

Chapter 1
GENERAL CONSIDERATIONS

1. Applicability

- a. These Engineering Design Standards, hereinafter referred to as the “Standards” shall apply to all new construction and upgrading of facilities both in the public right-of-way and on-site for water, wastewater, storm drainage, and transportation systems, and for all land alterations including clearing, grading and erosion control. They shall apply for any public or private work including work performed by private parties at their own expense under authority granted by ordinance of the city council or the City’s permit process. Where there are conflicts or differences between these standards and the Port Townsend Municipal Code (PTMC), the PTMC shall govern.

2. Standard Specifications

- a. Except where these Standards provide otherwise, design, construction and materials shall conform to the current edition of the following publications produced by the Washington State Department of Transportation (WSDOT) and the Washington State Chapter of the American Public Works Association (APWA): “Standard Specifications for Road, Bridge and Municipal Construction” (hereinafter referred to as the “WSDOT/APWA Standard Specifications”) and “Standard Plans for Road, Bridge and Municipal Construction” (hereinafter referred to as the “WSDOT/APWA Standard Plans”).
- b. The conditions and standards set forth in the most current edition of the following plans and specifications are incorporated into these standards by reference and shall be applicable when pertinent or required:
 - i. City of Port Townsend Municipal Code (PTMC)
 - ii. City of Port Townsend GMA Comprehensive Plan and all functional plans incorporated by reference into the Port Townsend Comprehensive Plan
 - iii. City of Port Townsend 1997 Water System Plan
 - iv. City of Port Townsend Arterial Street Plan
 - v. City of Port Townsend Non-Motorized Plan
 - vi. City of Port Townsend Gateway Plan
 - vii. City of Port Townsend Urban Waterfront Plan
 - viii. City of Port Townsend Shoreline Management Master Program
 - ix. Jefferson County Solid Waste Plan
 - x. State Environmental Policy Act
 - xi. Rules and Regulations of the State Board of Health regarding public water supplies, as published by the State Department of Health
 - xii. State of Washington Department of Ecology “Criteria for Sewage Works Design”
 - xiii. AWWA Standards
 - xiv. State of Washington Department of Ecology Stormwater Management

- Manual for Puget Sound (SWMM)
- xv. Uniform Building Code
- xvi. Uniform Fire Code
- xvii. Uniform Electrical Code
- xviii. Uniform Plumbing Code
- xix. Uniform Mechanical Code
- xx. WSDOT Design Manual
- xxi. WSDOT Traffic Manual
- xxii. WSDOT Utilities Manual
- xxiii. WSDOT Construction Manual
- xxiv. WSDOT Local Agency Guidelines (LAG) Manual
- xxv. U.S. Department of Transportation Manual on Uniform Traffic Control Devices (MUTCD), as amended by WSDOT
- xxvi. American Association of State Highway and Transportation Officials (AASHTO) “Policy on Geometric Design of Highways and Streets”
- xxvii. Washington State Barrier-free Facility and Design (WAC 51.30)
- xxviii. Conditions and Standards set forth by the State of Washington Department of Labor and Industries

3. Changes to Engineering Design Standards

- a. The Public Works Director is authorized to make minor, technical amendments to these Standards without further city council approval or adoption, although such minor changes must still be forwarded to city council. Such changes shall be effective upon filing with the city clerk. Significant or substantive changes to these Standards require approval by the city council.

4. Severability

- a. If any part of these Standards shall be found invalid, all other parts shall remain in effect.

5. Permits and Applications Required

- a. Public Works Technical Conference: It is strongly recommended that all persons considering development of property within the city request a public works technical conference and pay the required fee to obtain information on street and utility improvement requirements for their development. The technical conference may be mandatory when utilities are to be extended and/or streets are to be opened. The fee for this public works review is used for an internal city review, a meeting with the developer and city staff and a written report by the city describing the required public works improvements. In the case of Type I permits in Tier 1, the fee for the technical conference is credited to the Street Development and/or Utility Development Permit. The project requirements identified in the written report shall remain valid for a period of one year from the date of the review, unless any changes which would materially impact the design of the utility or right-of-way improvements are made to the proposed

development, in which case requirements related to those changes may be modified.

b. Street Development and/or Utility Development Permit:

- i. A Street Development and/or Utility Development Permit must be obtained before any person shall (1) commence any work to clear, grade, disturb, construct or make improvements within any right-of-way, or open for vehicular traffic, even temporarily, any city right-of-way, or (2) install or construct any water, sewer or stormwater system improvements in the city right-of-way.
 - (1) A permit shall not be required for persons performing minor work in the right-of-way such as landscaping.
 - (2) Street Development - Minor Activities Permit may be submitted for projects such as driveways and sidewalks as defined in Chapter 12.07.070 PTMC and Chapter 6 of these standards.
- ii. Street Development - Minor Activities Permit- specific submittal requirements for this Street Development and Utility Permit are included in Chapters 2, 3 and 6 of these standards.
- iii. In the case of work performed by the public works department, preparation of drawings by the director or signing of a public construction contract shall constitute compliance with the permit requirements of this section. Maintenance work by the public works department shall be exempt from the permit requirements of this section.
- iv. All Street and Utility Development permits not tied to a building permit shall expire unless the work is completed within 12 months after issuance of the permit unless earlier revoked; *provided however*, that written request for extensions may be made prior to expiration upon a showing to the public works director that justifiable delays or unanticipated events beyond the control of the applicant have or will preclude timely commencement or completion of the work. Approval of such request shall be discretionary with the public works director. Any extension shall include a condition that the work will be completed within a reasonable time, not to exceed one year, as specifically set forth in the grant of the extension. Only one extension shall be allowed. All Street and Utility Development permits tied to a building permit shall remain valid so long as the building permit remains active with the building department, as shown in the building department files. In the event the building permit becomes inactive as further set forth in the Uniform Building Code and Title 16 PTMC, the Street and Utility Development permits shall automatically expire.

c. Environmental Review:

- (1) **SEPA:** All development, if not exempt, is reviewed for probable significant environmental impacts in accordance with Chapter 19.04 PTMC and the Washington State Environmental Policy Act of 1971 (SEPA). An environmental checklist must be submitted

with each proposed project/development unless specifically exempt. The Port Townsend Building and Community Development Department (BCD) must be consulted for the determination of exemption from SEPA review requirements. If the project is not exempt, the checklist must be completed with responses to the questions that apply to the proposal. The checklist must be submitted with the fees to the Port Townsend BCD Department in City Hall. Fees for SEPA review are set forth in Chapter 20.09 PTMC.

- (2) **Traffic Impacts:** A Traffic Impact Analysis may be required for certain development proposals. A description of when they are required and what must be included in the analysis is provided in Chapter 6 Appendix-6F.
- (3) **Environmentally Sensitive Areas (ESA) Review:** An ESA permit will be required in accordance with Chapter 19.05 PTMC for development of property which contains an environmentally sensitive area. Fees for ESA review and permits are set forth in Chapter 20.09 PTMC.

d. Other Permits:

- (1) Clearing and Grading Permit (by the Public Works Department). This permit is required for any projects involving the movement of 50 cubic yards or more of material.
- (2) Building Permit (by the Building and Community Development Department). A building permit is required for construction work including alteration, repairs and demolition.
- (3) Water Service Application- (by the Public Works Department). For connection to a City water main. Plans shall be submitted with forms provided by the city.
- (4) Side Sewer Permit- (by the Public Works Department). For connection to a City sewer main. Plans shall be submitted with forms provided by the city.

e. Land Use and Other Permits: There are several other city approvals involving land use that may be required for the project prior to or along with the permits listed above and which may be impacted by the standards as contained herein. These may include, but are not necessarily limited to, the following:

- (1) Certification of Lots of Record (Title 18)
- (2) Conditional Use Permits (Title 17)
- (3) Planned Unit Development Approvals (Title 17)
- (4) Shoreline Substantial Development Permits (Title 17)
- (5) Long and short subdivision approvals (Title 18)

f. Waiver or Variance: A waiver or variance from the requirements of these standards may be requested as set forth in Titles 12 and 13 PTMC.

6. Design and Plan Submittals

- a. Developers proposing extensions, replacement and upgrading of public facilities shall submit complete plans, profiles, and specifications along with the required applications for the work to be done to the Port Townsend Public Works Department for review with the Street and Utility Development permit application.
- b. If base maps prepared by a licensed land surveyor are available, the design and construction plans shall be submitted on such maps. If base maps are unavailable, and the public works director determines that a survey is necessary to avoid conflicts with existing facilities, to determine contours, and/or to determine the limits of the right-of-way for utility placement or transportation system construction and design, the applicant shall have the right-of-way surveyed, including elevations along the proposed utility route, by a licensed land surveyor and the plans shall be prepared and submitted on such surveyed base maps.
- c. All plans for water and sewer main extensions or other system improvements and for a new street or paving of an existing street must be prepared, signed and stamped by a Washington State licensed civil engineer.
 - i. For actions which involve a utility main extension or replacement or a street development of 260 feet (one city block) or less in Tier 1 which do not require licensed plans under another authority of the Port Townsend Municipal Code, the developer has the option of the city performing the engineering for the project for a fee as identified in Chapter 3.36 PTMC. Alternatively, the developer may pay for his or her own engineering with the full cost to be borne by the developer. All other plans shall be prepared at the developer's sole cost and expense.
- d. All plans prepared or required under this subsection must be reviewed and approved by the director prior to proceeding with construction of the proposed improvements.
- e. A temporary erosion/sedimentation control plan may be required prior to commencing land-disturbing activities.
- f. All plans must show property lines or right-of-way lines as necessary to determine the location of proposed water and sewer mains, stormwater facilities or streets or other transportation system improvements within the right-of-way.
- g. All drawings shall be on 22" x 34" or 24" x 36" size sheets unless otherwise approved by the City Engineer. The original shall be accurate, scaled, legible and of good quality reproducible ink on Mylar or CADD disk format. The original drawings of the approved plan will become the property of the city. Copies may be submitted on blue-line, oversized Xerox or plotting paper. The minimum requirements of the drawings are shown on the Plan Review Checklist provided in the Appendix to Chapter 1.
- h. Review and approval of the plans and specifications will be made in an expeditious manner. However, the time frame required for the review and approval is dependent upon the completeness and accuracy of the plans and specifications submitted. If the submitted design does not meet the requirements of these standards or project permits, the drawings will be returned to the

- applicant to revise and resubmit.
- i. The Plan submittal process shall be as follows:
 - i. Public Works Technical Conference as needed. The applicant should discuss the proposed project with the Development Review Engineer prior to permit application submittal in order to identify whether a public works technical conference is required.
 - ii. First Submittal (Draft Plans): A “Street and Utility Development Permit Application,” together with three (3) sets of prints of plans and specifications are to be submitted for review and comment. Following Public Works review, one set will be returned with review comments. If the city will be funding a proportionate share of the cost of the improvements in accordance with Titles 12 and 13, an estimate of the total cost of the project is required.
 - iii. Second Submittal (Final Plans): Submit three (3) sets of prints of corrected plans, specifications (if plan notes are not sufficient), calculations as required, revised cost estimates as required, and a proposed testing and measurement schedule for inspection and quality control. All plans are to be submitted to the Public Works Department to the attention of the Public Works Director. Any necessary easements or dedications shall be submitted for review along with the plans. A cursory check of the plans will be made by city staff. If the plans are deemed complete, they will be routed to the appropriate city staff and the final review process will begin. When final plans have been submitted that meet the requirements of these Standards, the public works department will approve the plans and issue the Street and/or Utility Development Permit and return one set of approved plans. All fees for the permit shall be paid before the final permit is received.
 - j. On some projects, this design submittal process may be modified. Project submittal requirements will be determined during initial project discussions.

7. Construction Plan- General Conditions

- a. The following GENERAL CONDITIONS and those contained in the specific chapters dealing with water, wastewater, transportation and other facilities shall be included on any plans when a permit is required.
 - i. A preconstruction meeting shall be held with the city prior to the start of construction
 - ii. All workmanship and materials shall be in accordance with the City of Port Townsend Standards, the current edition of the State of Washington Standard Specifications for Road, Bridge and Municipal Construction, and any project-specific special provisions or conditions and requirements.
 - iii. Temporary erosion control measures are required and shall comply with the stormwater code, Chapter 5 of these Standards and WSDOT/APWA Specification 1-07.15 as follows:
 - (1) Erosion control plans shall be submitted to the city, approved by the

- city, and implemented by the contractor prior to disturbing any soil on the site. Submittal and approval of these plans shall precede any construction activity on the site.
- (2) All permanent storage and retention/detention areas used as part of the temporary erosion control and water pollution/flood activities and conveyance systems shall be cleaned of all silts, sand and other materials following completion of construction and the permanent facilities shall then be completed including permanent infiltration areas.
- iv. Horizontal and vertical controls/datum as adopted by the city shall be used, unless approved otherwise.
 - v. The contractor shall be fully responsible for the location and protection of all existing utilities. The contractor shall verify all utility locations prior to construction by calling Underground Locate at **1-800-424-5555** a minimum of 48 hours prior to any excavation work.
 - vi. All non-ferrous pipe and services shall be installed with continuous tracer tape installed 12" to 18" under the final ground surface. The marker tape shall be 4" wide minimum plastic non-biodegradable, metal core or backing marked and color coded for the utility to be marked and which can be detected by a standard metal detector. Tape shall be Terra Tape "D" or approved equal. In addition to tracer tape, force mains and curved mains shall have a 14 gauge coated copper wire, wrapped around the pipe, brought up, coating stripped, and tied off at the valve stem or manhole ring. The tape and wire shall be furnished and installed by the contractor.
 - vii. Temporary street patching may be allowed with the approval of the City Engineer. Temporary street patching shall be as described in Chapter 6.
 - viii. The contractor shall provide a traffic control plan(s) for review and approval by the City Engineer in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).
 - ix. The contractor shall have a copy of the approved plans and permits at the construction site at all times.
 - x. Special structures shall be installed per plans and manufacturers' recommendations.
 - xi. All disturbed areas shall receive temporary and permanent erosion control in the form of vegetation establishment such as grass seeding. A means shall be established to protect the permanent storm drain system prior to establishment of the permanent erosion control measures. These methods shall be included in the erosion and sediment control plans in accordance with Chapter 5 of these standards.
 - xii. Construction work hours shall be restricted to 7 A.M. to 6 P.M., Monday through Friday, unless otherwise approved in writing.
 - xiii. The city public works inspector shall be notified a minimum of 24 hours in advance of the need for an inspection. Every effort will be made to accommodate same-day inspections if the city is notified before 8 am.

8. Construction

- a. All construction in the public right-of-way, other than that performed by city forces, shall be by a licensed and bonded contractor of the State of Washington.
- b. It is emphasized that no construction shall be started until approval of plans by the Public Works Department.
- c. Pre-construction Conference. Prior to the start of any clearing and grading activities or other construction approved through Public Works Department permits, an on-site pre-construction conference shall be held to review the requirements of the project and the project schedule. It is the responsibility of the owner, contractor, developer or their representatives to notify the city and schedule this meeting.
- d. All construction surveying and staking shall be as described under the heading "Surveying."
- e. All work performed within the public rights-of-way or easements or as described in these standards, whether by or for a private developer, by city forces, or by a city contractor shall be done to the satisfaction of the Director and in accordance with the WSDOT/APWA Standard Specifications, any approved plans and these Standards. Any revision to construction plans must be approved in writing, by the City Engineer, before being implemented. Failure to receive city approval can result in removal or modification of construction at the contractor's or developer's expense to bring it into conformance with approved plans, as well as civil penalties and other enforcement remedies pursuant to Chapter 20.10 PTMC.
- f. The contractor is required to supply sufficient skilled workers and suitable materials and equipment, and must furnish or perform the work in such a way that the completed work will conform to the approved plans.
- g. If temporary erosion and sediment control measures used by the contractor do not prevent sediment from leaving the site, the city will require further measures be taken to prevent erosion, and if not implemented, the city may order the contractor to stop work until corrective measures are taken.

9. Inspection

- a. All construction must be inspected by the city and the cost paid for by the developer.
- b. The city shall have the authority to enforce these standards as well as other referenced or pertinent specifications. The city will appoint project engineers, assistants and/or inspectors as necessary to inspect the work and they will exercise such authority as the Director may delegate.
- c. Specific inspections, test measurements or actions required of all work and materials will be set forth in the design submittals. Tests shall be performed at the developer's or contractor's expense.
- d. Failure to comply with the provisions of these standards may result in stop work orders, removal of work accomplished, non-acceptance of the work, or other penalties as established by 20.10 PTMC.
- e. It is the responsibility of the developer, contractor or their agents to have an approved set of plans and permits on the job site whenever work is being accomplished. These plans shall be made available to any representative of the city involved with inspecting

- or monitoring the project.
- f. The city has the authority to disapprove of defective work, or work that will not produce a completed project that conforms to the approved plans or that will prejudice the integrity of the design of the completed project as a functioning whole as indicated by the approved plans.
 - g. Upon notice from the contractor that the entire work or an agreed portion thereof is complete, the city representative will make a final inspection with the applicant and contractor and will notify the contractor in writing of all particulars in which this inspection reveals that the work is incomplete or defective. The contractor shall immediately take such measures as are necessary to complete such work or remedy such deficiencies.

10. Project Approval and Acceptance

- a. A project is considered final and accepted by the city when the city issues a notice of final acceptance indicating that the contractor has completed all work and corrections as needed and as-builts are approved.
- b. The city reserves the right to reject any installation not inspected, tested and approved by the department. Upon satisfactory completion of all required tests and acceptance of the improvements, the department shall cause the improvements to be connected to the city system. All costs incurred in such connection(s) shall be the responsibility of the customer.
- c. As a condition of acceptance of the improvements by the city, the permit holder shall provide the city with (1) a statement of the actual cost of design and construction of the improvements (2) a properly executed bill of sale for all improvements; and (3) as-built drawings as described below.
- d. No main shall be energized other than for test purposes by duly authorized personnel until the main has been accepted by the city and all fees and charges have been paid.
- e. No permanent water service will be permitted for any lot or building served by a project until final approval of the improvements has been granted.
- f. “As BUILTS” and Final Submittal: Following construction, one (1) set of reproducible Mylar and one set of copies of “As BUILTS” shall be submitted with the completed “Conveyance of Public Facilities Form” prior to final City acceptance of the wastewater, water, street, and/or storm drain facility installation. For any work designed by engineers, as-builts shall be stamped by a Professional Engineer stating that the facilities were built according to the City Design Standards and that the facilities were built as shown in the As-BUILTS. Digital records are desirable for all projects and are required for all final plats in accordance with Title 18.

11. Fees

- a. Fees and charges are established in the Port Townsend Municipal Code.
- b. All plan check fees are due upon approval of the plans and permit applications.
- c. Developers will be charged for all inspection time spent on a project that exceeds the two (2) hours included in the initial inspection fee. Poor performance, delays, etc.,

will generally require extra time spent on the part of the City. The project will not be accepted by Public Works until all bills are paid.

- d. In addition, there are various miscellaneous service and connection fees and charges. We strongly urge all applicants to request an estimate of the fees and charges for a project from the Building and Community Development Department early on in a project.

12. City Performed Work

- a. When work related to a development is to be performed by the city, the city will provide all material required for the work. The cost for the material and the work performed shall be at the developer's expense. Any requests for city work should be scheduled at least one week in advance. Coordination with the specific department will help minimize delays.

13. Latecomer Agreements

- a. When water, wastewater, stormwater or transportation facilities are required for a development, the developer may be eligible for reimbursement of a portion of the capital costs. This potential should be discussed with the city early in the project.
- b. Latecomer Agreements must be set up in accordance with PTMC Chapter 13.04 (Utilities) and PTMC Chapter 12.26 (Streets).

14. Bonding

- a. The public works director may require that the developer furnish the city with a performance bond in which assurance is given that the required improvements will be installed as provided in the approved plans and that the installed improvements will perform free of material defects for a period of one year from the date of city acceptance of the improvements. Types of securities include a bond with a surety qualified to do bonding business in the State of Washington, a cash deposit or an assigned bank account. Any security posted with the city shall be in an amount equal to 120 percent of the estimated cost for the city to contract for construction or replacement of the improvements as determined by the public works director, and shall be for a period of one year from the date of acceptance of the improvements by the city.

15. Utility Locations

- a. Utilities within the right-of-way or easement on new roads or in roadways where existing utilities are not in conflict, shall be located in the standard locations as shown on Standard Drawings. Where existing utilities are in place, new utilities shall conform to these standards as nearly as practical and yet be compatible with the existing installations. Deviations of locations shall be approved by the City Engineer. Existing utilities shall be shown using the best information available. Field exploration/excavation may be required if utilities are in conflict with the proposed

design.

- b. Call Before You Dig. All developers/contractors are responsible for timely notification of all utilities in advance of any construction in right-of-way or within utility easements. The utilities one-call Underground Location Center phone number is **1-800-424-5555**. This number can be used for design as well as construction.

16. Easements

- a. Where public utilities and/or their conveyance systems cross private lands or are not otherwise in the public right-of-way, an easement shall be granted to the city. The applicant will generally process, record and file all easements. Prior to recording, the easement must be reviewed and approved by the City Attorney. If ownership of the property upon which the easement is proposed, unknown or in dispute, the City may require title insurance. If the property is platted, the easement may be conveyed when the short plat or final plat is filed. All easements not shown on the plat must be prepared by a licensed surveyor or engineering firm capable of performing such work. All easements shall be filed prior to approval for construction.
- b. Easements are required for all sanitary sewer lines, water mains, storm drains, streets, pathways or other improvements installed outside of existing city right-of-way. No permanent structures or fences are allowed on the easement.
- c. Easement widths shall be a minimum of 20 feet for a single utility and a minimum of 25 feet for multiple utilities. Construction easements shall be 30 feet minimum in total width, including the permanent easement. When deeper trench depths dictate or where pipe diameter or vault widths exceed four feet, a wider easement may be required by the Director.
- d. Vehicle access will be provided to all valves, maintenance holes or other facilities requiring maintenance.
- e. Easements are required to be submitted in draft, unsigned for review and approval prior to plan approval. Any change in design which places an amenity outside of the easement may necessitate stopping of construction until plans and easements can be resubmitted and approved.
- f. If it is necessary to install a sewer storm drain, or water main in a private road, the minimum easement width shall be the width of the traveled road surface plus two feet.
- g. The location and elevation of sewer, water, and storm drain facilities within all easements shall be verified and certified in writing by a licensed land surveyor or engineer.
- h. Landscaping in utility easements should be restricted to low growing shrubs, grasses and shallow rooted plants.

17. Utility Extensions

- a. Anyone who wishes to extend any city utility should contact the Department of Public Works for information on the policies and procedures relating to the extension of utilities.
- b. Utility mains shall be extended to and through the lot frontage of the property being developed and to the next street intersection, unless otherwise approved by the Public

Works Director. Larger or remotely located projects may be required to provide looped connections or extensions beyond the development property to ensure adequate delivery of services.

- c. City utility extensions shall only be allowed inside the city limits or in the city's out-of-city water service areas.

18. Traffic Control

- a. Whenever work is done within the city's right-of-way which obstructs vehicular or pedestrian traffic, the developer/contractor shall be responsible for providing a certified flagger or flaggers on site. The developer/contractor shall be responsible for interim traffic control during construction on or along traveled roadways. Traffic control shall follow the guidelines of the WSDOT/APWA Standard Specifications and the MUTCD. At the city's discretion a traffic control plan may be required prior to construction.
- b. Signs must be legible and visible and should be removed at the end of each workday if not applicable after construction hours. The MUTCD provides further specification of sign materials and some standard procedures.
- c. When road closures and detours are anticipated, and cannot be avoided, the contractor/developer shall notify the Public Works Department. The city requires a detour plan be prepared, submitted and approved prior to closing any portion of a city roadway. It is the responsibility of the developer to keep the police and emergency services, transit and school bus dispatchers notified of changes in the traffic pattern.

19. Surveying, Staking and Monumentation

- a. All survey work required by these Standards or the Port Townsend Municipal Code shall be performed by or under the direct supervision, of a Professional Land Surveyor (PLS) licensed in the State of Washington.
- b. Surveying necessary to construct a given project per the approved plans, shall be furnished by the developer at no expense to the city.
- c. Construction Staking. Survey stakes shall be set for new street and curb and gutter construction, for both horizontal and vertical control. Additionally, any water, storm drain, or sanitary sewer mains which are to be constructed in easements are to have survey offset stakes set prior to starting that work, and any deviation from that staked line must be left uncovered and resurveyed to realign easement as required and for corrected as-built information.
- d. Where required by the Land Division Ordinance (Title 18), it shall be the developer's/contractor's responsibility to provide the surveying required to establish or perpetuate land corner monumentation as may be required on the project.
- e. All land corner surveying shall conform to the requirements of RCW 58.09. If the developer's or contractor's surveyor replaces or restores an existing or obliterated "General Land Office" (GO) corner(s), it shall be their responsibility to file "Land Corner Records" for these monuments with the Jefferson County Auditor's Office.
- f. When all land corners have been established, replaced or restored and monumented, the surveyor shall certify this information with a letter to the Public Works Director.

This certification letter shall include the location of the monumented corner(s) and that all land corner(s) have been monumented as described herein.

- g. The city reserves the right to check survey points and/or the correct locations and elevations of new construction. These spot checks will not change the requirements for normal checking and testing as described elsewhere, and do not relieve the contractor of the responsibility of producing a finished product that is in accordance with the approved construction plans. If unacceptable errors are found due to errors or omissions by the contractor's survey activities, then the applicant shall be responsible for work necessary to correct these errors including removing and replacing improvements and pay all expenses incurred by the city including the re-survey.
- h. Survey Monuments. All existing survey control monuments which are disturbed, lost, or destroyed during surveying or building shall be replaced with the proper monument as outlined below by a land surveyor registered in the State of Washington. All such work shall be at the expense of the responsible builder or developer. Monuments shall be as follows:
 - i. Street Type: Arterials and Collectors. A precast concrete monument per WSDOT/APWA Standard Plan No. H-7, except that the cover shall read "MON." If the monument case and cover are placed in cement concrete pavement, the pre-cast base will not be necessary.
 - ii. Street Type: Local Access. A cast-in-place concrete surface monument with sufficient ferrous metal embedded to allow for detection by a magnetic detection device. Cap shall be "Berntsen RB Series" or brass plug marker.
 - iii. Monument Locations. Appropriate monuments shall be placed at the following locations, unless otherwise directed by the City Engineer:
 - (1) At all street centerline intersections.
 - (2) At the PC and PT's of all horizontal curves.
 - (3) At PI of all horizontal curves of street where the PI lies within the limits of the traveled roadway.
 - (4) At all right-of-way corners, control points and angle points around the perimeter of subdivisions. Internal monuments shall be those as required in platting.
 - (5) At all section corners, quarter corners, and sixteenth corners that fall within the right-of-way.
 - iv. The monument case shall be installed after the final course of surfacing has been placed.

CHAPTER 1 - APPENDIX

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| Exhibit 1 | Tiering Map |
| Exhibit 2 | Plan Review Checklist |

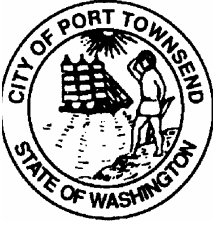


Exhibit 2

City of Port Townsend – Public Works Department
Public Improvements – Plan Review Checklist

Project Name: _____

| NA | "OK" | REVIEW ITEM |
|----------------------------|------|--|
| General | | |
| | | Vicinity Map |
| | | Legend (APWA Standard Symbols) |
| | | North Arrows |
| | | Scale Bar |
| | | Datum - Bench Mark Elevation and Location |
| Title Block | | |
| | | Title |
| | | Design By: |
| | | Drawn By: |
| | | Date: |
| | | Checked By: |
| | | Port Townsend Drawing Number |
| | | Signature Approval Block: Approved for Construction By: _____ (City Engineer) Date: _____ Approval Expires: _____ |
| | | Number of Total Sheets |
| | | Section, Township, and Range or Block, Lot, TPA |
| | | Engineer's Stamp (Signed and Dated) |
| | | Project Title Cover Sheet and Sheet Index |
| | | Utility System Map - Showing all Proposed Utility Changes on one Drawing (1"=300') |
| | | Plans Submitted on 24" by 36" Sheets |
| | | Detail Sheet(s) |
| | | Engineering Calculations and Basis for Design |
| | | Traffic Control Plan - per MUTCD |
| | | Coordinates for the Project, as needed |
| Plan Standard Items | | |
| | | Centerline Stations |
| | | Edge of Pavement and Width |
| | | Right-of-Way and Width |
| | | Proposed Survey Monumentation |
| | | Sidewalk and Width |
| | | Match Lines |
| | | Roadway Typical Sections |
| | | Existing Utilities (Above and Below Ground) |
| | | Coordinates (Two Known Points) |
| | | Adjacent Property Lines, Ownerships, and Parcel Number |

| NA | "OK" | REVIEW ITEM |
|-----------------------|------|---|
| | | Identify Where to Match Existing |
| | | Define Survey Baseline (Basis of Bearings) |
| | | Easements |
| | | Stations and Offsets for Structures |
| | | Flow Direction Arrows |
| | | Identify Street Names, Right-of-Way, Parcels, House Numbers and Lots |
| | | Profile Grades (Decimal Ft/Ft or Percentage) |
| | | Existing Ground |
| | | Scale (Horizontal and Vertical) |
| | | Stationing |
| | | Vertical Curve Data |
| | | Vertical Elevation Increments and Grid |
| Sanitary Sewer | | |
| Plan View | | |
| | | System Map (1"=300') Showing Existing and Proposed Line Sizes, Manholes, etc. |
| | | Station Shown at Each Manhole |
| | | Manholes Numbered |
| | | Manhole Type Designation |
| | | Flow Direction with Arrow on Pipe |
| | | Depth at Property Line and Distance from Downstream Manhole for Side Sewer |
| | | Distance from Water Lines |
| Profile View | | |
| | | Manholes Numbered |
| | | Invert In and Out Elevation to Nearest 1/100 Foot |
| | | Rim Elevation |
| | | Grades Shown to Decimal Form Ft/Ft or Percentage |
| | | Type of Pipe |
| | | Size of Pipe |
| | | Length of Pipe in L.F. to nearest 1/10 Foot |
| | | Existing Utilities Shown |
| Water | | |
| Plan View | | |
| | | System Map (1"=300') Showing Existing and Proposed Line Sizes, Valves, and Hydrants |
| | | Conflicts with Existing Utilities |
| | | Fire Hydrant Locations |
| | | Blow-Off Locations |
| | | Vacuum and Air Release Valves |
| | | Tees, Crosses, Elbows, Adapters, and Valves need Coupling Type |
| | | Meter Locations and Sizes |
| | | Fire Department Connections |
| | | Thrust Blocking Required at All Fittings Including In-Line Valves |
| | | Distance to Sewer |
| Profile View | | |
| | | Existing Utility Crossings |
| | | Show Fixture such as Hydrants, Valves, Blow-Offs, etc. |
| | | Size of Water Main |

| NA | "OK" | REVIEW ITEM |
|-----------------------------------|------|--|
| | | Length of Water Main in L.F. to nearest 1/10 foot |
| | | Engineered Design Grade of Flow Line (Ft/Ft or %) |
| Storm Drainage | | |
| Drainage and Erosion Control Plan | | |
| | | Site Soil Conditions - Geotechnical Report, as required |
| | | Site Map with Topographic Features: <ul style="list-style-type: none"> • Project Boundaries • Basin Boundaries • Major Drainage Features • 100 Year Flood Plain • Environmentally Sensitive Areas • Location of Well within 1,200 Ft of Proposed Retention/Detention Facilities • Location of Existing and Proposed Fuel Tanks • Existing and Proposed On-Site Sanitary Systems within 100 Ft of Proposed Retention/Detention Facilities • Easements for Existing and Proposed Utilities • Proposed Structures including Roads and Parking Surfaces • Lot Dimensions and Areas • Contours of Existing and Proposed Final |
| | | Details of Siltation Ponds and Channels |
| | | Site Plan Showing Flow Directions, Maximum Velocities, and Channel Slopes |
| | | Location of Check Dams, Filter Fabric, and Other BMP's Recommended |
| | | Mulching Vegetation Plan |
| | | Maintenance Schedule of All Drainage Facilities |
| | | Copy of Insurance |
| | | Security Bond, as required by City Engineer |
| | | Method of Construction Access Control to be Employed |
| | | Vicinity Map |
| | | Engineer's Construction Estimate |
| | | Limits of Clearing and Grading |
| | | Construction Sequence |
| | | Hydraulic Calculations |
| Plan View | | |
| | | Station and Number of each Manhole and Catch Basin |
| | | Manhole and Catch Basin Type and Size |
| | | Flow Direction with Arrow on Pipe |
| | | Size of Pipe |
| Profile View | | |
| | | Manhole and Catch Basin Rim Elevation |
| | | Type and Size of Pipe |
| | | Length of Pipe in L.F. to nearest 1/10 Foot |
| | | Station and Number of each Manhole and Catch Basin |
| | | Invert Elevation in and out of Manhole and Catch Basin |
| | | Grades in Ft/Ft or Percentage |
| | | Design Velocity in Pipe |
| Maintenance Report | | |
| | | Required Type and Frequency of Long-Term Maintenance |
| | | Identification of Responsible Maintenance Organization |
| | | Frequency of Sediment Removal |

| NA | "OK" | REVIEW ITEM |
|---------------------------------|------|--|
| | | Clearing of Catch Basins |
| | | Vegetation Control |
| | | Annual Cost Estimate of Maintenance |
| Street | | |
| Plan View | | |
| | | Identify Surrounding Parcels, Ownerships and House Numbers |
| | | Flow Direction Arrows at Curb Returns Showing Grade |
| | | Spot Elevations on Curb Returns |
| | | Station PC, PT, PI and Intersections |
| | | Curve Information Delta, Radius, Length and Tangent |
| | | Begin Curve Radius and End Curve Radius |
| | | Identify All Field Design Situations |
| | | Match Existing Flow, Directions and Elevations |
| | | Typical Sections |
| | | Pavement Marking Details with Stations and Offsets |
| | | Sidewalk's Location and Type |
| | | Driveway Entrances, Location and Type |
| | | Roadway Materials, Location and Width |
| | | Handicap Ramps - Detail and Type |
| Profile View | | |
| | | Vertical Information on VPI, BVC, EVC, AP, Low Point, High Point |
| | | Show Grades in Decimal Form with (+ or -) Slope (Curb Return Profiles) |
| | | Super Elevated Roadways: <ul style="list-style-type: none"> • Detail-Show Transitions • Special Detail Showing Gutter Flowing Adequately |
| Illumination and Signals | | |
| Lighting | | |
| | | Station and Offset Fixtures |
| | | Pole Type, including Manufacturer and Model Number |
| | | Mounting Height, Arm Length, Anchor Bolt Size, and Pattern |
| | | Power Source, Size of Wire, Conduit Type, Line-Loss Calculations |
| | | Luminaire Type and Lamp Wattage |
| | | Location of Service Disconnects |
| | | J-Box Locations |
| Signals | | |
| | | Follow WSDOT Specifications |
| | | Station and Offset to Signal Base, Cabinets, Ped. Lead, Loops, etc. |
| | | Wiring Schedule |
| | | Signal Heads and Mounting Assembly |
| | | Detection Loops |
| | | Optigom |
| | | Control Cabinet, Size and Layout |
| | | Power Source |
| | | Conduit |
| | | Wire Size and Type |
| | | Construction Notes |
| | | J-Box Schedule |

