

CHAPTER 1 - GENERAL PLANNING, DESIGN, AND APPROVAL REQUIREMENTS

1.00 Requirements For Public Improvements

A. General

The purpose of these standards is to set standards for the design and construction of public improvements to serve new and future developments. These include street, bikeway, drainage, water, and sanitary sewer improvements as required by the development review process, City Ordinance, and other City policies adopted by the City Council or the Mayor. Standards for site grading, erosion control, parking lot and driveway construction on private property are also contained in these standards. No such work shall commence prior to City approval of the construction plans. Designs submitted shall be stamped by a registered Professional Engineer licensed to practice in the State of Washington.

All public improvements and private streets, parking lots, sidewalks, and driveways shall be designed and constructed in such a manner as to be readily accessible to and usable by individuals with disabilities as per the requirements of the Americans with Disabilities Act of 1990. This includes providing curb ramps at intersections with pedestrian crosswalks to allow a smooth transition between street and sidewalk elevations.

B. Organization of Standards

These Standards are separated into three separate volumes; 1) Volume 1 - Design and Planning, 2) Volume 2 - Construction Specifications and Details, and 3) Volume 3 - Erosion Control Requirements.

C. Shortened Designation

These City of Stevenson Engineering Standards for Public Works shall be cited routinely in the text as the "Standards".

D. Applicability

These Standards shall govern all new construction and upgrading of facilities both in the right-of-way and on-site for: transportation-related facilities; storm drainage facilities and stream channel improvements; sewer and water improvements; and park, recreation,

and open-space facilities used by the public.

E. Requirements for Public Welfare

It is the purpose of these standards to provide for and promote the health, safety, and welfare of the general public, and not create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by the terms of these standards.

The Standards established by this Chapter are intended to represent the minimum design standards. Compliance with these Standards does not relieve the designer of the responsibility to apply sound professional judgment to protect the health, safety, and welfare of the general public. Additionally, since these are minimum standards, special site conditions and environmental constraints may require a greater level of protection than would normally be required under these Standards. The designer must apply these Standards bearing in mind these constraints.

F. One-year Surety Bond Requirement.

The owner is required to provide a surety bond for the full cost of construction for all public improvements for a period of one (1) year after acceptance of the project, which will not be released without written approval by the City.

G. Requirement for Street Utility Extension to Limits of Property.

Public streets, bikeways/multi-purpose trails, water mains, sanitary sewer mains, and storm sewer mains shall be extended through and to the extremes of the property being developed for extension to future development as determined by the City. The developer shall not be reimbursed for utility extensions to the limits of the property being served. Should the developer deem that the utility extension is an undue hardship and will significantly benefit other property owners, the developer may request for a latecomer agreement or reimbursement. Such requests shall be in writing and shall be made to the City Council.

1.01 Precedence of Documents

If there is a conflict between approval documents, the document highest in precedence shall control.

The precedence shall be:

First: Permits from other agencies or jurisdictions, as may be required by law.

Second: Facilities Review, Site Development Permit, and Planning Commission Conditions of Approval.

Third: City of Stevenson Engineering Standards for Public Works Construction.

Fourth: City of Stevenson Ordinances.

Fifth: Plans and details prepared by the design engineer.

Sixth: APWA/WDOT Standard Specifications, latest edition.

Seventh: Reference specifications.

Supplemental written agreements and approved revisions to plans and specifications by the appropriate jurisdictions will take precedence over documents listed above. Detailed plans shall have precedence over general plans. In any event, the determination of the City Engineer shall be final.

1.02 Abbreviations and Definitions

AASHTO	American Association of State Highway and Transportation Officials.
AC	Asphaltic Concrete.
ACI	American Concrete Institute.
ADA	Americans with Disabilities Act of 1990.
ADT	Average Daily Traffic.
ALTA	American Land Title Association Survey
ANSI	American National Standards Institute.
APWA	American Public Works Association.
ASTM	American Society for Testing and Materials.
AWWA	American Water Works Association.
Bicycle	A vehicle having two tandem wheels, propelled solely by human power.

Bicycle Facilities	A general term denoting improvements and provisions which accommodate or encourage bicycling, including parking facilities, maps, signs, pathways, bike lanes, widened sidewalks, bikeways and shared roadways designated for bicycle use.
Bicycle Lane (Bike Lane)	A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.
Bicycle Path (Off-Street Pathway)	A paved pathway physically separated from motorized vehicular traffic by an open space or barrier within an independent right-of-way.
Bicycle Route (Bike Route)	A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without a specific bicycle route number or as designated on a bicycle map, brochure or guidebook.
Bikeway	Any road, path or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.
CARV	Combination Air and Vacuum Release Valve.
CBE	Crushed base equivalent (CBE) is the number that directly relates the traffic coefficient to the required number of inches of rock for street structural sections.
CBR	California Bearing Ratio.
City	City of Stevenson with the Public Works Director as the lead contact person.
City Engineer	City of Stevenson's city engineer having authority specified in State law or City ordinances, or their designated representative.
Contractor	The agent of the developer completing the construction activities associated with a given project.
Contractor's Equipment	The phrase "Contractor's Equipment" shall include all items of materials or equipment remaining in the contractor's ownership and removed from the site upon completion of the project.

Developer	The owner and/or his agent or contractor's responsible for a given project.
Director	The Planning Director.
Engineer	The City Engineer.
Engineering Standards	The latest edition of the "City of Stevenson Engineering Standards for Public Works Construction".
EPA	U.S. Environmental Protection Agency.
Equipment	The machinery, accessories, appurtenances and manufactured articles to be furnished and/or installed under the Project.
FEMA	Federal Emergency Management Agency.
GPS	Global Positioning System.
IE	Invert Elevation.
Intersection	Refers to the area jointed by two (2) or more roads intersecting. For approaches of a continuous street at an acute curve or some other angle point with different street names.
Item	A convenient subdivision of work under these specifications, as herein separately described.
Material or Materials	These words shall be construed to embrace machinery, manufactured articles, materials of construction (fabricated or otherwise) and any other classes of material to be furnished in connection with the project.
MUTCD	Manual on Uniform Traffic Control Devices.
NEC	National Electric Code with Washington amendments.
Or Equal	Any manufactured article, material, method, or work which, in the opinion of the Engineer, is equally desirable or suitable for the purposes intended in these specifications and contract, as compared with similar articles specifically mentioned herein.

OS and Y	Outside stem and yoke.
OSHA	Occupational Safety and Health Administration.
Parking Lot	Paved surfaces on private property intended for the movement and storage of 6 (six) or more vehicles.
Plans	The plans shall mean all official drawings or reproductions of drawings made or to be made pertaining to the work provided for in the contract, or to any structure connected therewith.
Project	The structure or improvement to be constructed in whole or in part through the performance of the contract.
PRV	Pressure Reducing Valve.
Sidewalk	The portion of a street designed for preferential or exclusive use by pedestrians.
Specifications	The specifications shall mean the prescribed directions, requirements, explanations, terms and provisions pertaining to the various features of the work to be done, or manner and method of performance, and the manner and method of measurements and payments. They also include directions, requirements, and explanations as set forth on the plans.
Standards	City of Stevenson Engineering Standards for Public Works Construction, Volume 1, 2, and 3, latest edition.
Standard	The latest edition of the City of Stevenson's standard details for public works Drawings construction. Reduced copies are included in Appendix A of Volume 2 of these standards.
Standard Specifications	The latest edition of the "Standard Specifications for Road, Bridge, and Municipal Construction" as published by the Washington State Department of Transportation and the American Public Works Association.
Street	A public way which affords the principal means of access to abutting property.
TCDH	Traffic Control Device Handbook.
Traffic	A number used in determining the structural section of a street.

Coefficient

Trail	In the context of the General Plan - "Trail" is synonymous with Bicycle Path (off-street pathway).
UBC	Uniform Building Code with Washington amendments.
UFC	Uniform Fire Code with Washington amendments.
UL	Underwriter's Laboratory.
UMC	Uniform Mechanical Code with Washington amendments.
UP	Uniform Plumbing Code with Washington amendments.
WDOT	The Washington State Department of Transportation.
Wetlands	Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Identification and delineation of jurisdictional wetlands and wetland boundaries shall be done by a qualified biologist using applicable State and Federal guidelines.
Words and Phrases	Whenever the words, "as directed", "as required", "as permitted", or words of like effect are used, it shall be understood that the direction, requirement or permission of the Owner and Engineer is intended. The words, "sufficient", "necessary", "proper", and the like shall mean sufficient, necessary or proper in the judgment of the Owner and Engineer. The words, "approved", "acceptable", "satisfactory", or words of like import shall mean approved by or acceptable to the Owner and Engineer.
Work	The work necessary to manufacture and deliver machinery, equipment and material and/or the furnishings of all labor, tools, material, equipment, construction equipment, working drawings, where required, and other, necessities for the construction or erection of the structures shown and called for in the plans, specifications and contract, and the act of constructing or erecting said structures complete.

1.03 Permits

Permits, approvals, or agreements are required by the City, and sometimes other jurisdictions, prior to initiating any construction or demolition work elements described within these Standards.

The majority of work covered under these Standards will require multiple permit authority review and approvals. Several types of permits and approvals require prior approval from the authority before a building or other substantial permit can be issued. Any questions regarding information about permits, approvals, and agreements should be directed to the City Clerk.

The following general categories describe the major permits, approvals, and agreements, along with issuing permit/code authority identified in parentheses:

A. Environmental Review

For most projects, including clearing and grading activity, an Environmental Checklist must be completed by the applicant and submitted along with plans, specifications, and other information when approval or permits are being requested for a project. The Planning Director conducts the Environmental Review and makes a SEPA Threshold Determination for the City.

B. Building Permits

A Building Permit is required for all construction work including alteration, repairs and demolition. Demolition Permits for structures greater than four thousand square feet (4,000 sq. ft.) require the submittal of an Environmental Checklist.

C. Approvals and Other Permits

There are several other permits or approvals which may be required and referred to in these Standards: Developer Extension Agreements; Right Of Way permit; plat and short plat approvals; and Certificate of Occupancy.

In addition, there are several other City approvals (land use) which may have been obtained prior to the above listed permits and which may affect the Standards as contained in this document.

1.04 General Requirements for Utility Extensions (Sanitary Sewer, Storm Sewer, Water)

- A. When extension of the existing utility system for service is required, the developer shall submit a Request For Utility Service to the City. A copy will be returned to the developer. The developer shall sign the document and return it to the City. The signed document will be the Extension Agreement and shall constitute a legal agreement by the developer to design and construct the utility sewer in accordance with City requirements at no cost to the City.

To initiate the developer extension process, two (2) signed copies of the aforementioned request for utility service are submitted to the City. The City will return one copy with comments. A signed copy shall be returned to the City together with property legal description, site and improvement plans, utility design plans and design review and administration fees. The utility design shall be provided on an original mylar and will be reviewed by the City and finalized by the owner's engineer. Upon completion and approval by the City, plans and a pre-construction letter of requirements will be sent to the applicant. Requirements to be completed prior to construction will be noted in the pre-construction letter.

Upon completion of the pre-construction requirements and 48 hours notice, a pre-construction meeting shall be held with the Public Works Department at which time construction inspection will be scheduled. No public improvement construction shall commence prior to pre-construction meeting. After completion of construction and submittal of required documents and fees, final acceptance will be given by the City at which time service will be available by permit.

- B. Easements for utility system shall be prepared by a surveyor or engineer licensed to practice in the State of Washington. The easement shall be reviewed and approved by the City prior to acceptance.
- C. Developer extension projects will be deeded to the City for maintenance and operation by Bill of Sale before acceptance.
- D. The developer shall provide final as-built elevations of manhole inverts and tops, gravity pipe grades, and utility locations. All elevations shall be from Skamania County datum.

1.05 Submittal Requirements

A. General

1. Submittal requirements consist of design plans, grading plans (where required), erosion control plans (where required), drainage calculations, and other information as required. Letters of transmittal shall accompany all submittals.
2. The Standard Specifications are hereby adopted and incorporated as part of this document by reference except as modified herein.

1.06 General Requirements for Engineering Plans

A. Design Plan Format

1. The plans shall be submitted on 24 x 36-inch sheets.
2. Title sheet to include project name, vicinity map, name and mailing address of developer/owner and engineering firm, general notes, notice to excavators, index, and space for city approval stamp (5 x 5-inch) in the lower right quadrant. Vicinity maps shall show the location of the project in respect to the nearest major street intersection.
3. A north arrow shall be shown on each plan view sheet of the plans and adjacent to any other drawing which is not oriented the same as other drawings on the sheet.
4. Details - Reference each City Standard Drawing by number.
5. The scale shall be 1-inch = 2 feet, 3 feet, 4 feet, 5 feet, or 10 feet vertically and shall be 1-inch = 10 feet, 20 feet, 30 feet, 40 feet, or 50 feet horizontally for all drawings except structural details. Scale shall be shown with north arrow and within a title block.
6. Letter size shall not be smaller than 0.10 of an inch high.
7. The location and elevation of a National Geodetic Survey, United States Geological Survey, Skamania County, or City of Stevenson bench mark shall be shown. No other datum shall be used without permission of the City Engineer. Temporary control bench marks and elevations shall also be shown on the plans.
8. A title block shall appear on each sheet of the plan set and shall be placed in the

lower right-hand corner of the sheet, across the bottom edge of the sheet, or across the right-hand edge of the sheet. The title block shall include the names of the project, the engineering firm, the owner, the sheet title, and the sheet number.

9. The seal of the registered Washington Professional Engineer responsible for preparation of the plans shall appear on each sheet.
 10. The description and date of all revisions to the plans shall be shown on each sheet affected, and shall be approved and dated by the registered Professional Engineer of record as evidenced by an original signature or initial.
 11. Through use of standard drafting symbols, indicate the location and direction of view for all sections.
 12. The following statement shall appear on the cover sheet of all plans at a location immediately above or below the developer engineer's professional stamp - **"I hereby certify that these plans, and related design, were prepared in strict conformance with the City of Stevenson Engineering Standards for Public Works Construction"**.
 13. Developer's name, address and phone number shall be included on the cover sheet.
- B. Site Development Plans shall be organized as follows:
1. Title sheet.
 2. Sanitary sewer and water, including fire hydrant locations.
 3. Street and storm sewer, showing existing and finished contours at 2-foot intervals, shall be on separate sheets. Storm sewer information may be included on water and sewer sheets where practical. In all cases, all proposed utilities shall be shown on each utility sheet, although notes and call-outs may be segregated per individual sheet.
 4. Grading and erosion control plan with maximum contour intervals of 2 feet. Contours shall extend offsite a minimum of 50 feet. This sheet shall also note the source of information, date of field work, and location of original document.
 5. Approved preliminary plat (if it is a subdivision).

6. Landscape plan including sidewalks, bikeways, retaining walls, irrigation, and lighting.

1.07 Requirements for Public Street Improvement Plans

A. Plan View

Plan views shall show the following:

- X Right-of-Way, property, tract, and easement lines (existing and proposed).
- X Subdivision name, lot numbers, street names, and other identifying labels. Subdivision and street names are subject to the approval of the City Planning Director.
- X Location and stationing of existing and proposed street center lines and curb faces.
- X Horizontal alignment and curve data of street center lines and curb returns.
- X Existing underground utilities and trees over 6-inches in diameter within the construction limits.
- X Location of existing buildings, wells, septic tanks, drain fields, fuel tanks, and any other buried structures. An ALTA survey shall be required for at least 100 feet surrounding any of the above items to remain.
- X Match lines with sheet number references.
- X Street stationing to be noted at a minimum of 100-foot intervals.
- X Top of curb elevations along curb returns at quarter-delta's, and at 100-foot stations.
- X Location of the low points of street grades and curb returns.
- X Sidewalk locations. This shall include ramps, transitions in location or width, and relationship with driveways.
- X Crown lines along portions of streets transitional from one typical section to another.

- X Center line stationing of all intersecting streets.
- X Location and description of existing survey monuments, including but not limited to: section corners, quarter corners, donation land claim corners, and City bench marks.
- X Location of proposed street intersection monument boxes.
- X FEMA designated 100-year flood plains and flood ways, or areas of flooding during a 100-year storm event.
- X Wetland areas and storm water quality undisturbed corridors (buffer strips).
- X Legend.
- X Any additional information that the City deems necessary.

B. Profile View

Profile Views shall show the following:

- X Stationing, elevations, vertical curve data (including curve k factors), and slopes for center of streets or top of curbs. For off-set or superelevation cross-sections, both curbs shall be profiled. Where curbs are not to be constructed, center line of street and ditch inverts shall be shown.
- X Original ground along the center line and if necessary at the edges of the right-of-way if grade differences are significant.
- X Center line, top of curb or edge of pavement, and gutter flow lines of existing streets for a distance of at least three hundred (300) feet each way at intersections with proposed streets. For stub streets that may be extended in the future, the vertical alignment shall be designed for at least 300 feet beyond the scope of the proposed construction. At the discretion of the City Engineer, additional design information concerning the vertical and horizontal alignment of future street extensions may be required.
- X Vertical alignment of streets, including existing center line monumentation.

- X The top of curb for all cul-de-sacs, eyebrows and curb returns.
- X Existing drainage facilities, including off-site facilities, upstream and downstream that affect the design (i.e., downstream restrictions that back water onto project site). In addition, base flood elevations shall be shown on the profile.
- X Profiles for ditch and creek flowlines shall extend a minimum of two hundred (200) feet beyond the project, both upstream and downstream. Typical cross sections at fifty (50) foot intervals shall also be submitted.
- X Designate structures using alpha or numeric labels on profiles to correspond to plan view notation.
- X All existing and proposed sanitary, water, storm lines and other utilities crossing the profile.

1.08 Site Grading Plan

The City of Stevenson requires a site grading plan as part of the Application for any development that involves the excavation or fill of greater than fifty (50) cubic yards of material. Grading contours (existing & proposed) shall be at no more than 2 foot intervals, and shall extend off-site a minimum of 50 feet. This sheet shall also note source of information, date of field work, and location of original document.

All soil disturbing construction activity must adhere to the requirements of the City of Stevenson Engineering Standards for Public Works Construction, Volume 3, Erosion Control Plans, Technical Guidance Handbook. A detailed erosion control plan shall be shown in conjunction with the site grading plan.

1.09 Erosion Control Plans

Requirements for erosion control shall be listed in Volume 3 of the City's Engineering Standards.

1.10 Requirements for Utility Plans (Water, Sanitary Sewer, Drainage)

A. General Requirements

- X In plan view, location, stationing, materials, size, of all proposed utility lines (water, storm, sanitary). Location of all fire hydrants. Stationing shall be located in relationship to the street stationing at all manholes or other key locations.
 - X Show all proposed manholes, inlets, and catch basins with all invert and top elevations.
 - X For drainage plans, show existing drainage facilities, including off-site facilities, upstream and downstream that affect the design (i.e., downstream restrictions that back water onto project site). In addition, base flood elevations shall be shown on the profile.
 - X Designate structures using alpha or numeric labels on profiles to correspond to plan view notation. For water plans, each fitting/valve shall have attachment type listed (e.g. FL, MJ, FL x MJ, etc.).
 - X For water plans, provisions for cross-connection control must be clearly shown on the plans, including any retro-fitting of existing water service connections and existing auxiliary water supplies, conversions to City of Stevenson water service that are required as a condition of development approval, upgrading of existing service connections by replacement of same, and any other cross connection control required by state and local rules and codes.
 - X All lengths and dimensions shall be horizontal distances, no slope distances on plans.
 - X Indicate type of pavement restoration required (if working in existing streets).
 - X Dimension existing and new utility locations from right-of-way line and/or property line. For water plans, drawings shall reference distance to nearest existing valve/hydrant from new point of connection to existing watermain.
 - X Check that base map conforms to all requirements listed herein.
- X On plans show existing manholes or give reference distances to existing manholes near

project including manhole number and invert/rim elevations.

- X General construction notes must be included on first plan sheet. Remove notes that don't apply and add additional notes to the list if necessary.
- X List vertical datum on plan and show bench mark to be used for vertical control during construction.

B. Plan View

- X List pipe length, size and material along side of pipe, e.g. 150 l.f. - 8" PVC.
- X Pipe length is to be based on horizontal distance between center of manholes.
- X Indicate direction of flow with arrows on end of pipe entering manhole.

C. Profile View

- X List pipe length, size, material and slope to 4 decimal places (ft per ft), e.g. 150 l.f. - 8" PVC s=0.0125.
- X Slope based on i.e. out of upstream manhole, i.e. in of downstream manhole and horizontal distance between center of manholes.
- X Profile for existing and proposed storm sewer and sanitary sewers. Profiles for water mains less 12 inches or greater in diameter shall be required unless directed so by the City Engineer. Show bedding, and backfill requirements.
- X Show all existing and proposed sanitary, water, storm lines and other utilities crossing the profile.
- X For drainage plans, profiles for ditch and creek flowlines shall extend a minimum of two hundred (200) feet beyond the project, both upstream and downstream. Typical cross sections at fifty (50) foot intervals shall also be submitted.

1.11 Requirements for Supplemental Submittal Information

A. Drainage Calculations

Drainage calculations shall be presented in a clear, concise and complete manner. These calculations shall address all runoff into the drainage system; areas contributing flow to each inlet must be computed separately and each inlet with contributing area shall be designated and shown on an accompanying contour map work sheet.

Initial time of concentration calculation with assumptions listed and charts or nomographs used shall be included with drainage calculations.

B. Other Requirements

Other information to be shown on the construction drawings or the other submittals include:

- X The design assumptions for each street (ex: traffic coefficient, R-value).
- X The design elements such as:
 1. Street classification;
 2. Design speed;
 3. Superelevation;
 4. Average Daily Traffic (ADT) or Design Hourly Volume (DHV).
- X Structural construction plans and the necessary calculations shall be submitted for proposed structures (ex: walls, box culverts, bridges).
- X Any additional information that the City Engineer deems necessary to review the plans and assure compliance with design standards.

C. Detail Sheets

Detail sheets shall not be required where Standard Drawings are referenced by number.

D. Standard Notes.

Standard notes shall be included on the first sheet in the plan set. The following notes shall be included: *Construction shall conform to the requirements of the City of Stevenson Engineering Standards, Volume 2 - Construction Specifications and Details.*

1.12 Review Procedure

Five (5) sets, or as directed by the City Clerk, of complete draft plans shall be submitted for review. Plans shall be complete and shall be stamped and signed by the developer's engineer and shall contain the statement "***I hereby certify that these plans, and related design, were prepared in strict conformance with the City of Stevenson Engineering Standards for Public Works Construction***".

Supporting information and documentation, such as drainage and water system calculations, shall also be submitted.

Upon completion of the detailed review by the City, the City will return one (1) set of draft plans with "Red Line" comments. After the developer's engineer has completed all revisions, five (5) revised plans and the original "Red Line" plans shall be returned to the City.

Following approval of draft plans and calculations by the City Engineer, and following the signing of approval by the Fire Marshal, the developer's engineer will submit the original plans and one copy of all original plans and calculations to the City Clerk for approval signature. Following obtaining the approval signatures, the City Clerk will notify the developer's engineer that the original plans have been signed and are ready for release. The developer's engineer will provide the City with eight copies of complete final approved plans.

Plan review priority will be given to plans submitted for final review. This plan review and approval is valid for one (1) year from the date of plan review fee payment. If a site development permit is obtained, approval is valid for two years from the date of the issuance of the site development permit. Extensions to the permit can be made as part of the Development Permit extension process.

Plan approval means that the plans have been reviewed for reasonableness and compliance with minimum City specifications and standards. This approval does not supersede those standards and specifications, unless specifically varied by the City. Plan approval does not relieve the developer's engineer from responsibility for errors, omissions or deficiencies in the plans.

1.13 As-Built Drawings

Following completion of construction, the developer's engineer shall submit one (1) complete set of mylar as-built drawings. As-built drawings shall contain any and all revisions to the previously approved construction plans, and shall be accompanied by a completion certification letter from the developer's engineer. Each sheet of the as-constructed drawings shall be stamped "As-Built", and signed and dated by the developer's engineer. This signature constitutes a certification that the public improvements, grading, and other elements of the engineered drawings have been completed in accordance with the City approved plans and to the standards of the City. As-builts shall be black India ink on originals or reverse reading, fixed-line, photographically reproduced 4-mil mylar, 24 x 36-inches in size and to engineering scale. Each sheet included in the construction plan shall be as-built. Sepia mylars or vellums will not be accepted. If project was designed on a CAD system, the City also shall receive a copy of all related drawings and documents (such as point files) in AutoCad format dxf or dwg, on disk. As-built drawings will include the following:

- a. All public utility easements.
- b. Distance between main lines in shared easements.
- c. Type of main line, size, and material.
- d. All laterals, including length, plan stationing, size, material, and depths. Reference distance from manholes with as-builts.
- e. Public sidewalk detail.

Submission of as-built drawings shall be made prior to final inspection of a completed project.

1.14 Professional Qualifications

Professionals in the technical fields of Civil Engineering, Electrical Engineering, Geotechnical Engineering, Landscape Architecture, Soils Engineering, Structural Engineering, and Surveying who prepare or are responsible for the preparation of drawings, plans, specifications, technical reports, etc. for the process of obtaining required permits/approvals shall be currently licensed or registered in the State of Washington and qualified by both experience and educational background in the specific technical areas as warranted by the specific needs of the proposed development project.

1.15 Changes to Standards

From time to time changes may be needed to add, delete, or modify the provisions of these standards. The Engineer may propose changes to these Standards and upon approval of the City Council, they shall become effective and shall be incorporated into the existing provisions.

1.16 Design Modifications Process

A. Submittal

Requests to modify City Standards shall be submitted in writing by the developer's engineer, to the City Engineer. This written request shall state the desired modification(s), the reason(s) for the request(s) and a comparison between the specification(s), standard(s), and the modification(s).

Any request for modification or variance of City Standards should be documented with reference to nationally accepted specifications/standards.

B. Review

The request to modify shall be reviewed by the City Engineer, who shall consult the appropriate review authorities and make one of the following decisions:

- X Approve as is,
- X approve with changes,
- X or deny with an explanation.

The modification, if approved, is for project specific use. Approval of a request shall not constitute a precedent.

C. Appeal

The applicant may appeal the City Engineer's decision to the City Council.

D. Criteria for Modification of Standards

The City Engineer may grant a modification to the adopted specifications or standards when any one of the following conditions are met:

- X The specification or standard does not apply in the particular application.
- X Topography, right-of-way, or other geographic conditions impose an economic hardship on the applicant and an equivalent alternative which can accomplish the same design is available that does not compromise public safety or accessibility for the disabled.
- X A change to a specification or standard is required to address a specific design or

construction problem which if not enacted will result in an undue hardship.

1.17 Errors and Omissions

At the discretion of the City, any significant errors or omissions in the approved plans or information used as a basis for such approvals may constitute grounds for withdrawal of any approvals and/or stoppage of any or all of the permitted work. It shall be the responsibility of the developer to show cause why such work should continue, and make such changes in plans that may be required by the City before the plans are reapproved.

1.18 Contractor's Responsibility for Scheduling and Testing

A. General

Testing shall be performed by a certified independent testing lab hired by the developer or developer's contractor with the results being supplied to the City Engineer. The developer shall pay the cost of all testing as outlined herein. Specific requirements for testing are listed in Volume 2 of the Engineering Standards.

The testing is not intended to relieve the contractor from any liability. It is intended to show the inspector and the City that the work meets these Standards.

B. Scheduling

Scheduling shall be completed per Volume 2 of the Engineering Standards.

1.19 Railroad Crossings

A. General

Crossings of railroad rights-of-way shall be done in a manner which conforms with the requirements of the railroad having jurisdiction. If any bonds and/or certificates of insurance protection are required, they shall be furnished by the Contractor or Owner to the railroad company with the City as an additionally-named insured.

B. Permits or Easements

Crossing agreements, permits, and/or easements for such crossings will be obtained by the applicant and all the terms of such permits or easements shall be met by the Owner and Contractor.

1.20 Penalties

Failure to comply with these standards will be cause for withholding or withdrawing approval of plans or plats, forfeiture of bond, withholding Temporary and/or Final Certificate of Occupancy, and/or other penalties as provided by law.