NORTHSTAR COMMUNITY SERVICES DISTRICT

CODE

SEWER ORDINANCE 22-05

Effective: April 20, 2005

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BOARD OF DIRECTORS

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Adopted: April 20, 2005

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1. ADMINISTRATION

1.01 Title

The Northstar Community Services District Sewer Code represents, and may be referred to as the District Sewer Code. The District Sewer Code meets or exceeds the Uniform Plumbing Code, the Uniform Building Code, National Electrical Code, National Fire Protection Code, and other codes as listed in Definitions and Abbreviations.

1.02 Introduction

The purpose of the District Code is to provide the public with an accessible document stipulating requirements and guidelines applicable to all sanitary sewer facility construction and maintenance within the District boundaries. The District Code also establishes charges for services and provides a method for the collection of said charges.

Formed in 1991, the Northstar Community Services District (District) provides the Northstar community with a full range of public services, including; Sewer, Water, Fire Suppression, Snow Removal, Street Lighting, Solid Waste contracting, Multi-use Recreational Trails, and Road Maintenance. Throughout the years, the Northstar, Truckee and Tahoe areas has changed considerably. At the same time, sanitary sewer technology continues to improve. The rapidly changing community, improved technology, and a progressive District Board attitude have combined to maintain the excellence of the sanitary sewer facilities that exist today. The District operates and is governed by rules and laws set forth in the Health and Safety Code of the State of California. This code is adopted pursuant to Government Code Section 61000 et seq.

The District is governed locally by a five-member Board of Directors elected at the general elections held in November. The Board of Directors is responsible for setting policy and general administrative procedures for the District. The policies and procedures set by the Board are then administered by the General Manager of the District.

This document constitutes a compilation of standards for sewer system design, development, repair, and construction, while guiding the development of new services and guarantees continuance of excellent service to existing customers.

All requests for variances or deviations from these standards shall be submitted, in writing, by the owner or their agent to the General Manager. It is incumbent upon the requestor to secure such written permission and not to assume that permission will be forthcoming for said variances or deviations.

1.03 Revenue Program

The District may, by an order approved by a majority vote of the members of the Board of Directors, prescribe, revise, and collect fees, rates, rentals, or other charges for services and facilities furnished by the District in connection with its sanitary sewer system. Revenues derived by the District from said fees, rates, rentals or other charges for service or facilities may be used for any purpose except the acquisition or construction of additional local street sewers or laterals which are solely for private use.

The District is empowered with this authority in accordance with the Health and Safety Code of the State of California, Section 6400 et seq.

1.04 Scope

The provisions of the District Code shall apply to sewer construction, use, maintenance, discharge, deposit or disposal of all waste water, both directly and indirectly into and through all of the District's sanitary sewer system, and to the issuance of permits and collection of fees.

2. GENERAL POLICIES

2.01 Dwelling Unit Equivalent Transfer Policy

In the event that DUE's are established and utilitized as a basis for development within the District then a policy of approving or disapproving transfers of available dwelling unit equivalents (DUE's)[1] between parcels is as follows: Such transfers may be approved by the Board of Directors only when all of the criteria stated herein are satisfied.

- Each application for transfer of DUE's shall be in writing and shall be signed by the owner(s) of the affected real property and shall be accompanied by a map describing the general location of the affected parcels.

- The parcels involved in the proposed transfer, both transferor and transferee parcels, shall be in common ownership, with evidence of ownership accompanying the application.

- Transfers of DUE's shall be permitted only between parcels both located within a given sub-watershed service area of sufficient size to handle the total number of DUE's, without regard for allocation of DUE's between parcels. Nothing herein is intended to increase the number of DUE's available within a given sub-watershed service area of the District.

- Each transfer of DUE's shall be for a use which is consistent with applicable zoning requirements imposed by the appropriate land use regulatory agency and no DUE's shall be transferred without prior approval of the appropriate land use regulatory agency for the area within which the parcels involved in the proposed transfer are situated. The applicant shall file with the appropriate land use regulatory agency for the proposed use prior to making application to the District for transfer of DUE's.

- No approval of transfer of DUE's shall give any vested right to any number of DUE's which is not consistent with the land use density as approved by the appropriate land use regulatory agency, at or subsequent to the time the application for transfer is approved.

[1] A single family residential unit. Based on the occupancy of 3.2 persons per single family residence, producing 100 gallons of wastewater per person per day. One DUE is equal to 320 gallons of wastewater per day.

- A notice, in form suitable for recording, shall be provided to the District and recorded by the District at the applicant's expense. Said notice shall contain the name of the owner of record of all parcels involved in the transfer application, a legal description of the parcel from which DUE's are transferred (transferor parcel) and of the parcel to which DUE's are transferred (transferee parcel) as well as a certificate of consent of such transfer executed by the mortgagor, trustee and/or beneficiaries of all parcels involved in the transfer or in the alternative a statement by the record owner that there is no mortgage or, trustee or beneficiary affected by the transfer application.

- All cost and expenses related to the preparation and recording of such notice shall be paid by the applicant.

- Only one transfer of DUE's from or to a parcel of real property shall be permitted within a 12-month period immediately following the filing of an application for transfer by any owner of record. More than one Transfer Request within the 12-month period will require Board of Director approval. Such restriction upon transfer shall apply notwithstanding a change in ownership of the parcels involved in such transfer during the 12-month period immediately following the date of application for transfer of DUE's from or to a parcel which has been previously requested and approved.

- All District service charges, fees and assessments shall be paid current as of the date of filing an application for transfer.

- No application for transfer of DUE's shall be submitted to the Board of Directors of the District for review and approval until all items above have been completed.

2.02 Dedication of Sanitary Sewer Facilities

New Facilities: Whenever new sanitary sewer facilities are to be dedicated to the District for operation and maintenance, said facilities shall be constructed and tested in accordance with the District Code requirements that are in force on the date the improvement plans were approved by the District, provided such construction is completed within 1 year of the plan approval date.

Improvement plans not completed within 2 years of the approval date, as indicated by the General Manager's dated signature on the plans, shall be updated to current District Code requirements.

Acceptance of dedication of new sanitary sewer facilities occurs after all District Code requirements are met. Dedication acceptance is approved, by resolution, by the Board of Directors.

Existing Facilities: Existing sanitary sewer facilities to be dedicated to the District for operation and maintenance shall be repaired, upgraded and tested in accordance with the current District Code requirements.

Acceptance of dedication of existing sanitary sewer facilities occurs after all District Code requirements are met. Dedication acceptance is approved, by resolution, by the Board of Directors.

2.03 Disasters

Should a disaster occur, and the appropriate governing agencies deem a property uninhabitable, the District may elect to temporarily suspend user fees. The owner or their agent of a property involved may notify the District, in writing, and request a temporary suspension of fees.

The District disaster policy allows for a maximum 2-year time period during which user fees will not be charged. At the end of the 2-year time period, or at such time occupancy is granted on said property within the 2-year time period, user fees will resume.

The owner or their agent shall also be responsible for capping building lateral(s) on the property as soon as this procedure can be safely completed. A District Inspector will witness the capping. The District will require a pressure test of the building lateral(s) prior to re-connection and seal cap removal.

This policy shall be implemented on a "case by case" basis only, under the direction of the General Manager.

2.04 Authority to Receive District Services

The owner or their agent shall pay all the appropriate fees and/or deposits and have all necessary approvals regarding sanitary sewer facility improvements prior to receiving services from the District. For the purpose of this section, “services” include, but are not limited to, issuance of a sewer permit, plan check review, field visits and inspections.

2.05 Extension of and/or Alterations to Sanitary Sewer Facilities

An owner or their agent may request an extension of sanitary sewer facilities and/or alterations to existing sanitary sewer facilities in order to obtain sanitary sewer service from the District. The owner or their agent shall be required to design and install, in accordance with District Code requirements, and at the owner or their agent’s expense, all such sanitary sewer facilities required by said extension and/or alteration.

The District at its option, however, may require the owner or their agent to install sanitary sewer facilities with more capacity, of greater length, or of a different route than would be required for the service requested, (‘excess facilities’). In such events, the District may reimburse the owner or their agent for the costs of such excess facilities if such excess facilities are required solely to benefit, improve or upgrade service to existing or other District customers.

If, however, such excess facilities are deemed necessary by the District for the orderly development of an integrated sanitary sewer system in the area of the proposed pipeline extension and/or alteration, the District may require the owner or their agent to design, install, and pay the cost of such excess facilities. Under such case, the owner or their agent may be entitled to reimbursement pursuant to “Buy Back Agreements” as outlined on page 6.

Dedication: If the sanitary sewer facilities installed under the premises described above are offered for dedication to the District, all requirements as specified in Appendix A-6.7, Guarantee and Delivery of Title, page 90, shall be met before said dedication is accepted by the District Board of Directors.

Specifications and Fees: The size and location of the sanitary sewer facilities installed shall be specified by the District. Type and quality of material used in the installation of the sanitary sewer facilities shall meet the requirements specified in Appendix A-5, District Standard Specifications, page 75. The installation of sanitary sewer facilities does not alleviate the owner or their agent from any other fee requirements as specified within this document.

Buy Back Agreements: At the District's option, the District may enter into an agreement with the owner whereby adjacent properties connecting to the sanitary sewer facilities installed by the owner or their agent, will be required to reimburse the owner or their agent, through the District, for a prorated share of the cost for the sanitary sewer facility design and construction. Administration of reimbursement monies will continue until all such prorated shares have been paid, but no longer than a period of 10 years after completion of the sanitary sewer facilities.

2.06 Initiation of Sanitary Sewer Facility Construction

It shall be the responsibility of the owner or their agent to obtain approval of all the appropriate agencies before commencement of construction of sanitary sewer facilities proposed for connection to the District sanitary sewer system. Procurement of approvals and/or permits from such agencies shall be the full responsibility of the owner or their agent.

Residential: District and TTSA sewer permits will be paid for at the District Administration office. A Will Serve letter will be presented to the owner/agent in order to complete the building permit process at Placer County. A signed/issued building permit and plans must be presented to District personnel at the District Administration office prior to start of construction.

Commercial: Submitted improvement plans will not be considered approved by the District or sewer construction authorized until such time that the General Manager signifies approval by letter or by dated signature on the mylars in the approval block provided within the improvement plans.

There shall be no changes permitted to approved improvement plans unless such changes, corrections and/or additions are resubmitted to the General Manager for consideration and subsequent approval. All changes, corrections and/or additions shall be noted, dated and initialed on the improvement plans as such by the owner or their agent.

3. GENERAL PROVISIONS AND REGULATIONS

3.01 Validity of the District Code

If any part, section, subsection, paragraph, sentence, clause or phrase of the District Code is held invalid or unconstitutional for any reason by a court of law having jurisdiction, that decision does not affect the validity or constitutionality of the remainder of the District Code. The Board of Directors declares that it would have adopted each provision of the District Code irrespective of the validity of any other provision.

3.02 District Personnel Duties

Delegation of Authority: The General Manager shall administer, implement and enforce the provisions of the District Code. Any powers granted to or duties imposed on the General Manager may be delegated by the General Manager to persons in the employ of and/or acting in the general interest of the District.

Identification: All District personnel shall identify themselves upon request when entering the work site or property for any inspection of work or other purposes required or provided for by the District Code.

Access: The District or its authorized agents or employees shall have access at all reasonable times to enter the customer's premises for any purpose properly connected with the providing of sewer service, including inspection of the same to determine that the District Code and Ordinances are being observed.

No person shall place on any sewer pipeline any obstruction, such as wires, fences, trees, or buildings, which may impede or otherwise interfere with the District's ready access to any portion of the sanitary sewer system owned by the District. Upon the District's written request, such obstruction shall be immediately removed by the owner or their agent at no cost to the District or, at the District's option, shall be removed by the District at the owner's expense.

3.03 Sanitary Sewer Installation

Minimum Sanitary Sewer Facility Standards: Facilities shall be designed so as not to pollute underground or surface waters, create a nuisance, or menace the public health or safety. The General Manager shall consult with the health officers and officials of public agencies, and from time to time, promulgate standards, which may vary according to location, topography, physical conditions, and other pertinent factors.

Rain and Surface Water Drainage: No pool, receptacle, area, or roof which receives or disposes of rain water or surface water shall be connected to any private or public wastewater disposal system.

Winter Construction: No sewer construction or excavation shall be performed during winter conditions. **Determination of winter conditions shall be the sole responsibility of Placer County**. Winter conditions generally run from October 15th through April 15th.

If allowed by the District, a trench may be excavated for installation of a sewer pipeline only when:

- An appointment is scheduled for a visual inspection during normal working days and hours.

- The trench must be backfilled the same day as the visual inspection. This may require another inspection to verify completion of backfill.

Notice of Noncompliance: Whenever any construction is being performed contrary to the provisions of the District Code, the General Manager shall issue written notice to the responsible party to stop work on that portion of the construction on which the violation has occurred. No work shall proceed on that portion until corrective measures have been taken and approved by the General Manager.

Mandatory Sanitary Sewer Connections: All buildings requiring sanitation facilities, as defined in the Uniform Building Code and/or the District Code, shall be connected to the District sanitary sewer facilities when available.

Availability shall mean a public sewer with uncommitted capacity within 200 feet of the property. The further maintenance and use of septic tanks, cesspools and other on-site waste disposal facilities contained on any property within 200 feet of a District sanitary sewer, with uncommitted capacity, are hereby declared a public nuisance pursuant to Government Code Section 54352 and may be enjoined, and/or abated in a manner provided by law.

No person shall cause or permit the disposal of wastewater or other liquid waste into any drainage system which is not connected to the public sewer when such connection is required by this section.

Connection to the District's sanitary sewer facilities shall be accomplished by the owner or their agent at their sole risk and expense:

- Within 1 construction season, following written notification by the District, in the event the dwelling is serviced by a septic tank or other on-site waste disposal system; or

- Before occupancy of a building occurs.

The customer or user shall at his/her sole risk and expense remove from service and render harmless any and all septic tanks, cisterns, vessels or similar underground vaults in accordance with Placer County/District Regulations, the Uniform Plumbing Code and any State law, within 30 days following the date the dwelling is connected to the District's sanitary sewer facilities. District verification and approval is required for all abandoned wastewater facilities (see Abandoned Sewers and Sewage Disposal Facilities, Section 7.16, page 38).

3.04 Multiple Units on Same Premises

Separate houses, buildings, living or business and commercial quarters, or adjoining premises under a single control or management may be provided with sewer service, at the discretion of the District, by any of the following means:

- Through separate service connections to each unit or combination thereof,

- Through a single service connection to supply the entire premises, or any combination thereof, or units thereon, in which case the combined rate or charge may be applied by the District; such combined rates or charges to be assumed by the applicant unless otherwise modified by agreement or by the District Code.

3.05 Joint Lateral Connections

The shared use of a *private building lateral* by two or more parcels shall constitute the drafting, executing, and recording (with the County) of a "Joint Lateral Agreement" between each of the parties sharing the private building lateral. Executing and recording of the Joint Lateral Agreement shall be the responsibility of the parties involved. Through the Joint Lateral Agreement, the parties (owners) agree to share equally the operation, maintenance, and testing costs associated with the shared private building lateral. The Joint Lateral Agreement shall be binding upon the heirs, successors and assigns of each of the parcels.

3.06 Easement Abandonment

All persons requesting an abandonment of easement may incur a charge for the processing of said request. The said charge will not exceed the actual expense to the District in researching and processing such request. A non-binding estimate of expenses will be provided upon request to those desiring an abandonment of easement and such estimates shall be the basis of the required deposit.

3.07 District Records and Maps

The locations shown on the District's records, maps, as builts, etc. are believed to be accurate. The District does not warrant that all facilities are located as shown, and does not represent that all facilities are in fact shown.

3.08 Liability for Damage to District Sanitary Sewer Facilities

Prior to and whenever any underground construction is to be performed, the owner or their agent responsible for the proposed excavation shall contact the District and review the appropriate record drawings on file at the Utilities Office.

The owner or their agent responsible for the excavation shall:

- Make such calculations, findings and conclusions as may be necessary to determine the approximate location of the District sanitary sewer facilities in relationship to the proposed excavation. In the event of conflicting positions, the District sanitary sewer facilities shall have prior rights to its location.

- Be responsible for the proposed excavation shall explore for and expose the District sanitary sewer facilities using reasonable care. Once the District sanitary sewer facilities are exposed, the owner or their agent responsible for the excavation shall verify the clearances and compatibility of the proposed works.

- Be solely responsible for any and all necessary modifications and/or damage to the District's sanitary sewer facilities regardless of the cause. This includes consequential damage due to improper pipe protection and backfill procedures.

- Call **Underground Service Alert** (1-800-227-2600) 48 hours prior to any start of excavation.

- Be responsible and liable for all costs involved in the repair of damages to any District sanitary sewer facilities caused by said work.

3.09 Location of Points of Service Inconsistent with District Record Maps

It is the owner or their agent's responsibility to expose the stub out and determine adequate fall before construction. The service lateral connection point location stake shall be replaced by backfilling around the stake and cut off flush to grade. The stake shall not be driven into the ground. The owner or their agent shall be responsible for maintaining the stake location during any clearing operation.

Whenever the stub out, wye or other point of service is not located as shown on the District's "as built" or record maps, the District shall assist the owner or their agent, to the extent reasonably possible after reasonable effort has been made by the owner or their agent to locate the stub out, in determining the location of the stub out, wye or point of service by use of surface and underground pipeline detectors. However, the District shall bear no expense for equipment, excavation, time and/or labor expenses incurred by any person in determining the location of stub-outs, service laterals, wye's and/or points of service or other District sanitary sewer facilities.

3.10 Non-existing Laterals, Wye's and/or Points of Service Shown on Record Maps

Before a stub out, wye or point of service which is shown to exist on District maps is determined to be "nonexistent," the person attempting to locate the service lateral connection point shall contact the District for assistance. The District shall not be liable for any expense, equipment, excavation and/or labor incurred by any person in determining the existence or the "nonexistence" of any stub out, wye, point of service and/or other facility.

When the District has previously been provided with "as-built" or record maps, and the General Manager has made a determination that no service lateral, wye or point of service exists as shown on the "as-built" or record maps, **the General Manager may:**

- Waive any applicable sewer main tapping fee.

- Install or cause to be installed a service lateral at the District's expense, provided there is a sewer main servicing the property with uncommitted capacity.

3.11 Time Limits

Any time limit provided for in the District Code may be extended by mutual written consent of both the District and the permittee or applicant, or other person affected.

4. SEWER PERMIT, RESIDENTIAL

4.01 Will Serve Letter

A Will Serve Letter for an individual parcel must be issued by the District and a copy faxed, mailed or delivered to the Placer County Building Department. The purpose of the Will Serve Letter is to provide Placer County, an owner or their agent assurance that the District has sufficient capacity to provide sanitary sewer service for the parcel. Each Will Serve Letter is issued by the District based upon 1) plan check and acceptance of the land use/building plans provided by the owner/agent. 2) payment to the District and TTSA of all connection and permitting fees. The inspection and acceptance of land use/building plans are based simply on the planned use of the parcel with respect to sanitary sewer flows, including type, concentration, and amount of waste to be discharged into the District's sanitary sewer system.

Any change in the land use/building plans from the date the Will Serve Letter was issued may impose a different or greater demand upon the District's sanitary sewer system. The District shall be notified of any change in the statement of facts. Failure to do so is a violation subject to penalties as provided by Section 6523 of the Health and Safety Code.

The Will Serve Letter in addition to all other terms and conditions required by the District, shall not provide any unconditional guarantee, priority or reservation of capacity, but that the owner their agent or subsequent purchaser must provide information and sign a Receipt for Collected Fees and Deposits for the purpose of acquiring a Sewer Permit prior to initiation of any sanitary sewer improvements. The reception of a Will Serve Letter provides that such sewer permit will be issued by the District solely upon a first come, first served basis and only to the extent there is then remaining available capacity in the physical facilities for conveyance and treatment. The Will Serve Letter also provides that District services such as plan check review, field visits, and inspections will be authorized only after a building permit is issued and payment has been made and recorded of all applicable deposits, fees and charges, and subject to all then applicable District requirements.

4.02 Sewer Permit

The owner or their agent desiring to connect to the sanitary sewer shall be required to provide, in person, information and sign a Receipt for Collected Fees and Deposits for the purpose of acquiring a Sewer Permit. The District shall provide the Sewer Permit, indicating thereon the information to be furnished by the owner or their agent. The District may require, in addition to the information furnished by the printed form, any additional information, specifications, and improvement plans from the applicant, which will enable the District to determine that the proposed work or use complies with the provisions of the District Code.

All applicable fees and deposits are required prior to issuance of a District Will Serve letter.

The owner or their agent must obtain the Sewer Permit in person.

A Will Serve Letter and the Sewer Permit shall be issued on a first come, first served basis, and shall be valid for 1 year. Any Sewer Permit not utilized within 1 year may be extended for an additional year, provided all applicable requirements are met and provided all deposits, fees, and charges are paid as detailed on Appendix A-1, A-2, A-3 and A-4, pages 67, 69, 71, and 73.

Except by special agreement with the District, no customer or user of the District's sanitary sewer system shall connect, or permit any other person to connect additional sanitary sewer facilities other than those specified in the statement of facts and/or the Sewer Permit.

4.03 Excessive Projected Waste Flows

Any owner or their agent proposing to have wastewater discharged from any property to the District's sanitary sewer system in quantities, or at a rate greater than the capacity for which the sewer was designed, when such additional quantity will immediately overload the sewer, shall be denied the right to discharge more than the proportionate share allotted to the property. If, however, the capacity will not be exceeded immediately, but will be exceeded sometime in the future, the General Manager may enter into an agreement with the property owner to permit connection to the sewer. Such agreement shall be in a form acceptable to the District and shall include, at a minimum:

- A covenant requiring the owner to construct, cause to be constructed, or share in the cost of constructing improvements to the sewer system in order to enlarge the capacity of the sewer at such future time as the General Manager determines.

- A provision binding subsequent owners of the property.

- A bond or other form of security acceptable to the General Manager to guarantee compliance with the terms of the agreement.

5. SEWER PERMIT, COMMERCIAL

5.01 Will Serve Letter

A Will Serve Letter for an individual parcel may be issued by the District at the request of the owner or their agent. The purpose of the Will Serve Letter is to provide an owner or their agent assurance that the District has sufficient capacity to provide sanitary sewer service for the proposed commercial project on the parcel. Each Will Serve Letter is issued based on a "statement of facts" provided by the owner or their agent on the date of that issuance. The statement of facts is simply the planned use of the parcel with respect to sanitary sewer flows, including type, concentration, and amount of waste to be discharged into the District's sanitary sewer system.

Any change in the statement of facts from the date the Will Serve Letter was issued may impose a different or greater demand upon the District's sanitary sewer system. The District shall be notified of any change in the statement of facts. Failure to do so is a violation subject to penalties as provided by Section 6523 of the Health and Safety Code.

The Will Serve Letter for sewer availability, in addition to all other terms and conditions required by the District, shall not provide any unconditional guarantee, priority or reservation of capacity. The reception of a Will Serve Letter provides that sanitary sewer service is solely upon a first come, first served basis and only to the extent there is then remaining available capacity in the physical facilities for conveyance and treatment. The Will Serve Letter also provides that District services such as plan check review, field visits, and inspections will be authorized only upon payment of all then applicable deposits, fees and charges and in accordance with and subject to all then applicable District requirements.

5.02 Plan Check Review

The owner or their agent desiring to connect to the sanitary sewer shall be required to meet the requirements of Plan Check Review as outlined by the District. The District shall provide a Plan Check Review checklist form, indicating thereon the information to be furnished by the applicant. The District may require in addition to the requirements of the printed form, any additional information, specifications, and improvement plans from the applicant which will enable the District to determine that the proposed work or use complies with the provisions of the District Code.

All applicable fees and deposits are required upon submittal of a request for Plan Check Review.

The owner or their agent must make the Request for Plan Check Review in person. A valid, signed Grading Permit or Building Permit issued by the appropriate agency is required upon submittal of a Request for Plan Check Review.

A Request for Plan Check Review shall be issued on a first come, first served basis.

Improvement plans are not approved until signed by the General Manager. Improvement plans approved as acceptable to District Code requirements within Plan Check Review are authorized for construction, provided all deposits, fees, and charges are paid as detailed on Appendix A-1, A-2, A-3, and A-4, pages 67, 69, 71, and 73.

Project improvement plans approved by the District that are not constructed within 2 years of signature approval by the General Manager shall be subject to existing District Code requirements and may require additional Plan Check Review by the District.

Any change in the drawings with respect to the sanitary sewer after Plan Check approval is granted involving design changes to the sanitary sewer system, more construction, or an increase in the number of units, hookups, taps, or fixture units than that for which the Plan Check approval was issued shall be considered an unauthorized usage and is prohibited until an additional review is completed, permission to proceed is granted, and all appropriate deposits, fees and charges are paid.

Except by special agreement with the District, no customer or user of the District's sanitary sewer system shall connect, or permit any other person to connect additional sanitary sewer facilities other than those authorized within the Plan Check Review process.

5.03 Transfer of Title of a Partially Completed Project

A person or party to which Plan Check approval has been issued may transfer title of a partially completed project to another person solely for the same lot or premises for which the Plan Check approval was issued, subject to all terms and conditions under which the Plan Check approval was issued. The transferee shall meet all requirements of the District relating to the transfer. The usage of Plan Check approved improvement plans for a lot or premises other than the lot or premises for which the approved improvement plans were issued shall be considered an unauthorized usage and is prohibited.

Prior to the District's approval of the title transfer for the same lot or premises, the District shall inspect the lot or premises for which the Plan Check approval was issued. The purpose of this inspection shall be for the District to verify that the amount of construction and the number of units, hookups, taps, fixture units and facilities had not increased from that authorized by the Plan Check approval.

The District may require that the permittee or applicant first provide a revised set of improvement plans showing the different design and pay all deposits, fees and charges required by the District.

These requirements are in addition to other requirements or limitations imposed upon the usage of permits as set forth in the District Code.

5.04 Excessive Projected Waste Flows

Any owner or their agent proposing to have wastewater discharged from any property to the District's sanitary sewer system in quantities, or at a rate greater than the capacity for which the sewer was designed, when such additional quantity will immediately overload the sewer, shall be denied the right to discharge more than the proportionate share allotted to the property. If, however, the capacity will not be exceeded immediately, but will be exceeded sometime in the future, the General Manager may enter into an agreement with the owner to permit connection to the sewer. Such agreement shall be in a form acceptable to the District and shall include, at a minimum:

- A covenant requiring the owner to construct, cause to be constructed, or share in the cost of constructing improvements to the sewer system in order to enlarge the capacity of the sewer at such future time as the General Manager determines.

- A provision binding subsequent owners of the property.

- A bond or other form of security acceptable to the General Manager to guarantee compliance with the terms of the agreement.

5.05 Large Land Developments

Large land developments that require connection to the District's sanitary sewer system may require the owner or their agent to enter into an improvement agreement with the District outlining the terms and conditions applicable to the particular project.

5.06 When Sewer Permit is not Required

The provisions of this Division requiring Sewer Permit shall not apply to sewer contractors constructing public sewers and appurtenances under contracts awarded by the Board of Directors.

6. FEES AND CHARGES

6.01 Deposits and Refunds

Any person requesting permission to construct facilities in accordance with Sections 4 and 5, shall pay deposits in advance to the District to cover actual fees, charges and costs to be incurred by the District that are associated with said permitting process and the construction of sanitary sewer facilities in accordance with the District Code, and as detailed in Appendix A-1, A-2, A-3, and A-4, pages 67, 69, 71, and 73.

The deposits received by the District for services as provided by the District Code shall be identified by applicant and by project. The status of the funds on deposit shall be reconciled monthly by the District and copies of such reconciliation shall be made available to the applicant upon request. It is the intent of the District to maintain a positive balance in the applicant's project deposit account. In the event of a pending or projected shortfall, the District shall provide written notice to the applicant stating the amount of supplemental deposit that must be provided and terms or conditions that may, in the opinion of the General Manager, be appropriate.

The unused portion of all funds remaining on deposit with the District shall be returned to the applicant without interest, upon completion of plan check review, connection to the District sanitary sewer system, finalization and acceptance of the system by the District or cancellation of the permit.

6.02 Residential Plan Checking and Inspection Fees

No fees are charged for any review of improvement plans and/or specifications for a single family residential connection; however, improvement plans must be made available to the District upon request. Inspections are charged as outlined in Appendix A-1, page 67, with a minimum of one inspection collected in advance with the Sewer Permit.

6.03 Commercial Project Application Fees

Plan Check Review: The District shall review the improvement plans, with respect to the sanitary sewer, of all proposed commercial projects. This includes, but not limited to, proposed subdivisions, retail businesses, apartments, condominiums, office buildings, motels, food establishments, etc.

Prior to request for Will Serve Letter and Sewer Permit for a commercial project, the applicant shall submit two sets of improvement plans (no photocopies) to the District for Plan Check Review to assure compliance with District requirements. Prior to the District performing the Plan Check Review, the applicant shall pay a deposit to the District as specified in Appendix A-1, page 67, of the District Code from which Plan Check Review fees will be charged.

Commercial Project Deposit: After Plan Check Review has been completed and approval of the improvement plans for sanitary sewer facilities have been granted, the applicant shall deposit with the District a sum of money estimated by the General Manager to cover the cost of inspections, testing of materials, processing of design revisions, procuring or preparing record improvement plans, estimated connection fees, user fees, assessments, related construction activities, automobile mileage, and all overhead and indirect costs. Said deposit shall be paid prior to commencement of construction of the sanitary sewer facilities. The General Manager's estimate shall be based on the best information available, including the owner's and their engineer's estimate of the cost of the facilities to be constructed. The deposit estimated by the General Manager will be based on reasonable periods of time for the completion of the contractor's work.

6.04 Connection Fees

Payment of sewer connection fees is the responsibility of the owner of the property, regardless of who is deriving benefit from, submitting payment for, or receiving sewer service as a result of the connection. Connection charges are non-refundable unless the Sewer Permit is canceled prior to final connection approval by the District.

- Residential connection fees are determined in accordance with Appendix A-2, page 69. Initial Connection Fees are due and payable prior to receipt of Will Serve Letter and Sewer Permit. Additional connection fees shall be assessed for any increase thereafter in the factor rating of the property.

- Commercial and industrial connection fees shall be determined in accordance with Appendix A-1, A-2, A-3, and A-4, pages 67, 69, 71, and 73. Estimated Connection fees are estimated based on the factor rating as determined by the Plan Check Review. Appendix A-2, page 69, equates a single family living unit to 15 plumbing fixture units. Initial connection fees are included in the Commercial Project Deposit. Additional connection fees shall be assessed for any increase thereafter in the factor rating of the property.

Buildings which existed within the boundaries of the District on or before April 15, 1977, and were served by septic tanks until tied into the system, will be exempt from the regular connection charge applicable at the time the building is connected to the system for the factor rating, at the time of connection. This exemption is provided only when such connection is made within 1 year from the time sanitary sewer service becomes available to the property. An accessible sewer within 200 feet of the property will generally fulfill the definition of availability. The sewer allocation provided for the fore-mentioned buildings is neither refundable nor transferable.

6.05 Assessments

(blank)

6.06 Billing of User Fees

Each lot or premises which are connected to, and each owner or customer receiving sewer service from the District shall pay a periodic user fees in accordance with the District's Fee Structure set forth in the appendices. These rates are effective July 1, 1998. These schedules provide an appropriate additional administrative and overhead charge for users from whom the District does not receive property tax monies.

All sewer use, service charges and fees may be billed on the same bill and collected together with fees and charges for any other District services. Except as provided herein, estimated first year user fees are included in the Sewer Permit fees and deposits and are prorated from the date of issuance to the coming July 1st of that fiscal year. The Residential User fees: Single family residential and Multiple family residential (condo's) will be billed on the property tax rolls annually. Commercial billing will be billed bi-monthly (every two months) on August 30th, October 31st, December 31st, February 28th, April 30th and June 30th and shall become due and payable 30 days from the date of that billing statement. In the event of delinquency, a 10 percent penalty shall be added to the balance due. The District shall include a statement on its bill to each customer or owner or, shall provide such statement to each owner by any other means, that any charges remaining delinquent for a period of 90 days shall constitute a lien against the lot or parcel of land against which the charges were imposed. The District shall provide Notice of Public Hearing pursuant to Section 6066 of the Government Code to each affected owner. After Public Hearing, the District will request by resolution, that the County Auditor include the amount of said delinquencies on the property tax bill against the respective lot or parcel. Once the transfer of delinquent amounts has been turned over to the County Auditor's office for collection, no payment shall be received by the District on said delinquent amounts except as collected by the County Auditor's office.

User fees shall be billed to the owner of the property served. The payment of user fees shall be the responsibility of the owner of the property regardless of who is deriving the benefit from, submitting payment for, or receiving the sewer service as a result of the connections. Each owner shall be liable to the District for payment of sewer charges and fees, regardless of whether service is provided through an individual service lateral or multi customer service lateral.

The District may elect to send a composite bill to groups of customers when each of the following conditions are met:

- the owners to be billed as a group own lots or premises in a multi-unit living building,
- the owners have formally organized in writing into a homeowner's or similar association,
- the homeowners' or similar association, through properly executed covenants, conditions, articles of incorporation or by laws, has the power to act as the sole agent for the owners concerning sewer charges in a manner which binds individual owners.

Providing the above conditions are met, the District may bill to and the association shall pay all delinquent penalty and interest charges on the composite bills. The composite bill or other notices to the association shall constitute a bill or other notice to each individual owner or customer, who shall agree that no other notice or bill to individual owners or customers shall be necessary for, or a prerequisite to, the District's exercise of its powers to terminate service, or place liens on each owner's property or exercise other legal remedies necessary to collect delinquent bills and charges. The composite bill shall consist of the sum of the total semiannual sewer charges for each owner or customer represented by the association. Service to a common area shall be treated as service to a single unit.

6.07 Annexation Fees and Charges

Annexation fees and charges as detailed in Appendix A-1, page 67, are required for all areas outside of the District boundaries applying for annexation to the District on or after the effective date of the District Code.

The annexation fees shall be due and payable on the date of any such annexation approval by the District and payment shall be a condition of said approval. Non-monetary conditions of annexation shall be specified in an annexation agreement executed between the owner(s) and the District prior to the Local Agency Formation Commission hearings and approval of the proposed annexation.

The owner or their successor in title or interest of any such parcel or lot as herein described shall be responsible for payment of the annexation fee provided in this section.

The Clerk or other designated official of the District shall receipt the payment of all such annexation fees and shall record the name of the payer and a description of the parcel to which such payment is applicable. A record of all such payments shall be maintained by the District, including the date and amount of payment, the name of the payer, their mailing address, and a description of the parcel, or lot, to which such payment or payments are applicable.

6.08 Fees for Preparing and/or Reviewing Special Documents

Before proceeding with the preparation of any special study, Environmental Impact Report, or related document, the General Manager shall collect from the person making the request a deposit in the amount determined by the General Manager to be fair and equitable. If, after the fee is paid, a change in the study or documents is requested which will increase the cost to the District, supplemental fees shall be collected in the amount of the estimated additional cost.

6.09 Penalties on Unpaid Connection Fees

In the event that any connection charges are not paid within 30 days of the date of invoice, a basic penalty of 10 percent shall be added to such unpaid connection charges. The owner may request, in writing, to extend payment of additional connection charges over a 12-month or lesser period. The request may be granted upon approval of the General Manager.

6.10 Delinquent Account Penalty Fee

Any owner whose account is found to be delinquent shall be assessed a basic penalty of 10 percent of the delinquent amount.

6.11 Returned Check Fee

A fee may be required by the District for each check tendered as payment to the District that is returned unpaid. Future payments made to the District may be required to be in the form of cash, a Cashiers Check or a money order.

6.12 Billing Basis for User Fees

The District shall use a flat rate billing basis, based on the billing factor units of the user as determined by the General Manager, and in accordance with Appendix A-2, page 69, and A-3, page 71.

6.13 Initial Billing of User Fees

User Fees shall be based on connection type and/or fixture units derived from information supplied on the Sewer Permit and additional information as may be available to the General Manager. Unless otherwise stated, billing shall commence after the first day of permit payment and issue of Will Serve Letter.

6.14 Billing Adjustments

An adjustment of user fee charges will be made when the District is notified of a change in use, when the District discovers a change or when the change is made. Any amount paid in excess of the actual computed user fee charge shall be credited against the account. Any deficiency in the amount paid and the actual computed user fee charge shall be added to the account.

Deficiencies or credits may not be made for a period more than 2 years prior to the date the General Manager determines that a billing discrepancy exists; except in the event of an unreported connection or discharge, in which case all charges and fees shall be assessed under Section 6.16, page 25.

Periodically, there are changes in the sewer use of property that affects the factor rating. The District will notify the owner in writing of these changes and of any possible reduction or increase in the factor rating.

- Increased Factor Rating: The owner, upon written notification by the District of an increase in the factor rating, may choose to remove the additional plumbing fixtures to avoid increased connection and user fees. Removal of the additional plumbing fixtures must be completed by the owner and verified by the District within 30 days of the written increased factor rating notification.

- Reduced Factor Rating: The owner may elect to pay lesser user fees for the lower factor rating by signing an Agreement for the Reduction of District Factor Rating. In Accordance with this agreement, the factor rating for the property shall be reduced and the owner shall forfeit all rights to the allocations that have been reduced. Connection charges shall be assessed for any increase thereafter in the sewer capacity of the property which, is represented by any subsequent increase in its factor rating. The owner may elect to continue paying the user fees for the higher factor rating of a property with no reduction and thereby not forfeit all rights to the allocations for the higher factor rating.

In the event of a disaster, adjustments to billing may be made as specified in Section 2.03, Disasters, page 5.

6.15 Collection Remedies

Remedies for collecting and enforcing user fees and connection charges set out by the District Code are cumulative. Any and all remedies may be used alternatively. None of the remedies are exclusive.

Delinquent charges for sanitary sewer service together with all penalties thereon, when recorded as in Chapter 6, Division 2, of the Government Code of California shall constitute a lien upon the real property served and such liens shall continue until the charges thereon and penalties thereon are fully paid or the property sold therefore in the manner more particularly provided in Sections 54354, 54354.5 and 54355 of said Government Code of California.

Delinquent charges for sanitary sewer service together with penalties thereon, which remain delinquent as of June 30 of each year, shall be collected in the same manner as the general taxes for the District for the forthcoming fiscal year provided that the District shall give notice as provided by law.

Delinquent charges, together with all penalties thereon, may be collected by an action in any court of competent jurisdiction against a person or persons who owned the property when the service was rendered for the collection of all delinquent charges and penalties.

An action may be instituted in any court of competent jurisdiction to enforce any lien on the land for the user fees and connection charges together with all penalties thereon.

Reasonable attorneys' fees and court costs of any action in any court for collection of user fees, together with any penalties thereon, or for a preliminary or permanent injunction, or for the issuance of an order stopping or disconnecting sanitary sewer service, or to enforce a lien, shall be an additional charge for such sanitary sewer service.

If sewer service is furnished by the District to the real property and is disconnected for unpaid charges, re-connection shall not be made until all user fees and connection charges including penalties and disconnection and re-connection charges have been paid to the District.

6.16 Unreported Connections and Discharges

An unreported connection is a connection that has not been inspected and approved by the District. An unreported discharge is a discharge on property previously connected to the public sewer system that increases the factor rating and/or fixture unit use on the property or for which all applicable charges have not been paid.

Upon discovery of unreported connections or unreported discharges to the sewer system which increase the factor rating or fixture units of the property or for which a Sewer Permit has not been issued or for which user fees have never been paid, the District shall charge all current user fees, and current connection charges and fees, including all basic penalties and additional penalties thereon, from the time the unreported connection or discharge was made. All such charges and fees shall be deemed to be user fees, including all current connection charges and all service charges and penalties thereon retroactive to the date of the unreported connection.

The District for any unreported connections and unreported discharges shall assess connection charges and service charges at the time of discovery by the District.

6.17 Collection of Delinquent Assessment District Bonds

For any applicable period, when property taxes for a parcel within any existing or future Sewer Assessment District (SAD) become delinquent with the County Tax Collector, the portion of the unpaid tax assessed for that SAD remains as a lien against the property, until such time said assessment, penalties, interest and fees are collected by the District.

7. INSTALLATION OF SANITARY SEWER FACILITIES

7.01 Connection Policy

Connection to the District collection system will be made when the sewer system is inspected tested and approved, and meets or exceeds all District criteria as set forth in these codes.

7.02 Alternate Connection Option

The building lateral will be installed, backfilled, tested and boxed per cleanout specifications before the structure is framed and covered. If the line, cleanouts or boxes are damaged or appear to be damaged during construction, the District may require an additional test, per original specifications, at the sole cost of the permittee.

- The building lateral must be tested and approved by the District.
- The building lateral must be secured with an approved contractor furnished watertight cap or,
- Rough plumbing is approved and connected to the building lateral. Before connection, the rough plumbing is to be approved by the building department and all test/flush water removed from the building waste piping.
- The watertight cap shall be reasonably accessible by District personnel. Watertight caps that are unreasonably obstructed by construction debris, structural features, or lack of space will not be removed until accessibility is improved.
- If the watertight cap is broken or removed, the sewer lateral must be TV'd and retested per original test specifications.

In the event the sewer lateral has not been approved within the time period of the permit, and an extension of the permit is not requested the owner will forfeit their connect fee. The sewer lateral may be disconnected from the sewer main as deemed necessary by the District. If the sewer is disconnected, a reconnect fee and retest of the pipeline will be required before re-connection. Additional inspection fees will be required.

If for any reason the Sewer Permit is canceled prior to the final connection, the sewer pipeline shall be disconnected either by the owner or, their agent or, the District. If the District disconnects the lateral, the owner or their agent will be charged for all work incurred by the District for said disconnection. Such charges will be deducted from any funds remaining with the District.

7.03 Responsibility for Building Lateral Installation

It shall be the responsibility of the owner or their agent, to install all building lateral pipelines and appurtenances from and within the premises of the owner or their agent to the service connection pipeline provided by the District.

Unless otherwise agreed by the District, all building lateral pipelines and related appurtenances within the premises of the owner or their agent shall be installed at the owner's or their agent's expense.

7.04 Size and Type of Building Laterals

Building lateral pipelines connecting to the District's sewerage works shall meet the requirements listed below and the criteria listed in Appendix A-5, page 75, and Appendix A-6, page 77.

Residential Building Laterals: The diameter of gravity building laterals shall not be less than the pipeline diameter exiting the structure, or less than 4 inches for a single residence or two residences. A 6-inch diameter pipeline or larger shall be used for more than two dwelling units.

Commercial Building Laterals: The minimum pipeline diameter for new gravity building laterals shall not be less than 6 inches. Existing 4-inch building laterals proposed for commercial use shall be tested in accordance with Section 10.03, page 50. If the existing 4-inch building lateral fails the test, the entire 4-inch pipeline shall be removed or abandoned and the commercial building lateral shall be upgraded to a 6-inch diameter pipeline.

Appropriate fittings shall be used in connecting to the service connection provided by the District. On double sewer services, both wye's shall be uncovered prior to connection to the system for District inspection and the appropriate wye shall be used.

Joints in all building laterals shall be of a collar type as recommended by the manufacturer and shall pass the District's inspection and required tests.

7.05 Trench Requirements

All trenching for building lateral and service lateral pipeline installation shall be performed in accordance with the California Occupational Safety and Health Act. All trenches shall be excavated and backfilled in accordance with the Standard Drawings, Typical Sewer Trench, Figures 14, 15, or 16, pages 165, 167, or 169.

All encroachment permits and/or easements necessary for trenching shall be the responsibility of the owner or their agent, and shall be delivered to the District prior to inspection of pipeline installation.

The surface of ground or pavement of any public road or other public way intercepted or in which trenching work has been performed, shall on completion of backfilling, be restored as nearly as practicable to the condition it was prior to trenching.

7.06 Minimum Pipeline Cover Requirements

A minimum of 30 inches compacted earth fill shall cover all gravity and force building and service laterals. Cover less than 48 inches in vehicular traveled ways requires heavier walled pipe as listed in Appendix A-5, page 75.

7.07 Minimum Slope Requirements

Residential Building Laterals: Trenches shall be on an even grade with a minimum slope of 0.0208 (1/4 inch fall per linear foot) for 4-inch diameter pipeline and 0.0035 (1/24 inch fall per linear foot) for 6-inch diameter pipeline. Holes for connecting pipe collars shall be dug so that each joint of pipe will have an even bearing over 6-inches of sand bedding placed on the trench bottom.

Commercial Building Laterals: Trenches shall be on an even grade with a minimum slope of 0.0035 (1/24 inch fall per linear foot) for 6-inch diameter pipeline. Minimum slope for pipelines greater than 6 inches in diameter are listed in Appendix A-6, page 78.

7.08 Backfilling Building and Service Laterals

The native soil in the trench bottom shall be compacted to 90 percent relative compaction before placement of Class 1 Backfill for pipeline bedding. Class 1 Backfill shall meet the gradation requirements listed in Appendix A-6, page 99. It is recommended that Class 1 Backfill material have a specific gravity of at least 2.5 to assure proper compaction. Class 1 Backfill bedding material shall also be compacted to a relative compaction as specified in the Standard Drawings, Typical Sewer Trench, Figures 14, 15, or 16, pages 165, 167, or 169, before laying the pipeline. Class 3 Native Backfill may be substituted for Class 1 Backfill if the substitution is approved by the District Inspector **prior** to installation of the building lateral and placement of the Class 3 Native Backfill.

A District inspector prior to backfilling above the spring line shall visually inspect the new building and service laterals. After the visual inspection by a District inspector, the trench shall be backfilled. All trenches for building and service laterals shall be backfilled in accordance with the Standard Drawings, Typical Sewer Trench, Figures 14, 15, or 16, pages 165, 167, or 169.

Material for Class 1, Class 2, Class 3, and Class 4 Backfill, as listed in Appendix A-6, page 99, shall be placed in uniform horizontal layers not exceeding 0.67 feet in thickness before compaction, and shall be brought up uniformly on all sides of the trench.

Each layer of backfill shall be compacted to a relative compaction as indicated in the Standard Drawings, Typical Sewer Trench, Figures 14, 15, or 16, pages 165, 167, or 169. The District reserves the right to perform compaction tests, or have compaction tests performed through a licensed geotechnical testing firm, to verify compaction of the backfilled trench section. All tests by the District will be performed in such a manner as will not unnecessarily delay the work. The owner or their agent shall not be required to reimburse the District for the initial tests performed. If subsequent tests are required due to compaction failures, the owner or their agent shall pay for all subsequent compaction tests.
In the event that heavy groundwater is encountered in the excavated trench, Class 4 Backfill may be substituted for Class 1 Backfill if the substitution is approved by the District inspector **prior** to placement of Class 4 material. If Class 4 Backfill material is substituted for Class 1 material, filter fabric must be placed on top of the Class 4 Backfill before proceeding with additional approved backfill.

Water stop impervious plugs (trench cutoff blocks) shall be installed in trenches where Class 4 Backfill is used, in all areas of ground water movement, and in all trenches containing pipeline slopes of 10 percent or greater.

The location and spacing of trench cut-off blocks for private building laterals shall be the responsibility of and shall be determined by the owner or their agent. The General Manager shall determine the location and spacing of trench cut-off blocks for sanitary sewer mains. Trench cut-off blocks shall be constructed as shown in the Standard Drawings, Trench Cut-Off Block, Figure 17, page 171.

The use of backfill material other than Class 1, Class 2, Class 3, and Class 4 is not permitted unless approval is granted, in writing, from the General Manager.

7.09 Installation of Cleanouts

A cleanout shall be installed in each building lateral at the property line of the premises being provided with sewer service and within 5 feet of where the lateral exits the structure foundation. Cleanouts located under the house are not accepted, the cleanout must be located *outside* the building foundation. Additional cleanouts shall be installed at intervals not to exceed 75 feet, and at any other point the owner or their agent may select for the purpose of keeping said sewer pipeline clean and free of obstruction. A cleanout shall also be installed on the upstream side of the fitting at all 45 degree or greater bends.

All cleanout risers must be installed 4 inches below finished grade and boxed to finished grade with an appropriate removable watertight plug in the end of the riser. Cleanout risers and appropriate boxes are required at the property line cleanout and at the cleanout installed nearest the building. Cleanout boxes shall be constructed of concrete with cast iron lids for vehicular traveled areas (Christy G-5 or equivalent) or reinforced plastic with cast iron lids for non-vehicular areas (Carson Industries, Inc., series 608 or 910, or equivalent). Cleanout boxes shall be set to grade and backfilled to prevent accidental displacement or removal. Lids shall have "SEWER" or equivalent imprinted on the lid. Lids with verbiage other than a sewer utility designation (i.e., Water, Gas, etc.) imprinted on the lid are <u>not</u> permitted. See Standard Drawings, Lateral Cleanout Assembly, Figure 10, page 157.

A sewer lateral stub out to vacant land shall contain a wye (two wyes for double service) with approved removable plugs in the bell ends. A cleanout riser must be installed 4 inches below finished grade and shall be boxed to finish grade with an appropriate removable, watertight plug installed in the end of the riser. The box shall be fitted with a metal lid marked “sewer”. The stub out shall be placed at the property line at the appropriate depth to service the parcel.

Dual swing ties are required for all stub outs and cleanout risers. Permanent objects such as property corners, power poles, water boxes, structures, etc. shall be used for swing ties.

7.10 Backflow Prevention Devices

The District is not responsible for interruption of sewer service or flows, damage to existing system beyond the Districts control or backflow any to any residential or commercial buildings. Installation and maintenance of backflow prevention devices are the sole responsibility of the permittee or owner.

Private or commercial building laterals which, connect to a joint lateral (a privately owned *shared* lateral pipeline that receives wastewater flow from two or more parcels) or District sewer service line may require the installation of a backflow prevention device to protect private property.

In the event of a pipeline stoppage, a backflow prevention device installed on each commercial or private building lateral would inhibit wastewater in the joint lateral from backing-up through the private building lateral into the building served.

Backflow prevention devices are especially useful in areas where any sewer or lateral provides service to parcels or connections of significantly different elevations.

7.11 Sewer Lateral Testing

All new building laterals shall be tested by either an air or water method, at the discretion of the District. The test section shall be from the wye at the service lateral connection point to the building cleanout, or from the cleanout at the property line to the building cleanout, corresponding to the new pipeline installed.

A District inspection shall be required for approval of workmanship and materials in compliance with District requirements. Testing will be completed in the presence of a District Inspector. The system must be completely ready for inspection at the appointed time; failure to comply with this will result in an additional inspection service charge for each occurrence. The owner or their agent must be present at the time of inspection and test.

Once the backfill is complete and the cleanout boxes are installed, the new building lateral shall be tested in accordance with one of the following:

- Air Testing consists of plugging each end of the building lateral and applying a pressure of 4.0 pounds per square inch to the section under the test. The pipeline shall be allowed a maximum loss in pressure of 1/2 pound per square inch in 5 minutes. If the loss exceeds 1/2 pound per square inch, the test may be attempted one additional time. A second loss of pressure constitutes a failure of the pipeline.

- Water Testing consists of plugging the downstream end of a building lateral, placing a section(s) of pipe in the vertical branch of the building cleanout and filling the test section with water. Additional cleanouts may have to be installed in steep pipelines and the pipeline tested in sections. In no case shall the total depth of water exceed 15 feet to any point in the pipeline. The water level in the pipeline shall remain constant for 5 minutes for a 4-inch or 6-inch lateral. If a loss occurs, the pipeline may be retested one additional time. If a second loss occurs, this constitutes a failure of the pipeline.

If a pipeline fails the test, the owner or their agent shall be responsible for notifying the District when corrective work has been completed and for scheduling a new test.

1-90 sewer lateral tests will be in accordance with the following criteria:

1. It is the recommendation of the District that all single family residential homes should be tested every ten (10) years at a minimum.

2. All condominium blocks shall be tested every ten (10) years.

3. All single family residential homes shall be tested prior to the sale of the home if,

   - The home is over five (5) years old from the date of new construction or,

   - Five (5) years have passed from the date of last testing or,

   - Upon determination by a District representative that testing may be required due to possible leakage, age, location, construction or other District concerns which

may be cause for testing.

- Sewer lateral testing is required on all remodels if 50% or more of the home is remodeled or, if more than 50% of the plumbing fixtures and/or piping are replaced.

It is the recommendation of the District that a residential home be tested prior to all sales regardless of the date of last testing.

Winter rules provide for deferment of the test due to weather and ground conditions until such a time as weather or ground conditions support the testing or repairs of approved lateral services. It is the sole responsibility of the owner to ensure that a test is completed in a timely manner. The District is responsible for providing the visual inspection and recording of the lateral test. The test must be performed by a certified plumber or plumbing company and visually inspected, recorded and filed by a District representative. The District will provide a copy of the test results and lateral location to the owner or owner's representative.

7.12 Testing of Manholes, Grease Interceptors, Sand/Oil Interceptors

Testing shall be in accordance with one of the following:

- Water test by plugging all inlet and outlet pipes and filling the test section with water to the top of the frame rim. The water should be introduced into the test section at least 4 hours in advance of the official test period to allow the concrete and joint material to become saturated. The test section shall then be refilled to the original water level.

  At the beginning of the test, the elevation of the water in the test section shall be carefully measured from a point on the frame rim. After a period of 4 hours, the water elevation shall be measured from the same point on the frame rim and the loss of water during the test period calculated. If this calculation is difficult, enough water shall be measured into the test section to restore the water to the level existing at the beginning of the test, and the amount added taken as the total leakage. The allowable leakage shall not exceed 0.13 gallons per hour. Manholes, Grease Interceptors, and Sand Oil Interceptors showing leakage in excess of that allowed shall be repaired or reconstructed as necessary to reduce the leakage to that specified. All failures shall be retested after the necessary repairs have been completed.

- Vacuum test by using acceptable equipment approved by the District. Vacuum test equipment shall be used per the manufacturer's specifications. A vacuum of 10-inches mercury should be drawn on the manhole. The time, in seconds, for the vacuum to drop to 9-inches mercury shall be measured and shall not be less than the times listed below for various manholes and interceptors.

Time (seconds)	**Manhole Diameter** (inches)	**Interceptor Size** (gallons)
60	48	
75	60	
90	72	
80		500 to 999
120		1,000 to 1,499
150		1,500 to 1,999
180		2,000 to 2,499

Note: Grease interceptors and sand/oil interceptors shall be completely drained and cleaned before initiation of the water or vacuum test.

7.13 Residential Pump Systems

For all building sites in which the improvement plans designate a pumped service or for any owner wishing to construct a structure on a portion of a lot or parcel for which gravity service was not provided, the owner shall install a sewage pump as specified herein for the purpose of lifting sewage to the public sewer. **All means necessary to provide gravity flow shall be exhausted prior to acceptance by the District regarding pumped service applications.**

A pumped sewer service shall consist of a gravity sewer, a wastewater holding tank, one or more pumps, a force main, electrical controls, and an alarm system. The pump and holding tank shall be installed in a location such as to be reasonably accessible for inspection and maintenance. If the holding tank is located outside of the building foundation it shall not be located within 5 feet of any building used as a dwelling, within 10 feet of any property line or within 50 feet of any lake, stream, or reservoir. Where installed, the owner at the owner's expense shall maintain such installations.

Installation:

Gravity Pipeline - The gravity sewer lateral from the building sewer to the waste water holding tank shall be tested in accordance with Sewer Lateral Testing, Section 7.11, page 32. Pipe must be grouted or sealed to a watertight condition at the point of holding tank penetration.

Waste Water Holding Tank - The holding tank shall be a solid impervious walled container. All openings in the walls of the tank, including pipe or conduit penetrations, are to be sealed to prevent inflow of surface water, infiltration of ground water, or exfiltration of contained wastewater. The tank shall have a minimum capacity of 150 gallons. The tank shall be vented with a 1 1/4 inch minimum vent line. The tank shall be buried to a depth such that the top cover of the tank is 18 inches below finished grade. A weatherproof housing, with adequate insulation,

shall be installed and extended to 6 inches above finished grade. It shall be the owner's responsibility to determine groundwater conditions that may cause the tank to float when empty and to provide the appropriate solutions to prevent it. Internal ballast that reduces the tank capacity below 150 gallons will not be acceptable.

Pumping Equipment - Pumps shall be centrifugal of the non-clog or grinder type. Pumps shall be capable of passing a minimum of a 2-inch diameter sphere. Pumps and motors shall be sized so as to maintain a minimum of 4-feet per second flow velocity throughout the entire discharge piping system when a maximum of one pump is pumping under actual installed conditions. A copy of the pump specifications and pump curve shall be required and made available to the District inspector before testing is allowed.

Electrical - The electrical control cabinet shall be isolated from the holding tank. All wiring, controls, conduits, boxes, etc. shall meet or exceed National Electrical Code (NEC) requirements for materials, ratings, placement, and installation etc. All equipment located in the holding tank shall be U.L. approved for its specific and proper use. All wiring in the area above the holding tank shall be provided with protection from physical damage by a combination of cable routing and/or conduits. Any wiring that hinders entry or view into the holding tank when opened will not be acceptable. All electrical connections shall be in an approved electrical junction box. All conduits leaving the holding tank, or the enclosed area above or surrounding the holding tank, shall be sealed. A circuit disconnecting means for all circuits must be located within sight of the holding tank unless a lockout device is installed on the disconnecting means for each individual circuit attached to or related to the pump system at the holding tank.

Alarm System - The holding tank and electrical controls shall include an alarming system that produces an audible and visual alarm when the liquid level in the holding tank exceeds a predetermined safe level. The audible and visual devices indicating such an alarm state shall be located within the building or structure served by the sewage system with the intent to notify the occupant of the possibility of a wastewater spillage. The alarm system power shall be supplied through a dedicated circuit, separate from the pump power supply. It is recommended that the alarm system include a battery backup to provide alarm functionality during an electrical power outage.

Discharge Piping - The discharge pipeline shall be ductile iron, polyvinyl chloride (PVC), polyethylene, or an approved pressure rated material designed for wastewater. The piping shall be pressure class 150 minimum and rated for the pressure service being installed. The pipeline size shall be 2 inch diameter minimum and not be of a size smaller than the pump discharge port. The discharge pipeline shall be fitted with an approved pressure rated check valve and a gate valve. The discharge pipeline shall also include a 1/4-inch pressure test port located between the check portion of the check valve and the gate valve. The gate valve shall be located on the discharge side of the check valve. Both valves and the test port shall be located as close to the pump or holding tank as possible and in such a manner that they are accessible for operation and for maintenance or repairs. It is recommended that valves are installed with unions and boxed to grade.

Discharge pipelines shall have a trench cutoff block located every 50 linear feet of pipe, at changes in pipeline type and/or grade, and at the pump tank. Thrust blocks shall be located at all fittings that change the direction of the pipe. Thrust blocks shall be constructed of concrete with

a minimum size of 2 cubic feet.

A siphon break shall be installed on the discharge pipeline at its connection point to the gravity sewer. A cleanout in accordance with Installation of Cleanouts, Section 7.09, page 31, shall be placed in the discharge pipeline at the property line, if the siphon break can be placed in a practical manner such that sufficient gravity slope can be maintained from the property line to the District main pipeline.

Inspection and Testing:

The gravity portion of the pipeline from the building to the holding tank shall be tested in accordance with the Sewer Lateral Testing, Section 7.11, page 32.

A visual inspection shall be performed to check for the following:

- Proper venting of the holding tank.
- An acceptable weather proof, insulated box with an insulated lid directly above the holding tank.
- A weather tight seal on the holding tank lid and at all pipe or conduit penetrations.

The discharge pipeline shall be pressure tested with air or water to a pressure of 150 percent of the calculated maximum possible working pressure (the Total Dynamic Head, or TDH) for the installed pump. The maximum possible working pressure for the system can be assumed to occur at the pump's shut off point. The pump shut off point can be obtained from the pump's performance curve by following the curve to the point at which it meets the axis representing the head of liquid.

The pressure must remain constant for 10 minutes. The required test equipment shall be provided by the owner or owner's agent and be acceptable to the District.

The electrical system and controls shall be inspected and approved by the local governing authority for building electrical inspection. Pumping and alarm tests shall only be performed after the electrical system has been inspected and approved by the proper authority. The District Inspector shall require proof of such approval before starting any of the following functional tests:

- The pump shall be started and stopped so the check valve can be tested for proper operation.
- The pumping system shall be tested for a discharge pipeline velocity of 4 feet per second. The flow velocity test shall be performed with the discharge pipeline full of water and the pumping system functional under normal operating conditions.
- The pump shall be run to pump down the holding tank to allow a visual inspection of the tank and to check it for leaks.

- The alarm system shall be checked for proper function of audio and visual alarms.

Septic tanks converted for use as holding tanks shall be air, water, or vacuum tested. The test shall be the same as specified for sanitary sewer pipelines, manholes, and grease and sand oil interceptors. If the converted septic tank fails the test, it shall be abandoned in accordance with Abandoned Sewers and Sewage Disposal Facilities, Section 7.16, page 38 and a new holding tank meeting the requirements for Residential Pump Systems shall be installed in its place.

Deviation from Requirements:

Any deviation from the above stated requirements shall be approved in writing by the General Manager.

7.14 Delay in Sanitary Sewer Facility Testing

Testing or inspection for final may be delayed when inclement weather or other conditions will not allow the required testing to be performed during winter months. When such a situation arises, the owner or their agent may enter into a written agreement with the District to delay the required testing with a specific deadline date upon which testing must be completed.

7.15 Owner-builder Temporary Hook up to Sanitary Sewer

An owner-builder, who plans to place a trailer on a parcel for the owner-builders sole use and living quarters while building a residence, may request a temporary trailer be connected to the sanitary sewer system by completing the following administrative steps:

- Present the appropriate valid Placer County Building Permit at the District's office and request a Sewer Permit.

- Pay connection fees and prorated user fees to the District and connection fees to the Tahoe-Truckee Sanitation Agency (T-TSA).

- Pay a $500.00 deposit for the connection. This deposit is refundable upon the District's approval of the disconnect of the temporary system.

- Pay a $100.00 fee for administrative costs.

Once the above administrative requirements are completed, the temporary trailer may be connected to the District sanitary sewer system under the following conditions:

Installation of Pipelines: The building lateral and the temporary sewer lateral have been installed, backfilled and tested by the owner-builder and inspected by a District inspector. The type of pipe used for the temporary sewer lateral shall be in accordance with District Code requirements.

The temporary sewer lateral shall be located in a trench with at least 30 inches of cover. The temporary sewer lateral shall have a slope of at least 1/4 inch fall per foot of length. The temporary sewer lateral shall be connected to the house building lateral using a wye.

The temporary sewer lateral riser shall be provided with a sewage drain inlet not less than 3 inches in diameter (if a trap is required as described) or 4 inches in diameter if no trap is required, to receive the wastes of the temporary trailer. A 4-inch thick slab of concrete extending at least 6 inches away from the outside diameter of the riser pipe shall protect the riser. The riser shall extend 3 inches above the top of the concrete slab.

Connection of the temporary trailer to the temporary sewer lateral shall be a watertight connection to prevent the entrance of groundwater or surface water at all times. Trailer facilities shall not be used to wash or dispose of construction tools or materials.

Location: The temporary trailer shall be parked a distance of no more than 3 feet from the temporary connection point riser. The riser shall be placed in concrete as described below. If a cleanout riser on the house sewer lateral can be utilized, a concrete box can be used in place of the concrete. The connection of the trailer to the riser shall be watertight.

Venting: In the case that the trailer waste fixtures are not properly vented, the drain inlet shall be provided with an effectively vented trap not less than 3 inches in diameter for inlets designed to receive the discharge of vehicles equipped with toilets.

If the temporary trailer fixtures are not properly vented, the drain inlet trap shall be individually vented with a vent pipe not less than 2 inches interior diameter. All vent pipes, in outdoor locations, shall be located at least 10 feet from an adjoining property line and shall extend at least 10 feet above the ground level. All vent pipes shall be adequately supported.

Connection of Temporary Trailer: The house sewer lateral and the temporary sewer lateral shall be tested as required by the District Code. After the test, a seal cap and numbered seal shall be placed on the house connection point and the temporary trailer shall be connected to the temporary sewer lateral as described above.

The temporary sewer lateral may be used during the house construction for a maximum of 1 year, whichever is less, beginning with the date the trailer fee is paid. If the house construction is not complete after the 1-year period, the owner may solicit the District to extend the allowed use of the temporary sewer lateral for an additional year. An extension will require an additional $100.00 administrative fee. After the end of the second year of use, the temporary sewer lateral shall be removed and the wye plugged as described above.
User fees shall commence on the date payment is made for the temporary trailer. Unpaid user fees will be deducted from deposits when final inspection has been completed.

Upon completion of the house and subsequent granting of occupancy by Placer County, the temporary sewer lateral shall be completely removed by the owner-builder within 5 days of occupancy of the house. The temporary sewer lateral shall be removed from its trench. The wye (fitting that joined the building lateral with the temporary lateral) shall be rotated upward and a cleanout riser pipe installed to grade. The cleanout shall be boxed to grade as shown in Lateral Cleanout Assembly, Figure 10, page 157. All temporary sewer lateral materials shall be removed from the property and the temporary sewer lateral trench shall be completely backfilled. The seal cap shall be removed and the house sewer lateral retested as required by the District Code.

7.16 Abandoned Sewers and Sewage Disposal Facilities

Every abandoned building (house) sewer, or part thereof, shall be plugged or capped with an approved watertight plug within 5 feet of the property line. A District Inspector shall witness this procedure.

Once the lateral is plugged at the property line, one of two options is available. The owner may continue to pay User Fees or may choose to stop User Fee payments. If User Fees are discontinued, Connection Fees will be required at the time of re-connection at the current Connection Fee rate. If the owner continues to pay User Fees, no Connection Fees will be required at the time of re-connection.

Every cesspool, septic tank and seepage pit which has been abandoned or has been discontinued otherwise from further use or to which no waste or soil pipe from a plumbing fixture is connected, shall have the sewage removed from and be completely filled with earth, sand, gravel, concrete or other approved material.

The top cover or arch over the cesspool, septic tank, or seepage pit shall be removed before filling and the filling shall not extend above the top of the vertical portions of the sidewalls or above the level of any outlet pipe until the cesspool, septic tank or seepage pit has been inspected. After such inspection, the cesspool, septic tank or seepage pit shall be filled to the level of the top of the ground.

Where disposal facilities are abandoned consequent to connecting any premises with the public sewer, the permittee making the connection shall fill all abandoned facilities as required within 30 days from the time of connecting to the public sewer (Uniform Plumbing Code, Section 1119). The District shall verify such abandonment.

8. GREASE REDUCTION PROGRAM

8.01 Commercial Food Establishments

Any commercial establishment serving food such as, but not limited to:

restaurants	coffee shops
delicatessens	drive-in eating establishments
bakeries	donut shops
take-out	ice cream or milk drive-in stations

or commercial food manufacturing facilities such as, but not limited to:

packing establishments	slaughter houses
canneries	

or commercial facilities such as, but not limited to:

hospitals	motels/hotels
markets	recreation or reception halls
schools	conference centers
churches	

Where any grease or other objectionable materials may be discharged into a public or private sanitary sewer system shall have installed on the premises an appropriately sized grease interceptor or grease trap as required by Chapter 7, Uniform Plumbing Code.

The facilities listed above can be classified into the following categories based on the type of facility, the nature and volume of the waste flow produced, the hours of operation, and the number of meals served per day:

- **Industrial** - commercial facilities as defined in sections 709 and 710 of the Uniform Plumbing Code, and those facilities designated by the General Manager.

- **High Volume** - full menu type establishments operating more than 16 hours per day and/or serving 500 or more meals per day.

- **Medium Volume** - full menu or specialty menu type establishments serving full meals 8 to 16 hours per day, and/or 100 to 400 meals per day.

- **Small Volume** - fast food, take-out or specialty type food establishments with limited menus, a minimum of dish washing, and/or minimal seating capacity.

The General Manager or his/her designated representative shall approve the size, type and location of each grease trap or interceptor.

Waste in excess of 140 degrees Fahrenheit (60 degrees Celsius) shall not be discharged into a grease trap or interceptor.

For the purpose of this division, the term "fixture" shall mean and include each plumbing fixture, appliance, apparatus or other equipment required to be connected to or discharged into a grease trap or interceptor by any provision of this division.

Waste discharge from fixtures and equipment in the above-mentioned types of establishments which may contain grease or other objectionable materials, including, but not limited to, scullery sinks, pot and pan sinks, dishwashers, food waste disposal, soup kettles, etc., and floor drains located in areas where such objectionable materials may exist, may be drained into the sanitary waste through a grease trap or interceptor when approved by the General Manager. **Exception: Toilets, urinals, and other fixtures containing fecal material may not flow through interceptors, traps, or sand/oil interceptors.**

District personnel will periodically schedule inspections of grease traps and interceptors. It shall be the responsibility of the owner or their agent to maintain grease traps and interceptors in an efficient operating condition by periodic removal and proper disposal of the accumulated grease. No such collected grease shall be introduced into any drainage piping or public or private sanitary sewer facility.

The owner or their agent shall post and maintain a current grease trap/interceptor cleaning and maintenance log on the premises and shall have the log available for review by District personnel at all times.

8.02 Grease Interceptors

Industrial facilities and High Volume food establishments as defined in Commercial Food Establishments, Section 8.01, page 41, are required to install a grease interceptor. Medium Volume food establishments may require a grease interceptor as determined by the General Manager.

Interceptors shall be constructed and installed at the expense of the owner, in accordance with the Standard Drawings, Grease Interceptor, Figure 24, page 185.

Each grease interceptor shall be so installed and connected that it shall be easily accessible at all times for inspection, cleaning, and removal of the intercepted grease. A grease interceptor may not be installed in any part of a building where food is handled. Proper location of the grease interceptor shall meet the Uniform Plumbing Code Requirements and the approval of the General Manager.

Each commercial facility or business establishment for which a grease interceptor is required shall have an interceptor which shall serve only that business establishment.

Buildings remodeled for use requiring interceptors shall be subject to these regulations.

Grease interceptors shall have a minimum 750-gallon capacity.

Interceptors shall be installed in such a manner that surface drainage may not enter. Interceptors located in vehicle traffic areas shall be capable of withstanding an H-20 axle load. The access port cover shall be at least 1/2 inch below finished grade and shall also be capable of withstanding an H-20 axle load. Except as otherwise provided, the cover and access ports shall be gas-tight. The waste shall enter the interceptor through the inlet pipe only. Interceptors shall be so designed that they will not become air bound. Each interceptor shall be properly vented, as required by Section 708(d), Uniform Plumbing Code.

Grade rings may be used to establish final grade for the access ports and shall be installed using Kent Seal or, Ram-Nek and Ram-Nek primer.

Interceptors shall be tested in the same manner as manholes. The test shall be witnessed by a District Inspector.

Abandoned grease interceptors shall be emptied and filled in the same manner as required for abandoned septic tanks as described in Section 1119, Uniform Plumbing Code.

8.03 Grease Traps

Small Volume food establishment as described in Commercial Food Establishments, Section 8.01, page 41, may choose to install a grease trap in place of a grease interceptor. Medium Volume food establishments, after careful review of UPC requirements based on actual or estimated waste flows, may also be allowed to install a grease trap in lieu of a grease interceptor.

No grease trap shall be installed which has an approved rate of flow of more than 55 gallons per minute, nor less than 20 gallons per minute, except with prior written approval of the General Manager.

Each plumbing fixture or piece of equipment connected to a grease trap shall be provided with an approved type flow control or a restricting device installed in a readily accessible and visible location in the tailpiece or the drain outlet of each such fixture. Flow control devices shall be so designed that the flow through such device or devices shall at no time be greater than the rated capacity of the grease trap. No flow control device having adjustable or removable parts shall be approved.

Each grease trap required by this section shall have an approved rate of flow, expressed in gallons per minutes, which is not less than 40 percent of the total capacity in gallons of fixtures discharging into said trap.

The grease retention capacity of the trap, expressed in pounds of grease, shall not be less than two times the approved rate of flow in gallons per minute.

Any grease trap installed with the inlet more than 4 feet lower in elevation that the outlet of any fixture discharging into such grease trap shall have an approved rate of flow which is not less than 50 percent greater than that given in the preceding paragraph. No more than four separate fixtures shall be connected to or discharged into any one grease trap.

Each fixture discharging into a grease trap shall be individually trapped and vented in an

approved manner. An approved type grease trap may be used as a fixture trap for a single fixture when the horizontal distance between the fixture outlet and the grease trap does not exceed 4 feet and the vertical tailpipe or drain does not exceed 2 1/2 feet.

No water jacketed grease trap or grease interceptor shall be approved or installed. No mechanical grease trap shall be allowed.

Each grease trap shall have an approved water seal of not less than 2 inches in depth or the diameter of its outlet whichever is greater.

8.04 Sand/Oil Interceptors

Every private or public wash rack used for cleaning vehicles, machinery or machine parts or facilities used for vehicle maintenance shall drain or discharge into a sand/oil interceptor of an approved design for this use.

The minimum internal dimensions of the interceptor shall be approximately 24 inches wide by 72 inches long with 57 inches between the tank bottom and the bottom opening of the 90-degree bend at the outlet for a 490-gallon minimum liquid capacity (see Standard Drawings, Sand/Oil Interceptor, Figure 25, page 187).

The inlet and outlet sewer piping shall conform to District specifications. The sewer outlet pipe shall have a downward pointing 90-degree bend inside the tank. The bottom entrance to the 90-degree bend shall extend 6 inches below the invert of the outlet pipe. The top of the sewer inlet and outlet pipes shall be at least 30 inches below the pavement surface where they enter and exit the tank.

The tank shall have a minimum of one self sealing access port and shall be maintained in a leak tight condition so there is no entry of surface storm water. There shall also be no leakage of groundwater into the tank, and waste flow shall not be allowed to flow into the surrounding ground. Grade rings may be used to establish final grade for the access ports and shall be installed using Kent Seal or Ram-Nek and Ram-Nek primer.

When the tank is located in a vehicle traffic area, the access port(s) shall be set at least 1/2 inch below finished grade. Tank covers and access ports located in vehicle traffic areas shall be capable of withstanding an H-20 axle load.
District personnel will periodically schedule inspections of sand/oil interceptors. It shall be the responsibility of the owner or their agent to maintain the sand/oil interceptor in an efficient operating condition by periodic removal and proper disposal of the accumulated sand and oil. No such collected sand and oil shall be introduced into any drainage piping or public or private sanitary sewer facility.

The owner or their agent shall post and maintain a sand/oil interceptor cleaning and maintenance log on the premises and shall have the log available for review by District personnel at all times.

All trapped materials removed from the interceptor, including filters and filter media, shall be disposed of in accordance with current existing environmental codes and regulations. It is the responsibility of the owner or their agent to determine the governing agency and comply with the

code requirements.

Sand/oil Interceptors shall be tested in the same manner as manholes. The test shall be witnessed by a District Inspector.

Abandoned sand/oil interceptors shall be emptied and filled in the same manner as required for abandoned septic tanks as described in Section 1119, Uniform Plumbing Code.

Vehicle Wash Installations: All vehicle wash installations shall be equipped with an appropriate sand/oil interceptor. Potable water piping to the wash installation shall be metered to verify water consumption. No other facility other than the wash installation shall be fed potable water through the meter.

Vehicle wash installations shall utilize a recycle system. The clarification, filtration and recycle system shall be designed by the owner or their agent and approved by the District. When a recycle system is used, there shall be a closed shutoff valve in the sewer outlet pipeline external to the interceptor tank. It shall have the necessary access and protection.

It shall be the responsibility of the owner or their agent to maintain the system for proper operation. The District shall be notified at least 72 hours in advance of any emptying and/or flushing of the system into the sanitary sewer.

The design automated full service vehicle wash installations must be approved by the District on an individual basis.

Vehicle Maintenance Facilities: Each vehicle maintenance facility shall have a sand/oil interceptor that meets the minimum tank requirements described above.

8.05 Time of Compliance

All commercial establishments serving food, commercial food manufacturing facilities, and commercial facilities described in Commercial Food Establishments, Section 8.01, page 41, and all private or public wash facilities used for cleaning vehicles, machinery or machine parts, or facilities used for vehicle maintenance as described in Sand/Oil Interceptors, Section 8.04, page 44, shall be required to install a grease interceptor/trap, or a sand/oil interceptor within the 60 day period after the first occurrence of any of the following events:

- transfer of ownership or interest in the parcel, the facility, or the business;
- the issuance by the County/District of any building permit for the construction, reconstruction or related work to be performed on the premises costing more than $5,000;
- the backup or discharge of wastewater on or from the premises due to grease, oil, or sand build up in their building plumbing or building lateral;
- or 90 days after receiving written notice from the General Manager of the necessity for installation of such facilities.

9. INSPECTION

9.01 Pre-Inspection Requirements

All work completed under the provisions of the District Code shall be subject to inspection by and shall meet the approval of the General Manager. Approval by the General Manager shall not relieve the owner or their agent or any other person from complying with any other applicable law or ordinance.

Residential: All applicable fees and deposits must be paid and a Sewer Permit and Will Serve Letter must be issued prior to scheduling and receiving an inspection by District personnel. District personnel shall inspect all sanitary sewer facilities installation for compliance with all requirements of the District Code.

Commercial: All applicable fees and deposits must be paid and District Plan Check Review must be completed before scheduling and receiving inspections by District personnel. District personnel shall inspect all sanitary sewer facilities installation for compliance with all requirements of the District Code.

9.02 Request for Inspection of Sanitary Sewer Facilities

The owner or their agent shall notify the District at least two business days (48 hours) prior to the time any inspection is to be made, unless a full time inspector representing the District is assigned to the project.

9.03 Conditions Required at Time of Inspection

At the time of the inspection, the owner or their agent shall have all work uncovered and convenient to facilitate the inspection. The owner or their agent shall provide and make available, to the inspector, any necessary special equipment and/or facilities to accomplish a thorough and complete inspection of the work. No inspections of sanitary sewer facilities will be made if the inspector's view of the facilities is blocked or obscured. The owner or their agent shall, at their sole cost, remove all materials, equipment, backfill and other objects, at the direction of the inspector, so as to facilitate the inspection.

9.04 Correction of Defective Work

If the construction/installation of sanitary sewer facilities does not conform to the provisions of the District Code, the District shall issue a Notice of Sewer Inspection, in writing, to notify the owner or their agent concerning the defective construction/installation. The owner or their agent shall correct the defective construction/installation before subsequent inspection by the District. If the owner or their agent fails to comply and correct the items listed on the Notice of Sewer Inspection, the Sewer Permit may be suspended and/or revoked in accordance with the provisions of the District Code.

9.05 Facilities Not to Be Used Prior to Final Inspection

No sanitary sewer facility constructed under the provisions of the District Code shall be placed in use until the work has been approved by the District and a Certificate of Final Inspection has been issued. Deviations from this requirement may be made only when the work is substantially complete and has been inspected and found to be in conformance with the provisions of the District Code. The General Manager shall make a determination in writing that the best interest of the public will be served by permitting such use prior to the completion of the total work under consideration.

10. MAINTENANCE OF EXISTING FACILITIES

10.01 Maintenance and Testing of Private Sanitary Sewer Facilities

The owner or their agent of a property served by the District's sanitary sewer system shall be responsible for the operation and maintenance of the private sanitary sewer facilities, including all devices or safeguards required by this section, which are located upon said property. The owner or their agent's operation and maintenance responsibility is from the building to the connection at the sanitary sewer easement or property line.

The owner or their agent shall, at their own risk and expense, install, keep and maintain in good repair all ***sanitary sewer facilities*** (sanitary sewer pipelines, force mains, manholes, equipment, pump stations, and related appurtenances) situated on the premises so served. The District shall not be responsible for any loss or damage caused by improper or defective installation of sanitary sewer facilities, whether inspected and/or approved by the District. All such installations of sanitary sewer facilities shall conform with all federal, state, county, District and local laws, rules, regulations and ordinances.

The owner or their agent served by the District's sanitary sewer system shall be responsible and liable for all costs involved in the repair of all damages caused by the owner, customer, or agents thereof, to the District's sanitary sewer facilities, including but not limited to sewer obstructions, wherever located.

All sanitary sewer facilities found in need of repair as a result of testing procedures required by this chapter shall be repaired and/or installed to the standards set forth in the District Code.

10.02 Conditions Requiring Testing of Existing Sanitary Sewer Facilities

It shall be unlawful for any owner of a house, building, or property connected to the District's sanitary sewer system to maintain private sanitary sewer facilities in a condition such that the tests contained herein cannot be successfully accomplished.

All private sanitary sewer facilities, including those serving residential, multiple residential, commercial, and industrial connected to the District's sanitary sewer system shall be tested when any of the following conditions occur:

(a) remodeling of the house, building or property served to an extent of more than 50 percent, as determined by Placer County assessed valuation or,

(b) installation of additional plumbing fixtures in the house, building or property served, or,

(c) change of use of the house, building or property serviced from residential to business or commercial, or from non restaurant commercial to restaurant commercial or,

(d) repair or replacement of all or part of the building lateral(s) or,

(e) the addition of living quarters, such as guest cabins on the property served or conversion of garages into living quarters with plumbing fixtures or,

(f) prior to the close of escrow upon a sale of the house, building or property served, or,

(g) the transfer of ownership or interest in the parcel, the facility, or the business. (A transfer of ownership between immediate family members, shall not require testing if it has been tested and passed in the prior 5 years) or,

(h) change of ownership (multiple owners) on the deed selling their portion to other partners/investors or,

(i) an inspection by the District indicates reasonable cause or,

(j) upon a determination of the General Manager that testing or sanitary sewer facility replacement is required for the protection of the public health, safety and welfare.

10.03 Testing Procedures for Existing Sanitary Sewer Facilities

The owner or their agent of a house, building, or property connected to the District's sanitary sewer system shall conduct all sanitary sewer facility upgrades and testing required at their sole expense and shall notify the District 48 hours prior to testing. Testing shall be witnessed by a District Inspector.

Sanitary Sewer Pipelines: All building laterals, joint laterals, and privately owned main pipelines shall be tested by either an air or water method, at the discretion of the District.

In the case of building and joint laterals, the test section shall be from the building cleanout to the District service connection point. The test section includes all private pipelines, including joint laterals, which provide sanitary sewer service to the parcel in question.

Privately owned main pipelines shall be tested their full length.

Testing shall be in accordance with one of the following (Note: test failures of non-metallic asphaltic composite pipe shall require entire replacement of the defective pipeline. Installation and testing of the new pipeline shall be in accordance with Section 7, Installation of Sanitary Sewer Facilities, page 27):

- Air test consisting of plugging each end of the pipeline and applying a pressure of 3.5 pounds per square inch to the section being tested. The pipeline shall be allowed a maximum loss in pressure of 1/2 pound per square inch in 5 minutes. If the loss exceeds 1/2 pound per square inch, the test may be attempted one additional time. A second loss of pressure constitutes a failure of the pipeline, whereupon the pipeline shall be replaced, as needed, and re-tested in accordance with this section.

- Water test consisting of plugging the downstream end of a pipeline, placing a section(s) of pipe in the vertical branch of the building cleanout and filling the test section with water. Additional cleanouts may have to be installed in steep pipelines and the pipeline tested in sections. In no case shall the total depth of water exceed 15 feet to any point in the pipeline. The pipeline shall be allowed a maximum loss of water level of 1 inch in 5 minutes for a 4-inch or 6-inch pipeline per 100 feet in length. If the loss exceeds the allowable, the pipeline may be re-tested one additional time. A second loss exceeding the allowable constitutes a failure of the pipeline, whereupon the pipeline shall be replaced, as needed, and tested in accordance with this section.

If a cleanout has not been installed at the easement/property line, a cleanout shall be installed prior to testing. If there is no cleanout located outside the building foundation (within five feet of the foundation wall), then a cleanout shall be installed. If the building lateral exits the foundation under an existing deck or concrete patio, the location of the building cleanout near the foundation may be modified on a case-by-case basis as determined by the General Manager. The Cleanouts shall be installed and boxed as specified in Installation of Cleanouts, Section 7.09, page 31. The owner or their agent shall be responsible for such installation. A cleanout underneath the house is not acceptable.

Manholes, Grease Interceptors, Sand/Oil Interceptors: Testing shall be in accordance with one of the following:

- Water test by plugging all inlet and outlet pipes and filling the test section with water to the top of the frame rim. The water should be introduced into the test section at least 4 hours in advance of the official test period to allow the concrete and joint material to become saturated. The test section shall then be refilled to the original water level.

  At the beginning of the test, the elevation of the water in the test section shall be carefully measured from a point on the frame rim. After a period of 4 hours, the water elevation shall be measured from the same point on the frame rim and the loss of water during the test period calculated. If this calculation is difficult, enough water shall be measured into the test section to restore the water to the level existing at the beginning of the test, and the amount added taken as the total leakage.

  The allowable leakage shall not exceed 0.13 gallons per hour. Manholes, Grease Interceptors, and Sand/Oil Interceptors showing leakage in excess of that allowed shall be repaired or reconstructed as necessary to reduce the leakage to that specified. All failures shall be re-tested after the necessary repairs have been completed.

- Vacuum test by using acceptable equipment approved by the District. Vacuum test equipment shall be used per the manufacturer's specifications. A vacuum of 10-inches mercury should be drawn on the manhole. The time, in seconds, for the vacuum to drop to 9-inches mercury shall be measured and shall not be less than the times listed below for various manholes and interceptors.

Time (seconds)	**Manhole Diameter** (inches)	**Interceptor Size** (gallons)
60	48	
75	60	
90	72	
80		500 to 999
120		1,000 to1,499
150		1,500 to1,999
180		2,000 to 2,499

Note: Grease interceptors and sand/oil interceptors shall be completely drained and cleaned before initiation of the water or vacuum test.

Pump Systems Testing: The gravity portion of the pipeline from the building to the holding tank shall be tested in accordance with Section 10.03, Testing Procedures for Existing Sanitary Sewer Facilities, Sanitary Sewer Pipelines, page 50.

A visual inspection shall be performed to check for:

- proper venting of the holding tank.
- acceptable weather proof, insulated box with an insulated lid directly above the holding tank.
- a weather tight seal on the holding tank lid and at all pipe or conduit penetrations.
- a properly functioning check valve on the discharge pipeline.

In the event that there is no check valve and/or pressure test port installed on the existing discharge pipeline, a check valve and a valved 1/4-inch pressure test port shall be installed in accordance with Section 7.13, Residential Pump Systems, page 33.

A pressure gage shall be connected to the test port and the pressure test port valve shall be opened. The pump shall be started and the holding tank pumped down to allow a visual inspection of the holding tank to check it for leaks. The check valve shall also be inspected for proper operation.

Immediately after the holding tank is pumped down and the pump turned off, the gage pressure shall be noted in the discharge pipeline. The pressure shall remain constant for 10 minutes. Any drop in pressure shall constitute a test failure and the check valve and/or the discharge pipeline shall be repaired and/or replaced.

After the check valve and/or the discharge pipeline is repaired and/or replaced, another test shall be attempted. A subsequent loss of pressure constitutes a failure of the check valve and/or discharge pipeline, whereupon the defective check valve and/or discharge pipeline section shall be replaced and tested as described above.

The alarm system, if so equipped, shall be checked for proper function of audio and visual alarms.

In the event that the holding tank or the force main needs replacement the pump and controls must be updated to meet District Code. In the event that the controls need replacement an alarm system must be installed as specified in Residential Pump Systems, Section 7.13, page 33.

Septic tanks and concrete vaults converted for use as holding tanks shall be air, water, or vacuum tested. The test shall be the same as specified for sanitary sewer pipelines, manholes, and grease and sand/oil interceptors. If the converted septic tank/concrete vault fails the test, it shall be abandoned and a new holding tank meeting the requirements for residential pump systems shall be installed in its place.

10.04 Time Limits for Completion of Testing Procedures

Testing shall be completed in a timely manner as follows:

- Prior to the close of escrow upon the sale of the residence, building, or property, or
- Within 30 days of standard notification by the District, or
- Immediately if the General Manager determines that testing and repair are necessary to protect public health and the integrity of the sanitary sewer system.

In the event that testing would be required during the period from November 1to April 15 or, during such other periods when such work would be impractical due to weather conditions; The General Manager may defer such requirement upon posting of a performance bond with the District in an amount equal to 125 percent of the General Manager's estimate of the cost of replacing the sanitary sewer facility.

In place of a performance bond, the owner may escrow funds in an amount equal to 125 percent of the General Manager's estimate, if the property or business is being sold or transferred. Funds held in escrow will not be released without written notification by the District to the Title company holding such funds. In such case, the testing must be performed by the following June 15.

If a sanitary sewer facility fails any of the above described tests, the owner or their agent shall cause corrective work and re-testing to be performed within 30 days from the date of the original test. The District shall approve all repairs. Repairs or replacement of 50 percent or more of a sanitary sewer pipeline or force main shall be cause for total pipeline replacement meeting current District standards.

After a second failure of any sanitary sewer facility, the owner shall be charged an additional inspection fee for further inspections.

In the event that a sanitary sewer facility has not been tested within the required time period, the District shall initiate procedures for sewer disconnection.

10.05 Waiver of Testing Requirements

The General Manager shall have the power to waive testing requirements if:

(a) the sanitary sewer facility has been installed and tested within a prior 5 year period for new construction, or tested within a prior 5 year period and there is good reason to believe that such testing is not necessary.

(b) the sanitary sewer pipeline or force main is of such a length that testing is not practical.

(c) the sanitary sewer facilities are part of a central private sanitary sewer system as described in Shared Use Facilities, Section 10.06, page 54, and the District has an established written agreement concerning specific testing requirements.

Nothing herein shall constitute a warranty by the District of the soundness or ability of the sanitary sewer facility to accomplish its purpose or remain in compliance with the District Code.

10.06 Shared Use Facilities/Shared ownership-residential

The District may choose to allow the owner or their agent of a ***Shared-Use Facility***/**Shared ownership – residential** (common interest subdivisions, commercial shopping centers, mini malls, apartment complexes, condominium complexes, schools, office buildings, and hospitals, etc.) one of the following option agreements for the maintenance and testing of sanitary sewer facilities. Any agreement must be in writing and acceptable to the District and the owner or their agent of the Shared-Use Facility.

Option No. 1: The owner or their agent of the Shared-Use Facility/Shared ownership agrees to complete required testing, repair or replacement of ***all*** the sanitary sewer facilities servicing the Shared-Use Facility/Shared ownership upon notification by the District that testing is required. Under this option, sales, leases, or changes in tenant/ownership of individual units or suites are allowed to proceed prior to testing and without approval from the District.

After 5 years from the latest test date, ***all*** the sanitary sewer facilities servicing the Shared-Use Facility/Shared ownership shall be re-tested when any of the conditions outlined in Section 10.02, page 49 occur, ***or*** Option No. 2 may be chosen and applied.

Option No. 2: The owner or their agent of the Shared-Use Facility/Shared Ownership agrees to complete required testing, repair or replacement of ***all*** the sanitary sewer facilities servicing the Shared-Use Facility upon notification by the District that testing is required, and will complete said testing over a 5 year period of time. The owner(s) or their agent of the Shared-Use Facility/Shared ownership shall be required to test a minimum of 20 percent of the total number of sanitary sewer facilities per year, beginning at the time of initial notification by the District that such testing is required. Under this option, sales, leases, or changes in tenant/ownership of individual units or suites are allowed to proceed without

approval from the District *if the conditions of the agreement have been fully honored by the owner or their agent of the Shared-Use Facility.*

After 3 years from the latest test date associated with the 5 year testing period, 20 percent of the total number of sanitary sewer facilities servicing the Shared-Use Facility shall be retested when any of the conditions outlined in Section 10.02, page 49 occur, ***or*** Option No. 1 may be chosen and applied.

Testing or sanitary sewer facility replacement may be required at any time upon a determination of the General Manager for the protection of the public health, safety and welfare.

10.07 Cleaning Manholes

When septic tank contents are dumped into a specified manhole under permission from the General Manager, it shall be discharged through a pipe or hose in such a manner that none of the contents shall be left adhering to the sides or shelf of the manhole.

11. PROHIBITED USES OF SEWER

11.01 Discharge Permit Required

No person shall discharge, or cause to be discharged, any industrial waste into the District sanitary sewer system without having obtained an Industrial Waste Permit from T-TSA. Such permit is required in addition to any other permits that may be required by the District Code, County Code, State Statute or other Ordinance, rule or regulation applicable to the industrial discharge.

11.02 General

It shall be unlawful for any person to do any of the following:

(a) To place, throw, or deposit, or cause or permit to be placed, thrown, or deposited in any public sewer or District sewer main pipeline any dead animal, offal, or any other solid matters, or materials or obstructions of any kind whatever of such nature as may clog or obstruct such sewer, or which may interfere with or prevent the effective use, operation, maintenance or repair of the sewer.

(b) To deposit or discharge, or cause or permit to be deposited or discharged, into any public sewer or District sewer main pipeline any water or wastewater or liquid waste of any kind containing chemicals, greases, oils, tars, or other matters in solution or suspension, in concentrations greater than 100 parts per million, by weight, which may clog or obstruct the sewer, or which may in any way damage or interfere with or prevent the effective use, operation, maintenance or repair of the sewer, or which may necessitate or require frequent repair, maintenance or flushing of such sewer to render it operable, or which may obstruct or cause an unwarranted increase in the cost of treatment of the wastewater.

(c) To discharge, or cause discharge or permit to be discharged to the sanitary sewer system any storm water, surface water, ground water, roof runoff, surface drainage, subsurface drainage, cooling water or waters of similar quality into any public sewer.

(d) To discharge any gasoline, benzene, oil or other flammable or explosive liquid or substance into any public sewer.

(e) To discharge, or cause or permit to be discharged, any toxic or other pollutants in amounts or concentrations that (1) endanger public safety; (2) adversely impact the physical integrity of the T-TSA treatment works; (3) cause a violation of effluent to water quality limitations imposed by the Lahontan Regional Water Quality Control Board or other public entity; or (4) preclude the selection of the most cost effective alternative for waste water treatment and sludge disposal.

(f) To connect sanitary sewer pipelines or laterals from any septic tank or cesspool to the District's sanitary sewer system.

(g) To discharge uncontaminated water into a public sanitary sewer except by written permission from the District.

11.03 Garbage

Garbage resulting from the preparation of food may be discharged into the public sewer provided the materials are ground to a size sufficient to pass through a 3/8-inch screen. The garbage grinding operation shall utilize a balanced water supply and cutting heads combination such that the operation will produce approximately 500 milligrams per liter settleable materials. The General Manager shall have sole authority to regulate the permittee's water supply and fineness gradation based on the special conditions at the site.

11.04 Temperature of Effluent

A person shall not discharge into the public sewer effluent to a temperature exceeding 140 degrees Fahrenheit.

11.05 Control of pH

Before any person shall discharge acids or alkalies into the public sewer, he shall control the pH to the extent the District finds adequate.

11.06 Toxic Substances

Any and all toxic chemical substances shall be subject to the industrial waste discharge permit requirement of the Tahoe Truckee Sanitation Agency. Additionally, all toxic and chemical waste substances shall be retained on site by the permittee until they have been pre treated sufficiently to meet the discharge standards specified in the applicable Permit for the premise. The discharge of any toxic chemical substance into sanitary sewer facilities will result in the declaration of a violation and the prosecution thereof in accordance with the District Code.

11.07 Removal of or Damage to Sewer

An unauthorized person shall not remove or cause to be removed, or damage or cause to be damaged, any portion of any public sewer, District sanitary sewer facility, or any appurtenances thereto.

11.08 Unauthorized Opening of District Sanitary Sewer Facilities

An unauthorized person shall not open or enter, or cause to be opened or entered, for any purpose whatsoever, any District sanitary sewer facility. The opening of any public sewer facility may lead to a penalty. This specifically includes all manholes and vaults used as access points by District personnel. Individuals may schedule a District employee to assist them if there is a need to have a facility opened.

12. ENFORCEMENT

12.01 Violations

The permittee shall be held solely responsible for all costs that the District may incur during the investigation, correction and/or prosecution of any and all violations to the District Code. Any and all such costs shall be reviewed by the Board of Directors and, if found appropriate, the Board of Directors may institute collection procedures in accordance with the District Code.

12.02 Authority of District

The charges, fees, levees and assessed monetary levees pursuant to the District Code shall be collected by the District and/or Placer County. The District shall make and enforce the regulations as necessary to ensure the public health, safety, and welfare. The District shall also ensure the economical and efficient management and protection of the District's sanitary sewer system and such regulating, collections, rebating and refunding of such charges and fees, levees and assessments as deemed appropriate by the Board of Directors.

In the event of a violation of any of the laws of the State of California, Placer County, or the ordinances of the District or, rules and regulations so established referring to the discharge of wastewater, the District shall notify the person or persons causing, allowing, or committing such violation and upon the failure of such person or persons to cease or prevent further violation within 5 days after the receipt of such notice, the District shall have authority to disconnect the property from the District sanitary sewer system.

12.03 Public Nuisance

Continued habitation of any building or continued operation of any commercial or industrial facility in violation of the provisions of the District Code or any other ordinance, rule or regulation of this District is hereby declared to be a public nuisance. The District may cause proceedings to be brought for the abatement of the occupancy of the building or industrial facility during the period of such violation.

12.04 Public Nuisance, Abatement

During any period of disconnection, habitation of such disconnected premises by human beings shall constitute a public nuisance, whereupon the District may cause or petition legal proceeding to be brought for the abatement of the occupancy of said premises by human beings during the period of such disconnection. In such events, and as a condition of re-connection, the applicant for re-connection shall pay to the District all costs incurred by the District associated with the disconnection and the legal proceedings. Such costs shall include but not be limited to reasonable attorney's fees and the costs of suit(s) arising out of any such action.

12.05 Discontinuance of Service

Service may be discontinued for any one of the following reasons:

(a) Delinquency in the payment of any bill, except that service shall not be discontinued for nonpayment in any of the following situations:

1. During the pendency of any investigation by the District of a customer dispute or complaint.

2. When a customer has been granted an extension of the period for payment of a bill.

3. On the certification of a licensed physician or surgeon that to do so will be life threatening to the customer.

4. If the customer is financially unable to pay for service within the normal payment period, yet is willing to enter into an amortization agreement with the District and requests permission to amortize, over a period not to exceed 12 months, the unpaid balance of any bill asserted to be beyond the means of the customer to pay within the normal payment period.

(b) Any violation by the customer of any rules and regulations of the District governing sewer service.

(c) Unsafe Apparatus or Damaging Conditions. If an unsafe or hazardous condition is found to exist on the customer's premises, or if the customer's use of sewer service is found to be detrimental or damaging to the District or its other customers, the District may discontinue sewer service without notice, provided that the District shall notify the customer immediately of the reasons for the discontinuance and the corrective actions to be taken by the customer before service can be restored. If the District determines that the need for the discontinuance stems from the customer's failure to adequately maintain the customers' building lateral or the customer's improper use of the building lateral or is otherwise caused by the customer's actions/inactions, then the customer will be liable for the District's cost of discontinuance and re-connection, if any, as well as any corrective actions required by the District.

12.06 Notice and Hearing Prior to Discontinuance of Service for Non Payment

At least 10 days before any proposed discontinuance of service for nonpayment of a delinquent account, the District shall mail a notice, postage prepaid to the customer to whom the service is billed of the proposed discontinuance. Such notice shall be given not earlier than 19 days from the date of mailing the District's bill for such service and the 10 day period shall not commence until 5 days after the mailing of the notice. In addition to the 10 day notice provided for in the preceding sentence, the District shall make a reasonable, good faith effort to contact an adult person residing at the premises of the customer by telephone or in person at least 48 hours prior to any discontinuance of such service.

Every notice of discontinuance of service required by this section, shall include all of the following information:

- The name and address of the customer whose account is delinquent.
- The amount of the delinquency.
- The date by which payment or arrangements for payment is required in order to avoid discontinuance.
- The procedure by which the customer may initiate a complaint or request an investigation concerning service or charges, unless the District's bill for services contains a description of that procedure.
- The procedure by which the customer may request amortization of the unpaid charges.
- The procedure for the customer to obtain information on the availability of financial assistance including private, local, state or federal sources, if applicable.
- The telephone number and name of a representative of the District who can provide additional information or institute arrangements for payment.

12.07 Notice and Hearing Prior to Discontinuance other than a Discontinuance of Service for Non-Payment

At least 10 days before discontinuing service, other than the discontinuance of service for nonpayment of a delinquent account which is provided for in Notice and Hearing Prior to Discontinuance of Service for Non-Payment, Section 12.06, page 63, the District shall provide the customer with a written notice which shall specify the reason for the proposed discontinuance and inform the customer of the procedure for and the availability of the opportunity to discuss the reason for the proposed discontinuance with the General Manager, who is empowered to review disputes and rectify errors and settle controversies pertaining to such proposed discontinuance of service. The name and phone number of the General Manager, shall be included in any such notice of proposed discontinuance given to a customer.

12.08 Discontinuance of Service on Weekends, Holidays or after Hours

No sewer service shall be discontinued to any customer or user because of any delinquency in payment on any Saturday, Sunday, legal holiday, or at any time during which the business offices of the District are not open to the public.

12.09 Amortization of Delinquent Bill for Service

Every complaint or request for investigation by a customer that is made within 5 days of receiving the disputed bill, and every request by a customer that is made within 13 days of the mailing of the notice required by Discontinuance of Service, Section 12.05, page 62, for an extension of the payment period of a bill asserted to be beyond the means of the customer to pay in full during the normal period for payment shall be reviewed by the General Manager. The review shall include consideration of whether the customer shall be permitted to amortize the unpaid balance of the account over a reasonable period of time, not to exceed 12 months. Any customer whose complaint or request for an investigation has resulted in an adverse determination by the General Manager, may appeal the determination to the Board of Directors.

12.10 Authority to Settle Controversies Relating to Discontinuance and to Permit Amortization of Delinquent Bills

The General Manager, is hereby authorized to investigate complaints and review disputes pertaining to any matters for which service may be discontinued and to rectify errors and settle controversies pertaining to such matters. The General Manager, is also authorized, upon a proper showing by a customer of the customer's inability to pay a delinquent bill during the normal period, to grant permission to amortize the unpaid balance over a reasonable period of time, not to exceed 12 months. At the discretion of the General Manager, controversies may be brought to the Board of Directors for settlement prior to the discontinuance of any such service.

12.11 Notice Required Prior to Discontinuance of Service for Failure to Comply with Amortization Agreement

If an amortization agreement is authorized, no discontinuance of service shall be affected for any customer complying with such agreement, if the customer also keeps the account current as charges accrue in each subsequent billing period. If a customer fails to comply with an amortization agreement, the District shall not discontinue service without giving notice to the customer at least 48 hours prior to discontinuance of the conditions the customer is required to meet to avoid discontinuance, but the notice does not entitle the customer to further investigation by the District.

12.12 Enforcement of Provisions

The provisions of the District Code, and a violation or failure to comply with any provision of the District Code, may be enforced, prosecuted and/or corrected pursuant to Health and Safety Code Sections 6523, 6523.2 and 6523.3, the penalty provisions of the District ordinance that adopted this code by reference, and/or other applicable provisions of law.

12.13 Means of Enforcement Only

The District hereby declares that the foregoing procedures are established as a means of enforcement of the terms and conditions of its ordinances, rules and regulations, and not as a penalty.

12.14 Cumulative Remedies

All remedies set forth herein for the collection and enforcement of charges, rates, and penalties are cumulative and may be pursued alternatively or consecutively.

12.15 Appeals Procedure

Any person aggrieved by a ruling under or interpretation of the provisions of the District Code may submit a written appeal to the General Manager of the District 30 days of the date that the applicant is advised by the member entity or by the Agency of any action. The appeal shall set forth the events and circumstances leading to the appeal, the nature of the ruling or interpretation from which relief is sought, the nature of the impact of the ruling on appellants' property or business, together with any other reason for the appeal.

Should the aggrieved person not be satisfied with the determination of the General Manager, he/she shall ask to appeal the decision of the General Manager to the Board of Directors within 30 days of the date that the General Manager's determination is made. The General Manager shall then submit such appeal together with his/her recommendations to the Board of Directors at the next regularly scheduled meeting, which shall forthwith study the matter, hear testimony and reasons for such appeal, and prepare a written decision summarizing the findings and ruling of the Board which shall be sent to the appellant within 30 days following that meeting.

After a decision is reached by the Board of Directors which results in the granting, denying, or revocation of a permit, the appellant must bring any legal action against the District within the time limits set forth in Section 1094.6 of the Code of Civil Procedure which provisions are applicable to the District.

12.16 Re-connection to the District's Sanitary Sewer System

After disconnection of sanitary sewer service to any premises for any cause, the re-connection of such premises shall be subject to all provisions of the District Code and/or Ordinances applicable thereto.

12.17 District Code Authority

To the extent that the terms and provisions of this ordinance may be inconsistent or in conflict with the terms or conditions of any prior District ordinances, resolutions, rules or regulations governing the same subject, the terms of this ordinance shall prevail with respect to the subject matter thereof, and such inconsistent and conflicting provisions of prior ordinances, resolutions, rules or regulations are hereby repealed.

If any provision of this ordinance or applications thereof to any person or circumstances is held invalid, no other provision of this ordinance shall be affected thereby.

APPENDIX A-1
INSPECTION CHARGES AND SPECIAL FEES FOR SEWER SYSTEM

PAYMENT FOR INFRASTRUCTURE INSTALLATION

Payment of $250.00 shall be made prior to acceptance of improvement plans. All other District incurred costs for plan review, inspections, testing of materials, processing of design revisions, calculation of connection fees, user fees, assessments, related construction activities, automobile mileage, and all overhead and indirect costs will be billed to developer at cost.

Sewer Main Tapping Deposit $500.00
(Only applicable for non-existing services)

Other .....Determined by the General Manager*

INSPECTION CHARGES

Residential (free first time, re-inspection cost).....$50.00
Other ..... At Cost

SPECIAL FEES AND CHARGES

Cancellation $25.00
Annexation Fee per acre .....Determined by the General Manager*
Annexation Fee sub-division .....Determined by the General Manager*
Other .....Determined by the General Manager*

* Based in part upon project/plan review and District engineers determination of mitigation for annexation or development's impact on the District.

APPENDIX A-2
NORTHSTAR COMMUNITY SERVICES DISTRICT
SEWER FEE STRUCTURE

TYPE OF CONNECTION	UNIT OF MEASURE	CONNECTION FEE PER UNIT					FEE TYPE	MONTHLY USER FEE CHARGE PERUNIT OF MEASURE (a)				
		2011/12	2012/13	2013/14	2014/15	2015/16		2011/12	2012/13	2013/14	2014/15	2015/16
Residential	Living Unit	$1,119.24	$1,158.42	$1,198.96	$1,240.93	$1,284.36	OPERATIONS	$55.70	$57.65	$59.67	$61.76	$63.92
							CAPITAL	$3.23	$6.47	$9.70	$12.94	$16.17
							TOTAL	$58.94	$64.12	$69.37	$74.70	$80.09
Hotel (without kitchen)	Living Unit	$301.95	$312.51	$323.45	$334.77	$346.49	OPERATIONS	$32.77	$33.92	$35.11	$36.33	$37.61
							CAPITAL	$1.90	$3.81	$5.71	$7.61	$9.51
							TOTAL	$34.67	$37.72	$40.81	$43.95	$47.12
Hotel (with kitchen)	Living Unit	$389.36	$402.98	$417.09	$431.69	$446.80	OPERATIONS	$40.36	$41.77	$43.23	$44.74	$46.31
							CAPITAL	$2.34	$4.69	$7.03	$9.37	$11.71
							TOTAL	$42.70	$46.45	$50.26	$54.12	$58.02
Campsite (with sewer)	# of Sites	$278.11	$287.85	$297.92	$308.35	$319.14	OPERATIONS	$20.11	$20.82	$21.54	$22.30	$23.08
							CAPITAL	$1.17	$2.34	$3.50	$4.67	$5.84
							TOTAL	$21.28	$23.15	$25.05	$26.97	$28.92
Campsite (without sewer)	# of Sites	$211.14	$218.53	$226.17	$234.09	$242.28	OPERATIONS	$16.85	$17.44	$18.05	$18.68	$19.33
							CAPITAL	$0.98	$1.96	$2.93	$3.91	$4.89
							TOTAL	$17.83	$19.39	$20.98	$22.59	$24.22
Other Businesses, Ski Clubs, Snack Bars, Service Stations, etc.	# of Plumbing Fixture Units	$88.54	$91.64	$94.85	$98.17	$101.60	OPERATIONS	$5.80	$6.00	$6.21	$6.43	$6.65
							CAPITAL	$0.34	$0.67	$1.01	$1.35	$1.68
							TOTAL	$6.13	$6.67	$7.22	$7.77	$8.33
Markets/Grocery	# of Plumbing Fixture Units	$88.54	$91.64	$94.85	$98.17	$101.60	OPERATIONS	$11.80	$12.21	$12.64	$13.08	$13.54
							CAPITAL	$0.68	$1.37	$2.05	$2.74	$3.42
							TOTAL	$12.48	$13.58	$14.69	$15.82	$16.96
Laundries	# of 10 lb machines	$357.57	$370.09	$383.04	$396.45	$410.32	OPERATIONS	$21.74	$22.51	$23.29	$24.11	$24.95
							CAPITAL	$1.26	$2.52	$3.79	$5.05	$6.31
							TOTAL	$23.01	$25.03	$27.08	$29.16	$31.26
	# of 20-50 lb machines	$715.14	$740.17	$766.07	$792.88	$820.63	OPERATIONS	$21.74	$22.51	$23.29	$24.11	$24.95
							CAPITAL	$1.26	$2.52	$3.79	$5.05	$6.31
							TOTAL	$23.01	$25.03	$27.08	$29.16	$31.26
Restaurants & Bars	# of Inside Seats	$85.14	$88.12	$91.20	$94.40	$97.70	OPERATIONS	$4.50	$4.66	$4.82	$4.99	$5.16
							CAPITAL	$0.26	$0.52	$0.78	$1.05	$1.31
							TOTAL	$4.76	$5.18	$5.60	$6.03	$6.47
	# of Outside Seats	$45.41	$46.99	$48.64	$50.34	$52.10	OPERATIONS	$1.80	$1.86	$1.93	$2.00	$2.07
							CAPITAL	$0.10	$0.21	$0.31	$0.42	$0.52
							TOTAL	$1.90	$2.07	$2.24	$2.41	$2.59
	# of Banquet Seats	$26.11	$27.03	$27.97	$28.95	$29.97	OPERATIONS	$1.16	$1.20	$1.25	$1.29	$1.34
							CAPITAL	$0.07	$0.14	$0.20	$0.27	$0.34
							TOTAL	$1.23	$1.34	$1.45	$1.56	$1.67
Theaters/Churches	# of Seats	$15.89	$16.45	$17.02	$17.62	$18.24	OPERATIONS	$0.55	$0.57	$0.59	$0.61	$0.63
							CAPITAL	$0.03	$0.06	$0.10	$0.13	$0.16
							TOTAL	$0.58	$0.64	$0.69	$0.74	$0.79
Car Wash	# of Bays	$1,119.24	$1,158.42	$1,198.96	$1,240.93	$1,284.36	OPERATIONS	$35.28	$36.51	$37.79	$39.12	$40.48
							CAPITAL	$2.05	$4.10	$6.14	$8.19	$10.24
							TOTAL	$37.33	$40.61	$43.94	$47.31	$50.73
Barber Shops	# of Service chairs	$313.30	$324.26	$335.61	$347.36	$359.52	OPERATIONS	$14.81	$15.33	$15.86	$16.42	$16.99
							CAPITAL	$0.86	$1.72	$2.58	$3.44	$4.30
							TOTAL	$15.67	$17.05	$18.44	$19.86	$21.29
Beauty Salons	# of Service chairs	$313.30	$324.26	$335.61	$347.36	$359.52	OPERATIONS	$20.34	$21.05	$21.79	$22.55	$23.34
							CAPITAL	$1.18	$2.36	$3.54	$4.72	$5.90
							TOTAL	$21.52	$23.41	$25.33	$27.27	$29.24
Temporary Discharge	Per 1,000 gallons	(b)	(b)	(b)	(b)	(b)	OPERATIONS	$3.46	$3.58	$3.70	$3.83	$3.97
							CAPITAL	$0.20	$0.40	$0.60	$0.80	$1.00
							TOTAL	$3.66	$3.98	$4.30	$4.63	$4.97
Pools and Spas	Equivalent Dwelling Units (EDU)	$1,119.24	$1,158.42	$1,198.96	$1,240.93	$1,284.36	OPERATIONS	$55.70	$57.65	$59.67	$61.76	$63.92
							CAPITAL	$3.23	$6.47	$9.70	$12.94	$16.17
							TOTAL	$58.94	$64.12	$69.37	$74.70	$80.09
Other Commercial (b)	(b)	(b)	(b)	(b)	(b)	(b)	OPERATIONS	(b)	(b)	(b)	(b)	(b)
							CAPITAL					
							TOTAL					

(a) Connection fees and first year's User Fees shall be due upon the earlier of the District's approval of Building Improvement Plans, initial use of the system, or as otherwise ordered by the Board of Directors of the District. First year's User Fees will be prorated to the end of the fiscal year.

(b) Determined by General Manager

APPENDIX A-3
PLUMBING FIXTURE UNIT EQUIVALENTS

FIXTURE	PRIVATE	PUBLIC
Bathtub (with or without shower)	2	4
Dental Unit or Cuspidor	-	1
Drinking Fountain (each head)	-	1
Kitchen Sink	2	4
Laundry Tub (each pair faucets)	2	4
Clothes washer	2	4
Lavatory	1	2
Shower (each head)	2	4
Sink (Bar)	1	2
Sink or Dishwasher	2	4
Sink (Flushing rim, Clinic)	-	10
Sink (Wash up, each set of faucets)	-	2
Sink (Wash up, circular spray)	-	4
Sink (with garbage disposal)	3	4
Sink (Use by Medical Professional only)	1	-
Urinal	3	5
Toilet	3	5
Floor Drain	1	2
Hot Tub	2	4

APPENDIX A-4
MULTIPLE USE FORMULA TABLE

When restrooms are shared by both restaurant patrons and other business patrons (as they are in some major ski areas, for example), and where restrooms are not located in the restaurant and are not provided solely for the use of restaurant patrons, the following table will be used to determine the number of business fixture units to be applied as a credit toward the actual number of business fixture units for the use of both restaurant and other business patrons.

# of Restaurant Seats	# of Fixture Units
0-50	12
51-100	15
101-200	21
201-300	27
301-400	33
401-500	39
501-600	45
601-700	51
701-800	57
801-900	63
901-1000	69
1001-1100	75

The multiple use policy applies to both connection fees and semi-annual user fee billing. Existing accounts will retain any excess connection fee allocation resulting from the application of the multiple use credit.

In the table above, an eating establishment of each incremental seat count is eligible for the corresponding number of business fixture units to be credited toward the actual number of business fixture units counted. However, the above listed table also represents the minimum business fixture units for a restaurant of each incremental seat count. In the event that a limited number of toilets and lavatories are provided and the application of a multiple use credit leaves fewer business fixture units than the minimum, the multiple use credit is reduced so that the minimum number of business fixture units remain. Example: A restaurant with seating of less than 100 would be eligible for a multiple use credit of 15 business fixture units. If after applying the multiple use credit toward the actual business fixture unit count, the remaining business fixture units fall below 15, then the credit applied would be reduced so that the required number of business fixture units remain.

APPENDIX A-5
MATERIALS FOR CONSTRUCTION OF SANITARY SEWERS

GRAVITY INSTALLATIONS

Type of Pipe	Class of Pipe	Minimum Cover Non-Traffic	Minimum Cover Traffic	Maximum Cover
PVC	SDR 35	36"	48"	12'
PVC	DR 25	36"	48"	16'
PVC	DR 18	36"	36"	16'
PVC	DR 14	36"	36"	-
PVC	CL 200 (C900)	36"	36"	-
DI	CL 51 or greater	36"	36"	-

PRESSURE INSTALLATIONS

Force main pipelines shall be designed and approved on a case by case basis. Considerations shall include; design static and dynamic pressures, pressure cycling, alignments, and any other condition considered unique to the project.

Type of Pipe	Minimum Class of Pipe	Minimum Cover Non-Traffic	Minimum Cover Traffic
PVC	CL 150	30"	36"
DI	CL 51	30"	36"

TRANSITION JOINTS AND FLEXIBLE COUPLINGS

Transition joints between different physical materials shall be Bond Seal, Fernco, Indiana Seal, or other approved flexible coupling.

NOTE: Any other pipe used for construction of sanitary sewer facilities must have written approval from the District.

APPENDIX A-6
DISTRICT STANDARD SPECIFICATIONS

A-6.1 Scope

The District Standard Specifications constitute a compilation of standards for sewer system design, development, repair and construction. The purpose of these standards is to establish quality guidelines for sewer system design and construction within the District. These standards shall apply to all sanitary sewer facilities constructed within the boundaries of the District.

The owner or their agent shall, at all times, keep themselves fully informed of, and shall observe and comply with all applicable Federal and State laws; Placer County, and special district ordinances, resolutions, rules, and regulations which in any manner effect the design construction or operation of the sanitary sewer system and its appurtenances.

All developments/projects are handled on a first come, first serve basis. There are specific administrative requirements for developments and projects that involve the installation of sewer facilities. The District has produced a "Development Guidelines" packet to assist you. The owner or their agent shall be required to submit the necessary application and associated forms to the District to facilitate this procedure. "Development Guidelines" packets may be obtained at the District office.

A-6.2 Design Standards

Design Flow: An average flow of 100 gallons per person per day shall be used for design purposes. District flow data indicates an average occupancy rate of 3.2 persons per residence. In larger sanitary sewer systems, consideration should be given to concentration of peak flows. All sewers shall be designed with sufficient capacity to handle peak flows with pipes running full but without surcharging the pipeline.

Population densities will vary, being controlled largely by the number of residential lots per acre and other land uses. All design population estimates including equivalent population for schools, commercial, and industrial uses, shall be indicated on the set of improvement plans submitted for approval.

Gradient: Sanitary sewer grades shall be designed to provide a minimum velocity of 2 feet per second when flowing full. The following table indicates the slopes, which will provide that velocity, and these shall be used as the standard for design. Minimum acceptable slopes are also shown. These minimum slopes shall be used only when topographic features preclude standard slopes and require written approval from the General Manager for their use.

SLOPE IN FEET/FOOT

Diameter	2 feet/Second Flow	Minimum Acceptable
4"	0.0208 (1/4" per foot)	0.0208 (1/4" per foot)
6"	0.0050	0.0035
8"	0.0035	0.0025
10"	0.0025	0.0015
12"	0.0020	0.0008
18"	0.0012	0.0006

Whenever a change in the size of the pipe, or an angle of 20 degrees or greater in alignment occurs, the flowline of the pipe flowing into manholes shall be a minimum of 0.17 feet above the flowline of the pipe flowing from the manhole, or an amount necessary to match the inside crowns of the pipe, whichever is greater.

Location and Alignment of Sanitary Sewer Facilities: All sanitary sewer facilities to be dedicated to the District shall be constructed and installed within rights-of-way dedicated for public streets or roads, or within sanitary sewer easements, unless such construction or installation is determined to be impractical by the General Manager.

Whenever it is essential that curved alignment be used for sanitary sewer pipelines, a radius of not less than 200 feet will be used, and shall be greater whenever possible. No sanitary sewer facility, including building laterals, shall be located within 50 feet of a water well. Any sanitary sewer pipeline located between 50 feet and 100 feet of a water well shall be constructed of ductile iron with rubber type ring joints.

Location of Sanitary Sewer Facilities with Respect to Water Pipelines: Sanitary sewer main pipelines running parallel to water mains must maintain at least a 10 foot horizontal separation. Sanitary sewer main pipelines crossing water mains shall maintain at least 1 foot vertical separation and shall meet Uniform Plumbing Code requirements for pipeline types, joint locations, and encasement or sleeving.

The location of building laterals with respect to water service connections running parallel in a common trench shall meet the requirements of the Uniform Plumbing Code, Section 1108 that states in part:

- The bottom of the water pipe, at all points, shall be at least 12 inches above the top of the sewer pipeline, and

- The water pipe shall be placed on a solid shelf excavated at one side of the common trench with a minimum clear horizontal distance of at least 12 inches from the sewer.

The spring line of building lateral crossing water pipes shall be at least 12 inches below the bottom of the water pipe and shall meet Uniform Plumbing Code requirements for pipeline types, joint locations, and encasement or sleeving.

Pipe Cover: The depth of any sanitary sewer main pipeline or lateral shall be adequate to obtain a minimum cover of 30 inches. Any exception to this rule must have prior approval of the General Manager.

Manhole Spacing: Normal maximum spacing for manholes shall be 400 feet. Where the location of two manholes are determined by intersecting lines, the distances between intervening manholes shall be approximately equal. Sewers on curved alignment with a radius of less than 400 feet shall have manholes spaced at a maximum of 300 feet and adjusted down to fit the individual case. Curved alignment shall not be used unless specifically permitted by the General Manager.

The maximum spacing of manholes on outfall sewer pipelines of 12 to 24 inches shall be 500 feet.

End of Line Cleanouts: An end of line cleanout may be used in lieu of a manhole for any stub pipeline with a length of 300 feet or less. Any pipeline more than 300 feet in length shall terminate with a manhole. Sewer pipelines less than 200 feet in length which are installed for future extension shall have an end of line cleanout at the end if there are any building laterals attached to it. Sewer pipelines longer than 200 feet shall terminate in a manhole with a stub for future extension. See Standard Drawings, End of Line Cleanout Assembly, Figure 5, page 147.

Sanitary Sewer Service Connections: In all new subdivision work, the sewer service lateral from the sewer main pipeline to the property line shall be installed at the time the sewer main pipeline is constructed.

Whenever a sewer main pipeline is installed which will serve existing houses or other buildings, a sanitary sewer service connection shall be constructed for each such existing house or building. Each sanitary sewer service connection shall be referenced to the plan stationing.

A plan and profile of any sanitary sewer service connection, other than for a single family or two family dwelling, shall be submitted in accordance with the District Code.

Sanitary sewer service laterals may be connected to outfall sewer pipelines at manhole locations only, and only when the depth of the outfall sewer pipeline does not exceed 12 feet from finished grade.

Wastewater Lift Stations and Force Mains: Whenever the design of a sanitary sewer system includes the necessity of a wastewater lift station and a force main, the following data shall be submitted for tentative approval prior to construction:

Pumps

- The design flows computations for the pumping system that includes either the pumps or ejectors, and the force main.

- The types, size, and model of pump to be used. Pumps shall be similar in design and manufacture to existing District equipment if possible. Pump curves shall be supplied with all design parameters and system curves marked.

Site

- A plot plan showing the dimensions of the site and its location with respect to homes or other structures. Minimum distance from a lift station to any residence shall be 50 feet except with advance approval of the General Manager for each specific case.

- Section and plan views of the wet well and all other structures to be constructed.

Electrical and Telemetry

- The design computations for electrical loads for pumps and all other equipment.

- Control equipment electrical diagrams. Control equipment shall be equal to design and manufacture of currently used control equipment in the District if possible.

- Telemetry electrical diagrams. Telemetry equipment shall be equal to design and manufacture of currently used telemetry equipment. All telemetry equipment shall be compatible with the District's most current telemetry system whether that system is in use or being implemented.

- Electrical standby system design. Electrical system shall incorporate a standby power system consisting of a safety switch and generator plug combination. Larger stations shall also include a generator and transfer switch combination depending on pumping station size, design flow, and type. Designation shall be by the General Manager

Force Main

- The size and type of pipe to be used.

- The size and type of fittings to be used.

- The tentative alignment of pipe and locations of bypass ports if required. Bypass ports shall incorporate valve and fitting types that match current District bypass port design and usage (see Standard Drawings, Bypass Port (Single), Figure 22, page 181, and Bypass Port (Double), Figure 23, page 183).

- A single bypass port shall be located at the pump station. Additional double bypass ports shall be located at accessible locations with a maximum distance between ports of 1,500 feet.

The force main shall be marked with tracer wire. Tracer wire shall consist of 10 AWG minimum with THW, THHW, TW, THWN, or other approved wet location insulation. Wire shall be attached to the top of the force main with tape at maximum 5 foot intervals. Wire shall be continuous between vaults and other access points where excess wire shall be spooled to provide connection points. Splices shall incorporate approved underground splice kits. Each run of tracer wire shall be tested for continuity following backfill.

Mobile Home and Recreational Vehicle Parks: Whenever the design of a sanitary sewer system involves mobile home and/or recreational vehicle parks, additional requirements to those in the Uniform Plumbing Code, may be necessary due to the environment (see Standard Drawings, Utility Pad Installation, Figure 11, page 159).

A-6.3 Criteria for Improvement Plans

Format of Improvement Plans: Improvement plans for sanitary sewer improvements shall be prepared on standard FAS sheets (24 x 36 inches). Scales are to be as follows except in unusually rough terrain where the scales may be variable. Horizontal 1 inch = 100 feet or 1 inch = 40 feet, Vertical 1 inch = 10 feet or 1 inch = 5 feet.

On subdivision or improvement plans exceeding three sheets in the set, a title sheet shall be prepared showing the entire subdivision or project, Assessment District, Streets Names, Section and/or grant lines and corners; and the location within the County. The owner or their agent shall provide a list of symbols and abbreviations either on the title sheet or in the specifications.

The title sheet also shall include the Engineer's name, and license number and signature; the date and scale of the drawing; and the blocks for the necessary approval of the General Manager and other officials.

Each set of improvement plans submitted to this office shall have a suitable index map showing the overall area to be developed and the sheet index referring to the construction improvement plans.

Each sheet within the set of drawings shall have an approved title block showing the sheet title, number, date, scale and the Engineer's name and license number; and the name of the Subdivision or Assessment District.

Approval blocks shall appear on the title sheet and all detail sheets that have details to be approved by the District. There shall be one block for "Approved" to be signed by the General Manager. The block shall have space to be dated.

Example:

These improvement plans have been reviewed and approved for construction of the sanitary sewer.

Approved: NORTHSTAR COMMUNITY SERVICES DISTRICT

_____ _____

General Manager **Date**

Special notes shall be clearly indicated, and it shall be conspicuously noted on the improvement plans that all construction work and installations shall conform to the District Code and that all work is subject to the approval of the General Manager. The following phrase shall be noted on the improvement plans:

"All sewerage works to meet or exceed Northstar Community Services District Code requirements"

Plan and Profile Sheet Requirements: The improvement plans shall clearly show the existing and proposed alignments and profiles of the sanitary sewer(s) in relation to road ways, drainage ditches, storm drains or any other underground utility. The improvement plans shall show all areas of conflict and minimum clearances between sanitary sewer and water facilities. Ground surface profiles must be shown.

The stationing on plan and profile shall read from left to right. Insofar as practical the improvement plans shall be so arranged that the north arrow is either pointed toward the top or to the right edge of the sheet.

Detail Sheet Requirements: Detail sheets of all sanitary sewer facilities (manholes, cleanouts, traps, interceptors, wet wells, pump stations, etc.) shall be included in the improvement plans. Typical trench sections shall also be included in the improvement plans.

Cross Sections shall be included in the improvement plans, where determined necessary by the General Manager.

Inclusion of Datum and Legal Boundaries: The bench marks and datum shall be clearly pointed out on the improvement plans both as to location, description and elevation. The datum shall be U.S. C & G.S., 1927 North American Datum.

It is desired and encouraged that proposed improvements be tied into the California Coordinate System if monumented coordinate points are available within a reasonable distance of said improvement.

Right-of-way lines, the boundaries of lots fronting on the street, drainage easements, utility easements, section lines and corners, land grant lines, and temporary construction easements both existing and proposed shall be shown on the improvement plans. All right-of-way and easement lines shall be properly dimensioned.

Topographic Features: All pertinent topographic features shall be shown such as street lines, curbs, sidewalks, shoulders, existing structures, houses, trees and other foliage drainage ditches, utility poles, fire hydrants, and all other features of the area which may affect the design requirements for the project.

Existing and proposed substructure location and size; i.e., storm and sanitary sewer pipelines; water and gas pipelines; electrical, telephone, cable T.V. conduits; and any other buried utilities which may affect the design requirements of the project, shall be noted.

A-6.4 As Built Drawings/Electronic Data

The owner or their agent shall have reproducible improvement plans (mylar sheets) prepared with all approved construction changes or final dimensions delineated on the improvement plans. All improvement plans produced on computer with the aid of computer design software shall be saved on 3 1/2 inch HD disk(s) or CD. A single set of reproducible improvement plans ***and*** a computer disk or CD containing the same data as the reproducible improvement plans shall be presented to the District.

The set of "as built" improvement plans shall have the words "as built" in one inch high letters on each sheet.

Dimensions and locations shall be sufficient for locating the constructed improvements. Dual swing ties are required for all stub outs and cleanout risers. Permanent objects such as property corners, power poles, water boxes, structures, etc. shall be used for swing ties. The General Manager shall approve the "as built" improvement plans prior to any District acceptance of the completed system.

A-6.5 Construction Administration

Installation of new sanitary sewer facilities or alternation to existing sewer facilities requires inspection during construction by an authorized representative of the District. Each phase of construction must be inspected and approved prior to proceeding to subsequent phases.

Any improvements constructed without inspection as provided herein or construction contrary to the orders or instructions of the authorized representative of the District will be deemed as not complying with these specifications and will not be accepted by the District.

Adequate notice shall be given the District prior to the beginning of construction operations in constructing sanitary sewer facilities so that arrangements may be made by the District to provide adequate inspection.

Conformity with Improvement Plans and Allowable Deviation: Deviations from the approved improvement plans, as may be required by field conditions during construction, shall require written approval by the General Manager.

Alteration of Improvement Plans: All authorized alterations affecting the requirements and information given on the approved improvement plans shall be in writing. No changes shall be made of any plan or drawing after the same has been approved by the District except by direction of the General Manager.

Working drawings or plans for any facility not included in the improvement plans furnished by the owner or their agent shall be approved by the District prior to commencement of any work involving such facility.

Authority of the District Inspector: The periodic inspection performed by the various inspectors employed by the District shall not constitute approval or ratification of work improperly completed by the contractor.

Final Inspection: Upon completion of any improvements which are constructed under and in conformance with this Code, and prior to requesting final inspection, the area shall be thoroughly cleaned of all rubbish, excess material and equipment; and all portions of the work shall be left in a neat and orderly condition satisfactory to the District. The final inspections may include: Ball and Flush of the pipelines, Mandrel Tests, Television Inspection, Air, Water, or Vacuum tests and/or any other tests deemed necessary by the District.

The General Manager will require copies of all Grant Deeds for easements given to the District as a part of sanitary sewer facility installation. Field verification of such easements may be required.

After receiving the request for final inspection, the District will inspect the work. The contractor and/or owner will be notified in writing as to any particular defects or deficiencies to be remedied. The contractor shall proceed to correct any such defects or deficiencies at the earliest possible date. At such time as the work has been completed, a second inspection shall be made by the District to determine if the previously mentioned defects have been repaired, altered and completed in accordance with this Code. At such time as the General Manager approves and accepts the work for the District, the contractor and/or owner may request in writing, for Board approval. The District Board of Directors will notify the owner in writing as to the date of final approval and acceptance.

A-6.6 Legal Relations and Responsibility

District Liability: Neither the District, the General Manager or any other officer or agent of the District shall be personally responsible for any liability arising under any contract between the developer and any contractor or subcontractor.

District Responsibility: The District shall <u>not</u> be held responsible for the care or protection of any material or parts of the work prior to final acceptance.

The District and its representatives, in establishing this Code, and in performing any services, or making any examinations, tests, or inspections hereunder, shall not be liable in any way to any person by reason of any injury, damage, costs, or expenses sustained or caused as a result thereof; nor shall any such services, examinations, tests or inspections constitute any warranty in reference thereto on the part of the District or its authorized representatives, and the relationship of the District to the contractor, or developer shall be solely that of independent contract and not joint venture, partnership, or otherwise.

That the developer shall at its sole cost and expense hold the District harmless from and defend the District against all claims, charges, demands or causes of action arising out of or in any manner whatever connected with any act, activity or work made, completed or undertaken hereunder by the developer, its contractor, engineer, or agents, or employees thereof.

Nothing herein contained shall be deemed to modify, limit, or restrict the rights, duties, and obligations given or granted to said District by the laws of the State of California now in effect or hereafter from time to time adopted, including without limitations the right to amend or modify this Code at any time, and if any part of this Code be determined to be unconstitutional, such determination shall not render ineffective or invalid the remaining provisions therein contained and set forth.

Responsibility for Damage: The District, the General Manager and all officers, agents and employees of the District shall not be answerable or accountable in any manner thereof; or for any of the materials or other things used or employed in performing the work; or for injury to any person or persons either workmen or the public, for damage to property from any cause which might have been prevented by the developer or anyone employed by him against all of which injuries or damages to persons and property the developer having control over such work, must properly guard.

The developer shall be responsible for any liability imposed by law of any damage to any persons or property resulting from defects or obstructions or from any cause whatsoever during the progress of the work or at any time before its completion and final acceptance.

The developer shall indemnify and save harmless the District, the General Manager and all officers, agents and employees of the District from all suits or actions of every name, kind, description brought for or on account of any injuries or damages received or sustained by any person or persons by or from the developer, his/her agents in the construction of the work or by or in consequence of any negligence in guarding the same, any improper materials used in its construction or by or on account of any act or omission of the developer or his/her agents.

Developer's Responsibility for Work: Except as provided above, until the formal acceptance of the work by the District, the developer or his/her contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution, or from the non execution of the work. The developer or his/her contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof.

All public or private facilities, including but not limited to gravel surfacing at existing canals, structures, telephone cables, roadways, curbs, gutters, parking lots, private drives, levees and embankments for creeks, ponds and reservoirs disturbed during construction of the work shall be repaired and/or replaced by the contractor to match facilities existing prior to construction. In addition, the contractor shall be responsible for any settlement damage to such facilities or adjoining areas for a period of one year after acceptance of such required facilities.

Public Convenience: It shall be the owner or their agent's responsibility to provide for the passage of public traffic through the work during construction. When work is to be performed in existing traveled streets or roads, trench spoil shall be placed so as to offer the least possible obstruction and inconvenience to public traffic. The owner or their agent shall have under construction no greater length or amount of work than can be prosecuted properly with due regard to the rights of the public.

All public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible. Bridges of approved construction shall be installed and maintained across trenches at all crosswalks, intersections and such other points where, in the opinion of the General Manager, traffic conditions make it advisable.

Spillage resulting from hauling operations along or across any publicly traveled way shall be removed immediately by the owner or their agent at their expense.

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property.

Convenient access to driveways, houses and buildings along the line of the work shall be maintained and temporary approaches to crossings or intersecting highways shall be provided and kept in good condition. When the abutting owner's access across the right-of-way line is to be eliminated, or to be replaced under the Contract by other access facilities, the existing access shall not be closed until the replacement access facilities are usable.

All fences, mailboxes, signs, etc. subject to interference shall be maintained by the owner or their agent until the work is completed, at which time they shall be restored to the condition existing prior to starting the work, or as shown on the improvement plans or specified by the General Manager.

Water or dust palliative shall be applied in accordance with Northern Sierra Air Quality Management District Rule 226.

In order to expedite the passage of public traffic through or around the work and where ordered by the District, the owner or their agent shall install signs, lights, flares, barricades, and other facilities for the sole convenience and direction of public traffic. Also, where directed by the District, the owner or their agent shall provide and station competent flagpersons whose sole duties shall consist of directing the movement of public traffic through or around the work.

Flagpersons and guards, while assigned to traffic control, shall perform their duties and shall be provided with the necessary equipment in accordance with the current "Instructions to Flagmen" of the State of California Department of Transportation. The equipment shall be furnished and kept clean and in good repair by the owner or their agent at their expense.

Safety: The owner or their agent shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to all applicable Federal, State, and local laws, ordinances, and codes, and to the rules and regulations established by the California Occupational Health and Safety Administration, and to other rules of law applicable to the work.

The services of the District in conducting construction review of the owner or their agent's performance is not intended to include review of the adequacy of the contractor's work methods, equipment, bracing or scaffolding or safety measures, in, on, or near the construction site, and shall not be construed as supervision of the actual construction nor make the District responsible for providing a safe place for the performance of work by the owner or their agent, subcontractors, or suppliers; or for access, visits, use work, travel or occupancy by any person.

The owner or their agent shall carefully instruct all personnel working in potentially hazardous work areas as to potential dangers and shall provide such necessary safety equipment and instruction as is necessary to prevent injury to personnel and damage to property. Special care shall be exercised relative to electrical work, work involving excavation and in pump sump work.

All work and materials shall be in strict accordance with all applicable State, Federal and local laws, rules, regulations, and codes.

All electrical equipment furnished shall be grounded and provided with guards and protection as required by safety codes. Where vapor-tight or explosion-proof electrical installation is required by law, this shall be provided.

Shoring and Trench Safety Plan - Attention is directed to Section 832 of the Civil Code of the State of California relating to lateral and subjacent support, and the owner or their agent shall comply with this law.

In accordance with Section 6705 of the State Labor Code, the owner or their agent shall have provisions for worker protection from caving ground. Trench safety working drawings shall show the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such working drawings vary from the shoring system standards established by the Construction Safety Orders of the California Occupational Health and Safety Administration or the Federal safety standards of the Department of Health, Education and Welfare, improvement plans shall be prepared by a registered civil or structural engineer. In no event shall the owner or their agent use a shoring, sloping, or protective system less effective than that required by said Construction Safety Orders, or less effective than that required by said Federal Safety Standards.

Protection of Person and Property: The owner or their agent shall take whatever precautions are necessary to prevent damage to all existing improvements, including above ground and underground utilities, trees, shrubbery that is not specifically shown to be removed, fences, signs, mailboxes, survey markers and monuments, buildings, structures, the District's property, adjacent

property, and any other improvements or facilities within or adjacent to the work. If such improvements or property are injured or damaged by reason of the owner or their agent's operations, they shall be replaced or restored, at the owner or their agent's expense, to a condition at least as good as the condition they were in prior to the start of the owner or their agent's operations.

The owner or their agent shall adopt all practical means to minimize interference to traffic and public inconvenience, discomfort or damage. The owner or their agent shall protect against injury any pipes, conduits or other structures, crossing the trenching or encountered in the work and shall be responsible for any injury done to such pipes or structures, or damage to property resulting therefrom. They shall support or replace any such structures without delay and without any additional compensation to the entire satisfaction of the District. All obstructions to traffic shall be guarded by barriers illuminated at night. The owner or their agent shall be responsible for all damage to persons and property directly or indirectly caused by their operations and, under all circumstances, they must comply with the laws and regulations of the County and the State of California relative to safety of persons and property and the interruption of traffic and the convenience of the public within the respective jurisdictions.

The owner or their agent is cautioned that they must replace all improvements in rights-of-way and within the public streets to a condition that shall comply with all general paving requirements and special requirements of Nevada County, Placer County, and the State of California Department of Transportation.

Type and time of construction required at any road subject to interference by Contract work will be determined by those authorities responsible for maintenance of said road. It shall be the responsibility of the owner or their agent to determine the nature and extent of all such requirements, including provision of temporary detours as required; however, the construction right-of-way obtained by the District at affected roadways will be adequate for provision of all required detours. As required at any road crossing, the owner or their agent shall provide all necessary flagpersons, guardrails, barricades, signals, warning signs and lighting to provide for the safety of existing roads and detours. Immediately after the need for temporary detours ceases, or when directed, the owner or their agent shall remove such detours and perform all necessary cleanup work, including replacement of fences, and removal of pavement. Included shall be all necessary replacement of existing roadway appurtenances, grading work, soil stabilization and dust control measures, as required and directed. The cost of all work specified under this Section shall be borne by the owner or their agent.

If required by law, the owner or their agent shall shore up, brace, underpin, and protect as may be necessary, all foundations and other parts of all existing structures adjacent to and adjoining the site of the project, which are in any way affected by the excavations or other operations connected with the completing of the work under his/her contracts.

The owner or their agent shall examine all bridges, culverts, and other structures over which they will move their materials and equipment, and before using them, they shall properly strengthen such structures where necessary. The owner or their agent shall be responsible for any and all injury or damage to such structures caused by reason of their operations.

A-6.7 Guarantee and Delivery of Title

General Guarantee: The developer/owners shall supply the District with a 1 year guarantee for all materials and workmanship which is incorporated into the system. To assure the District this will be completed, the developer/owners shall supply this guarantee as requested by the District in either of the following two forms. Failure to provide this maintenance agreement or maintenance bond will cause the District to withhold final approval.

- Maintenance Bond - The developer/owners shall supply a maintenance bond for 10 percent of the contract amount for the sanitary sewer facilities as specified in the District Development Guidelines.

- Maintenance Agreement - The developer/owners shall supply a maintenance agreement, depositing 10 percent of the contract amount for sewer facilities, in cash securities as specified in the District Development Guidelines.

If after a period of 48 hours has elapsed after the developer/owner and/or the bonding company have received written notice by certified mail that a condition of failure exists and no correction has been made, the bonds will be called or the securities withdrawn, and the work will be performed by the District and charged against them.

The developer shall be responsible for the full expense incidental to making good any and all of the above guarantees, the performance of which shall be binding upon the developer and his/her sureties.

Delivery of Title: Upon the completion and acceptance of the installations of the sewer facilities hereunder, the same shall be transferred to the District, without cost, and the owner shall provide and deliver to the District the following:

- Duly executed warranty bill of sale transferring marketable title to the District of all such sewer works, installations and appurtenances, title thereto to be free and clear of all liens and encumbrances and;

- Duly executed easements wherein said facilities and installations are located in favor of the District; which said bill of sale and easement shall be in form acceptable to the District.

A-6.8 Materials and Equipment

All materials, hardware, equipment, fittings and other miscellaneous items to be incorporated in the District sanitary sewer system shall conform to the following specifications. No changes from the specified products shall be made without written approval from the General Manager.

Samples and Tests: The General Manager may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance stating that the materials involved comply in all respects with the requirements of the specifications. The manufacturer of the material or the manufacturer of assembled materials shall sign the certificate. A Certificate of Compliance must be furnished with each lot of material delivered to the work and the lot so certified must be clearly identified in the certificate.

All materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the contractor of responsibility of incorporating material in the work which conforms to the requirements of the improvement plans and specifications and any such material not conforming to such requirements will be subject to rejection whether in place or not.

The District reserves the right to refuse to permit the use of material on the basis of a Certificate of Compliance.

At the option of the District the District shall approve the source of supply of each of the materials before delivery is started and before such material is used in the work. Representative preliminary samples of the character and quality prescribed shall be submitted by the contractor or producer of all materials to be used in the work for testing or examination as desired by the District.

All tests of materials furnished by the owner or their agent shall be made in accordance with commonly recognized standards of national organizations, and such special methods and tests as are prescribed in these specifications.

The owner or their agent shall furnish such samples of materials as are requested by the District, without charge. Samples will be secured and tested whenever necessary to determine the quality of material.

The owner or their agent shall deliver to the District two copies of certificates from the manufacturers of <u>all</u> materials and appurtenances incorporated in the District sanitary sewer system. These certificates shall certify that all goods manufactured by the manufacturer meet all applicable codes, District requirements and specifications.

The certificate shall show the type and quality of materials delivered the requirements and/or specifications that are complied with.

Should the owner or their agent fail to secure the certificates as required he shall at his/her expense have a commercial testing laboratory, approved by the General Manager, perform the

necessary testing and deliver two copies of the results to the General Manager.

The owner shall submit representative preliminary samples of the character and quality prescribed or their agent or producer of all materials to be used in the work for examination as desired by the General Manager.

No material shall be used until the General Manager has approved it.

The District reserves the right to take any additional samples or make additional tests, as they may deem necessary.

C900 Pipe: C900 PVC pipe shall conform to and meet the requirements of AWWA C900-75.

Ductile Iron Pipe: Ductile iron pipe shall conform to and meet the requirements of ANSI/AWWA C151/A21.51. It shall be the thickness class required for supporting the imposed loads. Joints shall conform to ANSI/AWWA C111/ A21.11.

Push-on gasket joints and fittings may be used except where otherwise required by the District.

Fittings shall be ductile iron and shall meet the requirements of ANSI/AWWA C110/ A21.11. An exception to this is the 4 to 12 inch pipe size whereby ductile iron compact fittings may be used provided they meet the requirements of ANSI/AWWA C153/A21.53 and have a working pressure rating of 350 pounds per square inch.

Ductile iron gravity pipe used for single family residences shall be class 51 or heavier and may use "Calder" type couplings with stainless steel clamps.

Polyvinyl Chloride Pipe: Polyvinyl chloride pipe and fittings for gravity pipelines shall be a rubber ring jointed pipe as manufactured by Johns-Manville or other approved equivalent, and shall comply with the following specifications.

Polyvinyl chloride pipe and fittings shall conform to A.S.T.M. designation D-1784 and ASTM D-3034 for rigid PVC compounds. Pipe size and dimensions shall be submitted to the General Manager for approval prior to contractor's purchase.

- Size and Dimensions - Size and dimensions shall be such that the minimum "pipe stiffness" (F/Y) at 5 percent deflection shall be as specified in ASTM D 3034-72 for all sizes when calculated in accordance with A.S.T.M. designation D-2412, External Loading Properties of Plastic Pipe by Parallel-Plate Loading.

- Flattening-The flattening test shall comply with the requirements of ASTM D 3034-72.

- Extrusion Quality-The extrusion quality shall comply with the requirements of ASTM D 3034-72.

- Impact Resistance-The resistance shall comply with the requirements of ASTM D3034.

Nominal Pipe Size-Inches	Impact Strength Ft. - Lbs.
4	150
6	210
8	210
10	220
12	220
*	

*For larger diameter pipe, see ASTM Standards

- Markings-Markings shall comply with the requirements of A.S.T.M.

Conductor Pipe: Conductor pipes shall conform to County and State requirements and these specifications.

Pipe used as a conductor pipe shall be either welded steel pipe or corrugated metal pipe. The General Manager may specify which type shall be used in any instance. The protective lining and coating, if required by the General Manager shall be as shown on the improvement plans.

- **Welded Steel Pipe** shall be manufactured of steel meeting the requirements of ASTM Designation A245, Commercial Grade. The method by which the pipe is manufactured shall comply with one or more of ASTM specifications: A134, A135, A139 or A211. The pipe shall be welded by either the electric-resistance or electric-fusion process, with either spiral seam welded joint or straight seam welded. All end joints shall be butt welded.

  When the conductor pipe is to be installed by boring and jacking, the wall thickness shall be 1/4 inch for sizes up to and including 24 inches in diameter, and 5/16 inch for sizes 27 inches to 36 inches in diameter.

- **Corrugated Metal Pipe** shall conform to and meet all the requirements of "Standard Specifications for Corrugated Metal Culvert Pipe" (ASSHO Designation M36). Unless otherwise designated by the General Manager, the pipe may be fabricated of any of the base metals listed in the above specifications. Band couplers shall be of the same metal as the pipe.

  When the conductor pipe is to be installed by boring and jacking the material shall be No. 10 gauge or thicker. The sections of pipe shall be especially prepared for making field joints by riveting or bolting. If the joints are bolted, the bolts shall be 3/8 inch diameter and galvanized. Rivets shall be of the same material as the base metal used for the corrugated sheets, and shall be galvanized or sherardized.

Castings: All castings for manhole rings and covers, or other purposes, shall be tough grey iron, free from cracks, holes, swells and cold sheets and be of workmanlike finish, and shall conform to the pertinent Standard Drawing. The cast iron shall meet the requirements of Specification

ASTM Designation A48, Class 40. The quality shall be such that a blow from a hammer will produce an indentation on a rectangular edge of the castings, without flaking the metal. Before leaving the foundry, all castings shall be thoroughly cleaned.

Manhole covers shall fit tightly to the seat and shall not rock. All manhole covers which do not fit neatly and bear firmly in the frame will be rejected.

Manhole frame and covers shall be used to protect end of line cleanouts located in paved areas. Manhole covers shall fit tightly to the seat and shall not rock. The frame and cover shall be set on a concrete footing ring of at least 12 inches wide by 12 inches thick.

Pre-cast Manhole Sections: The manhole sections, adjustment rings and tapered sections with tongue and groove joints shall conform to ASTM Designation C478, except that cement and aggregate shall conform to the requirements of Structural Concrete, Appendix A-6.14, page 117, of the Standard Specifications. Concrete for poured portions of manholes shall conform to Structural Concrete, Appendix A-6.14, page 117, of the Standard Specifications. Joints shall conform to Installation of Sanitary Sewer Facilities, Appendix A-6.9, page 96, of the Standard Specifications under "Manholes." Metal forms shall be used in the manufacture of the pre-cast sections so as to obtain smooth surfaces. The concrete shall be well compacted by being centrifugally-spun, vibrated, or mechanically-tamped.

Pump Stations: (For private residential submersible pump stations see Residential Pump Systems, Section 7.13, page 33). Pump stations shall have a duplex pump configuration with controls designed to alternate pumps. Controls shall include Hand-Off-Auto switches and running lights for each pump. Pump electrical supply shall be single phase for pumps rated at 5 horsepower or less where possible. Pumps shall be sized for the ultimate design flow of the area being serviced by the station and with a minimum of 4 feet per second flow velocity in the force main.

Submersible Pump Stations: Submersible pumps shall be of the explosion proof type. If circumstances require, the pump shall incorporate a grinder or cutter type blade/impeller system. Pump design shall be of the Flygt rail and discharge base mount type or approved equal. Lifting chains shall be stainless steel and rated for the lifting requirements provided by the pump manufacturer. Each pump discharge pipeline shall include a swing check valve with external lever and weight and an eccentric plug valve before the two discharge pipelines join. Valves shall be located in a separate vault outside of the wet well where possible. External valve vaults shall have a valved drain pipeline plumbed into the wet well. The drain pipeline valve shall be accessible by means of a riser pipe boxed to grade between the vault and the wet well (see Standard Drawings, Figure 19, Submersible Pump Station (Section View), page 175 and Figure 20, Submersible Pump Station (Plan View, page 177). Wet well piping and fittings shall be flanged ductile iron only. Submersible pump controllers shall be of a type equal in design and manufacture to preferred current District submersible controllers. All site related issues shall be in accordance with Pump Station Structures, Appendix A-6.15, page 125. All electrical and telemetry equipment shall be in accordance with Pump Station Electrical Work, Appendix A-6.16, page 130.

Drywell Centrifugal Wastewater Pumps: Centrifugal pumps shall be of the vertical or horizontal close-coupled, self-priming centrifugal type specifically designed for the handling of raw, unscreened sanitary domestic wastewater. Each pump shall be of heavy, cast iron construction and shall include a motor with the pump impeller mounted directly on the one-piece motor-pump shaft.

Each pump at its rated speed shall be designed to retain adequate liquid in the pump casing to insure unattended automatic repriming in a complete open system without suction of discharge check valves and with a dry suction leg. Upon completion of repriming cycle, pumps shall deliver full rated capacity at rated Total Dynamic Head (TDH) at the designed total dynamic suction lift.

The openings and passages of the pump shall be large enough to permit the passage of a sphere 3 inches in diameter and any trash or stringy material which can pass through the average 4 inch building collection system. The pump must be equipped with a removable cover plate or rotating assembly allowing complete access to pump interior to permit service and repairs without disturbing suction or discharge piping. The pump volute casing shall contain no openings of a lesser diameter than the sphere size specified. Screens or any internal devices that create a maintenance nuisance or interfere with priming and performance of the pump will not be permitted.

The pump shaft shall be sealed against leakage by a double mechanical seal installed in a bronze seal housing constructed in two sections with registered fit. Both the stationary sealing member and mated rotating member shall be of Tungsten-Titanium carbide alloy.

The impeller shall be two-vane, semi-open or enclosed type, non-clog, cast in ductile iron, and shall be balanced. The impeller shall be keyed and secured to the motor-pump shaft by a stainless steel device. The impeller shall not be screwed or pinned to the motor-pump shaft and shall be readily removable without the use of special tools. To prevent the build up of stringy materials, grit and other foreign particles around the pump shaft, all impellers less than full diameter shall be trimmed inside the impeller shroud. The shroud shall remain full diameter so that close, minimum clearance from shroud to volute is maintained.

The seal system lubricant shall be taken from the pump discharge through a 40-micron or better filter. The filter shall be readily accessible for cleaning and maintenance. The filter shall be isolated with brass valves. The seal system shall contain a brass valve connected near the top of the seal housing to permit the relief of any air trapped in the seal unit. A manually operated brass valve shall also be provided to vent the pump volute.

The pump volute shall be of heavy, cast iron construction, free from projections that might cause clogging or interfere with flow through the pump.

A heavy, cast iron base to provide maximum rigidity and balance shall support the pump. The height of a vertical pump base shall be sufficient to permit the use of an increasing suction elbow which, shall that be provided when the nominal pump size is smaller than the suction line. The suction and discharge openings shall be flanged, faced and drilled 125-pound American Standard.

Upon request, manufacturer must submit to the District for their evaluation and approval, a list of self-priming wastewater pump installations reflecting of satisfactory, automatic operations while permanently installed in an unattended wastewater lift stations.

Workmanship and materials throughout shall be of best quality per code and specifications.

Pump Motors: The motors shall be designed for continuous operation at full load with a temperature rise of not more than 40 degrees centigrade above ambient temperature. Motors shall be capable of frequent starts each hour as required to meet the flow requirements without overheating. Motors shall also be rated for the altitude at which they are to be installed.

A-6.9 Installation of Sanitary Sewer Facilities

Excavation and Bedding: Unless otherwise specified, the excavation for sewer pipe shall be an open trench, excavated to six inches below the flowline grade shown on the improvement plans, or 1 inch below the outside diameter of the bell, whichever is greater. The native soil in the trench bottom shall be compacted to 90 percent relative compaction before placement of Class 1 Backfill for pipeline bedding. Class 1 Backfill bedding material shall be compacted to a relative compaction as specified in the Standard Drawings, Typical Sewer Trench, Figures 14, 15, or 16, pages 165, 167, or 169.

Pipe trenches shall not be left open farther than 300 feet in advance of pipe laying operations or 200 feet to the rear thereof, unless otherwise permitted by the General Manager.

All trench excavation within asphalt paved areas shall be saw cut in neat parallel lines to the limits of excavation. When the existing pavement is concrete, it shall be sawed to a neat line 6 inches wider on each side than the trench width.

Whenever the bottom of the trench is soft, yielding, or unsuitable as a foundation for the pipe, sufficient crushed rock or coarse clean gravel shall be rammed into the soft material. If such treatment does not provide a proper foundation, the unsuitable material shall be removed to a depth such that when replaced with bedding material, it will provide a stable foundation.

Whenever the trench bottom is in rocky material, the trench shall be excavated to 6 inches below the flowline shown on the improvement plans or 3 inches below the outside diameter of the bell, whichever is greater, and backfilled to grade with imported bedding material thoroughly compacted into place.

Water stop impervious plugs (trench cutoff blocks) shall be installed in trenches where Class 4 Backfill is used, in all areas of ground water movement, and in all trenches containing pipeline slopes of 10 percent or greater.

The location and spacing of trench cut-off blocks for private building laterals shall be the responsibility of and shall be determined by the owner or their agent. The location and spacing of trench cut-off blocks for sanitary sewer mains shall be determined by the General Manager.

Trench cut-off blocks shall be constructed as shown in the Standard Drawings, Trench Cut-Off Block, Figure 17, page 171.

Bracing and Shoring: Sufficient bracing and shoring shall be installed in trenches to insure the safety of workers, and to protect and facilitate the work. Where practicable all such bracing and shoring shall be removed from the trench as the backfilling proceeds. All bracing and shoring shall comply with current Construction Safety Orders of the California Occupational Heal and Safety Administration.

When shoring is used in the trench, the fill shall be carried to a height sufficient to prevent the surrounding ground from cracking or caving into the trench before the shoring is removed.

Pipeline Installation: A minimum of 30 inches compacted earth fill shall cover all gravity and force main pipelines. Cover less than 48 inches in vehicular traveled ways requires heavier walled pipe as listed in Appendix A-5, page 75.

The pipe shall be laid in conformity to the prescribed line and grade. The prescribed grade shall be set using the appropriate surveying tools (i.e., transit, rod, laser, etc.). In case any discrepancy exists from the prescribed alignment, the work shall be stopped and the discrepancy immediately corrected. In addition, a string line shall be used in the bottom of the trench to insure a straight alignment of pipe between manholes, unless curved alignment is shown on the improvement plans.

Pipe shall be laid continuously upgrade with the bell of the pipe uphill. Each length of pipe shall be laid on a firm bed and shall have a true bearing for the entire length between bell holes. No wedging or blocking up of the pipe will be permitted.

Both bell and spigot shall be clean before the joint is made and care shall be taken that nothing but the joint-making material enters the joints.

When for any reason, pipe laying is discontinued for an hour or more, the open end of all pipelines shall be closed with a close-fitting stopper.

The jointing of pipe with this type of joints shall be made by approved methods and recommendations of the manufacturer, care being used to prevent chipping or cracking of either end of the pipe during installation.

Pipe shall be protected during handling against impact shock and free fall. The rubber gasket joints shall be cleaned prior to the seating of the gasket. The gasket shall be wiped clean and shall be fitted snugly in the gasket seat. A thin film of lubricant shall be applied to the inside surface of the gasket which will come in contact with the plain end of the pipe, if necessary apply the same lubricant to the plain end of the pipe. Use only a lubricant recommended by the pipe manufacturer.

Boring or Jacked Casing: The work contemplated under this heading consists of placing cast iron pipe or other pipe of approved material, usually in a conductor pipe, under a paved roadway, street or railroad to a true line and grade as shown on the improvement plans, by means of boring

or jacking operations. The equipment and method of operation shall be approved by the General Manager prior to proceeding with the work.

The excavation for the boring operation shall be kept to a minimum but shall be of sufficient dimensions to satisfactorily complete the work. If so required, bracing and shoring shall be provided to adequately protect the workmen and the roadway or railroad.

The conductor pipe shall be placed closely behind and in conjunction with the boring operation. The bored hole shall be not more than 0.1 foot in diameter larger than the conductor pipe. Guide rails shall be accurately set to line and grade so as to achieve close adherence to the line and grade shown on the improvement plans.
The pipe to be placed inside the conductor pipe shall have a non-rigid joint and shall be installed by the use of suitable wood skids. Clean sand shall then be sluiced or blown into the conductor pipe to a depth of not less than half the diameter of the sewer pipe.

Where tunneling is permitted, backfill shall be made with clean damp sand, tamped and compacted to insure a non-yielding, uniform foundation for the entire length of the tunnel.

Trench Backfill Gravity Pipelines: Class 1 Backfill for sanitary sewer pipelines and related appurtenances that are constructed for the District shall have a minimum specific gravity of 2.5.

Backfill around and to at least 1 foot over pipe shall be made with Class 1 Backfill material compacted as placed. A difference in level on either side of the pipe not to exceed 4 inches shall be maintained to hold the pipe firmly in place.

Backfill from a point at least 1 foot over the top of the pipe to finish grade shall be made with Class 2 or Class 3 Backfill. When the sewer trench lies within the right-of-way of a street this backfill shall be Class 2. Class 3 Backfill may be used in areas outside the pavement of streets and highways involved.

In connection with backfill, the following tests shall be made in conformance with the requirements set forth in these Specifications:

Tests	Test Method No. California or ASTM
Relative Compaction	ASTM D1557 & D1556
Sand Equivalent	217
Resistance (R-Value)	301
Sieve Analysis	202

Backfill shall not be placed until the pipe or other facility has been inspected by an authorized District Representative and approved for backfilling. The percentage composition by weight as determined by laboratory sieves shall conform to the following requirements.

Class 1 Backfill

Sieve Sizes	Percentage Passing Sieves
3/8”	100

Sand equivalent not less than 20.
Bulk Specific Gravity of Class 1 Backfill shall be at least 2.5.

Class 2 Backfill

Sieve Sizes	Percentage Passing Sieves
1"	100
3/4"	90-100
No. 4	35-60
No. 30	10-30
No. 200	2-9

Sand equivalent not less than 20.
Bulk Specific Gravity of Class 2 Backfill shall be at least 2.6.

Class 3 Native Backfill

Sieve Sizes	Percentage Passing Sieves
3"	100

Sand equivalent not less than 20.

Class 4 Backfill

Sieve Size	Percentage Passing Sieves
1"	90-100
3/4"	70-100
1/2"	25-60
3/8"	10-40
#4	0-10
#8	0-5

Bulk Specific Gravity shall be at least 2.5

Material for Class 1, Class 2, Class 3, and Class 4 Backfill shall be placed in uniform horizontal layers not exceeding 0.67 foot in thickness before compaction, and shall be brought up uniformly on all sides of the trench. If the contractor can satisfactorily demonstrate to the General Manager an alternative method of placing the backfill so that all requirements, other than the layer thickness, are met, the General Manager will permit the contractor to use the alternative method.

Under no circumstance will the contractor use the alternative method unless the General Manager's approval is obtained in writing.

Each layer of backfill shall be compacted to a relative compaction as indicated in the Standard Drawings, Typical Sewer Trench, Figures 14, 15, or 16, pages 165, 167, or 169.

The District reserves the right to perform compaction tests, or have compaction tests performed through a licensed geotechnical testing firm, to verify compaction of the backfilled trench section. All tests by the District will be performed in such a manner as will not unnecessarily delay the work. The owner or their agent shall not be required to reimburse the District for the initial tests performed. If subsequent tests are required due to compaction failures, the owner or their agent shall pay for all subsequent compaction tests.

The use of backfill material other than Class 1, Class 2, and Class 3 is not permitted unless approval is granted, in writing, from the General Manager.

Class 4 Backfill material may be substituted for Class 1 Backfill, if approved by the General Manager or their designated representative in writing, under the following conditions:

- When large amounts of groundwater are encountered within the trench section, or;

- When trench depths exceed 12 feet in depth *and* placement of Class 1 Backfill material at the prescribed relative compaction is not possible.

If Class 4 Backfill material is substituted for Class 1 material, 140 NC filter fabric, or equivalent, must be placed on top of the Class 4 Backfill before proceeding with additional approved backfill.

Groundwater may be removed from the trench and placed in the existing sanitary sewer if ***all*** of the following conditions are met:

- The contractor requests, in writing, to place said groundwater into the existing sanitary sewer, ***and*** receives, in writing, from the General Manager permission to do so. This written request by the contractor and subsequent written reply from the General Manager will be only on a case-by-case basis.

- The volume of groundwater placed into the existing sanitary sewer shall not exceed a predetermined amount (in gallons per minute) as designated in writing by the General Manager.

- All pump/hose inlets shall be screened to prevent rocks or gravel from entering the existing sanitary sewer system. If high concentrations of silts are suspended in the groundwater, settling basins may be required before the water may be placed into the existing District sanitary sewer system.

Initial backfill shall be to 0.7 of the vertical outside diameter of the pipe in 8 inch maximum lifts.

Backfill material shall be "shovel sliced" on both sides of the pipe, with care to assure that the spaces under the pipe haunches have been filled.

Field repairs to P.V.C. are not acceptable unless the General Manager has given his/her prior approval for each repair.

Mechanical compactors shall not be used directly over the pipe with less than 1 foot of cover.

Paving over trenches shall not be placed until the backfill has been inspected by an authorized District representative. Trench surfacing and trench restoration in Nevada/Placer County, or State of California right-of-way shall conform to the requirements of the agency having jurisdiction.

Backfill around manholes and the pit excavated for boring operations shall be made in the same manner as above specified for trenches, except as otherwise provided under Manholes.

If at any time during the period of responsibility there shall be any settlement of the trenches, cracking of the newly applied pavement, or separation of the newly applied pavement from the existing pavement requiring repairs to be made in any street highway, or easement, or should any other defect appear in the system due to the contractor's operations, the owner or their agent shall promptly repair all defects in accordance with the requirements of the responsible agency.

Trench Backfill Force Mains: Class 1 Backfill for sanitary sewer force main pipelines and related appurtenances which are constructed for the District shall have a minimum specific gravity of 2.5. Trench backfill methods and materials for force mains, shall be as specified for sewer pipelines with the following exceptions:

- The height of backfill over the pipe before testing shall not be less than 12 inches.
- All thrust blocks shall be in place before the pipeline is hydrostatically tested.
- All joints, bends, angles, or fittings shall be left exposed until testing has been completed.

Every precaution shall be taken against floating the pipe. In case of such floating, the contractor shall replace the pipe to its proper location at his/her own expense, and replace any damaged pipe which may have resulted.

Trench Section, Paved Areas: Pipeline shall be bedded on 6 inches of Class 1 Backfill compacted to 95 percent relative compaction. Class 1 Backfill shall also extend a minimum 12 inches above top of pipe, compacted to 95 percent relative compaction as specified in the Standard Drawings, Typical Sewer Trench (Paved Areas), Figure 14, page 165. In the event that heavy groundwater is encountered in the excavated trench, Class 4 Backfill may be substituted for Class 1 Backfill as outlined above.

Class 2 Backfill shall be placed from 12 inches above top of pipe to 1 inch below bottom of existing asphalt pavement. All Class 2 Backfill shall be compacted to 95 percent relative compaction as specified in the Standard Drawings, Typical Sewer Trench (Paved Areas), Figure 14, page 165.

Trench Section, Roadway Shoulders adjacent to Paved Areas: Pipeline shall be bedded on 6 inches of Class 1 Backfill compacted to 95 percent relative compaction. Class 1 Backfill shall also extend a minimum 12 inches above top of pipe, compacted to 95 percent relative compaction as specified in the Standard Drawings, Typical Sewer Trench (Off Shoulder), Figure 15, page 167. In the event that heavy groundwater is encountered in the excavated trench, Class 4 Backfill may be substituted for Class 1 Backfill as outlined above.

Class 2 Backfill shall be placed from 12 inches above top of pipe to finished grade. Class 2 Backfill placed from 12 inches above top of pipe to 12 inches below finished grade shall be compacted to 90 percent relative compaction, with Class 2 Backfill placed from 12 inches below finished grade to finished grade compacted to 95 percent relative compaction as specified in the Standard Drawings, Typical Sewer Trench (Off Shoulder), Figure 15, page 167.

Class 3 Backfill may be substituted for Class 2 Backfill up to one foot below finished grade. Class 3 Backfill shall be compacted to 90 percent relative compaction as specified in the Standard Drawings, Typical Sewer Trench (Off Shoulder), Figure 15, page 167.

Trench Section, Unpaved Areas: Pipeline shall be bedded on 6 inches of Class 1 Backfill compacted to 95 percent relative compaction. Class 1 material shall also extend a minimum 12 inches above top of pipe, compacted to 95 percent relative compaction as specified in the Standard Drawings, Typical Sewer Trench (Non Traffic Areas), Figure 16, page 169. In the event that heavy groundwater is encountered in the excavated trench, Class 4 Backfill may be substituted for Class 1 Backfill as outlined above.

Class 2 or Class 3 Native Backfill shall be placed from 12 inches above top of pipe to finished grade. Class 2 or Class 3 Native Backfill shall be compacted to 90 percent relative compaction as specified in the Standard Drawings, Typical Sewer Trench (Non Traffic Areas), Figure 16, page 169.

Manhole Installation: Manholes shall be watertight structures constructed in accordance with the details shown on the improvement plans as specified herein and as directed by the General Manager. Pre-cast manholes shall be constructed of pre-cast reinforced pipe sections, tapered reinforced concrete sections, adjustment rings, with cast-in-place bases in accordance with the Standard Specifications and ASTM Specification C478-64T. Portland cement shall be Type II, conforming to the requirements of ASTM Designation C-150.

Pre-cast manhole bases shall be used in lieu of cast in place manhole bases whenever possible.

The ends of pipe (barrel) sections, tapered sections, adjustment rings shall be of such design and construction that when properly laid they shall have a smooth and uniform surface. Each joint shall be sealed with Kent Seal, or Ram-Nek sealant and primer to prevent infiltration or

exfiltration. Ram-Nek shall be neatly trimmed after manhole assembly. No pipe shall project more than 0.17 foot into a manhole and in no case shall the bell of a pipe be built into the wall of a manhole or structure. All work shall be cured for a period of 10 days after being placed and shall be protected from injury.

Manholes in paved areas shall have at least one, 2-inch grade ring installed on top of the cone section. The manhole frame and cover shall be placed on top of the grade ring as prescribed herein. The throat of the manholes shall be made of pre-cast concrete grade rings of the proper inside diameter and height. If fine adjustments are needed a concrete mixture fortified with "Xypex Xycrylic Admix" or equal may be used. The maximum depth permitted shall be 12 inches between the cone and frame. Adjustment using concrete mix shall not exceed 2 inches.

When adjusting an existing manhole to grade and the total depth of the throat from the top of the frame to the bottom of the throat exceeds 18 inches, the upper portion of the manhole shall be removed and the manhole shall then be reconstructed so that the final adjusted height of the throat is not greater than 12 inches. The manhole shall then be tested in accordance with Appendix A-6.10, Testing of Sanitary Sewer Facilities, page 106.

Before any work is started on adjusting or repairing a manhole, the channels in the base shall be covered. This cover shall be kept in place during all work. Upon completion of the work, the cover shall be removed from the manhole allowing no debris to fall or remain in the manhole.

The inside base of manholes shall be shaped to provide channels conforming to the size and shape of the crown of the inlets and outlets. The exact configuration of transition from branch size to mainline sizes shall be as directed by the General Manager. Cast-in-place concrete for manholes or portions of manholes shall conform to the Standard Specifications and ASTM Specification C478-64T. Portland cement shall be Type II, conforming to the requirements of ASTM Designation C-150.

The top of manhole elevations shown on the improvement plans are approximate only. In general, the finished grade of the manhole shall be set a maximum of 0.1 foot below the existing ground. Finished grade in paved areas should meet the appropriate Nevada/Placer County or State of California specifications.

Whenever the excavation for a manhole exceeds the outside diameter of the manhole by 10 inches, measured along a radius line, the backfill shall be placed in layers not to exceed 8 inches uniformly around the structure and mechanically tamped to relative compaction of not less than 95 percent for each layer.

Manhole Frame and Cover: Cast iron frames and covers as specified shall be furnished and installed by the contractor in accordance with the applicable portions of the Standard Specifications, except as herein modified. Cast iron frames and covers shall be matched and marked in pairs before delivery to the work. Manhole covers shall fit into their respective frames without rocking. Manhole frames and covers located within easements shall be the bolted down type, bolts shall be stainless steel with an anti seize compound applied to all male threads. Miscellaneous iron and steel for use in the construction of manholes shall be furnished and installed in accordance with the details shown on the improvement plans.

Internal Chimney Seals: All new construction manholes or replacement of existing manholes requires installation of an internal rubber seal as specified. A rubber seal extension to include any additional heights of chimney not covered by the seal itself shall be used as directed. The internal rubber seal and seal extensions shall be as manufactured by Cretex Specialty Products, or approved equal. The seals and extensions shall have a minimum thickness of 3/16 inches and shall be extruded from a high grade rubber compound conforming to the applicable requirements of ASTM C923. The bands used for compressing the seal and extension against the manhole shall be fabricated from 16 gauge stainless steel conforming to ASTM A240 type 304, any screws, bolts or nuts used on this band shall be stainless steel conforming to ASTM F593, type 304.

External Manhole/Vault Seals: When manholes are located within an area of high groundwater, adjacent to a lake or stream, or within an area of standing water, the exterior manhole joints and surface shall be sealed with an external concrete sealant. Exterior manhole walls shall be sealed with a liquid cold-applied waterproofing membrane system such as Sonneborn ® HLM 5000®, or equivalent. Exterior joints shall be sealed with an elastomeric based external concrete joint wrap such as Henry RUB'R-NEK®, or equivalent.

Manhole Temporary Construction Cover: Temporary covers of 3/8 inch steel plate of sufficient size to adequately cover the opening shall be placed on the cone of a manhole until paving is completed. Suitable locating ribs shall be welded to the underside of the cover to hold it in place during the grading and paving operations.

Connection to Existing Manhole: Connections to existing manhole walls shall be made by core drilling into the wall of the manhole. Pipe penetration through the manhole wall shall be sealed with a watertight seal by one of the following:

- equipping the pipe with a modular mechanical type seal ("Link-Seal", or equivalent), consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and manhole wall opening. Links shall be loosely assembled with stainless steel bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt and nut. After the seal assembly is positioned in the sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide a watertight seal between the pipe and the manhole wall opening.

- inserting the end of the pipe through the core drilled opening, and packing the opening around the pipe with Kent seal or Ram-Nek and primer, then covering with a stiff mix of cement mortar, thoroughly compacted. The mortar shall be composed of one part Type II Portland cement and three parts clean sand. The mortar shall be troweled smooth and flush with the interior surface of the manhole.

Connection of a pipeline to an existing manhole that has a stub-out shall be accomplished with a rigid repair coupling. No flexible rubber couplings are allowed.

The use of impact hammers to break into a manhole wall is prohibited.

Drop Manholes: When in the opinion of the General Manager the flow line grades are such as to require a drop manhole this shall be accomplished as detailed in the District Standard details. A drop inlet shall not be permitted within 5 feet of the flow line.

Utility Pad Installation: See Standard Drawings, Utility Pad Installation, Figure 11, page 159.

Cleanouts: A cleanout shall be installed in each building lateral at the property line of the premises being provided with sewer service and within 5 feet of where the lateral exits the structure foundation. Cleanouts located under the house are not accepted, rather the cleanout must be located *outside* the building foundation. Additional cleanouts shall be installed at intervals not to exceed 75 feet, and at any other point the owner or their agent may select for the purpose of keeping said sewer pipeline clean and free of obstruction. A cleanout shall also be installed on the upstream side of the fitting at all 45 degree or greater bends.

All cleanout risers must be 4 inches below finished grade and boxed to finished grade with an appropriate removable watertight plug in the end of the riser. Cleanout risers and appropriate boxes are required at the property line cleanout and at the cleanout installed nearest the building.

Cleanout boxes shall be constructed of concrete with cast iron lids for vehicular traveled areas (Christy G-5 or equivalent) or reinforced plastic with cast iron lids for non vehicular areas (Carson Industries, Inc., series 608 or 910, or equivalent). Cleanout boxes shall be set to grade and backfilled to prevent accidental displacement or removal. Lids shall have "SEWER" or equivalent imprinted on the lid. Lids with verbiage other than a sewer utility designation (i.e., Storm Drain, Water, Gas, etc.) imprinted on the lid are <u>not</u> permitted.

Service laterals shall be extended to property line and shall be marked with either of the following:

- A 2 x 2 inch redwood stake. The stake shall be buried at the wye and shall extend to finished grade. No stakes shall be driven into the ground or left protruding above finished grade.

- A flexible green marker made of a composite of glass-fiber reinforced polymers (Carsonite®), or equivalent. The marker shall be buried at the wye and extend to finished grade. The marker shall not be left protruding above finished grade.

Every service lateral shall be so marked before final acceptance.

A service lateral stub out to vacant land shall contain a wye (two wyes for double service) with approved removable plugs in the bell ends. The stub out shall be placed at the property line at the appropriate depth to service the parcel. The property line cleanout riser shall be extended to within 4 inches of finished grade and properly boxed per cleanout specifications. An approved marker shall be buried in front of the wye(s) and cut off flush to grade as specified in the Standard Drawings, Service Lateral Detail (Profile View), Figure 8, page 153. Dual swing ties are required for all stub outs and cleanout risers. Permanent objects such as property corners, power poles, water boxes, structures, etc. shall be used for swing ties.

Building Laterals: Building lateral pipelines connecting to the District's sanitary sewer system shall meet the requirements listed below and the criteria listed in Appendix A-5, page 75 and Appendix A-6, page 77.

- **Residential Building Laterals:** The diameter of gravity building laterals shall not be less than the pipeline diameter exiting the structure, or less than 4 inches for a single residence or two residences. Six-inch diameter pipeline or larger shall be used for more than two dwelling units.

- **Commercial Building Laterals:** The minimum pipeline diameter for commercial gravity building laterals shall not be less than 6 inches.

Appropriate fittings shall be used in connecting to the service connection provided by the District. On double sewer services, both wye's shall be uncovered prior to connection to the system for District inspection and the appropriate wye shall be used.

Joints in all building laterals shall be of a collar type as recommended by the manufacturer and shall pass the District's inspection and required tests.

A-6.10 Testing of Sanitary Sewer Facilities

The following tests will be required for all sanitary sewer facilities connected to the District's sanitary sewer system. Testing shall not be permitted until all excavation, backfilling (for other utilities), and grading (for roadway subgrade and structural section) in the immediate area of the sanitary sewer facility has been completed.

Gravity Pipelines: After the sewer pipelines have been properly backfilled to a depth where additional backfilling will not disturb the position of the pipe, all sections shall be tested either *hydrostatically* or with an *air* test. In no case shall the required minimum backfill be less than 30 inches above the top of the pipe before subjecting the pipeline to the test. All necessary materials and equipment to make the test shall be provided by the owner or their agent.

Hydrostatic Test: A section of sewer pipeline shall be prepared for testing by plugging the upper side of the downstream manhole and all openings in the upstream manhole except the downstream opening. Where grades are slight, two or more sections between manholes may be tested at once. Where grades are steep, and excessive test heads would result by testing from one manhole to another, test tees the full size of the sewer main shall be installed at intermediate points so the maximum head on any section under test will not exceed 15 feet.

The allowable leakage in the test section shall not exceed 350 gallons per mile per day per inch diameter of pipe tested at the 5-foot test head.

If it is necessary or desirable to increase the test head above 5 feet, the allowable leakage will be increased at the rate of 80 gallons for each foot of increased in head.

Test sections showing leakage in excess of that allowed shall be repaired or reconstructed as necessary to reduce the leakage to that specified above and the pipeline retested.

Air Test: Air testing may be used in lieu of the hydrostatic testing. Air testing shall be as specified herein unless otherwise directed by the General Manager. Length of pipeline tested shall be limited to the length between adjacent manholes. Air test procedure shall be as follows:
Pressurize the test section to 4.0 pounds per square inch and hold above 3.5 pounds per square inch for not less than 5 minutes. Add air if necessary to keep the pressure above 3.5 pounds per square inch. At the end of this 5 minute saturation period, note the pressure (must be 3.5 pounds per square inch min.) and begin the timed period. If the pressure drops 0.5 pounds per square inch in less than the time given in the following table, the section of pipe shall not have passed the test.

If the time for the pressure to drop 0.5 pounds per square inch is 125 percent or less of the time given in the table, the pipeline shall immediately be re-pressurized to 3.0 pounds per square inch and the test repeated.

For 8 inch and smaller pipe if the pressure drops less than 0.5 pounds per square inch after the initial pressurization and air is not added, the section undergoing test shall have passed.

If the test is not passed, the leak shall be found and repaired to the satisfaction of the General Manager and the pipeline shall be retested.

House waste piping shall be considered part of the building lateral to which it is connected. No adjustment of test time shall be allowed to compensate for the smaller diameter of the house waste piping.

Lateral Size	Minimum Time in Seconds
4	122
6	184
8	245
10	306
12	367
15	460

For larger diameter pipe, use the following formula:

Minimum time in seconds = 370 x pipe diameter in feet

When the prevailing ground water is above the sewer being tested, air pressure shall be increased 0.43 pounds per square inch for each foot the water table is above the flow line of the sewer.

The pressure gauge used shall be supplied by the contractor, shall have minimum divisions of 0.10 pounds per square inch, and shall have an accuracy of 0.04 pounds per square inch. Accuracy and calibration of the gauge shall be certified by a reliable testing firm at 6 month intervals or when requested by the General Manager. In addition, the General Manager may compare the contractor's gauge with a District owned gauge at any time.

Mandrel Testing: Deflection test for Plastic Pipe and Fittings -Installed pipe shall be tested to insure that vertical deflections for plastic pipe do not exceed the maximum allowable deflection. Maximum allowable deflections shall be governed by the mandrel requirements stated herein and shall nominally be:

Nominal Pipe Size	**Percentage**
Up to and including 12-inch	5.0
Over 12- to and including 30-inch	4.0
Over 30-inch	3.0

The maximum average ID shall be equal to the average OD minus two times the minimum wall thicknesses per applicable ASTM Standards. Manufacturing and other tolerances shall not be considered for determining maximum allowable deflections.

Deflection tests shall be performed not sooner than 30 days after completion of placement and densification of backfill. The pipe shall be cleaned prior to testing.

For all pipes less that 24-inch ID, a mandrel shall be pulled through the pipe by hand to ensure that maximum allowable deflections have not been exceeded. If the mandrel fails to pass, the pipe will be deemed to be over deflected. Prior to use, the mandrel shall be approved by the engineer or by another entity approved by the engineer. Use of an uncertified mandrel or a mandrel altered or modified after certification will invalidate the test.

Any over deflected pipe shall be uncovered and, if not damaged, reinstalled.

Damaged pipe shall not be reinstalled, but shall be removed from the work site. Any pipe subjected to any method or process other than removal, which attempts, even successfully, to reduce or cure any over deflection, shall be uncovered, removed from the work site and replaced with new pipe.

The mandrel shall:

- Have an odd number of legs (nine legs minimum) and be a rigid, nonadjustable mandrel having an effective length not less than its nominal diameter.

- Be fabricated of steel, be fitted with pulling rings at each end, be stamped or engraved on some segment other than a runner indicating the pipe material specification, nominal size, and mandrel OD (e.g., PVC D 3034-8 inch - 7.524 inch, ABS Composite D 2680-10 inch

- 9.584 inch); and be furnished in a suitable carrying case labeled with the same data as stamped or engraved on the mandrel. For the pipe IDS nominally 24-inch and larger, deflections shall be determined by a method submitted to and approved by the engineer. If a mandrel is selected, the minimum diameter, length and other requirements shall conform to the dimensions and requirements as stated above.

All costs incurred by the contractor attributable to deflection testing including any delays, shall be borne by the contractor.

Television Tests: Each section of sewer pipeline shall be subject to inspection by use of a television (T.V.) camera. Use of the T.V. inspection shall not relieve the contractor of the responsibility for performing the tests outlined in this section nor shall it be used in lieu thereof.

Pre-inspection Preparation - T.V. inspection will not be scheduled or made until the following operations are complete:

- All sewer pipelines are installed and backfilled to finished grade, or, if pavement will be finished grade, to the final street subgrade, but prior to paving.
- All structures are in place and pipelines are accessible from structures.
- All pipelines have been balled, flushed and tested for deflection.
- All pipelines have been successfully tested.

Arrangements for Inspection - When the contractor determines that the pipeline is ready for inspection, the contractor shall notify the District and request a date for the T.V. inspection. The District shall notify the contractor of the scheduled date. If it is determined by the contractor that the job site will not be ready or accessible for the T.V. inspection on the scheduled date, as notified, the contractor shall notify the District of the necessary cancellation at least 48 hours in advance of the scheduled inspection. Rescheduling shall be accomplished in the same manner as for the initial inspection.

The developer shall bear the cost of the first T.V. inspection made for the purpose of determining acceptance. Subsequent inspections and T.V. camera assistance rendered by the District shall be charged labor, materials, equipment, and travel time.

Grounds for Refusal of Acceptance - All pipelines that have been televised will be evaluated by the District for deficiencies. If no deficiencies are noted, the sewer installation portion of the work will be considered satisfactory.

The following conditions are considered unacceptable for sewer pipelines and will result in refusal of acceptance:

- Visible standing water
- Joint separations greater than recommended by manufacturer
- Cocked joints present in straight runs or on the wrong side of pipe curve
- Chipped pipe
- Cracked pipe
- Infiltration or exfiltration
- Debris or other foreign matter
- Protrusions or excessive roughness in pipe
- Offset joint
- Out of round or diameter deflected pipe
- Improper alignment or curves not conforming to specified line
- Upset in normal hydraulic regime
- Any conditions that prevents the economical, safe or reasonable use of the sewer
- Pipeline sags in excess of 1/2-inch standing water

Video Tape - Televised sewer pipelines will be recorded onto video tape. The contractor may view video tapes within 2 working days at the District Offices by making an appointment. All video tapes produced as a result of the work shall be the sole property of the District and shall remain under its care and custody at all times.

Reinspection - If the sewer pipeline offered for acceptance fails to meet applicable specifications, the District shall have a right to reinspect after correction of defects and to charge a re-televising fee in accordance with current District rates. The T.V. testing process shall be repeated as necessary until all defects have been corrected to the satisfaction of the District.

Force Main Testing:

Pressure Class PVC Pipe - Each section of PVC pipe shall be tested in accordance with the Inspection and Testing methods outlined for pressure PVC pipe in the UniBell Handbook of PVC Pipe with the following conditions. The pipeline shall be subjected to a test pressure of not less than 150 pounds per square inch or the service pressure plus 50 pounds, whichever is greater, without exceeding the pressure rating for the pipe at the lowest end of the pipe. The pressure shall be applied for a minimum of 2 hours. All

exposed joints, bends, angles, and fittings shall be closely examined during the test. Any part of the pipeline which proves to be defective shall be replaced and the pipeline retested.

Ductile Iron Pipe - Each section of ductile iron pipe shall be tested in accordance with Hydrostatic Testing methods outlined for ductile iron water mains in the Ductile Iron Pipe Research Association Handbook with the following conditions. The pipeline shall be subjected to a test pressure of not less than 150 pounds per square inch or the service pressure plus 50 pounds, whichever is greater, without exceeding the pressure rating for the pipe at the lowest end of the pipe. The pressure shall be applied for a minimum of 2 hours. All exposed joints, bends, angles, and fittings shall be closely examined during the test. Any part of the pipeline which proves to be defective shall be replaced and the pipeline retested.

Manhole Testing: If deemed necessary by the District, any or all manholes shall be tested for leakage by one of the following procedures:

Water Test - All inlet and outlet pipes shall be plugged and the manhole filled with water to the top of the manhole frame. The water should be introduced into the test section at least 4 hours in advance of the official test period to allow the manhole and joint material to become saturated. The manhole shall then be refilled to the original water level. At the beginning of the test, the elevation of the water in the upper manhole shall be carefully measured from a point on the manhole rim. After a period of 4 hours, the water elevation shall be measured from the same point on the manhole rim and the loss of water during the test period calculated. If this calculation is difficult, enough water shall be measured into the upper manhole to restore the water to the level existing at the beginning of the test, and the amount added taken as the total leakage. For manholes, the allowable leakage shall not exceed 0.13 gallons per hour. Manholes showing leakage in excess of that allowed shall be repaired or reconstructed as necessary to reduce the leakage to that specified above and the manhole retested.

Vacuum Test - Vacuum test equipment shall be used per the manufacturer's specifications. A vacuum of 10 inch Hg should be drawn on the manhole, and the time for the vacuum to drop to 9 inch Hg shall be measured. For simplification in the field, a "rule of thumb" for this drop in vacuum shall be conservatively established at 60 seconds for a 48-inch diameter manhole; 75 seconds for a 60-inch diameter manhole; and 90 seconds for a 72-inch diameter manhole.

A-6.11 Pavement Restoration

Asphalt Concrete Pavement Restoration: The contractor shall perform asphalt concrete patching and pavement restoration work in accordance with State of California Department of Transportation Standard Specifications, Section 39, and Contract Drawings and documents.

This work shall consist of furnishing and mixing aggregate and asphalt binder at a central mixing plant, spreading and compacting the mixture as specified herein in all areas affected by trenching

and construction activities under this contract.

Asphalt concrete is designated as Type B and shall meet the requirements Section 39 of the State of California Department of Transportation Standard Specifications (July 1992) Type B Asphalt Concrete.

Asphalt concrete shall be produced in a batch mixing plant, a continuous pugmill mixing plant or a dryer-drum mixing plant. Proportioning shall be either by hot-feed control or cold-feed control.

Asphalts: Asphalt binder to be mixed with aggregate shall be Grade AR4000. The amount of asphalt binder to be mixed with the aggregate will be specified in the special provisions.

Liquid asphalt for prime coat shall conform to the provisions in "Liquid Asphalts", and shall be SC-250.

Aggregates: All aggregates shall be clean and free from decomposed materials, organic material and other deleterious substances.

Coarse aggregate is material retained on the No.4 sieve; fine aggregate is material passing the No.4 sieve; and supplemental fine aggregate is added fine material passing the No. 30 sieve, including dust from dust collectors.

Unless otherwise specified in the special provisions, the aggregate grading to the various types of asphalt concrete shall conform to the following:

Type	Grading
B, AR-4000	1/2" maximum

The combined aggregate, prior to the addition of asphalt binder, shall conform to the requirements of this section. Conformance with the grading requirements will be determined by California Test 202, modified by California Test 105 when there is a difference in specific gravity of 0.2 or more between the coarse and fine portions of the aggregate or between blends of different aggregates.

In the tables below, the symbol "X" is the gradation which the contractor proposes to furnish for the specific sieve. The proposed gradation shall meet the gradation shown in the table under "Limits of Proposed Gradation". Changes from one mix design to another shall not be made during the progress of the work unless permitted by the District Engineer. However, changes in proportions to conform to the approved mix design shall not be considered changes in mix design.

AGGREGATE GRADING REQUIREMENTS
Type B Asphalt Concrete
Percentage Passing

1/2" Maximum, Medium

Sieve Range	Limits of Compliance	Operating	Contract	Sizes	Gradation
3/4"		100	100		
1/2"		95-100	89-100		
3/8"		80-95	75-100		
No.4	59-66	X±5	X±8		
No.8	43-49	X±5	X±8		
No.30	22-27	X±5	X±8		
No.200		3-8	0-11		

Subgrade: Immediately prior to applying prime coat or paint binder, or immediately prior to placing the asphalt concrete when a prime coat or paint binder is not required, the subgrade to receive asphalt concrete shall conform to the compaction requirement and elevation tolerances specified for the material involved and shall be free of loose or extraneous material. If the asphalt concrete is to be placed on an existing base or pavement which was not constructed as part of the contract, the contractor shall clean the surface by sweeping, flushing or other means to remove all loose particles of paving, all dirt and all other extraneous material immediately before applying the prime coat or paint binder.

Prime Coat and Binder: Edges of existing pavement being joined and surface being overlaid shall receive a tack coat of SS1H bituminous binder or equivalent.

Prime coat shall be applied at the approximate total rate of 0.25 gallons per square yard of surface covered.

Prime coat shall be applied at a temperature conforming to the range of temperatures provided in the State of California Department of Transportation Standard Specifications, Section 93-1.03, "Mixing and Applying," for distributor application of the grade of liquid asphalt being used.

A paint binder shall be furnished and applied to all vertical surfaces of existing pavement, curbs, gutters when additional material is to placed to a pavement to be surfaced, and to other surfaces designated by the District Engineer.

Paint binder shall be applied in one application at a rate of from 0.02 to 0.10 gallon per square yard of surface covered.

Spreading Equipment: Asphalt pavers shall be self-propelled mechanical spreading and finishing equipment, provided with a screed or strike-off assembly capable of distributing the material to not less than the full width of a traffic lane if necessary.

Compacting Equipment: A minimum of one steel-tired, two-axle tandem roller weighing not less than 8 tons or more than 10 tons shall be used for each asphalt paver to compact Open Graded asphalt concrete.

Temporary Paving: The owner or their agent shall comply with all general temporary paving requirements and special requirements of the Placer County, and the State of California Department of Transportation. Temporary paving (cold patch) shall be placed to grade over all backfilled trenches located within primary roadways until permanent paving is installed.

Temperature Requirements: Type B asphalt concrete shall be placed only when the atmospheric temperature is above 50 degrees Fahrenheit.

Asphalt concrete and asphalt concrete base shall not be placed when the underlying layer or surface is frozen, or when, in the opinion of the District Engineer, weather conditions will prevent the proper handling, finishing, or compaction of the mixtures.

Spreading: When directed by the District Engineer, paint binder shall be applied to any layer in advance of spreading the next layer.

Before placing the top layer adjacent to cold transverse construction joints, such joints shall be trimmed to a vertical face and to a neat line. Transverse joints shall be tested with a 12-foot straightedge and shall be cut back as required to conform to the requirements as specified in Pavement Restoration, Appendix A-6.11, Compacting, page 111. Connections to existing surfacing shall be feathered to conform to the requirements for smoothness. Longitudinal joints shall be trimmed to a vertical face and to a neat line if the edges of the previously laid surfacing are, in the opinion of the District Engineer, in such condition that the quality of the completed joint will be affected.

All layers shall be spread with an asphalt paver. Asphalt pavers shall be operated in such a manner as to insure continuous and uniform movement of the paver and shall lay a mat which will provide a lift of 2.5 inches in the compacted state and not less than 1.5 inches in the compacted state.

Compacting: A pass shall be one movement of a roller in either direction. A coverage shall be as many passes as are necessary to cover the entire width being paved. Overlap between passes during any coverage, made to insure compaction without displacement of material in accordance with good rolling practice, shall be considered to be part of the coverage being made and not part of subsequent coverage. Each coverage shall be completed before subsequent coverages are started.

Rolling shall commence at the lower edge and shall progress toward the highest portion, and shall be performed so that cracking, shoving or displacement will be avoided.

The completed surfacing shall be thoroughly compacted, smooth, and free from ruts, humps, depressions, or irregularities. Any ridges, indentations or other objectionable marks left in the surface of the asphalt concrete by blading or other equipment shall be eliminated by rolling or

other means. The use of any equipment that leaves ridges, indentations, or other objectionable marks in the asphalt concrete shall be discontinued, and acceptable equipment shall be furnished by the contractor.

When a straightedge 12 feet long is laid on the finished surface and parallel with the center line, the surface shall not vary more than 0.01 foot from the lower edge of the straightedge. The transverse slope of the finished surface shall be uniform to a degree such that no depressions greater than 0.02 foot are present when tested with a straightedge 12-feet long laid in a direction transverse to the center line and extending from edge to edge of a 12-foot traffic lane. Contractor shall furnish the 12-foot straight edge.

Manhole Adjustments: When manholes are adjusted to pavement grade, they shall be 1/2 to 3/4 inch below adjacent pavement surface. Asphalt concrete shall be neatly *tapered* from the final pavement grade to the manhole frame and cover. If the manhole is located within 2 feet of the edge of the pavement, in earth shoulders or earth flow-line areas, asphalt concrete shall be placed to a minimum 2 feet around the manhole and paved out at 45 degrees to the edge of existing pavement.

A-6.12 Clean Up

During the progress of the work, the owner or their agent shall keep the entire job site in a clean and orderly condition. Excess or unsuitable backfill material, broken pipe or other waste material shall be removed from the job site. Spillage resulting from hauling operations along or across existing streets or roads shall be removed immediately by the contractor. All gutters and roadside ditches shall be kept clean and free from obstructions. Any deviation from this practice shall have prior approval from the General Manager.

Before final acceptance of the work, the owner or their agent shall carefully clean up the work and premises, remove all temporary structures built for the work, and remove all surplus construction materials and rubbish of all kinds from the grounds which he has occupied and leave them in a neat condition.

A-6.13 Environmental Considerations

Water Pollution: The owner or their agent shall exercise every reasonable precaution to protect ditch conduits, streams, lakes and reservoirs from pollution with fuels, oils bitumens, chemicals, concrete and other harmful materials and shall conduct and schedule his/her operations so as to avoid or minimize muddying and silting of said conduits, streams, lakes and reservoirs.

Nothing in these Standards shall relieve the owner or their agent of the responsibility for compliance with Sections 5650 and 12015, California Fish and Game Code, or other applicable statutes relating to prevention or abatement of water pollution.

Erosion control features shall be constructed concurrently with other work and at the earliest practicable time. Care shall be exercised to preserve vegetation beyond the limits of construction.

When borrow material is obtained from other than commercially operated sources, erosion of the borrow site during and after completion of the work shall not result in water pollution. The material source shall be constructed, where practicable, so that water will not collect or stand therein.

The requirements of this section shall apply to all work performed within the District and to all noncommercial operated borrow or disposal sites used for work within the District. The word "stream" as hereinafter used shall be construed to mean ditch, conduit, stream, river, lake or reservoir.

The owner or their agent shall be completely responsible for compliance with all local, town, county, state, and federal regulations pertaining to water pollution and soil erosion including the payment of any fines or penalties imposed by any governmental agency as a result of work performed by or for the owner or their agent.

Stream Zones: Where working areas encroach on live streams, barriers adequate to prevent the flow of muddy water into streams shall be constructed and maintained between working areas and streams, and during the construction of such barriers, the muddying of streams shall be held to a minimum.

Prior to the removal of material from an area beneath a flowing stream, a bypass channel shall be constructed in a location which will carry the stream free from mud or silt around the material removal operation.

Should the operations of the owner or their agent require transportation of materials across live streams, such operations shall be conducted without muddying the stream. Mechanized equipment shall not be operated in the channels of such live streams except as may be necessary to construct crossings or barriers and fills at channel alterations.

When operations are completed, the flow of streams shall be returned as nearly as possible to the original meandering thread without creating the possibility of future bank erosion.

Material derived from the work shall not be deposited in a live stream channel where it could be washed away by high stream flows.

Erosion Control: This work shall consist of incorporating straw and/or mulch, fertilizing, and seeding all water pipeline excavation and backfill areas; all easements which are disturbed by pipelines, ditches or access roads shall also be seeded. Areas designated as waste or borrow areas shall be seeded after final cleanup of said areas is finished.

> **Seeding:** Seed shall be uniformly distributed over the seedbed area. The seed mixture chosen shall be one which is suitable for dry soils at an elevation of 5,000 to 6,000 feet and meets the specifications for purity and viability as given in Chapter XI-C of the Tahoe Regional Planning Agency's Handbook of Best Management Practices.
>
> The seeding operation shall be accomplished promptly after the cleanup of an area is

completed, in no case shall the seeding operation of an exposed or disturbed area be allowed to stand fallow through winter until the following construction season.

Fertilizer: Fertilizer shall be applied at a rate so as to provide 80 pounds of available nitrogen per acre and 100 pounds of available phosphoric acid (p2o5) per acre.

Mulch: Wood fiber mulch shall be applied to all areas at the rate of 1,500 pounds per acre. The mulch shall be applied in a slurry with the seed and fertilizer. Straw mulch shall be a cereal grain straw, not rotted and free of noxious weeds. Straw mulch shall be applied on areas as specified in the following paragraphs at the rate of 2 tons per acre. Mulching shall follow immediately after seeding.

Erosion control shall be used on all trench excavation outside of the paved Placer County, or State of California right-of-ways.

In addition, should the cross slope grade parallel with the trench be greater than 15 percent, Douglas Fir or Cedar 1 x 8 inch boards shall be placed normal to the pipe trench on 10 foot centers with 2 inches exposed above grade and extended 6 inches into original ground on each size before seeding.

A-6.14 Structural Concrete

Provide and install all cast-in-place concrete, as shown and as specified, including but not limited to the following:

- Accessories to be embedded in cast-in-place concrete, anchor bolts, etc.;
- Cutting, patching, finishing and curing of cast-in-place concrete;
- Coordination with all trades with regard to requirements for special bases, sleeves, chases, inserts, finishes, or provisions of any nature;
- Treatment of finished concrete surface.

Quality Assurance: Qualification of Workmen: All concrete work shall be completed by experienced and skilled concrete workmen working under the supervision of an experienced concrete contractor.

Reference Standards: The following references and standards are hereby made a part of this section. Nothing contained herein shall be construed as permitting work that is contrary to code requirements or governing rules and regulations.

ACI - American Concrete Institute.

- ACI 301 - "Specification for Structural Concrete for Buildings."
- ACI 304 - "Recommended practice for Measuring, Mixing and Placing Concrete."

- ACI 305 - "Recommended Practice for Hot Weather Concreting."
- ACI 306 - "Recommended Practice for Cold Weather Concreting."
- ACI 309 - "Recommendation Practice for Consolidation of Concrete."
- ACS 318 - "Building Code Requirements for Reinforced Concrete."
- ASTM - American Society for Testing and Materials.
- C 31 - "Making and Curing Concrete Test Specimens in the Field."
- C 33 - "Standard Specification for Concrete Aggregates."
- C 39 - "Standard Method of Test for Compressive Strength of Cylindrical Concrete Specimens."
- C 88 - "Standard Specification for Method of Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate."
- C 94 - "Standard Specification for Ready-Mixed Concrete."
- C 143 - "Standard Method of Test for Slump of Portland Cement Concrete."
- C 150 - "Standard Specification of Portland Cement."
- C 157 - "Standard Method of Test for Length Change of Hardened Mortar and Concrete."
- C 171 - "Standard Specification for Sheet Materials for Curing Concrete."
- C 172 - "Sampling Fresh Concrete."
- C 233 - "Testing Air-Entraining Admixtures for Concrete."
- C 260 - "Standard Specifications for Air-Entraining Admixtures for Concrete."
- C 309 - "Standard Specification for Liquid Membrane - Forming Compounds for Curing Concrete."
- C 494 - "Standard Specifications for Chemical Admixtures for Concrete."
- C 2419 - "Standard Specification for Method of Test for Sand - Equivalent Value of Soil and Fine Aggregate."
- E 329 - "Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as Used in Construction."

UBC - Uniform Building Code, Standards.

Testing Agency: Any testing Agency utilized during the course of the project should conform to the following: All reports and certificates prepared by the Testing Agency shall be signed by a Professional Engineer registered to practice as a Civil Engineer in the State of California. Test methods shall comply with the codes and standards listed.

Source Quality Control: The Testing Agency shall perform tests and/or assemble the necessary data indicating conformance with specifications as follows:

- Mix Designs - Furnish a list of proportions for each proposed mix.

- Strength - For each mix, submit data showing that the proposed mix will attain the required strength in accordance with the requirements of these specifications.

- Aggregate - For each aggregate used, submit data showing that it complies with ASTM C33. Include gradation, deleterious materials, specific gravity and soundness. For coarse aggregates in mixes for site work, include abrasion.

- Cement - Furnish mill tests for all cement used. Submit this data to the District for review prior to delivering any concrete materials to the site. Mix designs, test, etc., required by this specification need not be made specifically for this job, provided that data submitted is current within the last 12 months and that in the judgement of the Testing laboratory the test data correctly describes the materials proposed for use.

- Provide all necessary controls during batching, mixing, and placement of concrete.

The owner will perform and report on the following:

- Review mix designs, certificates of compliance, and samples of materials proposed for use;

- Test and inspect materials, as necessary, in accordance with ACI 318, for compliance with requirements;

- Take samples as required from sources designated by contractor;

- Inspect batch plant prior to any Work to verify following:

    1) Plant is equipped with approved metering devices for determining moisture content of fine aggregate.

    2) Other plant quality controls are adequate.

- Compression Tests: During progress of Work, take not less than five identical test specimens for standard cylinder tests at job site for each 100 cubic yards or less of class "A" and "B" concrete placed per day (except 50 cubic yards or less at underpinning), in accordance with requirements of ASTM C 31 and C 172. Make standard 7 and 28 days after casting. Keep fifth cylinder as a check cylinder for further tests if required.

- Slump Tests: Make slump tests per ATM C 143 at time of making each set of cylinder specimens and for each truckload.

- Air Entrainment Tests: Make air entrainment test for each truckload.

Submittals: Submit mix designs for approval by owner prior to placement of any concrete.

Submit improvement plans and schedule concrete placement operations before commencing Work. Show all construction, contraction and expansion joints.

Product Delivery, Storage and Handling: Protect cement from moisture and rotate stock to insure fresh materials.

Protect cement from moisture and rotate stock to insure fresh materials.

Alternative Procedures: Concrete may be placed by pumping provided that pumping equipment is suitable for proposed use and provided that specific "pump mixes" are submitted with data showing that they comply with the requirements of these specifications and subject to approval of Testing Laboratory.

Concrete Mix: Class "A" - Stone aggregate concrete for use in foundations: 3/4 inch maximum size aggregate, specified minimum 28 day strength of 4,000-pounds per square inch, slump 3-inches, +/=1-inch, 4-8 percent air entrainment, maximum water/cement ratio of 0.43.

Concrete mixes shall comply with ASTM C94. Proportioning shall comply with Alternative 3, mixing and transporting shall comply with requirements for Truck-Mixed Concrete.

Materials: Portland Cement: Type II, ASTM C 150, with use of at lease 2 years with proposed aggregates without detrimental reaction. Cement shall not exceed 150 degrees Fahrenheit at time of use. Use one brand of cement throughout the Work.

Standard Weight Aggregates: ASTM C 33 from approved pits. The Maximum size used in a particular location shall be consistent with the form and dimensions of the section being placed, with the location and spacing of the reinforcing steel and with the method of vibration. The aggregate sizes shall be such as will produce dense, uniform concrete, free of rock pockets, honeycombs, or other irregularities. Aggregates for stone concrete shall conform to UBC Standard No., 26-2, except as modified by this section. Any suitable individual grading of coarse aggregates may be used, provided a workable and durably sound mix is obtained. Fine and coarse aggregate for stone concrete shall be clean, hard, fine grained, ground crushed rock or washed gravel or a combination of both, free from oil, organic matter, or other deleterious substances containing not more than 2 percent by weight of shale or cherty material.

Water: Clean and free of deleterious materials such as acids, alkalis, salts, oils, or organic substances.

Admixtures: Only if acceptable by Northstar Community Services District.

- Water Reducing Admixtures: ASTM C 494, Type A; Grace Construction Materials "WRDA"; Master Builders' "Pozzolith"; Sonneborn-Contech's "Trimix" or equal.

- Air Entraining Admixtures: ASTM C 260; Protec (Autolene Lubricant Company), MB-

VR (The Master Builders' Company), or Plastiment (Sika Chemical Corp.).

Epoxy Materials:

- Epoxy Adhesive: Ceilcote No. 348, Concresive LPL 1001, or equal.

- Epoxy Grout: Ceilcote No. 648, Grace Vibro-Foil Grout Master Builder's Masterflow No. 713 Grout, or equal.

Grout for Base Plates: Master Builder's "Embeco 636 Grout"; Conrad Sovig's "Perma Grout"; Master Builders' "Masterflow 713", or equal.

Vapor Barrier: St. Regis Paper Company's Sisal Kraft Division "Moistop", or equal, in sheets as wide as possible to avoid joints. Provide manufacturer's recommended tape for all seams, joints, and repairs.

Hardeners: Clear, Dust-on Type: Base price on application of 50 pounds per 100 square feet. Same as Conrad Sovig's "K-Natural"; Upco Company's "Hydromat"; Lambert Corp.'s "Colorhard"; or equal.

Drypack Mortar for Form Tie-Holes and Patching: Composed of one part Portland Cement and two parts of fine aggregate and water.

Cement Mortar for Sacking: 5-1/2 parts sand, 2-1/2 parts Portland Cement, 1-1/2 parts lime hydrate by volume, plus water.

Concrete Curing Requirements:

- Seven-day full water cure.

- Manufactured curing compounds may be used in addition to the 7-day full water cure upon written approval of the General Manager.

Pre-molded Joint Filler: ASTM D 1751.

Polyvinyl Waterstop: Neoprene, center bulb type, or equal.

Inspection: Prior to placement of concrete, contractor shall be responsible for the examination and acceptance of all conditions affecting the proper installation of his/her work and shall not proceed until all unsatisfactory conditions have been corrected including the following:

- Approval of compaction tests of fill and backfill.

- Completion of the placement of drainage fills or slab base.

- Completion of form work.

- Placement of reinforcement.
- Placement of embedded items.
- Completion of review of form work and reinforcing.

Slab on Grade and Footing: Vapor Barrier: Place completely over capillary break material subgrade. Lap joints 6 inches minimum, and continuously tape. Fit tightly to penetrations, and continuously tape. Install continuous tape at all edge conditions.

Sand Cushion: Place a 2-inch sand cushion on top of membrane immediately after placing membrane.

Clean and roughen all construction joint surfaces by removing latence and exposing sound aggregate. Thoroughly clean and moisten contact surfaces before placing fresh concrete.

Cleaning and wetting forms and subgrade: Remove foreign matter accumulated in forms, rigidly close ports and openings left in the form work immediately prior to starting concrete placing. Wet wood forms sufficiently to tighten up cracks. Wet other materials sufficiently to reduce suction and maintain workability of the concrete mix. Thoroughly clean tools used in transporting, placing, and consolidating concrete immediately after each use. Wet subgrade surfaces, immediately prior to placing slabs on grade.

Placing Concrete: Transport concrete from batching plant to place of final deposit as rapidly as practicable. Place concrete before initial set has occurred and in no event after it has contained water for more than 90 minutes and 45 minutes when concrete temperature exceeds 85 degrees Fahrenheit. Convey concrete from mixer to forms as rapidly as possible and deposit as nearly as practicable in its final position by methods which will prevent segregation or loss of ingredients. Thoroughly vibrate and tamp concrete so that all parts of forms are filled and so that no voids remain in mass or on surface. Take special care to work concrete through and around reinforcing steel.

Deposit concrete in horizontal layers not over 8-inches deep. Use spouts, elephant trunks or other approved means as necessary to avoid segregation when dropping concrete. Free fall shall not exceed 5 feet unless approved by the District prior to placement.

Use as many vibrators and tampers as necessary to secure desired results for different parts of structure. Make extra vibrators available during placing of concrete, ready for service in case any vibrator in use fails.

For vibrating of concrete, use a mechanical internal vibrator having a frequency of not less than 4,000 impulses per minute. Place vibrating element directly in concrete and not attached to either inside or outside of forms or to reinforcing steel. Do not over vibrate concrete.

Provide runways for buggies or other approved means of conveying concrete into place to

prevent displacement of forms or reinforcement. Do not run buggies directly over reinforcing steel or on planks supported directly by reinforcing steel. Take care not to displace reinforcement, anchor bolts or other materials that are to be embedded in concrete. Where placing of concrete has been stopped for a sufficient period of time so that shrinkage or warp has separated forms and concrete, draw forms into firm contact with concrete before placing additional concrete. Prevent any shoulder or ledge being formed at a cold joint.

Bring surfaces to be finished to proper grade, strike off, finish in a workmanlike manner. Ensure smooth level surfaces.

Add no water when placing concrete.

Finishing Concrete: Sidewalks, Exterior Slabs on Grade and Curbs:

- Compact, screed, level, and tamp with a grid tamper to raise a thin mortar bed to the surface. Steel trowel and medium broom after concrete has hardened sufficiently to prevent the drawing of moisture to the surface. Do not dust with dry materials. Avoid excessive tamping and surface mortar.

- Tool mark slabs where shown. Round all edges to a 1/2-inch radius.

Curing Concrete: During initial 7 days of curing, concrete and form work shall be kept continuously moist so that a film of water remains on the concrete or form work surface. This may be accomplished through continuously fogging or spraying with water or with moisture retaining fabric coverings. Any covering must be free of any substance that would be harmful to the concrete or the curing process. New fabric coverings should be thoroughly rinsed in water prior to use.

Weather Protection:

Cold Weather Requirements:

- Provide adequate equipment for heating concrete materials and protecting concrete during freezing or near-freezing weather in accordance with ACI 306. Use no frozen materials or materials containing snow or ice.

- All reinforcement, forms, fillers, and ground with which the concrete is to come in contact shall be free from snow or ice. Whenever the temperature of the surrounding air is below 40 degrees Fahrenheit, all concrete placed in the forms shall have a temperature of 45 degrees Fahrenheit or higher after placement. Provide adequate means for maintaining this temperature for 4 days. Provide any additional time necessary to ensure proper curing of the concrete as directed. The housing, covering, or other protection used in connection with curing shall remain in place and intact at least 24 hours after the artificial heating is discontinued. No dependence shall be placed on salt or other chemicals for the prevention of freezing.

Hot-Weather Requirements:

- In hot weather, take suitable precautions to avoid drying of concrete prior to finishing operations. Provide windbreaks, sun shades, fog sprays, or other devices as directed and as required.

- Concrete deposited in hot weather shall no have a placing temperature that will cause difficulty from loss of slump, flash set, or cold joints. Concrete temperature shall be less than 90 degrees Fahrenheit, unless higher temperatures are permitted by the Architect.

Defective Work: Any concrete work not formed as shown or not true to the intended alignment or not plumb or level where so intended, or not true to the intended grades and levels or that has voids or rack pockets that have not been filled, or that has any sawdust, wood, or debris embedded in it, or does not fully conform to the Specifications will be deemed to be defective. Concrete finish which is not properly surfaced as specified, or which varies more than 1/4 inch from the required finish grade (except floors having drains), or which has any roughened top surfaces, or which does not connect properly to the adjoining work will be deemed to be defective. Defective work shall be removed and be replaced with workmanship and materials complying with the requirements of the Contract Documents at no increase in Contract Price and with no time extension allowed.

Patching and Grinding: Formed Surfaces: Patch tie holes and defective areas immediately after form removal. Bonding grout approximately one part Portland Cement to one part fine sand passing a #30 sieve, mixed to creamy consistency. Patching mortar shall be made of the same material and approximately the same proportions as used for concrete, except that coarse aggregate shall be omitted and mortar shall consist of not more than one part Portland Cement to 2-1/2 parts damp loose sand by volume. Combine white and gray Portland Cement as necessary to match color of surrounding concrete. Use no more mixing water than necessary for handling and placing. Mix patching mortar in advance and allow to stand with frequent mixing with trowel without adding water until it has reached the stiffest consistency that will permit placing. Remove honeycombed and other defective concrete down to sound concrete. Dampen area to be patched and at least 6 inches surrounding the area. After water has evaporated from surface, a coat of bonding grout shall be well brushed into the surface. When the bonding grout begins to lose water sheen, apply patching mortar, thoroughly consolidate and strike off slightly higher than surrounding surface. All patching mortar shall set undisturbed for at least 1 hour before final finishing. Do not finish patches for 7 days. Tie holes shall be cleaned, dampened, and solidly filled with patching mortar. All areas to be repaired or grouted are to be inspected by the owner and architect prior to repair.

Slabs on Grade: After entire slab is finished, shrinkage cracks may appear which shall be patched as follows:

- Where the slab is not exposed or where appearance is not important, fill cracks larger than 1/32 inch wide with cement grout and strike off level with surface.

- Where slab is exposed and appearance is important, repair all unsightly cracks in a

manner satisfactory in appearance to the Architect. If this cannot be accomplished, then the concrete shall be considered defective.

Wall Finishes:

- Sack all exposed exterior wall surfaces to fill only superficial air voids and irregularities which are larger than 1/4 inch in diameter with a cement mortar grout, remove all excess grout by sacking without use of water. Take care in application of grout and in sacking excess grout from surface in order that all voids are filled without a thickness of grout being built up on adjacent concrete surface. The resultant finish and texture of concrete shall match existing finish and texture.

Clean Up: Wash and mop clean all interior finish surfaces and sweep and hose clean exterior surfaces after removal of protective covering. Leave all finish surfaces clean and free from oil, paint, plaster, stain and foreign substances and in approved condition.

Reinforcement: Bar reinforcement shall be deformed, and shall be intermediate grade conforming to the "Billett-Steel Bars for Concrete Reinforcement" (ASTM Designation A15), and be of the shape and dimensions shown on the improvement plans. Before any reinforcing steel is delivered to the job site, two sets of prints of the shop drawings shall be submitted to the General Manager for his/her approval, showing the number, length, and a dimensioned bending diagram of all steel bars and rods. Such approval is intended only as an additional precaution against errors and the responsibility for furnishing and placing steel in accordance with the details shown on the improvement plans and as specified shall still remain with the contractor.

A-6.15 Pump Station Structures

Doors: All man doors shall be hollow metal with all steel door frame. Minimum size 3068. Doors shall be of adequate size to move interior equipment in and out for maintenance.

Clearance Requirements: Where works are to be constructed within vaults, houses, or other enclosing structures, the desired minimum horizontal clearance around, outside of, and between the extreme dimensions of appurtenances such as pipes, valves, fittings, flanges, pumps, tanks, and auxiliary equipment shall be 24 inches; the desired minimum horizontal clearance between said extreme dimensions and the vertical walls or enclosing surfaces of said structures shall be 24 inches; and the desired minimum vertical clearance under and between said extreme dimensions and the horizontal floors or bottom surfaces shall be 18 inches. Electrical equipment clearances shall be per the current National Electrical Code.

Floor Drains: The floor or bottom areas of the above mentioned structures shall be drained by means of sloping floors, catch basins with grates, and drain lines constructed to terminate at an approved location, and will not recirculate into the enclosing structure. The catch basin grates shall have a free flowing area of not less than 50 square inches, and the minimum drain line shall be 4 inch size. Where gravity discharge through a drain line is not feasible, a power driven sump pump or line pump, automatically activated by a liquid level sensing device, shall be installed. Gravity drains shall be equipped with a trap and drain to the wet well.

The enclosing structures shall be designed so that precipitation, surface water, and ground water cannot enter said structure. Floors shall be at least 6 inches above outside ground level. The Outside ground level shall have adequate storm drainage facilities not connected to the sanitary sewer system.

Materials and Workmanship: All materials used or incorporated in any works to be accepted by the District shall be new and the best market quality. All work shall be completed in the best, most thorough, substantial and workmanlike manner.

All material, labor and finished work shall be subject to the approval of the General Manager as to its quality and fitness, and shall be immediately removed if it does not meet with his/her approval.

Improvement Plans: The owner or their agent shall submit to the General Manager two prints of all structure plans for his/her review. These improvement plans shall be on 24 x 36 inch sheets.

All structures above ground shall be compatible architecturally with existing or future conditions and shall be approved as to appearance prior to final structure design.

Insulation: Insulation shall be placed if required. The owner or their agent shall submit to the General Manager insulation calculations based upon a low temperature of minus 28 degrees Fahrenheit.

Surface Treatment: The structures surface treatments shall be approved by the General Manager.

Loads: The minimum vertical snow load applicable to the design of roofs and similar surfaces including water tanks shall conform to the following schedule.

Elevation of Structure	Normal Snow Load
5500 and greater, but less than 6000	220 PSF
6000 and greater, but less than 6500	260 PSF
6500 and greater, but less than 7000	300 PSF

Wind loads shall conform to the uniform building code.

Two sets of calculations shall be sent to the General Manager.

Concrete: All concrete used in District structures shall conform to Structural Concrete, Appendix A-6.14, page 117, of this specification.

Excavation and Backfill: Excavation and backfill for buildings and structures shall be approved by the General Manager.

The owner or their agent shall, at no expense to the District, take compaction tests one for each 100 cubic yards of structure backfill by an approved commercial testing laboratory with two copies of the results sent to the General Manager.

The moisture density test shall be ASTM D1557, Method A.

The in place density shall be determined by ASTM D1556.

Access Roads and Site Work: Access roads to District sanitary sewer facilities shall be of an all weather type with a minimum width of 12 feet of traveled way. This width may be increased if length or location become a consideration to the District.

The road grades shall be a maximum of 8 percent. The structural section for access roads and parking areas shall be a minimum of 6 inches of aggregate base Class 2, and 4 inches of asphalt concrete.

There shall be adequate consideration given to roadway and site drainage.

Tops of all excavation slopes and toe of embankment slopes shall have "V" type ditches draining the runoff away from the site area.

All structure sites shall allow for a minimum of one pickup truck parking and adequate room to turn around where necessary.

The District will require free title to all structure sites and a recorded access easement on the road extending a minimum of 5 feet beyond any construction limits.

Welding: All welding shall conform to the welding handbook of the American Welding Society, and as modified herein.

Welder Qualification: All welders working on any portion of work to be incorporated in the District sanitary sewer system shall be certified as specified below and as may be required by the General Manager.

Fabrication and testing of test specimens for qualification of welding procedures and qualification of welding operators shall be completed at no cost to the District.

Test reports shall be submitted to the General Manager in triplicate and approved by him in writing prior to start of fabrication. Test reports shall become the property of the District.

The General Manager may require tested specimens to be furnished to him for review after testing. In the event that test specimens are not satisfactory, the welder will be disqualified.

The contractor shall advise the General Manager in advance of testing weld specimens and shall provide access to the test area so that testing may be witnessed by the General Manager, and bear all costs of such inspection.

Welder qualification tests will be evaluated in accordance with requirements of the AWS except that radiographic examinations will not be used in lieu of the guided bend tests. Radiographic examinations may be used as a supplement to other tests and should they indicate that a test weld is unsound, the General Manager may disqualify the welder.

In lieu of the AWS requirements, qualification tests for tack welding will be the same as the qualification tests required for butt welding material up to and including 3/4 inch thick.

All certification tests shall be performed at the owner or their agent's expense by a commercial testing laboratory approved by the General Manager.

Welding Testing: If in the opinion of the General Manager, the workmanship or the welds are of such a type or nature as to require testing, the owner or their agent shall have the necessary tests performed by a commercial testing laboratory at the owner or their agent's expense with the results delivered to the General Manager.

Pipelines and Fittings: All piping and appurtenances shall be installed in the position and to accurate lines, elevations, and grades as shown on the improvement plans or specified herein. All pipelines shall be rigidly supported and braced by approved hangers, brackets, or other devices. When temporary supports are used, they shall be sufficiently rigid to prevent any shifting or distortion of the piping or related work.

Pipe shall be cleaned of dirt and scale prior to installation and all joints swabbed clean before jointing. All fittings necessary for the satisfactory alignment and arrangement of piping and all necessary unions and cleanouts shall be adequately supported throughout and the weight thereof shall be carried independently of the pump casings or the equipment. All pipe work shall be mounted in a truly workmanlike manner with pipe work parallel with vertical and horizontal axis of reference. All sections of pipe shall be rigidly bolted or joined together after being cut accurately to length in such a manner as to relieve any and all parts of equipment of undue strain resulting from closure of flanged or other joints or connections. Equipment shall be so positioned and aligned that no strain shall be induced within the equipment during or subsequent to the installation of pipe work.

Threaded joints shall be made up with the best quality pure lead paste or approved equal, carefully and smoothly placed on the male threads only. All screwed joints shall be made tight with tongs and wrenches; caulking of any kind will not be permitted.

Use of thread cement or caulking to make joints tight is prohibited. All cut ends shall be reamed to full bore before assembly.

Flanged joints shall be made up square, with even pressure on the gaskets, and shall be watertight. Gaskets shall be heat quality rubber packing not less than 1/16 inch thick and compatible with wastewater applications. All gaskets shall be the full width of the flanges to which they are applied.

All piping within structure shall have bolted flanged joints except as authorized by the General Manager.

The owner or their agent shall, if requested by the District, demonstrate the disassembly and reassembly of the station piping.

Bolts and nuts for flanged joints shall be made of the best quality of defined iron or mild steel and shall have sound, well fitting threads. Bolts shall be provided with hexagonal chamfered heads and nuts. The underside of all bolt heads and nuts shall have true surfaces at right angles to the axis of the bolts. The lengths of the bolts shall be such that after joints are made up, the bolts shall protrude through the nuts, but in no case shall they protrude more than 1/2 inch. All bolts shall have an anti seize compound applied to all male threads.

Dehumidifiers, Heating, Ventilation, and Air Conditioning: Where necessary these types of equipment shall be installed such that the control of the environment within wastewater lift stations and/or other District structures may be controlled.

Heaters shall be required in structures where cold sensitive equipment is located. Cabinets containing cold sensitive equipment shall be equipped with heat strips or heat ventilation. Piping located above ground or in such a manner that exposure to extreme cold would be evident if the heating system failed shall be avoided.

Dehumidifiers where required shall conform to the following. The moisture removing capability of the dehumidifier shall vary with the temperature and relative humidity. The minimum capacity rating at 80 degrees Fahrenheit shall be 15.5 pints per day at 60 percent relative humidity. The maximum capacity at 80 degrees Fahrenheit shall be 25 pints per day at 90 percent humidity. The dehumidifier shall be controlled automatically by an adjustable humidistat and low air temperature cut out with contacts of adequate capacity for the dehumidifier motor.

Ventilation shall be accomplished by using a ventilating blower with sufficient capacity in cubic feet per minute to ventilate the enclosing structure. Minimum guidelines for air changes per hour shall be taken from the current publication of NFPA 820, *Standard for Fire Protection in Wastewater Treatment and Collection Facilities.* A gas detection system shall be installed to check for levels of oxygen, hydrogen sulfide, and explosive gases. The indicators on the gas detection system shall be located such that personnel entering the building will receive notification of hazards. Telemetry equipment shall be connected to the gas detection system to remotely notify District personnel in the event there is a detection of dangerous levels of explosive gases.

Air conditioning shall be installed if the horsepower requirements of the pump motors are such that overheating will be a consideration. Air-conditioning type and size shall be approved by the General Manager.

Calculations for environmental conditions within the lift station shall be submitted with lift station improvement plans.

A-6.16 Pump Station Electrical Work

These Standards cover in general the Districts requirements. The developer shall have his/her engineers specify in additional detail all necessary items of electrical work not mentioned herein.

Materials: All materials shall be new, of the quality herein specified, free from defects and approved by the Underwriters' Laboratories for the purpose for which they are used. Materials shall be of uniform type and make throughout.

Equipment Identification: All panelboards, remote control switches, push buttons, terminal boxes, etc., shall be properly identified with a descriptive nameplate. Nameplate shall be made of 1/16-inch laminated plastic with black background and white letters. Size of letters shall be 1/8 inch high for equipment in device box or boxes and 1/4 inch high for panelboard, terminal can, or larger items. Letters shall be machine engraved. Punched strip tape type nameplates and cardholders in any form are not acceptable.

Working Space: Provide adequate working space around electrical equipment in compliance with the National Electrical Code. In general, provide 6-1/2 foot of headroom and 42-inch minimum clear work space in front of panelboards and controls.

Wire: Installed in conduit and control panels shall be stranded copper with 600 volt type "THHN" or "THWN" insulation. Direct burial cable shall not be allowed.

All other wires shall be stranded type copper wire of not less than 98 percent conductivity. Wires shall bear the Underwriters' label, be color coded and be marked with gauge, type, and manufacturer's name on 24 inch centers.

Wire splices and joints are allowed only in readily accessible junction boxes. #10 AWG or smaller shall be twisted together electrically and mechanically secured and insulated with approved type insulated electrical spring connectors Scotchlok or Ideal. Threaded type wire nut, porcelain or bakelite are not acceptable. Joints and connections for #8 AWG, or larger, shall be made with Burndy, T & B or approved equal, solderless tool applied pressure lugs and connectors. Un-insulated lugs and wire ends shall be insulated with layers of plastic tape equal to insulation of wire and all irregular surfaces properly padded with "Scotchfill" putty prior to application of tape. Tape shall be equal to Scotch #33, General Electric #AW-1 or H.K. Porter #107.

Lace or wire tie conductors together in a neat and workmanlike manner in panelboards, wireways, raceways pull boxes, and similar locations. Plastic wiring ducts are preferred as an alternate to lace or wire ties.

#12 AWG wire shall be the minimum size wire used for lighting and power circuits. Wires run in conduit shall conform to code regulations as to number of wires and conduit size. All wire ends shall be identified with Thomas & Betts WM-A-Z and/or WM-0-45 or approved equal. Identification shall be as shown on the electrical drawings.

Outlet Boxes: Shall be galvanized or sherardized, one-piece pressed steel type. Boxes for fixtures shall be not less than 4 inches and be equipped with fixture stud. Boxes shall be at least 1-1/2 inches deep. Boxes must be accurately placed for finish, independently and securely supported by adequate wood backing or by manufactured adjustable channel type heavy duty box hangers. Boxes in unfinished areas, installed exposed, shall be cast type "condulet" for switches and convenience outlets. Exposed boxes mounted below 6 feet from finished floor shall be cast type.

Codes, Rules, Regulations: All work shall be in full accordance with the latest edition of the National Electrical Code, California Electrical Code, and all state, federal, local, and other laws including the requirements of the serving utility company. However, when these specifications call for materials or construction of a better quality or larger sizes than required by the above mentioned rules and regulations, the provisions of the specifications shall take precedence.

Pilot Lights: Shall be of the oil-tight type and shall have push-to-test feature. Color of lens shall be red unless noted otherwise on drawings.

Switchboard Motor Controls: Shall generally consist of the following components: main circuit breaker; combination drawout circuit breakers and full voltage or soft-start motor starters; dry transformers; 120-volt panelboards; and all appurtenances.

The switchboard/motor controls shall consist of vertical sections to accommodate the circuit breakers, motor starters and control devices. The control structures shall be free-standing, designed and tested in accordance with the latest NEMA ICS 1970 standards, and shall be metal enclosed indoor type, completely interwired in accordance with steel with NEMA Class I Type B standards. Fabrication shall be of code gauge steel with 1-1/2 x 1-1/2 inch welded structural steel angles at the top and bottom of the frames. Control cabinets shall be designed for multiple alignment with continuous main horizontal bus and multiple sections riveted together.

Doors and blank cover plates shall be code gauge steel with gaskets around each door except panelboard. Doors shall use semi-concealed piano type hinges and be secured with slotted head, one-quarter turn captive speed fasteners or approved equal.

All bus bars shall be rectangular and formed of alcan tin-plated copper supported on fiberglass insulators and be properly braced to withstand mechanical stresses of not less than 22,000 amperes. Each combination starting unit shall be mounted on a chassis, having a height as required by the particular size of the combination starter and circuit breaker unit. The chassis shall be so housed and constructed as to isolate the components from adjoining circuits. All motor starters shall be of the magnetic type for across-the-line starting with ambient compensated thermal and adjustable overload protection in each phase. Overload heaters shall be sized for the load they are protecting. Motor starters and circuit breakers shall be I.T.E., Square D, or approved equal. Each combination starter shall be protected by a molded case circuit breaker having an interrupting capacity of not less than 14,000 amperes (symmetrical) and/or as called for on the drawings. Adjustable time delay relays shall be provided, where shown on drawings, to start motors in sequence to limit starting demand on commercial power. Ammeters shall be used as necessary.

Time delay relays, control power transformers and auxiliary relays as necessary shall be provided in each cubicle and each internal and external component shall be clearly identified.

Components shall be mounted on removable back panels, drilled and tapped from the front. They shall not protrude into or restrict wireways. Push buttons, selector switches, meters and pilot lights shall be visible and operable externally, through gasketed, die-cut openings in the unit door. Thermal overload protective devices in combination starters and branch circuit protective devices shall have an external operating device. The circuit breaker shall be interlocked with the door so that the circuit must be de-energized before the door can be opened. A semi-concealed interlock "defeater" arrangement shall be provided. Provisions shall be made for padlocking the breakers with a minimum of three padlocks in the "on or off" position.

All plug-in equipment not mounted horizontally shall have readily removable physical restraining devices to prevent their vibrating loose and falling out.

A wiring diagram specifically detailed for each cubicle shall be furnished and installed inside each cubicle in a door mounted holder.

A continuous ground bus shall extend through all motor control centers. Provide space heaters and thermostats with a calibrated dial adjustment in each section.

All motor control centers and switchboards shall be mounted on 1-1/2 inch concrete slab raised above normal floor level. Grouting will not be accepted. Provide anchor bolts. At locations shown on improvement plans, maintain a minimum of 2 inch air space between rear of switchboards and concrete or metal walls. The 1-1/2 inch concrete pads shall be provided under this section of the specifications to fit the exact size and shape of the switchboards.

Identification of electrical interior controls shall be of a plastic coated material, or other permanent type of marking, as approved by the General Manager. Dymo tape is not accepted. The permanently attached marking shall be attached to each of the following, but not necessarily limited to such: relays, timers, terminal blocks, starters, control transformers, etc. Identification of each item shall correspond to wiring diagram of final shop drawings.

A qualified representative of each manufactured item shall make final adjustments of equipment.

Lighting Fixtures and Lamps: Shall be as shown in the Fixture Schedule complete with lamps listed therein, and shall be U.L. approved, listed and labeled for use as installed. All fixtures of a kind shall be of identical manufacture, appearance and finish. Fixtures shall be located where shown on improvement plans. Where structural conditions require slight deviations, resulting layout shall be symmetrical and as approved by the General Manager.

Bussing: All bussing shall be of copper with sizes based on current code requirements or a current carrying capacity of not over 1,000 amperes per square inch of cross-section. Bars shall be 1/4 inch thickness minimum. All contact surfaces shall be cleaned bright and silver-plated by submergence in an electrolytic bath. Busses shall be rigidly supported and thoroughly braced to match short circuit values of the main circuit breaker.

Circuit Breakers: The main and distribution circuit breakers shall be molded case type with trip ratings as called for in the schedule on the drawing.

Each circuit breaker shall be identified with an engraved laminated phenolic plate showing the load served or the function of the breaker. The nameplate shall be attached with oval head machine screws tapped into the front of the board, or some other equally effective means.

Grounding: Ground fittings shall be of approved manufactured type, installed and connected to conform with Code requirements. The neutral conductors and noncurrent-carrying parts of equipment at each installation shall be grounded in accordance with the applicable Code. Ground conductor shall be copper having a current capacity per N.E.C., but not smaller than No. 6 AWG. Exercise every precaution to obtain good contact at all panelboards, outlets, etc. Where it is not possible to obtain good contact, the conduits shall be bonded around the boxes with an insulated conductor, No. 6 AWG or larger, connected to the conduits by means of approved clamps.

All equipment cases, motor frames, etc., shall be completely grounded to satisfy the requirements of the N.E.C. and the Electrical Safety Orders.

Conduits: Rigid Steel Conduit shall be standard weight, mild steel pipe, zinc coated on the outside by a hot dipping, sherardizing, or metalizing process. The inside and outside of the conduit shall be finished with a protective coating.

Fittings, such as couplings, elbows, bends, etc., shall be subject to the same requirements as for rigid steel conduit. All couplings and unions shall be the threaded type assembled with red leaded joints made absolutely tight to exclude water. Unions shall be Crouse Hinds UNY or UNF or approved equal.

Electrical Metallic Tubing (E.M.T.) shall be cold rolled steel tubing with zinc coating on the outside and a protective enamel coating on the inside.

Fittings shall meet the same requirements for finish and material as E.M.T. They shall be the watertight compression type requiring the tightening of a nut. Indenters will not be allowed.

A flexible conduit shall be liquid tight except where used with a recessed light fixture. Conduit shall be galvanized with extruded polyvinyl covering and with watertight connectors. Minimum size shall be 1/2 inch except where supplied as part of approved manufactured assemblies.

All conduits shall be rigid, except that E.M.T. may be used at the following locations:

- In dry locations in furred spaces.
- In partitions other than concrete or solid masonry.
- For exposed work indoor above 6 feet.

Conduits installed in contact with the ground, in sand or gravel-fill shall be rigid steel with two protective coverings of Koppers' Bitumastic #50 or equal, applied after couplings and fittings are in place, each coat not less than 1/32 inch thick when dry. Conduit shall be run concealed in areas having finished ceilings and in furred walls. Conduit may be run exposed where so permitted by the General Manager. Exposed conduit below 6 feet shall be rigid type. Conduit run exposed shall be neatly installed parallel and at right angles to the structural members.

Conduit shall be fastened to the structure with pipe clamps. Conduits up to and including 1-1/2 inch trade size shall be supported at 5 foot intervals or less.

Cap conduit during construction by means of manufactured seals; swab out conduits before wires are pulled in.

Make water-tight conduits projecting through roof by proper flashing.

Wet Well Electrical Equipment: The electrical equipment used in the wet well must meet the National Electrical Code (NEC) requirements for Class I, Division I, groups C and D hazardous atmospheres. The electrical control cabinet shall also be isolated from the wet well to meet the above hazardous atmospheres. If sensors or other electrical equipment is used that does not meet the NEC requirements for hazardous atmospheres, they shall be electrically isolated with approved intrinsically safe barriers.

Telemetry: Will be required where wet wells, pump stations and other types of mechanical facilities are to be incorporated into the District sanitary sewer system. The owner or their agent shall include a complete telemetry system which shall conform with the existing District telemetry plans and system. The proposed system shall be approved by the General Manager.

Tests: Upon completion of construction and adjustment of all equipment, all systems shall be tested under the direction of the General Manager to demonstrate that all equipment furnished and installed and/or connected under the provisions of these standards shall function electrically in the manner required.

All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and between phase conductors and ground not less than the requirements of the National Electrical Code. All circuits shall be tested for proper neutral connections.

As Built Drawings and Operating Manuals: Shall be furnished in three bound sets, covering the following items:

- "As Built" drawings of contract electrical documents showing clearly exact locations of all underground conduits as installed. All deviations from contract drawings shall be shown. This information shall be presented by the contractor on revised transparent ozalid prints of original tracings. As built drawings shall be presented at completion of project and before final payment is due.

- "As Built" drawings of all switchboards, panelboards, wiring diagrams and control equipment.

- Detailed control wiring diagrams, both schematic and construction wiring for all switchboards, motor starters, transformers. Included herein shall be copies of individual cubicle wiring diagrams posted inside motor starter cubicles as noted under switchboard specifications. All wires, connections, terminals, etc. shall have an individual identification code.

- Complete instruction, maintenance and overhaul manuals, clearly showing and explaining operation and overhaul of all starters, circuit breakers, controls and all electrical equipment.

- Renewal parts lists for all equipment requiring maintenance, adjustment or repairs.

- Complete step-by-step sequential explanation of relay contact and device operation for all controls. The written explanation shall be clearly coordinated to device symbols and numbers on the elementary wiring diagrams.

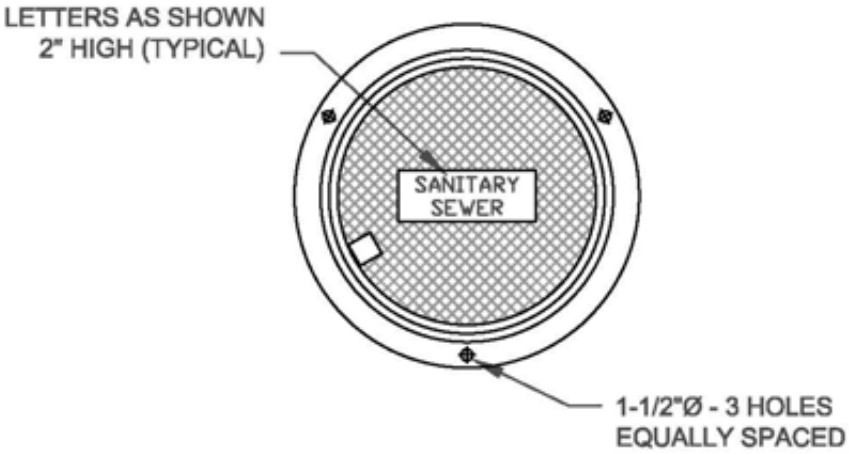
- Complete step-by-step sequential instructions and precautions for system start-up as well as system shut down.

- All material called for in c. to f. above shall be bound and indexed in stiff back, loose leaf, plastic covered binder.

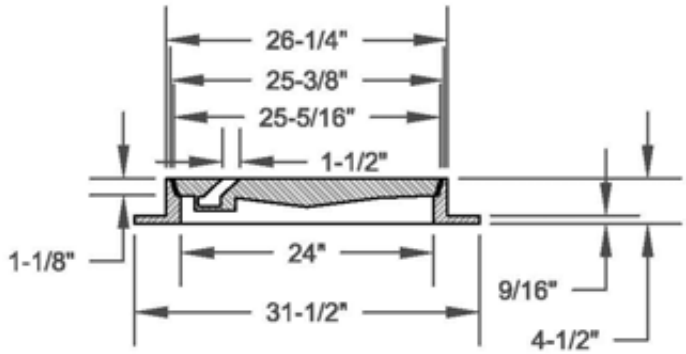
Guarantee: The owner or their agent shall leave the entire electrical system in proper working order and shall, at their own expense, replace any work, material, or equipment furnished by him which develops defects within 1 year from the date of acceptance.

STANDARD DRAWINGS

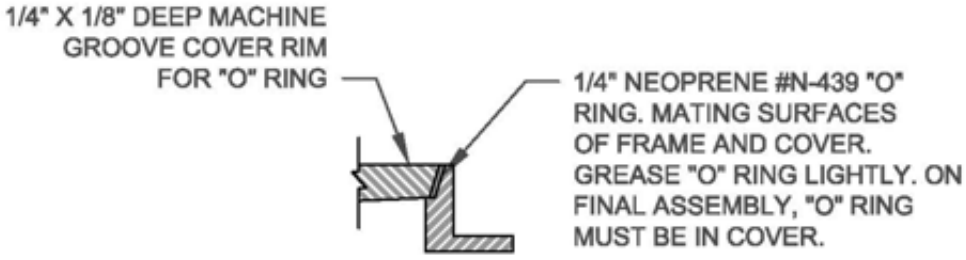
PLAN VIEW



SECTION VIEW

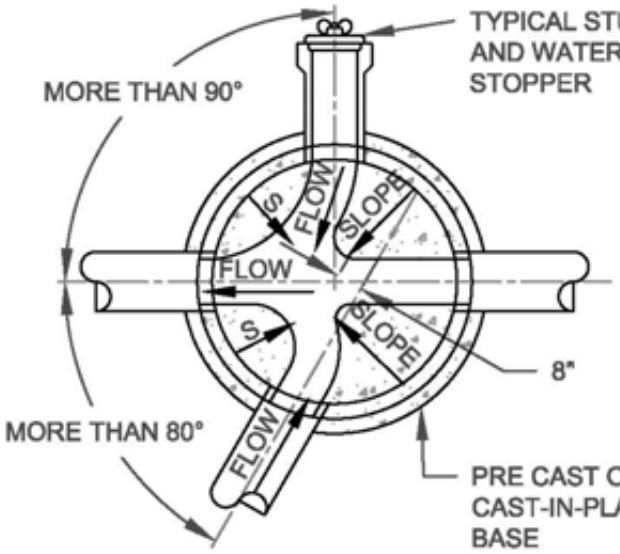


TAPERED FRAME AND COVER DETAIL



N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	MANHOLE FRAME AND COVER DETAIL	DRAWN: JW	DWG. FILE: SO-1
		APPROVED: MS	FIGURE: 1
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

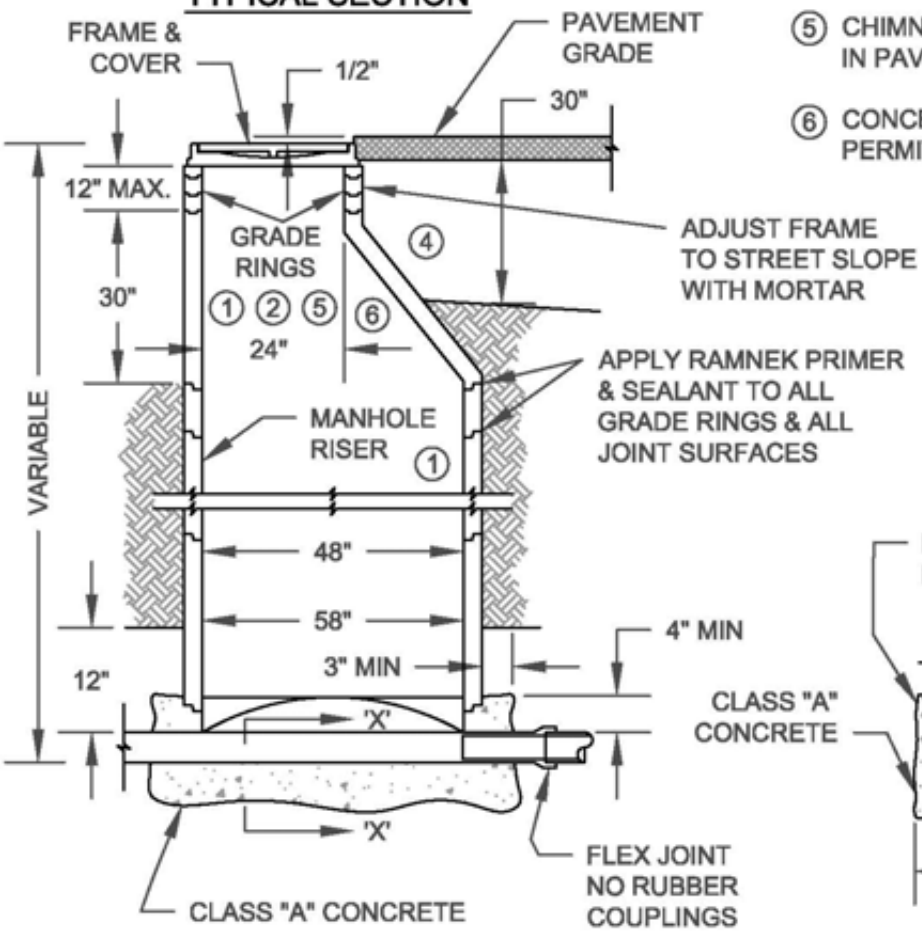
FLOOR PLAN



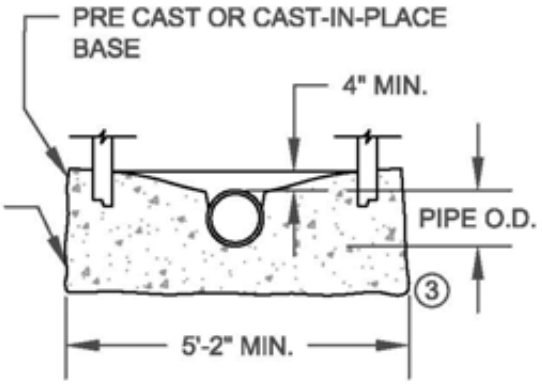
NOTES:

1. REINFORCED CONCRETE GRADE RINGS, CONES, PIPE RISERS OR APPROVED PRE CAST MANHOLE SECTIONS SHALL CONFORM TO CURRENT A.S.T.M. SPEC. NO. C-478.
2. MANHOLES IN PAVED AREAS SHALL HAVE AT LEAST ONE 2-INCH GRADE RING INSTALLED ON TOP OF THE CONE.
3. FOR CAST-IN-PLACE BASES, CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
4. CLASS 2 BACK FILL AT 95% R.C. IN ALL STREETS, CLASS 3 AT 90% R.C. IN OTHER AREAS.
5. CHIMNEY SEAL REQUIRED ON MANHOLES IN PAVED AREAS.
6. CONCENTRIC OR ECCENTRIC CONES PERMITTED.

TYPICAL SECTION

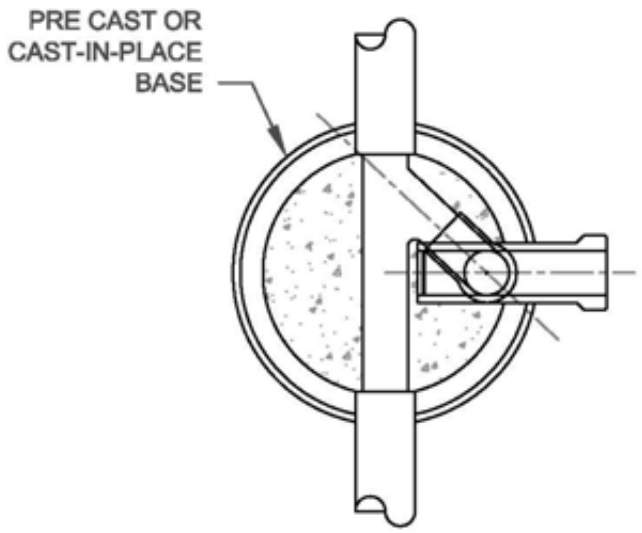


SECTION 'X - X'



N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	TYPE "A" MANHOLE	DRAWN: JW	DWG. FILE: SO-2
		APPROVED: MS	FIGURE: 2
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

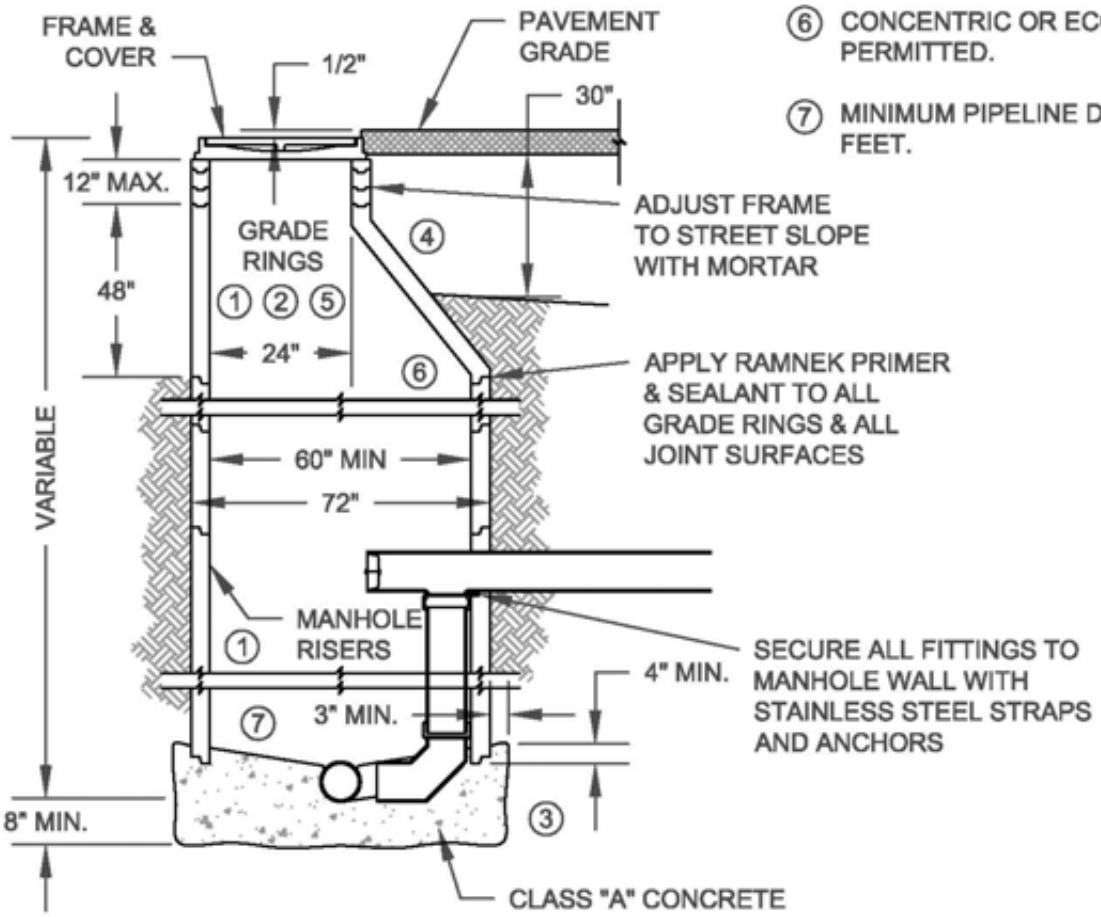
FLOOR PLAN



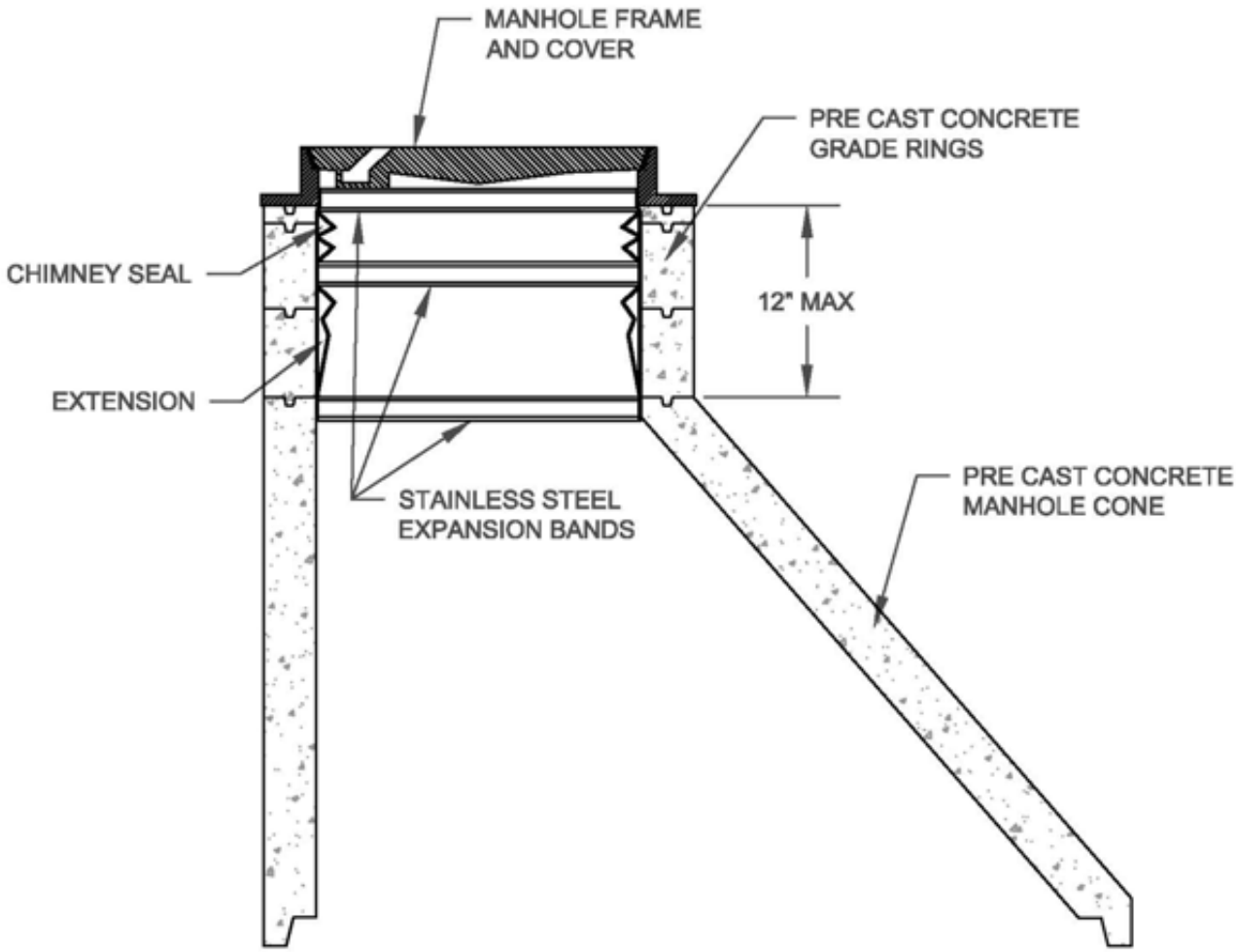
NOTES:

1. REINFORCED CONCRETE GRADE RINGS, CONES, PIPE RISERS OR APPROVED PRE CAST MANHOLE SECTIONS SHALL CONFORM TO CURRENT A.S.T.M. SPEC. NO. C-478.
2. MANHOLES IN PAVED AREAS SHALL HAVE AT LEAST ONE 2-INCH GRADE RING INSTALLED ON TOP OF THE CONE.
3. FOR CAST-IN-PLACE BASES, CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
4. CLASS 2 BACK FILL AT 95% R.C. IN ALL STREETS, CLASS 3 AT 90% R.C. IN OTHER AREAS.
5. CHIMNEY SEAL REQUIRED ON MANHOLES IN PAVED AREAS.
6. CONCENTRIC OR ECCENTRIC CONES PERMITTED.
7. MINIMUM PIPELINE DROP 5 VERTICAL FEET.

TYPICAL SECTION



N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	DROP CONNECTION MANHOLE	DRAWN: JW	DWG. FILE: SO-3
		APPROVED: MS	FIGURE: 3
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

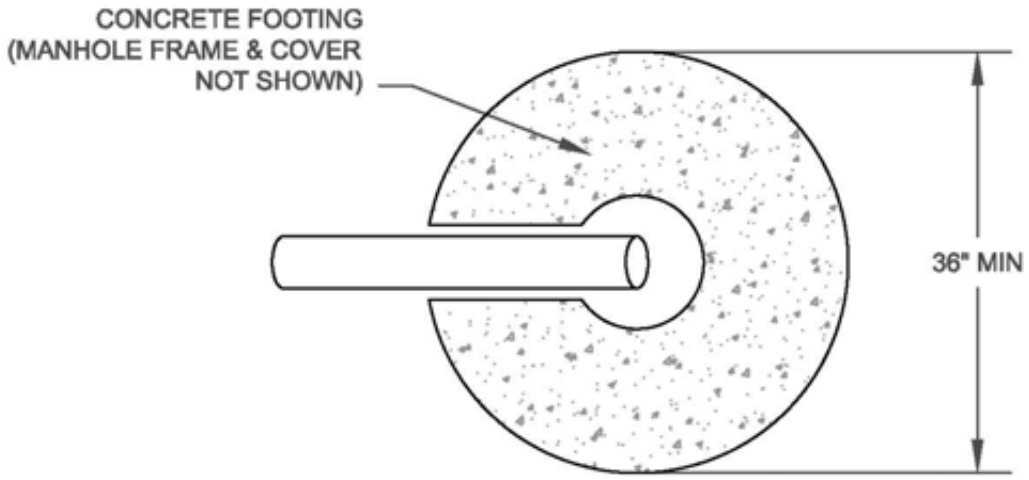


CHIMNEY HEIGHT	SEAL
0 THROUGH 4-1/2"	CHIMNEY SEAL ONLY
4-1/2" THROUGH 10"	SEAL + 7" EXTENSION
10" THROUGH 12"	SEAL + 10" EXTENSION

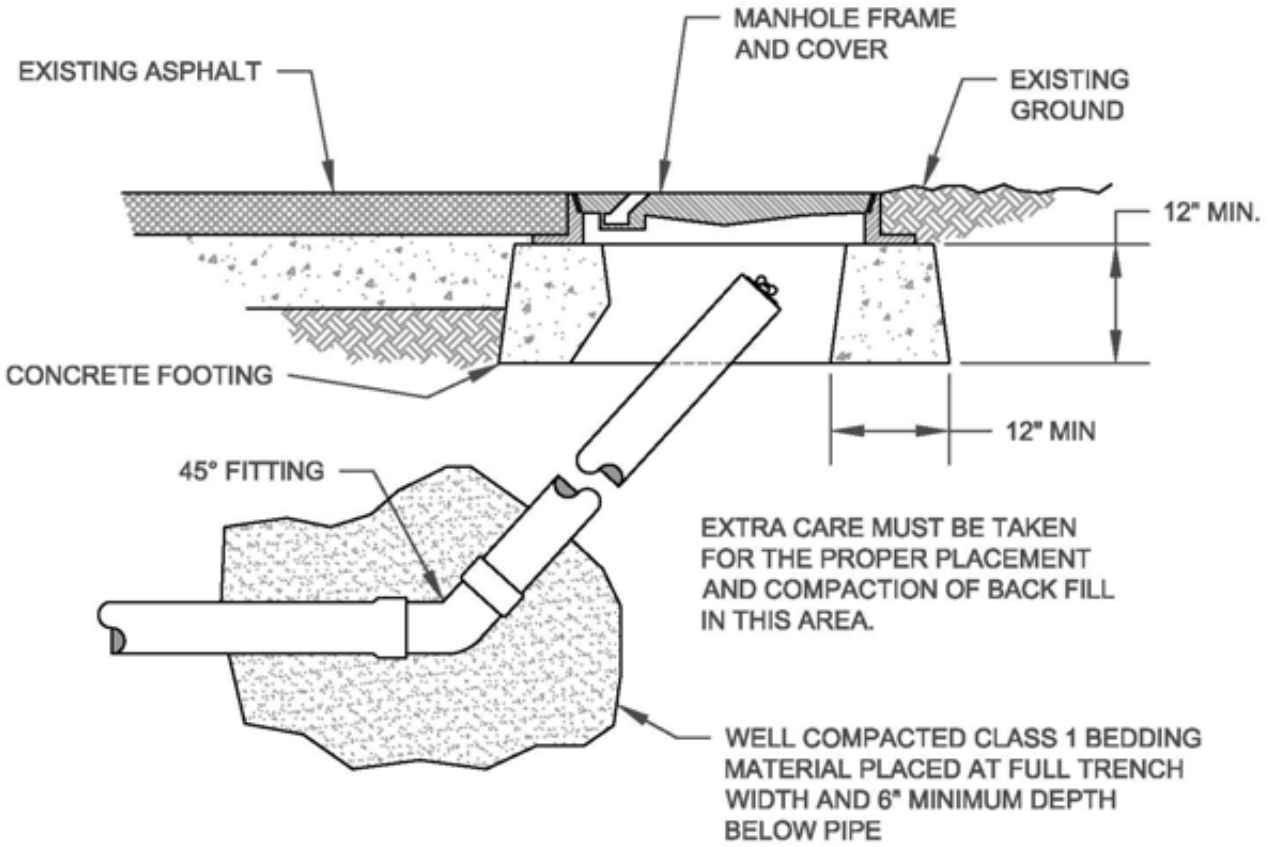
NOTE: FRAME OFFSETS AND DIAMETER DIFFERENTIALS WILL REDUCE SEAL/EXTENSION SPAN HEIGHT.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	INTERNAL MANHOLE CHIMNEY SEAL	DRAWN: JW	DWG. FILE: SO-4
		APPROVED: MS	FIGURE: 4
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

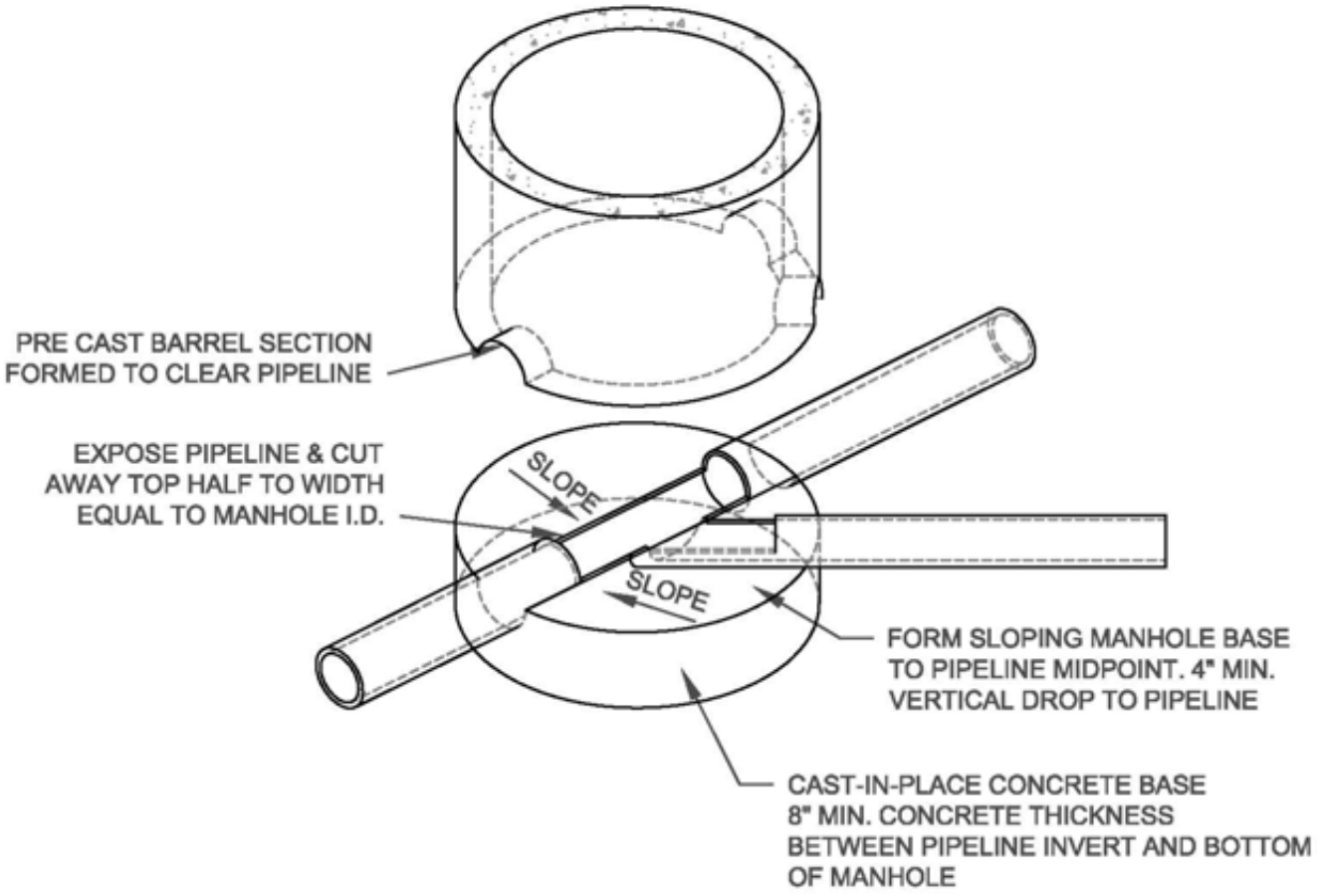
PLAN VIEW



PROFILE VIEW

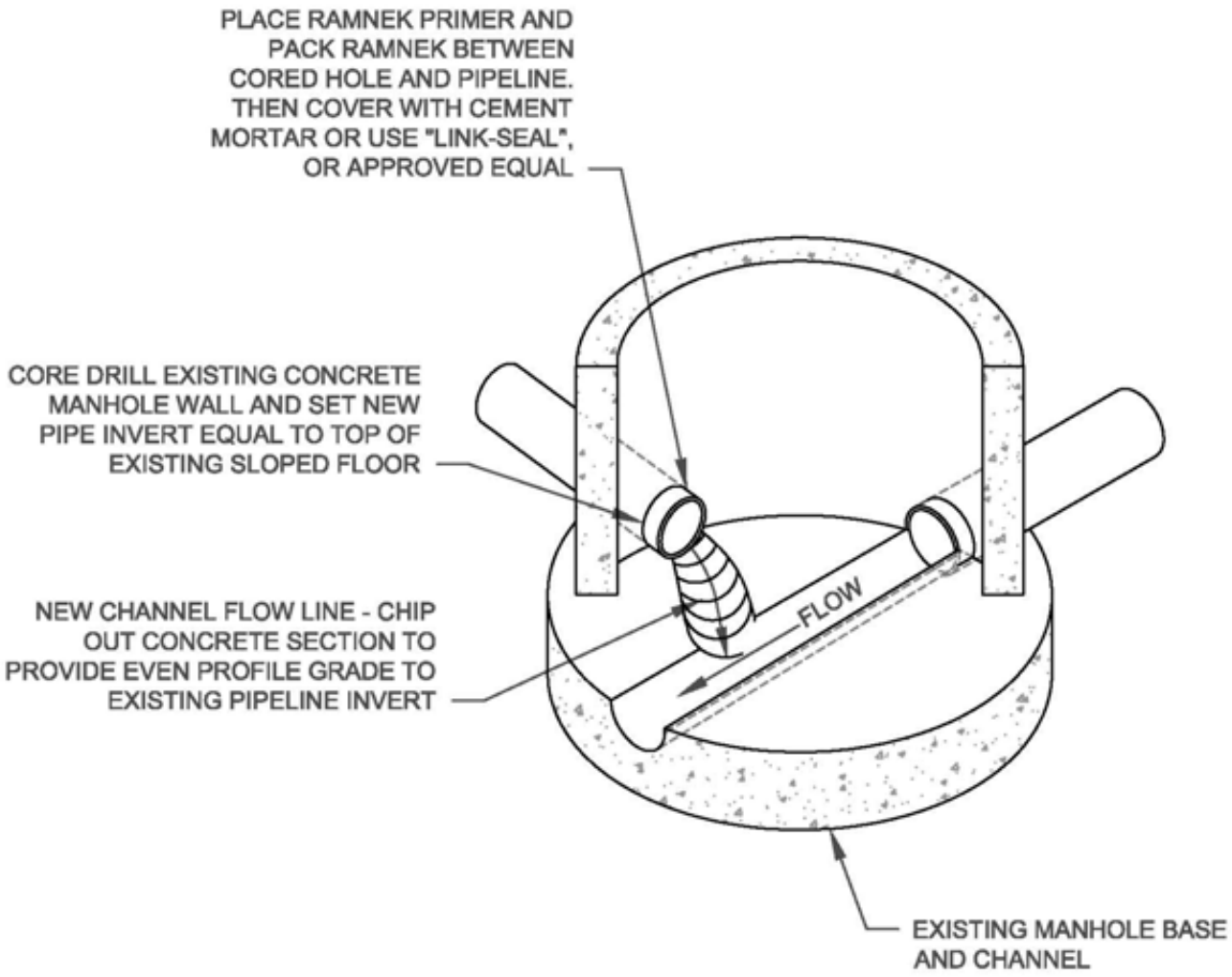


N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	END OF LINE CLEAN OUT ASSEMBLY	DRAWN: JW	DWG. FILE: SO-5
		APPROVED: MS	FIGURE: 5
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

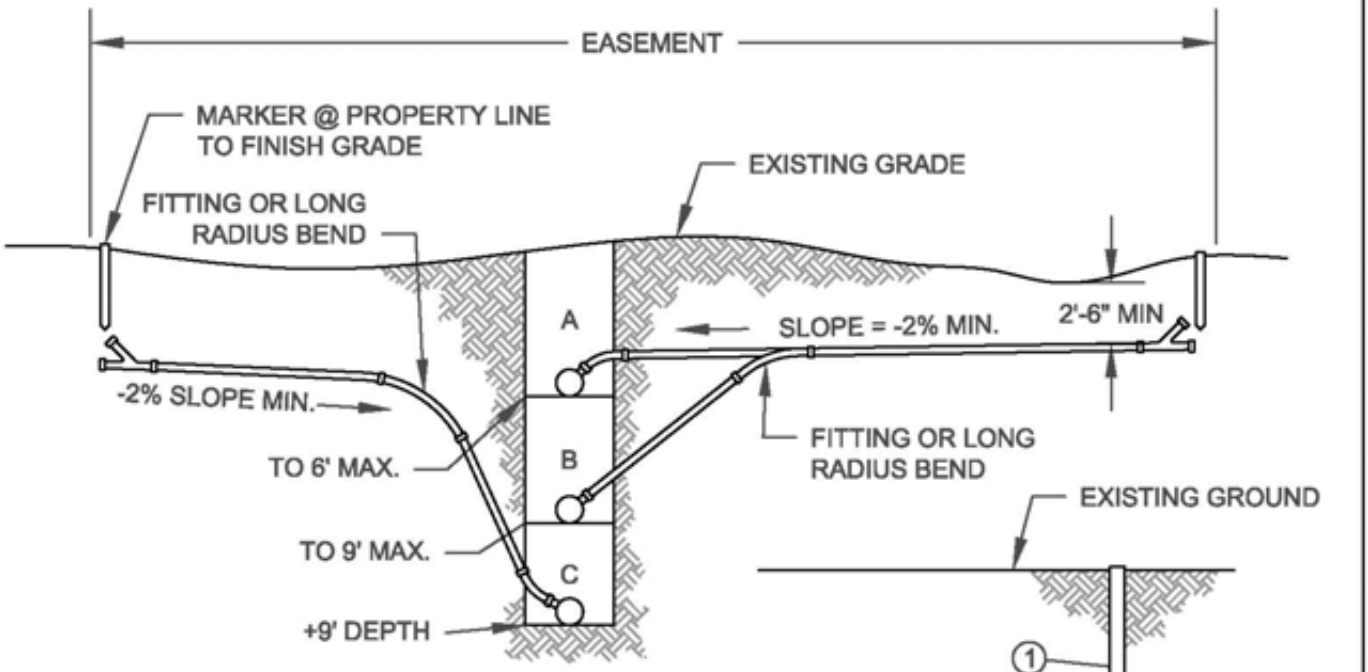


NOTE:
CAST IN PLACE MANHOLE BASE, BARREL SECTION(S), ECCENTRIC CONE, FRAME AND COVER, AND RELATED APPURTENANCES SHALL MEET THE REQUIREMENTS OF FIGURES 1 & 2, STANDARD DRAWINGS.

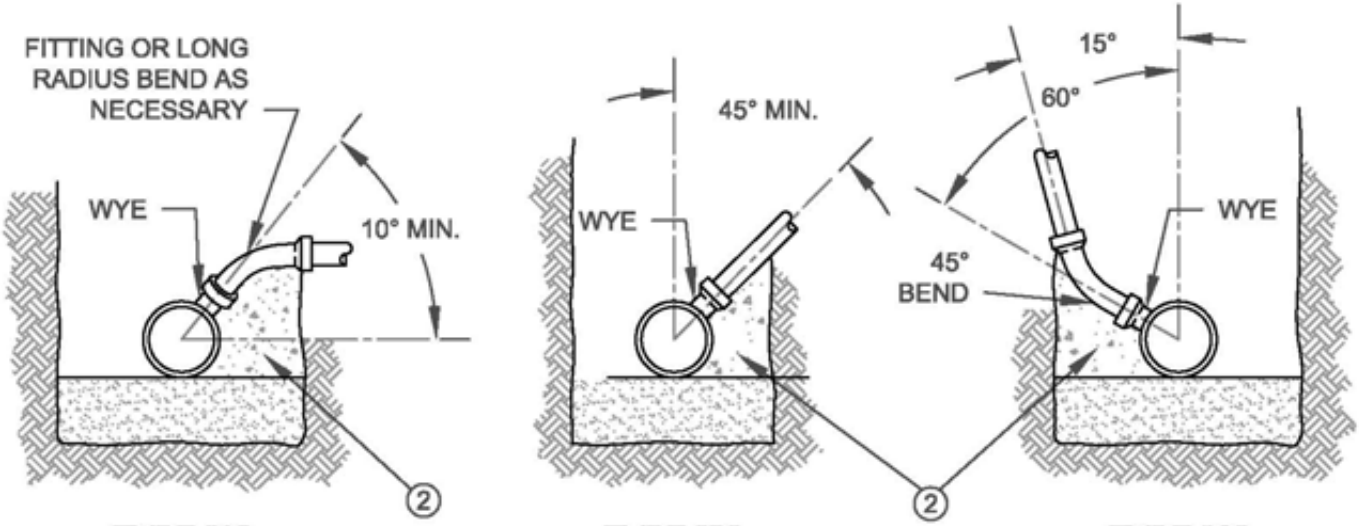
N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	MANHOLE CONSTRUCTION OVER EXISTING SEWER LINE	DRAWN: JW	DWG. FILE: SO-6
		APPROVED: MS	FIGURE: 6
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	



N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	PIPE CONNECTION TO EXISTING MANHOLE	DRAWN: JW	DWG. FILE: SO-7
		APPROVED: MS	FIGURE: 7
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

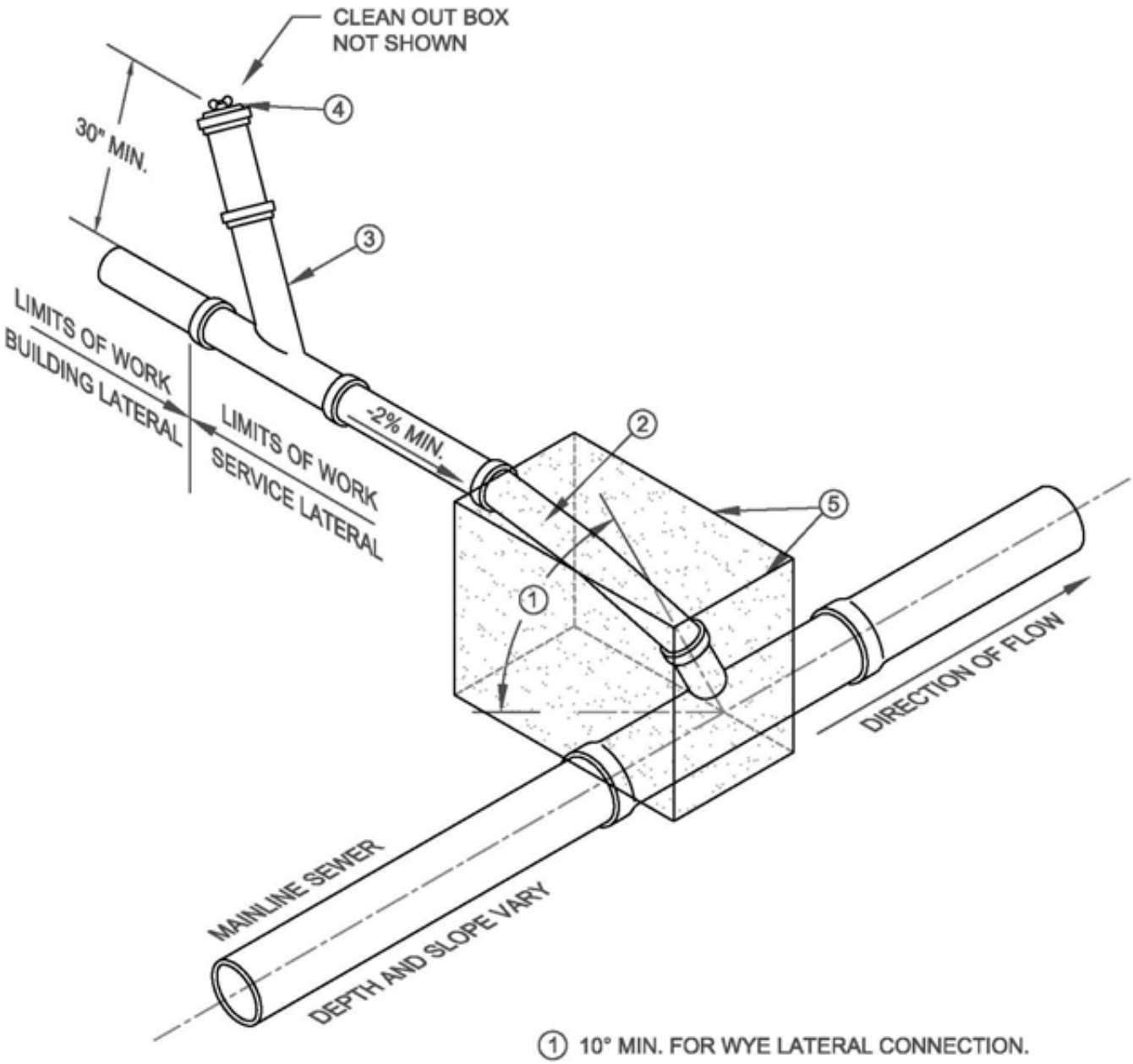


① INSTALL 2" X 2" REDWOOD STAKE OR APPROVED FLEXIBLE GREEN MARKER @ PROPERTY LINE FROM TOP OF LATERAL TO FINISH GRADE.



② PLACE WELL COMPACTED BEDDING MATERIAL 18" UNDER WYE BRANCH, FITTING, AND UNSUPPORTED PIPE. WHEN BEDDING MATERIAL IS USED, PLACE ADDITIONAL MATERIAL TO TOP OF BEND, THE FULL WIDTH OF THE TRENCH.

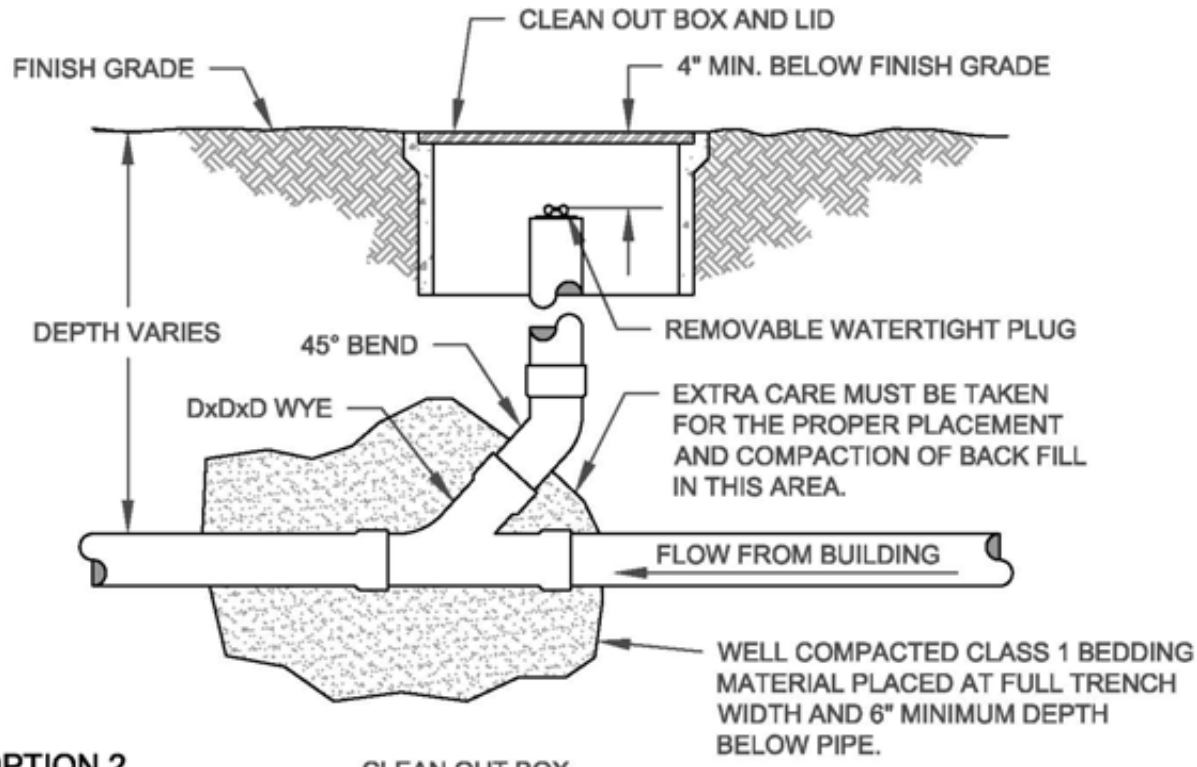
N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	SERVICE LATERAL DETAIL (PROFILE VIEW)	DRAWN: JW	DWG. FILE: SO-8
		APPROVED: MS	FIGURE: 8
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	



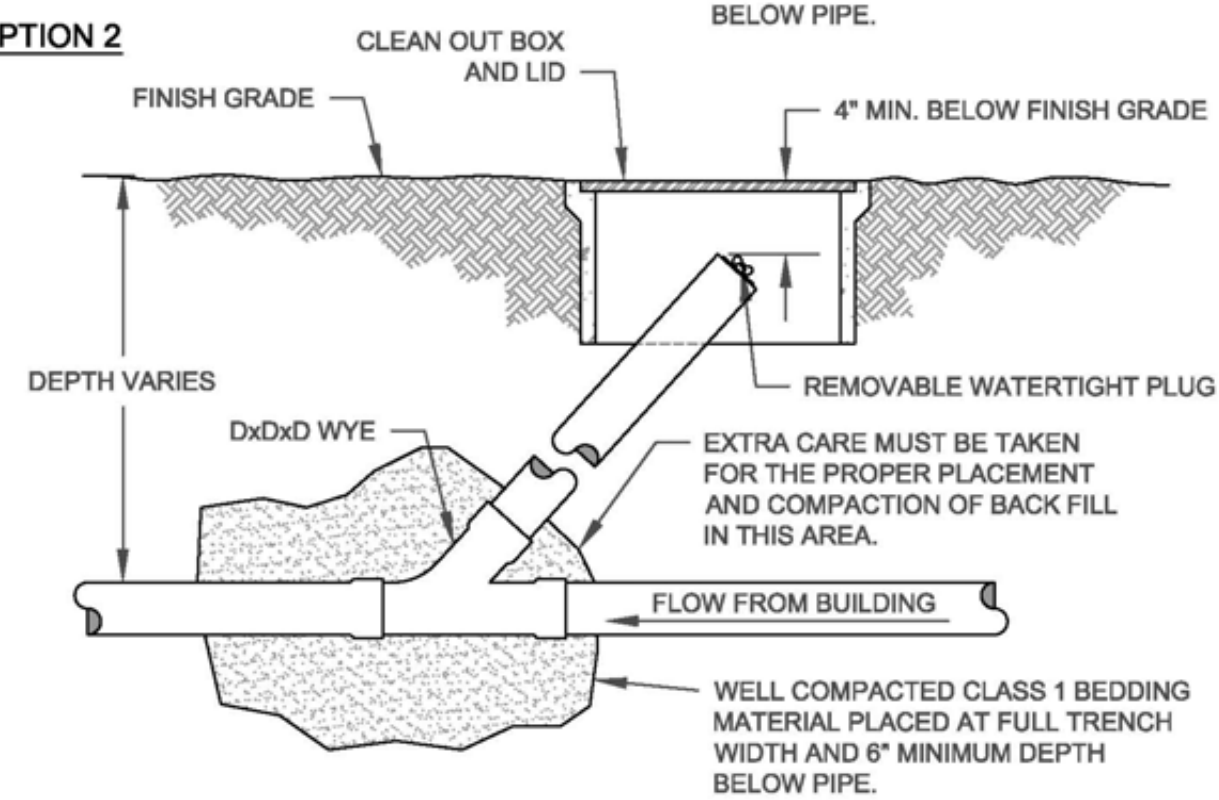
1. 10° MIN. FOR WYE LATERAL CONNECTION.
2. FITTING OR LONG RADIUS BEND.
3. SERVICE WYE WITH PIPE EXTENSION TO GRADE.
4. WATERTIGHT END PLUG (EASILY REMOVABLE).
5. PLACE WELL COMPACTED BEDDING MATERIAL 18" UNDER WYE BRANCH, FITTING, AND UNSUPPORTED PIPE. WHEN BEDDING MATERIAL IS USED, PLACE ADDITIONAL MATERIAL TO TOP OF BEND, THE FULL WIDTH OF TRENCH.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	SERVICE LATERAL DETAIL (ISOMETRIC VIEW)	DRAWN: JW	DWG. FILE: SO-9
		APPROVED: MS	FIGURE: 9
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

OPTION 1 NOT RECOMMENDED IN AREAS WHERE HEAVY EQUIPMENT IS OPERATED.

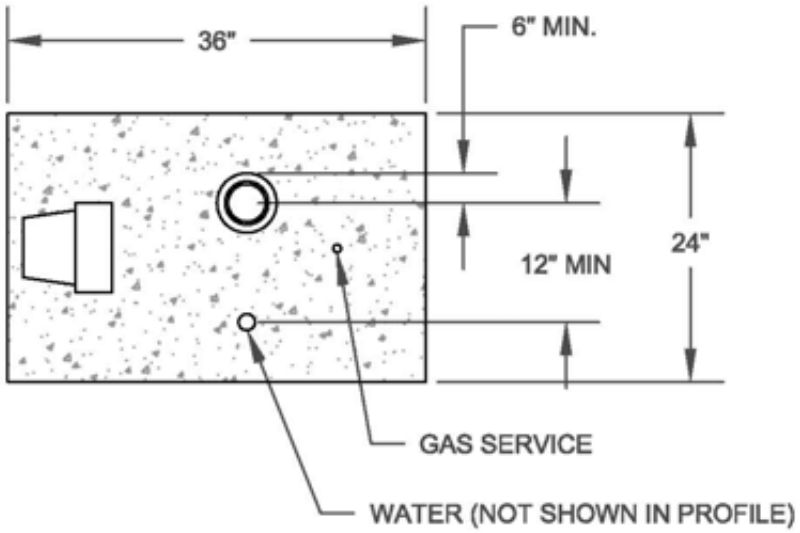


OPTION 2

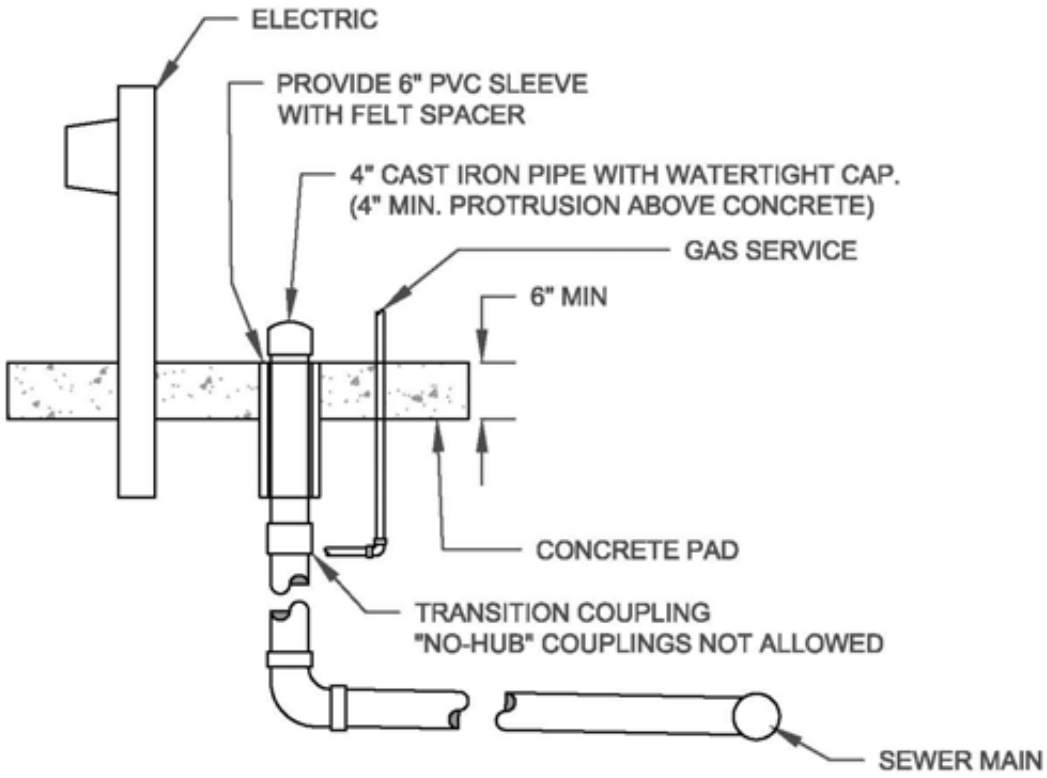


N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	LATERAL CLEAN OUT ASSEMBLY	DRAWN: JW	DWG. FILE: SO-10
		APPROVED: MS	FIGURE: 10
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

PLAN VIEW

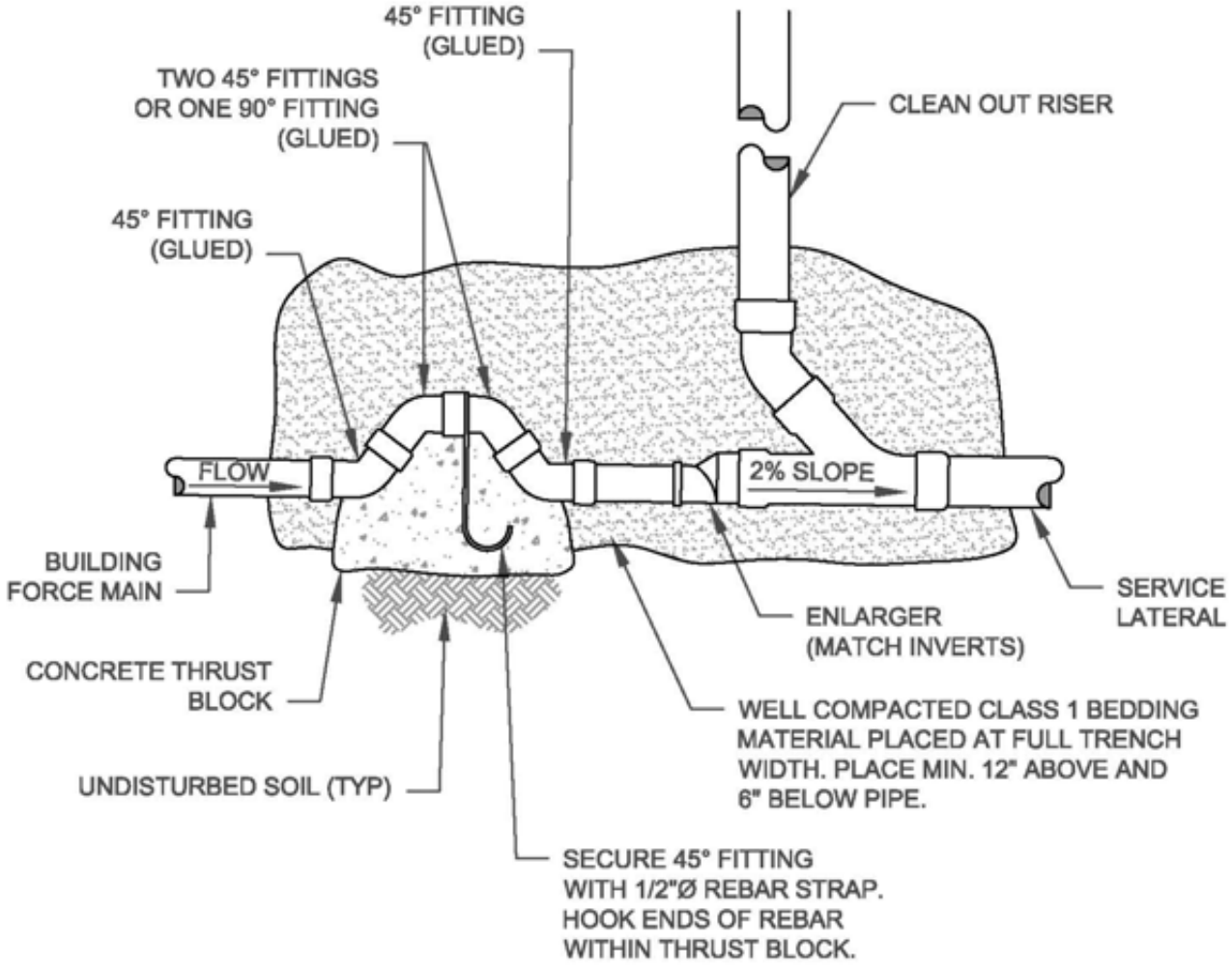


PROFILE VIEW



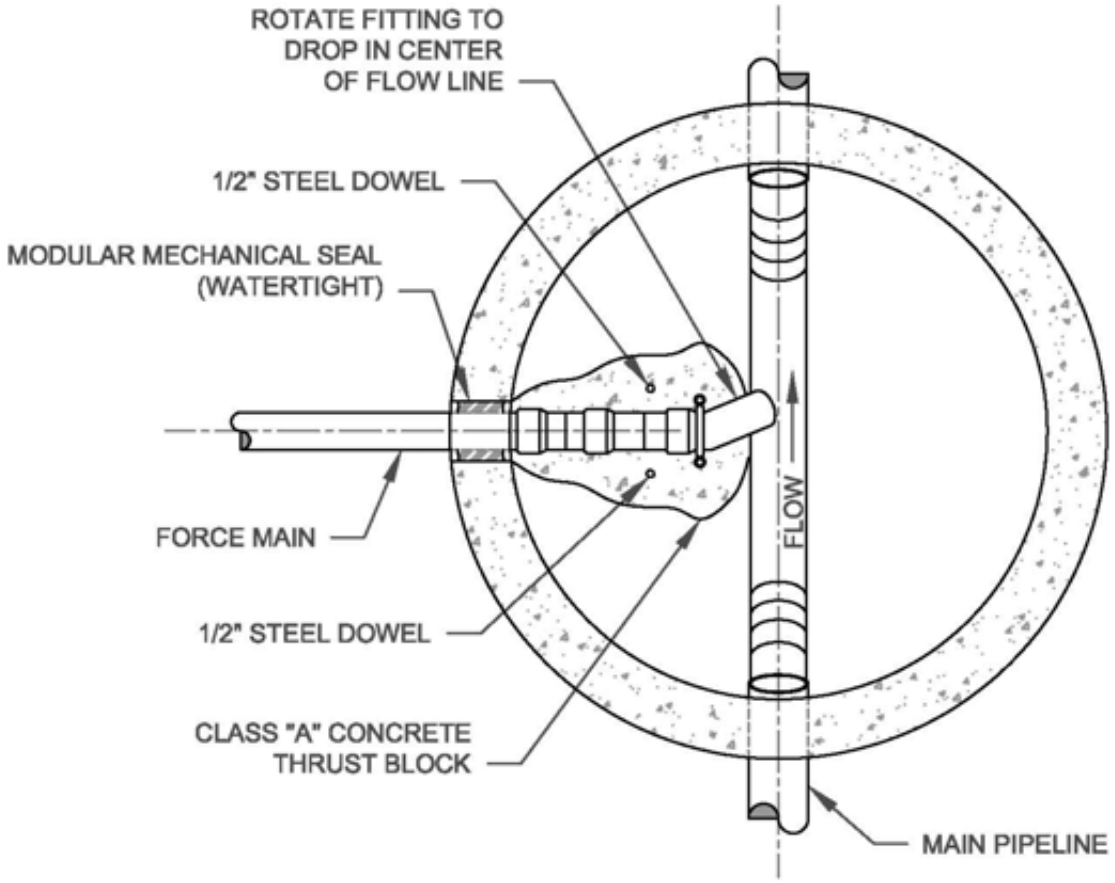
N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	UTILITY PAD INSTALLATION	DRAWN: JW	DWG. FILE: SO-11
		APPROVED: MS	FIGURE: 11
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

PROFILE VIEW

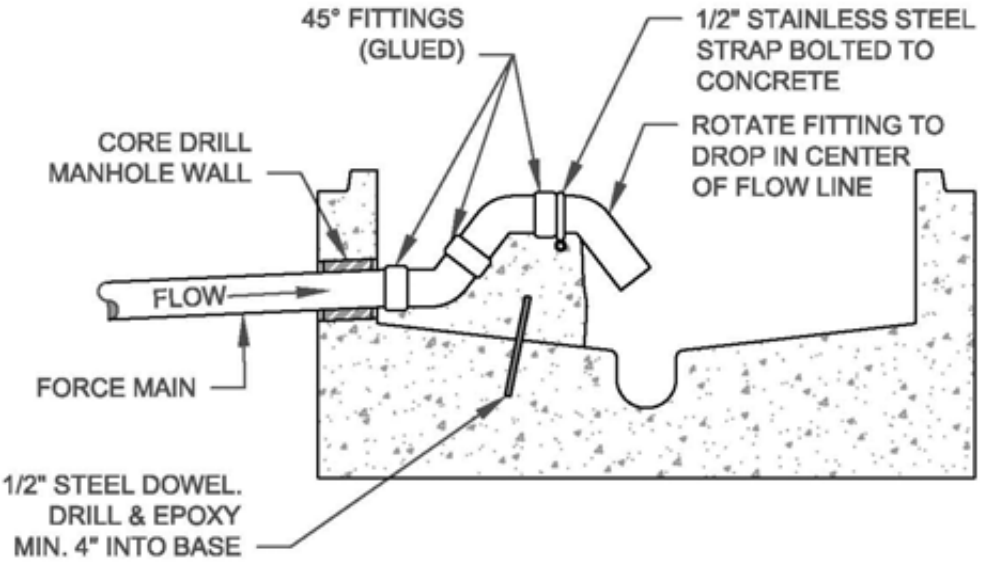


N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	FORCE MAIN DETAIL	DRAWN: JW	DWG. FILE: SO-12
	(SIPHON BREAK AT PROPERTY LINE)	APPROVED: MS	FIGURE: 12
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

PROFILE VIEW

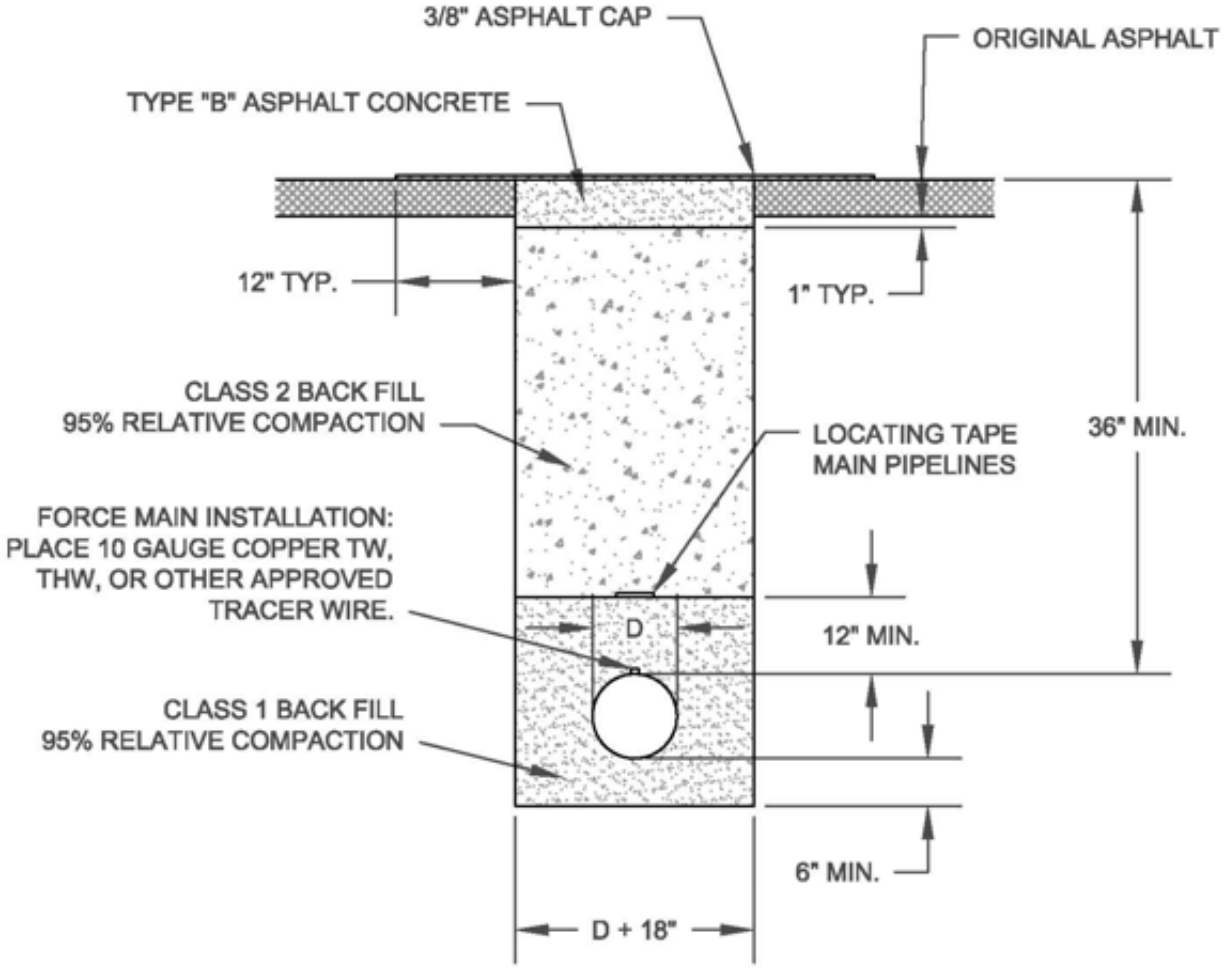


PLAN VIEW



N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	FORCE MAIN DETAIL (SIPHON BREAK AT MANHOLE)	DRAWN: JW	DWG. FILE: SO-13
		APPROVED: MS	FIGURE: 13
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

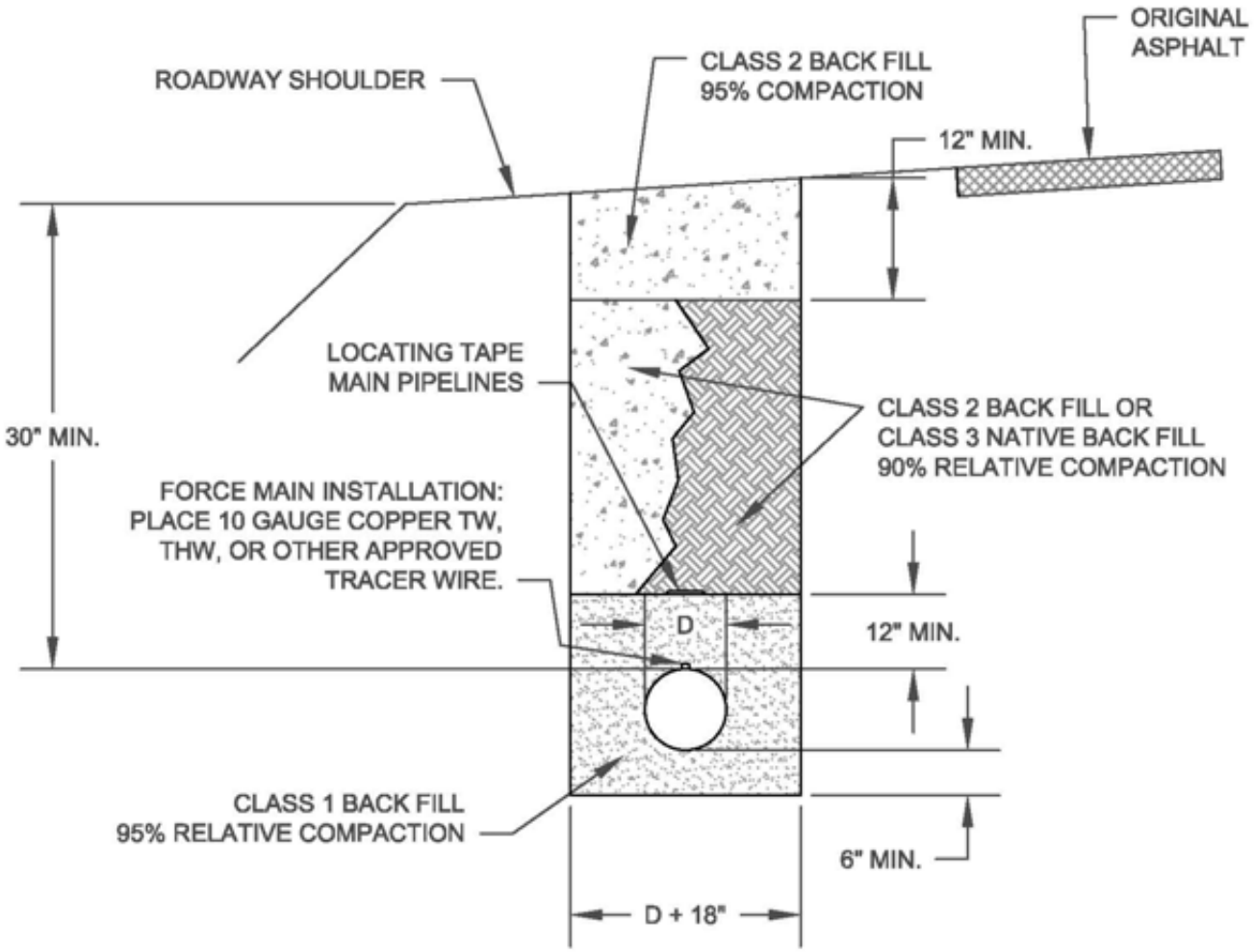
PROFILE VIEW



NOTES:
1. ALL SEWERAGE WORKS TO MEET OR EXCEED NORTHSTAR C.S.D. CODE REQUIREMENTS.
2. D = PIPE DIAMETER.
3. TRENCH BRACING OR SHORING AS REQUIRED BY THE "CONSTRUCTION SAFETY ORDERS", STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS.
5. A MINIMUM OF 30 INCHES COMPACTED EARTH FILL SHALL COVER ALL GRAVITY AND FORCE BUILDING AND SERVICE LATERALS. COVER LESS THAN 48 INCHES IN VEHICULAR TRAVELED WAYS REQUIRES HEAVIER WALLED PIPE AS LISTED IN APPENDIX A-5.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	TYPICAL SEWER TRENCH FOR PAVED AND TRAFFIC AREAS	DRAWN: JW	DWG. FILE: SO-14
		APPROVED: MS	FIGURE: 14
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

PROFILE VIEW

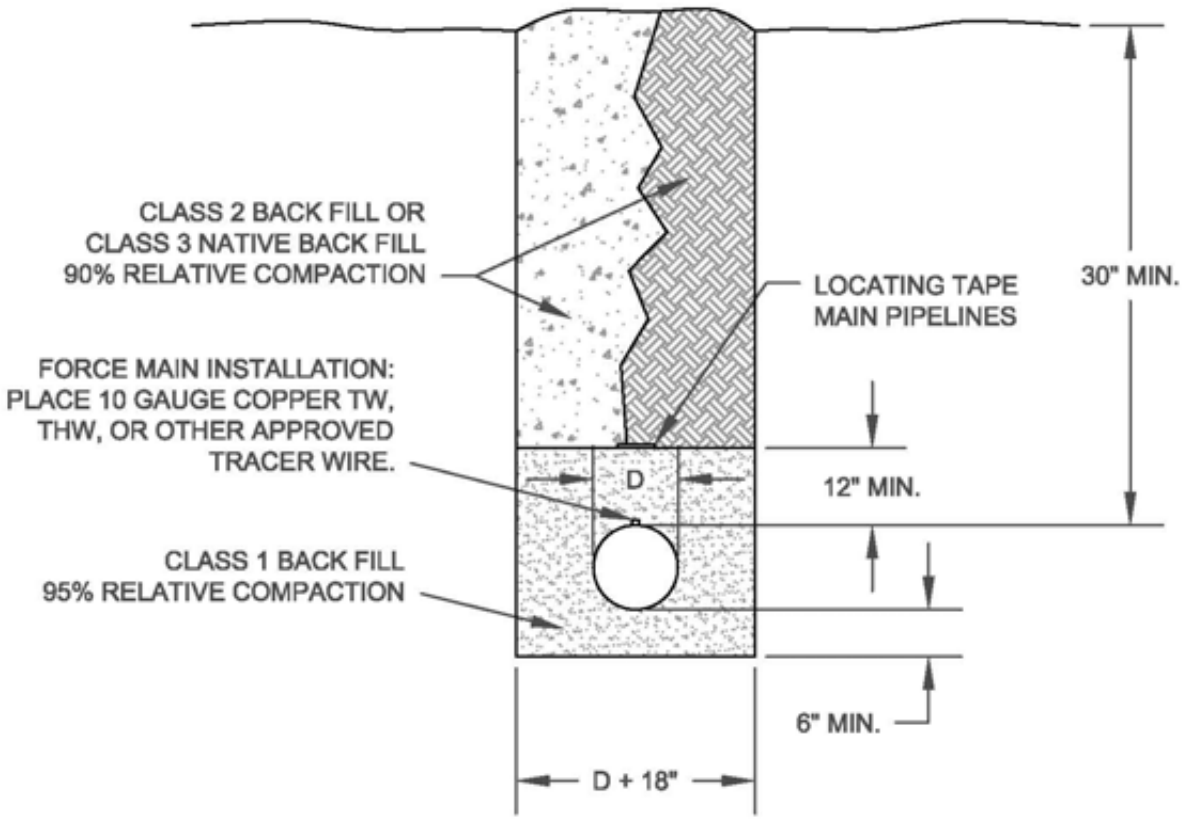


NOTES:

1. ALL SEWERAGE WORKS TO MEET OR EXCEED NORTHSTAR C.S.D. CODE REQUIREMENTS.
2. D = PIPE DIAMETER.
3. TRENCH BRACING OR SHORING AS REQUIRED BY THE "CONSTRUCTION SAFETY ORDERS", STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS.
4. ROADWAY SHOULDERS SHALL BE CONSIDERED VEHICLE AREA AND ARE SUBJECT TO PIPELINE REQUIREMENTS OF APPENDIX A-5.
5. A MINIMUM OF 30 INCHES COMPACTED EARTH FILL SHALL COVER ALL GRAVITY AND FORCE BUILDING AND SERVICE LATERALS. COVER LESS THAN 48 INCHES IN VEHICULAR TRAVELED WAYS REQUIRES HEAVIER WALLED PIPE AS LISTED IN APPENDIX A-5.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	TYPICAL SEWER TRENCH (OFF SHOULDER)	DRAWN: JW	DWG. FILE: SO-15
		APPROVED: MS	FIGURE: 15
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

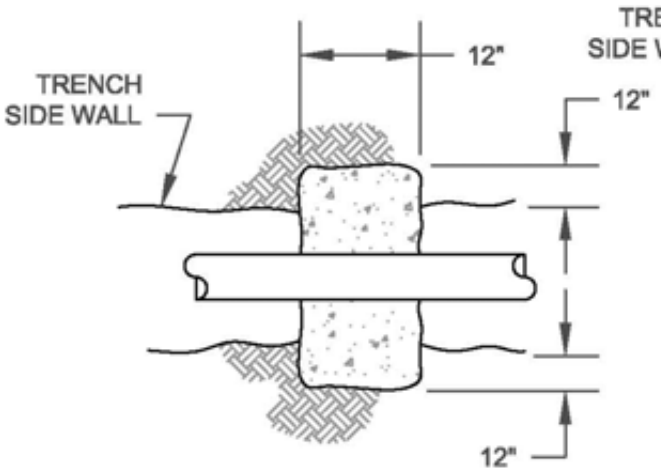
PROFILE VIEW



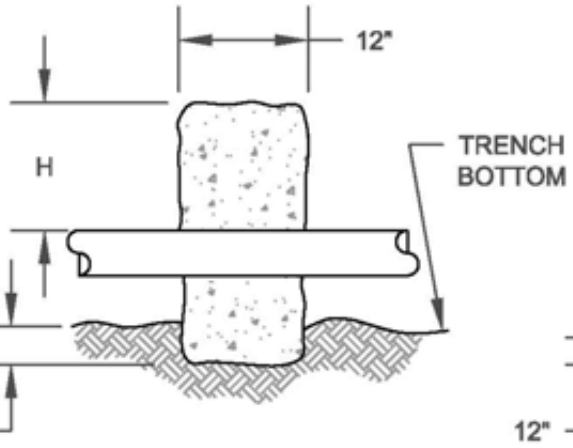
NOTES:
1. ALL SEWERAGE WORKS TO MEET OR EXCEED NORTHSTAR C.S.D. CODE REQUIREMENTS.
2. D = PIPE DIAMETER.
3. TRENCH BRACING OR SHORING AS REQUIRED BY THE "CONSTRUCTION SAFETY ORDERS", STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS.
5. A MINIMUM OF 30 INCHES COMPACTED EARTH FILL SHALL COVER ALL GRAVITY AND FORCE BUILDING AND SERVICE LATERALS. COVER LESS THAN 48 INCHES IN VEHICULAR TRAVELED WAYS REQUIRES HEAVIER WALLED PIPE AS LISTED IN APPENDIX A-5.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	TYPICAL SEWER TRENCH (NON-TRAFFIC AREAS)	DRAWN: JW	DWG. FILE: SO-16
		APPROVED: MS	FIGURE: 16
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

1 SACK/CY CEMENT SLURRY

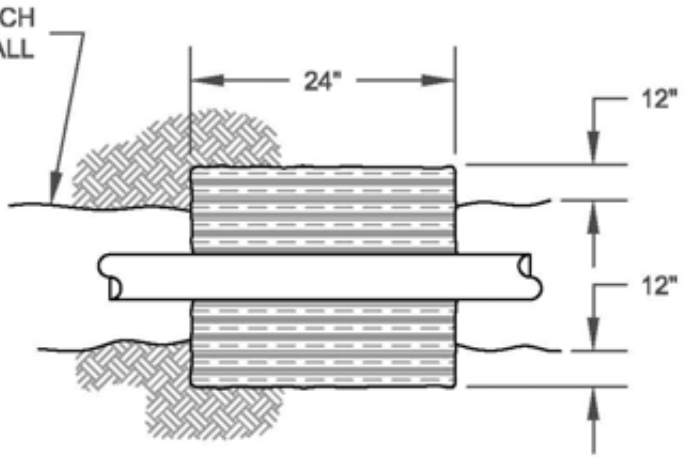


PLAN VIEW

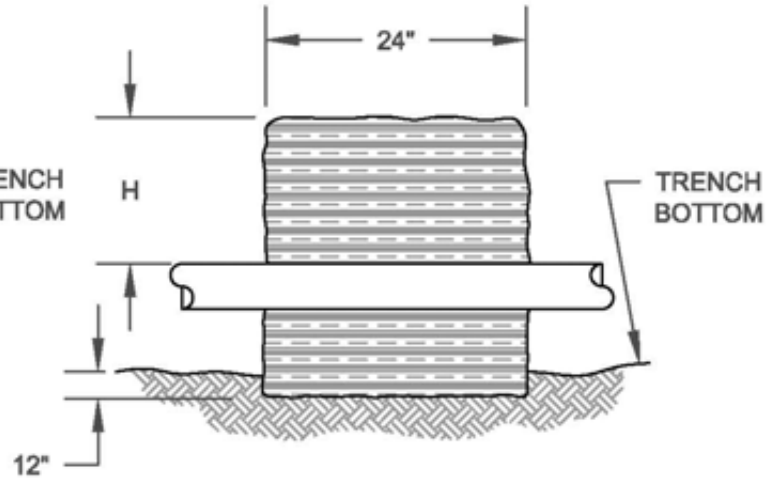


PROFILE VIEW

BENTONITE CLAY



PLAN VIEW

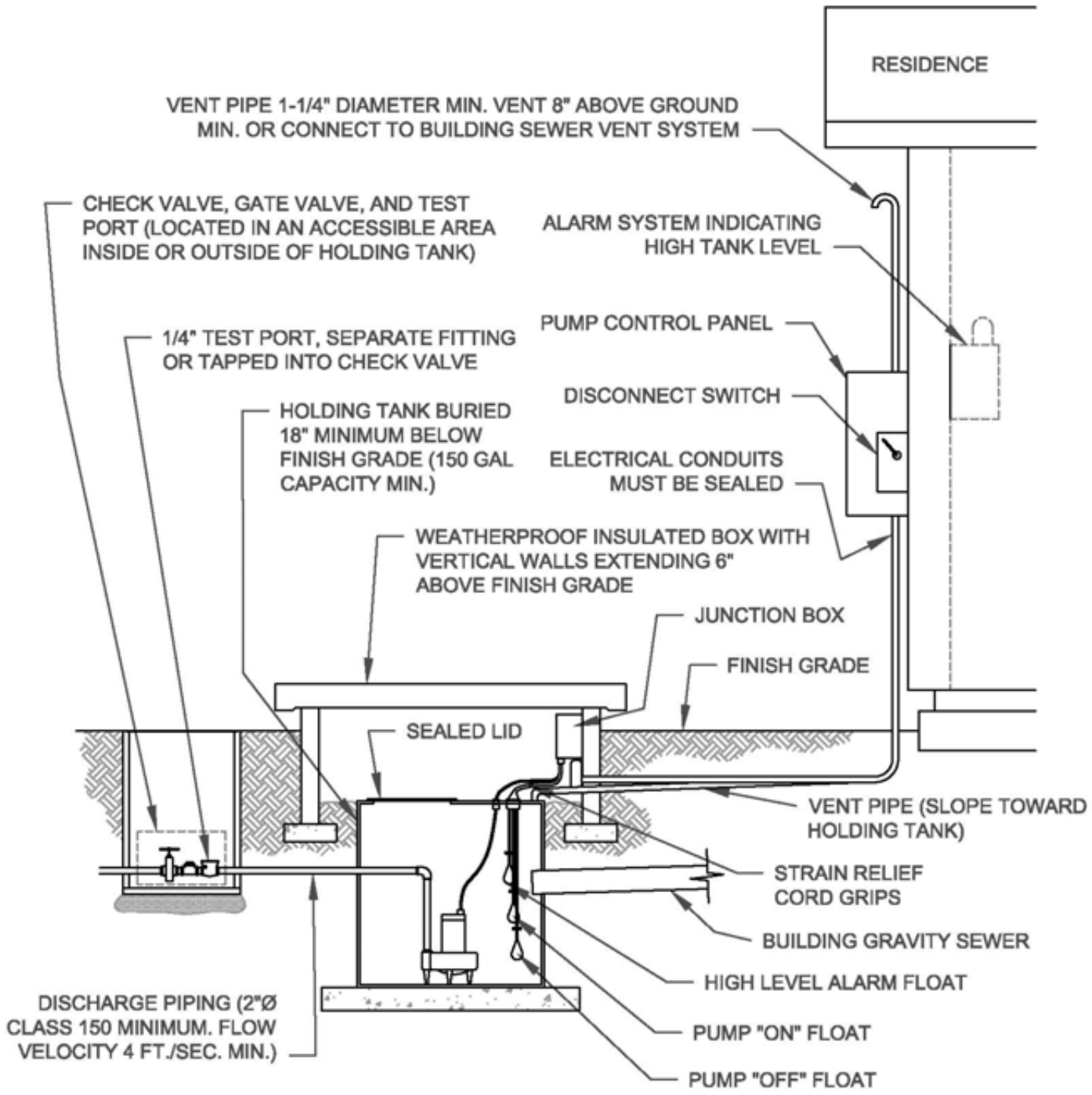


PROFILE VIEW

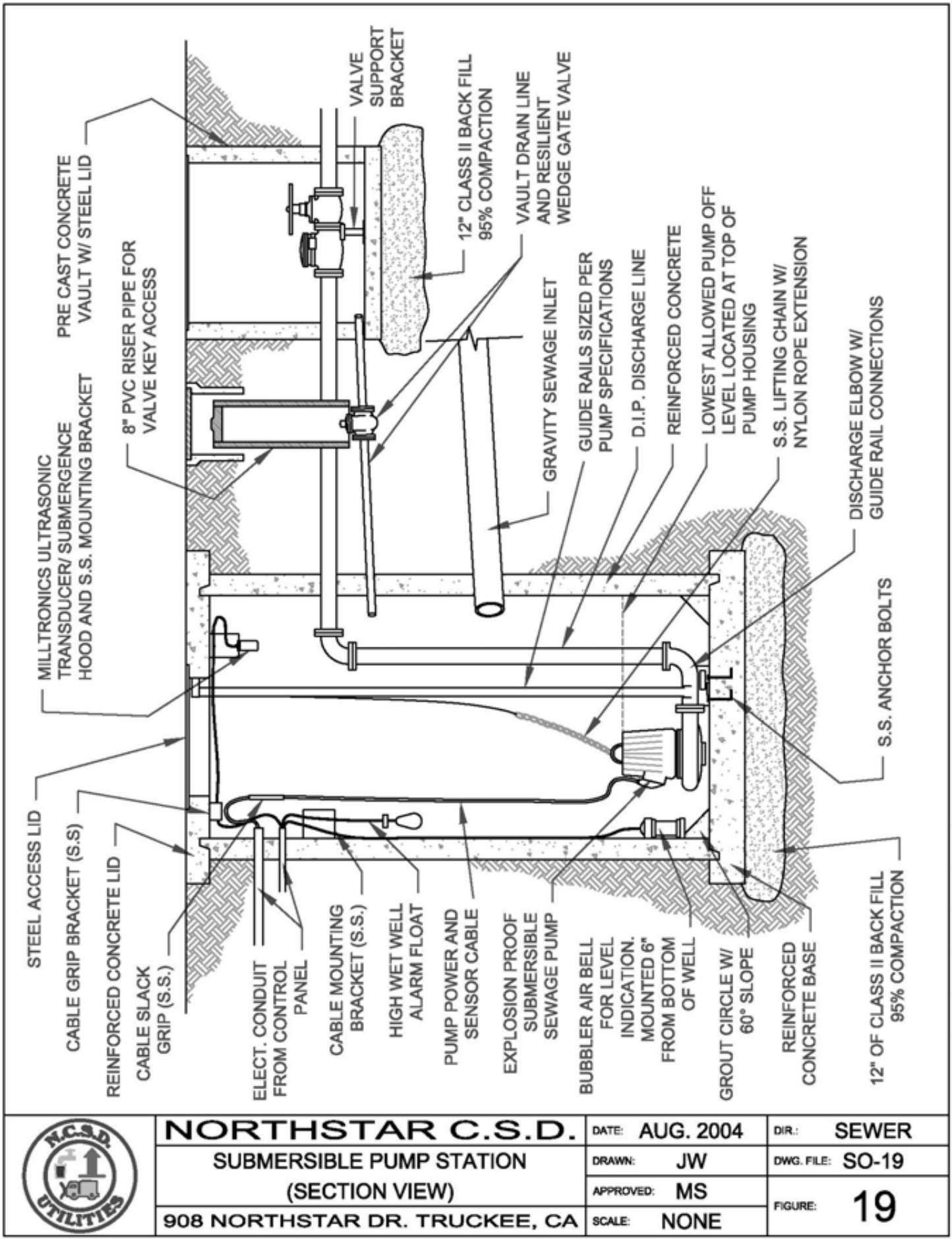
H = 12" ABOVE SEASONAL HIGH
GROUNDWATER TABLE (36" MIN.)

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	TRENCH CUT-OFF BLOCK	DRAWN: JW	DWG. FILE: SO-17
		APPROVED: MS	FIGURE: 17
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

PROFILE VIEW



N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	RESIDENTIAL PUMP STATION	DRAWN: JW	DWG. FILE: SO-18
		APPROVED: MS	FIGURE: 18
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	



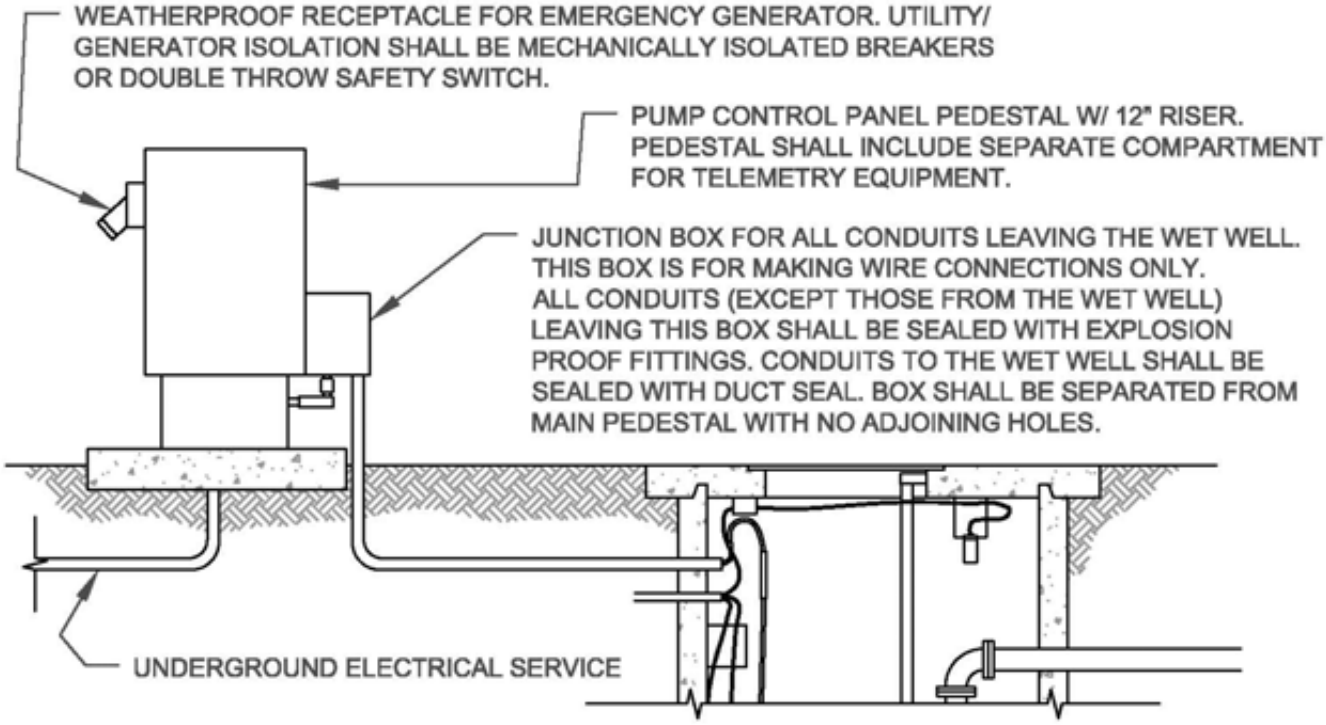
N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	SUBMERSIBLE PUMP STATION (SECTION VIEW)	DRAWN: JW	DWG. FILE: SO-19
		APPROVED: MS	FIGURE: 19
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

GENERAL NOTES

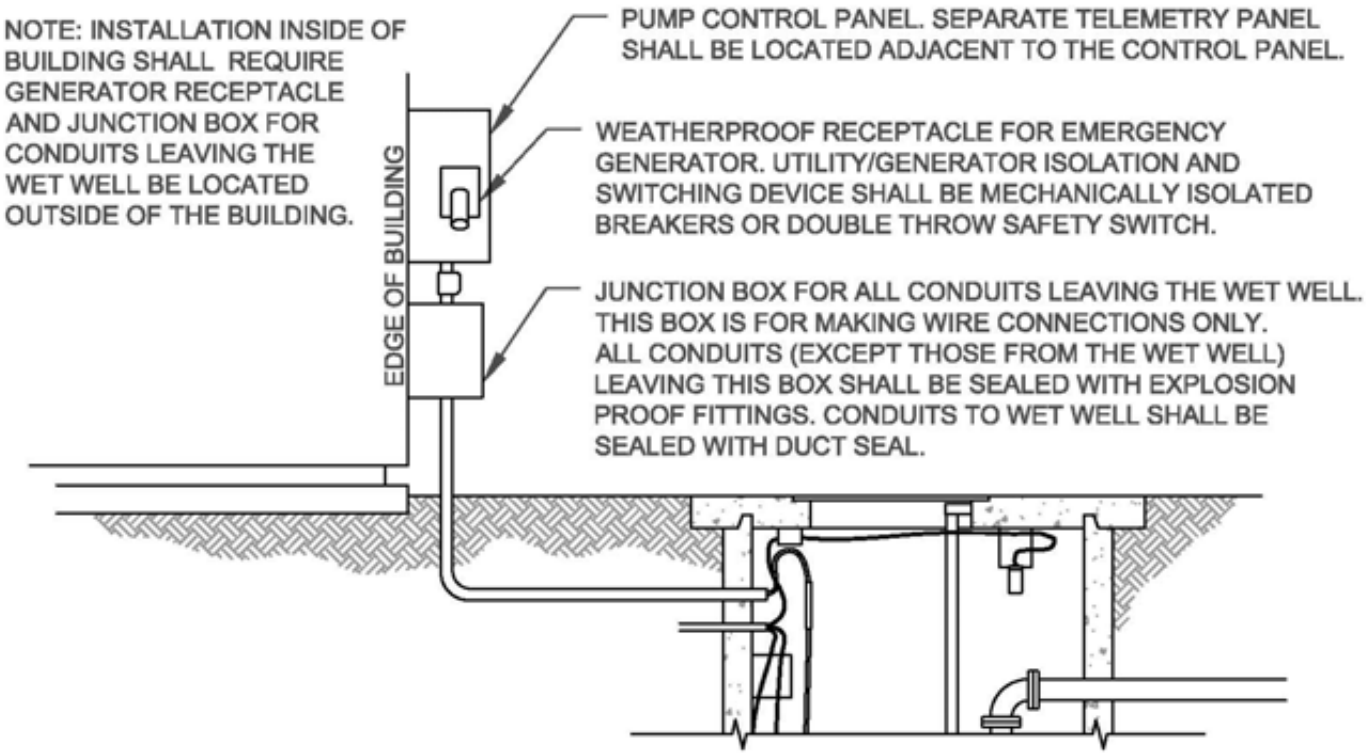
1) WET WELL SHALL BE CLASSIFIED AS A CLASS 1 DIVISION 1 GROUPS C & D HAZARDOUS LOCATION. ALL EQUIPMENT INSIDE THE WET WELL AND ALL CONDUITS CONNECTED TO THE WET WELL SHALL BE APPROVED AND INSTALLED FOR FOR THIS HAZARDOUS CLASSIFICATION.
2) ALL HARDWARE AND MOUNTING BRACKETS IN THE WETWELL SHALL BE STAINLESS STEEL.
3) ALL CONCRETE WET WELL PIECES SHALL BE REBAR REINFORCED AND DESIGNED FOR H2O LOADING. ALL CONCRETE JOINTS SHALL BE CLEANED, AND THEN SEALED WITH RAMNEK PRIMER AND RAMNEK OR AN APPROVED EQUAL. THE WET WELL INTERIOR SHALL BE COATED WITH AT LEAST TWO COATS OF XYPEX CONCRETE SEAL OR APPROVED EQUAL. IN AREAS WITH HIGH GROUND WATER THE WET WELL EXTERIOR SHALL BE COATED IN ACCORDANCE WITH EXTERNAL MANHOLE/VAULT SEALS SPECIFICATIONS IN SECTION A-6.
4) BUBBLER CONTROLS MAY BE SUBSTITUTED WITH ULTRASONIC CONTROLS UPON APPROVAL.
5) ALL PIPE OR CONDUIT PENETRATIONS THROUGH WET WELL OR VAULT SHALL BE SEALED WATERTIGHT WITH MECHANICAL TYPE SEALS (LINK SEAL OR EQUIVALENT) OR RAMNEK AND PRIMER, THEN GROUTED WITH NON-SHRINK GROUT.
6) THRUST BLOCKS SHALL BE PLACED AT EACH FORCE MAIN BEND OR FITTING THAT CHANGES THE FLOW DIRECTION OR VELOCITY.
7) DISCHARGE PIPING IN WET WELL AND THROUGHOUT THE VALVES SHALL BE FLANGED DUCTILE IRON. WHEN SPOOLS CONSIST OF FIELD FLANGES, CONSIDERATION SHALL BE MADE FOR UNSUPPORTED FITTINGS AND SPOOLS BY USING RESTRAINED FLANGE ADAPTERS.
8) DISCHARGE PIPING SHALL HAVE A TRACER WIRE ATTACHED TO THE TOP OF THE PIPE. TRACER WIRE SHALL BE SECURED TO THE PIPE AT APPROPRIATE INTERVALS AND SHALL BE CONTINUOUS BETWEEN VAULTS AND OTHER ACCESS POINTS.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	SUBMERSIBLE PUMP STATION	DRAWN: JW	DWG. FILE: SO-20
	(PLAN VIEW)	APPROVED: MS	FIGURE: 20
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

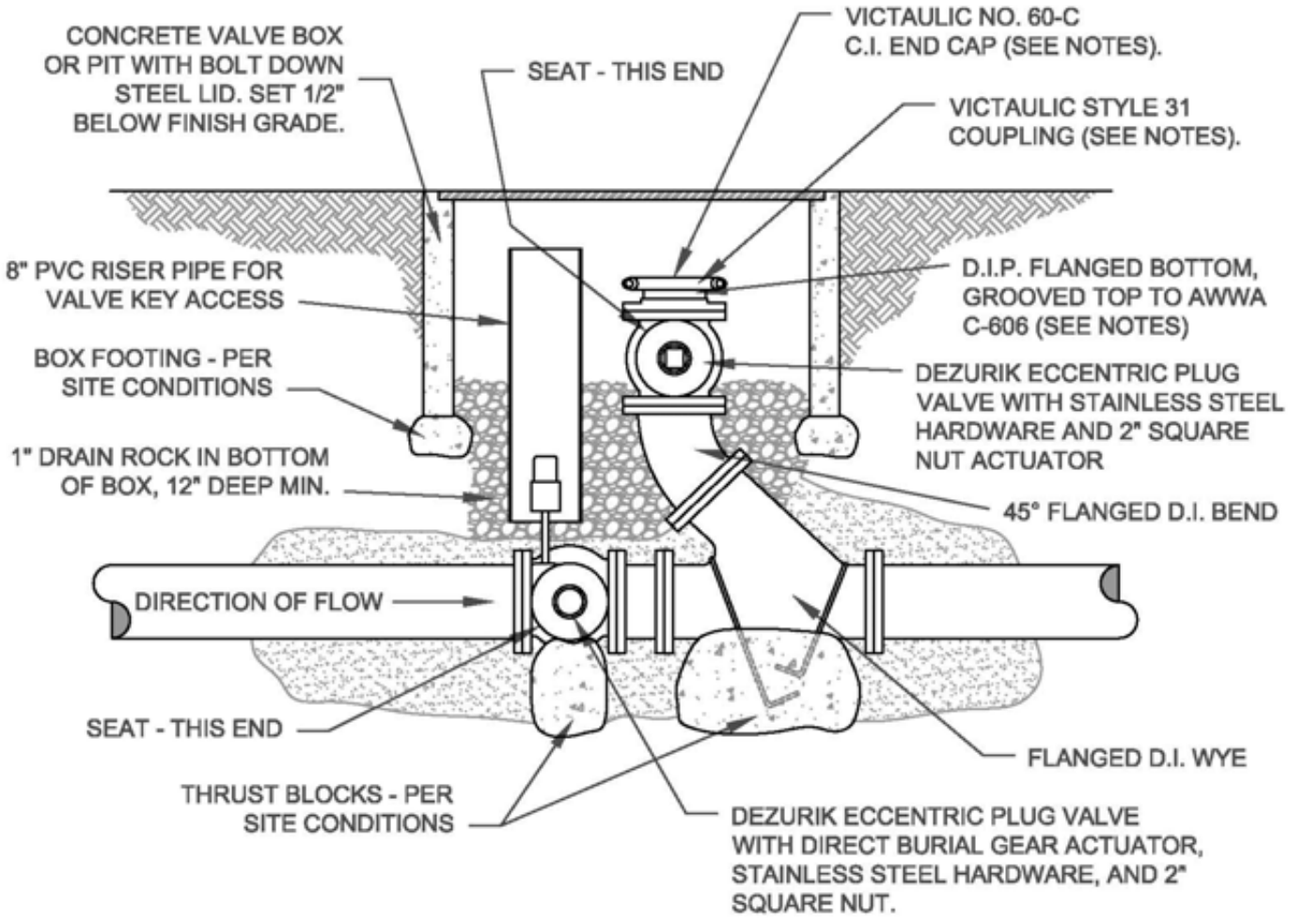
TYPICAL INSTALLATION WITH SERVICE/CONTROL PEDESTAL



TYPICAL INSTALLATION ON BUILDING EXTERIOR OR SERVICE POLE



N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	SUBMERSIBLE PUMP STATION (ELECTRICAL)	DRAWN: JW	DWG. FILE: SO-21
		APPROVED: MS	FIGURE: 21
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	



NOTES:

1). BOX FOOTING REQUIRED PER SOIL CONDITIONS. TRAFFIC AREAS REQUIRE FOOTINGS TO SUPPORT H-20 RATED BOX.

2). VALVES AND FITTINGS TO BE SIZED EQUAL TO FORCE MAIN SIZE FOR FORCE MAINS LESS THAN OR EQUAL TO 8" DIAMETER.

3). GROOVED TOP RISER, GROOVED CAP, AND VICTAULIC COUPLING SHALL BE AWWA C.I./D.I. DIMENSIONS FOR 8" PORTS OR LARGER. SMALLER PORT SIZES SHALL HAVE STANDARD I.P.S. DIMENSIONS ON GROOVED RISER, CAP, AND COUPLING.

4). GEAR ACTUATOR MAY BE SUBSTITUTED WITH STANDARD 2" SQUARE NUT ON BURIED PLUG VALVE FOR 4" BYPASS PORTS ONLY.

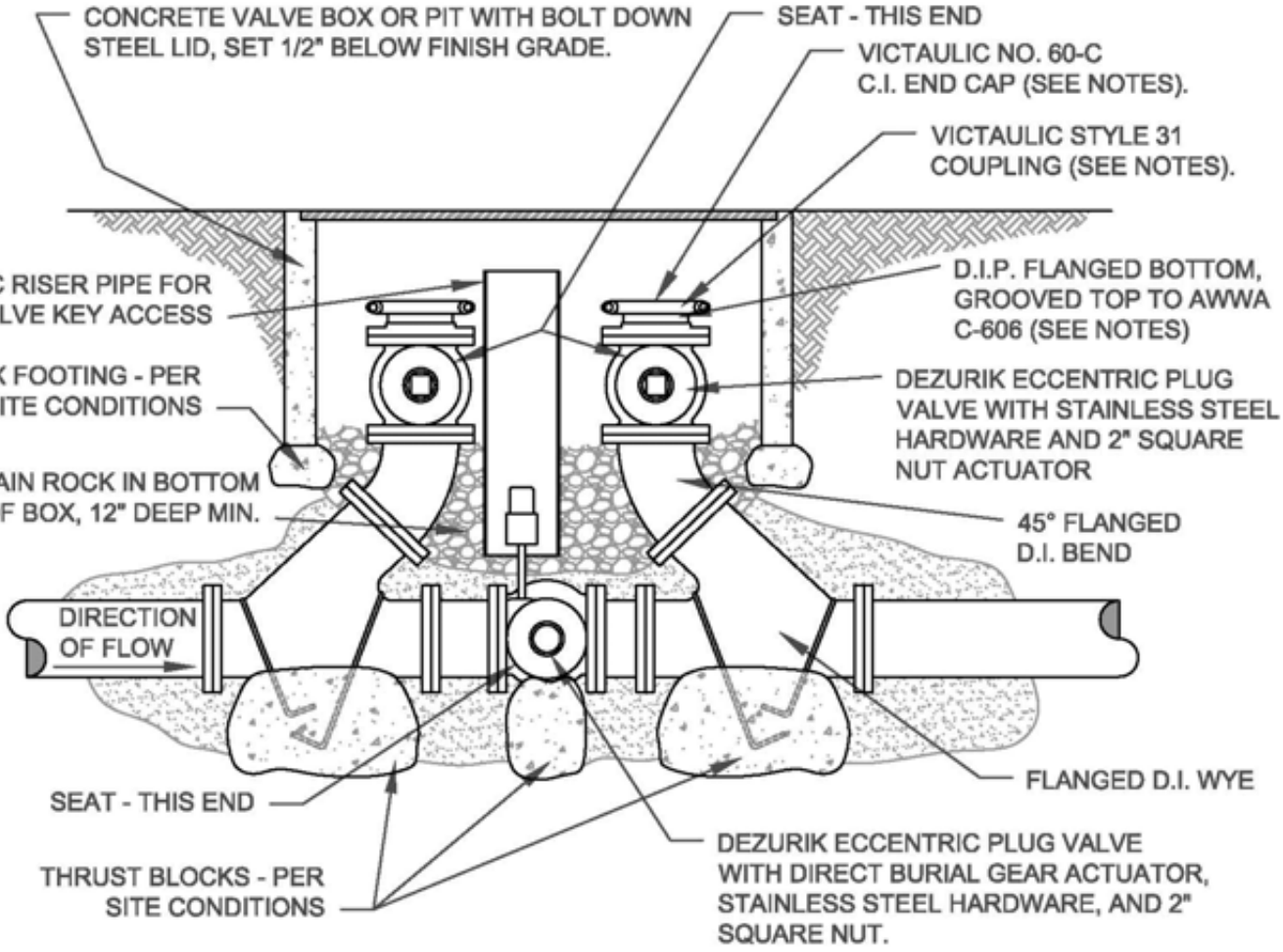
5). ALL FLANGES TO BE RATED FOR APPROPRIATE PRESSURE CLASS AS DICTATED BY FORCE MAIN DESIGN PRESSURES. CLASS 125 MINIMUM.

6). ALL HARDWARE, INCLUDING VALVE HARDWARE, SHALL BE STAINLESS STEEL.

7). BOX SHALL BE SIZED AS TO ALLOW SUFFICIENT WORKING ACCESS TO ACTUATORS AND COUPLINGS. SIZE SHALL BE DETERMINED PER SITE CONDITIONS AND APPROVED BY THE DISTRICT.

8). PORT HEIGHT SHALL BE DETERMINED PER SITE CONDITIONS AND APPROVED BY THE DISTRICT.

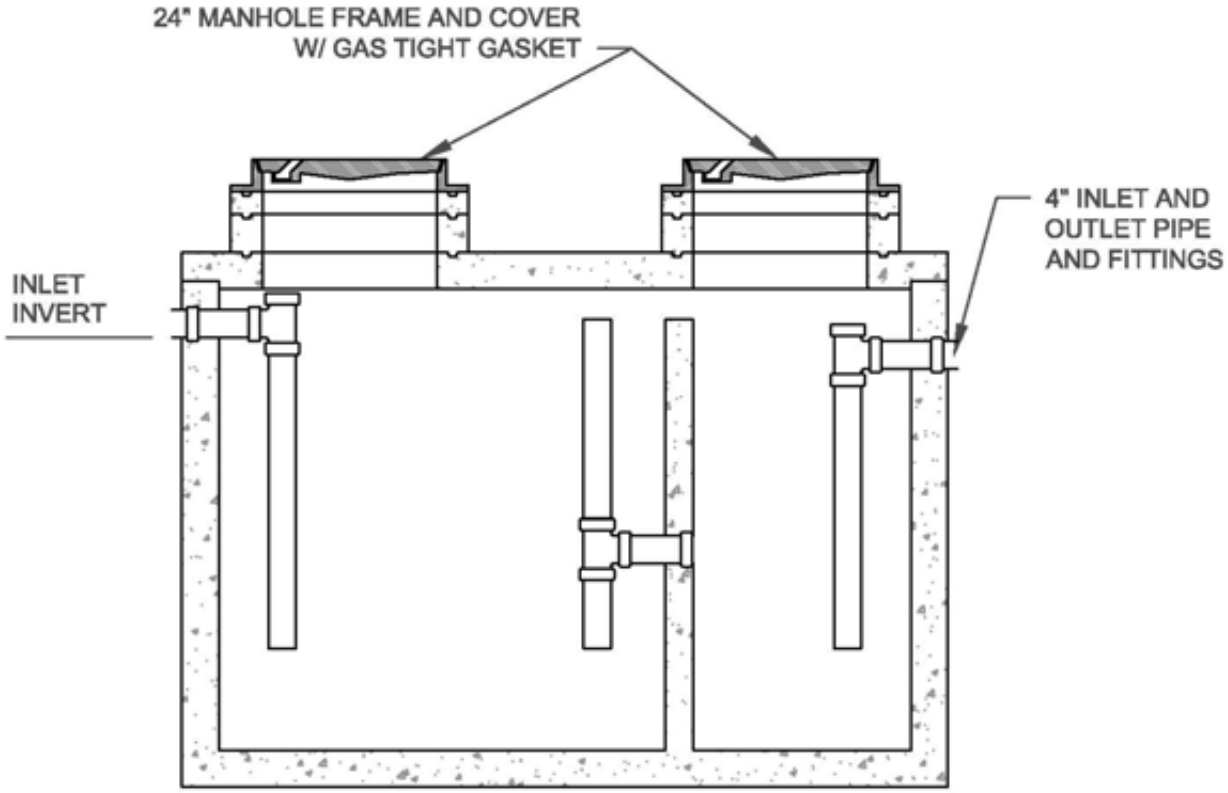
N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	SINGLE BYPASS PORT	DRAWN: JW	DWG. FILE: SO-22
		APPROVED: MS	FIGURE: 22
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	



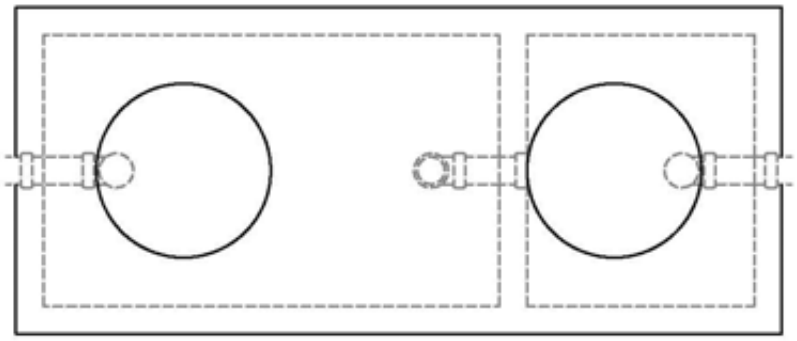
NOTES:
1). BOX FOOTING REQUIRED PER SOIL CONDITIONS. TRAFFIC AREAS REQUIRE FOOTINGS TO SUPPORT H-20 RATED BOX.
2). VALVES AND FITTINGS TO BE SIZED EQUAL TO FORCE MAIN SIZE FOR FORCE MAINS LESS THAN OR EQUAL TO 8" DIAMETER.
3). GROOVED TOP RISER, GROOVED CAP, AND VICTAULIC COUPLING SHALL BE AWWA C.I./D.I. DIMENSIONS FOR 8" PORTS OR LARGER. SMALLER PORT SIZES SHALL HAVE STANDARD I.P.S. DIMENSIONS ON GROOVED RISER, CAP, AND COUPLING.
4). GEAR ACTUATOR MAY BE SUBSTITUTED WITH STANDARD 2" SQUARE NUT ON BURIED PLUG VALVE FOR 4" BYPASS PORTS ONLY.
5). ALL FLANGES TO BE RATED FOR APPROPRIATE PRESSURE CLASS AS DICTATED BY FORCE MAIN DESIGN PRESSURES. CLASS 125 MINIMUM.
6). ALL HARDWARE, INCLUDING VALVE HARDWARE, SHALL BE STAINLESS STEEL.
7). BOX SHALL BE SIZED AS TO ALLOW SUFFICIENT WORKING ACCESS TO ACTUATORS AND COUPLINGS. SIZE SHALL BE DETERMINED PER SITE CONDITIONS AND APPROVED BY THE DISTRICT.
8). PORT HEIGHT SHALL BE DETERMINED PER SITE CONDITIONS AND APPROVED BY THE DISTRICT.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	DOUBLE BYPASS PORT	DRAWN: JW	DWG. FILE: SO-23
		APPROVED: MS	FIGURE: 23
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

PROFILE VIEW



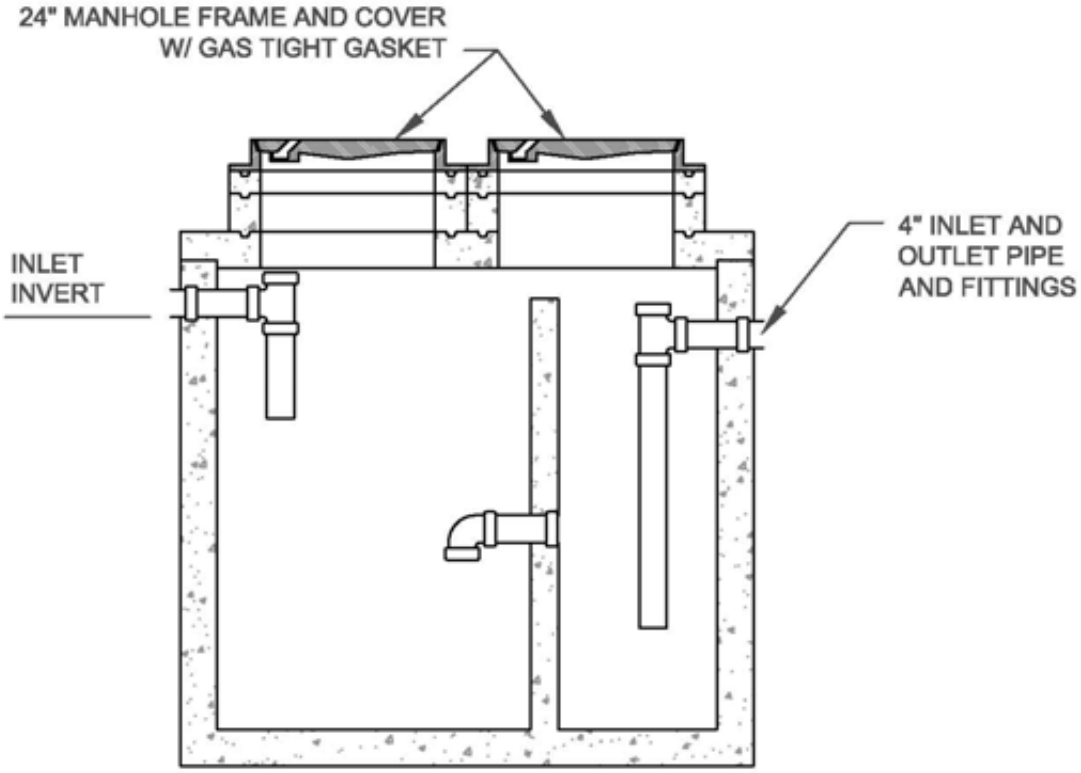
PLAN VIEW
(COVERS AND RISERS REMOVED)



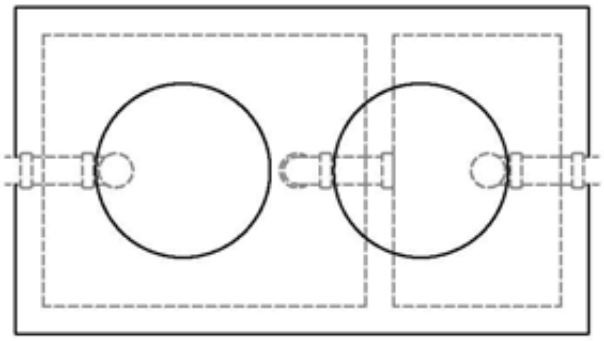
1). LIQUID CAPACITY: MINIMUM 750 GALLONS
2). VAULT DESIGN LOAD: H - 20 TRAFFIC LOADING
3). MINIMUM 3" VERTICAL DIFFERENTIAL BETWEEN INLET AND OUTLET.
4). APPLY RAMNEK PRIMER AND SEALANT TO BOTH SURFACES AT ALL JOINTS.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	GREASE INTERCEPTOR	DRAWN: JW	DWG. FILE: SO-24
		APPROVED: MS	FIGURE: 24
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

PROFILE VIEW



PLAN VIEW
(COVERS AND RISERS REMOVED)



1). LIQUID CAPACITY: MINIMUM 500 GALLONS
2). VAULT DESIGN LOAD: H - 20 TRAFFIC LOADING
3). MINIMUM 3" VERTICAL DIFFERENTIAL BETWEEN INLET AND OUTLET.
4). APPLY RAMNEK PRIMER AND SEALANT TO BOTH SURFACES AT ALL JOINTS.

N.C.S.D. UTILITIES	NORTHSTAR C.S.D.	DATE: AUG. 2004	DIR.: SEWER
	SAND/OIL INTERCEPTOR	DRAWN: JW	DWG. FILE: SO-25
		APPROVED: MS	FIGURE: 25
	908 NORTHSTAR DR. TRUCKEE, CA	SCALE: NONE	

DEFINITIONS AND ABBREVIATIONS

Definitions

The following definitions shall apply to all District work:

AGENCY: Any political subdivision of the State of California acting as a body in accordance with the appropriate enabling legislation.

AGENT: Any individual, corporation, partnership or other legal entity representing the interests of the owner.

APPLICANT: An individual, agent, owner or agency making application for permission to connect and to make use of the District's sanitary sewer facilities.

BANQUET FACILITIES: A designated area which is occasionally used by commercial establishments for restaurant seating for groups of customers in addition to the regularly used restaurant seating. The District factor rating for banquet facilities is based upon the maximum number of seats used on the property at any one time. These banquet seats are charged 36 percent of a restaurant seat. Banquet seating shall not be used in the day to day operation of a restaurant; or for more than 50 percent of the time; or for non-banquet purposes. Seats which do not meet the criteria for banquet seats shall be rated as restaurant seats.

BAR SINK: A single square or rectangular sink which does not exceed 15 inches in length or width, and 7 inches in depth; or a round sink which does not exceed 15 inches in diameter. It shall not be the primary sink in a residential unit. If a bar sink is installed in a room which is not made available for rental purposes and does not have a kitchen, kitchenette, or any cooking facilities, and which is located within a residential unit which already contains a kitchen sink, there will be no connection charges or service charges assessed for the room.

BARBER SHOP: An establishment whose primary purpose is washing, cutting, and styling hair, and where color tints or dyes are not used and permanent waves are not usually given.

BEAUTY SHOP: An establishment whose primary purpose is washing, cutting, and styling hair, and where color tints or dyes are used and/or permanent waves may be given.

BENCH SEATING: In an establishment which is rated according to the number of seats, 20 inches of benching will be considered as one seat. Each bench will be counted in increments of 20 inches. Fractional seats will not be charged.

BOOTH SEATING: In an establishment which is rated according to the number of seats, 24 inches of booth seating will be considered as one seat. The booth seat will be counted in increments of 24 inches. Fractional seats will not be charged.

BOARD: The Board of Directors of the Northstar Community Services District.

BUILDING: Any structure used for human habitation, employment or place of business, recreation or other purpose, containing sanitary facilities.

BUILDING LATERAL: The sanitary sewer waste pipeline extending from the outside of the building foundation to the service lateral connection point (usually located at the property line). The cleanout at the service lateral connection point (usually the property line cleanout) is part of the building lateral.

CLEANOUT: A sealed aperture permitting access to a sanitary sewer pipeline for cleaning purposes.

COMMERCIAL ESTABLISHMENT: Any building use other than a residential unit as defined in the District Code, or a building used for manufacturing.

CONFERENCE FACILITIES: Facilities which are only used for conducting conferences intermittently throughout the year by groups of people which may vary significantly in number. The factor rating for these facilities is based upon the number of plumbing fixture units in the area used exclusively by the fore-mentioned groups and are generally rated at the public rate.

CONNECTION CHARGE: An amount of money charged for connection to the District sanitary sewer system pursuant to the District Code. This includes connection fees charged for any increase in factor rating as listed in Appendix A-3, page 71. Fixture Unit Equivalents may be amended from time to time, as a result of remodeling, additional building on property, change in usage of the property, or other change in appearance or operations.

CONTRACTOR: The person, firm, partnership, association, corporation or organization, either singular or plural, which is constructing any work authorized to be performed by improvement plans and specifications and approved by the District. The aforementioned entities may act either directly, or through properly authorized agents acting within the scope of the particular duties delegated to them.

COUNTY: The Counties of Nevada or Placer in the State of California, represented by the Director of Public Works acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties delegated to them.

CUSTOMER: Any person described herein who receives wastewater service from or discharges wastewater into the District sanitary sewer system.

DEVELOPER: The person, firm, partnership, association, corporation or organization, either singular or plural, which is having constructed any work which is authorized to be performed by improvement plans and specifications and approved by the District. The aforementioned entities may act, either directly or through properly authorized agents, such agents acting within the scope of the particular duties delegated to them.

DISTRICT: The Northstar Community Services District.

DISTRICT DEVELOPMENT GUIDELINES: There are specific administrative requirements

for developments and projects which involve the installation of sewer facilities. The District has produced a "Development Guidelines" packet to assist you. A "Development Guidelines" packet may be picked up at the District office.

DISTRICT ENGINEER: Engineer retained by the District, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties delegated to them.

DISTRICT SANITARY SEWER FACILITIES: The system of pipelines, manholes, cleanouts, pump stations, interceptors, and/or related appurtenances, under the jurisdiction of the District, that carry liquid and waterborne waste from residential, commercial, or industrial facilities to the Tahoe-Truckee Sanitation Agency (T-TSA) for final treatment and disposal.

DWELLING UNIT: A living unit with kitchen facilities, including those in multiple dwellings, apartments, motels, hotels, mobile homes, trailers, condominiums or townhouses.

DWELLING UNIT EQUIVALENT: (DUE) A single family residential unit. Based on the occupancy of 2.3 persons per single family residence, producing 100 gallons of wastewater per person per day. One DUE is equal to 230 gallons of wastewater per day.

EFFLUENT: Treated waste waters flowing from a processing plant, or related facility.

ENGINEER: The person, firm, partnership, association, corporation or organization, either singular or plural, specifically appointed to prepare improvement plans and specifications, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties delegated to them.

FACTOR RATING: The number of plumbing fixtures in a commercial establishment related to plumbing fixture unit equivalents in Appendix A-3, page 71, and correlated to the District Fee Structure, Appendix A-2, page 69.

FIXTURE UNITS: Plumbing fixture unit equivalent load values for drainage piping and plumbing, as specified in the District Code, the applicable Uniform Plumbing Code or the California State plumbing laws and administrative rules.

FORCE MAIN: A pressure pipe joining the pump discharge at a water or wastewater pumping station with a point of gravity flow.

GARBAGE: All animal and vegetable wastes from the preparation, cooking and dispensing of food, or the commercial and industrial processing thereof.

GENERAL MANAGER: The General Manager of the Northstar Community Services District

GREASE INTERCEPTOR/TRAP: A device, or structure and storage reservoir, acceptable to the District, which provides for the separation and storage of waste water with a specific gravity of less than 1.0 and prevents said light waste water from entering the sanitary sewer system.

GUEST HOUSE: A space to be used by members of the family occupying the main dwelling and their non-paying guest, without a kitchen or cooking facilities and containing less than 500 square feet of floor area. All utilities serving the guest house, such as water, sewer, electricity and gas shall be common to, dependent on and associated with the main dwelling. Allowable plumbing shall be limited to that required for a single bathroom. There shall be a limit of one guest house per parcel. The guest house must be further covered with a deed restriction or appropriate covenant approved by the District prohibiting the separate sale of the unit and/or independent rental of the unit.

INDUSTRIAL WASTE: Any liquid, gaseous, radioactive or solid waste substance or a combination thereof, resulting from any process of industry or manufacturing, or from the development or recovery of any natural resources.

INSPECTION: The act of reviewing any/or all sewer construction work for the purpose of determining compliance with the District Code.

INSPECTOR: A District representative, acting within the scope of their designated authority, who shall inspect commercial establishments in order to count the fixture units to determine the factor rating to be charged to the property. Also review any or all construction work for the purposes of determining compliance with the District Code.

KITCHEN FACILITIES: Any kitchen sink(s), kitchen sink with garbage disposal, kitchenette, or cooking facilities.

LABORATORY: Any testing agency or testing firm which has been approved by the Board of Directors of the Northstar Community Services District.

LICENSED CONTRACTOR: A contractor having a valid license issued pursuant to Chapter 9, Division 3, of the Business and Professions Code, State of California, which license includes the activities applied for and permitted.

LIVING UNIT: A structure or portion of a structure used for human habitation that contains sanitary facilities; shall be equivalent to a Dwelling.

LOT: Any piece or parcel of land bounded, defined, or shown upon a map or deed, recorded or filed in the office of the County Recorder.

MOTEL UNIT/HOTEL UNIT: (Also includes Bed & Breakfast establishments) Shall mean each guest room in a motel or hotel which is made available for use, rental or hire for the purpose of furnishing transient living accommodations on a day-to-day basis.

MULTIPLE USES: When restrooms are shared by both restaurant patrons and other business patrons (as they are in some major ski areas, for example), and where restrooms are not located in the restaurant and are not provided solely for the use of restaurant patrons, the formula detailed on Appendix A-4, page 73, will be applied as a credit against the total of plumbing fixture units which are provided for the use of both restaurant and other business patrons.

NOTICE OF NONCOMPLIANCE: A written notice issued by the District to the owner or their agent informing of defective materials, workmanship or procedures which do not conform to District requirements and which must be removed, replaced or remedied.

ORDINANCE: A statute or regulation of the Northstar Community Services District Board of Directors.

OUTFALL SEWER: A major sewer pipeline which collects wastewater from various sewer main pipelines and conveys it to an interceptor pipeline or pump station.

OWNER: The person, corporation, partnership, or other legal entity which is shown as the owner of a particular lot on the property tax rolls that are maintained by the Counties of Nevada or Placer.

pH: The negative reciprocal of the logarithm of the weight of hydrogen in grams per liter of solution.

PERMIT: Formal authorization required pursuant to this District Code for connection to the sanitary sewer system of the Northstar Community Services District.

PERMITTEE: The person to whom a permit has been issued pursuant to the provisions of the District Code.

PERSON: The State of California, any individual, public or private corporation, political subdivision, governmental agency, municipality, industry, co-partnership, association, firm, trust, estate or any other legal entity whatsoever.

PLUMBING FIXTURE: Any sink, toilet, shower, tub, floor drain, urinal, drinking fountain, etc., or appliance that collects and/or produces waste flow and introduces it into the sanitary sewer system.

PREMISES: Any lot, or any piece or parcel of land comprising of two or more lots of record in one ownership, or any building or other structure or any part of any building or structure used or useful for human habitation or gathering or for carrying on a business or occupation or any commercial or industrial activity.

PRIVATE SANITARY SEWER FACILITIES: The system of pipelines, manholes, cleanouts, pump stations, interceptors, and/or related appurtenances, ***not operated or maintained by the District***, that carry liquid and waterborne waste from residential, commercial, or industrial facilities to the District's sanitary sewer system.

PRIVATE FIXTURES: Are those which are intended for the use of an individual, or which are limited to the use of the employees of a business or tenants of a commercial building; provided that the number of employees in that business or tenants in that commercial building at any one time does not exceed the ratio of 5 employees or tenants per toilet per restroom.

PUBLIC ENTITY: A city or county, municipal water district, public utility district, sanitary

district, sanitation district, county water district, or California water district, organized under the laws of the State of California, or any other public corporation or agency of the State having power to acquire, construct and operate facilities for the collection, treatment and disposal of wastewater, industrial waste and storm water of such entity and its inhabitants.

PUBLIC FIXTURES: Are those which are intended for the use of the employees of a business or tenants of a commercial building when the ratio of employees or tenants per toilet per restroom exceed 5 to 1; or those fixtures in a business which are for unrestricted use by clients or customers of the business, or members of the public; or those which are located in places to which the public is invited, or places which are frequented by the public without special permission, or other installations where fixtures are installed so that their use is similarly unrestrictive.

PUBLIC SEWER: A sanitary sewer pipeline which is controlled by or under the jurisdiction of a public entity.

RESIDENTIAL UNIT: A living unit with a kitchen sink, kitchenette, or any cooking facilities such as: (a) single family dwelling, (b) multiple dwelling, (c) apartment, (d) timeshare unit, (e) mobile home, (f) trailer, (g) condominium, or (h) townhouse. Includes all living units in which the owner is renting or leasing the premises, or any portion of the premises.

SANITARY SEWER: A sewer pipeline that carries water-borne wastes from residences, commercial buildings, and industrial plants.

SANITARY SEWER SYSTEM: The system of interceptor pipelines, outfall sewer pipelines, main pipelines, laterals, and pumping stations of the District that carry liquid and waterborne waste from residences, commercial buildings, and industrial plants.

SEASONAL SEATING: When an establishment which is rated and charged according to the number of seats has seating which is located outside, those seats which are located outside shall be charged 50 percent of the normal service charges charged for seats and 50 percent of the regular connection charge which is charged for seats.

SECTION: A subdivision of the District Code unless a specific citation is given to some other enabling legislation. Also, a term used to describe a specified segment of pipeline.

SEPTIC TANK: A watertight receptacle which receives the discharge from a building lateral and is designed and constructed to retain solids, digest organic matter through a period of detention, and is intended to allow the liquids to discharge into the soil outside of the septic tank through a drain field system or one or more seepage pits.

SERVICE LATERAL: The sanitary sewer waste piping which extends from the District main pipeline to the property line cleanout. The property line cleanout is part of the building lateral.

SEWER MAIN PIPELINE: A pipeline that receives wastewater from other sewer main pipelines, private sanitary sewer facilities, and building laterals.

SEWER SERVICE: Granting the privilege of sanitary sewer facility use to agencies, customers or persons in accordance with specific conditions and requirements.

SKI CLUB: An establishment which makes rooms available for use by members of a club or group on a temporary basis for periods of two weeks at a time shall be rated according to the number of fixture units on the premises and as private fixtures.

SNACK BAR: An establishment which uses only disposable products for food service and does not provide seating for the use of its customers.

SPECIAL DISTRICT: The Northstar Community Services District

STANDARDS: The Standards for Sewer Improvements for the Northstar Community Services District.

STANDARD SPECIFICATIONS: Whenever reference is made to the "Standard Specifications" it shall refer to the latest edition of the State of California, Department of Public Works, Division of Highways STANDARD SPECIFICATIONS. Where the terms "State" or "Engineer" are used in the "Standard Specifications" or any documents or instruments where this document or the developers specifications govern, they shall be construed to mean the District or the General Manager as defined in this article.

STATEMENT OF FACTS: Any information or documentation provided to the District by the owner or their agent.

STREET: Any public highway, road, street, avenue, alley, way, public place, public easement or right-of-way.

STREET PROPERTY LINE: A building line, where one has been established by ordinance; otherwise, the street property line itself.

STUB OUT: The connection point to the sanitary sewer. This point of connection is usually located near the property line at the terminus of the service lateral. A term also used for a short, capped extension of the District's sanitary sewer system for future pipeline extension.

SWIMMING POOL: All swimming or wading pools containing 2,000 gallons of water or more, and all non-residential whirlpool baths and hot tubs. All swimming pools, non-residential whirlpool baths and hot tubs, may discharge backwash and drain wastewater into the public sewer system.

If swimming pool draining and backwash is discharged to the sanitary sewer system, written approval must be obtained from the General Manager. No person shall discharge any substance into the sewer system without first notifying the District. The General Manger obtains the right to prohibit the draining of swimming pools when, in his/her opinion, such activity would deleteriously affect the operation of the sewer system-generally July 15 through September 15 and April 15 through May 15, but not inclusively or exclusively. Draining operations shall take place only between the hours of 9 P.M. and 7 A.M. or the any other time with prior approval of

the General Manger.

TAPPING: The forming of a Tee or Wye branch connection to an existing sewer main pipeline by installing a Tee or Wye Saddle.

TEE: A fitting for a branch on which the spur joins the barrel of the pipe at an angle of approximately 90 degrees.

TOXIC WASTE: Any waste that is poisonous or hazardous to human, animal and/or plant life.

TRAP: A fitting or device which provides a liquid seal to prevent the emission of sewer gas or air without materially affecting the flow of wastewater or waste water through it.

T-TSA: Tahoe-Truckee Sanitation Agency, a regional wastewater treatment facility.

USER FEES: A regular charge to a owner or designated representative for the use of the public sanitary sewer system.

WASTEWATER: The spent water of a community, which may be a combination of liquid and water carried wastes from residences, commercial buildings, industrial plants, etc.

WASTEWATER PUMPING PLANT: Any works or device used to raise wastewater from a lower to a higher level or to overcome friction in a pipeline.

WASTEWATER TREATMENT FACILITY: Any arrangement of devices and structures used for treating wastewater.

WYE OR "Y": A fitting for a branch on which the spur joins the barrel of the pipe at an angle of approximately 45 degrees.

Abbreviations

ASTM	American Society for Testing Materials
AWS	American Welding Society
AWWA	American Water Works Association, Inc.
NEMA	National Electrical Manufacturers Association
NEC	National Electrical Code
UBC	Uniform Building Code
UPC	Uniform Plumbing Code