>C.H.B.</u> DATE: <u>Jan 89</u> FILE NO. <u>SP-161</u>		DETAIL F
		DETAIL G
		<p>NOTES: (Assembly shall be in accordance with ASTM recommended practice D2855)</p> <ol style="list-style-type: none"> 1. Saw hole in pipe. 2. Use PVC solvent-cement on both surfaces. 3. Place saddle on pipe surface, lining up wye outlet with hole. 4. Remove excess solvent at base of wye.
	STANDARD SOLVENT WELD WYE INSTALLATION	DETAIL H

CUPERTINO SANITARY DISTRICT



STANDARD BACKFLOW PROTECTIVE DEVICE INSTALLATION DETAIL I



STANDARD CLEANOUT FOR LATERAL SEWER DETAIL J

SCALE: _____
 DATE: _____
 APPROVED BY: _____
 CK BY: C.P.A. DATE: Jan. 89
 DR BY: C.P.B. DATE: Jan. 89
 FILE NO. SP-161