

GENERAL DRAFTING REQUIREMENTS

Plans for all water and sewer system improvements shall be accurate, legible and properly detailed, and afford the maximum degree of understandability.

CONSTRUCTION PLANS

Construction Plans for the water and sewer system improvements shall meet the following minimum requirements:

- (1) The Plans shall be separate from those plans for plat improvements, storm drainage improvements, road and street improvements and drawings and plans for any other utility. Plans for water system improvements shall be separate from those for sanitary sewer system improvements. Line weights and screening are to be selected to show new work clearly with existing utilities in background.
- (2) The Plans shall be prepared in AutoCAD DWG format (Release 2010, Civil 3D, or earlier version) with entities placed on unique layers as listed in "As-Built Drawings and Electronic Files" for incorporation into the District's GIS unless otherwise pre-approved by the District.
- (3) **The size of each Plan sheet shall be 22" x 34".**
- (4) The sheet material for the construction plans shall be Mylar, Vellum or equivalent durable material. Paper diazo reproductions, or photographic reproductions are not acceptable.
- (5) The Plans shall include a suitable title block/plate, which states the names and addresses of the property owner/Developer, Engineer, general notes, the scale, the date and the stamp and signature of the Design Engineer. This information should be located on the right side or lower right hand corner of the Plan.
- (6) The Plans shall provide a legend of symbols used, to ensure clarity.
- (7) The Plans shall have a legal description of the developing property and a location/vicinity or index map that clearly shows the project and its boundaries in relationship to the nearest street intersections.
- (8) To the maximum extent possible, the north arrow shall be oriented to the top or to the left of each Plan.
- (9) The horizontal scale of the Plans shall be 1-inch = 50 feet. In circumstances where the clarity of the Plans would otherwise be unacceptable due to the complexity of the work, or the number of other simultaneous construction elements within the same Project (such as for a major street/road improvement) are extensive, the District will consider a horizontal scale of 1-inch = 20 feet upon written request with justification provided. **The vertical datum plane for the Plans shall be NAVD 88.** An elevation benchmark shall be clearly identified. Note: Some District elevation records for existing structures are NGVD 29. When this occurs, elevations should be converted to NAVD 88 wherever shown on the Plans with a parenthetical note stating "(Existing elevation converted from NGVD 29 to NAVD 88)".
- (10) Profile views are required for all sewer system construction Plans. **Profile view shall be oriented directly above or below the respective Plan view.**

- (11) The Plans shall be prepared and stamped by a civil engineer with current registration in the State of Washington.
- (12) The Plans shall indicate and identify all property and lot lines, street rights-of-way that have been vacated shall be shown as such on the Plans. The area included in the Plan shall be enough to locate the property from an existing street intersection unless waived by the District. The Plans shall indicate and identify all existing buildings; structures; underground power, electrical, telephone, natural gas, cable television, storm drainage, and appurtenances; street, alley and driveway pavement; stream crossings; trees to be saved, new trees, landscaping, green belt; and other known physical features within the project area which will affect the execution of the system improvement construction. This information should not obscure any water or sewer improvement information.
- (13) Where proposed easements are incorporated in the Plans, and they are defined as a constant width on each side of the pipeline/structure, a segment of said easement shall be shown and labeled as "Typical" and shown as Silver Lake Water & Sewer District sewer and/or water easement.
- (14) Provide the following additional information when required for clarity:
 - a. Site grading plan
 - b. Plan for other utilities
 - c. Plan of future phases of same project
 - d. Contour maps or street profiles
- (15) Upon approval of the construction concept, the original Plans shall be submitted to the District for signature as "approved for construction." The originals will be returned to the Design Engineer and a minimum of four (4) prints of the signed "approved" Plans shall be provided to the District prior to scheduling a pre-construction conference with the District. Additional copies will be required if right-of-way utility use permit application is necessary for construction of the water or sewer facilities.
- (16) The Plans shall have a revision block located in the border frame that will be blank on the initial "approved for construction drawings" when signed by the District and will be used to document significant modifications made and approved by the District during the course of construction.

AS BUILT DRAWINGS AND ELECTRONIC FILES

- (1) Upon completion of construction and prior to acceptance, Mylar drawings corrected to reflect "As-Built" conditions shall be returned to the District. All constructed facilities and easements shall be placed to scale on these drawings. Each drawing shall include a project number provided by the District.
- (2) Prior to project acceptance, the Developer shall be responsible for an "As-Built Survey." This survey may be performed by a licensed surveyor of the Developer's choosing. If the Developer is unable to perform the survey, the District shall perform the survey at cost to the Developer. The "As-Built Survey" shall be limited to surface water and sewer features, shall be performed in the appropriate datum, shall be incorporated into the record drawings, and shall be submitted to the District electronically prior to project acceptance.

- (3) All dimensions shall be corrected to concur with field location. No scratch out of dimensions and notes will be accepted. Remove erroneous and “not applicable” notes and correctly include the new location information and dimensions.
- (4) If reprinted, the Mylars shall include a reference block to the prior approved construction drawings that provides the name and date of signature of the design engineer, the name of the District approving personnel and date of approval.
- (5) Prior to receiving District acceptance, Developers/Owners of commercial properties, industrial properties and residential/multi-family properties shall submit to the District, drawing files in AutoCAD DWG format (Release 2010, Civil 3D, or earlier version), on CDROM, accompanied by the original mylar record drawings which indicate the water and sewer services. Additionally, electronically scanned copies of the final record drawings in TIF or PDF format (at 200 DPI or best resolution for legibility) are required. The AutoCAD files submitted shall include electronic copies of the project base map containing the water and sewer system as submitted on the mylar record drawings. These files shall include electronic files for the “As-Built Survey.” All AutoCAD files shall be submitted with the mylar record drawings. The Developer shall be responsible for any required changes to the mylar record drawings or electronic AutoCAD files, which are not representative of as-built conditions.

Final record drawings shall incorporate all changes from the original approved plans and shall reflect as-built conditions. If the property has existing water and sewer infrastructure which are not on the District’s G.I.S., the Developer/Owner shall also include the existing facilities. The AutoCAD drawing files shall be supplied in the format listed below:

The entities shall be placed on a unique layer as listed. Any other unique features not listed shall be given a descriptive layer name. A layer list shall be provided with the drawing files to indicate what additional layer names represent. All pertinent text information provided on the drawings shall be placed in a layer called REFTEXT. Associated leaders, dimension lines and arrows can also be placed in this layer.

Lines which are intended to remain separate shall be represented by separate polylines. The AutoCAD drawing file shall be drawn with one drawing unit = 1 foot and shall be supplied showing the complete plat on one drawing file. Drawing files shall be tied to the Washington State Plane (North Zone) coordinate system, NAD 83 datum, in U.S. feet.

The following drawing entities shall be developed as single points representing the location of the center of the item they represent. The proper symbols will be allocated to these points by the District once the drawing is translated into the Silver Lake Water & Sewer District’s GIS. The points shall be placed on the proper layers as listed below:

<u>Entity</u>	<u>Layer</u>
1. Set monument in Case	MON
2. Existing Property Corner	PROPCOR
3. Fire hydrant	WHYD
4. Sanitary sewer manhole	SSMAN
5. Sanitary sewer cleanout	SSCO
6. Sanitary sewer force main air-vac assembly	SS FM-AV
7. Water valve	WVALV(size)
8. Double check valve assembly	DCV
9. Water meter	WM(size)
10. Blowoff assembly	WBLOWOFF
11. Utility vault – water and sewer only	VAULT
12. Air vacuum and release assembly	WAIRVAC
13. Backflow preventer assembly	WBFP
14. Fire department connection	WFDC
15. Sewer lift station	SLS
16. Master meter	WMM
17. Pressure reducing valve vault	WPRVA
18. Booster station	WBS

The following drawing entities shall be developed as polylines. Each entity shall be placed on the proper layer as listed.

<u>Entity</u>	<u>Layer</u>
1. Water Polyines shall run between valves and/or pipe intersection to intersection (8" waterlines) would be located on Layer WL8, and 12" on WL12, etc.)	WL(size)

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| 2. | Sanitary sewer lines shall run between manholes as a single polyline. (e.g., 8" sewer lines shall be located on layer SS8). | SSL(size) |
| 3. | Sanitary side sewer stub shall run between main line and end of stub. | SSTUB(size) |
| 4. | Record drawing information for sanitary side sewer stubs shall be placed on its own layer. | SSTUB-TXT |
| 5. | Water service lines shall run from main line to meter box (e.g., 1" waterlines shall be located on layer WS1) | WLS(size) |
| 6. | Centerline polylines shall run from intersection to intersection (one per road). | CL |
| 7. | Sewer force mains shall start at lift stations and terminate at discharge point. | SSFMS(size) |

The AutoCAD files shall be structured so that the following drawing entities are developed using closed polygons.

<u>Entity</u>	<u>Layer</u>
1. Parcels (property lines)	PROP
2. Water Easements	WEASE
3. Sewer Easements	SSEASE
4. Right-of-Way	ROW
9. Reservoirs	RESERVOIR

GENERAL NOTES

1. LOCATIONS SHOWN OF EXISTING UTILITIES AND IMPROVEMENTS ARE APPROXIMATE ONLY, AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATIONS OF ALL UTILITIES AND IMPROVEMENTS TO AVOID DAMAGE OR DISTURBANCE.
2. ALL WORK AND MATERIALS MUST BE IN ACCORDANCE WITH THE LATEST REVISION, INCLUDING ADDENDA AND UPDATES, OF THE SILVER LAKE WATER & SEWER DISTRICT STANDARDS. CONTRACTOR TO HAVE THESE STANDARDS ON JOBSITE.
3. ROAD RESTORATION SHALL BE PER APPLICABLE CITY OF EVERETT/CITY OF MILL CREEK/SNOHOMISH COUNTY/WSDOT STANDARDS.
4. CONTRACTOR SHALL CALL "DIAL DIG" (1-800-424-5555), 2 FULL WORKING DAYS PRIOR TO CONSTRUCTION, FOR AID IN LOCATING ANY EXISTING UNDERGROUND UTILITIES.
5. THE CONTRACTOR SHALL KEEP TWO SETS OF PLANS ONSITE AT ALL TIMES FOR RECORDING "AS BUILT" INFORMATION. ONE SET SHALL BE SUBMITTED TO SILVER LAKE WATER & SEWER DISTRICT AT COMPLETION OF CONSTRUCTION.
6. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE SILVER LAKE WATER & SEWER DISTRICT FOR A PRECONSTRUCTION MEETING.
7. THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT FOR A FIELD MEETING PRIOR TO INSTALLATION OF ANY REDUCED PRESSURE BACKFLOW ASSEMBLY OR REDUCED PRESSURE DETECTOR ASSEMBLY.
8. EACH WATER AND SEWER CONSTRUCTION DRAWING SHEET SHALL HAVE THE FOLLOWING DISTRICT SIGNATURE BLOCK.

SILVER LAKE WATER & SEWER DISTRICT
APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____
DISTRICT OFFICIAL

DISTRICT PROJECT NUMBER: _____

“THESE PLANS ARE APPROVED FOR CONSTRUCTION FOR THE PERIOD NOTED ON THE DEVELOPER EXTENSION AGREEMENT. THE DISTRICTS RESERVES THE RIGHT TO MAKE REVISIONS, MODIFICATIONS, AND CHANGES SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT.”

(This page is available electronically for Developer use by contacting the District)