

# IMPROVEMENT STANDARDS

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Lake Oroville Area Public Utility District**

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## **DEVELOPMENT PROCESSING CHECK LIST**

1. Depending on the size of the proposed development, approval from Sewerage Commission Oroville Region (SC-OR) may be required, including either a Pre-Annexation Agreement, if the property is outside the District boundaries or a Capacity Agreement, if the project is 20 EDU's or greater and is inside the District boundaries.
2. Property proposed for development must be within the District's annexed boundary. If it is not, procedures to annex the property to the District must have been initiated, and all fees paid in connection therewith.
3. Submit two sets of preliminary plans, details and specifications for initial review by the District's General Manager and District Engineer. Their comments will be annotated on one of the sets of prints and returned to the developer's engineer. Plan Check and Administration Fee must accompany initial submittal. (See Section 1.04 of Improvement Standards)
4. Final submittal, after District's requested corrections have been made, shall include two sets of plans, details, and specifications, engineer's estimate of final sewer project cost, development agreement (see Appendix A of Improvement Standards), easement deed(s) (see Appendix B of Impr. Stds.) and/or tentative or final subdivision map. (See also Sections 1.04 and 1.08 of Improvement Standards)
5. Once the District Board of Directors grants approval of the development agreement (see Appendix A of Impr. Stds.) and for construction of the project, the plan originals will be signed by the General Manager and/or District Engineer.
6. After three sets of prints of the approved plans are submitted for District inspection purposes, the inspection fee is paid (see Section 1.04 of the Improvement Standards), and an encroachment permit from Butte County or City of Oroville Public Works Department has been secured (if necessary, see Section 1.10 of Impr. Stds.), work may commence.
7. Work in progress shall be inspected periodically by LOAPUD personnel. No sewer mains or service laterals may be backfilled prior to District inspection and approval.
8. Upon completion of work, including successful line and manhole testing (see Section 5.06 through 5.08 and 5.10), the following items shall be submitted:
  - a. as-built drawings prepared by the developer's engineer (see Section 1.04I of Impr.Stds.);
  - b. one-year maintenance surety (see Section 3.i.(4) of Appendix A);
  - c. facility conveyance form (see Appendix A).

9. The one-year maintenance period commences on the date the District Board of Directors takes action to declare the project complete and accept the facilities into the District's maintained system.
10. After completion of the one-year maintenance period and/or completion of all necessary remedial work resulting during that time, the District will return the maintenance surety (less amounts drawn for failure to provide adequate remediation) and will assume maintenance of the sewer facilities.

**BOARD POLICY**  
**Lake Oroville Area Public Utility District**

**TITLE: ANNEXATION PROCEDURES** **NUMBER: 6030**  
**ADOPTION DATE: October 11, 1989** **AMENDED DATE: DECEMBER 13, 2011**

**6030.1** Property must be annexed to the District prior to receiving sewer service. Unconditional commitments to provide service to property and/or proposed developments will not be granted until said property is annexed to the District.

**6030.2** In conformance with Policy No. 6040, District approval of residential, commercial, industrial or other types of development projects will not be granted by the Board of Directors until the entire site has been annexed to the District, or will be granted with the condition that the entire project site be successfully annexed to the District.

**6030.3** Annexation Procedures.

**6030.3.1** Determine suitability. Property owners or project developers desiring annexation to the District should first determine several factors regarding their property's suitability for sewer service:

**6030.3.1.1** Is the property presently within the District's boundaries?

**6030.3.1.2** If the property is not within the District's boundaries is the property within the sphere of influence established for the District by the Local Agency Formation Commission (LAFCo)?

**6030.3.1.3** Where are the District's existing sewer service facilities relative to the property?

**6030.3.1.4** Is there capacity in the District's existing facilities adequate for the property's proposed development density?

**6030.3.1.5** Information regarding District annexation, sphere of influence, and the location of existing sewer service facilities and available excess capacity will be provided by District staff upon request. Determination of the property's suitability for development and/or connection to the sewer facilities is the responsibility for the project proponent. Use of professional engineering and/or development consultants is encouraged.

**6030.3.2** Application to LAFCo. Among other duties LAFCo has been established by the State Legislature to review and approve or disapprove proposals for annexation of territory to special districts. Approval by LAFCo of any annexation proposal is required before the District can approve the annexation and provide sewer service.

**6030.3.2.1** To initiate the LAFCo application procedure, owners of the property proposed for annexation, or the registered voters residing within the area proposed for annexation, shall submit a petition (§56704, Ca. Gov. Code) to LAFCo. The contents of the petition, itemized below, shall conform to §56700 of the California Government Code.

**6030.3.2.2** With the petition, annexation proponents shall submit to LAFCo a map and legal description of the proposal. The contents of the map and legal description, itemized below, shall conform to LAFCo and the State Board of Equalization requirements.

**6030.3.2.3** Also with the petition, annexation proponents shall submit to LAFCo a completed application form and appropriate filing and environmental review fees.

**6030.3.3** Application to District. If annexation proponents desire to receive confirmation of District acceptance of their proposal prior to initiating the LAFCo application, the petition, map, legal description and LAFCo application form, discussed in 6030.3.2.3 above, should be submitted to the District office. A deposit must also accompany said submittal to cover LAFCo's filing and environmental review fees, State Board of Equalization fees, and District processing costs. When the annexation process is complete or terminated, cost overruns will be billed to the applicant, and underruns will be refunded.

**6030.3.3.1** The Board of Directors will consider the annexation proposal at a regularly scheduled meeting. Acceptance by the Board of the proposed annexation shall be formalized by the adoption of a resolution. Said resolution shall contain the following:

- (a) all of the information required in the petition, as itemized below, excepting provisions regarding signatories and signatures;
- (b) the annexation map and legal description as attachments;
- (c) verification that the District desires to annex the subject territory;
- (d) authorization for the resolution to be submitted as an application for annexation approval by LAFCo; and,



- (e) a request that LAFCo approve and authorize the District to conduct proceedings for the annexation without notice and hearing and without an election (only if the petition has been signed by all of the owners of land within the boundaries of the proposed annexation).

**6030.3.4** District Approval of Annexation. If LAFCo accepts the annexation proposal it will adopt a resolution and forward same to the District. After confirmation of LAFCo acceptance, and after the annexation proponent(s) tenders to the District applicable annexation fees (discussed below) and appropriate recording and State Board of Equalization fees, as determined by LAFCo, the District's Board of Directors, at a regularly scheduled meeting, will consider approval of the proposed annexation. Approval by the Board of the proposed annexation shall be formalized by the adoption of a resolution.

**6030.3.4.1** Said resolution shall contain the following provisions:

- (a) That a description of the annexed lands shall be attached to said resolution;
- (b) The annexed land shall be subject to the District's policies, rules and regulations, charges made, and assessments levied pursuant to the provisions of the laws pertaining to public utility districts to pay for outstanding obligations of said district, and also shall be subject to all and any combination of assessments, tolls and charges as may exist at the adoption of the resolution and as thereafter may be established and/or levied by the County of Butte and/or the District for any District purpose;
- (c) The District shall be under no obligation to install a sewer service system or any facilities in connection with the subject annexation and the owners of the land to be annexed shall install, as and when sewer service is desired, without cost, charge or obligation to the District, a complete sewer service system as may be specified by the District, in accordance with plans and specifications approved by the District Engineer and/or General Manager, in a manner meeting his/her approval, and shall convey, at no cost to the District, all of said sewer service system, including rights of way over all parts thereof, to the District; and,
- (d) The project developers and/or owners of the annexed property, and their heirs, successors and assigns shall agree to abide by all Board policies, rules and regulations of the District presently established and as shall be established by the Board in the future.

**6030.3.4.2** After adoption of said resolution of approval by the Board of Directors, it shall be sent to LAFCo along with necessary fees, for processing of State filings, local recordings, and filing with the State Board of Equalization.

**6030.3.5** Annexation Petition. In accordance with §56700 of the California Government Code, the petition proposing annexation of property to the District shall do all of the following:

**6030.3.5.1** State that the proposal is made pursuant to said §56700;

**6030.3.5.2** State the nature of the proposal (i.e., annexation of property to Lake Oroville Area Public Utility District);

**6030.3.5.3** Include a description of the boundaries of the affected territory accompanied by a map showing the boundaries;

**6030.3.5.4** State any proposed terms and conditions;

**6030.3.5.5** Explain the reason for the proposal (e.g., to receive sewer service);

**6030.3.5.6** State whether the petition is signed by registered voters or owners of land;

**6030.3.5.7** Designate no more than three persons as chief petitioners, including their names and mailing addresses;

**6030.3.5.8** Request that proceedings be taken for the proposal pursuant to said §56700; and,

**6030.3.5.9** State whether the proposal is consistent with the sphere of influence designated by LAFCo for the District.

**6030.3.6** Descriptions and Maps. In accordance with State Board of Equalization and District requirements, annexation descriptions and maps shall conform to the following conditions:

**6030.3.6.1** All documents must be capable of producing a readable photographic image;

**6030.3.6.2** Every description must be self-sufficient within itself and without the necessity of reference to any extraneous document, with references to deeds of record used only as a secondary reference;

- 6030.3.6.3** When writing a metes and bounds description of a contiguous annexation, all details of the contiguous portion(s) of the boundary may be omitted, with the points of departure from the existing boundary clearly established;
  - 6030.3.6.4** A specific parcel description in sectionalized land is permissible without a metes and bounds description of the perimeter boundary;
  - 6030.3.6.5** A parcel description making reference only to a subdivision or a lot within a subdivision is not acceptable, unless all dimensions needed to plot the boundaries are shown on an accompanying plat, and the relationship of lot lines with street rights of way must be clearly indicated;
  - 6030.3.6.6** Every map must clearly indicate all existing streets, roads and highways within and adjacent to the lands to be annexed, together with the current names of these thoroughfares;
  - 6030.3.6.7** Every map shall be drawn to scale with a North arrow;
  - 6030.3.6.8** The point of beginning of the legal description must be shown on the map;
  - 6030.3.6.9** The boundaries of the lands to be annexed must be distinctively shown on the map without obliterating any essential geographic or political features;
- 6030.3.7** All maps must be professionally drawn or copies (rough sketches of maps or plats will not be accepted); and,
- 6030.3.7.1** All descriptions must be prepared by a surveyor or civil engineer licensed in the State of California to practice land surveying and his/her stamp and signature shall be affixed to said description.
- 6030.3.8** In addition to LAFCo filing, environmental review, State filing, recording, State Board of Equalization and any other applicable non-District fees, an annexation fee shall be paid to the District prior to adoption by the Board of Directors of the resolution approving any annexation. Said annexation fee shall be at the currently adopted charge per acre or fraction thereof and may be adjusted from time to time by the Board of Directors.

## DESIGN CHECK LIST

Sewer improvement plans submitted for District review and approval should contain the following:

- Administration Fee (\$1.00/lf of sewer mainline) subject to periodic change;
- Plan Check Fee deposit (actual cost will be District Engineer's time and materials);
- 3 sets of check prints;
- Itemized sewer project construction cost estimate;
- Computation sheets for all alignment (horizontal and vertical);
- Computation sheets verifying adequate flow capacity;
- Stamp and signature of RCE on all plan sheets, calculations and estimates;
- Plan sheets on 24" x 36" paper;
- Vicinity/location map on title sheet of plans;
- Index of sheets on title sheet of plans;
- Legend of symbols;
- Title block on each sheet showing sheet title, number, date, scale, name and registration number of project engineer, and name of project and/or subdivision;
- Signature blocks for District's General Manager and District Engineer
- Note referencing District Improvement Standards;
- Bench mark(s) and datum description;
- Stationing oriented left to right and south to north, where feasible;
- North arrow and scales on all plan sheets;
- Overall plan layout on single sheet;
- Locations (horizontal) of all existing utilities within project area;
- Locations (horizontal and vertical) of all proposed underground facilities (e.g., storm drains, gas, water, electric, etc.);
- Adjacent subdivisions, including names, lot lines and lot numbers;
- Property lines (existing and proposed);
- Public easements correctly dimensioned;
- Section and grant lines and corners within project area;
- Street names and widths (existing and proposed);
- Pertinent topographic features;
- Contours and elevations;
- Typical detail of proposed roadway section(s);
- Existing ground profile above proposed sewer improvements;
- Profile of proposed underground facilities (sewer and others in vicinity);
- Sewer invert elev. 's annotated at 50' intervals (25' through vert. curves);
- Rates of grade, vertical curve lengths and other alignment data;
- Plans scale to be 1" = 20', 40' or 50' where feasible;
- Profile scales to be 1" = 2', 4' or 5' where feasible;
- Computations to be accurate within 0.01' +/-, and 0.001% +/-.

Review Sections 1.04 and 3.11 of the Improvement Standards.

# **IMPROVEMENT STANDARDS**

## **LAKE OROVILLE AREA PUBLIC UTILITY DISTRICT**

### **SECTION 1 - General Requirements**

#### **1.01 Jurisdiction**

These Standards shall apply to design and construction of all sewerage system facilities which will be offered for dedication to be operated and/or maintained by Lake Oroville Area Public Utility District (hereinafter referred to as "District").

#### **1.02 Agency Approvals**

It shall be the responsibility of the Developer or project sponsor (hereinafter referred to as "Owner") to obtain all approvals required from applicable public agencies regarding the proposed project. Approval shall be obtained from the following agencies as applicable:

1. South Feather Water and Power
2. California Water Service Company
3. Butte County Environmental Health Department
4. Butte County Development Services
5. Butte County Department of Public Works (for all work within existing or proposed County rights of way)
6. Caltrans (for all work within existing or proposed State highway rights of way)
7. State Department of Public Health
8. El Medio Fire Protection District
9. City of Oroville

It shall be the Owner/Developer's responsibility to contact all other agencies which have jurisdiction over the project. Such agencies may include the California Department of Fish and Game, and the Central Valley Regional Water Quality Control Board.

#### **1.03 Compliance With Laws**

The Owner/Developer, the Project Engineer and the Contractor shall keep themselves fully informed of, and shall comply with all applicable federal and state laws, county, municipal and special district ordinances, resolutions, rules and regulations which in any manner affect the design, construction or operation of the project or its appurtenances.

## **1.04 Submission of Plans, Approvals & Construction Inspection**

- A. Plans by Licensed Civil Engineer - All plans and specifications for sanitary sewer improvements, private and public, which are to be accepted for maintenance by the District shall be prepared by a Civil Engineer, currently licensed by the State of California.
- B. Approved Plans - Complete plans and specifications for all proposed sewerage systems, including any necessary dedications, easements, and rights of entry, shall be submitted to the General Manager and/or District Engineer for approval. This approval must be substantiated by the signature of the General Manager and/or District Engineer or his/her authorized representative following the Development Agreement approval prior to the commencement of construction of any such improvements. The General Manager and/or District Engineer, or his/her representative shall order any Contractor to cease work on any project if said Contractor does not have properly approved plans on-site.
- C. Reference to District Specifications and Standards - The general notes and/or special provisions of all project plans, specifications and contract documents shall include the following note:  
*All construction and materials shall be in accordance with the latest edition of the Lake Oroville Area Public Utility District Improvement Standards and Standard Details.*
- D. Improvement Plan Submittal - The initial submittal of improvement plans to the District shall consist of the following:
- a. Three (3) sets of plans, complete and in accordance with these Improvement Standards, together with any required specifications, computations for all horizontal and vertical alignment, test data, and other material requested by the General Manager and/or District Engineer.
  - b. An itemized cost estimate for construction of all proposed sewer system improvements.
  - c. Copies of transmittal letters by which preliminary project plans were submitted to involved utility companies for their review.
  - d. Administration Fee computed on the basis of \$1.00 per lineal foot of sewer main line, said fee subject to periodic change.
  - e. Plan Check Fee deposit computed on District Engineer's time and materials.

Should there be required alterations or revisions to the plans submitted, the General Manager and/or District Engineer will return one copy with the corrections annotated thereon. If the plans submitted are not prepared in accordance with these Standards or are not in keeping with the standards of the profession, the General Manager and/or District Engineer may return them unmarked and unapproved.

E. Improvement Plan Resubmittal - Plans being resubmitted shall consist of three complete sets of plans. Additional sets may be required by the General Manager and/or District Engineer.

Any revisions or alterations on resubmitted plans other than those required by the General Manager and/or District Engineer on previously corrected plans shall be brought to the attention of the General Manager and/or District Engineer by the Project Engineer.

F. Plan Approval - At such time as the Project Engineer preparing the plans has made the necessary revisions and the Owner/Developer has executed a Development Agreement approved by the General Manager and/or District Engineer (see Appendix A for sample form), the District Board of Directors, at the next regularly scheduled meeting, will consider approving the plans and the project for construction. Upon the Board's approval, the General Manager and/or District Engineer will sign the plan originals in the space provided, if they have been signed by the Project Engineer. The Board's approval of the plans and project is valid for a period of twelve months. Should work not commence within the 12-month period, the plans shall be submitted for reapproval. Also, if construction commences and then is halted for more than one year, project approval shall expire. (See Board Policy No. 6040.)

G. Final Plans Required - The Project Engineer shall deliver three sets of approved plans to the District office. Additional improvement plan sets may be requested by the General Manager and/or District Engineer, and these shall be furnished to the District without cost.

H. Improvement Plan Revisions During Construction - Should changes become necessary during construction, the Project Engineer shall first obtain the approval of the General Manager and/or District Engineer

I. Record Drawings - The Project Engineer and Contractor shall keep an accurate record of all approved deviations from the plans and shall, upon completion of the work and before final approval of the completed improvements, annotate the original plans to reflect this information and submit a diazo mylar along with 2 digital versions (one .pdf and one .cad format) of the "record drawings" tracings to the District. (See Section 3.i of Appendix A, Development Agreement.)

J. Conflict, Errors and Omissions - Excepted from approval are any features of the plans that are contrary to, in conflict with, or do not conform to any California State Law, Butte County or City of Oroville Code or Resolution, conditions of approval, or generally accepted good engineering practice, in keeping with the standards of the profession, even though such errors, omissions or conflicts may have been overlooked in the District's review of the plans.

K. Existing Utilities - All existing utilities are to be shown on the plans. In addition, the Project Engineer shall submit the preliminary and approved plans to the utility companies involved. This is necessary for the utilities to properly plan their relocation projects and additional facility requirements. Copies of the transmittal letters to the utility companies shall be provided to the General Manager and/or District Engineer.

L. Partial Plan - Where the improvement plans submitted are for only a portion of the ultimate development, the plans submitted shall be accompanied by the approved tentative plan, or a study if there is no approved tentative plan, showing topographic features of ultimate development at an adequate scale to clearly show the proposed future improvements.

M. Other Agency Notifications - The Project Engineer is responsible for obtaining the approval and necessary permits from all governmental agencies when their facilities are involved.

N. Construction Inspection Fee - Construction inspection fees, subject to periodic change, shall be paid to the District prior to commencement of construction and shall be computed on the following basis:

<u>Estimated Sewer Project Cost</u>	<u>Fee</u>
\$0.00 to \$10,000.00	4.25% of Estimate
\$10,000.01 to \$50,000.00	3.60% of Estimate
\$50,000.01 to \$100,000.00	3.20% of Estimate
Over \$100,000.00	2.85% of Estimate

O. Inspection Requirements - Any improvement constructed for which District acceptance and maintenance is intended, shall be inspected during construction by a District representative. Any improvements constructed without inspections as provided above or constructed contrary to the order of instructions of the General Manager and/or District Engineer will be deemed as not complying with these Standards and will not be accepted by Lake Oroville Area Public Utility District for ownership and maintenance purposes.

The Project Engineer shall notify the General Manager and/or District Engineer one week prior to the commencement of project construction.

When all project sewer improvements are complete and within forty-eight (48) hours after receiving the request for final inspection from the Project Engineer or Owner/Developer, the General Manager and/or District Engineer or his/her representative shall inspect the completed work. The Contractor shall proceed to correct any such defects or deficiencies at the earliest possible date. At such time as the remedial work has been completed, a second inspection shall be made by the General Manager and/or District Engineer or his/her representative to determine if the previously mentioned defects have been repaired, altered and/or completed in accordance with the plans. At such time as the General Manager and/or District Engineer approves the work, and after the Owner/Developer has complied with the provisions of the Development Agreement regarding "Conveyance" (see Appendix A, Section 3.i) the District Board of Directors will consider, at their next regularly scheduled meeting, accepting the improvements into the District's maintained system. Upon said acceptance, the Contractor, Project Engineer and Owner/Developer will be notified.

On projects where Lake Oroville Area Public Utility District participates in the costs thereof, quantities will be measured in the presence of the General Manager and/or District Engineer, Project Engineer, and Contractor, and witnessed accordingly.



P. Special Notices and Permits - The Project Engineer shall be responsible for advising the Contractor to give the following notices and have in his/her possession the following permits and plans:

- a. Contractor shall notify all utility companies involved in the development prior to beginning work;
- b. Contractor shall notify "Underground Service Alert" (phone 811 or 800-227-2600) forty-eight (48) hours in advance of any work.;
- c. Contractor shall be responsible for the protection of all existing survey monuments.

### **1.05 Control of Materials**

The Owner/Developer shall furnish samples of materials as deemed necessary by General Manager and/or District Engineer for testing to verify conformance with manufacturer's specifications and these Standards. Sample shall be furnished at no cost to the District.

All tests of materials will be made in accordance with recognized standards of national organizations. The cost of testing for materials which are found to be in conformance with specifications and these Standards shall be charged as a part of the inspection fee to the District. The cost of testing for materials which do not conform to specifications and these Standards shall be paid by the Owner/Developer in addition to said inspection fee.

At the discretion of the General Manager and/or District Engineer, materials may be approved for use when accompanied by a manufacturer's certificate of compliance stating that the material complies with all requirements of the specifications and these Standard. The certificate shall be signed by a representative of the manufacturer. The certificate of compliance shall be furnished with each lot of material delivered to the work site and the lot so certified shall be clearly indicated in the certificate.

All materials may be sampled and tested at any time. The certificate of compliance shall not relieve the Owner/Developer of responsibility for furnishing material which conforms to the requirement of specifications and these Standards. Any material not conforming to said requirements will be subjected to rejection regardless of its stage of installation.

### **1.06 Control of Work**

A minimum of forty-eight (48) hours notice shall be given to the District prior to commencement of any work. A minimum of forty-eight (48) hours notice shall be given to the District prior to any phase of the work requiring disruption of existing sewer service. Connection to existing District facilities or conflicts with other utilities shall be discussed well in advance of the commencement of that phase of the work.

It shall be the Contractor's responsibility to ascertain possible conflicts, potholing as necessary, with underground utilities, locate said utilities in advance of the work, and notify all applicable agencies and acquire any and all required permission and/or permits.

**1.07 Rights of Way**

All facilities to be operated and/or maintained by the District shall be located in public rights of way wherever possible. When facilities cannot be so located, they shall be located in public utility or sewer easements dedicated specifically to the District, the City of Oroville or the County of Butte for acceptance for use by the public. The location and width of easements shall be subject to approval by the General Manager and/or District Engineer. All necessary easements shall be deeded to and accepted by the District Board of Directors prior to conveyance of the completed sewer improvements by the Owner/Developer to the District. Said deeds shall include that language specified in the sample easement deed form included herewith as Appendix B.

**1.08 Conveyance of Facilities**

Within ninety (90) days after completion of construction of the project's sewer improvements in accordance with the approved plans and these Standards, the Owner Developer shall convey title of the completed works to the District without cost and free and clear of all liens and encumbrances, by appropriate conveying documents (sample Dedication Form included herewith as Appendix A). The Owner/Developer shall also comply with the provisions specified in Section 3.i of the sample Development Agreement included herewith as Appendix A.

**1.09 Connections to Facilities**

No connections will be permitted to any portions of the project's sewer improvements which are not completed in accordance with these Standards and accepted by the District's Board of Directors, unless guaranteed as to completion and acceptance by means of faithful performance bond and a labor and material bond, each in the amount of not less than 100% of the total Project Engineer's estimate of the work, as approved by the General Manager and/or District Engineer.

**1.10 Work Within Rights of Way**

**1.101. Butte County Department of Public Works**

All Contractors performing work in connection with District facilities within County rights of way, for which application for an encroachment permit by Lake Oroville Area Public Utility District is required by the Butte County Department of Public Works, must comply with all agency requirements, and have certificate of general liability insurance on file with Public Works with at least \$1,000,000 general liability coverage with Butte County Public Works listed as additional insured and Butte County listed as a certificate holder, and have a valid Class A Contracting License.

**1.102 City of Oroville Department of Public Works**

All Contractors performing work in connection with District facilities within City of Oroville rights of way, for which application for an encroachment permit by Lake Oroville Area Public Utility District is required by the City of Oroville Department of Public Works, must comply with all agency requirements, and have a certificate of general liability insurance on file with Public Works with at least \$1,000,000 general liability coverage with City of Oroville Public Works listed as additional insured and City of Oroville listed as certificate holder, provide an excavation bond, and have a valid Class A Contracting License.

## SECTION 2 - Materials

### 2.01 Pipes, Joints and Fittings

All pipes, joints and fittings shall be of either polyvinyl chloride plastic or ductile iron materials as described below. Only one single type of pipe shall be used in any given project unless otherwise approved by the General Manager and/or District Engineer.

#### 2.011 Polyvinyl Chloride Pipe (PVC)

Polyvinyl chloride pipe shall be of a type as manufactured by Johns-Manville Co. under the brand name "Ring Type PVC Pipe," Certaineed Products Corporation's "PVC Gravity Sewer Pipe," or approved equal. Pipe shall be polyvinyl chloride plastic gravity sewer pipe and integral wall, bell and spigot O-ring type joints. Pipe and fittings shall meet the extra strength minimum of SDR-35 of the requirements of ASTM designation D-3034. All fittings such as wyes, tees, bends, reducers and connections shall be of the same material and manufacturer as the pipe. Rubber rings shall conform to ASTM designation D-1869. No solvent cement joints shall be used.

All PVC shall have a home mark to indicate full penetration at the spigot when the joint is made. PVC and fittings shall not be stored with direct exposure to sunlight for any extended period of time. If storage for a long period is necessary, pipe and fittings shall be covered with opaque material, providing air circulation, or otherwise protected in a manner approved by the General Manager and/or District Engineer.

#### 2.012 Ductile Iron (DI)

Ductile Iron Pipe (DIP) Class 50 (Class 51 for 4" DIP) Ductile iron pipe shall conform to the ANSI Specifications A.21.51, and AWWA C151 for Tyton joint pipe. Rubber gasket joints shall conform to ANSI A.21.11.

Fittings for ductile iron and PVC pipe used as force main shall be ductile iron compact fittings conforming to AWWA C153 Class 350.

All ductile iron pipe and fittings shall be lined with a PROTECTO 401 ceramic epoxy interior lining or approved equal. Methods of application, touch up, and repair shall be in accordance with the manufacturer's recommendations. The pipe and fitting manufacturers must provide certification confirming that the liner was installed in accordance with the lining manufacturer's recommendations.

### 2.02 Force Main Pipe

All force main pipe shall be Polyvinyl Chloride Pipe (PVC) C-900 - PVC C-900, Class 150 pipe shall conform to AWWA Standard C-900 for four (4) inch through 12 inch pressure water pipe or equal. Rubber rings shall conform to ASTM designation D-1869. No solvent weld joints shall be used. Storage specifications apply as in Section 2.011, above.

### **2.03 Manholes**

Precast manhole bases shall be as manufactured by Cook Precast Concrete, Inc., or approved equal. Poured in place manholes shall have 3000 psi concrete bases with precast reinforced concrete pipe sections, tapered sections and adjustment rings. Reinforced concrete parts shall conform to ASTM designation C-76, and pipe sections shall be four (4) feet inside diameter.

Manhole joints shall be sealed against infiltration and exfiltration by means of sand-cement mortar between and both inside and out, or by means of joint sealing compound as manufactured by K.T. Schneider Co., Houston, Texas, under the brand name "Ram-Nek", or "Quick-Seal" as manufactured by Associated Concrete Products, Inc., or approved equal. Appropriate primers and preparation as specified by manufacturers shall be used.

Cast in place manhole bases, drop structures and appurtenances shall be as set forth in the Standard Details, included herewith as Appendix D, and these Standards.

### **2.04 Castings**

All castings shall be grey iron conforming to ASTM designation A-159 class G-3000, asphalt paint dipped.

Bolted manhole castings shall be D&L Foundry A-1024 with no gasket or approved equal and shall be H-20 traffic loading rated. Non-bolted manhole castings shall be D&L Foundry A-1024 with no gasket or approved equal and shall be H-20 traffic loading rated.

Composite manhole castings shall be GMI Series 3800 or approved equal composite manhole cover and frame set. Composite castings shall be H-20 traffic loading rated and include a quarter turn locking system with security bolts.

Flushing hole (clean out) castings shall be D&L Foundry H-6530 Lamp Hole Cover or approved equal, depending on the type and size of pipe used.

### **2.05 Concrete and Patching Mortars**

Concrete shall conform to the State of California Standard Specifications in the latest edition and shall be class B unless otherwise shown on the approved plans or specified herein.

Patching and sealing mortars shall be of a portland cement base and shall be as of a type manufactured by Tamms Industries Co., Bellflower, California, under the brand name "Speed-Crete," or approved equal.

## **2.06 Couplings and Special Fittings**

Flexible couplings shall be Fernco Strong Back RC Series or approved equal. Tapping saddles shall be Fernco Sewer Saddles of cast iron material, o-ring type seal with stainless steel bands. Tapping saddles shall be appropriate for the diameter and type of the sewer being tapped and shall be subject to approval by the General Manager and/or District Engineer.

Stub-out fittings for tapping shall be of the type specified for use with the specific size and type of pipe by the pipe manufacturer. Installation shall be in accordance with the manufacturer's specifications and as approved by the General Manager and/or District Engineer.

## **2.07 Casings**

Casings for underground pipelines shall be as required by the State of California Standard Specifications, latest edition.

## SECTION 3 - Design Standards

### 3.01 Design Flow

An average flow of 100 gallons per person per day or 350 gallons per dwelling unit shall be used for design of sewers with peak flows calculated using the factors from the peak flow factor formulas below. All sewers shall be designed to carry peak flows without surcharging the manholes.

- a. PWWF (in MGD) = ADWF X PF +I/I
- b. ADWF (in MGD) = (350 gpd/EDU) / 1,000,000
- c.  $PF = 3.5 - 1.8Q^{0.05}$  where Q = average ADWF (in MGD), with a minimum value of 1.2
- d. I/I = 1400 gpd/acre for new pipelines (under 5 years old); I/I = 1600 gpd/acre for existing pipelines

The estimated population used for design including population equivalents for commercial, industrial and institutional uses shall be submitted prior to commencement of design of improvements.

Sewer mains subject to extension in the future shall be sized to serve the entire area tributary to the proposed development. The Project Engineer shall submit a study substantiating the proposed size of sewer in such cases. Discussion of parameters with the General Manager and/or District Engineer is advised prior to the study.

### 3.02 Gradients

Sewer pipe gradients shall be designed to provide a minimum flow velocity of two feet per second when pipes are flowing full or half full. The following table indicates slopes which will provide that velocity. These shall be the minimum slopes for design of sanitary sewers unless flatter slopes are specifically approved by the General Manager and/or District Engineer.

#### MINIMUM SEWER GRADIENTS

<u>Diameter</u>	<u>Slope</u>
4 " (service)	.0200 (1/4" per foot)
6"	.0050
8"	.0035
10"	.0025
12"	.0020
15"	.0015
18"	.0012

At changes in pipe size the invert of the pipe flowing from the manhole shall be sufficiently lower than the incoming pipe in order that the inside crown elevation of both pipes is the same.

At manhole locations where angles of deflection occur in the alignment of the sewer, the pipe invert shall have a minimum drop from inlet to outlet according to the following table:

#### MINIMUM FLOW LINE DROP THROUGH MANHOLE

<u>Angle of Deflection</u>	<u>Invert Drop (Inlet to Outlet)</u>
0 to 45 degrees	.05 feet
45 to 90 degrees	.10 feet
90 degrees plus	.20 feet

A drop manhole shall be constructed at any location where there is a drop in the sewer invert of more than 1.5 feet. Inside drop manhole structures shall only be used in accordance with the Standard Details (See Appendix D).

### **3.03 Pipe Size**

Sewer pipe sizes shall be adequate to carry the peak design flows at the design gradient with a minimum size of eight (8) inch diameter except for service lines. Minimum size for mainline sewers downstream of the last manhole on any given collector line shall be 8 inches unless otherwise approved by the General Manager and/or District Engineer. Lower laterals shall be four (4) inch diameter minimum except where estimated floor requires a larger size (see Appendix C)

### **3.04 Pipe Strength Class**

Manufacturer's specifications shall apply as to the proper class of pipe required for installation except where these Standards are more stringent. The Project Engineer may be required to substantiate the proposed class of pipe, as directed by the General Manager and/or District Engineer.

### **3.05 Location and Alignment**

Sanitary sewers shall be installed within rights of way dedicated for public streets or roads where practicable. If not located in street or road rights of way, sewers shall be installed within the center ten (10) feet of a twenty (20) foot wide permanent easement deeded to and accepted by the District, City of Oroville or the County of Butte as a sewer or public utilities easement. In case of hardship in providing a twenty (20) foot width, lesser widths may be approved on an individual basis by the General Manager and/or District Engineer.

When a curved alignment is necessary, the minimum radius of curvature shall be 400 feet, unless otherwise approved by the General Manager and/or District Engineer. In no case shall the maximum deflection of pipe joints exceed the recommendation of the pipe manufacturer. Location of sewer lines relative to domestic water facilities and improvements shall be in accordance with applicable public health and water company/district standards. The permissible location and installation requirements for any sanitary sewer being installed in existing streets or roads or in newly designed rights of way shall be in accordance with the requirements of the City of Oroville or Butte County Public Works Departments, unless these Standards require more stringent provisions.



### **3.06 Minimum Depth**

The depth of any sanitary sewer shall be adequate to provide a minimum cover of three (3) feet in any traveled way. Exceptions must be by prior approval of the General Manager and/or District Engineer. All service lines will, wherever practicable, be maintained at four (4) feet cover at the property line. Minimum cover on service lines shall be two and one half (2.5) feet throughout the length of the line within the public rights of way.

### **3.07 Manhole Locations**

Manholes shall be constructed at all pipeline intersections except service lines, at angle points, at changes in pipe size or gradient, at the terminus of lines (see subsection 3.08, below), and at maximum intervals of four hundred (400) feet on sewers not greater than twelve (12) inches in diameter, or at intervals of five hundred (500) feet on sewers greater than twelve (12) inches in diameter. Where manhole locations are fixed by intersections, the spacing of intervening manholes shall be approximately equal.

### **3.08 Cleanouts or Flushing Holes**

Cleanouts or flushing holes may be used in lieu of manholes at the terminus of any sewer where the distance from the terminus to the next manhole does not exceed two hundred (200) feet. Exceptions may be permitted by approval of the General Manager and/or District Engineer. Cleanouts on service lines shall be in conformance with the California Plumbing Code, and as specified in Appendix C, included herewith.

Temporary cleanouts are required at the terminus of lines intended for future extension and to which service lines connect.

### **3.09 Stubs for Future Extension**

Stub pipes shall be installed in manholes with appropriate plugs or caps, where shown on the drawings, for anticipated future extension. The location and size of stubs is subject to approval by the General Manager and/or District Engineer.

### **3.10 Service Lines**

Service lines shall be installed for each and every residence or structure. Cleanouts shall be installed as specified in subsection 3.08, above, except as otherwise directed by the General Manager and/or District Engineer. Building sewers within the property lines shall be in conformance with District Building Sewer Standards, included herewith as Appendix C.

**3.11 Plan Sheet Requirements**

- A. Paper Details - All improvement plans shall be, prepared on 24" x 36" sheets.
- B. Scales - Horizontal scales shall be 1" = 20', 40' or 50'. Corresponding vertical scales shall be 1" = 2', 4' or 5'.
- C. Title Sheet - On improvement plans exceeding three (3) sheets in a set, a title sheet shall Be prepared showing the following.
  - a. the entire project;
  - b. street names and widths;
  - c. section lines, grant lines and corners;
  - d. adjacent subdivisions, including names, lot lines and lot numbers;
  - e. property lines;
  - f. public easements;
  - g. location map;
  - h. scale of drawings; index of sheets; legend of symbols
  - k. signature block for District Manager
  - l. signature block District Engineer; and
  - m. signature block for Project Engineer.

Improvement plans consisting of three (3) or less sheets shall not: be required to include a title sheet, but shall be required to show all of the above in the plans.

- D. Title Block - Each sheet within the set of drawings shall have an approved title block showing the sheet title, number, date, scale, and the Project Engineer's name, signature and license number the name of the District and the name of the subdivision or assessment district and the Owner/Developer's name.

Approved blocks shall conform to the following:

ENGINEER'S CERTIFICATE

These improvement plans have been prepared and submitted under my direct supervision and are deemed by me to be sufficient and correct.

Engineer	R.C.E. No.	Date
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DISTRICT'S CERTIFICATE

Approved for Construction:

\_\_\_\_\_  
, Date  
General Manager  
Lake Oroville Area Public Utility District

Approved for Construction:

\_\_\_\_\_  
, P.E. Date  
District Engineer  
RCE No. exp.  
Lake Oroville Area Public Utility District

E. Sewer Layout - On subdivision plans, the sanitary sewer systems shall be shown on an overall plan layout, In addition, the sanitary sewer systems shall be shown on the street plans. On all other plans, an overall plan layout will not be required, but the facilities shall be shown within the development and on the street plans .

F. Plan Details - In addition to the other requirements of these Standards, the following details shall be shown on plans submitted for approval. This does not in any way exempt the Project Engineer preparing the plans from the responsibility of preparing neat, accurate and comprehensive plans in keeping with the standards of the profession.

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

b. All pertinent topographic features shall be shown, such as street lines, medians, driveways, curbs, sidewalks, shoulders, location and size of storm and sanitary sewer lines, high water and frequent inundation levels, water lines, gas lines, telephone conduits, other underground utilities, existing structures, houses, trees (6" and larger), other foliage, traffic signals, street lights and pullboxes, underground electrical conduits and cable, drainage ditches, utility poles, fire hydrants, retaining walls , masonry structures, and all other features of the area which might affect the design requirements for the area.

c. Existing contours or supporting elevations shall be shown on all plans submitted for subdivisions, commercial improvements, planned unit developments, or assessment and improvement districts.

d. The plans shall show the existing ground profile for a minimum distance of two hundred (200) feet beyond temporary endings to facilitate setting proper vertical alignment within the proposed improvement limits. The two hundred (200) foot minimum shall be increased when requested by the General Manager and/or District Engineer.

e. The stationing on plan and profile shall read from left to right. Stationing shall increase from south to north or from west to east. Plans shall be so arranged that the North arrow points toward the top or upper 180 degrees, insofar as practical.

f. The bench marks and datum shall be clearly delineated on the plans both as to location, description and elevations, When a proposed project is adjacent to or in the vicinity of a project for which District approved bench marks exist, the design datum of the proposed project shall be the same as that of said approved bench marks.

g. Special notes shall be clearly indicated, and it shall be conspicuously noted on the plans that all construction work and installations shall conform to the Lake Oroville Area Public Utility District Improvement Standards and Standard Details, and that all work is subject to the approval of the General Manager and/or District Engineer. Notes shall contain a statement regarding obtaining encroachment permits from other agencies when applicable.

G. Degree of Accuracy - All calculated dimensions and elevations shown on the improvement plans shall be allowed a computation accuracy tolerance of +0.01. Rates of grade shown on the improvement plans shall be allowed a computation accuracy tolerance of +0.001 %.

## **SECTION 4 -Lift Stations and Force Main Design**

### **4.0 General**

It is the policy of the District's Board of Directors that lift stations be installed only at locations that facilitate providing sewer service on a regional basis, to all parcels within natural water shed areas. Project proposals that include a site-specific lift station that would preclude serving other properties within the project site's natural drainage area will not be approved.

Lift station and force main designs shall be submitted by the Project Engineer along with supporting data and calculations. Discussion of parameters with the General Manager and District Engineer prior to design is advised.

If Project Engineer specifies a factory built and tested "package" unit, detailed calculations, shop and construction drawings and complete specifications for materials must be submitted prior to project approval.

Detailed calculations, shop and construction drawings, and complete specifications for materials must be submitted and approved by the District Engineer prior to project approval by the Board of Directors. The following shall be required:

Site specific design criteria for the pump stations will be provided by the District.

- a. calculations used for determining station design flow;
- b. pump design criteria including pump performance curves;
- c. load calculations for station and valve box lid and cover;
- d. specifications for concrete;
- e. specifications for protective concrete coating;
- f. method of sealing concrete rings;
- g. mechanical drawings showing exact locations of pumps, disconnects, pipes, valves, etc. (all components shall be dimensioned adequately for proper assembly);
- h. detailed drawings and specifications of all hardware and components used in the wet well and valve box;
- i. method used for anchoring components to concrete slab and/or walls.
- j. buoyancy calculations for underground facilities.

## 4.10 Design Considerations

### 4.101 Wet Well Sizing

The usable wet well volume (dead-band volume) shall be calculated using the following formula:

$$V = TQ / 4$$

where:  $V$  = dead-band volume, gallons

$T$  = cycle time (time between starts), minutes

$Q$  = design pump flow rate, gpm

The minimum value of  $T$  shall be 10 minutes based on a maximum of 6 starts per hour. The value of  $T$  may be increased according to pump manufacturer's recommendations.

### 4.102 Pump Capacity

The design pump capacity for sewer lift stations shall be based on peak wet weather flow for the area being served. Peak flow shall be calculated in accordance with the District's Improvement Standards Section 3.01 Design Flow. Historic flows may be considered in determining design flow where adequate information is available.

### 4.103 Pump Configuration

Submersible or above ground pump installations may be considered acceptable by the District depending on local conditions. A minimum of two pumps (duplex) shall be required where each pump is capable of pumping the design flow with the second pump acting as a back-up. Operation of pumps shall automatically alternate to maintain even wear. The District may require a three pump (triplex) system based on conditions of operation or where a higher level of reliability is required.

### 4.104 Mandatory Emergency Storage

Emergency storage shall be required for all lift station installations. The amount of storage will be based on design flows, environmental sensitivity, and estimated time for District personnel to respond to the emergency and reestablish station operation. Design criteria for quantity of emergency storage will be provided by the District.

### 4.105 Standby Power

On-site standby power shall be required for all lift stations. Standby generators shall be sized to accommodate pumping the maximum design flow. Standby power systems shall include automatic transfer to the generator during power outages. Systems shall also include a manual transfer switch and receptacle to accommodate the District's portable generator. Generators shall be diesel or propane fuel powered with minimum fuel storage to allow 24 hours of pump operation. Diesel powered generators secondary fuel containment shall conform with the District

“Spill Prevention Control & Countermeasures Plan” and “Hazardous Material Release Response Plan.”

#### **4.106 Bypass Pipe**

All stations shall be equipped with bypass pipelines to allow pumping from the wet well to the force main through a portable pump. Suction and discharge bypass pipes shall be 6-inch diameter with Bauers quick disconnect and cap for connection to pump hoses. Suction pipe shall include a drop pipe installed in the wet well to within 6 inches of the invert. The discharge pipe shall be installed in the force main downstream from the pump check valves and shall include an isolation valve between the force main and disconnect.

#### **4.107 Alarms**

Lift station equipment shall include alarms for the following conditions; low water level, high water level, pump failure, generator failure, station power failure, fire, security, and low fuel on generator.

#### **4.108 Force Main Design**

Force mains shall be designed to reduce energy costs and prevent settling of solids in the line. Optimum velocities for reducing costs and preventing accumulation of solids range from 3.0 feet per second to 5.0 feet per second. Force mains shall be designed using restrained joints or concrete thrust blocks to prevent movement of pipeline and fittings under pressure. Force mains shall include air/vacuum release valves at all high points.

#### **4.109 Pigging Port**

All lift stations shall include a pigging port to allow insertion of a pipe cleaning pig into the force main. Pigging port shall be installed downstream of the pump check valves.

#### **4.110 Odor Control**

Depending on the local conditions and proximity to potentially sensitive receptors, odor control may be required at sewer lift stations. Odor control may include chemical treatment or forced air ventilation through filter media at the discretion of the District.

#### **4.111 Noise Control**

Depending on the local conditions and proximity to potentially sensitive receptors, noise control may be required at sewer lift stations. Noise control may include sound deadening insulation in buildings and/or mechanical sound attenuation for equipment such as standby generators at the discretion of the District.

#### **4.112 Location and Access**

Sewer lift stations and force mains shall be located to allow access to all facilities by District service vehicles. Lift station sites shall include adequate driveways, parking, and turnaround space to allow District service vehicles access to wet well and valve vault hatches and building doorways. Lift stations shall be located so as to minimize potential adverse environmental impacts in the event of an overflow or spill. Where lift stations must be placed near open water courses, they must include adequate protection such as emergency storage and grading and drainage modifications to prevent discharge into surface waters.

#### **4.113 Pump/Motor Handling Equipment**

Where lift stations include pumps, motors, or other equipment which cannot be accessed or lifted with the District's standard service equipment, pump/motor handling equipment may be required. Pump/motor handling equipment may include cranes, trolleys, hoists, or other equipment determined necessary by the District.

#### **4.114 Comminution**

Depending on the nature of the customers being served and the level of reliability required, comminution may be required. The need for comminution will be determined by the District on a case by case basis.

#### **4.115 Buildings**

Buildings shall be required for all sewer lift stations utilizing above ground pump systems. Buildings shall include at least one standard entry door and one minimum 8-foot wide roll-up door.

#### **4.116 Outside Security Lighting**

All sewer lift stations shall be equipped with outdoor security lighting. Security lighting shall operate on an automatic photo/motion sensor with a manual override.

#### **4.117 Vibration**

Regardless of the type of unit constructed, maximum vibration measured around the upper circumference of the motor of the completed and functioning sewer lift stations shall be less than one (1) mil peak measured around the upper circumference of the motor. Vibration will be measured before station is accepted by the Board of Directors. Corrections for excess vibration shall be the responsibility of the Contractor.



#### **4.118 Telemetry Communication**

The District utilizes a radio based communications system for alarm notification, trending and reports, and remote operation through its existing SCADA system. All new lift stations shall be equipped with radio communication systems. A point-to-point radio path survey will be required to determine antenna design criteria.

#### **4.20 Materials**

##### **4.201 Wet Well Material**

Lift station wet wells shall be constructed of reinforced concrete pipe conforming to ASTM Designation C76/AASHTO M170 or precast manhole sections conforming to ASTM C 478. Joints for concrete pipe or manhole sections shall be water-tight flush bell joints with rubber gaskets conforming to ASTM C443 / AASHTO M198 or approved equal. Interior concrete walls shall be coated with a protective coating suitable for use in contact with raw sewage.

##### **4.202 Pipe and Fittings**

Station piping and fittings for installation above ground and in the wet well shall be flanged ductile iron. Force main pipe shall be either ductile iron or polyvinyl chloride (PVC).

Ductile iron pipe and fittings used as station piping shall have minimum 125 lb flange connections and shall conform in all respects to ANSI/AWWA C115/A21.15-94 and C110/A21.10-93 standards as appropriate.

All ductile iron pipe and fittings shall be lined with a PROTECTO 401 ceramic epoxy interior lining or approved equal. Methods of application, touch up, and repair shall be in accordance with the manufacturer's recommendations. The pipe and fitting manufacturers must provide certification confirming that the liner was installed in accordance with the lining manufacturer's recommendations.

Fittings for ductile iron and PVC pipe used as force main shall be ductile iron compact fittings conforming to AWWA C153 Class 350.

Polyvinyl chloride pipe shall have a maximum dimension ratio (DR) of 18 (minimum pressure class 150), unless otherwise specified and shall conform to AWWA Standards C900. Outside diameter (OD) pipe shall be manufactured to cast iron pipe (CIP) equivalent. Pipe shall be furnished in minimum standard lengths of 20 ft.

#### **4.203 Check Valves**

Check valves shall be installed in the discharge line of each pump. Check valves shall be swing check valves and shall be constructed of heavy cast iron body with a bronze seat ring. Check valves shall include an exterior lever and weight to allow adjustment of the closure rate and manual operation of the valve. The valves shall be APCO Series 6000CLW Convertible Swing Check Valve (per Bulletin 579) or approved equal.

#### **4.204 Eccentric Plug Valves**

Isolation valves shall be eccentric plug type valves. The isolation valves shall have flanged ends conforming to ANSI B16.1 Class 125 standard. Valves within the valve vault shall have mechanical actuators with handwheels. Buried valves shall include mechanical actuators with 2" operating nuts and shall be designed for underground applications. The isolation valves shall be M & H Style 820 X-Centric plug valves or approved equal.

#### **4.205 Pressure Gauges**

A pressure gauge shall be mounted on each force main. Pressure gauges shall be 4.5" Ashcroft Duragauge style 1279 or approved equal. Gauges shall be glycerin filled and shall include isolation valves and stainless steel diaphragm seals as recommended by the gauge manufacturer for wastewater applications.

#### **4.206 Wet Well and Valve Vault Access Covers**

The wet well and valve vault access doors for the top of the vaults shall be furnished in the size and configuration as approved by the District. The door panels shall be stainless steel or aluminum diamond plate, reinforced to withstand a live load of the H-20 designation. Doors shall include automatic lock with stainless steel hold open arms with release handles and enclosed stainless steel compression spring assists. Doors shall close flush with the frame. Hinges and all fastening hardware shall be stainless steel. Units shall lock with stainless steel slam locks with removable keys and have a non-corrosive handle. Doors shall be manufactured by Halliday Products, Inc. or approved equal.

#### **4.207 Flow Meter**

Flow meters shall be installed at all sewer lift stations. Flow meters shall be magnetic flow meters and shall be the MX magnetic flow meter as manufactured by McCrometer or approved equal.

#### **4.208 Level Sensing Devices**

A pressure sensing device shall be installed for measurement of the liquid level in the wet well. Level sensing devices shall be either a bubbler system or submersible pressure transmitter. The pressure sensing device shall be specifically designed for a wastewater, pump/lift station application.

In addition to the pressure sensing device, a set of redundant float type liquid level sensing devices shall be installed in the station to indicate the high-high water alarm condition and the low-low water alarm condition. Floats shall be ITT Flygt ENM-10 Liquid Level Sensors or approved equal.

#### **4.209 Building**

Where buildings are required they shall consist of a concrete slab floor, split face masonry block walls, and steel roof. Colors of block and roof shall be chosen to match station surroundings.

#### **4.210 Pump Controls**

Lift station pump controls shall be Tesco L2000 Programmable Logic Controller with Reactive Air Monitoring System and Ethernet connections.

#### **4.211 Auto Dialer**

All lift stations shall be equipped with an auto-dialing, voice synthesized remote monitor telemetry system. Auto-dialer shall be “real voice” type Verbatim or Chatterbox as manufactured by Raco.

#### **4.212 Telemetry Communication**

Lift stations shall be equipped with Ethernet radios provided by the pump controller supplier in order to communicate with the District’s existing SCADA system. Installation shall also include antenna, tower and/or mast, and cabling as required. Radio communication design criteria will be provided by the District.

Radio equipment shall be manufactured by Microwave Data Systems, SD9 “smart radio” or approved equal. The radios shall meet all of FCC part 94 out-of-band emission requirements and shall be capable of transmitting data at 9600 baud, operating half duplex. The R.F. transmitters shall be directly frequency modulated by a built-in digital modem from the digital data stream furnished by the PLC.

The radio assembly for each site shall consist of a non-protected transmitter, receiver, power supply and digital modem capable of operating in the 928 to 952 MHz band. Each assembly shall be capable of transmitting and receiving digital data at a rate of 9600 Baud over a 12.5 KHz FCC assigned channel. The radio shall include both Ethernet (10/100 BaseT) and serial (RS-232) connections and shall support encryption for radio traffic.

The antennas for all sites shall be heavy duty yagi type and shall have a frequency range of 928 to 960 MHz.

Transmission lines shall be Andrew Corporation Helix Type LDF4-50A 1/2” diameter foam dielectric coaxial cable or approved equal.

## **SECTION 5 – Mainline Construction Requirements**

### **5.01 Excavation**

Except by specific approval of the General Manager and/or District Engineer, no more than three hundred (300) feet of open trench shall be excavated in advance of laying of the sewer pipe. The trench shall be backfilled, compacted and open to traffic where applicable at the end of each day's work.

Width of trench shall be uniform from top to bottom and shall be a minimum of eight (8) inches wider than the external diameter of the pipe. The maximum width of the trench measured at the top of the pipe shall not exceed the external width of the pipe plus twenty four (24) inches exclusive of bells, collars and fittings.

Stripping of top soil and separate storage thereof will be required in areas where it is deemed necessary by the General Manager and/or District Engineer to preserve the quality of top soil.

Shoring of trenches shall be in accordance with appropriate State and Federal safety regulations and the dictates of good construction practice. Safe access to the trench for inspection purposes shall be provided at all times. The requirements of the California Division of Industrial Safety shall be complied with. Instructions, or the lack thereof, from the General Manager and/or District Engineer or his/her representative in no way waive the Contractor's responsibility with regard to safety.

The depth of trench shall be in accordance with the lines and grades shown on the plans with proper allowance for bedding and thickness of pipe and for the type of fittings specified. Any portion of the trench excavated below the proper grade shall be backfilled with approved bedding material and compacted to 95% relative compaction at the Contractor's expense and at the direction of the General Manager and/or District Engineer. All areas of unsuitable material required by the General Manager and/or District Engineer to be removed shall be replaced in the same manner.

Removal and disposal shall be required of all water entering the excavation, disposal of water shall be done in a manner to prevent damage and nuisance to adjacent properties or to the public. A Dewatering plan as required by the Regional Water Quality Control Board shall be in place. Sufficient pumping equipment shall be provided by the Contractor in a manner so as to maintain the trench in a dry condition during the bedding and initial backfilling of pipe. Appropriate precautions shall be taken to prevent drainage water from entering the sewer line being constructed.

## **5.02 Bedding**

Bedding for sewer pipe shall be of a granular material appropriate to the conditions present in the construction. Depending on said conditions, clean sand, pit run gravel, pea gravel or road base may be required for pipe bedding. Type, method of placement and preparation of bedding shall be approved in advance of the construction by the General Manager and/or District Engineer and any changes necessitated by the work or available supply of materials shall be approved by the General Manager and/or District Engineer. A minimum of six (6) inch compacted depth of bedding shall underlie the pipe in all cases. Bedding shall be placed to fit the underside of the pipe barrel with excavation made for bells or pipe couplings.

Concrete encasement of the pipe may be required by the General Manager and/or District Engineer under certain circumstances.

## **5.03 Alignment and Grade Control**

Construction alignment and grade control shall be set by a licensed civil engineer or land surveyor. At a minimum, alignment and grade of each manhole change in alignment, and cleanout shall be set. When the distance between manholes or a cleanout is greater than 300' an intervisible point between both manholes shall be staked. Cut sheets shall be provided to the General Manager and/or District Engineer. The General Manager and/or District Engineer shall determine the adequacy of the proposed method and shall set the tolerances required for the work. The General Manager and/or District Engineer, at any time during the course of the work, may require alterations of the grade control method to conform to the required conditions of the work.

Horizontal alignment shall be such as to maintain a true line between manholes. Any deviation therefrom must meet the approval of the General Manager and/or District Engineer.

Unless otherwise approved by the General Manager and/or District Engineer, line and grade shall be staked by a licensed civil engineer or licensed land surveyor. The General Manager and/or District Engineer may at any time check the alignment and grade from staking. The Contractor shall take appropriate means to preserve, as is practicable, all stakes, bench marks and control used in the setting of alignment and grade. Where, in the judgment of the General Manager and/or District Engineer, the loss of stakes and/or other reference points from whatever cause, requires restaking, such restaking shall be performed when and as directed by the General Manager and/or District Engineer and shall be done at the cost of the Owner/Developer.

## **5.04 Pipe Installation**

The pipe shall be laid in strict conformity with the prescribed alignment and grade, as staked, and brought to the work by the approved method. Pipe laying shall proceed upgrade with the bell ends of the pipe placed upstream. Each section of pipe shall be laid true to line and grade and in such a manner as to form a water tight concentric joint with the adjoining pipe. The

interior of the sewer shall be kept clear of all dirt and debris during the work process. Plugs shall be placed in the open end of pipe during all waiting periods in the construction process.

All pipe laying and joining, including the maximum deflection of joints in curved alignment shall be in accordance with the pipe manufacturer's specifications and as directed by the General Manager and/or District Engineer.

The bedding shall be shaped to fit the barrel of the pipe and give uniform support throughout its length. Pipe bedding should be excavated from beneath the bell ends or couplings of the pipe so as to avoid any bridging effect. No wedging or support of the pipe with wood or any other type of material than the approved bedding shall be permitted.

Initial backfill shall be placed in an approved manner so that the bottom one-third (1/3) of the pipe rests on a densely compacted bed of approved granular material. Slicing with a shovel tip, tamping with a T-bar, compaction by foot or other approved mechanical equipment may be used to meet such requirement. In case of light weight pipe (PVC), sufficient material must be placed on the pipe to keep it from moving out of line and grade. In the case of PVC, jetting of the pipe zone material as approved by the General Manager and/or District Engineer may be required.

#### **5.05 Backfill**

Backfill shall consist of compacted initial backfill and intermediate backfill. Backfill within the roadway structural section shall conform to Butte County or City of Oroville Standards.

a. Initial Backfill – Initial backfill shall be placed from the springline of the pipe to a point twelve (12) inches above the top of the pipe. Initial backfill material shall be the same type imported material used for pipe bedding. Initial backfill shall be placed after the bedding material has been placed and the pipe joints have been inspected and passed by the District inspector. Initial backfill shall be on-site prior to inspection by the District inspector.

b. Intermediate Backfill - Intermediate backfill for projects outside the city or county right of way shall be placed from twelve (12) inches above the pipe to the surface. Intermediate backfill material shall be screened excavated (native) material, free from roots, organic matter, trash, and debris, and shall contain no rocks greater than three (3) inches in diameter. All material containing rocks shall have adequate fines to fill all voids. Where excavated material cannot meet this specification it should be properly disposed of and imported backfill material used. Intermediate backfill shall only be placed after the line has been tested and approved by the District inspector. Excavations shall not remain open overnight outside of private property unless approved by the District. All trench backfill shall be completed within a maximum of five (5) working days. Intermediate backfill within the roadway structural section shall conform to City of Oroville or Butte County standards.

## 5.06 Mainline Pipe Line Testing

- A. Testing for Leakage - The completed pipe line may be tested for leakage at the option of the Contractor prior to completion of backfill and surfacing. Retesting may be required by the General Manager and/or District Engineer following backfill operations. Testing of pipe lines for leakage shall be done prior to acceptance of the completed Facility by the Board of Directors.

All pipe lines shall be air tested under the terms of the Ramseier Method as interpreted and reduced below.

The pipe line to be tested shall be plugged and pumped full of air to a pressure of not more than four (4.0) psi above the average back pressure created by any ground water that may submerge the pipe. A stabilization period of not less than five (5) minutes shall follow filling prior to beginning the test unless waived by the General Manager and/or District Engineer. The pressure at the beginning of the test shall be not less than three (3.0) psi. The allowable time for the pressure to drop a maximum of one-half (0.5) psi is shown below per size of pipe.

<u>Pipe Size</u>	<u>Allowable Time for 0.5 psi Drop</u>
4"	125 seconds
6"	185 seconds
8"	245 seconds
10"	310 seconds
12"	370 seconds
15"	460 seconds
18"	550 seconds
24"	735 seconds

If the pressure drop exceeds one-half (0.5) psi over the time allowed, that section of pipe shall have failed the test and the Contractor shall locate and repair the faulty portion or portions and successfully retest.

Prior to air testing the Contractor shall satisfy the General Manager and/or District Engineer that the thus far completed lines are free of obstructions to the point that the air test is deemed valid by the General Manager and/or District Engineer. Balling and flushing may be done at this time, however, balling and flushing is required after completion of all surface work and final paving, if any, and installation of manhole castings, final leveling thereof and any and all remaining manhole work. Where service lines extend through or into easements final air testing shall be performed after the completion of all work in the easements.

Hydrostatic testing of lines may be substituted for air testing if and as approved by the General Manager and/or District Engineer.

B. Tests for Obstructions - All pipe lines shall be tested for obstructions and cleaned by balling and flushing or the use of a high pressure sewer cleaner. Balling and flushing shall be done with a commercial sewer cleaning ball such as the Wayne Sewer Cleaning Ball or the Flexible Sewer Ball or approved equal. The ball shall be controlled by a tag line or rope or sewer rods and permitted to move slowly through the sewer. The ball shall be passed freely through the test section and all debris flushed ahead of it shall be caught and removed at the first manhole. If the ball is stopped or prevented from moving freely by debris, damaged pipe, alignment, irregularity or any other cause, the Contractor shall locate and remedy or repair the obstruction and shall retest the conduit by balling and flushing as well as air testing to the satisfaction of the General Manager and/or District Engineer.

Jet rodding shall be done with a high pressure sewer cleaner as approved by the General Manager and/or District Engineer.

C. Test for Deflection/Out-of-Roundness (PVC) - Following the placement and compaction of backfill and prior to the placing of permanent surfacing, all plastic pipe mains shall be cleaned and then mandrelled in the presence of the General Manager and/or District Engineer or his/her representative to determine the existence of obstructions (deflections, joint offsets and lateral pipe intrusions).

A rigid mandrel that is approved by the General Manager and/or District Engineer, with a circular cross section having a diameter of at least 95% of the specified average inside diameter of the pipe, shall be pulled through the pipe by hand. The minimum length of the circular portion of the mandrel shall be equal to the nominal diameter of the pipe. Any obstructions encountered by the mandrel shall be properly repaired or replaced and rechecked as directed by the General Manager and/or District Engineer at no expense to the District.

Approximately eleven (11) months after acceptance of the work (at least twenty (20) days but not more than fifty (50) days prior to expiration of the one year maintenance period) all plastic pipe mains shall again be mandrelled in the presence of the General Manager and/or District Engineer or his/her representative. A rigid mandrel that is approved by the General Manager and/or District Engineer, with a circular cross section having a diameter of at least 90% of the specified average inside diameter of the pipe, shall be pulled through the pipe by hand. The minimum length of the circular portion of the mandrel shall be equal to the nominal diameter of the pipe. All obstructions encountered by the mandrel shall be properly repaired or replaced and rechecked as directed by the General Manager and/or District Engineer at no expense to the District.

## **5.07 Manholes**

All manholes shall be of concrete construction and shall conform to the Standard Details unless otherwise approved and specified. The manhole base shall be of sound concrete, placed in accordance with good practice and of proper slump for use in the work. Control of water in the manhole excavation shall be to the satisfaction of the General Manager and/or District Engineer.

Precautions shall be taken to assure that sewer pipe entering and leaving the manholes does not move from the installed alignment and grade. Sufficient material should be placed on said sewer



lines to prevent such movement. Appropriate plugs, as approved by the General Manager and/or District Engineer shall be placed in the ends of the pipes in order to prevent concrete from entering the lines during the manhole pour. In case of straight through lines, the pipe may be laid through the manhole excavation with the base being poured around the pipe. The upper half of the pipe shall then be cut or broken out to form the channel in an approved method.

Care should be taken to set the manhole barrels at the appropriate time during the cure of the concrete to insure proper penetration and allow for sufficient clearance between the bottom of barrel and top of pipe. Initial setting and removal of barrels and rings or the use of a ring form to make the indentation in the base is subject to approval by the General Manager and/or District Engineer.

Sufficient care should be taken during the manhole pour operation to observe the rate of cure of concrete and to properly work the surfaces and channels so as to arrive at the required shapes and surfaces and avoid poor results. The channels shall be shaped in flowing curves as indicated on the drawings to insure proper hydraulic characteristics for the flow of sewage. A smooth, clean, hand rubbed finish shall be given to the surfaces of the manhole base and to any joint mortar work. Transitions between different sizes of pipes shall be smooth and regular. Excessive concrete, mortar or improperly shaped or surfaced channels shall be chipped back and built up again to insure the proper shape and surface. All cracks, joints, holes, etc., shall be sealed by mortar, sealing compounds or dry pack as approved by the General Manager and/or District Engineer to insure water tight manholes with workmanlike appearance.

During the pour of the manhole base, adequate care shall be taken to insure the proper bond between the sewer pipe and the concrete to prevent leakage in that location.

Care shall be taken in setting of barrels, tapered sections and risers to achieve good elevation control so that no more than twelve (12) vertical inches of grade rings are necessary to adjust the level of the manhole castings (12 inch maximum between top of tapered section and bottom of manhole casting).

Backfill shall be placed uniformly around the outside of the manhole so as not to create differential forces and the possibility of dislodging the manhole sections.

Drop connection inside manholes shall be in accordance with the Standard Details and shall be constructed in a manner to leastwise restrict maneuverability within the manhole.

## **5.08 Manhole Testing**

All manholes shall be tested by the placing of suitable plugs in the inlet and outlet lines and filling with water to the top of the casting. A one (1) hour minimum absorption may be required following which the testing of any leakage shall be observed. There shall be no measurable drop in water level observed by the District following the 15 minute test period.

If the manhole leakage exceeds the allowable amount, the manhole shall have failed the test and the Contractor shall repair and retest the manhole to the General Manager and/or District Engineer's satisfaction.

### **5.09 Installation of Casings; Boring and Jacking**

In case of installation of sewer line in a casing, whether by trenching methods or by boring and jacking, the grade of the installed casing shall be checked with regard to the design slope of the sewer being installed. The sewer line shall be installed by the method outlined in the latest edition, "State of California Standard Specifications," as amended by specific pipe manufacturer's recommendations, and approved by the General Manager and/or District Engineer. The pipe skids shall be shaped and installed in a manner so as to compensate for any misalignment or grade problems in the installed casings. All procedures and equipment used in the installation of a sewer in the casing shall be subject to prior review and approval of the General Manager and/or District Engineer. Any filling, sacking, drainage and protection of the casing ends shall be as directed by the General Manager and/or District Engineer.

All requirements of agencies having jurisdiction over the roadway, railroad or other type of embankment through which the casing is placed, shall be observed.

### **5.10 Cleanup**

During the progress of the work the Contractor shall maintain the entire job site in a clean and orderly condition as required by all agencies having jurisdiction. The Contractor shall promptly attend to the concerns of any persons having contact with the work and shall repair or replace any damage caused by his/her operation as directed by the General Manager and/or District Engineer.

**DEVELOPMENT AGREEMENT**  
for  
**DEVELOPER**  
**SUBDIVISION LINE EXTENSION**

THIS AGREEMENT, made and entered into this \_\_\_\_ day of \_\_\_\_\_, by and between LAKE OROVILLE AREA PUBLIC UTILITY DISTRICT, a local public agency of the State of California, hereinafter referred to as "District", and \_\_\_\_\_, hereinafter referred to as "Developer";

**WITNESSETH:**

WHEREAS, Developer is the owner, in fee, of that certain real property located within Butte County, California, bearing Assessor's Parcel Number \_\_\_\_\_; and,

WHEREAS, Developer intend to develop said property for business purposes, as more particularly shown and described in Exhibit "A", attached hereto and made a part hereof; and,

WHEREAS, Developer is planning to construct a sanitary sewer system, which system, together with all necessary lands, easements, and rights of way therefor, is hereinafter called "the Sewer System"; and,

WHEREAS, Developer has caused its engineer to prepare complete plans and specification for the construction of the Sewer System, consisting of sewer main extension and all appurtenances thereto, all in accordance with District's Improvement Standards, Board Policies, and the requirements and conditions hereinafter agreed upon; and,

WHEREAS, the facilities and lands to be served by the Sewer System lie within the annexed boundaries of District; and,

WHEREAS, Developer desires District to accept the Sewer System into District's wastewater collection system upon completion thereof and thereafter to operate, maintain, repair and replace said works as necessary; and, District is willing to do so, provided the Sewer System is properly constructed in accordance with the approved plans therefor, and in accordance with its Standards and Policies.

NOW, THEREFORE, District and Developer mutually agree as follows:

1. **ACCEPTANCE OF PLANS AND SPECIFICATIONS:** Developer certifies that the completed plans and specifications as described above for the Sewer System have been prepared in conformance with District Improvement Standards, Standard Details, and the requirements of the General Manager and District Engineer.

2. **ACCEPTANCE OF PLANS AND SPECIFICATIONS:** The plans and specifications prepared by Developer are in a form acceptable to the General Manager and District Engineer and Developer is authorized to proceed to construct the Sewer System in accordance therewith. Developer shall reimburse District for its expenses incurred in checking the plans and specifications from the fees described in paragraph 7 hereof.
3. **REVISION OF PLANS:** Any changes in the approved plans and specifications shall be submitted by Developer to District and shall not be incorporated into the construction of the Sewer System without the prior written approval of the General Manager and District Engineer.
4. **RIGHTS OF WAY:** Developer will provide to District, at no cost to District and in a form acceptable to the General Manager and District Engineer, appropriate easements and rights of way providing unrestricted right in the District for the ownership, operation, maintenance, repair, and replacement of all Sewer System main line facilities. Facilities placed within existing county maintained streets, non-exclusive public utility easements, and/or sanitary sewer easements will be acceptable in lieu of deeded easements.
5. **CONSTRUCTION:** Developer shall, without expense to District, construct the Sewer System pursuant to the approved plans or any approved modification thereof. Developer shall provide in any contract for construction of the Sewer System that all contractor's and material supplier's guarantees thereunder, shall be effective for at least one (1) year on the completed improvements after acceptance by District, shall inure to the benefit of District. Developer shall also provide in any contract for construction of the Sewer System that the contractor's public liability and property damage insurance shall be extended to cover Developer and District and their agents, officers and employees as additional insured with liability and bodily injury limits of not less than \$1,000,000, and property damage coverage of not less than \$100,000.
6. **PAYMENT OF PREVAILING WAGES:** Developer understands that the State of California (State) Attorney General has opined that, in certain circumstances, construction of facilities for provision of public utility service, with the understanding that said facilities will be turned over to District for ownership, operation and maintenance at the conclusion of construction, may be subject to the prevailing wage laws of the State. Developer has determined that, at this time, said opinion of the Attorney General does not affect the wages paid by Developer to laborers employed on said facilities constructed pursuant to this Agreement. Developer agrees, however, that should it be determined that the prevailing wage laws of the State (Labor Code Section 1770, et seq.) apply to the work performed in accordance with this Agreement, then Developer shall defend and hold District harmless from any liability, claims, damages, or costs in any way associated with said determination by the State and Developer shall, as further consideration of District entering into this Agreement, take all necessary and appropriate action, including payment of back wages, and any associated penalties which may be required, due to enforcement of the prevailing wage laws in connection with construction of the Sewer System. Developer agrees that District has not represented or in any way advised Developer in connection with this matter except to advise Developer of their potential liability and Developer does not in any way rely upon any

opinion or information of District in making its determination in connection with the payment or nonpayment of such wages for the work performed under this Agreement.

The obligation of Developer to, if required, pay prevailing wages for the work performed in accordance with this Agreement shall be a continuing obligation and shall bind the heirs, successors and assigns of Developer and District's obligation to provide operation and maintenance on the facilities to be turned over to District, and to provide sewage collection therein, shall be dependent upon Developer's continuing compliance with this provision.

7. **INSPECTION OF CONSTRUCTION:** The General Manager or his/her agent(s) shall inspect the construction of the Sewer System to ensure that the works are installed in accordance with the approved plans. Said inspection shall be funded by a Plan Check and Inspection Fee in the initial amount of \_\_\_\_\_, being \_\_\_\_\_ % \_\_\_\_ of the cost of the Sewer System () as estimated by the Project Engineer, paid by Developer as specified in District's Improvement Standards (§1.04, §O). Said Fee shall be subject to adjustment based on actual costs of plan check and inspection at such time as the work is completed. Plans and Specification shall not be deemed approved, and construction of the Sewer System shall not commence, until said fee is paid. The General Manager or District Engineer shall notify Developer as to any deviation or failure to construct pursuant to the approved plans as soon as such deviation or failure is brought to the General Manager or District Engineer's attention, and Developer shall correct such deviation or failure. Failure of the General Manager or the Districts Engineer to observe and/or to report such deviation shall not relieve Developer of the obligation to cure, at Developer's expense, all defects in material and workmanship and deviations from the approved Plans and Specifications.

8. **HOLD HARMLESS:** District is not, by inspection of the construction or installation of the Sewer System, representing to Developer that the System is constructed without defects or deviations nor does District's inspection relieve the Developer of the responsibility for the inspection and control of the work by Developer. Any inspections and observations of the work by District are for the sole purpose of providing notice of stage and character of the work. Any failure of District to note variances in the work from the plans does not excuse or exempt Developer from complying with all terms of the plans. The fact that District inspects the construction of work and notifies Developer of deviations or failures to construct them pursuant to the approved plans shall not be deemed to constitute a guarantee by District that the works have been built in accordance with the approved plans. During construction and prior to conveyance thereof to and acceptance thereof by District, Developer shall hold District harmless against any and all claims, demands and charges by third parties arising out of alleged deviations or failures to construct pursuant to the approved plans.

9. **CONVEYANCE:** Within ninety (90) days after completion of construction of the Sewer System in accordance with the approved plans therefor and District's Improvement Standards:

- a. Developer shall offer to dedicate the completed works and associated rights of way to District without cost and free and clear of all liens and encumbrances, by the documents of conveyance in Exhibit B or in such other form as is acceptable to the General Manager. Conveyance by the Developer shall not be complete, nor shall service from the Sewer System be provided until acceptance is authorized by the Board of Directors.

- b. Developer shall provide District with one set of 24"x 36" reproducible record drawings of the completed project, including street centerline station ties to house service line/main line connection points, on matte mylar (5 mil minimum) one digital .pdf format and one digital .cad format;
- c. Developer shall provide easements acceptable to District as specified in Paragraph 4, above;
- d. Developer shall furnish to District a bond, irrevocable letter of credit, cash deposit, or other form of surety meeting District's approval in the amount of \_\_\_\_\_, being \_\_\_\_\_ % of the actual cost of the Sewer System ( \_\_\_\_\_ ) as determined by the Project Engineer, \_\_\_\_\_ of \_\_\_\_\_, protecting District against any failure of the work due to natural phenomenon or catastrophe, faulty materials, poor workmanship, or defective equipment within a period of one (1) year after acceptance of the Sewer System by the District's Board of Directors. Said cash deposit, bond or irrevocable letter of credit shall name Developer as Principal and District as Obligee. The amount of said surety may be adjusted after construction is complete and the actual construction costs are known. However, the amount of said surety must be acceptable to the General Manager to insure adequate funding for those failures described above; and,
- e. District shall accept conveyance of title of the completed Sewer System by action of its Board of Directors and include it as part of its system, and shall thereafter operate and maintain said Sewer System.

10. **DEVELOPER'S RESPONSIBILITIES FOR FACILITIES AFTER CONVEYANCE:** After District's acceptance of the Sewer System, Developer shall have no obligation for the operation, maintenance, repair or replacement thereof, except that to the extent Developer retains ownership of any parcel to which service from such works is available. If Developer subdivides the Project subsequent to construction of the Sewer System and a building sewer service stub installed in accordance with the approved plans is not physically situated so as to provide service to a lot resulting from said subsequent subdivision; and, the installation of a new building sewer service line is deemed necessary by District to provide adequate sewer service to said lot, or requested by Developer or the purchaser of a resulting lot, Developer shall, without expense to District, remove said nonfunctional building sewer service stub, and install a functionally located building sewer service line in accordance with District Improvement Standards and Standard Details.

11. **APPLICATION FOR SEWERAGE SERVICE:** No sewage shall be delivered to or conveyed by or through the Sewer System, other than for testing purposes, until the Sewer System is conveyed to District and formally accepted by District as specified in Paragraph 9, above, and proper applications for sewer service having been filed with District accepted.

12. **OBLIGATION FOR PIPELINE AND/OR FACILITIES:** District shall be under no obligation to provide additional pipelines and/or facilities in order to serve the Project. Upon acceptance of the

Sewer System by District, it shall become the sole property of District and shall be used and operated as District's sole discretion.

**13. DEVELOPER RESPONSIBILITY FOR RATES, FEES AND CHARGES FOR SERVICE:**

All sanitary sewer service made available by District to users within the Project shall be at the established rates and charges as fixed by District's Board of Directors from time to time, including all applicable connection and capacity fees, periodic service charges, and surcharges required to retire the loan to the District made by the USDA Rural Development . Prior to connecting any residential structure or other structure requiring wastewater discharge to the Sewer System, payment of District's Sewer Connection Fee, District's Capacity Charge and Sewage Commission Oroville Region's (SC-OR) Regional Facility Charge shall be made. Developer agrees that if any such rates, fees, charges or surcharges established by the District are not paid when due, then Developer's service by District may be discontinued until such time as all required charges, and any interest and penalties thereon, are paid.

**14. NOTICES:** Notices or requests from any party to this Agreement to the remaining parties thereof shall be in writing and delivered or mailed, postage prepaid, to the following addresses:

**LAKE OROVILLE AREA PUBLIC UTILITY DISTRICT**

1960 Elgin Street  
Oroville, California 95966  
Attention: , General Manager

**DEVELOPER**

123 MY STREET.  
ANY TOWN CA 91919  
Attention:

**15. SUCCESSORS AND ASSIGNS:** This Agreement shall be binding upon and inure to the benefit of the successors and assigns of both parties. Developer shall not assign any of his rights, duties or obligations under this Agreement without the prior written consent of District, which consent shall not be unreasonably withheld.

**16. DISTRICT POWERS:** Nothing herein contained shall be deemed to limit, restrict, or modify any right, duty, or obligation given, granted, or imposed upon District by the laws of the State of California now in effect, or hereafter adopted, not to limit or restrict the power or authority of District, including the enactment of any rules, regulations, resolutions or ordinances, and in the event that any part of provision herein contained in this Agreement or incorporated herein, be found to be illegal or unconstitutional by a court of competent jurisdiction, such findings shall not affect the remaining parts, portions, or provisions hereof.

**17. TERMINATION:** This Agreement shall terminate and be of no further force and effect at District's discretion if District determines that construction of the Sewer System has not commenced within twelve (12) months from the date of this Agreement. Developer shall be solely responsible to

request extension of said twelve (12) month period, the grant of which shall be in the sole discretion of the Board.

18. **REIMBURSEMENT AGREEMENT:** If applicable the District and the Developer shall enter into a Reimbursement Agreement per Board Policy No. 6122, said agreement shall be attached hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

**LAKE OROVILLE AREA PUBLIC UTILITY DISTRICT:**

\_\_\_\_\_  
By: President

**ATTEST:**

\_\_\_\_\_  
, District Secretary

**DEVELOPER/OWNERS:**

By:  
\_\_\_\_\_ for DEVELOPER



**EXHIBIT "B"**

**DEDICATION**

**TO: LAKE OROVILLE AREA PUBLIC UTILITY DISTRICT**

1960 Elgin Street  
Oroville, California 95966

I/We hereby offer to convey, transfer and dedicate all right, title and interest in and to that certain sewerage system and appurtenances, including all necessary rights of access and easements required for District to have unrestricted right and access to own, operate, maintain, repair and replace said system and appurtenances more particularly described in Exhibit "A", attached to the Development Agreement by and between Lake Oroville Area Public Utility District and \_\_\_\_\_, for \_\_\_\_\_ dated \_\_\_\_\_ 20\_\_\_\_, a copy of which is on file in the District office located at the address noted above; to Lake Oroville Area Public Utility District. The undersigned further warrant to said District that the Sewer System is free and clear of all liens, encumbrances and other expenses and that it has been constructed in accordance with the Plans and Specifications approved by the District.

Dated: \_\_\_\_\_

**DEVELOPER/OWNERS:**

By: \_\_\_\_\_  
for Developer

**RECORDING REQUESTED BY**

Lake Oroville Area  
Public Utility District

**WHEN RECORDED MAIL TO:**

Lake Oroville Area  
Public Utility District  
1960 Elgin Street  
Oroville, CA 95966

**AP: 000-000-000** **SPACE ABOVE THIS LINE FOR RECORDER'S USE**

Conveyance to governmental entity R&T Code 11922

## **EASEMENT GRANT DEED**

**KNOW ALL MEN BY THESE PRESENTS:**

For good and valuable consideration receipt of which is hereby acknowledged:

**OWNER**

hereinafter referred to as **GRANTORS**, grant to **LAKE OROVILLE AREA PUBLIC UTILITY DISTRICT**, hereinafter referred to as **GRANTEE**, a public agency in the State of California, duly organized, existing and acting pursuant to the laws thereof, with its principle place of business in Butte County, California, and to its successor and assigns, a perpetual easement with the right to erect, construct, install, and lay, and thereafter use, operate, inspect, repair, maintain, replace, and remove sewer pipes, pumps, pump vaults, electrical controls, electrical services and facilities incidental thereto, and in addition to a temporary construction easement over, across and through a portion of the lands of the **GRANTORS** situate in Butte County, State of California, said land being described as follows: All lands, as described in deed to **GRANTORS** as filed January 7, 2009 at Serial No. 2009-0000000 of the Official Records of the County of Butte, State of California.

In connection with **GRANTEE'S** right of access for installation, repair, replacement and maintenance of said facilities, **GRANTORS** further grant to **GRANTEE** the right of ingress to, and egress from, the easements granted herewith, over and across **GRANTORS'** land, by means of any routes as shall occasion the least practical damage and inconvenience to **GRANTORS** and grant the right for **GRANTEE** to use said routes to provide access to **GRANTEE'S** easements and facilities, on **GRANTORS'** lands and on lands adjacent to **GRANTORS'** lands; dedicated roads owned and maintained by Butte County as may be reasonably necessary in connection with the installation, repair, replacement, and maintenance of **GRANTEE'S** facilities.

The easement shall be over all that real property as described in Exhibit "A", attached hereto and by this reference made a part hereof.

The hereinabove described easement is generally depicted as shown on Exhibit "B" attached hereto and made a part hereof by reference.

The grant and other provisions of this easement shall constitute a covenant running with the land for the benefit of the GRANTEE, its successors and assigns.

IN WITNESS WHEREOF, the GRANTORS have executed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

GRANTOR: \_\_\_\_\_  
OWNER

GRANTOR: \_\_\_\_\_  
OWNER

State of California }  
County of \_\_\_\_\_ }

On \_\_\_\_\_ before me, \_\_\_\_\_ Notary Public personally appeared \_\_\_\_\_ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her authorized capacity, and that by his/her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Notary Signature \_\_\_\_\_

State of California }  
County of \_\_\_\_\_ }

On \_\_\_\_\_ before me, \_\_\_\_\_ Notary Public personally appeared \_\_\_\_\_ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her authorized capacity, and that by his/her/their signature(s) on the instrument, the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

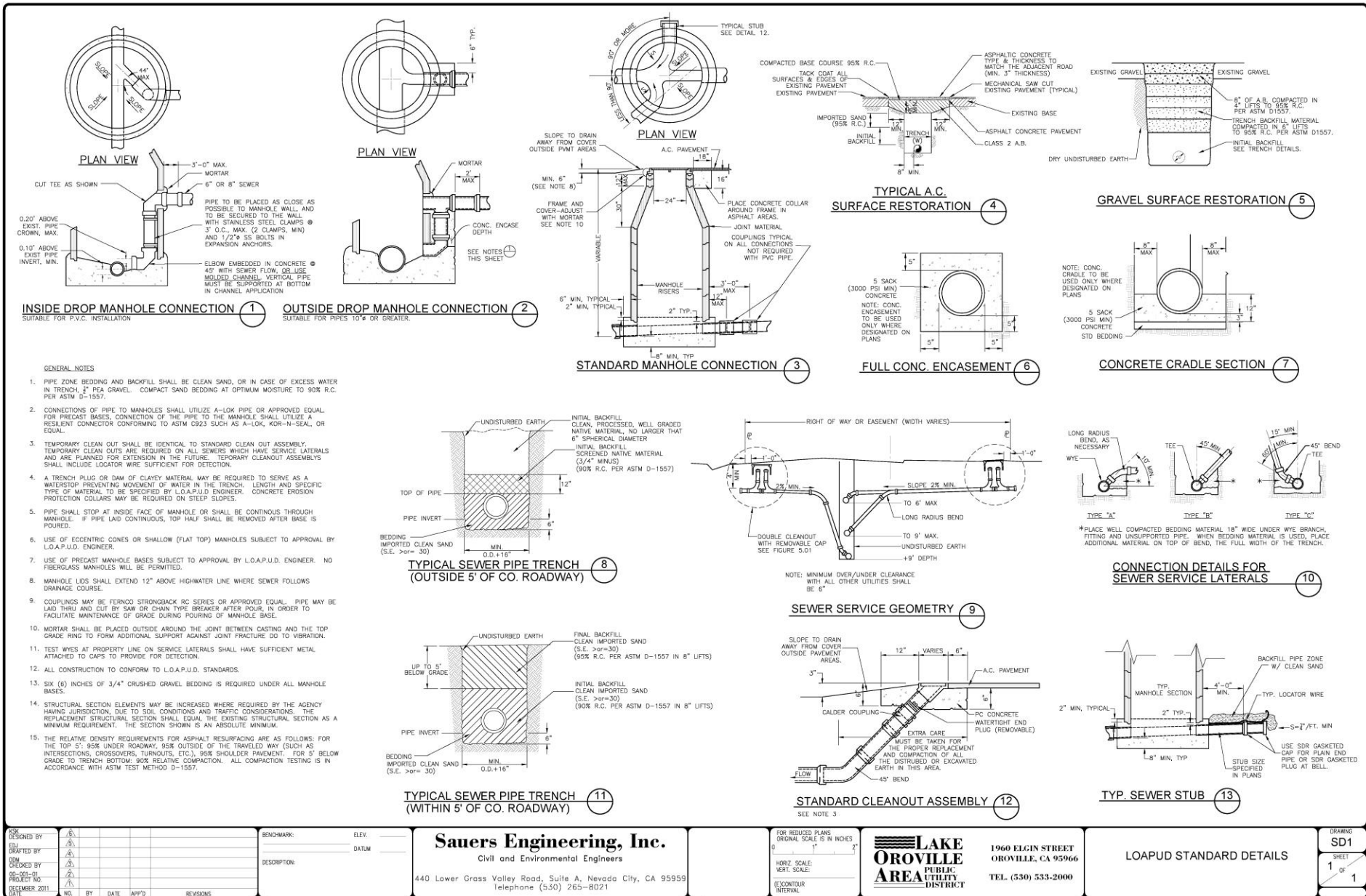
Witness my hand and official seal.

Notary Signature \_\_\_\_\_

**ACCEPTANCE AND AUTHORIZATION:**

This is to certify that the easement upon real property conveyed by grant deed dated \_\_\_\_\_ from \_\_\_\_\_ to Lake Oroville Area Public Utility District a government agency is hereby accepted by the undersigned officer on behalf of the Lake Oroville Area Public Utility District pursuant to the authority conferred by Resolution No. 15-02 of the Lake Oroville Area Public Utility District, adopted October 8, 2002 and the grantee consents to recordation thereof by its duly authorized officer.

Dated: \_\_\_\_\_ By: \_\_\_\_\_  
Clerk of the Board  
Lake Oroville Area Public Utility District



**Sauers Engineering, Inc.**  
Civil and Environmental Engineers

440 Lower Grass Valley Road, Suite A, Nevada City, CA 95959  
Telephone (530) 265-8021

**LAKE OROVILLE PUBLIC UTILITY DISTRICT**

1960 ELGIN STREET  
OROVILLE, CA 95966  
TEL. (530) 533-2000

LOOPUD STANDARD DETAILS

DRAWING SD1  
SHEET 1 OF 1