7. SEWER DESIGN:

A. DESIGN CRITERIA

1. Comply with current Soos Creek Water & Sewer District approved Comprehensive Sewerage Plan and all amendments thereto.

2. Verify existing sewer main facility locations, sizes and type of pipes, and feasibility of use.

3. Utilize the aerial base map data to determine the sewer service area requirements.

4. Minimum separation between sewer and water shall be according to the Washington State Department of Ecology (DOE) requirements.

5. Minimum depth of manholes shall be 8 feet in public right-of-ways and other paved traffic areas; or 6 feet in non-traffic easements.

6. Pipe shall be PVC or D.I. Ductile iron pipe shall be used for all slopes greater than 20% and for sewer 18 feet and deeper.

7. Minimum slope on all 8-inch sewer lines shall be 0.4% (0.004). Minimum slope on all dead end lines shall be 1.0%. All other minimum slopes shall be per DOE requirements.

8. All main line sewers shall terminate with a manhole.

9. Main line sewers shall be extended to the boundaries of plat or commercial development as required for future connections.

10. Main line sewers shall be a minimum of 8-inches in diameter. Maximum design capacity for all sanitary lines shall not exceed d/D - 0.8.

11. According to King County Road or city standards, location for sewer main lines shall be 5 feet South and 5 feet West of street centerline (other locations subject to District, King County and/or city approvals). Sewer mains shall be located to not cross under storm detention vaults.

12. Minimum cover on all sewer main lines shall be 7 feet in public right-of-ways and other paved traffic areas and 5 feet on easements (out of paved areas).

13. Maximum distance between manholes shall be 400 feet.

14. Pipe size, length and slopes of all main lines shall be shown on the profile.

15. Sewer mains shall maintain minimum 10 feet separation from power vaults, hand holes and light standards.

16. ALL SEWER LINES shall be subject to television testing for conformance to the District's standard specifications. Final acceptance of SEWERS will be subject to the District's Resolution No. 1904-S.

SEWER STUB SERVICES

1. All stub services shall be 6-inch minimum diameter and terminate at the property and/or easement line with a 6-inch cap, or 10 feet past at option of Developer/Contractor. (Install TEE at property line/or easement line as directed.)

2. Minimum cover shall be 5 feet at the property line, or deeper, if required to provide sewer service and/or proper clearance from other utilities.

3. Minimum slope on stub services shall be 2%.

4. Each lot/unit shall have a single side sewer stub unless the District issues a special permit for double side sewer.

5. For one/two units, the side sewer stub shall connect directly to the sewer main with a tee (or to a manhole).

6. For commercial buildings, schools, and apartments, the side sewer stub shall connect directly to a manhole.

7. Provide one stub to each tract for OFFSITE sewers required in paved areas, and stubs for future lots shall be extended out from under any paved areas.

8. Maximum 6-inch side sewer length shall be 200 feet with a surface cleanout at 100 foot intervals and at the end.

9. Puget Sound Energy vaults, hand holes and light standards shall be located no closer than 10 feet from sewer stub services.

10. Refer to Soos Creek Water and Sewer District current side sewer policy for other side sewer requirements.

ALTERNATIVE SEWER SYSTEM

1. It is the District's policy that transporting sewage by gravity is the best system. Alternative pressure systems will be permitted only in those circumstances when a gravity system would be impractical, unreasonably expensive or otherwise infeasible.

2. A pre-design report, with system analysis to justify the installation of an alternative system, must be submitted prior to design. Approval of an alternative system must be given by the District's Board of Commissioners.

3. The District has selected the grinder pump pressure system as most suitable for its needs and has standardized on the "Environment One" grinder pump for all installations.

4. All pipe and fittings for the alternative system shall be High Density Polyethylene (HDPE). See Section C - Materials.

5. HDPE pipe location shall be identified by installation of a 16-gauge solid tracer wire attached to top of pipe and by "SEWER" warning tape installed 18 inches above the

pipe.

6. Grinder Pump Sewer stubs shall be as detailed on the Standard Details and Sewer Construction Provisions.

7. Minimum cover on alternative pressure mains shall be minimum 4 feet (or as required to provide minimum clearance from water main and other utilities), or as directed by the District.

B. CONSTRUCTION PROVISIONS

1. STANDARD SPECIFICATIONS

All work, materials and testing shall conform to the standards of Soos Creek Water & Sewer District and the "Standard Specifications for Road, Bridge, and Municipal Construction", current edition, as prepared by the Washington State Department of Transportation, and hereinafter referred to as the "Standard Specifications," except as herein modified.

2. TRENCH EXCAVATION, BEDDING AND BACKFILL

All work within the right-of-way shall comply with all pertinent permits, the governing agency's current road standards, and the Standard Specifications. All material from clearing and grubbing shall be hauled to an approved waste disposal site provided by the Developer/Contractor.

When trenching through existing pavement, the pavement shall be cut on a neat-line by saw cutting. Trench sides shall be kept as vertical as possible given the soil conditions. Compaction and restoration shall be done as detailed below and immediately after the trench backfill is placed, so as to cause the least disruption to traffic. All pavement shall be cut 1 foot outside the edge of the trench on each side.

Any trench exceeding four feet in depth shall be provided with adequate safety systems meeting the requirements of the Washington State Industrial Safety and Health Act (WISHA), Chapter 49.17 RCW, and all regulations adopted pursuant thereto. The Developer/Contractor shall have a structural engineer review and stamp any and all shoring plans and calculations. The Developer/Contractor shall be responsible for worker safety and the District and the District’s Engineer assume no responsibility.

When native material at the trench bottom is suitable for pipe bedding, the bottom shall be hand finished to grade so that the pipe will have uniform support along the barrel and bell. After the pipe is in place, additional hand selected native material meeting the requirements for bedding material shall be placed and tamped around the pipe for a minimum of 4 inches above the crown of the pipe.

When native material at the trench bottom is stony or otherwise non-uniform, the trench shall be over-excavated a minimum of 6 inches below the specified grade and a layer of pipe bedding material shall be furnished and placed to the specified grade. After the pipe is in place, additional hand selected native material meeting the requirements for bedding material shall be placed and tamped around the pipe for a minimum of 4 inches above the crown of the pipe.

If the native material at the trench bottom is unsuitable for foundation purposes or will have difficulty providing uniform bearing for the pipe, such material shall be removed and replaced with a minimum of 6 inches of compacted foundation material.

The bedding material shall be carried up evenly on both sides of the pipe simultaneously in approximately 6-inch layers and each layer thoroughly compacted with appropriate tools in such manner as to avoid injuring or disturbing the completed pipeline. All

bedding and native material shall be stored away from the edges of excavation and off the paved roadway and shoulder.

All trench backfill shall be mechanically compacted to 95% of the maximum density within the right-of-way and in all areas (paved and unpaved) where streets, roadway shoulders, driveways, sidewalks, or parking lots will be constructed or reconstructed over the trench except for trenches over 8 feet in depth. When the trench depth exceeds 8 feet, trench backfill up to 4 feet from the top of the trench shall be mechanically compacted to 90% of the maximum density. The remaining top 4 feet of the trench shall then be mechanically compacted to 95% of the maximum density. In unpaved areas and other areas not subject to vehicular traffic, trench backfill from the pipe to within 3 feet of the surface shall be compacted to 90% of the maximum density. The upper 3 feet shall be compacted to 95% of the maximum density.

All densities shall be determined by testing per the modified proctor method, ASTM D1557. The Developer/Contractor shall be responsible for providing density test reports certified by a professional engineer registered in the State of Washington. A minimum of one test shall be taken within every 500 feet of trench length and at depths up to 50% of trench depth, or as directed by the District's field representative or the governing road agency. Compaction of laterals or service line trenches shall be tested where directed by the District's field representative or the governing road agency. Testing of CDF, when used as required by the governing road agency, shall be in accordance with ASTM 04832.

Trench backfill shall be placed in uniform loose layers no more than 12 inches thick and mechanically compacted as specified. In any trench where the specified compaction cannot be achieved with native backfill, the top 4 feet shall be replaced and compacted to 95% of the maximum density with imported bank run gravel. The District's field representative reserves the right to request a compaction test at any time on the backfill material.

In cuts transverse to the road alignment and at all utility crossings, the entire trench shall be backfilled with crushed surfacing. Backfill shall be placed and mechanically compacted in 12-inch maximum lifts.

After backfill and compaction, an immediate cold mix patch shall be placed and maintained in a manner acceptable to the governing road agency until replaced with permanent surfacing.

All pipe and fittings shall be laid "in the dry" unless otherwise approved by Engineer. Trench excavations shall be dewatered by using well point systems, sumps with pumps or other methods approved by the District. Dewatering systems shall be used in accordance with good standard practice and shall be efficient enough to lower the water level in advance of the excavation and maintain it continuously to keep the trench bottom and sides firm and dry. Developer/Contractor shall submit the dewatering plan to the District for review at least 10 days prior to commencing any dewatering work. All dewatering effluent shall be routed through a dewatering pond prior to release.

Groundwater shall be controlled such that softening of the bottom of excavations or formation of "quick" conditions or "boils" during excavation shall be prevented and no soil shall be eroded into the excavation from the sides of excavation. Dewatering systems

shall be designed and operated so as to prevent removal of the natural soils. The Developer/Contractor shall at all times have on hand sufficient pumping equipment and machinery in good working condition for all ordinary emergencies, including power outages, and shall have available at all times competent workers for the operation of said equipment.

Developer/Contractor shall control surface runoff so as to prevent entry or collection of water in excavations and shall maintain the undisturbed state of the foundation soils and allow the placement of any backfill to the required density. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill, and prevent flotation or movement of structures and pipelines.

Developer/Contractor shall be responsible for complying with all permit requirements and provisions for monitoring and managing water discharged from the excavation.

3. CONNECTION TO EXISTING SEWER SYSTEM

Connections to existing lines shall be made only with the written approval of Soos Creek Water & Sewer District. The Developer/Contractor shall notify the District's field representative and other utilities at least 48 hours in advance of any construction and make the necessary arrangements with the District's field representative for the connection to the existing sewer system. The Developer/Contractor shall furnish all material, equipment and labor necessary for making the connection under the supervision of the District. The 48-hour notice requirement shall not count Saturdays, Sundays, and holidays.

Work shall not be started until all of the material, equipment and labor necessary to properly complete work is assembled on the site. Once work is started on a connection, it shall proceed continuously without interruption and as rapidly as possible until the connection is completed. Before ordering materials for any connection to an existing manhole, Developer/Contractor shall excavate the manhole and verify outside diameter of all pipes for determining types of fittings to be used. All work shall be coordinated with the District’s field representative. The existing sewers shall remain in service at all times.

Connections to sanitary sewer manholes shall be made using a sand collar, a concrete coupling or a kor-n-seal boot. The pipe to manhole connection shall be watertight. Any leaks in the couplings or other areas created while connecting to the existing manhole shall be sealed with Strata Tech ST-520 Injection Resin or approved equal.

Developer/Contractor shall re-channel existing manholes as necessary to smoothly direct the flow into the existing system.

All water and/or construction debris shall be removed from new sewers and not be permitted to enter the existing system. The Developer/Contractor shall be responsible for flushing out and cleaning any existing sewers into which gravel, rocks or other debris has entered as a result of the Developer’s/Contractor's operations, and shall pay for repair to lift stations or other facilities damaged by such debris. All flushing water shall be pumped from upstream manholes or sewer lines and shall not be allowed to enter the existing sewer.

4. SEPARATION OF UTILITIES

Minimum separation between sewer and water mains shall conform to Section C1-9.1 of the “Criteria for Sewage Works Design”, current edition, as published by the Department of Ecology. Minimum separation between other utilities shall be 6 inches with a sand cushion.

Puget Sound Energy vaults, hand holes and light standards shall be located no closer than 10 feet from any sewer mains and stub services. Developer/Contractor shall be responsible for coordination of vaults, hand holes, and light standards with the sewer stub services. No construction shall start until the Developer/Contractor has furnished the District with a work sketch from Puget Sound Energy or a signed hold harmless agreement (form supplied by the District) is provided..

5. THRUST BLOCKING

When digging near fittings on existing pipelines, temporary blocking shall be installed to prevent blowouts. Blocking shall allow for any connections to the fitting to be removed without damaging the fitting. Thrust blocking shall conform to the standard details. Where unfavorable ground conditions are encountered, special blocking may be required as directed by the District in the field.

6. SEWER MAIN TESTING

Gravity sewers and appurtenances shall be tested after backfilling by the low-pressure air method in accordance with Section 7-17.3(2) of the Standard Specifications, except where the ground water table is such that the District may require the infiltration test. Final acceptance of the sewer main installation will be subject to the District's Resolution No. 1904-S, which allows a maximum ponding depth of 3/4-inch. In the event of conflicts between the standards established in Resolution No. 1904-S and the standards specified in Section 7-17.3(2) of the Standard Specifications, the standards of the Resolution will take precedence.

7. REPAIR OF PIPELINE FAILURES

Broken or otherwise defective pipe shall be removed and replaced. Repair bands or clamps shall not be used to repair broken pipe.

8. JACKED CROSSING

At locations as required by the District or governing road agency, or as proposed by the Developer/Contractor, sewer main crossings of arterial streets shall be made by jacking, driving, or auguring a steel casing pipe beneath the surface. Alignment and grade of casings furnished shall be such that no additional fittings are necessary to make the connection. If the casing does not meet this requirement, it shall be abandoned by filling the casing with moist sand and a new casing installed to meet the line and grade requirements. No open excavation shall be made closer than 6 feet from the edge of pavement.

Diameter of casing pipe shall be sufficient to allow installation of the sewer. Wall thickness shall be sufficient to withstand installation force and highway loading with a minimum thickness of ¼-inch. After the sewer main has been adjusted to grade, moist sand shall be tamped into the casing pipe so that all voids will be filled. Manufactured casing spacers that prohibit movement of the pipe in any direction within the casing may be used in lieu of filling the void between the sewer main and the casing wall with sand.

10. EXISTING UTILITIES

Existing utilities shown on any reference drawings provided by the District have been plotted from the best information available to the District. The Developer/Contractor shall be responsible for locating all existing utilities well enough in advance of the excavation to prevent damage during construction. The Developer/Contractor shall be responsible for any damage resulting from his operations on the project.

11. WARRANTY PERIOD

The Developer making the application for a line extension shall be responsible for the materials and for satisfactory operation of the facility for a period of one year from the date of acceptance of the completed project and the bill of sale to the District.

C. MATERIALS

1. PIPE

Gravity sewers and services shall be constructed of PVC pipe conforming to Section 9-05.12 of the Standard Specifications unless required otherwise by the District. PVC gravity sewer main and PVC gravity sewer service pipe shall be considered flexible conduit. PVC compound shall meet the requirements of ASTM D 1784 for Class 12454-B PVC.

Ductile iron pipe (class 52) may be used in lieu of PVC pipe provided the ductile iron pipe is lined with epoxy, polyurethane, or SewperCoat as manufactured by Kerneos Aluminate Technologies or approved equal. All linings shall be applied per the manufacturer's recommendations.

A. Lined ductile iron pipe shall have the lining applied to all exposed interior surfaces per the manufacturer's recommendations.

B. Polyurethane linings shall consist of polyisocyanate resin and polyol resin mixed at a 1:1 ratio at the time of the application and applied to a dry film thickness of 40 mils (0.040 inches). Coating thickness within the bell socket interior and on the spigot end of the pipe exterior shall be 8 mils (0.008 inches) nominal with a maximum thickness of 10 mils (0.010 inches) in order to minimize potential dimensional assembly problems. Thicker coats may be allowed provided final dimensions are within allowable tolerances after the coating. The lining shall provide an ASTM D16 Type V system.

C. Sewpercoat is a calcium aluminate mortar made of fused calcium aluminate and calcium aluminate aggregates. The lining shall be applied to a thickness of 125 mils (0.125 inches) for 12-inch and smaller diameter pipes and 3/16 inches for pipes larger than 12 inches in diameter. Cracks in the lining, other than closed hairline cracks and/or fine crazing are not acceptable. A seal coat shall be applied to any Sewpercoat lining.

D. The exterior of all ductile iron pipes shall be coated with 1 mil (0.001 inches) of bituminous paint according to ANSI/AWWA C151/A21.51.

2. SIDE SEWER SERVICES

All side services shall be constructed in accordance with the Section 7-18 of the Standard Specifications and the resolutions of the District, which are incorporated herein by reference. Side service construction shall follow the installation of main lines as closely as practical in the opinion of the District.

Contractor shall install the pipe to a minimum depth at the property line of 5 feet below the floor to be served or 5 feet below the street centerline whichever is deeper. In cases of vacant properties or properties vacant beyond 150 feet from sewer main, the side sewer shall be constructed with a minimum slope of 2% from the tee, unless otherwise approved by the District in writing.

All stub services shall terminate with a 6-inch watertight cap at the property and/or easement line, or 10 feet past at the option of the Developer. All ends of stub services shall be marked by a 12-gauge galvanized wire and a 2-inch by 4-inch timber. The wire shall extend vertically from the capped end to the ground surface and shall be attached to the timber from end to end. The timber shall extend from the capped end to a minimum of 12 inches above the ground and shall be painted traffic white with the word "sewer" stenciled on with black paint. The end of the timber shall be marked in permanent indelible ink with the length of the timber installed. Neither the wire nor 2" x 4" timber shall be secured or attached to the sewer pipe.

All side services shall be tested for acceptance at the same time the main line sewer is tested for acceptance.

All 6-inch stubs into manholes to match crowns.

3. MANHOLES

Manholes shall be precast concrete unless required otherwise by the District and shall conform to Standard Plan B-23A except with eccentric reducing cones. Poured in place bases shall not be allowed. Maximum allowable dimension from the break of cone to top of casting shall be 20 inches. Which includes a minimum of one Ladtech or equal HDPE adjustment ring.

Internal concrete channels, benches and fillets shall be formed using Low Shrinkage Class 4000D 5 sack mix with pea gravel to 5/8-inch (max size) aggregate conforming to Section 6-02.3 of the Standard Specifications. The water-cement ratio shall not exceed 0.38. A water-reducing admixture shall be included in the mix.

Ladder rungs shall be 1-inch diameter deformed bar, polypropylene safety-type steps meeting the requirements of ASTM C478, AASHTO M-199, and all WISHA and OSHA specifications. Polypropylene steps, conforming to ASTM D 4101, shall be injection molded around a 1/2-inch ASTM A 615 Grade 60 steel reinforcing bar. Use Corrosion resistant epoxy for all manhole rung installations and finish with equal parts of Portland cement and sand mixture.

Covers shall be Olympic Foundry Model No. MH30A D/T or approved equal and shall be 24-inch diameter cast iron or ductile iron with three 5/8-inch diameter x 1 1/2-inch long countersunk N.C. stainless steel socket head cap screws and single 1-inch diameter lift hole located approximately 3 inches from the outside edge of the cover. Provide 5/8-inch x 2 1/2-inch stainless steel carriage bolt installed in manhole lift hole. Lids shall have a non-skid pattern cast integrally on top with the word "SEWER" cast in 3-inch raised letters. Ring and cover shall have one of the lock down bolts centered directly over the access ladder.

All manhole covers located in sidewalks or driveways shall be Olympic Foundry No. MH30A D/T Smooth Design or approved equal with locking lid and 6-inch casting ring and the word "SEWER" cast integrally on top in 3-inch raised letters.

Manhole sections shall have rubber gasket joints conforming to ASTM C 443. All manhole joints and pick holes shall be sealed from the inside and the outside with an equal parts sand and Portland cement concrete mix.

When the manhole is located within a street, roadway, parking lot, or sidewalk, the manhole covers and the manhole cone shall be bedded and compacted with 5/8 inch minus top course crushed rock. No asphalt or concrete pads shall be allowed within the street, roadway, parking lot, or sidewalks. Backfill shall be compacted to a minimum of 95%.

Contractor shall provide an 8-inch thick by 6-foot wide asphalt or concrete collar around the rims of all manholes located in unimproved areas, landscaped areas, easements, and all other unpaved areas. The asphalt or concrete collar shall slope away from the manhole rim.

4. IMPORTED GRAVEL MATERIAL

Pipe bedding shall conform to Section 9-03.12(3) of the Standard Specifications. Foundation gravel shall conform to Section 9-03.17 of the Standard Specifications. Bankrun gravel for trench backfill shall conform to Section 9-03.19 of the Standard Specifications, except at transverse cuts to the road alignment or at utility crossings, which shall be backfilled with crushed gravel surfacing or as required by the governing road agency. Developer/Contractor shall be responsible for removing and disposing of any excess excavated soil material at an approved disposal site.

5. CRUSHED GRAVEL SURFACING

Crushed gravel surfacing shall conform to the requirements of Section 9-03.9(3) of the Standard Specifications.

6. ASPHALT CONCRETE PATCH AND OVERLAY

Asphalt concrete surfacing for patching and overlay shall conform to Section 5-04.2 and 5-04.3 of the Standard Specifications. Asphalt concrete surfacing shall meet Class ½-inch, P.G, 58-22 grading requirements, or as required by the governing road agency.

D. SURFACE RESTORATION

1. OFFSITE SURFACE RESTORATION

All paved or unpaved surfaces or easements shall be restored to a condition equal to or better than that which existed prior to construction. All trees, shrubs and or other improvements shall be saved, relocated, or replaced by Developer/Contractor unless noted otherwise on the drawings or in the easement stipulations. Restoration shall be to the satisfaction of the District, property owner, or governing road agency. Preconstruction photographs shall be used to approve restoration.

2. ROAD SHOULDER RESTORATION WITHIN RIGHT-Of-WAY

The existing surfacing of disturbed asphalt shoulders shall be removed to a minimum depth of 6 inches below original street grade to provide for placement of the new subgrade and paving. The subgrade shall be constructed of 1-1/4-inch minus crushed surfacing base course placed to a compacted thickness of 2-1/2 inches, followed by 5/8-inch minus crushed surfacing top course placed to a compacted thickness of 1-1/2 inches. Asphalt concrete paving shall then be placed and compacted in 2-inch lifts up to a maximum 4-inch thickness to match existing pavement thickness. Minimum thickness shall be 2 inches. The shoulder shall be replaced to the existing fog line in areas where the existing asphalt shoulder is seriously disturbed, or at the discretion of the District or the governing road agency.

Restoration of gravel shoulders shall include a minimum of 1-1/2 inches of crushed surfacing top course and 2-1/2 inches of crushed surfacing base course.

3. ASPHALT SURFACE RESTORATION WITHIN RIGHT-Of-WAY

The existing asphalt surface shall be cut on a neat line by sawcutting prior to excavation to provide a continuous line. Following proper backfill and compaction of the trench, the edges of the surfacing shall be re-trimmed 12 inches wider than the excavation with straight vertical edges free from irregularities. A 1-1/4-inch minus crushed surfacing base course shall be placed to a compacted thickness of 4-1/2 inches, followed by 5/8-inch minus crushed surfacing top course placed to a compacted thickness of 2 inches.

Asphalt concrete paving shall then be placed and compacted in 2-inch lifts to match the existing thickness and grade of the original surface. Asphalt patch shall have a minimum thickness of 2 inches and a maximum thickness of 4 inches. The asphalt patch shall then be overlaid with a minimum of 1-1/2 inches compacted asphalt concrete. Asphalt overlay shall be pre-leveled as determined by the District's field representative. No overlay shall be required if the final trimmed edge of the asphalt patch does not encroach inside the fog line or, in lieu of a fog line, within 12 feet from the existing centerline of the road. The District or governing road agency reserves the right to require an overlay on any section. If the edge of the road is curb and gutter, then the asphalt patch shall extend to the edge of the curb unless indicated otherwise by the District or governing road agency. All asphalt joints shall be sealed with approved sealer. Developer/Contractor shall replace existing striping and pavement markings as required by the governing road agency.

Developer/Contractor shall maintain temporary cold or hot mix asphalt patches daily during construction to the satisfaction of the governing road agency and the District's field representative until said patch is replaced with a permanent hot patch. The permanent patch shall be placed and sealed with paving grade asphalt within 30 calendar days.

Concrete pavement shall be restored consistent with Section 5-01 of the Standard Specifications. Any concrete pavement traffic lane affected by the trenching shall have all affected panels replaced. Cement concrete pavement shall be restored with an 8-sack mix, using either Type II or Type III cement within 30 calendar days.

4. CURBS, GUTTERS, AND SIDEWALKS

Existing curbs, gutters, and sidewalks damaged by construction of the project or the Developer's/Contractor's use and activity, shall be repaired to the satisfaction of the property owner, the District, or the governing road agency, and to its original condition or better.

5. NON-PAVEMENT RESTORATION WITHIN RIGHT-OF-WAY

Cultivated lawns shall be restored with sod. Reseeding of cultivated lawns will not be allowed without prior approval of property owner and District. Uncultivated lawns, pasture and vacant land shall be restored with a pasture grass meeting the following requirements.

Seed Mix:	40% perennial ryegrass 10% white clover 30% fescue 20% red creeping fescue Apply at the rate of 100 pounds per acre
Mulch:	Silva fiber mulch applied at 1500 to 2000 pounds per acre.
Fertilizer:	Commercial mix 10/20/20 of nitrate, phosphate and potash applied at rate of 450 pounds per acre.

6. FINAL UTILITY ADJUSTMENT TO FINISH GRADE

All utility covers, which are located on proposed asphalt roadways, shall be temporarily placed at sub-grade elevation prior to placing crushed surfacing material. Final adjustment of all covers and access entries shall be made following final paving by sawcutting of the pavement around lids and covers. Opening should not be larger than 12 inches beyond the radius of the cover. Developer/Contractor shall then remove base material, surfacing course, and frame; add raising bricks; and replace frame and cover to finish grade. Fill and mechanically compact around the structure and frame with crushed surfacing material. Finished surfacing shall be two, 2-inch courses of asphalt concrete surfacing, compacted and sealed to provide a dense, uniform surface. Final adjustment of all covers and access entries shall be completed within 30 days of final paving.

7. FINAL CLEANUP

The Developer/Contractor shall cleanup all adjacent areas in compliance with Section 1-04.11 of the Standard Specifications. Streets and roadways shall be cleaned and swept both during and after the installation work. Disturbed soils shall be final graded, seeded, and mulched after installation of the sewer main. In limited areas seeding and mulching by hand, using approved methods, will be acceptable. Ditch lines with erodible soil or subject to rapid flows may require seeding, jute matting, netting, or rock lining to control erosion. Any silting of downstream drainage facilities, whether ditches or pipe and catch basins, which results from the sewer main installation shall be cleaned out and the work site restored to a stable condition as part of site cleanup.

8. TRAFFIC CONTROL

The Developer/Contractor shall be responsible for interim traffic control during construction on or along traveled county roadways. Traffic control shall follow the guidelines of Section 1-07.23 of the Standard Specifications. All barricades, signs, and flagging shall conform to the requirements of the MUTCD Manual. Signs shall be legible and visible and should be removed at the end of each workday if not applicable after construction hours.

When road closures cannot be avoided, the Developer/Contractor shall post "to be closed" signs a minimum of five days prior to the closing. The types and locations of the signs shall be shown on a detour plan. A detour plan must be prepared and submitted to the District's field representative and approved by the governing road agency prior to closing any roadways. In addition, the Developer/Contractor must notify in writing all local fire, school, law enforcement authorities, metro transit, and any other affected persons as directed by the District's field representative at least five days prior to the road closure.

E. GENERAL NOTES

1. All work shall be performed in accordance with the specifications of the Soos Creek Water & Sewer District, also referred hereinafter as “District”.

2. The Developer shall furnish the District a copy of the commercial and/or subdivision plans approved by the governing agency prior to any sewer main construction.

3. Prior to constructing any sewer mains, the appropriate streets and lots shall be cleared, graded, and staked by the Developer/Contractor and all existing utilities shall be located.

4. Following sewer main construction, any revision of roadway or easement grades requiring the mains to be reconstructed shall be made at the Developer's/Contractor’s expense.

5. Reconstruction shall conform to the specifications of the District. All costs for inspecting such reconstruction shall be charged to the Developer in addition to the standard charges, and shall be paid before acceptance by the District.

6. No side sewer connections shall be made to the existing system until completion of the Bill of Sale and all easements. Obtain side sewer permits from the District for each side sewer connection prior to making connection. Bill of Sale will not be processed until Puget Sound Energy has either provided a work sketch or installed their vaults, hand holes and light standards, or the Developer has provided a signed hold harmless agreement (form supplied by the District).

7. All costs of sewer main re-staking shall be paid by the Developer/Contractor.

8. Property corners shall be pinned with reference tack on curbs by the Developer/Contractor.

9. The Developer/Contractor shall notify the District at (253) 630-9900 to schedule a pre-construction meeting at the District office. After the pre-construction meeting, the Developer/Contractor shall notify the District’s field representative at least 48 hours (regular working days) before starting work.

10. The Developer/Contractor shall obtain all required final inspections to meet permit requirements. Inspections must be scheduled at least 48 hours in advance.

11. Connections to existing sewer mains shall be made only with written approval of the District and only after at least 48 hours (two regular working days) advance notice.

12. Existing sewers to remain in service at all times.

13. All water and/or construction debris shall be removed from new sewers and shall not be permitted to enter the existing system.

14. Existing Manhole No. ___ shall be core-drilled and re-channeled as required to receive incoming flow from the new sewer.

F. SEWER STANDARD DETAILS

DTL. NO.	DETAIL TITLE
S-1	SPECIAL MANHOLE CUT-IN INSTALLATION (06-02-11)
S-2	MANHOLE DETAIL (06-02-11)
S-3	SURFACE CLEANOUT (MAINLINE STUB) (06-02-11)
S-4	STUB SERVICE CONSTRUCTION DETAIL (06-02-11)
S-5	STANDARD PLAN STUB SERVICE (ALTERNATE NO. 1) (06-02-11)
S-6	STANDARD PLAN STUB SERVICE (ALTERNATE NO. 2) (06-02-11)
S-7	STANDARD PLAN DOUBLE STUB SERVICE (06-02-11)
S-8	STANDARD PLAN STUB SERVICE FOR MANUFACTURED HOME (06-02-11)
S-9	SADDLE STUB SERVICE CONNECTION TO EXISTING SEWER MAIN (06-02-11)
S-10	SAFETY GRATE DETAIL (06-02-11)
S-11	PIPE ANCHOR DETAIL (06-02-11)
S-12	SACK SLOPE RETAINER (06-02-11)
S-13	STEEL SLOPE RETAINER (06-02-11)
S-14	SADDLE MANHOLE BASE DETAIL (06-02-11)
S-15	FILTER FABRIC FENCE (06-02-11)
S-16	GRINDER PUMP SERVICE LINE FOR PVC OR D.I. GRAVITY SEWER MAIN IN PUBLIC RIGHT-OF-WAY (06-02-11)
S-17	GRINDER PUMP SERVICE LINE FOR SMALL DIAMTER LOW PRESSURE SEWER SYSTEM IN PUBLIC RIGHT-OF-WAY (06-02-11)
S-18	GRINDER PUMP DOUBLE SERVICE LINE FOR LOW PRESSURE SEWER SYSTEM (06-02-11)
S-19A	TYPICAL HOUSE CONNECTION FOR GRAVITY SEWER (09-23-11)
S-19B	TYPICAL HOUSE CONNECTION ALT. – GRAVITY STUB (06-02-11)
S-19C	TYPICAL HOUSE CONNECTION ALT. – PRESSURE STUB (06-02-11)
S-19D	TYPICAL HOUSE CONNECTION CONSTRUCTION REQUIREMENTS (09-23-11)

S-19E TYPICAL HOUSE CONNECTION MATERIALS LIST (06-02-11)

S-20 SIDE SEWER CONNECTION INFORMATION (06-02-11)

S-21 SHALLOW MANHOLE DETAIL (06-02-11)

S-22 GRINDER SERVICE CONNECTION TAPPED ON EXISTING LINE (06-02-11)

S-23 MANHOLE RIM AND COVER – OFF PAVEMENT (06-02-11)

S-24 A/C WATER MAIN REPLACEMENT & SANITARY SEWER CROSSING (06-02-11)

S-25 DROP MANHOLE DETAIL (06-02-11)

S-26 BACKWATER VALVE DETAIL (06-02-11)

S-27 STANDARD MANHOLE DETAIL (05-07-25)

S-28 TYPICAL TRENCH DETAIL (02-04-25)

S-29 TYPICAL TRENCH DETAIL (OUTSIDE ROADWAY) (02-04-25)

S-30 SURFACE CLEANOUT (MAINLINE STUB) (06-02-11)

S-31 FORCE MAIN TRACING WIRE (06-02-11)

S-32 GRINDER FORCE MAIN INTO MANHOLE (03-18-23)

S-33A DUMPSTER PAD DRAIN (03-18-23)

S-33B DUMPSTER PAD DRAIN TWO WAY CLEANOUT (03-18-23)

S-34 END FORCE MAIN CLEANOUT (02-10-25)

G. SEWER STANDARD PLANS FORMAT

Note: The following 11”x17” figures are half size samples. Standard full size plans are to be 22”x34” per Section 5.

Figure SP-1 Sewer Plan Sheet Format

Figure SP-2 Construction Provisions

Figure SP-3 Materials and Surface Restoration

Figure SP-4 Standard Details