

## **SECTION 1: GENERAL REQUIREMENTS & PROCEDURES**

### **Section 1.01 Purpose:**

It is the purpose of these Improvement Standards to provide standards to be applied to both public and private sewer and sewerage development works to be dedicated to the public for operation and maintenance, or requiring the approval of South Placer Municipal Utility District, or to be installed within existing or new public rights-of-way or easements. These Standards are necessary to provide for the safety and general welfare of the public that will be using the subject facilities. These Standards shall regulate and guide the planning, design, and construction of all sanitary sewer systems within the District.

### **Section 1.02 Design Practice:**

It is recognized that it is not humanly possible to anticipate all situations that may arise in the planning, design, and construction of sewer facilities or to prescribe standards applicable to every situation. Therefore, any items or situations not included in these Improvement Standards shall be designed and constructed in accordance with accepted engineering practice, and as required by the District.

### **Section 1.03 Definitions:**

Whenever the following terms or titles are used in these Improvement Standards, or in any contract, agreement, document, or instrument where these Standards govern, the intent and meaning shall be as herein defined:

- A. “Consulting Engineer” That person or persons, firm, partnership, or corporation legally authorized to practice civil engineering in the State of California who, acting as agent for a client or developer, prepares or submits improvement plans and specifications to the District for approval.
- B. “Developer” Any person, or persons, firm, partnership, corporation, or combination thereof, who is financially responsible for the construction of approved sewer facilities within the District.
- C. “District” The South Placer Municipal Utility District, a public sewer agency.
- D. “General Manager or Manager” The General Manager of South Placer Municipal Utility District acting either directly or through authorized deputies, inspectors, engineers, or agents.
- E. “District Engineer” The Engineer of South Placer Municipal Utility District acting as agent of the District either directly or through authorized deputies or subordinates.
- F. “Owner” The record owner of real property, residence, or business served by a sewer connection to District facilities.

- G. "Contractor" Any person or persons, firm, partnership, corporation or combination thereof who has entered into a contract with any person, corporation, company, special district, city or the county as a party or parties of the second part, or his or their legal representative, for the construction of any approved sewer facilities with the District. All Contractors shall be licensed in accordance with the laws of the State of California.
- H. "State Standard Specifications or State Specifications" The Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, latest edition.
- I. "Building Sewer" The pipeline connecting a building drain to a public sewer, consisting of an upper lateral and a lower lateral.
- J. "Upper Lateral" That part of the building sewer running from two (2) feet outside the face of the building wall to the public right-of-way.
- K. "Lower Lateral" That part of the building sewer running from the public right-of-way to the public sewer.

**Section 1.04 Approved Plans:**

- A. No construction of public or private sewer facilities shall be undertaken within the District or to serve properties within the District until plans and specifications for such facilities have been approved by the District.
- B. The approval shall be substantiated by the signature of the General Manager on the plans obtained prior to initiation of construction.
- C. The District may order any Contractor to cease work on any project if said Contractor does not have properly approved plans in his possession at the job site.

**Section 1.05 Plans Signed by Engineer:**

All plans and specifications for sewer facilities, private or public, which are prepared for approval by the District shall be prepared, stamped, and signed by a Civil Engineer currently licensed to practice within the State of California.

**Section 1.06 Plan Sheet Format:**

- A. All improvement plans shall be prepared on 22" or 24" x 36" plan and profile sheets or on special consulting engineer's sheets, which have been accepted in writing by the District. Plan scales shall be as follows:

Horizontal: 1" = 20' 40' or 50'

Vertical: 1" = 2' 4' or 5'

Only the horizontal or vertical scale for which the sheet was intended and has been set up shall be used.

**Section 1.07 Drafting Standards:**

- A. All plans submitted for approval to the District shall conform to that quality of drafting standard that will result in clear and legible prints and microfilm.
- B. All lines shall be clear, sharp, and heavy.
- C. Letters and numerals shall be 1/8 inch minimum height, well formed, and sharp.
- D. Numerals showing profile elevations shall not be bisected by station grid lines.
- E. Dimension lines shall be terminated by sharp solid arrowheads.

**Section 1.08 Title Sheet:**

- A. On all improvement plans exceeding 3 sheets in a set, a title sheet shall be included that shows the following:
  - 1. The project or subdivision name, and the name and address of the developer/owner.
  - 2. A plan of the overall subdivision, parcel, or project showing sewer line sizes, direction of flow, and manhole locations.
  - 3. Boundaries of the District, cities, county, and assessment district (if any).
  - 4. Street names and widths.
  - 5. Section lines, grant lines, property lines, and corners.
  - 6. Names of adjacent subdivisions, lot lines, and lot numbers.
  - 7. Public easements.
  - 8. Vicinity and location maps.
  - 9. Scale of drawings and details.
  - 10. North arrow where appropriate.
  - 11. Index of sheets.
  - 12. Legend of symbols and lines.

13. Standard and special notes.
14. Signature block for approval of General Manager (Signature block format shall be in accordance with Standard Drawing No. 20.)
15. Improvement plans consisting of 3 or less sheets will not be required to provide a title sheet as such, but all information otherwise required to be included on the title sheet shall be provided on the other sheets of the plans.

**Section 1.09 Title Blocks:**

- A. Every sheet of a set of plans submitted to the District for approval shall have a title block showing project or subdivision name, sheet title, sheet number, date, scale, Consulting Engineer's address and phone number, and other pertinent information.
- B. The preferred location for the title block is along the right hand end of the sheet so that the title block information is visible when the plans are rolled up.

**Section 1.10 Sewer Improvement Plan Requirements:**

- A. Plans for the construction of sanitary sewers, whether in conjunction with other improvements or for a sewer project only, shall conform to the following standards, as well as other standards contained in these Standard Specifications and Improvement Standards:
  1. Study Map - A study map may be required prior to review of the sewer design if there is a possibility that upstream or adjacent areas may require service through the subject property. The map shall show the entire service area including upstream tributary and adjacent areas, and all other data necessary to determine anticipated sewage flows. The method of sewerage the entire service area, including pipe sizes and slopes, shall be shown to the extent necessary to determine the requirements within the subject property.
  2. General Requirements - Plans for sewer improvement projects shall include a layout sheet, plan and profile of each sewer line, and any necessary detail drawings. The plans shall be clearly legible and conform to accepted practice with respect to drafting standards. All information, which, in the opinion of the District is necessary for the satisfactory design, review, construction, and maintenance of a project shall be provided and, where applicable, shall be shown on the plans.
  3. Layout Sheet

- a) All sewer improvement plans shall include an overall map which shows the project boundaries, sewer lines, manholes, flushing branches, and other important items of the work.

#### 4. Overall Sheet

- a) An overall sewer plan shall be submitted prior to plan approval showing the overall subdivision, parcel or project including sewer line sizes, direction of flow, flushing branches and manhole locations. The overall plan scale shall be 1 inch = 400' feet. The 400' scale overall sheet does not need to be a part of the final improvement plans. The plan may be a reduced layout sheet as specified above.

#### 5. Plan and Profile Sheets

- a) Sewers that will be owned and maintained by the District shall be shown in both plan and profile views on approved plan and profile sheets.
- b) The following standards, with respect to drafting and the information to be included on the plan and profile sheets, generally apply to projects in developed areas.
- c) In new subdivisions, only the requirements that are applicable shall apply.

##### 1) Sewer lines and manholes:

- I. Sewer lines to be constructed shall be indicated on the profile by parallel lines spaced the pipe diameter or by a single heavy line at the pipe invert for 10-inch diameter and smaller lines only.
- II. Manholes shall also be indicated by parallel lines spaced according to scale or by a single heavy vertical line, if the sewer profile is also shown on a single line.
- III. Slope shall be printed 1/8 inch above, and preferably parallel to, the line, or between the parallel lines.
- IV. The length, size, and type of pipe between each manhole shall be printed parallel to the horizontal grid lines and approximately halfway between the ground surface and pipeline.
- V. All pipe inverts at manholes and other structures shall be indicated on the profile.

- VI. The invert elevations shall be printed parallel to the horizontal grid lines and shall be underscored by a line which then runs at a 45-degree angle to the corresponding pipe invert.
  - VII. When manholes, manholes with drop connections, flushing branches, or other appurtenances are to be constructed, the profile shall be so noted.
  - VIII. Manhole identification on the plan view may be oblique.
  - IX. Manhole stationing shall appear at the lower edge of the profile grid directly under the manhole.
- 2) Existing facilities shown on the profile shall be cross-hatched.
  - 3) In improved areas:
    - I. Addresses of buildings shall be shown on the plan view, within the outline of the building. Only the front line and indication of side lines of buildings need be shown.
    - II. The location of each building sewer lower lateral proposed to be constructed shall be indicated on the plans by stationing or by reference to a permanent, well-defined structure, if available.
    - III. In new subdivisions, the lower lateral shall be located by stationing, by dimension to lot line, or by notation to install at the center of the lot.
    - IV. The invert elevation of the lower lateral at the property line shall be indicated on all plans.
    - V. Improvements or lots shown on a plan sheet but served to a line shown on another plan sheet shall have the direction of service shown by a small triangle and letter "S".
  - 4) Easements:
    - I. Both permanent and working easements shall be shown to scale on the plans.
    - II. Easement dimensions shall be given and each easement shall be tied to both the property line and the sewer line.

- III. Each permanent easement shown on the plans shall be identified by the book and page number in which the easement is recorded.
- IV. The Consulting Engineer shall provide the book and page number.

5) Trench/Bedding:

- I. Indicate the limiting maximum trench width, as measured at the top of the pipe, on the plans between well-defined points of application; the pipe material and class, if more than one class is available; and the bedding-backfill type. Type I bedding, when used, and unlimited trench width, when allowed, need not be shown on the plans.
- II. If more than one combination of pipe class, maximum limiting trench width, or bedding type is available, a practical range of such combinations shall be shown on the plans.

6) Proposed sewer dimensioning:

- I. Proposed sewer line shall be adequately dimensioned from street centerline.
- II. If the sewer line is to be located in an easement, sufficient dimensions and bearings from physical features to locate the line in the field shall be shown on the plans.

7) Other Utilities:

- I. Gas mains, water mains, storm drains, and all other main utility lines above or below ground shall be determined and shown on the plans with accuracy as great as practicable.
- II. The location of any utility line which is parallel to and within 5 feet of the sewer line or which crosses the sewer line at an angle of 30 degrees or less shall be determined with an accuracy of  $\pm 1.0$  foot and the clearance shown on the plans.
- III. Water service lines shall be shown.

8) Trees:

- I. Trees and other objects within 10 feet of construction centerline shall have their correct location shown on the plans and the clearance from construction centerline shown.
- II. The diameter of tree trunks and interfering heavy tree branches shall be noted.
- III. Removal of a tree or object, or other special handling shall be noted on the plans.
- IV. The Consulting Engineer shall assume full responsibility for such notes as it is assumed that he has made all necessary arrangements with the owner of the object to be handled.
- V. Written documentation of any special arrangements regarding preservation of property made between property owners and the Consulting Engineer shall be supplied to the District if no easement document is involved.
- VI. If an easement is negotiated, all special arrangements shall be included in the easement document.
- VII. Tree removal within sewer easements shall be approved by the District.

9) Culverts:

- I. Culverts shall be shown on both plan and profile when crossed by the construction or when parallel and within 20 feet of the construction line.
- II. The size and type of all such culverts shall be indicated and when the culvert crosses or is perpendicular or nearly so and within 20 feet of the construction line, the invert of the culvert end nearest the construction line shall be shown.

**Section 1.11 Plan Details:**

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

1. Rights-of-Way

- a) Rights-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.
- b) All rights-of-way and easement lines shall be properly dimensioned.

2. Topography

- a) All pertinent topographic features shall be shown, such as street line, medians, driveways (on both sides of the street when within 40 feet of the median ending), 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 inches and larger) and other foliage, traffic signals, street lights and pullboxes, underground electrical conduits, drainage ditches, utility poles, fire hydrants, retaining walls, masonry structures, and all other features of the area which may affect the design requirements for the area.
- b) When a potential utility conflict exists, "as built" elevations of the utilities shall be verified by the Consulting Engineer.

3. Contours and Elevations

- a) Existing contours or elevations shall be shown on all plans submitted for subdivisions, commercial improvements, or planned unit developments.

4. Profiles

- a) The plans shall show the profile of all roadway centerlines, edges of pavement, curb and gutter flow lines, drainage ditches, water lines, storm and sanitary sewers.
- b) All profiles of proposed sewer improvements shall show pipe slopes and other vertical alignment data and invert elevations at manhole entrances and exits.
- c) The plans shall show the existing ground profile along all alignments and for a minimum distance of 200 feet beyond temporary street endings to facilitate setting proper vertical alignment within the proposed improvement limits.
- d) The 200-foot minimum shall be increased when requested by the District.

5. Stationing and Orientation

- a) The stationing on plan and profile sheets shall read from left to right.
- b) Stationing shall increase from south to north or from west to east.
- c) Plans shall be so arranged that the North arrow points toward the top or right of the sheet, insofar as practical.

6. Bench Marks

- a) The benchmarks and datum shall be clearly delineated on the plans as to location, description and elevations.
- b) The datum shall be 1929 North American Datum (U.S.G.S. or U.S.C. & G.S.)

7. Horizontal Control

- a) Horizontal control shall be tied to the District's coordinate system, herein referred to as the SPMUD Coordinate System, which is based on the California Coordinate System, Zone 2, NAD 1983.

8. Typical Sections

- a) A typical section for each type of facility within the improvement, setting out the structural features, shall be a part of the plans.

9. Cross Sections

- a) Cross sections shall be included in the plans, where determined necessary by the District.
- b) When, in limited areas, unusual topographic features or special conditions occur that would affect the work, individual cross sections may be shown on the pertinent plan sheets.

10. Special Notes

- a) 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 District's Standard Specification and Improvement Standards and that all work is subject to the approval of the District. Notes shall contain a statement regarding obtaining encroachment permits from other agencies when applicable.

11. Detail Drawings

- a) Items of a special nature shall be shown with detail drawings, either on the plan sheets, or on a separate detail sheet.

**Section 1.12 Reference to District Specifications & Standards:**

- A. The General Notes and Special Provisions of all plans shall include the following note:

“All sanitary sewer construction and materials shall be in accordance with the South Placer Municipal Utility District "Standard Specifications and Improvement Standards for Sanitary Sewers", latest edition.”

**Section 1.13 Procedures & Fees:**

- A. Except for projects undertaken directly by the District, the planning and design of sewer facilities within the District will be performed by the Developer's Consulting Engineer.
- B. The following is a sequential, step by step outline of the procedures to be followed and fees to be paid to the District:
  - 1. During the planning phase, the South Placer Municipal Utility District should be consulted regarding District policies, design criteria, special field conditions, annexation, special agreements, proposed routes and rights-of-way, permits, and any other matter on which a decision by the District may have ultimate effect on final design.
  - 2. When completed, 2 full sets of plans and specifications properly signed by a licensed Civil Engineer) shall be presented to the District for checking.
    - a) A soils report shall be submitted to the District for any offsite sewer alignment not included within the project soils report or as otherwise requested by the District.
  - 3. Plan Check:
    - a) Plan checking by the District will not be started until the designated deposit has been made against the District's final estimated processing fees.
      - 1) The final estimated fees will be the District's direct and incidental administrative and inspection/field costs related to the project including Warranty Inspection, but not less than the deposit. Improvement plans will not be approved by the District until the final estimated fees are paid.
    - b) Improvement plans submitted for checking shall show all existing and proposed rights-of-way and easements.

- 1) Easements shall be dedicated to or granted to the District along all main sewer lines not constructed within existing or proposed public street rights of way.
  - 2) It is the responsibility of the Developer/Owner to ascertain the need, location, and acquisition of all easements.
  - 3) Under no circumstances will the District accept the Bill of Sale and maintenance and operation of any sewer system before all rights-of-way are obtained.
- c) Improvement plans submitted for checking will be reviewed in detail by the District.
- 1) The Developer or his Consulting Engineer will be notified of defects, deficiencies, omissions, changes or corrections required to be made to the plans in order to obtain the District's approval.
  - 2) One or more iterations of changes or revisions or re-submittals may be required to perfect the plans.
  - 3) Two copies of revised plans and specifications will be required to be re-submitted.
  - 4) When the improvement plans are determined to be satisfactory, the Developer or his Consulting Engineer will be notified that the plans may be submitted to the District for approval.
4. For District Approval, the Developer or his Consulting Engineer shall present to the District:
- a) Two (2) paper prints of the full set of improvement plans.
  - b) The original of the lead sheet or title sheet of the plans, bearing the District's standard approval signature block, for approval.
  - c) The Developer or his Consulting Engineer shall also submit a plan of the overall subdivision, parcel or project showing sewer line sizes, direction of flow and manhole locations.
  - d) The overall plan scale shall be 1" = 400'. The 400' plan may be a reduced overall map as used in the sewer improvement plan.
    - 1) The plan will be used to update the District's overall sewer system plan.
  - e) The District will sign the original lead sheet or title sheet and will retain the paper prints for District use.

- f) Immediately after full approval by all agencies involved, the Developer shall submit to the District, one full set of paper prints of the approved plans and the project specifications.
5. The balance of the District's final estimated processing fees shall have been paid to the District at the time of approval of the plans.
    - a) Plans will not be signed until all fees are paid.
  6. Construction may be initiated after approval of the plans.
    - a) Construction shall be initiated and substantial progress made in the construction of the sewer facilities within one year of the date of approval of the plans.
    - b) Projects or portions of projects which, in the judgment of the District, have not been initiated and substantial progress made in the construction of the sewer facilities within one year, may be voided as to the approval of plans and the Developer shall resubmit the plans for re-approval in accordance with all the current procedures and standards just as if the plans were never previously approved.
    - c) New plan checking fees and inspection fees may be charged and all unexpended previous fees may be forfeited to the District.
  7. Sewer facilities shall be constructed in accordance with the approved plans.
    - a) No change or deviation from the approved plans will be permitted except for revisions approved in writing by the District.
    - b) District approval shall be obtained by submitting, in a timely fashion, revised drawings, adequately and properly identified as to the number and content of the revision, to the District for review.
    - c) District's approval of the revision will be indicated by signature in the District's standard revision approval signature block, to be provided on each such revised plan sheet by the Consulting Engineer.
    - d) Changes involving revisions of specification text only will be approved by letter by the District.
  8. Upon completion of construction, and prior to the District's field final, the following items shall be submitted to the District:
    - a) One full-size, reproducible set (Mylar or Sepialar), two (2) full-size paper print sets and one (1) half-size (on 11" x 17") paper print set

- of the original plans showing all changes made during construction and labeled “As Built Plans” or “Record Drawings”.
- b) A digital version of the above listed improvement plan drawings (Full and complete with all integral layers.) on DVD in AutoCad 2004 Format as either.DWG or .DXF files and PDF version on DVD.
  - c) Payment of all supplemental fees owed to the District.
  - d) Fully executed Bill of Sale.
  - e) A paper copy and one (1) .PDF version on DVD of the recorded final map of the development, or other instrument evidencing the creation of easements and rights-of-way for public sewers.
9. The completed public sewer facilities shall be turned over to the District in a complete and ready for operation condition.
- a) Formal acceptance of the public sewer facilities, by Bill of Sale, shall be made by the District Board of Directors.

**Section 1.14 Improvement Plan Revisions During Construction:**

- A. Should changes become necessary during construction, the Consulting Engineer shall first obtain the consent of the District and shall then resubmit the title sheet and the plan sheets affected for approval.
- B. The changes on the plans shall be made in the following manner:
  - 1. The original proposal shall not be eradicated from the plans but shall be lined out.
  - 2. In the event that eradicating the original proposal is necessary to maintain clarity of the plans, approval shall first be obtained from the District.
  - 3. The changes shall be clearly shown on the plans with the changes and approval noted on a revision signature block.
  - 4. The changes shall be identified by the revision number in a triangle delineated on the plans adjacent to the change and on the revision signature block.
  - 5. Minor changes that do not affect the basic design or contract may be made upon the authorization of the District.
  - 6. The District may order changes in the plans in order to complete the necessary facilities to meet District requirements.

- a) Changes in the plans ordered by the District shall conform to all of the above.

**Section 1.15 Conflicts, Errors & Omissions:**

- A. Excepted from approval are any features of the plans that are contrary to, in conflict with, or do not conform to California State Law, District 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.

**Section 1.16 Sewer Annexation Requirements:**

- A. When sanitary sewer plans are submitted for an area that is not within the South Placer Municipal Utility District, said plans will not be approved until annexation has been approved by the District or unless the service to an area outside the District or importation of flows is in accordance with an existing approved contact or agreement between the District and the agency having jurisdiction for sewer service in the area outside the District.

**Section 1.17 Existing Utilities:**

- A. All existing utilities shall be shown on the plans.
  - 1. In addition, the Consulting Engineer shall submit prints of the preliminary and approved plans to the utility companies involved. This is necessary for the utility companies to properly review the plans.

**Section 1.18 Partial Plans:**

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

**Section 1.19 Other Agency Notifications:**

- A. The Consulting Engineer is responsible for obtaining the approval and necessary permits of all governmental or municipal agencies when their facilities are involved.

**Section 1.20 Summary of Plan Submittal & Approval:**

- A. Submit the following items as required by the District, to the South Placer Municipal Utility District office, 5807 Springview Drive, Rocklin, California 95677:

1. The non-refundable processing fee deposit.
  2. Two sets of preliminary construction plans.
  3. One copy of sewer study plan and calculations.
  4. Engineer's sewer construction cost estimate.
  5. 1"= 400' scale sewer plan.
  6. One copy of preliminary subdivision map.
  7. Soils Report
  8. Additional items as may be required by the District.
- B. The District will check the plans and return comments to the Consulting Engineer.
1. The District will work directly with the Consulting Engineer until plans are acceptable.
- C. Upon acceptability of the plans by the District, submit original lead sheet or title sheet and 2 copies of construction plans to the District for signature.
1. The following are required at the time plans are submitted for approval:
    - a) Pay final or estimated final processing fees.
    - b) Pay other fees as may be applicable to the project.
    - c) Submit other items specific to the project as may be required by the District. (Example: easement documents, State and Federal agency permits.)
  2. Upon approval, the District will return the signed lead sheet or title sheet to the Consulting Engineer.