WOODLAND PLANNING COMMISSION AGENDA

Planning Commission Regular Meeting – 7:00 PM

SPECIAL DAY: Thursday, April 24, 2014

Woodland NEW City Council Chambers
200 E Scott Avenue, Woodland, Washington

CALL TO ORDER – 7:00 PM

APPROVAL OF MINUTES

- January 16, 2014 meeting minutes (held over)
- March 20, 2014 meeting minutes

WORKSHOP

- WMC Title 12 Streets & Sidewalks, WMC Title 13 Water & Sewage, and WMC Title 14 Municipal Public Works Code
    - Draft Code

- Haddock Plat Amendment/Lot Consolidation
    - Application & Maps
    - Staff Report

PRESENTATION

- 2016 Comprehensive Plan Update
    - Public Participation Plan draft
    - Other discussion

ADJOURN

cc: Post (City Hall Annex, Library, Post Office, City Hall)
City of Woodland website
Planning Commission (5)
City Council (7)
Mayor
Department Heads

WOODLAND PLANNING COMMISSION MINUTES

Planning Commission Regular Meeting – 7:00 PM

Thursday, January 16, 2014

City Council Chambers
200 E Scott Avenue, Woodland, Washington

CALL TO ORDER
The meeting was called to order at 7:01PM.

PRESENT:	Commissioner Deborah Deans Commissioner David Simpson Commissioner Sharon Watt
ABSENT:	Commissioner Tel Jensen Commissioner Mike Amirenini
STAFF:	Public Works Director Bart Stepp Community Development Planner Amanda Smeller Clerk Jessica Myers

APPROVAL OF November 21, 2013 Minutes
Commissioner Watt made a motion to approve minutes as written. This motion was seconded by Commissioner Simpson and passed unanimously.

WORKSHOP

- Sign Ordinance
  The Commission would like to see a solution to complaint driven infractions for illegal signs. They also would like to see sign information going to new businesses when they apply for a license. Commissioner Watt would like painted sign wording added. Commissioner Simpson would like frontage to be better defined to prevent a 'sign war,' with Commissioner Watt agreeing.

- Clarification of responsibility of permit/sign size
  Commissioners agree that property owner is required to sign permit for sign. Commissioner Watt believes political signs are allowed on public right of way areas. On page 7, next to last paragraph, Commissioner Simpson would like to see for sale or rent signs with only name of real estate and information about the property. Amanda expressed she cannot regulate content of sign. Commissioner Deans thinks page 3 section G is more hassle then it is worth on the real estate signs. Commissioner Simpson would like to see the cost of simple signs to be less money. Simple meaning painted or tarp, no bolts or nuts used in construction. Also, would like to see more encouragement for having murals. Commissioner Deans notes section 3-5 are good, along with page 12. And ok with wording on all of it.

DRAFT

Commissioner Watt would like clarification on 17.52.070. She would like wording to clarify on street frontage wording, not to just say frontage.

DISCUSSION

- Lot sizes
  Staff report was given by Amanda Smeller, stating there is no limit on how many buildings you can have. Comp plan amendment deadline is June 2016. Bart Stepp added that there are a few subdivision plats expiring that are 5 acre pieces.
  Commissioners agreed to leave allowable accessory building sizes for lots less than 12,000 sq ft. Lot sizes larger than 12,000 sq ft Commissioner Simpson would like to see one permanent building up to 2,500 sq ft, with sheds allowed with going through the process of a hearing examiner. Commissioner Simpson asked about a lot size of 1,300 sq ft. Amanda responded that it would be considered a minor variance.

- Review of City projects
  MRSC says we should have some language in our code about city projects and applications. The recommendation was for it to go to a hearing examiner. Maybe add it to chapter 19?

  Back on track for the shorelines, the first draft will be ready in a few months.

- Schedule the Joint Planning Commission/City Council Goals Setting Meeting
  Set for 2/10/14. With City Council wants to discuss the Gateway project. Should it be a C-2? Commission would like to see foot traffic and attraction to downtown area. Commissioner Simpson wants everyone to think about the C-2 zone, and thinks that the re-zone will kill the walk ability.

ADJOURNMENT 9:11 PM

A motion to adjourn the meeting was made by Commissioner Watt, seconded by Commissioner Simpson, and unanimously approved at 9:11 PM.

_____ _____

Jessica Myers, Administrative Clerk Date

These minutes are not a verbatim record of the proceedings.

DRAFT

WOODLAND PLANNING COMMISSION MINUTES

Planning Commission Regular Meeting – 7:00 PM

Thursday, March 20, 2014

City Council Chambers
200 E Scott Avenue, Woodland, Washington

CALL TO ORDER
The meeting was called to order at 7:04PM.

PRESENT: Commissioner David Simpson
Commissioner Murali Amirenini
Commissioner Sharon Watt

ABSENT: Commissioner Tel Jensen
Commissioner Deborah Deans

STAFF:
Public Works Director Bart Stepp
Community Development Planner Amanda Smeller
Clerk Jessica Myers

APPROVAL OF January 16, 2014 Minutes
Minutes could not be approved without three Commissioners from January's meeting present.

WORKSHOP

- Sign Ordinance

  Amanda gave a refresher on sign-murals and frontage to catch Commissioner Murali up to speed. Commissioner Simpson likes the notes in gray, gives the board some topics to think about. Commissioner Amirenini questioned section K. Smeller explained that it has been discussed before and it sounds funny, but it is right. Smeller will look at it again to possibly change it. Commissioner Simpson wants to know are murals exempt. Smeller and Stepp expressed that for window and painted signs it is a $75.00 fee. Smeller also added that once you identify the business in the painting you need a permit for a sign. Commissioner would like to see the fee for a mural lower than that. Commissioner Watt would like to see a definition added to the code that states clearly what a mural is. Commissioner Simpson would like to not add the City of Zilla's language on Real Estate signs on 'higher signs.' Commissioners agreed that signs pertaining only to the sale or rent of property can be on the sign. Commissioner Amirenini added that it is an eye sore to have multiple advertising on one sign. Commissioners would like the input from Mary Parsons-Code Enforcement. They want her opinion on the sign code. Commissioner Simpson stated that she is the one dealing with it, so he wants to just help make it easier on her. Smeller said she will supply Parsons with a copy of the drafted sign code.

DRAFT

DISCUSSION

- Joint Planning Commission/City Council Goals 2014

- Gateway Rezone

  Smeller gave a Staff Report of the Gateway Rezone Process. She has heard back from 3 of the property owners. The 3 property owners we heard from own a majority of the land in the Gateway Rezone. Commissioner Simpson wants to make sure we don't need to have ok by owner. Rezoning from a C1 to a C2, will make the bank property conforming. Commissioner Simpson would like to see the Park and Ride rezoned to a PQPI as well as the pool. He states this is for housekeeping purposes. Stepp suggested an open house for the Gateway Rezone. Stepp also asked about if the Commissioners wanted to pick out any pieces of property or all them all to the rezone. Commissioner Simpson stated he liked it the way it was. Idea for an open house was to have a booth at Planter's Day. Commissioner Simpson would like everyone to read a section a month for the Comprehensive Plan.

- Project update

  Smeller's report was-American paper appeal is set for March 25, 2014. The city is taking a side with American Paper. They would like the requirement removed on for the Robinson road frontage update. The county wants them to make frontage improvements, which would include streetlights and sidewalks. Also, there is no application for a Winco and Smeller thinks the application for Taco Bell will be coming soon.

ADJOURNMENT 8:34 PM

A motion to adjourn the meeting was made by Commissioner Watt, seconded by Commissioner Amirenini, and unanimously approved at 8:34 PM. Next meeting will be April 24, 2014. Commissioner Deans and Jensen should be back.

_____ _____

Jessica Myers, Administrative Clerk Date

These minutes are not a verbatim record of the proceedings.

DRAFT

Title 12 STREETS AND SIDEWALKS

Chapters:

Chapter 12.02 - ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION SPECIFICATIONS AND PLANS

Chapter 12.04 - STREET EXCAVATIONS*

Chapter 12.06 - INSTALLATION OF SIDEWALKS

Chapter 12.08 - CURB AND SIDEWALK MAINTENANCE*

~~Chapter 12.10 - IMPROVEMENT STANDARDS~~(Repealed)

Chapter 12.14 - STREET CONSTRUCTION

~~Chapter 12.16 - DRIVEWAY CONSTRUCTION~~(Repealed)

Chapter 12.20 - PROHIBITED DISCHARGES ONTO STREETS AND INTO DRAINS

Chapter 12.24 - POLICIES AND PROCEDURES RELATING TO CONTRACTS FOR CONSTRUCTION OF PUBLIC FACILITIES

Chapter 12.28 - WOODLAND STREET TREES

Chapter 12.02 ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION SPECIFICATIONS AND PLANS

Sections:

12.02.010 Adoption.

12.02.020 City of Woodland Public Works Engineering Standards for Construction (new)

12.02.010 Adoption.

The ~~1991~~ 2014 Standard Specifications and Standard Plans for Road, Bridge, and Municipal Construction, as published by the Washington State Department of Transportation and the American Public Works Association, as currently printed or hereafter amended, is adopted by reference.

(Ord. 732 § 2, 1992)

12.02.020 City of Woodland Public Works Engineering Standards for Construction (new)

All construction within City Right-of-Way will meet the requirements of the current version of the City of Woodland Public Works Engineering Standards for Construction.

Chapter 12.04 STREET EXCAVATIONS*

Sections:

12.04.010 Definitions.

12.04.020 Permit required.

12.04.030 Permit exemptions.

12.04.040 Permit application.

12.04.050 Permit fee.

12.04.060 Disruption fee.

12.04.070 Security required.

12.04.080 Insurance required.

12.04.090 Routing of traffic.

12.04.100 Clearance for fire equipment.

12.04.110 Traffic-control devices.

12.04.120 Utility removal and protection.

12.04.130 Attractive nuisance—Unlawful to leave unguarded.

12.04.140 Property lines and easements.

~~12.04.150 Cleanup.~~ (Repealed)

~~12.04.160 Backfilling.~~(Repealed)

~~12.04.170 Restoration of surface by permittee.~~

12.04.180 City completion and restoration.

~~12.04.190 Open trench length.~~

12.04.200 Diligence in completion of work.

12.04.210 Power of public works director to order emergency work.

12.04.220 Emergency action.

12.04.230 Minimization of noise, dust and debris.

12.04.240 Preservation of monuments.

12.04.250 Inspections.

12.04.260 Maintenance of drawings, plans and profiles.

12.04.270 Liability of city.

12.04.280 Violation—Penalty.

12.04.010 Definitions.

For the purposes of this chapter, the following terms, phrases, words, and their derivations shall have the meaning given in this section. When not inconsistent with the context, words used in the present tense include the future, words in the plural number include the singular number, and words in the

singular number include the plural number. The word "shall" is always mandatory and not merely directory:

"Applicant" means any person making written application to the public works department for an excavation permit hereunder.

"City" means the city of Woodland.

"City council" or "council" means the city council of the city of Woodland.

"Permittee" means any person who has been granted and has in full force and effect an excavation permit issued under this chapter.

"Person" means any person, firm, partnership, association, corporation, company or organization of any kind.

"Public works director" means the public works director or his designee.

"Right-of-way" means the area of land dedicated for current or future public use.

"Street" means any street, highway, sidewalk, alley, avenue, easement, or other public way or public grounds in the city.

(Ord. 856 § 1 (part), 1997)

12.04.020 Permit required.

Whenever any person, firm or corporation, intends to construct, excavate or install any facility in the city right-of-way, including the extension of city utilities, they shall first obtain a right-of-way access/utility permit. Failure to obtain such a permit as a condition precedent to undertaking such work shall constitute a misdemeanor under Chapter 1.12. Typical facilities covered by this chapter are signposts, utility poles, culverts, underground utilities, curbs, sidewalks, driveways, bus shelters, fences, street lights or any manner of obstruction and/or construction which occupies the right-of-way.

(Ord. 856 § 1 (part), 1997)

12.04.030 Permit exemptions.

A right-of-way access/utility permit shall not be required under the following conditions:

A. When city employees, or contractors engaged by the city, perform work on behalf of the city within the right-of-way;

B. When a public utility, under franchise agreement with the city, performs normal maintenance as defined in the franchise agreement in order to protect the existing utility system;

C. When natural disasters or other emergencies make it impossible to obtain a permit prior to commencing work. In such event, the director of public works shall be notified as soon as possible.

(Ord. 856 § 1 (part), 1997)

12.04.040 Permit application.

The permit application shall be accompanied by detailed plans and specifications covering the construction in accordance with the requirements of the public works department. The permit shall require the approval of the public works director and if the traveled way will be obstructed, the police department and fire department shall be notified.

(Ord. 856 § 1 (part), 1997)

12.04.050 Permit fee.

A permit fee in an amount established by resolution of the city council shall accompany the right-of-way access/utility permit application. In addition, plan check and inspection fees will be levied as required by resolution of the city council.

(Ord. 856 § 1 (part), 1997)

12.04.060 Disruption fee.

When an underground utility installation is made within five years after improvement of a street to city standards, a disruption fee in addition to the fees prescribed in Section 12.04.050 shall apply. The fee shall be paid at the time the permit fee is due. This additional disruption fee shall be five times the estimated cost of restoration as determined by the public works director if the installation is made during the first year after the street improvement is completed, four times during the second year, three times during the third year, two times during the fourth year, and equal to the estimated construction cost during the fifth year; provided, however, the public works department shall notify all persons utilizing any portion of the city right-of-way under a franchise and such other special districts and municipal corporations as may be subjected to the disruption fee as soon as practicable following the final decision of the city to so improve a street. Where no permit fee is required, the disruption fee shall be paid at the time the work is undertaken.

(Ord. 856 § 1 (part), 1997)

12.04.070 Security required.

Prior to commencement of the work under a permit granted pursuant to this chapter, the City may require the permittee or the contractor for the permittee ~~shall~~ to post with the city a bond with a surety qualified to do bonding business in this state, a cash deposit or an assigned savings account or other security acceptable to the city in an amount equal to one hundred fifty percent of the cost of the work as estimated by the public works director. Such bond, deposit or other security shall be conditioned upon the permittee or its contractor performing the work pursuant to the terms of this chapter, including the restoration and/or replacement of the street, sidewalk, or other right-of-way within the time specified by the public works director, and a maintenance bond guaranteeing such work and replacement at ten percent of the estimated cost of surface restoration for a period of two years after the completed job is accepted by the city. For those public utilities which hold a franchise agreement, a maintenance bond is not required.

(Ord. 856 § 1 (part), 1997)

12.04.080 Insurance required.

Prior to commencing work pursuant to the permit granted under this chapter, the permittee or his/her contractor shall obtain and maintain during the period of construction, public liability insurance for bodily injury and property damage, to public or private persons or property, which insurance shall name the city as an additional insured, and provide coverage for all claims or damages for bodily injury, including wrongful death, and property damage, in an amount not less than a single limit of one million dollars per occurrence. Proof of such coverage shall be provided to the city as a condition to the issuance of the permit.

(Ord. 856 § 1 (part), 1997)

12.04.090 Routing of traffic.

The permittee shall take appropriate measures to assure that during the performance of the work traffic conditions as nearly normal as practicable shall be maintained at all times, so as to cause as little inconvenience as possible to the occupants of the abutting property and to the general public; provided, that the public works director may permit the closing of streets to all traffic for a period of time prescribed by him/her, if in his/her opinion it is necessary. The permittee shall route and control traffic including its own vehicles in a manner approved by the public works director. The following steps shall be taken before any highway may be closed or restricted to traffic:

A. The permittee must receive the approval of the public works director and the police department therefor.

B. The permittee must notify the chief of the fire department of any street so closed.

C. Upon completion of construction work, the permittee shall notify the public works director and city police department before traffic is moved back to its normal flow so that any necessary adjustments may be made.

D. Where flagmen are deemed necessary by the city, a traffic control plan shall be prepared and approved by the public works director and such plan and flagmen shall be furnished by the permittee at its own expense. Through traffic shall be maintained without the aid of detours, if possible. In instances in which this would not be feasible, the public works director will designate detours. The city shall maintain roadway surfaces of existing highways designated as detours without expense to the permittee, but in case there are no existing highways, the permittee shall construct all detours at its expense and in conformity with the specifications of the public works director. The permittee will be responsible for any damage caused to any highways by the operation of its equipment.

E. If traffic control is necessary on state controlled portions of State Route 503, Pacific Avenue, or Atlantic Avenue the permittee shall get a traffic control permit from the Washington State Department of Transportation prior to construction.

(Ord. 856 § 1 (part), 1997)

12.04.100 Clearance for fire equipment.

The work shall be performed and conducted so as not to interfere with access to fire facilities and fire hydrants. Materials or obstructions shall not be placed within fifteen feet of fire hydrants. Passageways leading to fire escapes or firefighting equipment shall be kept free of piles of material or other obstructions.

(Ord. 856 § 1 (part), 1997)

12.04.110 Traffic-control devices.

The permittee shall erect and maintain suitable traffic-control devices in conformance with the current standards contained in the "Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)."

(Ord. 856 § 1 (part), 1997)

12.04.120 Utility removal and protection.

The permittee shall not interfere with any existing utility without the written consent of the public works director and the utility company or person owning the utility. If it becomes necessary to remove an existing utility, this shall be done by its owner. No utility owned by the city shall be moved to

accommodate the permittee unless the cost of such work is borne by the permittee. The cost of moving privately owned utilities shall be similarly borne by the permittee unless it makes other arrangements with the person owning the utility. The permittee shall support and protect by timbers or otherwise all pipes, conduits, poles, wires, or other apparatus which may be in any way affected by the work, and do everything necessary to support, sustain and protect them under, over, along or across the work. In case any of the pipes, conduits, poles, wires or apparatus should be damaged, they shall be repaired by the agency or person owning them; and the expense of such repairs shall be charged to the permittee, and his/her or its bond shall be liable therefor. The permittee shall be responsible for any damage done to any public or private property by reason of the breaking of any water pipes, sewer, gas pipe, electric conduit or other utility, and its bond shall be liable therefor. The permittee shall inform itself as to the existence and location of all underground utilities and protect the same against damage.

(Ord. 856 § 1 (part), 1997)

12.04.130 Attractive nuisance—Unlawful to leave unguarded.

It is unlawful for the permittee to permit to remain unguarded at the place of work or opening any machinery, equipment, or other device having the characteristics of an attractive nuisance likely to attract children and be hazardous to their safety or health.

(Ord. 856 § 1 (part), 1997)

12.04.140 Property lines and easements.

Property lines and limits of easements shall be indicated on the plan accompanying the application for the right-of-way access/utility permit, and it shall be the permittee's responsibility to confine the work within these limits.

(Ord. 856 § 1 (part), 1997)

~~12.04.150 Cleanup.~~

~~As the work progresses, all streets and private properties shall be thoroughly cleaned of all rubbish, excess earth, rock and other debris resulting from such work. All cleanup operations at the location of such work shall be accomplished at the expense of the permittee and shall be completed to the satisfaction of the public works director. From time to time, as may be ordered by the public works director and in any event immediately after completion of the work, the permittee shall at his/her or its own expense clean up and remove all refuse and unused materials of any kind resulting from the work; and upon failure to do so within twenty-four hours after having been notified to do so by the public works director, the work may be done by the city and the cost thereof charged to the permittee; and the permittee shall also be liable for the cost thereof under the surety bond provided hereunder.~~

(Ord. 856 § 1 (part), 1997)

~~12.04.160 Backfilling.~~

~~Backfilling in any street opened or excavated pursuant to a right-of-way access/utility permit issued hereunder shall be according to WSDOT/APWA and the City of Woodland Public Works Department Engineering Standards for Constructioncity's development standards. When water is taken from a fire hydrant, the permittee shall first make arrangements with the city for a hydrant meter and shall assign one person to operate the hydrant and shall make certain that the person has been instructed by the city public works department in the operation of the hydrant. The department shall likewise be notified at both the beginning and end of the job so that the condition of the fire hydrants can be checked on both occasions. Any damage done to the hydrant or hydrant meter during the work shall be the responsibility of the permittee. Water shall be paid for by the permittee in the amount established by council resolution.~~

~~(Ord. 856 § 1 (part), 1997)~~

~~12.04.170 Restoration of surface by permittee.~~

~~A. The permittee shall restore the surface of all streets broken into or damaged as a result of the work to their original condition in accordance with city standards and WSDOT/APWA specifications.~~

~~B. Acceptance or approval of any work by the public works director shall not prevent the city from asserting a claim against the permittee and his/her or its security deposit required hereunder for incomplete or defective work, if discovered within twenty-four months from the completion of the work. The presence of a staff member of the public works department during the performance of any work shall not relieve the permittee of its responsibilities under this chapter.~~

~~(Ord. 856 § 1 (part), 1997)~~

12.04.180 City completion and restoration.

If the permittee shall have failed to restore the surface of the street to its original and proper condition upon the expiration of the fixed time by such permit, or shall otherwise have failed to complete the work covered by such permit, the public works director, if he/she deems it advisable, shall have the right to do all work and things necessary to restore the street and to complete the work. The permittee shall be liable for the actual cost thereof and twenty-five percent of such cost in addition for general overhead and administrative expenses. The city shall have a cause of action for all fees, expenses and amounts paid out and due it for such work and shall apply, in payment of the amount due it, any funds of the permittee deposited as provided in this chapter; and the city shall also enforce its rights under the permittee's security deposit provided pursuant to this chapter. It shall be the duty of the permittee to guarantee and maintain the site of the work in the same condition it was prior to the work for two years after restoring it to its original condition.

(Ord. 856 § 1 (part), 1997)

~~12.04.190 Open trench length.~~

~~Except by special permission from the public works director, no trench shall be excavated more than one hundred feet in advance of pipelaying nor left unfilled more than two hundred feet where pipe has been laid. No trench shall be left unfilled overnight unless authorization to do so has been given by the public works director. Any trench so left shall be protected in a manner which will not endanger the safety of passing motorists or pedestrians. The length of the trench that may be opened at any one time shall not be greater than the length of pipe and the necessary accessories which are available at the site ready to be put in place.~~

~~(Ord. 856 § 1 (part), 1997)~~

12.04.200 Diligence in completion of work.

The permittee shall prosecute with diligence and expedition all work covered by the right-of-way access/utility permit, and shall promptly complete such work and restore the street to its original condition, or as near as may be, as soon as practicable and in any event not later than the date specified in the permit therefor. Failure to comply with these requirements shall authorize the city to take action against permittee's surety bond or the security and/or prosecute permittee for violation of this chapter as set forth in Section 12.04.280.

(Ord. 856 § 1 (part), 1997)

12.04.210 Power of public works director to order emergency work.

If, in his/her judgment, traffic conditions, the safety or convenience of the traveling public or the public interest require that the work be performed as emergency work, the public works director shall have full power to order, at the time the permit is granted, that a crew and adequate facilities be employed by the permittee twenty-four hours a day to the end that such work may be completed as soon as possible.

(Ord. 856 § 1 (part), 1997)

12.04.220 Emergency action.

In the event of any emergency in which a sewer, main, conduit or utility in or under any right-of-way breaks, bursts, or otherwise is in such condition as to immediately endanger the property, life, health or safety of any individual, the person owning or controlling such sewer, main, conduit or utility, without first applying for and obtaining any right-of-way access permit hereunder, shall immediately take proper emergency measures to cure or remedy the dangerous conditions for the protection of property, life, health and safety of individuals. However, such person owning or controlling such facility shall apply for a right-of-way access permit not later than the end of the next succeeding day during which the public works director's office is open for business, and shall not proceed with permanent repairs without first obtaining a permit hereunder.

(Ord. 856 § 1 (part), 1997)

12.04.230 Minimization of noise, dust and debris.

Each permittee shall conduct and carry out the work in such manner as to avoid unnecessary inconvenience and annoyance to the general public and occupants of neighboring property. The permittee shall take appropriate measures to reduce to the fullest extent practicable in the performance of the work, noise, dust and unsightly debris; and during the hours of eight p.m. through seven a.m. Monday through Friday and eight p.m. through nine a.m. on Saturday shall not use, except with the express written permission of the public works director or in case of an emergency as otherwise provided in this chapter, any tool, appliance or equipment producing noise of sufficient volume to disturb the sleep or repose of occupants of the neighboring property. No work shall be permitted on Sundays except in the case of an emergency.

(Ord. 856 § 1 (part), 1997)

12.04.240 Preservation of monuments.

The permittee shall not disturb any surface monuments or hubs found on the line of excavation work until ordered to do so by the public works director.

(Ord. 856 § 1 (part), 1997)

12.04.250 Inspections.

The primary responsibility for on-site inspections to guarantee that all necessary requirements have or will be met is that of the permittee. The public works department shall make such inspections as are necessary to enforce this chapter.

(Ord. 856 § 1 (part), 1997)

12.04.260 Maintenance of drawings, plans and profiles.

Users of subsurface street space shall maintain accurate drawings, plans and profiles showing the location and character of all underground structures including abandoned installations.

(Ord. 856 § 1 (part), 1997)

12.04.270 Liability of city.

This chapter shall not be construed as imposing upon the city or any official or employee thereof any liability or responsibility for damages to any person injured by the performance of any work for which a right-of-way access permit is issued hereunder; nor shall the city or any official or employee thereof be deemed to have assumed any such liability or responsibility by reason of inspections authorized hereunder, the issuance of any permit, or the approval of any work.

(Ord. 856 § 1 (part), 1997)

12.04.280 Violation—Penalty.

Anyone who violates or fails to comply with any provisions of this chapter shall be guilty of a misdemeanor and upon conviction thereof shall be punished in accordance with the provisions of Chapter 1.12.

(Ord. 856 § 1 (part), 1997)

Chapter 12.06 INSTALLATION OF SIDEWALKS

Sections:

12.06.010 Required.

12.06.020 Placement.

12.06.030 Replacement of existing sidewalks.

12.06.040 Construction standards.

~~12.06.050 Exceptions.~~(Repealed)

12.06.060 Appeals.

12.06.010 Required.

The public works director is authorized and directed to require the installation of sidewalks with new construction.

(Ord. 856 § 2 (part), 1997: Res. 318 § 1, 1991)

12.06.020 Placement.

A. The sidewalks shall be constructed across the frontage of the property being developed between property lines of abutting properties.

B. If the property being developed is a corner lot, sidewalks shall be constructed on the sides abutting city streets or other public access.

(Ord. 856 § 2 (part), 1997: Res. 318 §§ 2, 3, 1991)

12.06.030 Replacement of existing sidewalks.

If the property being developed currently has sidewalks and, in the opinion of the public works director, the sidewalks are in such disrepair so as to render them a public safety hazard, the public works director is authorized and directed to require the construction of new sidewalks.

(Ord. 856 § 2 (part), 1997: Res. 318 § 4, 1991)

12.06.040 Construction standards.

Sidewalks constructed pursuant to this chapter shall be constructed to the latest version of the City of Woodland Public Works Engineering Standards for Construction. ~~standards required by the public works director~~.

(Ord. 856 § 2 (part), 1997: Res. 318 § 5, 1991).

~~12.06.050 Exceptions.~~

~~New development on State Route #503 may be considered an exception to the requirements listed in this chapter unless required as a condition of subdivision approval or requirements of the Washington State Department of Transportation.~~

(Ord. 856 § 2 (part), 1997: Res. 318 § 6, 1991)

12.06.060 Appeals.

Any party may appeal the requirements of the public works director by submitting a letter stating the basis for the appeal to the city council. Provided however, the jurisdictional authority of the city council shall be to determine whether such requirements are consistent with city regulations and policy.

(Ord. 856 § 2 (part), 1997: Res. 318, § 7, 1991)

Chapter 12.08 CURB AND SIDEWALK MAINTENANCE*

Sections:

12.08.010 Inspection.

12.08.020 Notice to repair.

12.08.030 Notice contents.

12.08.040 Notice service or posting.

12.08.050 Action by city.

12.08.060 Assessment becomes lien.

12.08.070 Abutting owner's liability.

12.08.010 Inspection.

The public works director shall from time to time inspect the sidewalks and curbs within the city limits to determine whether programs for repair and/or replacement should be initiated.

(Ord. 856 § 3 (part), 1997)

12.08.020 Notice to repair.

Upon having made an inspection as provided in Section 12.08.010 and upon being satisfied by such inspection that any sidewalk or curb is in fact defective, dangerous or obstructed, the public works director shall notify the owner of the abutting property to repair, reconstruct, replace, clean or remove such condition or obstruction. In the event the owner fails to respond and/or initiate the work, the city shall invoke the procedures set forth in RCW 35.69 to cause the work to be completed. Provided however, pursuant to RCW 35.69, as amended in 2009~~1996~~, in the event the cost of the improvements exceed fifty percent of the assessed value of the abutting property, the cost imposed may only be the fifty percent amount. Provided further, such cost may not be assessed if the damage was caused by the city or through the city's failure to enforce ordinances.

(Ord. 856 § 3 (part), 1997)

12.08.030 Notice contents.

The notice provided in Section 12.08.020 shall be in writing and shall specify the precise location, and state the legal description of the abutting property so concerned and the owner's name, and shall state the nature of the deficiency to be repaired or removed and the time granted for such removal or repair, and that if such deficiency is not repaired or removed by the time specified in such notice, the city will by contract or with its employees proceed to make such improvement, repair or removal and assess the cost of so doing and all legal and professional charges incidental thereto against the property. Such notice shall further state that if the work is not done by the property owner, the public works director shall present to the city council, after the completion of the work, an assessment roll showing by legal description the lot or parcel abutting said work, the cost and expense of said work, and the name of the owner. The council will proceed to hear any and all protests against the assessment and confirm, alter, revise or set aside such roll as may in their judgment be just, and any assessment so made shall be and become a lien upon said property and shall be collected by due process of law.

(Ord. 856 § 3 (part), 1997)

12.08.040 Notice service or posting.

The notice provided for in Section 12.08.030 shall be served by the chief of police upon the owner of the property personally, if he or she can be found or if not then upon the agent for the owner if any is found in the city. If the owner is absent and has not attached to the property a legible notice stating his name and address or that of his agent, then the person or persons found to be physically and actually in charge of and upon the property shall be deemed to be the agent of the owner, and if no personal service is possible within the city or the premises is closed, then good and sufficient notice shall be had by firmly posting and attaching to the property a copy of the notice in a prominent place and sending a copy by mail to the last mailing address of owner known to the county treasurer.

(Ord. 856 § 3 (part), 1997)

12.08.050 Action by city.

In the event the improvement specified in the notice is not carried out, it shall be the duty of the public works director to carry out the improvement with city employees and equipment or by hiring extra help and rented equipment by contract in the manner that may in his opinion be most expedient and economical, and he shall keep careful accounting of all costs, including the wages and salaries of all city employees, and a just rental for all city equipment and all legal and advertising costs, and shall prepare and present to the council an assessment roll all in accordance with the notice as hereinabove prescribed.

(Ord. 856 § 3 (part), 1997)

12.08.060 Assessment becomes lien.

When the council has heard all protests, considered and revised, altered or found true and confirmed such assessment by ordinance, it shall become a lien on the property described and shall be collected by due process of law.

(Ord. 856 § 3 (part), 1997)

12.08.070 Abutting owner's liability.

Any abutting property owner who fails, refuses, neglects or omits to maintain, clean and keep up abutting sidewalks and curbs in good repair, and in the condition safe for the use thereof by the public shall be liable to the public or any member thereof for any and all damages to persons or property resulting therefrom.

(Ord. 856 § 3 (part), 1997)

~~Chapter 12.10 IMPROVEMENT STANDARDS~~ (Repealed)

~~Sections:~~

~~12.10.010 Definitions.~~

~~12.10.020 Minimum widths for street right-of-way improvements.~~

~~12.10.010 Definitions.~~

~~For the purposes of this chapter, the terms set forth below shall mean the following:~~

~~"Collectors" provide for movement within a community, including connecting neighborhoods with smaller community centers. Collectors also provide connections to secondary and major arterials. Property access is generally a high priority for collectors, with a lower priority for through traffic movements. Collectors also provide access to commercial and industrial developments. Spacing of collectors is generally one mile or less.~~

~~"Local/access streets" primarily provide access to abutting properties. Local streets include a variety of designs and spacing depending on access needs.~~

~~"Major arterials" means inter-community roadways connecting community centers or major facilities. Major arterials are generally intended to serve predominately "through" traffic with minimum direct service to abutting land uses. Spacing between parallel major arterials is generally two miles or greater.~~

~~"Minor arterials" provide for intra-community travel for areas bounded by the major arterial system. Secondary arterials serve trips of moderate length and provide more direct access to abutting properties than major arterials. Spacing of secondary arterials is typically less than two miles.~~

~~"Street" means a public way that provides vehicular circulation or primary access to abutting properties, inclusive of arterials, collector streets and local streets, and exclusive of alleys. Physically a "street" is the improved and maintained portion of a right-of-way that is designated for vehicular use.~~

~~(Ord. 854 § 1, 1997: Ord. 676 § 3 (part), 1989)~~

~~12.10.020 Minimum widths for street right-of-way improvements.~~

~~The minimum width standards for street right-of-way improvements are as set out in the following table. Provided however, where an existing street has been constructed to a wider width than required in these standards, any extensions of that street shall be constructed to the wider standard unless otherwise approved by the development review committee.~~

~~Minimum Width Standards for~~

~~Street Right-of-Way Improvements~~

~~Street Class[1]~~	~~Right-of-way[2]~~	~~Curb-to-curb Pavement[3]~~	~~Utility Planting Strip~~	~~Sidewalk Two Sides~~
~~Major Arterial~~	~~80'~~	~~50'[4]~~	~~9'~~	~~5'~~
~~Minor Arterial~~	~~70'~~	~~44'~~	~~8'~~	~~5'~~

~~Commercial:~~				
~~Collector[5]~~	~~60′~~	~~36′~~	~~6′6″~~	~~5′~~
~~Industrial:~~				
~~Collector[5]~~	~~60′[3]~~	~~36′~~	~~6′6″~~	~~5′~~
~~Residential:~~				
~~200 or less trips per day~~	~~50′~~	~~32′~~	~~3′6″~~	~~5′~~
~~More than 200 trips per day~~	~~56′~~	~~36′~~	~~4′6″[6]~~	~~5′~~
~~Collector~~	~~60′~~	~~40′~~	~~4′6″[6]~~	~~5′~~
~~Alleys~~	~~20′~~	~~20′~~	~~-~~	~~-~~

~~-~~

~~-~~

~~1. Authority to determine a street's class shall lie with the development review committee.~~

~~2. Additional right-of-way and pavement width may be required to allow parking and turn lanes. Additional right-of-way or easements may be required for cut and fill embankments.~~

~~3. Unless otherwise approved by the city's development review committee, the sidewalk shall be located immediately adjacent to the curb (See Figure 1B, included in Chapter 16.14). Unattached sidewalks and meandering all-weather walkways may be allowed if the variation is integral to the design of the subdivision or development and pedestrian needs are not compromised. A sidewalk or walkway on only one side may also be allowed if consistent with on and off-site parking locations and pedestrian movements as demonstrated in the development plan for the area. A determination that a sidewalk need be constructed on one side of the street only reduces the right-of-way requirements for street width by five feet. In such instance, the centerline of the street may be off-set from the center of the fifty-five-foot right-of-way with prior approval of the public works director.~~

~~4. Allows for four lanes and two-foot median.~~

~~5. No on-street parking is allowed on industrial collector streets in industrial parks. On-street parking for commercial collector streets may be restricted.~~

~~6. Five feet, six inches are required for curb and sidewalk together if an integral curb and sidewalk is to be developed (See Figure 1, included in Chapter 16.14). In areas of steep terrain, sidewalks on one side may be allowed; however, utility strips not less than four feet, six inches in width shall be provided in the right-of-way on both sides of the street. A five-foot underground utility easement shall be granted by the developer across the front of lots to accommodate underground utilities, if necessary.~~

~~(Ord. 854 § 2, 1997: Ord. 687 § 2 (part), 1989: Ord. 676 § 3 (part), 1989)~~

Chapter 12.14 STREET CONSTRUCTION

Sections:

12.14.010 New streets and additions to meet all standards—Conveyance of facilities.

12.14.020 Construction cost reimbursement— Late-comer fee.

12.14.030 Late-comer fee program—Contract.

12.14.010 New streets and additions to meet all standards—Conveyance of facilities.

All new streets and additions to existing streets shall be constructed to meet all standards of the City of Woodland Public Works Engineering Standards for Construction~~public works supervisor and other city ordinances~~. When such facilities are constructed by the developer and are certified as acceptable by the Public Works Director~~public works supervisor to the city~~, the developer shall convey such facilities and easements to the city for consideration of the benefits of city service and regulations. The city will thereafter operate and maintain said facilities. Said conveyance of facilities shall occur no later than sixty days after inspection and acceptance of said facilities by the city.

(Ord. 712 § 1, 1990)

12.14.020 Construction cost reimbursement— Late-comer fee.

When a new street or an addition to an existing street is constructed and the cost is absorbed entirely by the developer, the developer may be reimbursed by the owners of other property benefiting from such construction for portions of the cost to the developer at such time as other property benefiting from the construction is developed.

A late-comer fee shall be a charge equal to a pro-rata cost of a street or street addition, constructed by a developer, as computed on a front-footage basis, or other equitable basis using actual costs of construction. The late-comer fee shall be paid to the original developer until the verified cost of the line has been re-paid or a period of ten years has lapsed, whichever shall first occur. Provided, the pro-rata charge to the original developer who constructed the street or street addition, shall be subtracted from the cost of the original construction when computing the late-comer fee due. The developer may be the city.

(Ord. 856 § 4, 1997: Ord. 712 § 2, 1990)

12.14.030 Late-comer fee program—Contract.

If a developer desires to participate in the late-comer fee program as described in Section 12.14.020, provision shall be recognized through a contract between the city and the developer. Such contract is obtained from the city.

(Ord. 712 § 3, 1990)

Chapter 12.16 DRIVEWAY CONSTRUCTION

Sections:

12.16.010 Definitions.

12.16.020 Permit required.

12.16.030 Maximum and minimum widths— Except industrial zoning districts.

12.16.035 Maximum and minimum width for driveways in industrial zoning districts.

12.16.040 Materials.

12.16.050 Curb cuts.

12.16.060 Use and action when abandoned.

12.16.070 Permit fees.

12.16.080 Liability insurance and bonds.

12.16.090 Penalty for violation.

12.16.100 Design standard illustrated—Alternate No. 1.

12.16.110 Design standard illustrated—Alternate No. 2.

12.16.010 Definitions.

"Engineer," as used in this chapter, means the public works director or his duly authorized representative.

"Inspector," as used in this chapter, means the city building inspector or his duly authorized representative.

"Person," as used in this chapter, means and includes an individual, firm, association, corporation or other organization except the city of Woodland or employees thereof and except the state of Washington or employees thereof, while acting in the course of their employment of the city or state.

"Private driveway," as used in this chapter, means any ingress or egress constructed in accordance with the city's standard specifications which provides access to only one lot or parcel and which joins with a private or public street and is intended for use by the occupant.

"Service driveway," as used in this chapter, means any ingress or egress constructed in accordance with the city's standard specifications which provides access to only one lot or parcel and which joins with a private or public street and is intended for use by the public for access to any place of business or public use.

(Ord. 854 § 3, 1997: Ord. 676 § 2, 1989; Ord. 401 §§ 1, 2, 1974)

12.16.020 Permit required.

A. It is unlawful to hereafter construct any service or private driveway in the city without first securing a permit therefor and paying the permit fee required in Section 12.16.070. Such driveways shall be in accordance with the drawings, codified at Section 12.16.100, which by this reference are incorporated herein.

B. The city building department shall issue a permit upon approval of the application therefor by the inspector.

~~(Ord. 401 § 3, 1974)~~

~~12.16.030 Maximum and minimum widths— Except industrial zoning districts.~~

~~A. If only one service driveway is desired, the maximum width approved shall be as follows:~~

~~Frontage~~	~~Width~~
~~30 to 50 feet~~	~~20 feet at the bottom of ramp~~
~~51 to 75 feet~~	~~25 feet at the bottom of ramp~~
~~76 feet or over~~	~~30 feet at the bottom of ramp~~

-

~~B. The minimum width for all service driveways shall be ten feet at the bottom of the ramp. If more than one service driveway is desired for frontage up to one hundred feet, the maximum width of each driveway shall be twenty feet, and not more than two such driveways will be permitted. The minimum width for property on which two service driveways are constructed shall be seventy-five feet. If service driveways less than twenty feet in width are desired, three fifteen-foot service driveways may be permitted; provided, however, that not less than twenty feet of straight curb must separate service driveways under one ownership.~~

~~C. If a private driveway is desired, the minimum width of the driveway for a fifty-foot lot shall be sixteen feet at the bottom of the ramp. For each additional twenty-five feet of property, two feet additional may be added to the width of the driveway to a maximum of twenty feet.~~

~~D. If two driveways are to be used for the purpose of a circular entrance and exit, the maximum width shall be sixteen feet at the bottom of the ramp.~~

~~E. Subject to the approval of the city engineer and the city building inspector and with the prior consent of the council, the provisions of this section may be varied where the topography of the property for which the permit is requested, as hereinafter provided, or the irregular shape of the lot or lot for which such permit is requested, makes such variance necessary. The city council may, in its discretion, grant or refuse to grant permits varying the provisions set forth in this section.~~

~~F. The above standards shall not apply to development within industrial zoning districts.~~

~~(Ord. 854 § 4, 1997: Ord. 446, 1977: Ord. 401 § 4, 1974)~~

~~12.16.035 Maximum and minimum width for driveways in industrial zoning districts.~~

~~The maximum and minimum widths for driveways in the light industrial and heavy industrial districts shall be determined by the public works director and based upon information in the proponent's SEPA checklist or impact statement. Appeals of the director's determination may be made to the city council.~~

~~(Ord. 854 § 5, 1997)~~

~~12.16.040 Materials.~~

~~A. All driveways and curbs shall be constructed of class 5.5 concrete. They shall conform to the sizes and standards of the attached drawing. Slope from gutter to back of sidewalk line shall not be more than three-fourths inch rise to one foot and from gutter to top of curb shall not be more than one and one-half inch rise per foot from the level.~~

~~B. If there are no existing sidewalks in the area where the driveway is to be constructed or if in the opinion of the inspector there are no sidewalks anticipated in the foreseeable future, a light bituminous or asphaltic concrete wearing surface over a suitable base may be constructed from the property line to the curb line. However, if the property owners construct sidewalks at some future date the light bituminous or asphaltic concrete surfaces must be removed and replaced with concrete as shown on the attached sketch.~~

~~(Ord. 401 § 5, 1974)~~

~~12.16.050 Curb cuts.~~

~~A. In the event it is necessary to cut the curb and street at the location of a driveway, the following requirements must be met:~~

~~1. The curb must be cut vertically and proper bond must be insured when pouring the new section of curb.~~

~~2. If an expansion joint occurs within four feet of the proposed cut, the curb shall be removed to the expansion joint.~~

~~3. The new curb shall be properly formed so that it will be poured monolithically with the new driveway. The foot of the driveway shall be formed so that the concrete will have a vertical face; therefor, insuring a proper bond with the surfacing of the roadway.~~

~~4. The portion of the roadway that is removed for the construction of the driveway must be replaced according to the requirements of the city specifications for street and roads. The replacement must have the approval of the inspector. Any variance shall have the approval of the engineer.~~

~~B. After completion of such work, a call for final inspection shall be made in order that the inspector can determine if all requirements have been met. No release of the performance bond, as required in Section 12.16.080, shall be made until a written release has been issued by the inspector.~~

~~(Ord. 401 § 6, 1974)~~

~~12.16.060 Use and action when abandoned.~~

~~A. It is unlawful to permit a truck or any other vehicle to stand or park in a service driveway between the property line and the curb line. No building shall be arranged for the loading or unloading of merchandise on or from the trucks or other vehicles from or into the building by having the truck or other vehicle stand or park wholly or partially in or on the service driveway. When a building is arranged with a drive-in space for the loading or unloading of trucks or similar vehicles used in transporting merchandise, the length of the drive-in space to the property line shall not be less than the greatest overall length of the truck, plus one foot, and in no case shall this distance be less than twenty feet.~~

~~B. When a driveway over an existing sidewalk is desired, the approval of the inspector shall be obtained. The sidewalk must be free from cracks and other imperfections that may tend to weaken it for vehicular loads. Any portion of the sidewalk that does not meet this requirement in the opinion of the inspector must be replaced according to the standards of the city.~~

~~C. When the use of a service or private driveway is abandoned, the owner of the abutting property shall construct a new curb and sidewalk section to conform to the standards of the city.~~

~~(Ord. 401 § 7, 1964)~~

~~12.16.070 Permit fees.~~

~~The permit fee for each driveway shall be as established by resolution of the city council.~~

~~(Ord. 796 § 6, 1996: Ord. 522 § 2, 1981: Ord. 401 § 8, 1974)~~

~~12.16.080 Liability insurance and bonds.~~

~~Prior to the issuance of any permit hereunder, the applicant shall furnish to the city public liability and property damage insurance in the amounts of five thousand dollars for any one person, ten thousand dollars for any one accident, and five thousand dollars for property damage, to protect the city from any damage, costs or liability for injury to any person (including death) and damage to any property resulting from or in any manner connected with the opening or disturbing of the surface of the street, curbs or sidewalks, and shall file with the inspector appropriate certificates of insurance showing such insurance to be in full force and effect and showing the city to be named insured under such policy or policies of insurance. The applicant shall also file with the chief building inspector, a good and sufficient performance bond executed by the applicant as principal, and a surety company authorized to do business in the state of Washington as surety, in the amount of one thousand dollars or in such higher amount as the city council may deem necessary to protect the city adequately, conditioned that the applicant will comply strictly with the terms of this chapter and with the conditions of his permit, and that he will restore to its original condition any street, alley, sidewalk, curb or other structure opened or disturbed in the prosecution of the work under the permit, and will maintain the same until a written release is given him by the inspector.~~

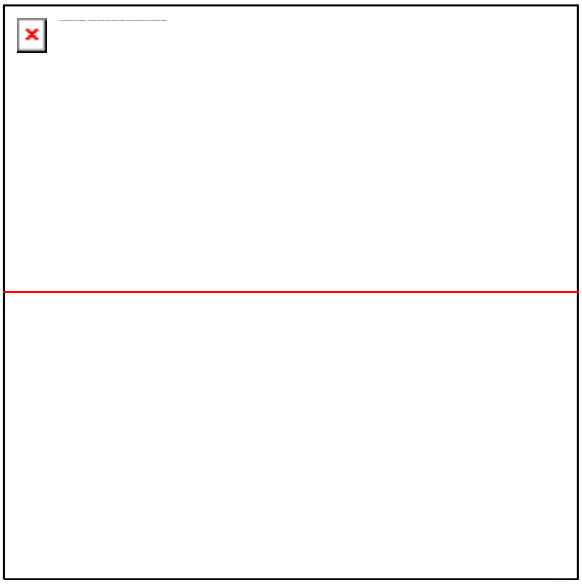
~~(Ord. 401 § 9, 1974)~~

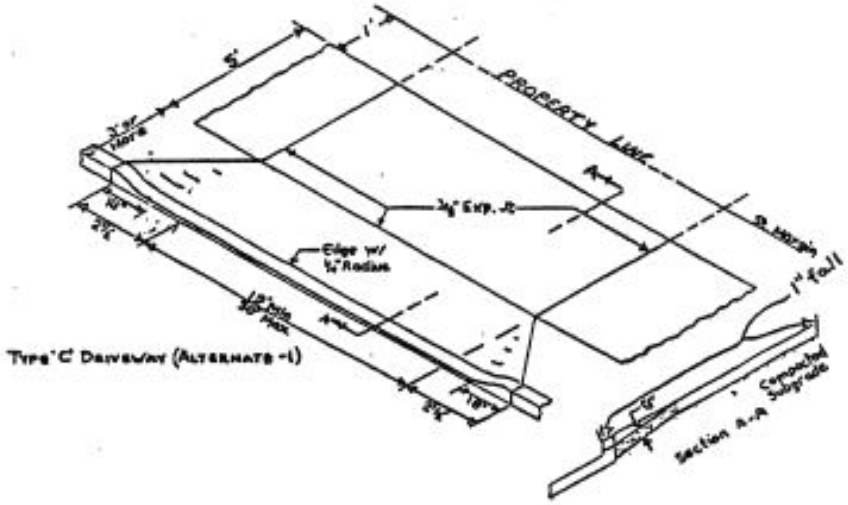
~~12.16.090 Penalty for violation.~~

~~Any person violating any of the provisions of this chapter and upon conviction thereof shall be punished according to W.M.C. Section 2.56.110.~~

~~(Ord. 401 § 10, 1974)~~

~~12.16.100 Design standard illustrated—Alternate No. 1.~~





~~GENERAL NOTES~~

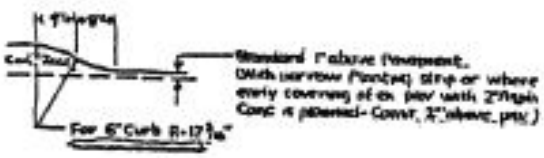
~~**JOINTS.** In paving slab shall not extend into driveway. All joints shall be clean and edged. Transverse driveway joints shall be as shown or as directed by the city engineer.~~

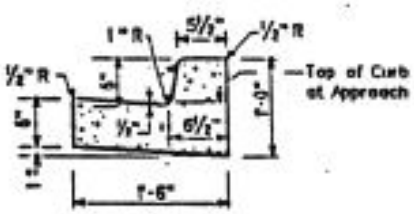
~~**MATERIAL.** Shall meet requirements of the Standard~~

~~Specifications for Municipal Public Works Construction.~~

~~**CONCRETE.** Shall be Cement Concrete Class 5 (1½) or 5(¾)~~

~~**PROCEDURES.** For further requirements for forms, form settings, placing, finishing, stripping and curing shall be as outlined in Standard Specifications for Municipal Public Works Construction.~~

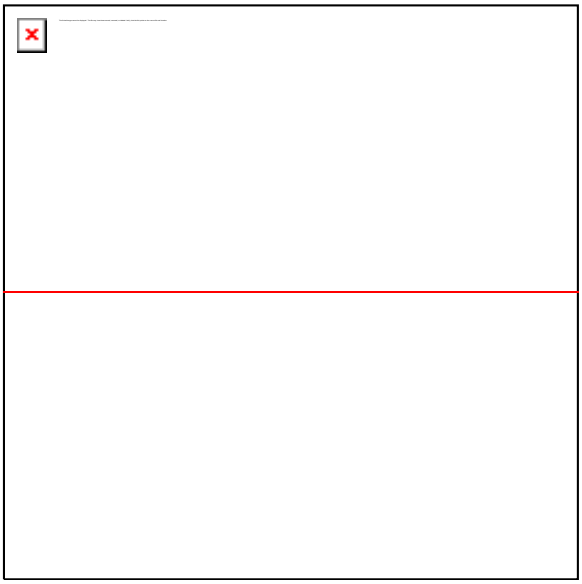


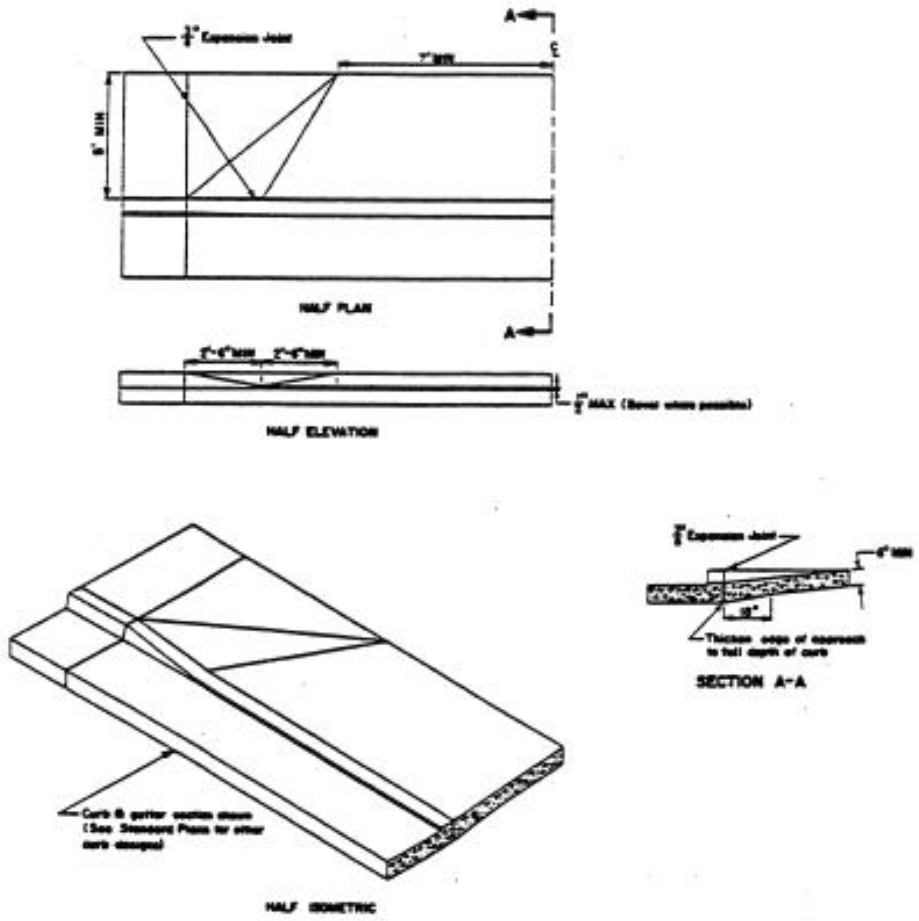


CEMENT CONCRETE CURB AND GUTTER

~~(Ord. 687 § 3, 1989)~~

~~12.16.110 Design standard illustrated—Alternate No. 2.~~





~~NOTES~~

~~Cement concrete approaches shall be constructed of air-entrained concrete Class B.~~

~~Contraction joints shall be placed at 15′ maximum spacing.~~

~~All joints shall be cleaned and edged.~~

~~Approaches may be poured integral with curb.~~

~~(Ord. 687 § 4, 1989)~~

Chapter 12.20 PROHIBITED DISCHARGES ONTO STREETS AND INTO DRAINS

Sections:

12.20.010 Prohibited substances.

12.20.020 Violation—Penalty.

12.20.010 Prohibited substances.

No person, firm or corporation shall discharge, allow to be discharged or cause to be discharged upon the city streets or into the city storm drainage system any of the following described waters or wastes:

A. Any liquid having a temperature higher than one hundred fifty degrees Fahrenheit;

B. Any water or waste which may contain more than one hundred parts per million, by weight, of fat, oil or grease;

C. Any gasoline, benzene, naphtha, oil or other flammable or explosive liquid, solid or gas;

D. Any noxious or malodorous gas or substance capable of creating a public nuisance; and,

E. Any hazardous material or waste as defined in RCW 70.105.

(Ord. 693 § 1, 1989)

12.20.020 Violation—Penalty.

Any person, firm or organization found to be in violation of Section 12.20.010 shall be penalized as provided in Section 1.12.010 of this code.

(Ord. 693 § 2, 1989)

Chapter 12.24 POLICIES AND PROCEDURES RELATING TO CONTRACTS FOR CONSTRUCTION OF PUBLIC FACILITIES

Sections:

12.24.010 Limitations—Disclaimer.

12.24.020 Establishment of procedures/policies.

12.24.030 Execution of disclaimer.

12.24.040 Application/processing fees.

12.24.050 Processing.

12.24.010 Limitations—Disclaimer.

Agreement on the city's part to invoke the process set out in either RCW 35.72 or RCW 35.91 is declared to be strictly discretionary with the city and the city's denial of such a request shall establish no rights of action on the part of any potentially benefitting developer whatsoever. Further, the process for latecomer reimbursement for any type of improvement shall not be deemed commenced until the city council, by majority vote, has accepted the application of a developer.

(Ord. 775 § 1, 1994)

12.24.020 Establishment of procedures/policies.

Within thirty days of the adoption of this chapter, the Public Works Director ~~public works superintendent~~ shall establish policies and procedures in accordance with RCW 35.72 and RCW 35.91 to be followed by prospective beneficiaries and city staff in processing latecomer reimbursement contracts for both water/sewer and street projects, taking into account the fact that the processes are different. Such policies and procedures shall be reviewed by the city attorney and approved by the city council before taking effect.

(Ord. 775 § 2, 1994)

12.24.030 Execution of disclaimer.

As a condition to applying for a latecomer reimbursement contract, the applicant shall be required to execute a disclaimer acknowledging that the city shall not be liable for contribution or damages in the event the developer does not recoup contribution from latecomers. Such disclaimer shall not be construed, however, to imply that the city is not obligated to distribute amounts collected from latecomers to the developer.

(Ord. 775 § 3, 1994)

12.24.040 Application/processing fees.

A. A nonrefundable one hundred ~~fifty~~ dollar application fee shall accompany any such application. Water and sewer facilities to be installed simultaneously may be combined in one application. Application for street projects must be separate and shall require a separate application fee.

B. In the event the city council accepts the application, a processing fee shall be established for each application which shall be no less than two hundred fifty dollars nor greater than five percent of the estimated value of the portion of the project which shall be subject to third party reimbursement. The fee shall be established by the city council upon recommendation of the Public Works Director ~~public works supervisor~~.

(Ord. 775 § 4, 1994)

12.24.050 Processing.

The processing of latecomer contract requests shall be in compliance with this ordinance and the policies and procedures prepared by the Public Works Director ~~public works~~ ~~supervisor~~ and approved by the city council.

(Ord. 775 § 5, 1994)

Chapter 12.28 WOODLAND STREET TREES

Sections:

12.28.010 Title and purpose.

12.28.015 Applicability.

12.28.020 Definitions.

12.28.025 Permitted street trees.

12.28.030 Planting restrictions.

12.28.040 Street tree work permit.

12.28.050 Permission and procedure to remove street trees.

12.28.060 Property owner responsibilities.

12.28.070 Utility maintenance responsibilities.

12.28.080 Street tree protection.

12.28.090 Safety provisions.

12.28.100 Prohibited trees.

12.28.110 Penalties.

12.28.120 Remedies not exclusive.

12.28.010 Title and purpose.

This chapter shall hereafter be referred to and cited as the "Woodland Street Tree Ordinance."

The purpose of this chapter is to enhance the environment, improve our quality of life, and enhance the general aesthetics and welfare of the community. The preservation, protection, historic, and planting of trees is deemed to be a desirable goal of the community.

(Ord. 1116 § 1 (part), 2007)

12.28.015 Applicability.

This chapter shall apply to all trees and woody shrubs within city right-of-way.

(Ord. 1116 § 1 (part), 2007)

12.28.020 Definitions.

"City" means the incorporated city of Woodland.

"Chapter" defined as, the "Woodland Street Tree Ordinance."

"Director" means the city's Public Works Director ~~director of public works~~, or their designee.

"Dead" means a street tree or woody shrub that is no longer alive. This can include some or all parts of an existing tree or shrub.

"Drip line" means that area on the ground below the tree in which the boundary is designated by the edge of the tree's branches.

"Emergency" means an imminent threat to persons or property.

"Enforcing authority" means the director of public works or their duly authorized representative, who shall be charged with the enforcement of this chapter, according to procedures adopted pursuant to adoption of this chapter.

"Hazard tree" means any street tree, or part thereof, that the enforcing authority determines is subject to a high probability of failure, due to structural defect or disease, and which poses a potential threat to persons or property in the event of failure.

"Maintenance" or "maintain" means to plant, prune, trim, water, feed, protect or any other activity intended to help a street tree achieve its mature size and full, environmental function.

"Minor pruning" means pruning or cutting out of water sprouts, suckers, twigs, or branches less than three inches in diameter; or cutting out of branches and limbs constituting less than fifteen percent of the tree's foliage bearing area and retaining the tree's natural form. Removal of dead wood, broken branches and stubs are also considered minor pruning.

"National arborist organization standards" means nationally recognized arborist association standards including those of the International Society of Arboriculture, Tree Care Industry Association and the American National Standards Institute.

"Permit holder" means that person who is issued a permit to install or maintain street trees under this chapter.

"Person" means and includes any individual, business, firm, association, corporation, agency, or organization of any kind.

"Planting" means necessary steps taken during the installation of trees and shrubs within the right-of-way to ensure survival.

"Planting strip" means that area between the back of a street curb to the front of a sidewalk or the area in a raised median, used for street trees, grass and other landscaping material.

"Private tree" means a tree in which the trunk wholly resides on a property owner's parcel outside of the right-of-way.

"Property owner" means a person, or agent thereof, who owns, leases or manages real property adjacent to or within the right-of-way.

"Removal" means the act of taking out or reducing a part of an entire tree or shrub so that the tree or shrub will not regain its mature size or function.

"Right-of-way" means property subject to public use for existing or future streets, curbs, planting strips, or sidewalks. Property subject to a right-of-way may be through an express, implied, or prescriptive easement granted to or controlled by the city or other public entity or may be owned by the city or other public entity in fee simple or other freehold interest. Right-of-way is separate and distinct from the lots or parcels adjoining such right-of-way, and is not included in the dimensions or areas of lots or parcels.

"Sidewalk" means a facility made of concrete or other approved material for the conveyance of pedestrians adjacent to a street.

"Serious bodily injury" means any bodily injury that creates a substantial risk of death or that causes the loss or impairment of the function of any body part or organ for a protracted period of time.

"Severely damaged" means a street tree that has been harmed by people or nature, including, but not limited to, storms, disease or insect infestation so that the street tree will not achieve its mature size or full, environmental function.

"Street" means any street, highway, sidewalk, ally, avenue, easement, or other public way.

"Street tree" means any tree in which the trunk is wholly or partially located within the right-of-way. A "street tree" may also be considered to be those portions of a private tree, including any overhanging limbs or exposed root systems, that may reside in the right-of-way.

"Topping" means cutting back a tree to buds, stubs or laterals not large enough to assume the role of leader.

"Tree" means any self-supporting perennial woody plant, generally single-stemmed, and is recognized by the city as a tree.

"Utility" means any business, organization or entity that legally uses the public right-of-way to deliver electrical, telephone, water, sewer, natural gas, cable television services, and other communication system. "Utility" also means the actual commodity delivered or sold by the business, organization or entity.

(Ord. 1116 § 1 (part), 2007)

12.28.025 Permitted street trees.

The city shall develop and maintain a list of permitted street trees and proper planting guidelines pursuant to adoption of the ordinance codified in this chapter.

(Ord. 1116 § 1 (part), 2007)

12.28.030 Planting restrictions.

All trees or shrubs shall hereafter be planted in any public parking strip or other public place in the city only with the permission of the director according to the provisions of this chapter. No trees or shrubs shall overhang any sidewalk or street in such manner as to obstruct or impair the free and full use of the sidewalk or street, including the interruption or interference with the clear vision of pedestrians or persons operating vehicles thereon, and including interference with poles, wires, pipes, fixtures or any other part of any public utility situated in said street. No trees or shrubs shall be planted which constitute a fire hazard or a menace to public health, safety or welfare.

(Ord. 1116 § 1 (part), 2007)

12.28.040 Street tree work permit.

The street tree work permit application requirements, and policies and procedures for its issuance, shall be developed pursuant to the adoption of this chapter.

A. Street Tree Work Permit Required. No person may plant, or remove any street tree, or disturb the area within the drip line of a street tree, or cause or authorize another person to do so, unless the person obtains a street tree work permit from the enforcing authority. Unless otherwise provided in this section, a separate permit is required for each work location. No permit is required for minor pruning of street trees.

B. Emergency Pruning and Removal. No street tree work permit is required to prune or remove a street tree that is in imminent danger of falling. Any individual, acting under this subsection, must notify the enforcing authority of the emergency pruning or removal within one working day of the action.

C. Permit Application Data. The applicant must provide the location, number and kind of trees to be pruned or removed and planted; the kind of work to be done; the reasons for the requested activity; and any other information required by the enforcing authority to ensure compliance with the provisions of this chapter.

D. Standards for Permit Issuance. The enforcing authority shall issue a permit if, in the enforcing authority judgment, the proposed work and methods are consistent with the requirements of this chapter.

E. Time. Any permit issued shall contain a date of expiration and the work must be completed within ninety days of permit issuance.

F. Notice of Completion. The permit holder shall notify the enforcing authority of the completed work within five days upon completion of said work.

(Ord. 1116 § 1 (part), 2007)

12.28.050 Permission and procedure to remove street trees.

A. Authority to Remove Street Trees. No tree over four inches in diameter at its base shall hereafter be removed in any public planting or other public right-of-way in the city of Woodland without written permission from the enforcing authority.

B. Requirement for Removal. The stumps and roots of trees or shrubs shall be removed to a point at least one foot below the top of the adjacent curb or proposed curb grade, as well as treating the remaining roots with a suitable compound to prevent future sprouting or growth. Any roots which have disrupted or broken the adjacent street, existing utilities, curb or sidewalk shall be removed and said street, sidewalk, or curb shall be repaired.

C. Street Closures for Street Tree Removal. The director may, with concurrence of the chief of police and fire chief, permit a street to be blocked for a short period of time where suitable detours can be arranged and the public will not be unnecessarily inconvenienced.

(Ord. 1116 § 1 (part), 2007)

12.28.060 Property owner responsibilities.

Property owners shall have the following responsibilities regarding street trees fronting their property:

A. Dead and Severely-Damaged Street Trees. Dead or severely-damaged street trees shall be removed, and if replaced it shall be replaced with an approved street tree species.

B. Hazardous Street Trees. Street trees deemed to be hazardous shall be removed or reduced, such that the hazard is eliminated. In the event of removal, the street tree shall be replaced with an approved street tree species.

C. Right-of-Way Obstructions. Street trees shall be maintained so that they do not obstruct the free use of the right-of-way, including, but not limited to, clearance for sight visibility, traffic signage and signals, as well as pedestrian and vehicular use of streets and sidewalks. Maintenance procedures and requirements shall be as set by policies and procedures adopted pursuant to adoption of the ordinance codified in this chapter.

D. Protection of Utilities, Streets and Sidewalks. Street trees must be planted and maintained so that they do not damage utilities, streets or sidewalks.

E. Standard for Right-of-Way Maintenance. The right-of-way between the curb or edge of pavement and the private property line must be kept reasonably clean from street tree debris, including, but not limited to, branches, leaves, flowers, and fruit.

F. Trimming Authorized within the Right-of-Way. The city is authorized to trim existing trees and shrubs within the right-of-way as needed to provide safe passage or visibility, according to procedures developed pursuant to adoption of the ordinance codified in this chapter.

G. Disease or Insect Infestations. Street trees must be maintained free of disease or insect infestation. Street trees that are infected with disease or insects may be replaced, if deemed necessary by the enforcing authority, with an approved street tree species.

(Ord. 1116 § 1 (part), 2007)

12.28.070 Utility maintenance responsibilities.

In addition to the requirements contained in WMC Section 12.28.060, utilities shall maintain their utility system in the right-of-way to prevent any light, pole, wire, cable, appliance or apparatus, used in connection with or as a part of the utility system, from unduly interfering with any street tree.

(Ord. 1116 § 1 (part), 2007)

12.28.080 Street tree protection.

A. All street trees that may be adversely impacted by any excavation, demolition, construction or utility work must be sufficiently guarded and protected by those responsible for such work to minimize potential injury to street trees. Any work which requires a city permit and which may adversely impact street trees requires approval by the enforcing authority. In order to protect street trees, the enforcing authority may require protective measures consistent with National Arborist Organizations Standards.

B. No person may destroy, injure, or deface any street tree by any means, including, but not limited to, the following methods:

   1. By impeding the free passage of water, air, or fertilizer to the roots of any street tree by depositing concrete, asphalt, plastic sheeting, or other material on the ground immediately surrounding any street tree;

   2. By pouring any toxic material on any street tree or on the ground near any street tree;

   3. By causing or encouraging any fire near or around any street tree;

   4. By severely reducing a street tree's crown by removing more than twenty-five percent of the tree's foliage, except when pruning under utility wires or when eliminating obstructions of the right-of-way, as required by this chapter. Removal and replacement is preferred to severe crown reduction; or

   5. By carving, attaching any sign, poster, notice, or other object, on any street tree, or by fastening any rope, wire, cable, nail, screw, staple or other device to any street tree, except as used to support a young or broken tree. Nothing in this section shall be construed in such a manner that forbids lighting of a decorative or seasonal nature, provided that such lighting is draped or wrapped around a street tree and maintained without causing permanent damage to the street tree; or by using equipment that is not generally accepted by the tree care industry.

(Ord. 1116 § 1 (part), 2007)

12.28.090 Safety provisions.

No person may work on street trees in such a manner that may result in serious bodily injury to any individual.

(Ord. 1116 § 1 (part), 2007)

12.28.100 Prohibited trees.

It shall be unlawful to plant in any public planting strip the following trees: Alder, Big leaf maple, Black locust Cottonwoods, Lombardy poplar, Oregon maple, Silver maple, Willow, and any other nonrecommended street trees, including fruit trees (except ornamental types) such as Apples, Cherries and Black Walnut; Ash (Mountain ash), Birch (White birch, etc.), Elm (American elm, etc.), Hawthorn, London Plane, Oak (Pin oak), Pagoda tree, Poplars, Sycamore. Street trees not mentioned may be determined to be subject to discretion of the director.

(Ord. 1116 § 1 (part), 2007)

12.28.110 Penalties.

Violation of or failure to comply with any of the provisions of this chapter shall constitute a civil infraction, the penalty for which shall be a fine in the amount of five hundred dollars. Washington State Court Rules governing infractions and the appeals thereof shall control.

(Ord. 1116 § 1 (part), 2007)

12.28.120 Remedies not exclusive.

The remedies prescribed in this chapter are in addition to all other remedies provided or authorized by law.

(Ord. 1116 § 1 (part), 2007)

Chapter 13.12 SEWER CONSTRUCTION AND USE

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13.12.010 Title.

This chapter shall be known and may be officially designated as the "sewage disposal ordinance" of the city.

(Ord. 409 Ch. I § 1, 1975)

13.12.020 Purpose.

Purpose of this chapter is to protect the public health by providing standards for the collection, treatment and disposal of sewage within the city.

(Ord. 409 Ch. II § 1, 1975)

13.12.030 Definitions.

For the purpose of this chapter, certain words and terms are defined as follows:

"Approved," as applied to a material, device, fixture or mode of installation, means approved by the supervisor of public works of the city, under the standards specified in this chapter or those recommended by nationally recognized technical organizations or laboratories such as the United States Bureau of Standards, The American Standards Association, Inc., Federation of Sewage Works Associations, or American Society for Testing Materials, and Standard Specifications for Municipal Public Works Construction as prepared by the Washington Chapter of the American Public Works Association.

"B.O.D." (denoting biochemical oxygen demand) means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five days at twenty degrees centigrade expressed in parts per million by weight.

"Building drain" means that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer, beginning two and one-half feet outside the outer face of the building wall.

"Building inspector" or "inspector" means the building inspector of the city or his authorized deputy, agent or representative.

"Building sewer" means the extension from the building drain to the public sewer or other place of disposal.

"Garbage" means solid waste from the preparation, cooking and dispensing of food, and from the handling, storage and sale of produce.

"Industrial wastes" means the liquid wastes from industrial processes as distinct from sanitary sewage.

"Natural outlet" means any outlet into a watercourse, pond, lake, ditch or other body of surface or ground water.

"Person" means an individual, firm, company, association, society, corporation or group.

"pH" means the logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution.

"Properly shredded garbage" means the waste from the preparation, cooking and dispensing of food that has been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch in any dimension.

"Public sewer" means a sewer in which all owners of abutting properties have equal rights and is controlled by public authority.

"Sanitary sewer" means a sewer which carries sewage and to which storm, surface and ground waters are not intentionally admitted.

"Sewage" means a combination of the water-carried wastes from residences, business buildings, institutions and industrial establishments.

"Sewage treatment plant" means any arrangement of devices and structures used for treating sewage.

"Sewage works" means all facilities for collection, pumping, treating and disposing of sewage.

"Sewer" means a pipe or conduit for carrying sewage.

"Shall," when used in this chapter, is mandatory; "may" is permissive.

"Storm sewer" means a sewer which carries storm and surface waters and drainage but excludes sewage and polluted industrial wastes.

"Public Works Director~~Supervisor of public works~~" means the Public Works Director ~~supervisor of public works~~ of the city or his authorized deputy, agent or representative.

"Suspended solids" means solids that either float on the surface of, or are in suspension in water, sewage or other liquids; and which are removable by laboratory filtering.

"Watercourse" means a channel in which a flow of water occurs, either continuously or intermittently.

(Ord. 409 Ch. III §§ 1—23, 1975)

13.12.040 Sewage deposited on property prohibited.

It is unlawful for any person to place, deposit or permit to be deposited upon public or private property within the city, any human excrement, garbage, domestic wastewater or other objectionable waste, except as permitted by other ordinances of the city.

(Ord. 409 Ch. IV § 1, 1975)

13.12.050 Discharging into natural outlet prohibited.

It is unlawful to discharge to any natural outlet within the city, any sanitary sewage, industrial wastes or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this chapter.

(Ord. 409 Ch. IV § 2, 1975)

13.12.060 Toilet facilities required.

The owner of all houses, buildings, or properties used for human occupancy, employment, recreation, business or where people congregate, situated within the city and abutting on any street, alley or right-of-way in which there is now located a public sanitary sewer of the city, is required at his expense to install suitable toilet facilities therein, and to connect such facilities directly to the public sanitary sewer

in accordance with the provisions of this chapter, within sixty days after date of official notice to do so, provided that the public sewer is within three hundred feet of the property line.

(Ord. 409 Ch. IV § 3, 1975)

13.12.070 Premises unfit for human habitation.

Whenever upon inspection any building or premises, or part thereof, is found unfit for human habitation by reason of defective plumbing, lack of sanitary plumbing or toilet facilities, drainage system, building sewer or private sewage disposal system, the building inspector shall require the vacation of such building, premises or part thereof, within ten days after date of official notice to do so, and the building inspector shall take action as outlined in the Uniform Code for the Abatement of Dangerous Buildings.

(Ord. 409 Ch. IV § 4, 1975)

13.12.080 Privies, cesspools prohibited when.

Except as hereinafter provided, it is unlawful to construct or maintain any privy, privy vault, septic tank, cesspool or other facility intended or used for the disposal of sewage.

(Ord. 409 Ch. IV § 5, 1975)

13.12.090 Private system—Allowed when.

Where a public sanitary sewer is not available, the building sewer shall be connected to a private sewage disposal system complying with the provisions of this chapter. Such private sewage disposal systems shall be only approved septic tanks or cesspools. Cesspools shall be permitted only for temporary use in areas approved by the Cowlitz-Wahkiakum health district.

(Ord. 409 Ch. V § 1, 1975)

13.12.100 Private system—Plans and application for permit.

Before commencement of construction of a private sewage disposal system, the owner or his contractor shall first obtain a written permit from the office of the Cowlitz-Wahkiakum health district. The application for such permit shall be made on a form furnished by the Cowlitz-Wahkiakum health district, which the applicant shall supplement by such plans, specifications and other information as are deemed necessary by the Cowlitz-Wahkiakum health district.

(Ord. 409 Ch. V § 2, 1975)

13.12.110 Private system—Work inspection.

A permit for a private sewage disposal system shall not become final until the installation is completed to the satisfaction of the building inspector. The building inspector shall be allowed to inspect the work at any stage of construction and, in any event, the applicant for the permit shall notify the inspector when the work is ready for final inspection, and before any work is covered. The inspection shall be made within twenty-four hours of the receipt of notice by the building inspector.

(Ord. 409 Ch. V § 3, 1975)

13.12.120 Private system—Compliance with specifications.

The type, location and layout of a private sewage disposal system shall comply with specifications on file in the office of the Cowlitz-Wahkiakum health district and all recommendations of the Department of Social and Health Services, state of Washington. No septic tank or cesspool shall be permitted to discharge to any public sewer, natural outlet or to the ground surface.

(Ord. 409 Ch. V § 4, 1975)

13.12.130 Private system—Abandoned when.

At such times as a public sanitary sewer becomes available to a private sewage disposal system, a direct connection shall be made to the public sanitary sewer in compliance with the terms of this chapter, and any septic tanks, cesspools and similar private sewage disposal facilities shall be abandoned and filled with sand, gravel or soil or any combination thereof.

(Ord. 409 Ch. V § 5, 1975)

13.12.140 Private system—Owner expenses.

The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all times at his own expense.

(Ord. 409 Ch. V § 6, 1975)

13.12.150 Additional state requirements.

No statement contained in this chapter shall be construed to interfere with any additional requirements that may be imposed by the Washington State Department of Social and Health Services.

(Ord. 409 Ch. V § 7, 1975)

13.12.160 Construction permit required.

No person shall install, uncover, make connections with or openings into, use, alter or disturb any public sewer, building sewer or appurtenance thereof without first obtaining a written permit from the Public Works Department ~~office of the clerk-treasurer~~.

(Ord. 409 Ch. VI § 1, 1975)

13.12.170 Building sewer—Permit classes.

There shall be two classes of building sewer permits: (1) for residential and commercial service, and (2) for service to establishments producing industrial wastes. For either class, the owner or his contractor shall make application on a special form furnished at the office of the clerk-treasurer. The permit application shall be supplemented by such plans, specifications or other information considered necessary in the judgment of the supervisor of public works to insure compliance with the provisions of this chapter.

(Ord. 409 Ch. VI § 2, 1975)

13.12.180 Building sewer—Separate for each building.

The owner of each lot or parcel of real property within the area to be served by the sewage disposal system of the city as it now exists and as it may be improved and extended in the future, upon which such lot or parcel of real property there is situated any building or structure for human occupation or use for any purpose, shall cause a connection to be made between the sewerage system and each such building or structure. A separate and independent building sewer shall be provided for every building; except that where one building stands at the rear of another building on the same lot, the building sewer may be extended from one building to the other and the whole considered as one building sewer; and except that several buildings on one property, where by nature of usage, later subdivision into separate ownerships is not likely, may be connected to a single building sewer.

(Ord. 409 Ch. VI § 3, 1975)

13.12.190 Building sewer—Materials.

The building sewer shall be of cast iron pipe, ABS (plastic), vitrified clay pipe or PVC pipe as specified in the municipal public works code.

(Ord. 688 § 2, 1989: Ord. 409 Ch. VI § 4, 1975)

13.12.200 Building sewer—Size and slope.

The size and slope of the building sewer shall be subject to the approval of the supervisor of public works, but in no event shall the diameter of the sewer be less than four inches, The slope of the sewer pipe shall be not less than one-quarter inch per foot unless otherwise approved by the inspector in cases where it is impractical or impossible to lay the sewer to the most desirable slope of one-quarter inch per foot.

(Ord. 409 Ch. VI § 5, 1975)

13.12.210 Building sewer—Building drain connection.

In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such drain shall be lifted by approved artificial means and discharged to the building sewer.

(Ord. 409 Ch. VI § 6, 1975)

13.12.220 Building sewer—Gas and water-tight connections.

All joints and connections in building sewers shall be made gas-tight and watertight. All sewer pipe construction, jointing and testing shall be done in accordance with the City of Woodland Public Works Engineering Standards for Construction ~~Standard Specifications for Municipal Public Works Construction~~ as required in Woodland Municipal Code, Chapter 14.12.

(Ord. 409 Ch. VI § 7, 1975)

13.12.230 Public sewer—Prohibited discharges.

No person shall discharge or cause to be discharged any storm water, surface water, ground water, roof run-off, subsurface drainage, cooling water or unpolluted industrial process waters to any sanitary sewer, except refrigeration water as permitted by other ordinances of the city.

(Ord. 409 Ch. VII § 1, 1975)

13.12.240 Public sewer—Storm water and unpolluted drainage.

Storm water and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as storm sewers, or to a natural outlet approved by the city council and Department of Ecology, upon recommendation of the supervisor of public works. Industrial cooling water or unpolluted process waters may be discharged to a storm sewer, or natural outlet, with the approval of the city council and Department of Ecology upon recommendation of the supervisor of public works.

(Ord. 409 Ch. VII § 2, 1975)

13.12.250 Public sewer—Unlawful substances.

Except as hereinafter provided, no person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewer:

A. Any liquid or vapor having a temperature higher than one hundred fifty degrees Fahrenheit;

B. Any water or waste which may contain more than one hundred parts per million by weight of animal or vegetable fat, oil or grease;

C. Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid or gas;

D. Any garbage that has not been properly shredded;

E. Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, or other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with proper operation of the sewage works;

F. Any waters or wastes having a pH lower than five and five-tenths or higher than nine, or having any other corrosive property capable of causing damage or hazard to structures, equipment and personnel of the sewage works;

G. Any waters or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, which constitutes a hazard to humans or animals, or creates any hazard in the receiving waters of the sewage treatment plant;

H. Any waters or wastes containing suspended solids of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant;

I. Any noxious or malodorous gas or substance capable of creating a public nuisance.

(Ord. 409 Ch. VII § 3, 1975)

13.12.260 Pretreatment facilities.

A. Review and Acceptance of Pretreatment Facilities. Users shall provide wastewater treatment as required to comply with this chapter and shall achieve compliance with all applicable pretreatment standards and requirements set out in this chapter within the time limitations specified by the EPA, the state or the director, whichever is shorter. All pretreatment facilities shall be provided, operated, and maintained at the user's expense. Detailed plans showing proposed pretreatment facilities and operating procedures shall be submitted to the city for review and approval before construction of the facility. All pretreatment facilities shall be located in an accessible location for the ease of inspection and maintenance. The review of such plans and operating procedures shall not relieve the user from the responsibility of modifying pretreatment facilities as necessary to produce an acceptable discharge under the provisions of this chapter. The user shall obtain all necessary construction and operating permits from the city.

B. Standard of Pretreatment. Users shall provide all known, available and reasonable methods of treatment, prevention and control, including best management practices, as required to comply with this chapter and state and federal regulations.

C. Requirement for Proper Operation. All pretreatment facilities shall be operated and maintained at the user's expense. Prior to operation of the pretreatment facility, the user shall submit a copy of the proposed operations and maintenance procedures to the city for review and approval. Such pretreatment facilities shall be at all times under the control and direction of a person qualified to operate such facilities. Food service users shall submit required plans and/or operation maintenance procedures to the city sewer maintenance department. All other users shall submit such procedures to the director. The use of hot water, enzymes, bacteria, chemicals or other agents or devices for the purpose of causing the contents of a pretreatment device to be discharged into the sanitary sewer system is prohibited.

D. New Construction. Any subsequent proposal for significant changes in the user's operation or maintenance of existing pretreatment facilities shall be submitted to the city for review and approval prior to the user's initiation of such changes. Prior to any new construction or other modification of existing pretreatment facilities, the user shall submit detailed plans showing such proposed new construction or modifications. The user shall obtain any necessary construction permits before new construction or modification of an existing facility. If applicable, the user shall obtain a wastewater discharge permit or other control document. The review of such plans by the city shall not relieve the user from the responsibility of modifying its facility as necessary to comply with the provisions of this chapter.

E. Submission of Plans and Reports. Engineering reports for pretreatment facilities shall comply with the requirements of Chapter 173-240 and Section 173-216-050(3) of the WAC, RCW 90.48.010 as amended, and shall be submitted in accordance with the director's pretreatment program procedures.

F. Grease and Oil Separators.

1. Food Service Users. Users, who operate restaurants, cafes, lunch counters, cafeterias, bars or clubs, or hotel, hospital, sanitariums, factory or school kitchens, butcher shops, or other establishments where food (polar) grease may be introduced to the sewer system, shall have pretreatment facilities to prevent the discharge of fat waste, oil and grease. Such pretreatment facilities shall be either a grease interceptor or grease trap as determined by the jurisdiction located outside the building, and installed in the wastewater line leading from sinks, drains or other fixtures where grease may be discharged. Grease interceptors shall be required on all new construction projects that have a Type 1 hood exhaust system. New grease interceptors or grease traps shall be in accordance with the Uniform Plumbing Code, and any other requirements by the city as set forth herein. Grease interceptors that include dishwasher effluent shall be sized to allow sufficient detention time to allow for cooling of the effluent. No more than four fixtures shall connect to an individual grease interceptor, and no sanitary facilities will be allowed to connect upstream of any grease interceptor. Subject to the director's approval, dishwater effluent may be excluded from pretreatment. Grease traps inside the kitchen area will only be allowed under special circumstances and shall only be approved by the director on a case-by-case basis.

2. Industrial/Commercial User. Users who operate automobile or truck repair facilities, steam cleaning facilities for motorized equipment, air compressor(s), or any other establishments or equipment where petroleum based (non-polar) grease and oil may be introduced to the sewer system, shall have pretreatment facilities to prevent the discharge of oil and grease. These pretreatment facilities shall be oil/water separators or interceptors located to collect such mixture of grease, oil and water. Such facilities shall be in accordance with city and state standards.

3. Retrofit of User Facilities. Users may be required to retrofit facilities which were constructed prior to the adoption of the ordinance codified in this chapter. The requirement to retrofit shall be on a case-by-case basis, as determined by the director for compliance with city, state and federal regulations. The director may require installation of grease interceptors, grease traps or other pretreatment facilities for those facilities that violate discharge prohibitions and supplemental limitations as set forth in this chapter. In all cases, existing food service users that have a Type 1 hood exhaust system shall be required to retrofit with an approved grease trap or

interceptor that is sized in accordance with the current Uniform Plumbing Code and its appendices. In deciding whether to require a user to retrofit their facilities, the director shall take into account all relevant circumstances, including but not limited to, the extent of potential harm caused by the discharge, the magnitude and duration of the discharge, economic detriment to the user, corrective actions by the user, the compliance history of the user, and any other relevant factors. Grease interceptor or grease trap size shall be determined in accordance with the Uniform Plumbing Code and any other requirements by the city as set forth herein at the time the user is notified that facility modifications are required. Sizing of grease traps or interceptors will be reviewed and may be modified at the request of the local sewer jurisdiction. All costs incurred in retrofitting a user's facility shall be the sole responsibility of the user.

4. Construction of Grease Traps and/or Grease Interceptors. Trap/interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight and equipped with easily removable covers which when bolted in place shall be gastight, and vented.

5. Maintenance of Grease Traps and/or Grease Interceptors. Users shall maintain, at their sole expense, grease interceptors and/or grease traps and/or other pretreatment equipment in a manner that shall prevent fat waste, oil or grease from being carried into the sewer system at all times. Authorized city employees shall be allowed access to grease traps and interceptors for the purpose of inspection and/or to verify compliance with this chapter. Fat waste, oil or grease removed from such a facility shall not be disposed of in the sanitary or storm sewer. A record of disposal shall be maintained for review by the Southwest Washington Health District and the local sewer jurisdiction.

G. Provisions for the Implementation of Pretreatment Facilities.

1. If upon inspection the pretreatment facility in place is deemed inadequate by the public works director or if no pretreatment facility is in place and is deemed necessary by the public works director, a new pretreatment facility complying with the terms of the current Plumbing Code is required and shall be installed within thirty days of notice by the city of such deficiency. Failure to comply with these provisions shall result in the discontinuance of sewer service to the premises by the city shutting off the city water service.

2. Owners/Users of such trap/interceptors shall perform regular maintenance upon such interceptors with such frequency as to insure their continued proper working condition. If upon inspection, the city determines that the ongoing maintenance by the owner/user is inadequate to insure proper operation of the interceptor, an order shall be issued declaring such deficiency and providing the owner/user fourteen calendar days to properly service the interceptor. If upon further inspection such maintenance has not been performed, a surcharge of one hundred dollars per day shall be imposed and added to the premises' sewer bill until such maintenance shall have been performed. Such surcharge shall continue until the owner/user calls for an inspection to determine compliance and compliance has been certified and an inspection fee of one hundred dollars shall also be assessed.

3. Any owner/user whose interceptor is declared to be improperly maintained a second time within twenty-four months of a prior determination shall be assessed the sewer surcharge of one hundred dollars per day from the date of the inspection.

(Ord. 409 Ch. VII § 4, 1975)

(Ord. No. 1161, § 1, 10-5-2009)

13.12.265 Reserved.

Editor's note—

Ord. No. 1161, § 2, adopted October 5, 2009, repealed § 13.12.265, which pertained to provisions for the implementation of Section 13.12.260. See also the Code Comparative Table and Disposition List.

13.12.270 Reserved.

Editor's note—

Ord. No. 1161, § 2, adopted October 5, 2009, repealed § 13.12.270, which pertained to public sewer—interceptor maintenance. See also the Code Comparative Table and Disposition List.

13.12.280 Public sewer—Approval for certain discharges.

The admission into the public sewers of any waters or wastes having:

A. A five-day biochemical oxygen demand greater than two hundred parts per million by weight;

B. More than two hundred parts per million by weight of suspended solids;

C. Any quantity of substances having the characteristics described in Section 13.12.250; or

D. An average daily flow greater than two percent of the average daily flow of the city, shall be permitted only upon written approval of the public works director and approval by the city council. A contract between the city and the discharger shall be required. Rates for these flows and high strength wastes shall be determined by the city. Where necessary, in the opinion of the public works director, the owner shall provide, at his expense, such preliminary treatment as maybe necessary to:

1. Reduce the biochemical oxygen demand to three hundred parts per million and the suspended solids to three hundred fifty parts per million by weight;

2. Reduce the objectionable characteristics or constituents to within the maximum limits provided for in Section 13.12.250; or

3. Control the quantities and rates of discharge of such waters or wastes. Plans, specifications and any other pertinent information relating to proposed preliminary treatment facilities shall be submitted for the approval of the public works director and the Department of Ecology of the state of Washington, and no construction of such facilities shall be commenced until the approvals are obtained in writing.

(Ord. 409 Ch. VII § 6, 1975)

(Ord. No. 1183, § 1, 3-15-2010)

13.12.290 Preliminary treatment facility maintenance.

Where preliminary treatment facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation, by the owner at his expense.

(Ord. 409 Ch. VII § 7, 1975)

13.12.300 Control manholes required when.

A. When required by the Public Works Director ~~supervisor of public works~~, the owner of any property served by a building sewer carrying industrial wastes shall install a suitable control manhole in the

building sewer to facilitate observation, sampling and measurement of the wastes. Such manhole, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the Public Works Director~~supervisor of public works~~. The manhole shall be installed by the owner at his expense, and shall be maintained by him so as to be safe and accessible at all times.

B. If the Public Works Director ~~supervisor of public works~~ determines a need, the owner shall install an approved sewerage flow meter. Such flow meter shall be installed at the owner's expense.

(Ord. 409 Ch. VII § 8, 1975)

13.12.310 Testing and analysis from control manhole.

All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in Sections 13.12.250 and 13.12.280 shall be determined in accordance with "Standard Methods for the Examination of Water and Sewage," current edition, and any and all subsequent editions thereof as published jointly by American Public Health Association, and other recognized authorities, and shall be determined at the control manhole provided for in Section 13.12.300, or upon suitable samples taken at the control manhole. In the event that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the building sewer is connected.

(Ord. 409 Ch. VII § 9, 1975)

13.12.320 Special exceptions not accepted.

No statement contained in this chapter shall be construed as preventing any special agreement or arrangement between the city and any industrial concern whereby an industrial waste of unusual strength or character may be accepted by the city for treatment, subject to payment therefor by the industrial concern.

(Ord. 409 Ch. VII § 10, 1975)

13.12.330 Damage—Repair by person causing.

In the event any person shall, through accident or neglect, break, destroy or in any way damage any structure, appurtenance or equipment which is a part of the municipal sewage works, such person shall pay the cost of repairing or replacing such damaged or destroyed property. It shall be the duty of the supervisor of public works to determine the extent of the damage and to have the property so damaged either replaced or repaired, according to the city's specifications by the person causing said damage, or by such person paying to the city the cost of the same, in which event the city will either do the work or have such work done.

(Ord. 409 Ch. VIII § 1, 1975)

13.12.340 Damage—Malicious vandalism.

No person shall maliciously or wilfully break, damage, destroy, uncover, deface or tamper with any structure, appurtenance, or equipment which is a part of the municipal sewage works. Any person violating this provision shall be subject to immediate arrest under charge of disorderly conduct as well as being liable for the damage done.

(Ord. 409 Ch. VIII § 2, 1975)

13.12.350 Penalty for violation.

Any person found to be in violation of any provision of this chapter, except Sections 13.12.230 through 13.12.320, may be served by the city with written notice stating the nature of the violation and allowing a reasonable time limit not to exceed thirty days for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, make all corrections required by the notice. Failure to make correction within thirty days as herein provided is a misdemeanor and shall be punished pursuant to Woodland Municipal Code Chapter 1.12. Each day the violation continues shall be considered a separate offense.

(Ord. 409 Ch. X § 1, 1975)

13.12.360 Correction or abatement by city.

The imposition of the penalties herein prescribed shall not preclude the city attorney from instituting an appropriate action to restrain, correct or abate any violation of the terms of this chapter.

(Ord. 409 Ch. XI § 1, 1975)

Chapter 14.12 MUNICIPAL PUBLIC WORKS CODE

Sections:

14.12.010 Municipal Public Works Code adopted.

14.12.020 Compliance required.

14.12.010 Municipal Public Works Code adopted.

The 2014 City of Woodland Public Works Engineering Standards for Construction ~~1996 Standard Specifications for Road, Bridge and Municipal Construction~~ is hereby adopted as the Municipal Public Works Code for the city or the most recent code when published, later versions shall replace the 2014 Standards.~~1996 specifications~~.

(Ord. 857 § 7 (part), 1997: Ord. 422 § 1, 1976: Ord. 348 § 1, 1972)

14.12.020 Compliance required.

All streets and related work, sanitary sewers and storm drains, and water distribution construction or repair, done within the corporate limits of the city by any individual, firm, or corporation, shall be done and constructed both in design, material or otherwise as set forth and provided for in the City of Woodland Public Works Engineering Standards for Construction in ~~Standard Specifications for Municipal Public Works Construction described in~~ Section 14.12.010.

(Ord. 857 § 7 (part), 1997: Ord. 429 § 1, 1976: Ord. 348 § 2, 1972)

CITY OF WOODLAND PUBLIC WORKS

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTIONS

SECTION 1 .....GENERAL DESIGN, PLANNING, AND CONSTRUCTION
SECTION 2 ..... TRANSPORTATION
SECTION 3 ..... STORM DRAINAGE
SECTION 4 .....SANITARY SEWER SYSTEM
SECTION 5 ..... WATER SYSTEM
SECTION 6 ..... EROSION CONTROL MANUAL

APPROVAL DATE:

INTRODUCTION

The purpose of the City of Woodland Engineering Standards for Construction is to establish and maintain minimum standards for public and private construction for roads, storm drainage, and sanitary sewer systems hereinafter constructed or improved by another as a condition of city approval of a development or by the City.

The standards for city roads and bridges, and all other construction within publicly owned right-of-way, shall consist of the following: The Standard Specifications for Road, Bridge and Municipal Construction published or adopted by the Washington State Highway Commission, Washington State Department of Transportation (WSDOT), and the American Public Works Association (APWA) and all subsequent revisions thereto; the Washington State Department of Transportation Design Manual (current edition); and the design criteria set forth in WMC 12, WMC 13, WMC 14 and WMC 15 and the standard detail drawings of streets and utility construction approved by the City and located within these standards.

The Director shall specify which of the standard specifications will apply to the construction project. Copies of the Standards are available at the Woodland Public Works Office.

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CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 1

GENERAL DESIGN, PLANNING, AND CONSTRUCTION

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

SECTION 1 – GENERAL DESIGN, PLANNING, AND CONSTRUCTION

CHAPTER 1 – DESIGN AND PLANNING REQUIREMENTS

1.00 Requirements for Public Improvements

A. General

The purpose is to set standards for the design and construction of public improvements to serve new and future developments. These include street, bikeway, drainage, and sanitary sewer improvements as required by the development review process, City Ordinance, and other City policies adopted or authorized by the City Council or the Mayor. Standards for site grading, erosion control, parking lot, driveway construction, and 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 and the 2011 Public Rights-of-Way Accessibility Guidelines (PROWAG). 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 five separate Sections; Section 1 – General Design, Planning, and Construction, Section 2 – Transportation, Section 3 – Storm Drainage, Section 4 – Sanitary Sewer System, Section 5 – Water System, and Section 6 – Erosion Control Manual.

C. Shortened Designation

These City of Woodland Engineering Standards for Construction 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 benefit 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, 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. Two-year Surety Bond Requirement.

Prior to commencement of the work under a permit granted pursuant to this chapter, the City may require the permittee or the contractor for the permittee to post with the city a bond with a surety qualified to do bonding business in this state, a cash deposit or an assigned savings account or other security acceptable to the city in an amount equal to one-hundred fifty percent (150%) of the cost of the work as estimated by the Public Works Director. Such bond, deposit or other security shall be conditioned upon the permittee or its contractor performing the work pursuant to the terms of this chapter, including the restoration and/or replacement of the street, sidewalk, or other right-of-way within the time specified by the public works director, and a maintenance bond guaranteeing such work and replacement at ten percent of the estimated cost of surface restoration for a period of two years after the completed job is accepted by the city. For those public utilities which hold a franchise agreement, a maintenance bond is not required.

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 Hearings Examiner Conditions of Approval.

Third: City of Woodland Engineering Standards for Construction.

Fourth: City of Woodland Ordinances and Municipal Code (WMC)

Fifth: Plans and details prepared by the design engineer.

Sixth: APWA/WSDOT 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 Public Works Director 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	A portion of a roadway which has been designated by striping, signing and pavement (Bike Lane) markings for the preferential or exclusive use of bicyclists.
Bicycle Path	A paved pathway physically separated from motorized vehicular traffic by an open off-street space or barrier within an independent right-of-way.
Bicycle Route	A segment of a system of bikeways designated by the jurisdiction having authority (Bike Route) 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 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 Woodland with the Public Works Director as the lead contact person.
Public Works Director	City of Woodland's Public Works Director 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	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	City of Woodland's Public Works Director having authority specified in state law or city ordinances, or their designated representative.
Dry Utilities	Those utilities not dealing with the transport of water. They consist of telecommunications, electrical, natural gas, cable, and any other utilities operated by private companies.
Engineer	The Public Works Director or their designee
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
HMA	Hot Mix Asphalt as defined in the Standard Specifications.
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.
ITE	The Institute of Transportation Engineers. This organization is one of the organizations responsible for development of the ITS, the International Transportation Standards. The ITE also publishes trip generation and other information used by the City of Woodland in transportation system design.
Material(s)	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.
Planner	The Woodland Community Development Planner or their designee
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.
PROWAG	Public Rights-of-Way Accessibility Guidelines (2011)
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 The latest edition of the City of Woodland Engineering Standards for Construction.

Standard Drawings The latest edition of the City of Woodland's standard details for Construction. Reduced copies are included in the Standards.

Standard Specifications The latest edition of the "Standard Specifications for Road, Bridge, and Specifications 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 Coefficient A number used in determining the structural section of a street.

Trail "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.

WSDOT 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 Public Works Department.

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 requested for a project. The Woodland Community Development Planner 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. 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; 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, Water, Storm)

A. All development projects including utility extensions must go through the site plan review and approval process as outlined in WMC 19.10. Once the site plan and the engineering plans described in Section 1 of these Standards have been approved the City will allow the extension of city utilities.

   Upon completion of the pre-construction requirements and forty-eight (48) hours notice, a preconstruction meeting shall be held with the Public Works Department at which time construction inspection will be scheduled. No utility extension construction shall commence prior to a pre-construction meeting. After completion of construction and submittal of required documents and fees including as-built drawings, final acceptance will be given by the City at which time utility service will be provided. Three hardcopies of full size as-builts will be provided along with electronic copies of the drawings in AutoCAD .dwg format.

B. Easements for utility systems shall be prepared by a Professional Licensed Surveyor (PLS) 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 before acceptance by the City of Woodland.

D. The developer shall provide final as-constructed elevations of manhole inverts and tops, gravity pipe grades, and utility locations. All elevations shall be from Cowlitz or Clark County datum as appropriate.

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. Submittals will meet the requirements of WMC 19.10.050

3. 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 meet the requirements of WMC 19.10.

2. The plans shall be submitted on 24 x 36 inch sheets.

3. 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.

4. 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.

5. Details - Reference each City Standard Drawing by number.

6. The scale shall be 1-inch = 10 feet, 20 feet, 30 feet, 40 feet, 50 feet, or 60 feet horizontally for all drawings except structural details. Scale shall be shown with north arrow and within a title block.

7. Letter size shall not be smaller than 0.09 inches high.

8. The location and elevation of a National Geodetic Survey, United States Geological Survey, Cowlitz/Clark County, or City of Woodland bench mark shall be shown. No other datum shall be used without permission of the Public Works Director. Temporary control bench marks and elevations shall also be shown on the plans.

9. A title block shall appear on each sheet of the plan set and shall be placed 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.

10. The seal of the registered Washington Professional Engineer responsible for preparation of the plans shall appear on each sheet.

11. 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.

12. Through use of standard drafting symbols, indicate the location and direction of view for all sections.

13. Cover sheet shall include developer's name, address and phone number.

B. Site Development Plans shall be organized as follows:

1. Title sheet. The title sheet should include the following information:

   i. An index of all sheets in the plan set
   ii. Name and contact information of all utilities including the city
   iii. A vicinity map showing the proposed project
   iv. Project approval blocks for the City of Woodland, and Clark County Fire and Rescue
   v. Legal description of property where proposed development is located
   vi. Project Bench Mark information
   vii. A note stating "*Construction shall conform to the requirements of the City*

of Woodland Engineering Standards for Construction."

2. Grading and erosion control plan with maximum contour intervals of two feet (2'). Proposed contours shall match up with existing contours a minimum of two feet (2') from the property line of the proposed project. This sheet shall also note the source of information, date of field work, and location of original document.

3. Street and storm sewer. 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. Sanitary sewer and water, including fire hydrant locations.

5. Dry Utilities (Natural Gas, Electrical, Telecommunications, cable, etc.) This information can be included with street and storm sewer sheets if space allows.

6. Standard Detail Sheets (as required).

7. Standard Specification Sheets (as required).

8. Approved preliminary plat (if it is a subdivision).

9. Signing and Striping Plan (if needed).

10. Landscape plan including sidewalks, bikeways, retaining walls, irrigation, and lighting (if needed).

1.07 Requirements for Public Street Improvement Plans

A. Plan View

Plan views shall show the following:

1. Right-of-Way, property, tract, and easement lines (existing and proposed).

2. Subdivision name, lot numbers, street names, and other identifying labels. Subdivision and street names are subject to the approval of the City Planner.

3. Location and stationing of existing and proposed street center lines and curb faces.

4. Horizontal alignment and curve data of street center lines and curb returns.

5. Existing underground utilities and trees over 6-inches in diameter within the construction limits.

6. 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 one-hundred feet (100') surrounding any of the above items to remain.

7. Match lines with sheet number references.

8. Street stationing to be noted at a minimum of 100-foot intervals.

9. Top of curb elevations along curb returns at quarter-delta's, and at 100-foot stations.

10. Location of the low points of street grades and curb returns.

11. Sidewalk locations. This shall include ramps, transitions in location or width, and relationship with driveways.

12. Crown lines along portions of streets transitional from one typical section to another.

13. Center line stationing of all intersecting streets.

14. Location and description of existing survey monuments, including but not limited to: section corners, quarter corners, donation land claims, corners, and City bench marks.

15. Location of proposed street intersection monument boxes.

16. FEMA designated 100-year flood plains and flood ways, or areas of flooding during a 100-year storm event.

17. Wetland areas and storm water quality undisturbed corridors (buffer strips)

18. Legend.

19. Any additional information that the City deems necessary.

B. Profile View

Profile Views shall show the following:

1. 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.

2. Original ground along the center line and if necessary at the edges of the right-of-way if grade differences are significant.

3. 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 three-hundred feet (300’) beyond the scope of the proposed construction. At the discretion of the Public Works Director, additional design information concerning the vertical and horizontal alignment of future street extensions may be required.

4. Vertical alignment of streets, including existing center line monuments.

5. The top of curb for all cul-de-sacs, eyebrows and curb returns.

6. 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.

7. Profiles for ditch and creek flowlines shall extend a minimum of two-hundred feet (200') beyond the project, both upstream and downstream. Typical cross sections at fifty foot (50') intervals shall also be submitted.

8. Designate structures using alpha or numeric labels on profiles to correspond to plan view notation.

9. All existing and proposed sanitary, water, storm lines and other utilities crossing the profile.

1.08 Site Grading Plan

The City of Woodland requires a site grading plan as part of the Application for any development that involves the excavation or fill of greater than fifty cubic yards (50 cu. yd.) of material. Grading contours (existing & proposed) shall be at no more than two (2) foot intervals, and shall extend off-site a minimum of fifty feet (50'). 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 Woodland Engineering Standards for Construction, Section 6, Erosion Control Manual. A detailed erosion control plan shall be shown in conjunction with the site grading plan.

1.09 Erosion Control Plans

Erosion Control requirements are listed in Section 6, Erosion Control Manual, of these Standards.

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

A. General Requirements

1. In plan view, location, stationing, materials, size, of all proposed utility lines (water, storm, sanitary, dry utilities). Location of all fire hydrants. Stationing shall be located in relationship to the street stationing at all manholes or other key locations.

2. Show all proposed manholes, inlets, and catch basins with all invert and top elevations.

3. 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.

4. Designate structures using alpha or numeric labels on profiles to correspond to plan view notation.

5. Water plans will be reviewed and approved by the City and will meet the requirements and standards of the City.

6. All lengths and dimensions shall be horizontal distances, no slope distances on plans.

7. Indicate type of pavement restoration required (if working in existing streets).

8. Dimension existing and new utility locations from right-of-way line and/or property line.

9. Check that base map conforms to all requirements listed herein.

10. On plans show existing manholes or give reference distances to existing manholes near project, including manhole number and invert/rim elevations.

11. General construction notes must be included on the first or second plan sheet. Remove notes that don't apply and add additional notes to the list if necessary.

12. List vertical datum on plan and show bench mark to be used for vertical control during construction.

B. Plan View

1. List pipe length, size and material along side of pipe, e.g. 150 LF - 8" PVC.

2. Pipe length is to be based on horizontal distance between center of manholes.

3. Indicate direction of flow with arrows on end of pipe entering manhole.

C. Profile View

1. List pipe length, size, material and slope to 4 decimal places (ft per ft), e.g. 150 LF - 8" PVC, S = 0.0125.

2. Slope based on i.e. out of upstream manhole, i.e. in of downstream manhole and horizontal distance between center of manholes.

3. Profile for existing and proposed storm sewer and sanitary sewers. Show bedding, and backfill requirements.

4. Show all existing and proposed sanitary, water, storm lines and other utilities crossing the profile.

5. For drainage plans, profiles for ditch and creek towlines shall extend a minimum of two-hundred feet (200’) beyond the project, both upstream and downstream. Typical cross sections at fifty foot (50’) intervals shall also be submitted.

1.11 Requirements for Supplemental Submittal Information

A. Technical Information Report (TIR)

A TIR, or final stormwater report, is required with all engineering plans for proposed developments unless exempted under WMC 15.12 Article III. The TIR must meet the requirements outlined in WMC 15.12.

B. Other Requirements

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

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

C. Detail Sheets

Detail sheets shall include Standard Drawings that are appropriate to the project.

D. Standard Notes.

Standard notes shall be included on the first or second sheet in the plan set. The following notes shall be included: *Construction shall conform to the requirements of the City of Woodland Engineering Standards for Construction.*

1.12 Review Procedure

Three (3) sets, or as directed by the Public Works Director, of complete draft plans shall be submitted for review. Plans shall be complete and shall be stamped and signed by the developer's engineer. Supporting information and documentation, such as a TIR 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, three (3) revised plans and the original "Red Line" plans shall be returned to the City.

Following approval of draft plans and calculations by the Public Works Director, and following the signing of approval by the Fire Marshal, the developer's engineer will submit one copy of all original plans and calculations to the Public Works Director for approval signature. Once the plans have been approved and signed, the Public Works Director will notify the developer's engineer that the original plans have been signed and are ready for release. The developer's engineer will then provide the City with three hardcopies of complete final approved plans along

with electronic copies of the approved plans in AutoCAD .dwg and Adobe .pdf format.

This plan review and approval is valid for three (3) years from the date of site plan approval and fee payment. The Planner may approve up to two one-year extensions per WMC 19.10.100

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 review set of as-built drawings. As-built drawings shall contain any and all revisions to the previously approved construction plans. Once the as-built drawings have been reviewed and approved by the City, the developer's engineer shall submit a signed set of mylar as-built drawings to the City. 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. The City shall also receive a copy of all as-built drawings and documents (such as point files) in AutoCad format dwg, on disk or thumb drive. A copy of all as-built drawings in Adobe Acrobat .pdf format will also be provided on a disk or thumb drive. 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 and approval of as-built drawings shall be made by the City of Woodland prior to final plat approval.

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. Changes to the standards will become effective upon approval by the Woodland Public Works Director.

1.16 Design Modifications Process

A. Submittal

Requests to modify City Standards shall be submitted in writing by the developer's engineer, to the Director. 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 Director, who shall consult the appropriate review authorities and make one of the following decisions;

1. Approve as is,
2. approve with changes,
3. or deny with an explanation.

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

C. Appeal

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

D. Criteria for Modification of Standards

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

1. Topography, right-of-way, existing construction or physical conditions, or other geographic conditions impose an unusual hardship on the applicant and an equivalent alternative which can accomplish the same design is available.

2. A minor change to a specification or standard is required to address a specific design or construction problem which, if not enacted, will result in an unusual hardship.

3. An alternative design is proposed which will provide a plan equal to or superior to these standards.

4. Application of the Engineering Standards to the development would be grossly disproportional to the impacts created.

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 Public Works Director. The developer shall pay the cost of all testing as outlined herein. Specific requirements for testing are listed in the appropriate sections 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 Chapter 2 of Section 1 of the Engineering Standards.

1.19 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.

SECTION 1 – GENERAL DESIGN, PLANNING, AND CONSTRUCTION

CHAPTER 2 – GENERAL CONSTRUCTION REQUIREMENTS

1.50 General Requirements

A. General

The purpose of these standards is to set standards for the construction of public improvements to serve new and future developments. 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.

B. Standards

All work and materials shall be in accordance with this document and the latest edition of the City of Woodland Engineering Standards For Construction which shall be cited routinely in the text as the "Standards". The Standards include standard detail drawings which shall be considered part of the engineering plans approved by the City.

C. Standard Specifications

All work and materials shall be in accordance with this document and the latest edition of the APWA/WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, hereafter referred to as Standard Specifications. Where conflicts exist the more stringent specification shall apply as approved by the City.

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; park, recreation, and open-space facilities used by the public; and land alteration activities constructed within public right-of-way. Land alteration activities are those activities which are commonly referred to as clearing (the act of vegetation removal from the land surface by mechanical or chemical means - often referred to as land clearing), grubbing (the act of root vegetation removal from beneath the surface of the earth - usually in association with clearing), excavation (the mechanical removal of earth material), filling (deposition of earth material placed by artificial means), grading (excavation or filling or combination thereof), compaction (densification of earth material by artificial means), stockpiling (temporary deposition of earth material placed by artificial means), and stabilizing (counteracting the actions of gravity, wind or water).

E. Contractor Requirements

At all times during construction of public improvements, the Contractor shall be required to have in his possession, at the job site, a copy of the City's Engineering

Standards, and also a copy of the Standard Specifications.

1.51 Abbreviations and Definitions

Abbreviations and definitions shall be as listed in 1.02 of the "City of Woodland Engineering Standards for Construction", herein after referred to as the “Standards”.

1.52 Pre-Construction Conference

Upon completion of the design and approval by the City and forty-eight (48) hour notice, a pre-construction meeting will be held with the City at which time construction inspection will be scheduled. A pre-construction letter noting requirements to be completed prior to construction shall be provided at this meeting. No construction work shall commence prior to the pre-construction meeting. After completion of construction and submittal of required documents and fees, final acceptance will be given by the City.

1.53 Seasonal Limits

Seasonal Limits for land alteration operations shall adhere to the latest addition of the WSDOT Standards and Specifications for Road, Bridge, and Municipal Construction.

A. When Construction or land alteration activities are interrupted by heavy rain, operations shall not be resumed until the City determines that erosion control facilities are adequately in place.

B. Special erosion control requirements are required during wet weather months. See Section 6 of these Standards for requirements.

C. Construction or land alteration activities near sensitive areas, including slopes over five percent (5%), wetlands, flood plains, or riparian corridors shall be subject to limitations imposed by the City. Permits from other agencies in addition to the City may be required by law for such work. It is the responsibility of the project sponsor to obtain such permits prior to beginning work and to see that all applicable regulations are complied with at all times during the course of the work.

D. Work shall be stopped and the site shall be secured from erosion at any time when weather conditions change or the threat of heavy rain makes erosion problems likely.

1.54 100 Year Flood Plain

Encroachments, including fills, new construction, substantial improvements, and other development within the regulatory floodway that would result in any increase in flood levels during the occurrence of the 100-year flood discharge shall be prohibited.

1.55 Environmental Protection (During Construction)

A. General Policy and Requirements

1. It is the policy of the City of Woodland to require temporary and permanent measures for all construction projects to lessen the adverse effects of

construction on the environment.

a. The Contractor shall properly install, operate, and maintain both temporary and permanent works as provided in this section or in an approved plan, to protect the environment during the term of the project.

b. The City may, in addition, require that a construction project be scheduled so as to minimize erosion or other environmental harm.

c. Nothing in this section shall relieve any person from the obligation to comply with the regulations or permits of any federal, state, or other local authority.

2. For all projects, the prohibitions and regulations of this section shall apply. The City may temporarily suspend the work or require additional protection measures if it appears, based upon observed conditions of the project, that the approved plan is insufficient to prevent environmental harm, that such suspension or additional measures will prevent or minimize such harm.

B. Air Pollution Control

1. Dust shall be minimized to the extent practicable, utilizing all measures necessary, including, but not limited to:

a. Sprinkling haul and access roads and other exposed dust producing areas with water. Obtaining water from a hydrant will require specific authorization from the City.

b. Applying DOE approved dust palliatives on access and haul roads.

c. Establishing temporary vegetative cover.

d. Placing wood chips or other effective mulches on vehicle and pedestrian use areas.

e. Maintaining the proper moisture condition on all fill surfaces.

f. Pre-wetting cut and borrow area surfaces.

g. Use of covered haul equipment.

2. Fumes, Smoke, and Odors:

a. Tires, oils, paints, asphalts, coated metals, or other such materials will not be permitted in combustible waste piles, and will not be burned at the construction site.

b. Open burning shall not be permitted.

C. Erosion Control

All construction work shall be completed in accordance with Section 6 of these

Standards - Erosion Control Manual. All construction standards must meet or exceed these requirements for the installation and maintenance of erosion control devices.

1.56 Clearing and Grading on Environmentally Sensitive Lands

Clearing and Grading shall be prohibited in sensitive areas including slopes in excess of twenty-five percent (25%), wetlands, or flood plains.

1.57 Preservation of Existing Vegetation

A. Natural Vegetation

Natural vegetation shall be protected and left in place. Work areas shall be carefully located and marked to reduce potential damage. Trees shall not be used as anchors for stabilizing working equipment.

B. Excavation

All excavation, (cut and fill) in the proximity of trees and shrubs shall be kept outside the drip-line of said trees and shrubs.

C. Clearing Operations

During clearing operations, trees shall not be permitted to fall outside the work area. In areas designated for selective cutting or clearing, care in falling and removing trees and brush shall be taken to avoid injuring trees and shrubs to be left in place.

1.58 Vegetation Restoration

A. General

Vegetation shall be restored on those areas of the site disturbed by the land alteration activity which are not covered by permanent impervious surface improvements (e.g. buildings, parking lots, etc.) at the earliest possible time consistent with appropriate planting times. The soil shall be stabilized prior to vegetation restoration since vegetation alone cannot provide an effective erosion control cover and prevent soil slippage on a soil that is not stable due to its texture, structure, water movement or excessive slope.

B. Requirements

In no case will the period between the land alteration operation and final and complete restorative, or permanent erosion control, vegetation planting for a given project or project phase be longer than one year. Said planting shall restore the vegetation on site to a condition equal to or better than the pre-cleared condition to the maximum extent possible. Temporary erosion and sedimentation control measures shall be maintained in full operating condition for all areas to be restored until said restoration is complete and the site is fully stabilized.

1.59 Maintaining Surface Water Quality

A. Construction

Construction between stream banks shall be kept to a minimum.

B. Pollutants

Pollutants such as fuels, lubricants, bitumens, raw sewage, and other harmful materials shall not be discharged into or near rivers, streams, or impoundments. Sterilizing water from water line construction activities shall not be directly discharged into the public storm drainage system.

C. Use of Water

The use of water from a stream or impoundment shall not result in altering the temperature of the water body enough to affect aquatic life.

1.60 Fish and Wildlife Habitat Preservation

A. General

The construction shall be done in a manner to minimize the adverse effects on wildlife and fishery resources.

B. Requirements

The requirements of local, state, and federal agencies charged with wildlife & fish protection shall be adhered to by the entire construction work force.

1.61 Stream and Creek Crossings

A. Contractor

The Contractor shall comply with all provisions of the permits required by the Washington State Department of Fish and Wildlife and the U.S. Army Corps of Engineers.

B. Work To Be Performed

Before any work may be performed in any stream, the method of operation and the schedule of such work shall be approved in writing by the Engineer. Work within major streams shall be scheduled to take place as specified in the applicable permits for such work, and once started, shall be completed without interruption of the work. Mechanized equipment shall enter streams only when necessary and only within the immediate work area.

1.62 Noise Control

Construction noise shall be minimized by the use of proper engine mufflers, protective sound reducing enclosures, and other sound barriers. Construction activities producing excessive noise that cannot be reduced by mechanical means shall be restricted to locations where their sound

impact is reduced to a minimum at the edge of the work area.

1.63 Historical and Archaeological Areas

When burial sites, buried camp areas, village sites, and other distinctive archaeological or historical items are uncovered, or other items suspected of being of historical or archaeological significance are encountered, the Contractor shall report the matter to the City and the state liaison officer. Construction operations shall be stopped until the appropriate authorities can examine the area and give clearance to proceed with the work.

Under the Natural Historical Preservation Act, state liaison officers shall be notified when historical or archaeological items are unearthed. The Washington Criminal Code prohibits disinterment of a corpse without permission of the appropriate authorities.

1.64 Pesticides

A. General

The use of pesticides including insecticides, herbicides, defoliants, soil sterility, and so forth, must strictly adhere to federal, state, county, and local requirements. Time, area, method, and rate of application must be approved by all relevant authorities.

B. Materials

All materials delivered to the job site shall be covered and protected from the weather. None of the materials shall be exposed during storage. Waste material, rinsing fluids, and other such material shall be disposed of in such a manner that pollution of groundwater, surface water, or the air does not occur. In no case shall toxic materials be dumped into drainage-ways.

C. Personnel

All personnel shall stay out of sprayed areas for the prescribed time. All such areas should be fenced, appropriately signed, or otherwise protected to restrict entry.

1.65 Inspection

A. General Requirements

1. Work performed within the public right-of-way, 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 City and in accordance with the Standard Specifications, any approved plans and these Standards. Unless otherwise approved, any revision to construction plans must be approved by the City before being implemented.

2. The City shall have authority to enforce the Standards as well as other referenced or pertinent specifications. The City will appoint project engineers, assistants and inspectors, as necessary to inspect the work and they will exercise such authority as the Engineer may delegate.

3. It is the responsibility of the developer, contractor or their agents to have an approved set of plans, permits, Standard Specifications, and the City's Standards on the job site wherever work is being accomplished.

4. It is the responsibility of the developer, contractor, or their agents to notify the City in advance of the commencement of any authorized work. A preconstruction conference and/or field review shall be required before the commencement of any work.

Failure to comply with the provisions of these standards may result in stop work orders, removal of work accomplished, or other penalties as established by ordinance.

B. Substitution of Materials

It is not the intent of these Standards to exclude other equipment or materials of equal value, quality, or merit. Whenever a product is designated, or manufacturer's name, brand, or item designation is given or described, it shall be understood that the words "or approved equal" follows such name, designation, or description, whether in fact they do so or not. Determination of gravity in reference to the project design requirement will be made by the Public Works Director. A contractor shall not use an "equal" product without prior written approval of the Public Works Director.

C. City Inspector's Activities

Inspecting services provided by the City shall include:

1. Monitoring both work progress and performance testing results.

2. The performance of administrative and coordination activities as required to support the processing and completion of the project,

3. The issuance of a stop work order by notice to the contractor to stop the work. The City's Project Inspector, at the discretion of the Public Works Director, may post a stop work order.

4. Maintaining a completion file containing the following:

   a. The original of the project completion certification;

   b. A complete copy of the log book initialed by the engineer's inspector;

   c. The results of material tests, compaction tests, and soil analysis as detailed in the log book.

5. Inform the Public Works Director of all proposed plan changes, material changes, stop work orders, or errors or omissions in the approved plans or specifications as soon as practical. Any revision to approved plans must be under the direction of the Engineer. It shall be to the discretion of the City's Project Inspector as to whether the revision is significant enough to warrant

review by the Public Works Director. If so, the developer's engineer shall submit three (3) copies of the proposed revision; no work affected by the revision shall be done until approval by the Public Works Director.

1.66 Scheduling

A. Sequence of Operations

1. The Contractor shall plan construction work and execute his operations with a minimum of interference with the operation of existing public facilities. It may be necessary to do parts of the construction work outside normal working hours to avoid undesirable conditions, and it shall be the obligation of the Contractor to do this work at such times. This scheduling, however, is subject to the City's approval and does not relieve the contractor from making work available for inspection.

2. The Contractor shall notify the City at least forty-eight (48) hours (two full working days) prior to any City Inspection. Connections between existing work and new work shall not be made until necessary inspection and tests have been completed on the new work and it is found to conform to the requirements of the plans and specifications.

B. Step Inspections

The following items of work shall be inspected by City forces:

1. For street or sidewalk work, sub-grade shall be inspected by the City (and tested by the Contractor) prior to placement of crushed surfacing.

2. Crushed surfacing shall be inspected by the City (and tested by the Contractor) prior to placement of paving, curb, or sidewalks.

3. Pavement, curbs, and sidewalk. Notify the City prior to the placement of any paving, curbs, or sidewalk.

4. Compaction of bedding and backfill of utility trenches.

5. Compaction of bedding within public right-of-way and slope easement.

Other items of inspection notification are included under the various items of work outlined in these Standards.

C. Progress of Construction

Construction shall proceed in a systematic manner that will result in a minimum of inconvenience to the public.

In the case of a pipe-laying job for sanitary sewer, storm drainage, and water improvements the trenching equipment at no time shall be greater than twenty-five feet (25') ahead of the pipe-laying crew, unless given permission by the Public Works Director. The trench shall be back-filled so that no section of the trench or pipe is left open longer than twenty-four (24) hours.

Trenches located in a right-of-way or public streets shall be completely back-filled or plated before the contractor leaves the site each day.

1.67 Testing Requirements

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 Public Works Director. The developer or contractor shall pay the cost of all testing as outlined herein.

Test locations shall be selected randomly by City representatives. Minimum testing requirements outlined herein are for tests that meet the requirements of the City's standards or construction specifications. For each test result less than minimum requirements, additional testing will be completed by the Contractor at no cost to the City.

The testing is not intended to relieve the contractor from any liability. It is intended to provide the inspector with general information regarding quality control.

The Engineer, or his designated representative, may require additional testing not outlined herein. The Contractor, or Developer, shall pay the cost of all tests which fail to meet the requirements as specified:

See Sections 2 through 5 for specific requirements.

B. Asphalt Testing

Compaction of all lifts of asphalt shall be an average of ninety-one percent (91%) of maximum Rice Density as determined by WSDOT FOP for AASHTO T 209. Number of tests required for each lift:

1. For public streets, provide five tests for every density lot. Density lot size determined by WSDOT Section 5-04.3(10).

2. For surface restoration of utility trenches provide one test per every two-hundred feet (200’) of trench as measured along the trench centerline.

C. Sub-grade Testing

Compaction testing as specified in Standard Specifications Section 2-06.3. For streets and sidewalks, provide one test every five-hundred lineal feet (500’).

D. Base Rock and Top Rock Testing

Compaction testing as specified in Standard Specifications Section 4-04.3. For streets and sidewalks, provide one test every one-thousand lineal feet (1,000’).

E. Utility Trenching - Bedding & Backfill

Compaction testing as specified in Standard Specifications Section 2-06.3. Number of tests required for all utility trenches (water, sanitary sewer, storm sewer):

1. Provide one test at bottom of trench excavation prior to placements of pipe or bedding for every five-hundred feet (500') of trench.

2. Provide one test at top of bedding for every five-hundred feet (500')of trench.

3. Provide one test for each lift of backfill for every five-hundred feet (500') of trench.

F. Embankment

1. Compaction and moisture testing as specified in Standard Specifications Section 2-03.3. One density and moisture test every two-thousand five hundred cubic yards (2,500 cu. yds.) of material.

1.68 Safety Requirements

A. Contractor

The contractor is responsible for observing the safety of the work and of all persons and property coming into contact with the work. The contractor shall conduct his work in such a manner as to comply with all the requirements prescribed by WISHA or controlling authority. Traffic control in work zones shall conform to the MUTCD. At the City's discretion, a traffic control plan shall be submitted and approved prior to construction.

B. City of Woodland

The City Project Inspector's role is not one of supervision or safety management, but is one of observation only. Nothing contained in this section or elsewhere in this book shall be interpreted to obligate the City to act in any situation, nor shift the owner's responsibility for safety compliance to the City. No responsibility for the safety of the work or for construction means, methods, techniques, sequences, or procedures, shall be attached to the City by virtue of its action or inaction under this section.

1.69 Preservation, Restoration, and Cleanup

A. Site Restoration and Cleanup

The Contractor shall keep the premises clean and orderly at all times during the work and leave the project free of rubbish or excess materials of any kind upon completion of the work. During construction, the Contractor shall stockpile excavated materials so as to do the least damage to adjacent lawns, grassed areas, gardens, shrubbery, trees, or fences, regardless of the ownership of these areas. All excavated materials shall be removed from these areas, and these surfaces shall be left in a condition equivalent to their original condition and free from all rocks,

gravel, boulders, or other foreign material. Stockpiling of construction materials shall not be allowed on existing sidewalks or the driving surface of existing streets.

All existing storm systems shall be cleaned and flushed, and original drainage restored. Sediment, rock, and other debris shall be collected and disposed of in a proper manner. In no case shall debris be flushed down a storm or sanitary sewer for disposal. All damaged irrigation and house drainage pipe, drain tiles, sewer lateral, and culverts shall be repaired expeditiously.

All areas disturbed by the Contractor's operations inside dedicated right-of-ways or easements shall be restored to original condition. Areas outside of the easements or right-of-ways which are disturbed by the Contractor's operations shall be graded and reseeded in a method acceptable to the property owner. The Contractor shall obtain a written release from such property owners for any claims of injury or property damage prior to final acceptance of the work by the City.

B. Street Cleanup

The Contractor shall clean all spilled dirt, gravel, or other foreign material caused by the construction operations from all streets and roads at the conclusion of each day's operation. Cleaning shall be by grader and front-end loader, supplemented by power brushing, and hand labor, unless otherwise approved by the City. The contractor shall follow the City's erosion control procedures.

As soon as practical after completion of all paving and gravel shoulder resurfacing, the Contractor shall remove all dirt, mud, rock, gravel, and other foreign material from the paved surface and storm drainage system.

C. Protection of Property

The Contractor shall exercise all due care in protecting property along the route of the improvement This protection shall include, but not be limited to, trees, yards, fences, drainage lines, mail boxes, driveways, shrubs, and lawns. If any of the above is to be or has been disturbed, they shall be restored to as near their original condition as possible.

D. Contractor Responsibility and City Authority

All cleanup operations at the location of such work shall be accomplished at the expense of the Contractor and shall be completed to the satisfaction of the Public Works Director. From time to time, as may be ordered by the Public Works Director and in any event immediately after completion of the work, the permittee shall at his/her or its own expense clean up and remove all refuse and unused materials of any kind resulting from the work; and upon failure to do so within twenty-four hours after having been notified to do so by the Public Works Director, the work may be done by the city and the cost thereof charged to the permittee; and the permittee shall also be liable for the cost thereof under the surety bond provided hereunder.

1.70 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.

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 2

TRANSPORTATION

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

SECTION 2 – TRANSPORTATION

CHAPTER 1 – DESIGN AND PLANNING REQUIREMENTS

2.00 Functional Classification

The functional classification of existing and proposed roads is established by the City on an individual basis using the existing land use and existing operational characteristics. Woodland classifies roads and streets as follows:

A. Major Arterials

These facilities are the supporting elements of both the principal routes (highways and freeways) and small city arterial systems. Major arterials, in combination with principal routes, are intended to provide a high level of mobility for travel within the region. All trips from one sub-area through an adjacent sub-area traveling to other points in the region should occur on a major arterial or principal route.

B. Minor Arterials

The minor arterial system complements and supports the principal and major systems, but is primarily oriented toward travel within and between adjacent sub-areas. An adequate minor arterial system is needed to ensure that these movements do not occur on principal routes or major arterials. These facilities provide connections to major activity centers and provide access from the principal and major arterial systems into each sub-area.

C. Collectors

The collector system is deployed to provide mobility between communities and neighborhoods or from neighborhoods to the minor and major arterial systems. Land is directly accessible under certain conditions with emphasis on collection and distribution of trips within an arterial grid.

D. Access Streets

The neighborhood and local access street system is used throughout developed areas to provide for local circulation and direct land access. It provides mobility within neighborhoods and other homogenous land uses, and comprises the largest percentage of total street mileage. In general, local traffic should not occur on major arterials and principal routes.

2.01 General Requirement for Layout

The City's Comprehensive Plan assumes that future street construction would encourage connectivity. Street sizing for arterials should encourage non-motorized transportation. To meet the planning objectives, the City has established a standard of at least eight (8) through streets per mile to allow neighborhood trips on a smaller scale. The City's objective is to impose a maximum spacing for new streets of five-hundred feet (500’) (a 500-foot maximum grid) within all new developments and to the limits of the entire parcel of property being developed. Layout of new development will provide the capability of extending future streets

through adjacent parcels by having streets proposed for that development extended to the limits of the property and located so as to provide a spacing of five-hundred feet (500'). Where this requirement is not feasible due to topography, a fifteen foot (15') wide paved bikeway/multipurpose trail can be substituted for the street if approved by the City. The bikeway/multipurpose trail, located in a dedicated thirty foot (30') easement for pedestrians and bicyclists, shall be extended to the limits of the property. Said bikeway/multipurpose trail shall follow the general grid pattern of the street layout (500 foot grid) and shall extend from the ends of dead-end streets where said dead-end streets are not capable of being extended to the limits of the property due to topographic constraints. To meet the through street planning objectives, streets or bikeway/multipurpose trails shall be designed and constructed to extend to the limits of the property with the all costs borne by the developer of the property without reimbursement by the City.

2.02 Access

Access to public streets shall conform to the requirements listed herein. The Public Works Director shall have the authority to limit access and designate access locations on public streets under the jurisdiction of the City. Access to streets and highways under Clark or Cowlitz County or State of Washington jurisdiction must be formally approved by those entities at the applicant's initiative and expense.

2.03 Width

Table 2.1 is a summary of road width standards by the functional classification of the road. It should be noted that public utility easements beyond the right-of-way are typically required.

2.04 Number of Lanes

The number of lanes for each class of road shall be as directed by the Public Works Director. Additional lanes may be required at intersections in excess of the road sections shown in Table 2.1.

Right-of-way may be needed in addition to that shown in Table 2.1 to accommodate the increased number of lanes at intersections.

2.05 Design Speed

The minimum design speed for each road classification shall be as shown in Table 2.1 or as otherwise determined by the Public Works Director.

Table 2.1
Street Design Standards

Street Item	Major Arterial	Minor Arterial	Com./Ind. Collector	Residential Collector	Neighborhood Access	Local Access
Right-of-way	94	70	66	60	54	50
Total Pavement Width	72	48	44	40	36	32
No. of Drive Lanes	4	2	2	2	2	2
Width of Drive Lane	12	12	11	12	10	9
No. of Turn Lanes	1	1	1	0	0	0
Width of Turn Lanes	12	12	12			
No. of Parking Lanes	0	0	0	2	2	2
Width of Parking Lane				8	8	7
No. of Bike Lanes [1]	2	2	2	2	0	0
Width of Bike Lane [1]	6	6	5	5	0	0
No. of Sidewalks	2	2	2	2	2	2
Width of Curb and Sidewalk	6	6	6	6	6	6
No. of Planter Strips	2	2	2	0	0	0
Width of Planter Strips	5	5	5			
Design Volume	24,000	18,000	16,000	16,000	2,000	500
Design Speed	50	50	35	35	25	25
Min. Stopping Site	475’	475’	250’	250’	150’	150’

Notes to Table 2.1:

[1] Bike lanes will only be required in those areas as defined by the City. Residential Collectors with bike lanes will have parking lanes on a maximum of only one side.

2.06 Dedications

A. Right-of-Way shall be deeded for streets and other improvements as required per Table 2.1 to accommodate motorized and non-motorized transportation, landscaping, utility and buffer requirements. Some reduction in the minimum right-of-way requirement may be granted by the Public Works Director where it can be demonstrated that sufficient area has been provided for all functions within the right-of-way and/or alternate locations. Conveyance shall be fee simple using a statutory warranty deed.

B. Easements for all public systems shall be provided as required. Specific

requirements for sewer and storm drainage easements are detailed in the relevant chapters. Particular design features of a road may necessitate slope, wall, or drainage easements. Such easements may be required by the Public Works Director in conjunction with dedication or acquisition of right-of-way and other standard easements (temporary construction, right of entry, sidewalk, pedestrian, street lighting, and traffic control devices, etc.).

C. Special Access Easements or Tracts.

Where it is necessary to facilitate pedestrian circulation between neighborhoods, schools, shopping or other activity centers, public access easements or tracts shall be dedicated.

Improvements to the easement shall include a sidewalk or trail consistent with other non-motorized facilities in the area. Fences shall be constructed along access easements in residential areas where buildings will be located nearer than fifty feet (50) to the edge of the easement. Diverters or bollards shall be installed at the direction of the Public Works Director.

D. All subdivisions and short subdivisions (short plats) will be required to deed additional right-of-way, as a condition of approval of the subdivision, where the existing right-of-way for a public street is not adequate to incorporate necessary frontage improvements for public safety and provide compatibility with area's circulation system.

All short subdivisions (short plats) will be required to deed additional right-of-way, as a condition of approval of the short plat, under one or more of the following conditions:

1. The short plat abuts an existing substandard public street and the additional right-of-way is necessary to incorporate future frontage improvements necessary for public safety, or

2. Additional right-of-way is needed to provide right-of-way for the extension of existing public street improvements necessary for public safety, or

3. Additional right-of-way is needed to provide future street improvements necessary for public safety for planned new public streets.

E. It is within the authority of the Public Works Director to refuse to approve or sign any land partition, partition plat, or subdivision plat for a development that has not installed or completed the construction of the necessary public infrastructure to serve the proposed and affected existing lots. Such approval may be withheld until it can be verified that the location and width of proposed rights of way and easements are adequate for the completed infrastructure.

F. Easements are subject to the approval of the City Attorney prior to recording. Variation from the City standard form of conveyance shall be allowed only when extraordinary circumstances warrant, as determined by the Public Works Director

and City Attorney.

G. Bikeway/Multipurpose Trail. Where bikeway/multipurpose trails are constructed, a thirty (30) foot dedicated right-of-way shall be granted to the City.

H. Easement Widths

1. Pedestrian access easements or tracts shall be a minimum of fifteen feet (15') wide. If the easement is over one-hundred and fifty feet (150') in length but less than three-hundred feet (300') the width shall be twenty feet (20'); if over three-hundred feet (300') in length, the width shall be twenty-five feet (25'). Structure setbacks shall be a minimum of fifteen feet (15') from the edge of the easement or tract.

2. In residential subdivisions or residential short subdivisions, minimum panhandle width shall be twenty-five feet (25'). A greater width may be required to accommodate grading or utility requirements.

3. In commercial subdivisions or commercial short subdivisions, minimum private roadway easement or panhandle width shall be thirty feet (30'). A greater width may be required to accommodate grading or utility requirements.

I. All recording costs for easements created by private development shall be borne by the developer unless specifically agreed to by the City.

2.07 Private Streets

A. Criteria for Authorization. It is the City of Woodland's policy to discourage private streets and to only permit them under unusual circumstances. Where private streets are permitted they will only be under the following conditions:

1. Covenants have been approved, recorded, and verified with the City which provide for maintenance of the private streets and associated parking areas by owners in the development, and

2. Provision is made for the streets to be open at all times for emergency and public service vehicles, and

3. The private streets will not obstruct public street circulation, and

4. At least one of the following conditions exists;

a. The plat or short plat street will ultimately serve four (4) or fewer lots. Any access serving two or more homes shall be either a public or private street.

b. The roadways serve commercial or industrial facilities where no circulation continuity is necessary.

The Public Works Director determines that no other access is available and the private road is adequate.

B. Notice. A statement is required on the face of any plat or short plat containing a private road with the following: "The City of Woodland has no responsibility to improve or maintain the private roads contained within or private roads providing access to the property described in this plat".

C. Easements. Private roads shall be constructed within easements with easement width equal to the paved width plus sidewalk plus ten feet (10').

D. Design Requirements. Private streets shall conform to public street construction standards with the exceptions noted herein.

1. Private street road sections shall match the requirements of local access roads per drawing T-27. The improved roadway width shall be a minimum of twenty-four feet (24').

2. Private roadway easement width shall be the width of surfacing plus ten feet (10').

3. The maximum grade for private roadways shall be twenty percent (20%). Fire access roadways shall be a maximum of fifteen percent (15%).

4. Drainage improvement requirements shall be as specified in Section 3 of these Standards.

5. Utility requirements shall be per these Standards.

6. Street illumination is required at the intersection of a private street and a public street. No street lighting is required on the private street.

E. Acceptance as Public Streets. Acceptance of private streets as public streets will be considered if the street meets all applicable public street standards contained herein.

2.08 Horizontal Alignment

Street alignments shall meet the following requirements:

A. Center line alignment of improvements should be parallel to the center line of the right-of-way.

B. Center line of a proposed street extension shall be aligned with the existing street center line.

C. Horizontal curves in alignments shall meet the minimum radius requirements as shown in Table 2.2.

D. Reversing horizontal curves shall be separated by no less than fifty feet (50') of tangent. On arterials, the separation shall be no less than one-hundred feet (100').

Table 2.2 - Design Speed / Center Line Radius - Minimums
Major, Minor, and Small City Arterial Streets

Design Speed (mph)	Friction Factor (F)	Slope/R min.					
		(e)-4%	(e)-2.5%	(e) 0%	(e) 2.5%	(e) 4%	(e) 6%
25	0.165	335’	300’	255’	220’	205’	185’
30	0.160	500’	445’	375’	325’	300’	275’
35	0.155	710’	630’	530’	455’	420’	380’
40	0.150	970’	855’	710’	610’	560’	510’
45	0.145	1285’	1125’	930’	795’	730’	660’
50	0.140	1665’	1450’	1190’	1010’	925’	835’
55	0.130	2240’	1920’	1550’	1300’	1190’	1060’
60	0.120	3000’	2525’	2000’	1655’	1500’	1335’

NOTES:

For neighborhood and local access streets the minimum center line radius is one-hundred fifty feet (150’) at a design speed of twenty-five miles per hour (25 mph).

For Table 2.2 - off right-of-way runoff shall be controlled to prevent concentrated cross flow in super-elevated sections.

Super elevations may only be used with the written approval of the Public Works Director. Where super elevation is used, street curves should be designed per AASHTO guidelines except that the maximum super elevation rate of 0.04 shall be used. If terrain dictates sharp curvature, a maximum super elevation of 0.06 is justified if the curve is long enough to provide an adequate super elevation transition.

On local streets, requests for design speeds less than twenty-five miles per hour (25 mph) shall be based on topography, right of way, or geographic conditions which impose an economic hardship on the applicant. Requests must show that a reduction in center line radius will not compromise safety. There will be posting requirements associated with designs below twenty-five miles per hour (25 mph).

Off-set crown cross-sections are not acceptable as super elevation sections.

Super elevation transitions shall be designed to not allow concentrations of storm water to flow over the travel lanes.

2.09 Vertical Alignment

Street alignments shall meet the following requirements:

A. Minimum tangent street gradients shall be one-half percent (0.5%) along the crown and curb.

B. Maximum street gradients shall be fifteen percent (15%) for residential streets, and ten percent (10%) for all other streets.

C. Access streets intersecting with a collector or greater functional classification street or streets intended to be posted with a stop sign shall provide a landing averaging five percent (5%) or less. Landings are that portion of the street within twenty feet (20') of the projected curb line of the intersecting street at full improvement.

D. Grade changes of more than one percent (1%) shall be accomplished with vertical curves.

E. At street intersections, the crown of the major (higher classification) street shall continue through the intersection. The roadway section of the minor street will flatten to match the longitudinal grade of the major street at the projected curb line.

F. Street grades, intersections, and super elevation transitions shall be designed to not allow concentrations of storm water to flow across the travel lanes.

G. Offset crowns shall be allowed only with the specific prior approval of the Public Works Director.

H. Slope easements shall be dedicated or obtained for the purposes of grading outside of the right-of-way.

I. Streets intersected by streets not constructed to full urban standards shall be designed to match both present and future (as far as practicable) vertical alignments of the intersecting street. The requirements of this manual shall be met for both present and future conditions.

J. When new streets are built adjacent to or crossing drainage ways, the following standards shall govern the vertical alignment:

FUNCTIONAL CLASSIFICATION	VERTICAL STANDARD
Arterial Streets	Travel lanes at or above the 50-year flood elevation but not lower than six inches (6") below the 100-year flood elevation.
All other streets	Travel lanes at or above the 25-year flood elevation but not lower than six inches (6") below the 50-year flood elevation.

If alternate access is available for properties served by a particular local street, a design could be considered for approval by the Public Works Director that would set the travel lanes at or above the 10-year flood elevation but not lower than six inches (6") below the 25-year flood event.

K. Vertical curves shall conform to the values found in Tables 2.3.

Table 2.3
Design Controls for Vertical Curves Based on Design Speed

DESIGN SPEED	STOPPING SIGHT DISTANCE	CREST VERTICAL	SAG VERTICAL CURVE K
25	150	12	26
30	200	19	37
35	250	29	49
40	305	44	64
45	360	61	79
50	475	84	96

K = L/A A = Algebraic Difference in grades, percent; L = Length of

AASHTO provides the designer of sag vertical curves the option of using shorter curves with the installation of street lighting. These "comfort" designs can also be slightly modified by providing a one percent (1%) grade break at each end of the curve. The Public Works Director may approve comfort designs subject to the Developer's Engineer submitting a design and justification for the comfort design instead of the standard design.

2.10 Transitions

A. Street width transitions from a narrower width to a wider width shall be designed with a 3 to 1 taper. Delineators, as approved by the City, shall be installed to define the configuration.

B. For street width transitions from a wider width to a narrower width, the length of transition taper shall be determined as follows:

$L = S \times W$ (for S = 45 MPH or more)

$L = (W \times S^2)/60$ (for S = less than 45 MPH)

Where: L = minimum length of taper (feet)

S = Design speed (MPH), and

W = EP to EP offset width

Delineators, as approved by the Engineer, may be installed to define the configuration. Maximum spacing of delineators shall be the numerical value of the design speed, in feet (i.e. 35 - foot spacing for 35 MPH).

In situations where a tapered transition cannot be provided, a barricade shall be installed at the end of the wider section of the street and a taper shall be appointed and delineated as approved by the Engineer. The barricade shall conform to the Standard Drawing. If the wider section does not provide an additional travel lane, only a barricade is required without the transition.

2.11 Street Frontage Improvements

A. All residential subdivisions, commercial developments, and short plats shall install street frontage improvements at the time of construction as detailed in their subdivision or short plat approval, as detailed in their approved building plans, or as directed by the Public Works Director. Such improvements may include curb and gutter; sidewalk; street storm drainage; street lighting system; traffic signal modification, relocation, or installation; utility relocation; landscaping and irrigation and street widening all per these Standards. Plans shall be prepared and signed by a licensed civil engineer registered in the State of Washington.

B. Plan Preparation shall be as specified in Section 1 of these Standards.

C. Street Frontage design shall incorporate all applicable sections of these Standards and other standard reference materials. The designer shall utilize good engineering practice in any situation not specified in these Standards.

2.12 Street Ends

A. Cul-de-sacs shall be provided at all public and private street ends.

B. Temporary Dead Ends. Where a street is temporarily dead ended, turn around provisions must be provided where the road serves more than one lot. The turn around may be a hammerhead if the dead end is less than two-hundred feet (200') in length. If over two-hundred feet long (200'), a cul-de-sac is required for residential streets.

C. Design Requirements

The following specifies the minimum requirements for cul-de-sacs, eyebrows, and turnaround areas. Other turnaround geometries may be used when conditions warrant and Public Works Director approves the design and application of its use.

1. Cul-de-sacs shall have a minimum radius from center to curb of forty-five feet (45') if parking is not allowed in cul-de-sac. Cul-de-sacs with parking shall have a minimum radius from center to curb of sixty feet (60').

2. Cul-de-sacs, eyebrows, and turnaround areas shall be allowed only on neighborhood and local access streets.

3. Cul-de-sacs shall be not be more than five-hundred feet (500') in length. The length of a cul-de-sac shall be measured along the center line of the roadway from the near side right-of-way of the nearest through traffic intersecting street to the farthest point of the cul-de-sac right-of-way.

4. The minimum curb radius for transitions into cul-de-sac bulbs shall be twenty-five feet (25'), and the right-of-way radius shall be sufficient to maintain the same right-of-way to curb spacing as in the adjacent portion of the road.

5. An eyebrow corner may be used on a local street where ADT will not exceed

five-hundred (500) vehicles per day or as approved by the Public Works Director. Eyebrow geometry shall be evaluated on the basis of turning requirements for Fire District vehicles.

2.13 Medians

A. A median shall be in addition to, not part of, the specified roadway width. Medians shall be designed so as not to limit turning radius or sight distance at intersections. Landscaping shall be installed when directed by the Public Works Director.

B. Where raised medians are allowed, the following criteria must be met:

1. Edges shall be vertical curb.

2. If landscaping and irrigation are required, plans shall be prepared by a qualified Landscape Architect registered in the State of Washington.

3. Medians shall be designed so as not to limit turning radius or sight distance at intersections.

   a. The raised median shall be set back at least two feet (2') from the median lane on both sides.

   b. Street lighting shall be sufficient to provide illumination of the raised median.

   c. Objects, such as trees, shrubs, signs, and light poles shall not physically or visually interfere with vehicle or pedestrian traffic in the travel way.

   d. The style and design of the raised median shall be site specific. The raised median shall be safe for the design speed, and shall be subject to City approval.

2.14 Intersections and Curb Returns

A. Traffic control will be as specified in the Manual of Uniform Traffic Control Devices (M.U.T.C.D.) or as modified by the Engineer as a result of appropriate traffic engineering studies.

B. Traffic signal modification, relocation, or installation is required when roadway or driveway geometries interfere with existing signal facilities, or would result in an unsignalized approach or intersection that meets signal warrants.

C. Angle between intersections.

The following specifies the minimum requirements for intersections:

The interior angle at intersecting streets shall be kept as near to ninety degrees (90°) as possible and in no case shall it be less than seventy-five degrees (75°). A tangent section shall be carried a minimum of twenty-five feet (25') each side of

intersecting right-of-way lines.

D. Maximum street spacing – five-hundred feet (500').

E. Minimum centerline offset of adjacent streets.

1. Residential – one-hundred sixty feet (160')

2. Residential or arterials intersecting arterials – three-hundred feet (300')

F. Curb returns.

Curb radii at intersections shall be shown in Table 2.4 for the various functional classifications. The right-of-way radii at intersections shall be sufficient to maintain at least the same right-of-way to curb spacing as the higher classified street.

Table 2.4 - Turning Radii (Feet)

Edge of Pavement/Curb -Minimums

Street Classification	Minimum Intersection Curb Return Radii (ft.)
Major/ Minor Arterial	40
Collector	40
Neighborhood/ Local Access	25

* The radii of the major street will be used for all intersection curb returns.

G. Sloping approaches.

On sloping approaches, including commercial driveways, garage entrances, and private street openings, landings are not to exceed two feet (2') difference in elevation for a distance of thirty feet (30') approaching an arterial or twenty feet (20') approaching an access street, measured from the back of sidewalk or the back of curb if no sidewalk exists.

H. ADA Access Ramps

Sidewalk access ramps shall be provided at all corners of all intersections, regardless of curb type, and shall conform to Standard Drawings.

2.15 Sight Obstruction Requirements

A. Sight distance shall be maintained at all driveways, building, or garage entrances where structures, wing walls, etc. are located adjacent to or in close proximity to a pedestrian walkway.

B. Sight lines to traffic control devices (signs, signals, etc.) should not be obscured by landscaping, street furniture, marquees, awnings or other obstructions. Refer to the Manual of Uniform Traffic Control Devices for required sightlines (M.U.T.C.D.).

C. Uncontrolled Intersection and Driveway Sight Distance Triangle in Residential Areas.

Uncontrolled intersections shall have an unobstructed sight distance triangle of one-hundred feet (100') on both approaches. This requirement may be reduced to eighty feet (80') for intersections abutting corner lots in a residential subdivision. Driveways shall have an unobstructed sight distance of one-hundred feet (100') in both directions, except corner lot. The sight distance is measured along the lines four feet (4') from the center line, in drivers' direction, for both directions. Landscaping or fencing within the sight distance triangle shall not interfere with this sight distance requirement.

D. Controlled Intersection Sight Distance

It is the policy of the City to have the developer's engineer evaluate safe intersection sight distance using the principles and methods recommended by AASHTO.

The sight distance area is a clear-view triangle formed on all intersections by extending two lines of specified length (A) and (B) as shown below from the center of the intersecting streets along the centerlines of both streets and connecting those endpoints to form the hypotenuse of the triangle. The area within the triangle shall be subject to restrictions to maintain a clear view on the intersection approaches.

Sight distance should always be measured from a driver's eye three and one-half feet high (3.5') and fifteen feet (15') from the near edge of the nearest lane to a distance of four and one-quarter feet (4.25'). Sight distances must be checked on the actual vertical and horizontal values of the proposed improvement. There shall be nothing to block observation of objects between six inches (6") and four feet three inches (4'-3") above grade in both directions. The only exceptions should be for luminaire or utility poles, conforming traffic control devices, and fire hydrants. Cumulative effects must be considered, and all efforts taken to minimize sight obstructions.

Table 2.5 lists intersection sight distances at a Stop or Yield Controlled Intersection for various posted speeds.

Table 2.5 - Sight Distance for Controlled Intersection

Posted Speed (MPH), Uncontrolled Road	Minimum Corner Sight Distance (feet)
20	200
25	250
30	300
35	350
40	400
45	450
50	500

Modifications or exceptions to these standards shall be approved by the Public Works Director.

E. Effect of Grades. The effect of grades on the above stopping and intersection sight distances shall be governed by the criteria stated in the American Association of State Highway and Transportation Officials' (AASHTO) reference "A Policy on Geometric Design of Highways and Streets" (latest version).

2.16 Curb and Gutter - Types and Application

A. Curb and gutter shall be utilized for street edges whenever possible and shall always be used under the following conditions:

1. All streets - residential, commercial, or arterial.

2. Modified curb and gutter shall be used on designated bicycle lanes.

B. Vertical Curb shall be used for edges of islands and medians except when emergency vehicle access across the median is required.

C. The following specifies the requirements for curbs and cross-slope grading for streets:

1. All streets shall include curbs on both sides except in the situations of interim width improvements. Interim designs, where approved in writing by the Engineer, shall have shoulders and ditches/swales.

2. Interim width streets shall have 6-foot side shoulders adjacent to the street at a two and one-half percent (2.5 %) cross-slope and roadside ditches/swales on each side of the shoulders with a maximum side-slope of 2 horizontal to 1 vertical. The six foot (6') shoulder area may consist of a section of pavement and/or a section of crushed rock. The pavement section shall be a minimum of two feet (2') wide and a maximum of six feet (6') wide.

3. Cross-slope of the street section shall be no less than two percent (2%) and no greater than five percent (5%).

D. Grading outside the improved areas shall be as follows, unless approved in writing by the Engineer:

1. Arterials shall have a maximum two percent (2%) upward grading to the right-of-way line, and no steeper than 2 to 1 up, or 2 to 1 down, outside the right-of-way.

2. Neighborhood and local access streets shall have a maximum two percent (2%) upward grading to the right-of-way line, a 5 to 1 upward or downward grading within the public utility easement, and no steeper than 2 to 1 up, or 2 to 1 down outside the public utility easement.

3. Retaining walls shall be used if slopes are greater than the 2 to 1 requirement in the paragraphs above or where slope stability is a problem. If slopes are to be maintained (mowed) by the City, a maximum of 3 to 1 slope will be required. Retaining walls shall be constructed to a height where the slope is no more

than 2 to 1.

2.17 Survey Monuments

A survey monument shall be located at each street intersection in all subdivisions and short plats. The monuments will be brass and will be housed inside monument boxes.

2.18 Concrete Sidewalks

A. Concrete sidewalks shall be provided where required as follows:

1. Both sides of all arterial streets.

2. Both sides of all other streets (through street or dead-end) unless approved in writing by the Public Works Director.

B. Exceptions.

Where subdivision design provides an acceptable surfaced and maintained internal walkway system as approved by the Engineer, a sidewalk may not be required adjacent to the street.

C. Width.

1. All Streets: five and a half feet (5.5’).

2. Designated Bikeways: Ten feet (10’) when there is insufficient roadway width for bicycle lanes. Bicycle lanes shall be a minimum of five feet (5’) in width.

3. Width of sidewalk does not include curb.

4. Meandering sidewalks shall maintain the full design width around obstructions that cannot be relocated. Additional Right-of-Way (or easement) may be required to either relocate the obstruction or meander the sidewalk.

5. Sidewalk widening behind the mailbox shall be five feet (5’) long with a ten to one (10:1) taper to the standard sidewalk section.

D. Material.

All sidewalks shall be four inch (4") thick Class 3000 Concrete over three inches (3”) of crushed rock. Residential driveways shall have six inches (6") and commercial driveways shall have eight inches (8”) of Class 4000 Concrete.

E. PROWAG Accessible Ramps.

In accordance with State law, all curb ramps shall be provided at all pedestrian crossings with curb sections and will meet the requirements of the PROWAG.

F. Curb Ramps.

The edge of the sidewalk shall merge into curb ramps. One ramp is used on each curb return on residential streets and unsignalized intersections. At signalized

intersections, a curb ramp shall be aligned with each crosswalk.

G. Residential Driveway Ramps

When cutting into existing curbs to create driveway ramps, all cuts will be done at existing expansion joints. The new driveway and associated curb and sidewalk will be constructed from joint to joint.

2.19 Asphalt Sidewalks

Asphalt sidewalks may be allowed in lieu of concrete sidewalks where the sidewalk as determined by the City is deemed to be of a temporary nature (such as during construction activities) or due to future construction considerations.

2.20 Multi-Use Trail

Design requirements:

A. Multi-use trails shall be a minimum of six feet (6') wide.

B. Materials shall be per the requirements of Section 2.33.

C. Multi-use trails shall be a minimum of five feet (5') from the edge of the vehicular travel way unless no practicable alternative exists and when approved by the Engineer.

D. Maximum grade is fifteen percent (15%). Minimum curve radius is ten feet (10').

E. Access easement termination (Type 11) shall be installed as directed by the Public Works Director.

2.21 Bikeways/Bike lanes

A. Bikeway construction is required in conjunction with commercial development, plat or short plat approval, when the need for such a bikeway is established by the Director.

B. Separated bikeways (bicycles only) shall be a minimum of ten feet (10') wide for two (2) way flow. Separated bikeways combined with pedestrian facilities shall be a minimum of twelve feet (12') wide.

C. Where joint vehicular and bicycle facilities (Bike lanes) are constructed, bike lanes shall be a minimum of five feet (5') wide and a maximum of six feet (6') wide with bike lanes in each direction of traffic.

D. Surfacing requirements for separated bikeways shall be as specified in Section 2.33.

E. Maximum grade for separated bikeways shall be ten percent (10%). Minimum curve radius is one-hundred feet (100'). Curves should be minimized.

2.22 Rustic Trails

A. Rustic Trail construction is required in conjunction with residential development when the need for such a trail is established by the Planner.

B. Rustic trails shall be a minimum of four feet (4') wide with two feet (2') of clearance on each side and a minimum height clearance of ten feet (10').

C. Rustic trails shall be constructed by streams and in environmentally sensitive areas where bikeways will cause too much of an environmental impact. Rustic trails will follow the natural contours of the land.

D. Surfacing requirements for rustic trails shall be as specified in Section 2.33.

2.23 Driveways

A. General Requirements.

1. Standard residential or commercial driveways shall be required for all developments.

2. A private intersection opening shall be used in lieu of a conventional driveway in commercial areas where the following criteria as determined by the City are met:

   a. Projected driveway usage is greater than two-thousand (2,000) vehicles per day.

   b. In any case where traffic signalization is approved and provided.

   c. A minimum one-hundred foot (100') storage area is provided between the street and any turning or parking maneuvers within the development.

   d. The opening is at least one-hundred and fifty feet (150') from any other intersection opening.

   e. The opening is at least one-hundred and fifty feet (150') away from any other driveway on the property frontage under control of the applicant.

   f. Easement dedication for traffic control devices.

3. When the use of a service or private driveway is abandoned, the owner of the abutting property shall construct a new curb and sidewalk section to conform to the standards of the city.

B. Conditions of Approval.

1. Driveways directly giving access onto arterials may be denied if alternate access is available.

2. All abandoned driveway areas on the street frontage to be improved shall be removed and new curb, gutter, and sidewalk shall be installed.

3. No commercial driveway shall be approved where backing onto the sidewalk or street will occur.

4. Left turns from and to a driveway may be restricted as a development condition or in the future if such maneuvers are found to be unduly hazardous.

5. Driveways shall be aligned wherever possible with existing driveways on the opposite side of the street on two (2) or three (3) lane streets.

6. Driveways shall be offset a minimum of one-hundred feet (100') from existing driveways on the opposite side of streets with four (4) or more lanes whenever possible.

7. All driveways shall be angled ninety-degrees (90°) to the street, unless designated as right turn only with the approval of the Engineer.

8. It is unlawful to permit a truck or any other vehicle to stand or park in a service driveway between the property line and the curb line. No building shall be arranged for the loading or unloading of merchandise on or from the trucks or other vehicles from or into the building by having the truck or other vehicle stand or park wholly or partially in or on the service driveway. When a building is arranged with a drive-in space for the loading or unloading of trucks or similar vehicles used in transporting merchandise, the length of the drive-in space to the property line shall not be less than the greatest overall length of the truck, plus one foot, and in no case shall this distance be less than twenty feet.

C. Design Criteria

1. Width

The maximum two-way driveway width shall be twenty-five feet (25') for one and two-car garage residences, thirty feet (30') for 3-car garage residences, and thirty-five feet (35') for commercial uses, provided the driveway width is not more than fifty percent (50%) of the frontage width. A wider commercial driveway width maybe approved by the Engineer where a substantial percentage of oversized vehicle traffic exists. In this case the driveway should be sized to accommodate the largest vehicles. Commercial driveways shall be a minimum of thirty feet (30') on any arterial, and twenty-five feet (25') to thirty feet (30') on any access street. Where intersection openings are approved the width shall be as determined by the Engineer.

Maximum one-way driveway width shall be sixteen feet (16') for residential and twenty-two feet (22') for commercial driveways. Parking lot circulation needs shall be met on site. The public right-of-way shall not be utilized as part of a one way parking lot flow.

The maximum and minimum widths for driveways in the light industrial and heavy industrial districts shall be determined by the Public Works Director and based upon information in the proponent's SEPA checklist or impact statement. Appeals of the Director's determination may be made to the City Council.

2. Elevation

   In all cases, driveway elevations along the path of the sidewalk will comply with the PROWAG.

3. Clearance from structures.

   No object (including fire hydrants, light or power poles, street trees) shall be placed or allowed to remain within fifteen feet (15’) of the driveway edge.

   Where the building facade or other design element is less than ten feet (10’) behind the sidewalk front setback both pedestrian and vehicular sight distance shall be maintained. Vehicular sight distance shall be per section 2.15.

4. Sight Distance.

   Pedestrian sight distance shall be as follows: The driver of an exiting vehicle shall be able to view a one-foot (1’) high object fifteen feet (15’) away from either edge of the driveway throat when the driver’s eye is fourteen feet (14’) behind the back of the sidewalk.

5. Maximum driveway grade shall be fifteen percent (15%).

6. On sloping approaches, a landing as described in section 2.09 shall be provided.

7. Approach grades and configuration shall accommodate future street widening to prevent major driveway reconstruction.

2.24 Bridges

A. Design Principles. All bridges whether on public or private roadways shall meet the minimum requirements set forth in the latest addition of "Standard Specifications for Highway Bridges", adopted by AASHTO. All new bridges shall be designed to carry an AASHTO HS-20-44 live load or greater.

B. Geometries. In the general case, the bridge shall comprise the full width and configuration of the road being served (traveled way plus curb, sidewalk, walkway, bike lane, and/or shoulder on one or both sides). Requirements of utilities shall be considered. Traffic and pedestrian railings or combination traffic-pedestrian railings shall meet AASHTO specifications. Overhead vertical clearances on the traveled street or under overpasses shall be sixteen and one-half feet (16.5’) minimum.

2.25 Landscaping in the Right-Of-Way, Easements and Access Tracts

A. Plantings established in the right-of-way shall be maintained by the abutting property owner.

B. Any existing planting areas within the right-of-way that are disturbed by construction activity shall be restored to their original condition.

C. Any plantings or other improvements placed within the right-of-way (by abutting

property owners) are subject to removal when the right-of-way is needed for public use. The property owner is responsible for removing any landscaping or other improvements upon official notice. The property owners shall be responsible for survivals of the relocated plantings.

D. Measures shall be taken by the developer to provide groundcover in areas within the right-of-way which have been stripped of natural vegetation or have a potential for erosion. Native plants shall be used whenever possible.

E. Plantings within the right-of-way shall comply with the following provisions:

1. All landscaping shall comply with the sight distance provisions of these standards.

2. Where existing landscaping maintained by the City exists every effort shall be taken to protect and preserve the existing vegetation during construction: Plants shall be relocated or removed only upon approval of the Public Works Department. Damaged landscape areas shall be restored prior to issuing a final occupancy permit.

3. In areas where an existing landscaping concept or pattern has been established or approved, all new landscaping shall conform to the intent of the concept. Plantings shall be of a similar variety, size, and spacing to those already established and/or approved for the area.

4. All trees planted in areas with adjacent pedestrian usage shall maintain a seven foot (7') clearance to the lowest branches.

5. Approval from the Public Works Department must be received before trees are planted in or adjacent to sidewalk sections.

2.26 Mailboxes

A. Mailboxes should be clustered together when practical and when reasonably convenient to the houses served.

B. When mailboxes are located in the sidewalk, individually or in clusters, the sidewalk shall be widened to provide the full design width around the mail boxes.

C. In the case of new road construction or reconstruction requiring mail boxes to be moved back or rearranged, the designer and builder shall coordinate with the local postmaster of the U.S. Postal Service. Mailbox locations approved by the Post Office shall be shown on approved road construction plans.

2.27 Street Illumination

A. Plats and Short Plats.

Street lighting is required for all public streets. The street lighting design shall be reviewed and approved by the Engineer prior to final plat approval. The cost of all

street lighting shall be paid for by the developer.

Street lighting is not required on private streets within a plat. However, a street lighting system is encouraged. The City does not install or maintain private street lighting systems. On private streets, all street light maintenance and power cost shall be paid by the developer, homeowner, or homeowners association.

B. Existing Residential Areas.

If a resident or group of residents desires the installation of a new street light they must apply to the Public Works Director.

C. Commercial.

Street lighting is required on all public street frontages. The developer is responsible for design, installation or relocation of new or existing lighting. Commercial development shall replace existing lighting systems on power poles with a new lighting system serviced by underground power if the system will not conflict with essential distribution lines.

D. General Considerations.

All public street light designs shall be prepared by a licensed engineer experienced in lighting design. The design calculations should indicate illuminaire spacing, illumination levels, uniformity ratio, line losses, and the electrical and physical layout of the system, including its connection to the existing system.

All public street light systems shall be accessible for public maintenance by a wheeled vehicle weighing twenty-thousand pounds (20,000 lbs.).

All street light installations including wiring, conduit, and power connections shall be located underground. Exception: existing residential areas with existing above ground utilities may have street lighting installed on the existing power poles with approval from the lighting authority.

As-built drawings on 24 x 36 inch mylar and in AutoCad .dwg format are required for all new or relocated underground street lighting systems prior to receiving a final occupancy permit.

All street lights shall be on two-hundred and forty volt (240v) single phase systems. The exact location of the power source should be indicated together with the remaining capacity of that circuit. System continuity and extension should be considered.

Contractor cabinets equipped with electrical meters, time clocks, circuit breakers and other required components are required on commercial installations of five (5) or more streetlights.

Particular attention shall be given to locating luminaires near intersections, at all street ends and at pedestrian, bicycle, and/or equestrian crossings.

E. Illumination.

Street lighting system designs are to be prepared by a licensed engineer experienced with lighting design. Calculations should include illuminaire spacing, illumination level, uniformity ratio, line losses, power source, and other necessary details for the electrical and physical installation of the street lighting system. The lighting engineer shall use the WSDOT Standard Specifications, unless otherwise noted in these Standards.

Table 2.6
Illumination Levels

Street Classification	Horizontal Foot Candles	Uniformity Ratio (average to minimum)
Major Arterials	1.5 FC	3:1
Minor Arterials & Collectors	1.0 FC	3:1
Neighborhood Access	0.7 FC	3:1
Local Access	0.3 FC	None; 200 foot maximum spacing.

2.28 Traffic Control and Signing

A. Traffic Control Devices. The Public Works Director shall review and approve all traffic control devices.

B. Signing. In new plats the developer shall install all traffic control signs which shall include but not be limited to street name, parking, stop, dead end, and pedestrian signing. The developer will be responsible for supplying and installing the required signs. The signs will meet the requirements of the MUTCD and the Engineering Standards.

C. Pavement Marking. In new plats or commercial developments pavement markings, including buttons, paint, thermoplastics and delineators will be required for roadway safety. Such markings shall be provided and installed by the developer. All markings shall be approved by the Public Works Director prior to installation.

D. Temporary Traffic Control. It is the responsibility of the developer to provide adequate temporary traffic control to ensure traffic safety during construction activities.

E. Speed Humps. Speed humps are demonstration devices used to control vehicle speeds on neighborhood/local access and residential collector streets.

F. Traffic Signal Modification. Traffic signal modification designs shall be prepared by a licensed engineer experienced in traffic signal design.

G. Design Requirements

1. Traffic Control Devices. All traffic control devices shall conform to the "Manual on Uniform Traffic Control Devices" (M.U.T.C.D.) as adopted by the Washington-State Department of Transportation (WSDOT).

2. Signing. All signing shall conform to the "Manual on Uniform Traffic Control Devices" (M.U.T.C.D.) as adopted by the Washington-State Department of Transportation (WSDOT).

3. Pavement Marking. All markings shall conform to the current "Manual on Uniform Traffic Control Devices" (M.U.T.C.D.) as adopted by the Washington State Department of Transportation (WSDOT).

4. Temporary Traffic Control. All temporary traffic control devices shall conform to the "Manual on Uniform Traffic Control Devices" (M.U.T.C.D.) as adopted by the Washington State Department of Transportation (WSDOT).

5. Speed Humps. Speed humps are approximately three inches (3") in height with a length of at least twelve feet (12') at base.

6. Traffic Signal Modification. The developer's engineer shall use these Standards in conjunction with the Standard Specifications. Traffic Signal plans shall be submitted on (24 x 36) inch mylar.

7. A signing and striping plan will be submitted to the City of Woodland for review and approval prior to the start of construction if signing or striping is part of the proposed development.

2.29 Appurtenances

An appurtenance shall be considered to be any fixed object located adjacent to the roadway and deemed to be a possible safety hazard.

A. All appurtenances shall be located a minimum of three feet (3') behind the face of the curb to the face of the object. Where no curb exists the distance from the edge of the travel way to the face of the object shall be at least six feet (6').

B. All breakaway objects shall be located a minimum of two feet (2') behind the face of curb to the face of the object. All objects having properties up to that of a (4 x 4) inch wooden post shall be considered breakaway.

C. Appurtenances shall be located outside of the sidewalk area except when the sidewalk is widened around the appurtenance to the satisfaction of the Engineer.

2.30 Franchise Utilities

A. Non-City owned franchise utilities are required to relocate existing facilities at their own expense when a conflict results between their facilities and public street improvements. For street improvements required due to a private development the improvement work must be required by the non-City owned utility in order for the relocation work to be the financial responsibility of the utility, otherwise all

costs shall be the responsibility of the developer.

B. All non-City owned franchise utility distribution or collection systems including power, telephone, gas, cable, and T.V. in new plats or short plats shall be underground.

C. As a minimum on all new single family plats and short plats, a minimum five foot (5') wide common or individual non-exclusive utility easement shall be provided connecting any lots without public street frontage to a public street. Easements for existing or future utility lines which do not lie along rear or side lot lines shall be of a width specified by the serving utility.

2.31 Safety Railing

A. Where a sidewalk or other non-motorized transportation facility is to be constructed above or adjacent to a slope, rock wall, or retaining wall where the lowest finished elevation of the slope, rock wall or retaining wall is thirty inches (30") or more below the finished elevation of the sidewalk or other facility, a safety railing shall be required when:

1. The plane of a wall face is less than four feet (4') in horizontal distance from the near side face of the sidewalk or other facility.

2. The plane of the wall face is greater than four feet (4') horizontal distance to the near side face of the sidewalk or other facility but the slope down to the wall top exceeds three to one (3:1).

3. The slopes adjacent to the sidewalk or other facility average greater than two to one (2H:1V).

B. Safety railings or other approved devices (such as walls, high curbs, landscape features or guard rails) shall be required where grading operations will produce a parking area, service yard or other vehicle area which has a drop-off grade separation in relation to adjoining properties or streets.

C. Safety railings shall be constructed of two inch (2") galvanized steel pipe or aluminum with vertical supports ten feet (10') on center and three (3) horizontal railings fourteen inches (14") on center, the lowest railing center being fourteen inches (14") above finished grade. All joints shall be welded, cold galvanized if welded after galvanizing, and the entire safety railing will be vinyl coated for corrosion protection and aesthetics. Railings shall be erected and adjusted if necessary, after initially set, to assure a continuous line and grade.

D. Wooden railings may be used when approved by the Engineer. Wooden railings shall be sturdily constructed of pressure treated timbers and galvanized carriage bolts (no nails allowed). Posts shall be minimum (4 x 4) inch on four-foot (4') centers. Three (3), (3 x 6) inch rails shall be bolted to the posts. Alternate designs may be considered.

2.32 Guard Rails

For purposes of warrants, design, and location, all guard rails along roadways shall conform to the criteria of the "Washington State Department of Transportation Design Manual" as may be amended or revised. The decision of whether to install a guardrail or not shall be based on information found in AASHTO publication, Guide for Selecting, Locating, and Designing Traffic Barriers.

2.33 Surfacing Requirements

All materials and workmanship shall be in accordance with the Standard Specifications, these Standards, and as approved by the Engineer.

A. Minimum Structural Section

The following are the minimum requirements for surfacing for specific facilities as described elsewhere in these Standards.

Facility	Surfacing Requirements
1. Major and Minor Arterials	See Drawings T – 23 and T – 24
2. Collectors	See Drawing T – 25
3. Neighborhood & Local Access	See Drawings T – 26 & T – 27
4. Concrete Sidewalks	4" Portland Cement Concrete over 3" of crushed surfacing
5. Multi-Use Trail	6" Crushed Rock ¼" Minus or Approved Alternate
6. Bikeway	2" Class ½" PG 64-22 HMA over 4" Crushed Rock Base
7. Rustic Trail	6" Wood Chips over compacted subgrade

All minimum surfacing requirements assume an acceptable, well drained, stable, compacted subgrade. Additional requirements may be imposed at the discretion of the Engineer if suitable subgrade conditions are not met. Pervious materials may be used in parking lots and access streets upon approval of the Engineer.

B. Alternative Sections

Streets may be constructed of either of the following:

1. Hot Mix Asphalt with crushed rock base or treated bases.
2. Portland cement concrete with cushion course of crushed rock or on a base of crashed rock or treated base.

For pavement sections, other than those in Section 2.33, alternative sections

may be approved by the Public Works Director following submission of calculations by a registered engineer and per the design requirements described herein. Soil testing to obtain the strength of the soil is required for all roads and streets in order to analyze and design the structural section. Soil tests are needed on undisturbed samples of the subgrade materials that are expected to be within three feet (3') of the planned subgrade elevation. Samples are needed for each five hundred feet (500') of roadway and for each visually observed soil type. Soil tests are required from a minimum of three (3) locations.

The selected design structural strength of the soil needs to be consistent with the subgrade compaction requirements. The strength and compaction moisture content, at optimum to slightly over optimum, needs to be specified. The soils report shall address subgrade drainage and ground water considerations for year round conditions.

Recommendations for both summer and winter construction shall be included. The required density of treated and untreated subgrade materials shall not be less than ninety-five percent (95%) maximum density as determined by AASHTO T-99.

C. Aggregate Base

All aggregate shall meet WSDOT specifications for base rock.

During compaction, materials shall be maintained within two percent (2%) of the optimum moisture content. The contractor shall begin compaction of each layer immediately after the material is spread, and continue until a density of not less than ninety-five percent (95%) of the maximum density has been achieved. Maximum density will be determined by AASHTO T-180, or WSDOT Test Method 705.

D. Asphalt Pavement Design

Asphalt Pavement shall be WSDOT HMA Class ½", PG 64-22. The design shall be governed by Section 5-04 of the Standard Specifications.

The compaction shall be at least ninety-one percent (91%) based on a Rice theoretical maximum density, as determined in conformance with AASHTO T 209, as modified by WSDOT.

Pervious asphalt pavement designs will be considered on a case-by-case basis by the Public Works Director.

E. Portland Cement Concrete Pavement

The design of Portland cement concrete streets shall be governed by Section 5-05 of the Standard Specifications. In addition, the City will require that the following be incorporated into the design and construction specifications;

1. Use a minimum twenty (20) year design period.

2. Minimum thickness of Portland cement concrete shall be six inches (6”).

3. The minimum concrete specifications shall be 5000 psi (compressive) and 650 psi (flexural) in twenty-eight (28) days.

4. A design joint plan shall be prepared and incorporated into the street construction plans. Longitudinal and transverse joint locations shall be clearly delineated. Transverse joints shall be skewed forward two feet (2’) per lane with right and left curb street stationing noted for each end. Joint spacing (in feet) should not exceed 1.5 to 1.75 times the slab thickness (in inches). For example, an 8-inch thick slab would have a maximum joint spacing of 12 to 14 feet. The maximum length to width ratio shall be 1.25:1.0 for any panel unless there are other constraints that the City will examine on a case by case basis.

5. Pervious concrete designs will be considered on a case-by-case basis by the Public Works Director.

2.34 Utilities

A. Depth.

Underground utilities shall be buried a minimum depth of thirty inches (30”) as measured from finished grade to top of utility. See Sections 3 and 4 for additional requirements.

B. Curb Markings.

When new curbing is being placed, a stamp shall be placed to mark where each water, stormwater, and sanitary sewer service crosses the curb line. The method of marking the curb shall be approved by the Public Works Director and noted on the approved construction plans. If an imprinting stamp is used, the impression left for a water service shall be the letter "W"; for a sanitary sewer service, it shall be the letter "S"; for a stormwater service, it shall be the letters “SW”. These impressions shall be two inches (2”) high; placed on the top of the curb.

C. Trench Restorations.

Trench restoration shall be either by a patch or overlay method. When a patch method is used, the trench limits shall be sawcut prior to the final patch.

All trench and pavement cuts shall be made by sawcuts. The sawcuts shall be a minimum of 1 foot (1’) outside the trench width. If the permit requires an overlay, the contractor may use a jack hammer for the cutting of the existing pavement.

D. Utility Locations.

Utilities shall be located horizontally within the right-of-way in accordance with City Standards.

E. Only approved crushed aggregate backfill will be used for trenches in roadway

sections. Trenches in Collectors and Arterials will require Controlled Density Fill (CDF).

SECTION 2 – TRANSPORTATION

CHAPTER 2 –CONSTRUCTION SPECIFICATIONS

2.50 General Requirements

A. Pre-Construction Conference Requirement

See 1.52 in Chapter 2 of Section 1 of the City Standards for requirements.

B. Construction Standards

All street, roadway, or sidewalk construction within public right-of-way shall conform to the most recent design standards of the City and other requirements of the City. All work and materials shall be in accordance with these Standards and the most recent Standard Specifications and APWA Standards. Where conflicts exist the more stringent specification shall apply, as determined by the Public Works Director.

C. Plans & Specifications

The installation of street and sidewalks shall be in accordance with construction plans and specifications prepared by the developer's engineer and reviewed and approved by the City.

2.51 Surfacing Requirements

A. General

Sub-grade, aggregate base, and pavement shall be constructed in accordance with the Standard Specifications.

B. Aggregate Base

1. All aggregate shall meet WSDOT specifications for base rock.

2. During compaction materials shall be maintained within two percent (2%) of the optimum moisture content. The contractor shall begin compaction of each layer immediately after the material is spread, and continue until a density of not less than ninety-five percent (95%) of the maximum density has been achieved. Maximum density will be determined by AASHTO T-180, or WSDOT Test Method 705.

C. Asphalt Pavement

1. Hot Mix Asphalt

Hot Mix Asphalt shall be WSDOT Mix Class ½", Pressure Grade PG 64-22.

2. Compaction

The compaction shall be at least ninety-one percent (91%) based on a Rice theoretical maximum density, as determined in conformance with AASHTO T 209, as modified by WSDOT.

D. The Contractor shall restore the surface of all streets broken into or damaged as a result of the work to their original condition in accordance with these Standards and WSDOT/APWA specifications.

E. Acceptance or approval of any work by the Public Works Director shall not prevent the city from asserting a claim against the Contractor and his/her or its security deposit required hereunder for incomplete or defective work, if discovered within twenty-four months from the completion of the work. The presence of a staff member of the public works department during the performance of any work shall not relieve the permittee of its responsibilities under this chapter.

2.52 Curb & Gutter

A. General Requirements

1. All curb and gutter shall be constructed with CL 3000 concrete, and shall be constructed over a prepared foundation of compacted aggregate.

2. When new curbing is being placed, a stamp shall be placed to mark where each water, stormwater, and sanitary sewer service crosses the curb line. The method of marking the curb shall be approved by the Public Works Director and noted on the approved construction plans. If an imprinting stamp is used the impressions shall be two inches (2”) high placed on top of the curb. For a water service the letter "W" will be stamped, for a stormwater service the letters “SW” will be stamped, and for a sanitary service it shall be the letter "S".

B. In the event it is necessary to cut the curb and street at the location of a driveway, the following requirements must be met:

1. The curb must be cut vertically and proper bond must be insured when pouring the new section of curb.

2. If an expansion joint occurs within four feet of the proposed cut, the curb shall be removed to the expansion joint.

3. The new curb shall be properly formed so that it will be poured monolithically with the new driveway. The foot of the driveway shall be formed so that the concrete will have a vertical face; therefor, insuring a proper bond with the surfacing of the roadway.

4. The portion of the roadway that is removed for the construction of the driveway must be replaced according to the requirements of the city specifications for street and roads. The replacement must have the approval of the inspector. Any variance shall have the approval of the engineer.

5. After completion of such work, a call for final inspection shall be made in order that the inspector can determine if all requirements have been met. No

release of the performance bond shall be made until a written release has been issued by the inspector.

2.53 Concrete Sidewalks

All sidewalks shall be four inch (4") thick CL 3000 concrete, and shall be constructed over a prepared foundation of compacted aggregate with a stiff broom finish. At driveways the concrete shall be six or eight inches thick as determined by use.

2.54 Driveways

A. Structure Clearance

1. No object (including fire hydrants, light or power poles, or street trees) shall be placed or allowed to remain within fifteen feet (15’) of the driveway edge.

2. Where the building facade or other design element, is less than ten feet (10’) behind the sidewalk front setback both pedestrian and vehicular sight distance shall be maintained.

B. Construction

Construction shall be per Standard Drawings.

2.55 Mailboxes

It shall be the responsibility of the developer to ascertain mailbox design requirements as required by the Postmaster. Mailboxes, in the general case, shall be set to the following standards.

A. Height

The height of the bottom or base of a mailbox shall be forty-four inches (44") above road surface or as directed by the Postmaster.

B. Placement

1. Access Streets

In relation to curb or sidewalk for Local Streets, the front of the mailbox shall be six inches (6”) behind the back of sidewalk.

2. Arterial and Collector Streets

In relation to curb or sidewalk for Arterial Streets, the front of the mailbox shall be one foot (1’) behind the back of sidewalk.

C. Posts

Posts shall be strong enough to give firm support but not to exceed (4 x 4) inch wood or one and one-half inch (1-½") diameter pipe, or material with comparable breakaway characteristics.

D. Sidewalk

Sidewalk widening behind the mailbox shall be five feet (5') long with a ten to one (10:1) taper to the standard sidewalk section.

2.56 Survey Monuments

Monument case and cover - see WSDOT Standard Drawings. Placement of monuments will be as determined by Public Works Director.

2.57 Street Lighting

Street lighting for all subdivision, commercial, and industrial development shall be designed and provided by the developer's engineer. The design plans shall be stamped and signed by a Washington State Licensed Engineer. The design and installation shall be in accordance with the National Electric Code and Standard Specifications 9-29. The installation shall be inspected by the Washington State Department of Labor and Industries Electrical Inspection Division. Safe wiring labels required by Labor and Industries shall apply to all projects. The design shall meet the additional design criteria.

A. Conduit

All conduit shall be buried a minimum of twenty-four inches (24") deep. All roadway crossing shall be rigid metallic or Schedule 80 PVC conforming to Section 9-29 of WSDOT Standard Specifications.

B. Coordination

It shall be the contractor's responsibility to coordinate the installation of the street light system with all utilities to avoid schedule and location conflicts. The contractor shall provide written permission from Cowlitz PUD for the electrical service location, and a copy of the load calculations to the City of Woodland.

C. Guarantees

The contractor shall surrender to the City of Woodland any guarantee or warranty acquired as normal trade practice in connection with the purchase of any materials or items used in the construction of the street lights.

D. Location

In general, streetlights shall be located on the highest corner of the intersection. One streetlight will be placed at all new intersections. One streetlight will be placed at all four corners of any new signalized intersection. One street light will be placed at the entrance of new straight road plats and at the following minimum distances:

1. Arterials and Collectors – Every 140 feet
2. Access Streets – Every two-hundred feet (200')
3. A streetlight will be placed near the end of all new cul-de-sacs.

2.58 Safety Railings

A. Construction

Safety railings shall be constructed of two inch (2") galvanized steel pipe or aluminum with vertical supports ten feet (10') on center and three (3) horizontal railings fourteen inches (14") on center, the lowest railing center being fourteen inches (14") above finished grade. All joints shall be welded, cold galvanized if welded after galvanizing, and the entire safety railing will be vinyl coated for corrosion protection and aesthetics. Railings shall be erected and adjusted, if necessary, after initially set to assure a continuous line and grade.

B. Wooden Railings

Wooden railings may be used when approved by the Engineer. Wooden railings shall be sturdily constructed of pressure treated timbers and galvanized carriage bolts (no nails allowed). Posts shall be minimum (4 x 4) inch on four-foot (4') centers. Three (3), (3 x 6) inch rails shall be bolted to the posts. Alternate designs may be considered.

2.59 Utilities

A. Depth

Underground utilities shall be buried a minimum depth of thirty inches (30") as measured from finished grade to top of utility. See Sections 3 and 4 for additional requirements.

B. Curb Markings

When new curbing is being placed, a stamp shall be placed to mark where each water and sanitary sewer service crosses the curb line. The Method of marking the curb shall be approved by the Public Works Director and noted on the approved construction plans. If an imprinting stamp is used, the impression shall be two inches (2") high on top of the curb. The letter "W" will be stamped for a water service the letter "S" will be stamped for a sanitary sewer service.

C. Trench Excavations

Except by special permission from the Public Works Director, no trench shall be excavated more than one hundred feet in advance of pipelaying nor left unfilled more than two hundred feet where pipe has been laid. No trench shall be left unfilled overnight unless authorization to do so has been given by the Public Works Director. Any trench so left shall be protected in a manner which will not

endanger the safety of passing motorists or pedestrians. The length of the trench that may be opened at any one time shall not be greater than the length of pipe and the necessary accessories which are available at the site ready to be put in place.

D. Trench Restorations

1. General:

   Trench restoration shall be either by a patch or overlay method. When a patch method is used, the trench limits shall be sawcut prior to the final patch.

2. Sawcuts

   All trench and pavement cuts shall be made by sawcuts. The sawcuts shall be a minimum of 1 foot (1') outside the trench width. If the permit requires an overlay, the contractor may use a jack hammer for the cutting of the existing pavement.

3. Backfill

   All trenching shall be backfilled with crushed surfacing materials conforming to Section 4-04 of the Standard Specifications. The trench shall be compacted to ninety-five percent (95%) maximum density, as described in Section 2-03 of the Standard Specifications. For Collectors and Arterials identified by the City Controlled Density Fill (CDF) is required.

4. Backfill Compaction

   Backfill compaction shall be performed in 8 to 12-inch lifts. The compaction tests shall be performed in four-foot (4') increments maximum. The test results shall be given to the Engineer for review and approval prior to paving. Number of tests required shall be as specified in 1.67 of these Standards. Additional testing may also be performed and/or required by the City.

5. Temporary Restoration

   Temporary restoration of trenches for overnight use shall be accomplished by using MC mix (cold mix), ATB, or steel plates. ATB used for temporary restoration may be dumped directly into the trench, bladed out and rolled. After rolling, the trench must be filled flush with asphalt to provide a smooth riding surface.

6. Tack and Sand

   Tack shall be applied to the existing pavement and edge of saw cuts and shall be emulsified asphalt grade CSS-1 as specified in Section 9-02.1(6) of the Standard Specifications. Tack coat shall be applied as specified in Section 5-04 of the Standard Specifications. Sand will be placed on top of the tack in

sufficient quantities to cover the tack a minimum of ¼”.

7. Hot Mix Asphalt

   Hot Mix Asphalt, HMA ½” Class, PG 64-22 shall be placed on the prepared surface by an approved paving machine and shall be in accordance with the applicable requirements of Section 5-04 of the Standard Specifications, except that longitudinal joints between successive layers of HMA shall be displaced laterally a minimum of twelve inches (12”) or unless otherwise approved by the Public Works Director. Fine and coarse aggregate shall be in accordance with Section 9-03.8 of the Standard Specifications. HMA over two inches (2") thick shall be placed in equal lifts not to exceed two inches (2") each.

   Backfilling in any street opened or excavated pursuant to a right-of-way access/utility permit issued hereunder shall be according to WSDOT/APWA and these Standards.

8. Surfaces

   All street surfaces, walks or driveways within the street trenching areas affected by the trenching shall be feathered and shimmed to an extent that provides a smooth-riding connection and expeditious drainage flow for the newly paved surface. Shimming and feathering as required by the Engineer shall be accomplished by raking out the oversized aggregates from the Class B mix as appropriate.

   Surface smoothness shall be per Section 5-04.3(13) of the Standard Specifications. The paving shall be corrected by removal and repaving of the trench only.

9. Asphalt Patch

   Asphalt patch depths will vary based upon the streets being trenched and whether the trenching is parallel or perpendicular to the streets. The actual depths of asphalt shall be shown on the Right-of-Way Use Permit and the work shall be performed as required by the attached details.

10. Compaction of Lifts

    Compaction of all lifts of asphalt shall be an average of ninety-one percent (91%) of maximum density as determined by WSDOT FOP for AASHTO T209. Number of tests required shall be as specified in 1.67 of these Standards.

11. Joints

    All joints shall be sand sealed.

12. Roadway Shoulder(s)

    When trenching within the roadway shoulder(s), the shoulder shall be restored to its original or better condition.

13. Final Patch

The final patch shall be completed within thirty (30) days after first opening the trench. This time frame may be adjusted if delays are due to inclement paving weather, or other adverse conditions that may exist. Delaying of final patch or overlay work is allowable only subject to the Engineer's approval. The Engineer may deem it necessary to complete the work within the thirty (30) days' time frame and not allow any time extension. If this occurs, the Contractor shall perform the necessary work as directed by the Engineer.

2.60 Inspections

A. Step Inspections

The following items of work shall be inspected by City Staff:

1. For street or sidewalk work, sub-grade shall be inspected by the City (and tested by the Contractor) prior to placement of crushed surfacing.
2. Crushed surfacing shall be inspected by the City (and tested by the Contractor) prior to placement of paving, curb, or sidewalks.
3. Pavement, curb, and sidewalk. Notify the City prior to the placement of any paving, curbs, or sidewalk.
4. Compaction of bedding and backfill of utility trenches.
5. Compaction of bedding within public right-of-way and slope easement.
6. Other items of inspection notification are included under the various items of work outlined in these Standards.

B. Progress of Construction

Construction shall proceed in a systematic manner that will result in a minimum of inconvenience to the public.

2.61 Contractor's Requirement for Testing

Testing shall be performed per the requirements of the Standard Specifications and Paragraph 1.67 of these Standards.

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 2, CHAPTER 3

TRANSPORTATION STANDARD DETAILS

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 3

STORM DRAINAGE

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

SECTION 3 – STORM DRAINAGE

CHAPTER 1 – DESIGN AND CONSTRUCTION SPECIFICATIONS

3.00 Approval Requirements

A. See Section 1 for general construction requirements, including the requirements for extension of all drainage conveyance pipes to limits of property, surety bond, and utility review.

B. These requirements shall apply to all storm drainage facilities in existing and proposed public right-of-way, public drainage easements, and tracts of common ownership in the City. Storm drainage systems include, but are not limited to: inlets, pipes, ditches, creeks, rivers, wetlands, and stormwater quality and quantity facilities.

3.01 Planning Criteria

A. The City of Woodland has established the requirements for the design of facilities intended to protect the public health, safety, and welfare from damage due to flooding. Beyond that level of protection, additional measures are specified in this chapter that are intended to minimize any potential flooding damage and allow for efficient operation, repair, and maintenance of the storm drainage system.

B. In residential and commercial development, storm sewer main extensions are required to assure orderly and adequate extension of the storm sewer system. These extensions are to be in accordance with requirements of development and service availability as established by the City and the Washington State Department of Ecology.

C. Design and construction of drainage facilities, including but not limited to: open channels, conveyance pipe, and inlets shall be in compliance with WMC 15.12, these Standards, the Standard Specifications, and the "Stormwater Management Manual for the Puget Sound Basin (1992)" (hereinafter referred to as the Puget Sound Manual) prepared by the Washington State Department of Ecology.

D. Except for natural water courses designated by the City as Regional Facilities, storm drainage pipes shall be extended through and to the extremes of the property being developed along the natural drainageways, to provide connection points for future development of unserved property as determined by the City.

E. Provisions must be made for gravity drainage of roofs and foundation drains for all new buildings and structures. For multi-family, residential, commercial, or industrial developments, these drains shall be piped directly to on-site stormwater systems. In single family residential developments, on-site drywells or infiltration systems will be encouraged by the City. In areas where roof and foundation drains can not be infiltrated, hard piping the discharge directly to the public storm system will be the preferred method. Discharge of roof and foundation drains to the street gutter or wetlands will be approved on an individual basis by the City.

F. Provisions must be made for stormwater from private property to remain on private property wherever feasible.

G. Weep holes will be installed under sidewalks at all property lines for possible future use by the property owner.

3.02 Design Requirements

A. The City of Woodland has adopted the Puget Sound Manual with the following notations:

1. Stormwater quantity management requirements are amended by Section 3.02B of these Standards.

2. All inside drops and pollution control structures must be constructed with pipe; no partitions will be allowed.

3. All inside drops and pollution control manholes must be sixty inch (60”) or larger diameter structures.

4. All pipe shall be installed with watertight joints.

5. All backfill material shall be referenced per the Standard Specifications.

6. No private storm sewer shall be located within any lot other than the lot which is the site of the building or structure served by such sewer. The exception to this will be common areas, City right-of-ways, or as otherwise approved by the Public Works Director.

B. Water Quantity Standards

1. All development on sites one-half (0.5) acre or greater in area shall be required to provide on-site detention. Where the Public Works Director authorizes in writing a waiver from the on-site detention requirement, proposed site developments shall convey stormwater to regional facilities as designated by the City.

2. The minimum standards for the design and construction of stormwater quantity facilities in the City of Woodland shall be the same as the current standards of the Puget Sound Manual as amended by WMC 15.12 and these Standards.

3. If a site is proposed to be constructed in phases, the first phase shall have a stormwater quantity facility designed and built to accommodate the ultimate development of the site.

4. Drain inlets shall be curb inlets per the Standard Drawings. Curb inlets shall be placed so that no more than seven-thousand square feet (7,000 sq. ft.) of hard surfacing, pavement, and driveways which drain to the street including top of curb and sidewalk where sidewalk is adjacent to the curb, shall drain to each drain inlet.

5. Storm drain conveyance systems shall be sized to convey the 100-year storm event.

C. Water Quality Standards

The minimum standards for the design and construction of stormwater quality facilities in the City of Woodland shall be the same as the current standards of the Puget Sound Manual as amended by WMC 15.12 and these Standards.

D. Design of Conveyance Facilities

Manholes and pipelines shall be designed in accordance with the requirements specified for Sanitary Sewer Systems as outlined in Section 4 of these Standards.

3.03 Construction Requirements

A. General

1. The preceding and governing documents shall be as follows:

   a. City of Woodland Municipal Code, Title 19, WMC Development Code Administration.

   b. City of Woodland Municipal Code, Title 15.12, Stormwater Management.

   c. The 1992 edition of the Puget Sound Manual distributed by the Washington State Department of Ecology.

   d. City of Woodland Public Works Engineering Standards for Construction.

   e. Latest edition of the WSDOT Standards and Specifications for Road, Bridge and Municipal Construction.

2. Maintenance Bonds – Private Storm Facilities, shall be maintained per EPA MS4.

3. Compliance to these documents shall be adhered to unless otherwise specified in writing by the Public Works Director.

B. Gravity Drainage

1. Roofs & Foundations

   Provisions must be made for gravity drainage of roofs and foundation drains for all new buildings and structures.

2. Multi-Family, Commercial & Industrial

   For multi-family, commercial, or industrial developments, these drains shall be piped directly to on-site stormwater systems/facilities.

3. Single Family - Residential

   In single family residential developments, the first alternative is drains shall be

discharged to on-site dry-wells if feasible. The second alternative is to pipe directly to the public storm water system. The third alternative is to discharge to the street gutter. Discharge to the street requires approval by the Public Works Director.

C. Private Property

1. Provisions must be made for stormwater from private property to remain on private property wherever feasible.

2. Runoff from driveways shall be directed to adjacent lawn whenever practical and not be permitted to drain directly to the street unless topography presents undue constraints.

D. Storm Drainage Facilities

1. General

   These requirements shall apply to all storm drainage facilities in existing and proposed public right-of-way, public drainage easements, and tracts of common ownership in the City.

2. Storm Drainage Systems

   Storm drainage systems include, but are not limited to:

   a. Inlets

   b. Pipes

   c. Ditches

   d. Creeks

   e. Rivers

   f. Wetlands

   g. Stormwater Quality Facilities

   h. Stormwater Quantity Facilities.

E. Stormwater Pipes

1. Stormwater pipes shall be installed in accordance with Section 4 Sanitary Sewer System, of these Standards.

2. All applicable provisions of Section 4 shall be followed except where specifically amended in this Section.

3.04 Culverts

Materials and construction shall conform to latest edition of the WSDOT Standard Specifications Division 7, Section 7-02 Culverts

All exposed concrete culvert ends shall conform to the latest edition of the WSDOT Standard Specifications Division 9, Section 9-05.3(3) Beveled Concrete End Sections.

3.05 Catch Basins and Inlets

Materials and construction shall conform to the standard details in this Section of these Standards.

3.06 Cleaning Existing Drainage Structures

The cleaning of existing drainage structures shall be as specified in the latest edition of the WSDOT Standard Specifications Division 7, Section 7-07.

A. Description:

This work consists of cleaning, removing and disposing of all debris and obstructions from existing culvert pipes, storm sewer pipes, drains, inlet structures, manholes box culverts, grates, trash racks, or other drainage features within the limits of the project.

B. Construction Requirements:

All pipes and drainage structures that require cleaning are identified in the Plans. They shall be cleaned by flushing, rodding, or whatever means are necessary to provide unobstructed drainage. All catch basin sumps, manholes, inlets and outlet structures, and debris racks shall also be freed of all dirt, rock, and debris. Existing drainage facilities shall be kept clean throughout the life of the project and be clean upon final acceptance of the work.

3.07 Embankment

Embankment for stormwater retention or detention basins shall be placed in maximum eight inch (8”) lifts and each lift shall be compacted to ninety-five percent (95%) of maximum density at optimum moisture content. Embankments shall be constructed per Section 2-03 of the Standard Specifications.

3.08 Oil/Water Separator

A. General

Oil/water separators shall be constructed as shown in the standard details of these Standards

B. Excavation

Excavation for pre-cast vaults shall be sufficient to provide a minimum of twelve

inches (12”) between the vault and the side of the excavation.

C. Depth

Vault shall be placed at proper depth to set vault cover flush with finish grade. If additional depth of cover is required over inlet or outlet piping vault riser sections shall be installed to raise vault cover a maximum of twenty-four inches (24”).

D. Foundation

1. The oil/water separator shall be placed on fine soil. If the foundation material is inadequate, the Contractor shall use foundation gravel or bedding concrete under the normal base to support the separator.

2. Vault shall be placed and set plumb so as to provide vertical sides. The completed separator shall be rigid and watertight.

3. Rough, uneven surfaces will not be permitted.

E. Joints

Joints of pre-cast concrete sections shall be thoroughly wetted and completely filled with mortar, plastered, and trowled smooth with 3/4" of mortar in order to attain a watertight surface.

F. Lifts Holes

All lift holes, if any, on pre-cast items shall be completely filled with expanding mortar and smoothed both inside and out, to insure water-tightness.

G. Steel Loops

All steel loops, if any, on pre-cast section must be removed, flush with the vault wall. The stubs shall be covered with mortar and smoothed.

H. Knockouts

Pre-cast vaults shall be provided with 8 inch diameter knockouts at all pipe openings or have openings core-drilled prior to installation.

I. Rigid Pipe

1. All rigid pipe entering or leaving the structure shall be provided with flexible joints within twelve inches (12") of the manhole structure and shall be placed on firmly compacted bedding. Special care shall be taken to see that the openings through which pipes enter the structure are completely and firmly filled with mortar from the outside to ensure water-tightness.

2. All P.V.C. pipe connections to a vault shall be made with a gasketed coupling as approved by the City.

3.09 TV Inspections

A. The developer's contractor shall pay for the cost of scanning all new public storm pipe along with existing sections of pipe which are disturbed or affected by new construction.

B. Prior to a (TV) television scan, the contractor shall flush, clean, and remove all debris from the system and shall string all lines with nylon cord (or equivalent) having a minimum test strength of two-hundred fifty pounds (250 lbs.). The string ends shall be tied to the top rung of the steps in each structure.

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 3, CHAPTER 2

STORM DRAINAGE STANDARD DETAILS

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
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CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 4

SANITARY SEWER SYSTEM

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

SECTION 4 – SANITARY SEWER SYSTEM

CHAPTER 1 – DESIGN AND CONSTRUCTION SPECIFICATIONS

4.00 General Requirements

A. Planning Requirements

Sewer lines proposed for public ownership shall be located only within public rights-of-way or easements designated for their use. Private sewer lines connecting to a public system (house connections, building connections) must lie solely within property or easements under one ownership.

B. Design and Construction of Sewers

1. Sanitary sewers should be designed to remove the domestic sewage and basement drainage from houses, business buildings, and other public and private establishments, but not the street or roof drainage. Basement drainage by gravity flow shall be provided wherever practicable. Storm water, including street or roof drainage, shall be removed by a system of storm sewers or by some other method separate from the sanitary sewer system. Unpolluted cooling waters and swimming pool drains shall be kept out of wastewater systems.

2. Sanitary sewers should be designed to care for future loads that may reasonably be expected from full development upstream, consistent with the Woodland Comprehensive Plan, Capital Facilities Plan, WMC Title 13 and the latest General Sewer Plan. Sanitary sewer systems shall extend to the appropriate extremities of the project to provide for both upstream and downstream development of the system.

3. A copy of the calculations and worksheets used to determine design compliance of the sewer system within the development, the future upstream incoming influent, and the adequacy of the downstream facilities shall be submitted with plans for approval.

4. The minimum design life for sewer materials shall be 75 years.

C. Sewer Specifications

1. It is important to the City to minimize the amount of infiltration into the sanitary sewer system. For this purpose, the sewer specifications shall cover in detail the method of laying pipe and constructing joints. Strict supervision should be provided during construction to make certain that the specifications are complied with.

2. The sewer specifications shall cover pipe material, excavation, laying of sewer pipe, jointing, backfilling, material and compaction, testing, etc., in a manner consistent with these Standards and the Standard

Specifications.

D. House or Building Sewers

As a minimum criterion, construction of the house or building sewers shall be of the same quality and meet the same requirements as the public sewer with regard to materials, watertightness, and location. In addition, these sewers shall conform to the State and local plumbing codes and restrictions. No roof, surface, foundation, or other storm water drain lines shall be connected to the sanitary sewer system. Industrial connections shall have a sampling manhole located at their property line. All private systems connecting to public sewers that are over two-hundred fifty feet (250 ft.) in length or eight inches (8”) in diameter or larger shall comply with all applicable requirements of public sewers.

If the house or building has a basement located below sewer grade backwater valves will be required on the lateral to prevent reverse flow along the lateral. Clean outs are required at the building and at the property line.

E. Connections to Existing Sewers

Wherever practicable, sewer connections will be made directly into existing manholes. Construction of a manhole over the existing sewer may be required.

F. Pre-Treatment

City wastewater pre-treatment requirements as described in WMC 13.10 and 13.12 must be adhered to.

4.01 Capacity

Because it is usually impossible to exclude all ground water infiltration, it is recommended that the capacity of sanitary sewer laterals, when flowing full, be equivalent to three-hundred fifty (350) gallons per capita per day, based on the total estimated future population, plus an infiltration/inflow allowance of two-hundred (200) gal/day/in dia/mi. Trunk and interceptor sewers should, in general, have capacities equal to at least two-hundred fifty (250) gallons per capita per day, plus an infiltration/inflow allowance of two-hundred (200) gal/day/in dia/mi. If appreciable quantities of industrial or commercial wastes are to be discharged into the sewers, proper allowances must be made for such additional flows. Infiltration flow measurement and evaluation is essential to the proper design of interceptors to serve urban service areas.

4.02 Pipe Sizing

All public sanitary sewers shall be at least 8 inches in diameter. Approval to install six inch (6”) or four inch (4”) pipe for the extension of existing sewers less than eight inches (8”) in size will not be granted due to the difficulties involved in the replacement of overloaded live sewers. The minimum diameter of pipe used in house or building connections within the right-of-way or easement is six inches (6”).

4.03 Location, Alignment, and Depth

A. General

The standard location within road right-of-way is eight feet (8’) from the curb on the south or west side of the road centerline.

Sanitary sewers shall be located greater than one-hundred feet (100’) from any well, spring, or other source of domestic water supply. All sanitary sewers or parts thereof which are located within fifty feet (50’). from any such source of domestic water supply shall be constructed of ductile iron or C-900 PVC pipe with watertight joints or equivalent. Sanitary sewers and domestic water lines shall not be laid in the same trench. Parallel water and sewer lines, wherever possible, should be located at least ten feet (10’) apart horizontally with eighteen inches (18”) of vertical clearance between water and sewer. When physical conditions render this spacing impossible or impractical, then ductile iron or C-900 PVC pipe with watertight joints is required for the sewer line. Wherever it is necessary for sewer and water lines to cross each other, the crossing should be at an angle of approximately ninety degrees (90°), and the sewer shall either be located eighteen inches (18”) or more below the water line and constructed of ductile iron or C-900 PVC pipe with watertight joints for a distance of nine feet (9’) on both sides of the water line.

B. Alignment

Sewer lines shall be laid on a straight alignment and uniform grade between manholes. Do not deviate from line or grade as established by the developer, more than ½ inch for line and ¼ inch for grade, provided that such variation does not result in a level or reverse sloping invert.

Grade measurements will be done at the pipe invert because of permissible variation in pipe wall thickness.

C. Minimum Grade

1. All sanitary sewers should be laid on a grade which will produce a mean velocity, when flowing full or half full, of at least two feet (2’) per second, based upon the Kutter formula with “n”, the coefficient of roughness, valued at not less than 0.013, depending on the type of pipe used. The minimum grades for various sizes of pipe with an “n” value of 0.013 are listed in Table 4.1. Slopes, greater than those shown, are desirable and are recommended on the upper ends of sewer lines.

2. Minimum grade of house or building connections is two percent (2%).

3. Oversizing of pipes to comply with allowable slope tolerances is

discouraged. Two feet (2') per second velocities must, wherever possible, be achieved with available effluent volumes.

4. The above minimum grades need not be adhered to for outfall sewers which carry only treated sewage.

Table 4.1 – Minimum Sewer Line Grades

Inside Pipe Diameter (inches)	Grade (ft. per 100 ft.)
8	0.40
10	0.28
12	0.22
15	0.15
18	0.12
21	0.10
24	0.08
27	0.07
30	0.06

D. Minimum Depth

All sewers should be laid at depths sufficient to serve the building area for each lot, including basement drains, and to be protected against damage by frost and traffic. All sewers within road rights-of-way shall have a minimum of 6 ft. of cover, including house and building connections. Ductile iron pipe class 50 shall be used anytime trench cover is less than 3ft.

4.04 Material, Joints, and Anchor Walls

A. Material

All sewers shall be constructed of material sufficiently strong to withstand the design soil pressures and live load without jeopardizing the watertightness of the pipe. Material shall also be sufficiently rigid as to maintain hydraulic continuity and joint integrity under any and all design conditions. Pressure sewers shall be constructed of material approved by the City which will retain the nominal dimensions of the conduit under design trench loadings.

Polyvinyl Chloride (PVC) and Ductile Iron Pipe shall meet the requirements WMC 13.12 C-900 PVC Pipe shall meet the requirements of Standard Specifications 9-30. HDPE or other pipe material may be approved by the Public Works Director on a case by case basis.

B. Sewer Joints

All sewer joints must be constructed gastight and watertight per WMC 13.12.

Joint deflections shall be controlled such that the watertight integrity of the joint is maintained.

C. Branches and Special Pipes

Joints on all tee fittings and special pipes or fittings shall be the same as the joints used on the sewer pipe. Caps or plugs shall be furnished with each tee outlet or stub with the same type gasket and joint as furnished with the service connection pipe specified. The plug or cap shall be banded or otherwise secured to withstand all test pressures involved without leakage.

Furnish all tee outlets with gasketed type joint or approved adapter to join service connection pipe used. Tees fitting concrete pipe shall be shop fabricated. Fabrication details for tees and special pipes or fittings shall be submitted to the City for review prior to delivery to the job site.

D. Anchor Walls

Where soil conditions so warrant, sewers on slopes in excess of twenty percent (20%) shall be secured through the use of concrete anchor walls or other protection. Spacing of anchorage shall be as follows:

Table 4.2 – Minimum Anchor Spacing

Slope	Minimum Anchor Spacing Center to Center
20 – 34%	35 feet
35 – 50%	25 feet
>50%	15 feet or concrete encasement

E. Closure Collars

Anchor wall and Closure Collar details are shown in the details of this section.

F. Service Connections

See the standard details in this section.

4.05 Manholes

Manholes are mainly for the purpose of facilitating maintenance and operation of sewer systems, and for this reason should be designed, constructed, and located as follows:

A. Manholes shall be constructed in compliance with these Standards and Standard Specifications section 7-05. Variations must be approved by the City. Construction shall be watertight.

B. Manhole construction shall conform to the Standard Drawings in Chapter 4 of this section. Precast manhole construction shall conform to ASTM C478.

C. Concrete, Steel, and Crushed Rock Base

Materials for constructing manholes shall conform to Standard Specifications 7-

05.2. Details for poured-in-place manholes shall be submitted to the City for Approval.

D. Mortar shall conform to ASTM C387.

E. Manhole steps shall be steel conforming to ASTM A36, galvanized in accordance with ASTM A123 and shall be constructed in accordance with the Standard Drawing S-09. The step spacing shall be twelve inches (12”).

F. Manhole Frames and Covers

Frames and covers shall conform to the Standard drawings and be fabricated in accordance with ASTM A48, class 30B. Watertight, locking manhole covers are required outside paved areas.

G. Nonreinforced rigid pipe shall have a standard joint or flexible coupling installed at the inlets and outlets of each manhole structure. These joints shall be at a distance of no more than twelve inches (12”) from the outside surface of the manhole wall for all pipe diameters.

H. Manholes shall be located as follows, unless otherwise approved by the City:

1. Every change in grade or alignment of sewer.

2. Every point of change in size or elevation of sewer.

3. Each intersection or junction of sewer.

4. Upper end of all sewer lines.

5. At intervals of five-hundred feet (500’) or less.

I. Cleanouts will not be approved as substitutes for manholes, except at the upper end of non-extendible lateral sewers two-hundred fifty feet (250’) or less in length.

J. In manholes where lateral sewers are intercepted by mains, trunks, or interceptors, the lateral sewer should be laid such that under normal flow conditions in the interceptor sewer, there will be no backing up of sewage in the lateral sewer.

K. For sewers in excess of forty-eight inches (48”) in diameter, manholes shall be offset from the center line of the pipe so that easy access to the invert of the pipe is possible for inspections, testing and maintenance, unless otherwise ordered by the City.

L. Outside drop assemblies shall be provided for pipes twelve inches (12”) in diameter and smaller when entering a manhole at a distance of more than twenty-four inches (24”) above the invert of the manhole.

M. All manhole outlet pipes will have an invert elevation a minimum of 0.2 feet

below the lowest invert elevation of all incoming pipes.

4.06 Prohibited Devices and Pump Systems

A. Inverted siphons are prohibited without special approval of the City.

B. No automatic flush tank with direct or underground connection to a potable water supply shall be installed in any sewer system.

C. Areas that are below existing gravity sewer service will be required to provide sewer service acceptable to the City prior to conceptual project approval. Pump systems will be approved by the Public Works Director on a case by case basis.

4.07 Installation of Sewer Pipe

A. Pipe Base

Place a minimum of six inches (6”) of ¾ inch minus crushed rock under all sewer pipe under eighteen inches (18”) in diameter and eight inches (8”) under pipe eighteen inches(18”) to thirty-six inches (36”) in diameter. Compact the pipe base with vibratory or impact tampers to ninety-five percent (95%) maximum density as determined by the applicable method of AASHTO Testing procedures. Excavate bell holes at each joint.

B. Pipe Zone

Place a minimum of twelve inches (12”) of approved crushed rock over the top of the pipe. Compact the pipe zone with vibratory or impact tampers to ninety-five percent (95%) maximum density as determined by the applicable method of AASHTO testing. The developer is responsible for determining the maximum amount of pre-cover over the pipe to protect it from the backfilling operation.

C. Trenching as specified in Standard Specifications 7-08.

D. The minimum width of trench in which the pipe is to be laid shall be eighteen inches (18”) greater than the inside diameter of the pipe, or as approved.

E. Pipe Laying

Pipe laying shall proceed upgrade with spigot ends pointing in the direction of flow. Provide uniform bearing support for the pipe. Install the pipe as recommended in the manufacturer’s standard installation instructions.

F. Closure Collars

Use closure collars only when approved by the City, and then only to make connections between dissimilar pipe, or where Standard rubber-gasketed joints are impractical. Before the closure collars are poured, wash pipe to remove all loose material and soil from the surface on which the concrete will be placed, and apply suitable bonding agent. Thoroughly wet nonmetallic pipe before pouring the collars. Wrap and securely fasten a light gauge of sheet metal or

building felt around the pipe to ensure that no concrete shall enter the line. Make entire collar in one pour and extend a minimum of twelve inches (12”) on each side of the joint. The minimum thickness around the outside diameter of the pipe shall be six inches (6”). No collar shall be poured in water. After the collars are poured and have taken their initial set, cure by covering with well-moistened earth.

G. All new lines shall be acceptable to the City prior to any new sewer tie-ins to the existing sewer system.

4.08 Manhole Installation

A. Provide a minimum of six inches (6”) of compacted crushed rock base under the manholes.

B. All stub outs and blockouts are to be constructed watertight. Block all plugs to prevent blowoffs.

C. Install manholes in conformance with these Standards and good construction practice.

D. The finished grade of manholes is to be one foot (1’) above the existing ground in unimproved areas, at grade in existing street areas, and at future grade in proposed street areas.

E. Vacuum Testing

All manholes shall be vacuum tested. All adjacent surface restoration will be completed before conducting a sanitary manhole acceptance test, including finish paving and final adjustment to grade. Any test conducted beforehand shall be considered informal, and will not count for acceptance.

Vacuum tests will be conducted in accordance with Standard Specifications Section 7-17.3.

4.09 Sewer Line Cleaning and Testing

All sewer lines will be cleaned and tested according to Standard Specifications Section 7-17.3. This includes an exfiltration leakage test, an infiltration test, low pressure air testing, and deflection tests for thermoplastic pipe.

A. Prior to final acceptance and final manhole-to-manhole inspection of the sewer system by the applicant, flush and clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, sand, silt, and other foreign material from the sewer system at or near the closest downstream manhole. If necessary, use mechanical rodding or bucketing equipment.

B. Upon the applicant’s final manhole-to-manhole inspection of the sewer system, if any foreign matter is still present in the system, reflush and clean the sections and portions of the lines as required. The City will perform a final inspection.

C. A video inspection shall be performed on all sewer systems prior to final acceptance. A copy of the inspection shall be supplied to the City.

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 4, CHAPTER 2

SANITARY SEWER SYSTEM STANDARD DETAILS

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 5

WATER SYSTEM

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

SECTION 5 – WATER SYSTEM

CHAPTER 1 – DESIGN AND CONSTRUCTION SPECIFICATIONS

5.00 General Requirements

A. Preconstruction Conference

No water main construction work shall commence prior to the pre-construction meeting or prior to approval of the engineering plans. 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 application following payment of fees for water meters.

B. Water Quality

The quality, taste and odor of water drawn from new construction water mains shall be the same as the water in the existing facility classed as acceptable for use by the City. Should the water not be acceptable for use because of taste, required steps as approved by the City shall be accomplished to attain water quality acceptable for use.

C. Operation of all waterlines valves and appurtenances shall be by City personnel only once new waterlines are connected to the City's existing system, regardless of whether or not the overall project has been accepted by the City.

5.01 Water Meters

A. All water meters shall be furnished and set by the City. The owner is required to apply and pay all meter and installation fees prior to the acceptance of the project. The City will install meters and lock off meter setters and turn on as requested by the owner after acceptance by the City. Water meters will be set only after box and setter are installed per the standard details.

B. In subdivisions and short plats, water meter applications will be processed for meter sets and water turned on after acceptance of the water mainline facility by the City and payment of all meter and installation fees by the applicant.

C. All irrigation meters require the installation of certified backflow devices. Certification must be either City or State approved. All irrigation meters will be set and turned on after acceptance of the water system by the City. The City will not accept a water system until all the requirements of these standards have been completed and all the fees have been paid.

D. Adjustments, repairs or replacement of the service line, meter box or setter shall be the responsibility of the property owner.

E. Any deficient water service brought up to standards by the City as requested by a property owner by application shall be billed by the City on a time and material basis

F. Water services are to be single runs from the main line to each meter. Splices

or joints of any kind are not allowed on new services or service line repairs completed by the contractor. Multiple meters on a single service line will only be accepted when all meters serve a single property owner.

G. Materials and construction shall be in accordance with Section 7-15 of the WSDOT Standard Specifications and the Standard Details.

5.02 Cross Connection Control

Backflow devices shall be installed in accordance with the requirements of the "Accepted Procedure and Practice in Cross Connection Control" manual, the Uniform Plumbing Code and the Codes.

5.03 Connections to Existing Pipelines

A. Connections may be made to existing pipes under pressure with a tapping machine by determining the size and type of pipe and installing tapping sleeve to fit complete with tapping gate valve. Where cut-ins requiring a shut-down of existing lines are permitted to be made, the work shall be conducted at such a time and in such a manner as to minimize the interruption of service. Cut-in time must be approved by the City. Necessary pipe, fittings and gate valves shall be assembled at the site ready for installation prior to the shutting-off of water in the existing main. Once the water has been shut off, the work shall be performed vigorously and shall not be halted until the line is restored to service. Operation of all water main line valves shall be by the City. The City shall witness all wet taps and cut-in connections and requires forty-eight (48) hours notice and approval by the City.

B. The Contractor shall have the responsibility of giving at least a forty-eight (48) hour notice to the City and affected customers of intention to disrupt service.

C. Shut-down of the system at the requested time is not guaranteed. If City personnel are not available at the requested time or if the Contractor does not have the necessary equipment and materials on site, the shut-down will be moved back to allow for re-notification.

D. Pipes to be abandoned shall be capped with mechanical couplings. Abandoned pipes left in place that are larger than eight inches (8”) in diameter must be completely filled with grout.

E. When tapping water mains, use stainless steel conforming to 18-8 Type 304 stainless steel with a CF 8 cast stainless steel flanged end with ANSI 150 lb drilling. Bolts and hardware shall be Type 304 stainless steel.

F. Connections to existing mains larger than eight inch (8”) diameter shall be via a wet tap unless otherwise approved by the City.

G. Connections to existing mains smaller than eight inches (8”) in diameter shall be by cutting in a tee, unless otherwise approved by the Public Works Director.

H. Size on size tapping tees are not allowed unless otherwise approved by the Public Works Director.

5.04 Roadway and Railway Crossings

The Contractor shall use the method which has been designed on the plans and is acceptable to the City and the government or private agency having control of the road. Permits are required and shall be obtained prior to construction approval.

5.05 Trench Excavation

A. Clearing and grubbing where required shall be performed within the easement or public right-of-way and as permitted by the property owner and/or governing agencies. Debris resulting from the clearing and grubbing shall be disposed of by the developer.

B. The work necessary to excavate, bed, and backfill water pipelines shall conform to the requirements of Section 7-9 of the WSDOT Standard Specifications and the Standard Drawings.

C. Trenching and shoring operations shall not proceed more than one-hundred (100) feet in advance of pipe laying without written approval of the City.

D. Where a utility crosses under an existing asbestos cement water main or where a trench alters the bedding of an existing asbestos cement water main, the existing A.C. pipe shall be cut three feet (3') minimum from each side of the trench wall and replaced with a corresponding size ductile iron pipe Class 52. The ductile iron pipe shall be connected to A.C. pipe with transition couplings.

5.06 Pipe in Filled Area

Special treatment may be required at the discretion of the City for pipe installed in fill areas. This treatment may consist of compacting the backfill in six inch (6") layers, careful choice of backfill materials, use of Mechanical Joint Ductile Iron Pipe in short lengths, or such other reasonable method or combinations as may be necessary or as required by the City.

5.07 Pipe Installation for Water Mains

A. General

Pipe shall be laid per Section 7-08 of the Standard Specifications as modified and/or amended herein.

B. Line and Grade

Waterlines shall be installed to the line and grade shown on the plans. Construction staking providing both line and grade information shall be provided at locations of all fittings and valves and at intermediate locations spaced not more than 60 feet apart. Pipelines shall not deviate from the straight line at any joint in excess of two inches (2") horizontally and one inch (1") vertically. The Contractor shall pothole and locate existing utilities far enough in advance of

pipe laying operations such that horizontal and vertical changes in pipeline and grade can be achieved with joint deflections.

C. Pipe and Fittings Materials

Use only PVC C-900 or Class 52 ductile iron pipe and fittings. HDPE or other materials may be approved by the Public Works Director on a case by case basis.

D. Bolts

Bolts for buried flanged fittings shall be stainless steel. Bolts for mechanical joints shall be NSS Corten steel or Ductile iron only.

E. Permissible Deflection of Joints

Wherever it is necessary to deflect pipe from a straight line either in a vertical or horizontal plane, or where long-radius curves are permitted, the amount of deflection allowed shall not exceed the values in the following table:

Table 5.1 Maximum Deflection Permitted*
18-Foot Length Pipe

Diameter (Inches)	Mechanical Joint Maximum Deflection**		Push-on Joint Maximum Deflection	
	Angle (Degrees-Minutes)	Deflection (Inches)	Angle (Degrees)	Deflection (Inches)
4	8-18	31	5	18
6	7-07	27	5	18
8	5-21	20	5	18
10	5-21	20	5	18
12	5-21	20	5	18

* The maximum deflection shall be whichever is less, the table or that recommended by the pipe manufacturer.

** Safe deflection for one-hundred fifty pounds (150 lbs.) pressure. For higher pressure, reduce tabulated deflection proportionally ten percent (10%) for each one-hundred fifty pounds (150 lbs.) added pressure.

F. Downtime Protection

When stopping work for the day, the contractor shall plug pipe ends to prevent rodents, other small animals, or debris from entering the pipe. Use an inflatable ball as a plug in addition to a tight-woven canvas, securely tied around outside of pipe end.

G. Detectable Tracer Wire

Water main and services shall be installed with a 12 gauge insulated copper tracer wire. Wire shall be terminated at valve boxes and meter boxes. Splices in tracer wire shall be made with a manufactured connection to ensure conductivity through the splice.

H. Sanitary Sewer Crossings

1. Horizontal and Vertical Separation (Parallel)

A minimum horizontal separation of ten feet (10') between sanitary sewers and any existing potable water lines, and a minimum vertical separation of eighteen inches (18") between the bottom of the drinking water line and the crown of the sewer shall be maintained. The distance shall be measured edge to edge (i.e., from the outer diameter of the pipes.) as shown in drawing W – 20.

2. Vertical Separation (Perpendicular)

Sewer lines crossing water lines at angles including perpendicular shall be laid below the water lines to provide a separation of at least eighteen inches (18") between the invert of the water line and the crown of the sewer. In the event eighteen inches (18") of vertical separation cannot be achieved or the sewer line is required to be installed above the water line, the following is required.

a. Gravity Sewers Passing Under Water Lines

Sewer pipe shall be encased in controlled density fill (CDF) with a minimum compressive strength of 300 psi or in a one quarter-inch thick continuous steel, ductile iron, or pressure rated PVC pipe with a dimension ratio (DR) of 18 or less, with all voids pressure-grouted with sand-cement grout or bentonite. Commercially available pipe skids and end seals are acceptable. When using steel or ductile iron casing, design consideration for corrosion protection should be considered. Encasement shall extend a minimum of ten feet (10') on each side of the crossing. One full length of sewer pipe shall be centered at the point of crossing so that the joints will be equidistant and as far as possible from the water line. The sewer pipe shall be the longest standard length available from the manufacturer.

b. Gravity Sewers Passing Over Water Lines

Water lines shall be protected by providing:

i. A vertical separation of at least eighteen inches (18") between the invert of the sewer and the crown of the water line.

ii. Adequate structural support for the sewers to prevent excessive deflection of joints and settling on and breaking of the water lines.

iii. The length of sewer pipe shall be centered at the point of crossing so that the joints will be equidistant and as far as possible from the water line. The sewer pipe shall be the longest standard length available.

iv. A water line encased in a one quarter-inch thick continuous steel, ductile iron, or pressure rated PVC pipe with a dimension ratio (DR) of eighteen

(18) or less, with all voids pressure-grouted with sand-cement grout or bentonite. Commercially available pipe skids and end seals are acceptable. When using steel or ductile iron casing, design consideration for corrosion protection should be considered. Encasement shall extend a minimum of ten feet (10') on each side of the crossing.

c. Pressure Sewers under Water Lines

Pressure sewers shall be constructed only under water lines with pressure rated pipe encased in controlled density fill (CDF) with a minimum compressive strength of 300 psi or in a one quarter-inch thick continuous steel, ductile iron, or pressure rated PVC pipe with a dimension ratio (DR) of eighteen (18) or less, with all voids pressure-grouted with sand-cement grout or bentonite. Commercially available pipe skids and end seals are acceptable. When using steel or ductile iron casing, design consideration for corrosion protection should be considered. Encasement shall extend a minimum of ten feet (10') on each side of the crossing.

I. Separation from Existing Water Systems

New waterline piping shall not be connected to existing systems until all pressure testing and disinfection has been completed. New pipes shall be installed such that there is a physical gap between the existing waterline and the new waterline. Visual inspection of the tie-in to the existing system under working pressure is required prior to backfilling.

5.08 Pipe Class/ Protection/Cover

A. All waterlines shall be PVC C-900 or ductile iron pipe Class 52 unless otherwise noted herein. When crossing under rockeries and retaining walls, pipe shall be installed in a steel casing that extends beyond the footings or rockery face a minimum of five feet (5') and extends beyond the back of rockery or wall equal to the height of the wall or rockery or a minimum of five feet (5').

B. Watermain depth of cover:
1. Three feet (3') minimum from final grade
2. Six feet (6') maximum from final grade
3. Regardless of the pipe material or size or the amount of cover from finished grade, existing or newly installed pipe shall not be subject to construction traffic, including excavators, trucks, pavers, etc., until the backfill has reached a minimum of two feet (2') above the top of the pipe. Backfill material may be compacted in piles over the top of the pipe, but must not be removed during paving or any other construction activities. The City may require television inspection, removal and reinstallation or other measures as deemed necessary at the Contractor's expense should pipes be subject to construction traffic prior to providing the minimum two feet (2') of cover.

C. Building setback requirements:
1. Five feet (5') minimum from covered parking to watermain.

2. Ten feet (10’) minimum from building (and retaining walls) to watermain.
3. Twenty feet (20’) minimum easement shall be provided between buildings.

D. All ductile iron pipe and adjacent fittings shall be encased in 8-mil polyethylene per AWWA C-105 where directed by the Public Works Director.

5.09 Bedding and Backfill

Use crushed surfacing top course for bedding and backfill of all water main pipe installed under pavement, cubs, sidewalks, or usable shoulder. Place bedding and backfill pipe and appurtenances in accordance with the Standard Drawing W-13. Bedding shall be compacted to ninety percent (90%) of the maximum theoretical density as measured by the standard proctor method (AASHTO T-180) prior to placement of the next layer. Backfill material shall be compacted to ninety-five percent (95%) of maximum dry density as measured by the standard proctor method (ASSHTO T-180). In non-roadway areas, native material may be used above the pipe zone (twelve inches (12”) above pipe) as approved by the Public Works Director.

5.10 Hydrostatic Tests

The contractor shall make pressure and leakage tests on all newly laid pipe in accordance with Section 7-09.3(23) of the WSDOT Standard Specifications as modified herein. The test duration shall be sixty minutes (60 min.) and the pressure shall not drop more than 5 psi at any time during the test. If the pressure drops more than 5 psi, the test shall be terminated and the sixty minute (60 min.) period started over.

Contractor shall be required to furnish all necessary equipment and material, make all taps in the pipe as required, provide all temporary thrust blocking as required, and conduct the tests. The City’s Development Inspector shall witness the test; if the test does not pass inspection for any reason, additional trips required to witness the test shall be at the owner's expense.

A. Correction of Excessive Leakage
Should any test of pipe laid disclose leakage greater than that allowed, locate and repair the defective joints or pipe until the leakage of a subsequent test is within the specified allowance.

B. Testing Against Valves

Pressure testing against valves will not be allowed unless approved by the Public Works Director.

C. Provide temporary two inch (2”) blow off assemblies for testing and disinfection of new watermains (where hydrants are not available). Place blow-off at high end of line, where possible.

5.11 Sterilization and Flushing of Water Mains

Pipeline intended to carry potable water shall be sterilized before placing in service. All waterlines must be subject to and pass a pressure test prior to starting sterilization procedures. Sterilizing procedures shall conform to AWWA C-601 as hereinafter modified or expanded, and Section 7-09.3(24) of the WSDOT Standard Specifications.

A. Method of Disinfection

All pipelines shall be sterilized using a continuous feed method. Placement of dry Calcium Hypochlorite or other chlorine bearing compounds in individual pipe lengths will not be allowed. The potable water pipeline shall be disinfected with a solution containing a minimum of 25 ppm chlorine to maximum 50 ppm chlorine. The disinfecting solution must remain in the pipeline for a period of 24 hours or greater. After the twenty-four (24) hours, all portions of the pipe must have a minimum of 10 ppm. If the chlorine residual is less than twenty-four (24) hours, the line shall be flushed and the disinfection process repeated. If 10 ppm in all portions of the piping, the pipe shall be flushed until the chlorine residual is the same as that of the source of the flushing water. After flushing, the water shall remain in the pipeline for a twenty-four (24) hour period prior to taking the samples.

B. Disposal of Sterilizing Water

Dispose of sterilizing water in an approved manner. Do not allow sterilizing water to flow into a waterway without adequate dilution or other satisfactory method of reducing chlorine to a safe level. Dechlorinization procedures are to be submitted in writing and approved by the Public Works Director prior to flushing system.

C. Collection of Samples

The Contractor shall hire an independent laboratory to collect and analyze water samples for the presence of bacteria. The City's Inspector shall determine the quantity and location of samples to be taken and witness the sampling completed by the laboratory. Results of all tests shall be given to the Inspector upon completion.

5.12 Valves for Water Mains

A. Materials and construction shall be in accordance with Section 7-12 of the WSDOT Standard Specifications and the Standard Details.

B. Valve marker posts shall be reinforced concrete posts, (4 x 4) inch on one end, (6 x 6) inch on the other end, forty-two inches (42") long. Valve marker post shall be painted white hi-gloss Rust-oleum with painted black dimension from marker to valve boxes.

5.13 Hydrants

A. Fire hydrants shall be located to allow a thirty-six inch (36") clear space surrounding the hydrant. For example, street lights, sign posts, protective posts, or retaining walls shall be no closer than thirty-six inches (36") from the nearest portion of a hydrant. There shall also be no obstructions directly in line with any of the ports of the hydrant.

B. Fire hydrants shall have Storz fittings.

C. Materials and construction shall be in accordance with Section 7-14 of the

WSDOT Standard Specifications and the Standard Details.

D. Approved hydrant is the Waterous WB67 Class 250.

5.14 Cross Connection Control and Backflow Assemblies

A. Installation and Testing

Backflow prevention assemblies shall be installed at the water service connection on the customer side of the meter. Backflow assemblies 3" diameter and larger shall be installed in a vault in accordance with these standards. Backflow prevention assemblies one inch (1") and smaller shall be installed in a Rave Meter Box, series 1324 or an approved equal. one and one-half inch (1 ½") and two inch (2") assemblies shall be installed in a series 1730 box, or equal.

All backflow prevention assemblies must be tested upon installation by a State of Washington certified tester. The results of the testing shall be received by the City prior to issuance of "final occupancy".

B. Backflow Prevention Device Assembly Vaults

Backflow prevention device assembly vaults shall be constructed in accordance with the standard drawings and requirements of this section. Backflow vaults shall be on private property and located outside of public easements.

C. Fire Services and Domestic Services

1. No part of the backflow prevention assembly shall be submerged in water or installed in a location subject to flooding. In a vault or chamber, adequate drainage shall be provided; and test cocks shall be plugged. The plugs shall not be of dissimilar metals.
2. The backflow assembly shall be protected from freezing and other severe weather conditions.
3. All backflow assemblies shall have a minimum twelve inch (12”) clearance on the backside, twenty-four inch (24”) clearance on the test-cock side, and twelve inches (12”) below the assembly. Adequate clearance (six inches (6”) minimum) must be maintained above gate-valve stem at full extension. Headroom of six foot, zero inches (6’-0”) is required in vaults without a full opening top. Access to the device and to any vault or chamber shall remain clear at all times.

D. Special for Fire Service Only

1. Fire Service backflow prevention assemblies shall be installed at the property line, or edge of the public water line easement. The fire service from the public main to the backflow assembly shall be privately owned and meet all City's Standard Drawings.
2. Only approved resilient seat indicating valves are allowed on fireline assemblies.
3. Only approved Double Detector Check Valve Assemblies are to be used for system containment on fire line services in the City. The meter on the bypass assembly shall read in cubic feet.

4. Fire Line Flow and Tamper Switches installed must be connected to a monitored Fire Detection System approved by the Fire Marshal. The tamper switches are required on the OS and Y gate valves in the vault, as well as any other indicating control valves on the fire protection system. Electrical inspection and permit is required.

5. The remote reader (if allowed) shall be rigidly mounted on an exterior building wall (near the domestic meter), enclosed in a metal box with a slot opening which allows reading the remote without opening the box, and at an elevation of five feet (5') above the ground level.

   The remote reader shall have the same number configuration as the metering device itself, and read in cubic feet. All wires to the remote reader shall be enclosed in a heavy plastic or rigid metal conduit. All wiring shall be in conformance with appropriate sections of the National Electric Code.

5.15 Water System Vault Installations

To ensure proper operation and accessibility of all vaults, the following requirements shall apply unless otherwise approved by the Public Works Director.

A. All vaults shall be sealed with Crystal Seal or approved equal on the outside of the vault.

B. Vault penetrations shall be performed or core drilled to produce a smooth hole. Penetrations shall be sealed with a watertight Link Seal as manufactured by Thunderline or approved equal. Where approved by the Public Works Director, non-shrink grout may be used to seal penetrations. Apply water proof coating over grout. Backfill around vault per the manufacturer's specifications.

C. Access to all vaults shall be through a double door, H-20 rated hatch. The doors shall open to ninety degrees (90°) and automatically lock with a stainless steel hold-open arm with an integral stainless steel compression spring. The unit shall lock with a stainless steel slam lock with removable key and have a covered, recessed locking hasp. Hinges and all hardware shall be stainless steel.

D. Provide an aluminum ladder if the vault or chamber depth is three foot, zero inches (3'-0") or greater. Ladders shall include an aluminum ladder extension, Model 1672 as manufactured by Utility Vault Company, or approved equal. At a minimum, ladders shall be braced at the top, bottom and one intermediate location. All non-aluminum accessories shall be stainless steel or hot-dipped galvanized.

E. Adequate drainage for the vault or chamber shall be provided. Gravity drainage to piped storm systems is allowed provided a check valve is installed. If gravity drainage is not possible, vaults shall be equipped with a sump pump. Vault floors must be sloped towards vault drain or sump. Surface drainage shall be directed away from water system vaults and chambers. The drain from the access door shall be piped directly to the sump or the vault drain.

F. Vault must be equipped with a moisture proof light fixture if adequate lighting is not available.

G. Vault is to have no other use, except for use described by these standards.

H. Vault shall be installed on a subgrade consisting of ¾"-0 gravel base compacted

to 95 percent of maximum density (AASHTO T-99).

I. Piping shall be installed with a clearance of one (1) to three (3) feet above the vault floor and a minimum clearance of nine inches (9”) from the edge of flanges to any wall.

J. All miscellaneous bolts and fasteners shall be stainless steel unless otherwise approved or noted herein.

K. Assembly is to be adequately supported from the floor, and suitably restrained from movement. Supports shall consist of steel supports or approved equal; no wood supports shall be used.

L. All electrical wiring shall be inspected by the Washington State Electrical Inspector (Permit is required).

M. The assembly shall be readily accessible with adequate room for maintenance.

N. PRV vaults are unique to each situation. Minimum requirements shall be as listed in Section 5.15. The engineer shall detail the vault on the plans and submit for review. The City will review the vault for size and compliance with the general requirements listed under this section.

5.16 Appurtenances

A. Air and Vacuum Release Valves

1. Air and vacuum release valves shall be APCO - Valve and Primer Corporation, "Heavy-Duty", combination air release valve, or equal.
2. Installation shall be as shown on the Standard Details.
3. Piping and fittings shall be copper or brass. Location of the air release valves as shown on the plans is approximate. The installation shall be set at the high point of the line. Water line must be constructed so the air release valve may be installed in a convenient location.

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 5, CHAPTER 2

WATER CONSTRUCTION STANDARD DETAILS

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 6

EROSION CONTROL MANUAL

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

SECTION 6 – EROSION CONTROL MANUAL

CHAPTER 1 – DEVELOPMENT REQUIREMENTS AND PLAN SPECIFICATIONS

6.00 Washington State Department of Ecology Requirements

All developments with the City of Woodland will meet the requirements of the Washington State Department of Ecology. Construction stormwater permits will be obtained prior to start of construction if required. A Stormwater Pollution Prevention Plan (SWPPP), if needed, will be completed and a copy left on-site at all times prior to the start of construction. Any infiltration facilities to be used on-site will be registered through an Underground Injection Control (UIC) Permit prior to the infiltration facility beginning operation. A Certified Erosion and Sediment Control Lead (CESCL) will be hired by the developer and/or property owner to be responsible for all sediment and erosion control activities on the site. At the pre-construction conference the contact information for the designated CESCL will be provided to the City.

6.01 International Building Code Requirements

Any grading to occur in conjunction with a development activity or redevelopment shall, in addition to requirements of this section, be designed in accordance with and meet the requirements of Section 1803, Excavation, Grading and Fill, of the International Building Code, the latest edition.

6.02 Small Parcel Development (Less than 1 acre) Requirements

A. Construction Access

Construction vehicle access shall be limited to only one (1) route. Access points shall be stabilized with four (4”) to eight (8”) inch diameter quarry spalls to minimize tracking of sediment (mud) onto public roads. Vehicles not performing a construction activity shall not be permitted off-street. Worker personal vehicles shall be parked on adjacent streets or other approved areas.

B. Stabilization of Denuded Areas

All exposed and unworked soils shall be stabilized by suitable application of BMPs, including but not limited to sod or other vegetation, plastic covering, mulching, or application of ground base on areas to be paved. All BMPs shall be selected, designed, and maintained in accordance with the BMP Manual from Washington State Department of Ecology. From October 1 through April 30, no soils shall remain exposed for more than two (2) days. From May 1 through September 30, no soils shall remain exposed for more than seven (7) days. Construction materials such as lumber shall be delivered and stored on designated locations that are stabilized and protected from erosion. All sidewalk areas shall be pre-graded and stabilized for use as sediment traps.

C. Protection of Water Bodies and Adjacent Properties

Water bodies and adjacent properties shall be protected from sediment deposition by appropriate use of vegetative buffer strips, sediment barriers or filters, dikes, mulching, or by a combination of these measures and other appropriate BMPs. Each owner, builder, or permit holder shall install and maintain inlet protection on storm drain inlets impacted from construction activity on their site.

D. Maintenance

All erosion and sediment control BMPs shall be inspected and maintained and repaired as needed to ensure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with the BMP Manual or approved site plans. A maintenance log for private facilities shall be provided and kept as a permanent record. The maintenance log shall be in a designated on-site location. Uncompleted construction sites shall be inspected at least once a week and after each rainfall and shall be repaired if needed. An inspection log shall be maintained from the beginning of construction until the completion of the warranty period and final project inspection.

E. Sediment Removal from Roadways

If sediment is transported onto a road surface, the roads shall be cleaned thoroughly at the end of the work day, or more often if necessary. Significant soil deposits shall be removed from roads by shoveling or sweeping. Street washing, which must be approved by the Public Works Director, shall be allowed only after sediment is removed in this manner. Prior to washing, all inlets and downstream facilities must be protected.

F. Erosion Control Plans

An erosion control plan meeting the requirements of 5.05 will be submitted and approved prior to the start of construction if required by the Public Works Director. Any development that conducts land disturbing activities within an erosion hazard area, environmentally sensitive, or critical area, will be required to submit an erosion control plan that meets the requirements of 5.05.

6.03 Large Parcel Development (Greater than 1 acre) Requirements

A. Construction Access Route

Construction vehicle access shall be limited to specific access points. Access points shall include a temporary sedimentation pond or other approved BMP to contain or treat wash water from construction vehicles. Use of more than one (1) access point shall require approval by the Public Works Director. Access points shall be stabilized with two inch (2”) diameter gravel to

minimize the tracking of sediment (mud) onto public roads. Evidence of tracking of material from a construction site may require construction activities to cease until corrections are made.

B. Sediment Removal from Roadways

If sediment is transported onto a road surface, the roads shall be cleaned thoroughly at the end of the work day, or more often if necessary. Significant soil deposits shall be removed from roads by shoveling or sweeping. Street washing, which must be approved by the Public Works Director, shall be allowed only after sediment is removed in this manner. Prior to washing, all inlets and downstream facilities must be protected.

C. Delineate Clearing and Easement Limits

At the site, mark clearing limits and/or any easements, setbacks, sensitive/critical areas and their buffers, trees and drainage courses. Sensitive/critical areas and their buffers will be marked by orange construction fencing or approved alternative until all development, including house construction after site development is completed, is finished. Alternatives to orange construction fencing must be approved by the Public Works Director prior to placement.

D. Stabilization and Sediment Trapping

All exposed and unworked soils shall be stabilized by suitable application of BMPs. From October 1 to April 30, no soils shall remain unstabilized for more than two (2) days. From May 1 to September 30, no soils shall remain unstabilized for more than seven (7) days. Prior to leaving the site, stormwater runoff shall pass through a sediment pond or sediment trap, or other appropriate BMPs.

E. Protection of Water Bodies and Adjacent Properties

Water bodies and properties adjacent to the site shall be protected from sediment deposition by appropriate use of BMPs. Prior to leaving sites, stormwater runoff shall pass through a sediment pond, sediment trap, or other appropriate BMP designed in accordance with the BMP Manual. Sediment traps alone are not adequate on sites greater than three (3) acres. BMPs shall be selected, designed and maintained in accordance with the BMP Manual.

F. Timing of Sediment Trapping Measures

Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMPs intended to trap sediment on-site shall be constructed as a first step in grading. These BMPs shall be stabilized and functional before land-disturbing activities take place. Earthen structures such as dams, dikes, and diversions shall be seeded and mulched according to the timing indicated in 5.02 (D).

G. Infiltration System Protection

Permanent infiltration systems shall be isolated and protected from sedimentation by sediment traps, sacrificial systems, duplicate systems, or redundant systems.

H. Controlling Off-Site Erosion

Properties and waterways downstream from development sites shall be protected from erosion due to increases in the volume, velocity, and peak flow rate of stormwater runoff from the project site. Acceptable BMPs include temporary or permanent detention ponds and temporary infiltration BMPs limiting the discharge from a two (2) year storm to one-half (1/2) the pre-development two (2) year storm peak runoff rate.

I. Stabilization of Temporary Conveyance Channels and Outlets

All temporary on-site conveyance channels shall be designed, constructed and stabilized to prevent erosion from the expected velocity of flow from a two (2) year, twenty-four (24) hour frequency storm for the developed condition. Stabilization adequate to prevent erosion of outlets, adjacent streambanks, slopes and downstream reaches shall be provided at the outlets of all conveyance systems. BMPs shall be selected, designed and maintained in accordance with the BMP Manual. Outlet protection shall also include energy dissipation structures or devices that retard peak flows to non-erosive conditions.

J. Storm Drain Inlet Protection

All storm drain inlets shall be protected so that stormwater runoff shall not enter the conveyance system without first being filtered or otherwise treated to remove sediment. BMPs shall be selected, designed and maintained in accordance with the BMP Manual. Other BMPs may be utilized provided they have prior approval by the Public Works Director.

K. Maintenance

All erosion and sediment control BMPs shall be inspected, maintained and repaired as needed to ensure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with the BMP Manual or approved site plan. A maintenance log for private facilities shall be provided and kept as a permanent record. The maintenance log shall be in a designate on-site location. Uncompleted construction sites shall be inspected at least once a week and after each rainfall and shall be repaired if needed. An inspection log shall be maintained from the beginning of construction until the completion of the warranty period and final project inspection.

L. Underground Utility Construction

The construction of underground utility lines shall be subject to the following criteria:

1. Where feasible, no more than five hundred feet (500') of trench shall be opened at one (1) time.
2. Excavated material shall be placed to minimize runoff into the trench and adjacent roadways consistent with safety and space considerations.
3. Trench dewatering devices shall discharge into a sediment trap or sediment pond.
4. BMPs shall be used to control erosion during and after construction.
5. BMPs damaged during construction shall be replaced or repaired.
6. An erosion control plan that covers underground work shall be submitted and approved prior to beginning work.

M. Construction Site Dewatering

Dewatering devices shall discharge into a sediment trap or sediment pond.

N. Control of Pollutants Other Than Sediment on Construction Sites

All pollutants other than sediment that occur on-site during development shall be handled and disposed of in a manner that does not cause contamination of stormwater.

O. Removal of Temporary BMPs

All temporary erosion and sediment control BMPs shall be removed within thirty (30) days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on-site. Disturbed soil areas resulting from removal shall be permanently stabilized.

P. Cut and Fill slopes shall be designed and constructed in a manner that will minimize erosion. In addition, slopes shall be stabilized in accordance with 6.03 (D).

Q. If the BMPs approved and applied to a site are insufficient to prevent sediment from reaching water bodies, adjacent properties, or public rights-of-way, additional BMPs shall be implemented immediately by the property owner, developer undertaking the activity, or permit holder.

R. All large parcel developments are required to submit and receive approval of an erosion control plan meeting the requirements of 5.05 prior to the start of construction.

6.04 Signage

Erosion control signage approved by the Woodland Public Works Department shall be installed at each point of entry for any subdivision or short plat prior to issuance of provisional acceptance by the county. Removal of signage shall occur no sooner than there being less than ten (10) unoccupied lots remaining within the development or as determined by the Public Works Director.

6.05 Public Sanitation

All developments on properties that do not have existing operable restroom facilities are required to place temporary restroom facilities (port-a-potties) on the construction site for the use of construction workers and construction inspection staff. The restroom facilities must include a toilet and either a hand washing station or hand sanitizer dispenser. The facility must be maintained on a weekly basis.

6.06 Financial Liability

The owner constructing the development shall maintain a liability policy in the amount of five-hundred thousand dollars ($500,000) which shall name the City of Woodland, Washington, as an additional insured, and which shall protect the City of Woodland from any liability up to that amount for any accident, negligence, failure of facilities, or any other liability whatsoever, relating to the construction or maintenance of the facilities. The liability policy shall be maintained by the owner of the facilities commencing at the start of construction and continuing until final acceptance. The responsible official may approve other forms of surety.

6.07 Erosion Control Plan

A. The erosion control plan shall be stamped by an engineer licensed in the State of Washington and shall be submitted with the final development plans for approval by the City of Woodland. Any revised plan shall be a refinement of the prior approved final erosion control plan clearly showing any changes or revisions. Approval of the final erosion control plan does not relieve the developer's responsibility to ensure that erosion control measures are constructed and maintained to contain sediment on the construction site.

B. Erosion control measures will be implemented, as needed, prior to the start of any land-clearing activities on-site.

C. Content

The erosion control plan shall include the following:

1. The location, sizes, and other design features of the proposed BMPs that will be utilized to achieve compliance with the requirements of this chapter.

2. The timing of installation of BMPs and installation techniques.

3. The phasing of construction activities.

4. The location and construction of employee parking and equipment storage areas.

5. The location and construction of any stockpile areas on the site.

6. The Standard Erosion Control Notes from drawings ER-1A and ER-1B should be included on either the erosion control plan or erosion control detail sheets in the final set of plans.

6.08 Erosion Control Maintenance Written Daily Log

Per #10 of Standard Drawing E-03 the contractor shall maintain on site a written daily log of erosion control BMP Maintenance. If the contractor is required to prepare a SWPPP to meet Ecology Requirements, the SWPPP will include the information required for the daily log. The daily log shall include the following information:

A. The effect of weather on the project and temporary stoppages.

B. An inspection log to note any changes from the approved plan.

C. A maintenance schedule for ensuring the BMPs continue to function until the site is revegetated and stable.

D. A contingency plan discussing additional BMPs to be applied if proposed BMPs fail or are insufficient to control erosion.

E. Provisions for final stabilization prior to completion.

6.09 Erosion Control BMP Design Criteria

This section provides design, construction, and maintenance criteria for typical erosion control BMPs found on construction sites. Additional information on these BMPs and other alternative BMPs can be found in the Stormwater Management Manual for Western Washington from the Washington Department of Ecology.

A. Gravel Construction Entrances

Gravel construction entrances reduce the amount of dirt, rocks, and other debris transported onto roads by motor vehicles or storm water runoff leaving the construction site. Gravel construction entrances are required at any construction site where traffic will be leaving the site and moving directly onto public roads, other paved areas, or other approved access points. The entrances have the following specifications:

1. See standard detail drawing E-05.

2. If the gravel pad does not adequately remove dirt and mud from vehicle wheels such that tracking is evident off-site, additional measures must be

taken. Such measures may include washing off wheels before vehicles leave the site or other construction techniques/work operations modifications. See standard detail drawing E-06 for how to install a wheel wash.

3. An additional measure to contain sediment is installing gravel filter berms across on-site traffic wheel paths. Berms shall be 1 foot high with 3:1 side slopes, constructed of ¾ to 3-inch crushed rock with less than five percent (5%) fines. Berms must be inspected regularly and accumulated sediment removed and rock added or replaced as needed. Berms should be spaced every two-hundred feet (200') for slopes less than ten percent (10%), every one-hundred feet (100') for slopes greater than ten percent (10%).

B. Silt Fences

Silt Fences reduce the transport of sediment from a construction site by providing a physical barrier to sediment and reducing runoff velocities. Silt Fences are to be used in the following locations:

2. Down slope of disturbed areas where runoff occurs as sheet runoff.

3. At the toe of soil stockpiles.

4. At grade breaks exceeding fifteen percent (15%).

5. Silt Fences shall not be installed across streams.

The following design criteria apply to Silt Fences:

5. See standard detail drawing E-20.

6. Maximum sheet or overland flow path to a fence shall be determined by reviewing the approved erosion control plan. Additional fencing may be needed if the approved fencing layout is not adequately preventing erosion and/or reducing runoff velocities.

7. Where practical the silt fence shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap, and both ends securely fastened to the post.

C. Straw Bale Sediment Barrier and Straw Wattles

Sediment barriers and wattles reduce the transport of sediment from a construction site by providing a physical barrier to sediment and reducing runoff velocities. They can also divert runoff around work areas into filtration/sedimentation areas. They can be used in the following areas:

1. As a substitution for filter fabric fences for installations of less than two-hundred lineal feet (200') and for single family or duplex residential construction activities.

2. At a soil stockpile toe

3. In existing, undisturbed drainage ditches/swales used to convey drainage through disturbed areas of construction site.

The following design criteria apply to Straw Sediment Barriers and Straw Wattles:

4. See standard detail drawing E-21.

5. Straw bales shall be standard forty to sixty pound (40 to 60 lbs.) rectangular bales of cereal grain or seed straw.

6. Straw may be used as mulch on-site after completion of site work.

7. At no time shall more than one foot of sediment be allowed to accumulate behind sediment barriers or wattles. Sediment should be removed, regraded into the slope, or new lines of barriers installed uphill of sediment-laden barriers.

D. Sidewalk Subgrade Gravel Barrier

Sidewalk subgrade gravel barriers reduce the transport of sediment from a construction site by using the sidewalk subgrade gravel as a temporary filter for sediment-laden runoff. This can be used at single family or duplex residential construction sites, where the site slopes to a street with planned but unconstructed sidewalks, and site slopes are less than five percent (5%).

The following design criteria apply to using sidewalk subgrade gravel barriers:

1. Sidewalk subgrade gravel must be in place during the entire construction period, from the time of initial site clearing/grading through establishment of permanent site cover. If the sidewalk concrete is to be poured prior to established permanent site cover, approved sediment barriers must be installed prior to pouring concrete.

2. Sidewalk subgrade gravel must have a minimum four inch (4”) depth and a five foot (5’) width.

3. If the sidewalk subgrade gravel does not provide an effective filter such that sediment is leaving the construction site, additional measures must be applied. These may include replacement of gravel or installation of sediment barriers.

4. Subgrade gravel may not meet the specifications for sidewalk concrete placement if too much sediment has infiltrated the rock (see drawing ST-23). The contractor must therefore weigh the benefits of eliminating sediment barriers versus the possibility that the subgrade gravel may be rejected by the Public Works Inspector.

E. Undisturbed Buffers

Undisturbed buffers provide a natural vegetated buffer area for filtering erosion from construction areas, as an alternate in certain cases or supplemental measure to sediment barriers. An undisturbed buffer may be approved as an alternate to a sediment barrier at the toe of site slopes if the buffer meets the following criteria:

1. The buffer is an undisturbed grassy area or covered with other approved dense vegetation,
2. The buffer is downhill and in the drainage path of the constructed/disturbed area,
3. There are no concentrated flows from the disturbed site entering the buffer,
4. The buffer area is owned by the applicant or approved for such use in writing by the owner,
5. Slopes in the buffer and its drainage area are less than ten percent (10%),
6. And the buffer area impacted by the potential disturbed area runoff is at least equal in area to the uphill construction/disturbed area draining to it.

F. Establishing Temporary Grasses and Permanent Vegetative Cover

Establishing vegetative cover reduces erosion and sedimentation by stabilizing exposed soils with vegetation and mulching. This BMP can be used for:

1. Ground surfaces exposed during the wet season (November 1 – April 30)
2. Areas which will not be subjected to heavy wear by on-going construction traffic.
3. Exposed ground surfaces at the end of the construction period. Permanent cover must be established prior to removal of any erosion control measures.
4. Temporary or permanent stabilization of new or disturbed ditches or swales.

The following design criteria apply for temporary erosion control vegetation:

5. Temporary grass cover measures must be fully established by November 1 or other cover measures will have to be implemented until adequate grass coverage is achieved. To establish an adequate grass stand for controlling erosion by November 1, it is recommended that seeding and mulching occur by October 1.
6. Hydromulch shall be applied with grass seed at a rate of two-thousand pounds per acre (2000 lb. /acre.) On slopes steeper than ten percent (10%), hydroseed and mulch shall be applied with a bonding agent (tackifier).

Application rate and methodology to be per seed supplier recommendations.

7. Dry, loose, weed-free straw used as mulch shall be applied at double the hydromulch application requirement four-thousand pounds per acre (4000 lb./acre), approximately two inches (2") deep. Anchor straw by working in by hand or with equipment (rollers, cleat tracks, etc.).

8. Mulch shall be spread uniformly immediately following seeding.

9. Soil Preparation – Top soil should be prepared according to landscape plans, if available, or recommendations of grass seed supplier. It is recommended that slopes be roughened before seeding by 'track-walking', (driving a crawling tractor up and down slopes to leave a pattern of cleat imprints parallel to slope contours) or other method to provide more stable sites for seeds to rest.

10. Seeding – Recommended erosion control grass seed mixes are as follows. Similar mixes designed to achieve erosion control may be substituted if approved by jurisdiction:

    a. Dwarf Grass Mix (low height, low maintenance):

    - Dwarf Perennial Ryegrass, eighty percent (80%) by weight

    - Creeping Red Fescue, twenty percent (20%) by weight

    - Application Rate: one-hundred pounds minimum per acre (100 lbs. min/acre)

    b. Standard Height Grass Mix

    - Annual Ryegrass, forty percent (40%) by weight

    - Turf-type Fescue, sixty percent (60%) by weight

    - Application Rate: one-hundred pounds minimum per acre (100 lbs. min/acre)

11. Fertilization for grass seed – As per supplier's recommendations. Development areas within fifty feet (50') of water bodies and wetlands must use a non-phosphorus fertilizer.

12. Netting and Anchors, as needed – For disturbed areas on slopes and in ditches/swales, biodegradable netting or jute is desirable and may be used instead of bonding agents to provide a stable area for seeding. Netting should be anchored per manufacturer's recommendations.

13. Watering – Seeding shall be supplied with adequate moisture to establish grass. Supply water as needed, especially in abnormally hot or dry weather or on adverse sites. Water application rates should be controlled to

provide adequate moisture without causing runoff.

14. Re-seeding – Areas which fail to establish grass cover adequate to prevent erosion shall be re-seeded as soon as such areas are identified, and all appropriate measures taken to establish adequate cover.

At the end of site construction, approved permanent site landscaping must occur prior to removal of site erosion control measures.

G. Straw Mulch

Straw mulch can reduce erosion by providing a protective cover over disturbed bare or reseeded soils. It can be used as a cover for ground surfaces and stockpiles exposed during the wet season (November 1 - April 30). It can also be used as a mulch to enhance the success of seeding and revegetation measures.

The following design criteria apply to straw mulch:

1. Loose, weed-free straw mulch shall be applied at a rate of no less than four-thousand pounds (4,000 lbs.) or two (2) tons per acre, and shall have a minimum depth in-place of two inches (2”).

2. Mulch must be stabilized in place by hand or machine punching the straw into the soil, spraying it with a tacking agent, or covering it with an erosion blanket.

H. Erosion Blankets

Erosion blankets provide immediate protection and physical stabilization of disturbed soils. Typically used when vegetative cover cannot be achieved due to soils, slopes, or time of year. It can be used to enhance success of seeding, planting and/or sodding. Erosion blankets are used on areas of steep slopes (greater than fifty percent (50%)) and areas of moderate slopes that are prone to erosion. It can be used as a cover for ground surfaces exposed during the wet season (November 1 – April 30). It can also be used as supplemental aid to see and/or mulch treatment on slopes or in ditches or swales.

The following design criteria apply to Erosion Blankets:

1. See standard detail drawing E-07.

2. Erosion blankets may be used on level areas and on slopes up to 1:1. Where soil is highly erodible, netting shall only be used in conjunction with an organic mulch such as straw or wood fiber. The blanket must be applied so that it is in complete contact with the soil. Erosion will occur beneath the blanket if it is not in complete contact with the soil.

3. Deformed plastic filament matting may be used for stream velocity protection and other special applications when approved by the City.

I. Plastic Sheeting

Sheeting provides immediate erosion protection to slopes and disturbed areas when vegetative cover cannot be achieved due to spoils, slopes or time of year. Sheeting can also provide erosion protection on soils, spoils, and other erodible stockpiles.

Plastic Sheeting can be used in the following applications:

1. On disturbed areas which require immediate erosion protection.
2. On steep slopes (greater than fifty percent (50%)) and areas of moderate slopes that are prone to erosion.
3. On ground surfaces and stockpiles exposed during wet weather season (November 1 – April 30)
4. As a temporary measure to provide erosion protection and assist in germination on areas seeded between November 1 and March 31.

The following design criteria apply to plastic sheeting:

5. See standard detail drawing E-08.
6. Plastic sheeting shall be polyethylene and have a minimum thickness of 6 mil.
7. Drainage from areas covered by plastic sheeting shall be controlled such that no discharge occurs directly onto uncontrolled, disturbed areas of the construction site.
8. Clear plastic sheeting may be installed on areas seeded from November 1 – March 31 to provide a greenhouse-type environment, and remain until vegetation is firmly established.

J. Sediment Traps and Ponds

Sediment traps and ponds collect and store sediment eroded from exposed ground surfaces, disturbed during the construction period, prior to establishment of permanent vegetation and drainage facilities. These facilities are to be used downhill of areas with exposed soils.

Sediment traps are to be used where the drainage area is one (1) acre or less and slopes are less than fifty percent (50%). Sediment ponds are to be used where the drainage area is ten (10) acres or less and slopes are less than fifty percent (50%). For areas greater than ten (10) acres multiple sediment ponds with individual drainage areas of ten (10) acres or less must be used.

The following design criteria apply to Sediment Traps:

1. See standard detail drawing E-22.

2. Calculate the required sediment storage volume using the criteria from the 1992 Puget Sound Stormwater Management Manual and assuming a minimum one year sediment accumulation period for design purposes. To convert tons of sediment calculated to cubic feet, multiply by 0.05 tons per cubic foot.

3. Determine the bottom surface area for a sediment trap using the calculated sediment volume, the maximum 1.5 foot depth, and 3:1 side slope requirements.

4. Size the pond using the criteria in the 1992 Puget Sound Stormwater Management Manual.

5. Determine the total trap dimensions by adding an additional 2 feet of depth for settling volume (before overtopping of spillway) above the sediment storage volume, while not exceeding 3:1 side slopes.

6. A 3:1 ratio of trap length to width is desirable. Length is defined as the average distance from the inlet to the outlet of the trap.

The following design criteria apply to Sediment Ponds:

7. See standard detail drawing E-23.

8. Sediment ponds shall have a maximum storage depth of 3 feet, topped by a two to four feet (2'-4') settlement zone and an additional one foot (1') minimum of freeboard. The pond side slopes shall be 3:1 or flatter.

9. The sediment storage volume is determined in the same manner as for sediment traps.

10. The pond riser pipe and outlet pipe shall be sized to carry the 10-year design storm.

11. A 3:1 ratio between the pond length and width is desirable. Length is defined as the average distance from the inlet to the outlet of the trap. Use baffles in the pond to help prevent short-circuiting and to increase the effective pond length where site conditions prohibit constructing a pond with a direct 3:1 length to width ratio.

K. Temporary Interceptor Dikes and Swales

Dikes and swales intercept storm runoff from drainage areas above unprotected slopes and direct to a stabilized outlet. They also intercept storm runoff from a disturbed site and direct it to a sediment trap or pond.

The following design criteria apply to Interceptor Dikes and Swales:

1. See standard detail drawing E-11.

2. Intercepted runoff must be directed to a stabilized area such that no

erosion occurs due to the additional water and velocity, or to a sediment pond or trap.

3. Interceptor dikes and swales shall be stabilized with approved cover before put into use. Such cover may include grass, rock, or erosion blankets.

4. Minimize construction traffic over dikes and swales.

5. The upslope side of interceptor dikes shall provide positive drainage to the dike outlet. Provide energy dissipation measures as necessary to minimize erosion at dike outlet.

6. Grades for drainage parallel to interceptor dikes shall be between one-half and one percent (0.5%-1%).

7. Maximum grade of interceptor swales shall be five percent (5%), and provide positive drainage to outlet.

8. Outlets shall lead to sediment trap/pond when runoff from disturbed areas is intercepted by dikes/swales. Outlets shall be stabilized to prevent erosion.

9. Temporary dikes and swales shall be graded out at the completion of construction, when permanent vegetation has been established.

L. Storm Drain Inlet Protection

Inlet protection measures prevent sediment from entering storm drain systems prior to permanent stabilization of disturbed areas. They should be applied under the following conditions:

1. Where interior site storm drain inlets are operational before permanent stabilization of the disturbed drainage area.

2. Adjacent to and immediately downhill of utility type construction in existing paved areas with catch basin drainage.

3. In public right-of-way areas for use during approved flushing operations.

The following design criteria apply to Storm Drain Inlet Protection Measures:

4. See standard detail drawings E-16 and E-17.

5. Berms may be required to direct drainage to flow through the filters and prevent bypassing of the inlets.

6. The maximum depth of sediment that is allowed to accumulate against storm drain inlet protection measures is one foot (1’). Sediment must be removed and inlet protection measures restored as needed to maintain their sediment trapping and filtering capability.

M. Check Dams

Check dams reduce the velocity of concentrated flows, reducing erosion of the swale, or ditch, and provide for sedimentation of suspended soil particles.

Check dams should be applied under the following conditions:

1. In new or disturbed ditches and swales to reduce velocities and erosion.
2. In interior site ditches or swales conveying runoff from disturbed areas (other base and cover measures are still required in addition to the check dams for disturbed drainage areas).
3. No check dams may be placed in streams.

The following design criteria apply to check dams:

4. See standard detail drawing E-15.
5. Standard material for check dams is rock. Alternative materials that can be used include logs, straw wattles, wood chip filter pillows, or triangular silt dikes.
6. Log check dams shall be constructed of four to six inch (4”-6”) diameter logs. The logs shall be embedded into the soil at least eighteen inches (18”).

CITY OF WOODLAND

ENGINEERING STANDARDS FOR CONSTRUCTION

SECTION 6, CHAPTER 2

EROSION CONTROL MANUAL STANDARD DETAILS

MAY 1, 2014

City of Woodland
300 E. Scott Avenue
Woodland, Washington 98674
(360) 225-7999

Staff Report: Haddock Lot Consolidation (Plat Amendment)

Date: April 17, 2014
To: Planning Commission
From: Amanda Smeller, Community Development Planner
Re: Haddock Lot Consolidation Request (Plat Amendment)

Rick and Cynthia Haddock seek to consolidate their two lots (Lot #23, and #24) located in River Mist Subdivision on Misty Drive. River Mist Subdivision is a Planned Unit Residential Development.

Under WMC 16.34.010 (Boundary Line Adjustments): "...The consolidation of lots that are part of a planned unit residential development (PURD) or binding site plan shall be processed and approved as directed by WMC 16.22 and 16.19 respectively..." The lot consolidation, as it needs to be reviewed, is considered a plat amendment.

WMC 16.22.350(E): "Applications for amendment of final site plans shall be considered by the Planning Commission consistent with the procedural requirements of this article. The commission shall forward the recommendations to the council, which shall have sole authority to approve, approve with conditions, or disapprove the amendments."

A PURD is normally processed through the Planning Commission, followed by a Public Hearing, and then to the City Council for decision with a recommendation by the Planning Commission. If the Commission is supportive of this application, the Public Hearing will be held at the May Planning Commission meeting.

This lot consolidation will change no conditions from the original approval for the PURD, nor affect the success of the existing PURD. All original conditions, covenants, etc. will still apply.

Print Form

Required Fields

LAND USE APPLICATION

PLANNING DEPARTMENT
230 Davidson Avenue. Woodland, WA 98674
Office 360-225-1048 Fax 360-225-7336

Acct: 001 000 000 345

OFFICIAL USE ONLY
LAND USE # 214-910
PERMIT TYPE AMDT
DATE 3/20/14
AMOUNT PAID $250.00
RECEIPT # 95225
RECEIVED BY JM

[ ] 81-00 Boundary Line Adjustment *($400+$75/lot)*
[ ] 81-00 Short Plat *($800+$75/lot)*
[ ] 81-00 Preliminary Plat *($3,500+$75/lot)*
[ ] 81-00 PURD *($3,000)*
[ ] 81-00 Binding Site Plan *($2,000+$150/acre)*
[ ] 81-00 Final Plat *($1,500+$75/lot)*
[X] 81-00 Plat Vacation *($250+cost)*
[ ] 81-00 Plat Extension *($300)*
[ ] 81-00 Administrative Conditional Use *($700)*
[ ] 81-00 Conditional Use *($2,500)*
[ ] 81-00 Administrative Temporary Use *($100)*
[ ] 81-00 Similar Use Determination *($500)*
[ ] 81-00 Minor Variance *($400[1])*
[ ] 81-00 Major Variance *($1,500[1])*
[ ] 81-00 Comp Plan/Text Amendment *($2,000[1])*
[ ] 81-00 Zoning Map/Text Amendment *($2,500[1])*
[ ] 81-00 Annexation (Notice of Intent) *($250)*
[ ] 81-00 Annexation (Petition) *($1,200/$1,500)*
[ ] 81-00 Appeal *($700 + HE cost)*
[ ] 83-00 Site Plan Review *($110/1,000 sq. ft.)*
[ ] 89-00 Shoreline Substantial Dev *($800 + HE[1])*
[ ] 89-00 Shoreline Cond. Use/Variance *($600)*
[ ] 89-00 Shoreline Exemption *($100)*
[ ] 89-00 SEPA *($650)*
[ ] 89-00 Critical Area Permit *($600[1])*
[ ] 89-00 Other _____
[ ] 89-00 Report or Data Preparation *(staff time plus cost recovery)* _____

[1] = **Cost Recovery if outside review is required.**

BRIEF PROJECT DESCRIPTION Lot consolidation for Lots 23 and 24 River Mist so that one home can be constructed on both lots.

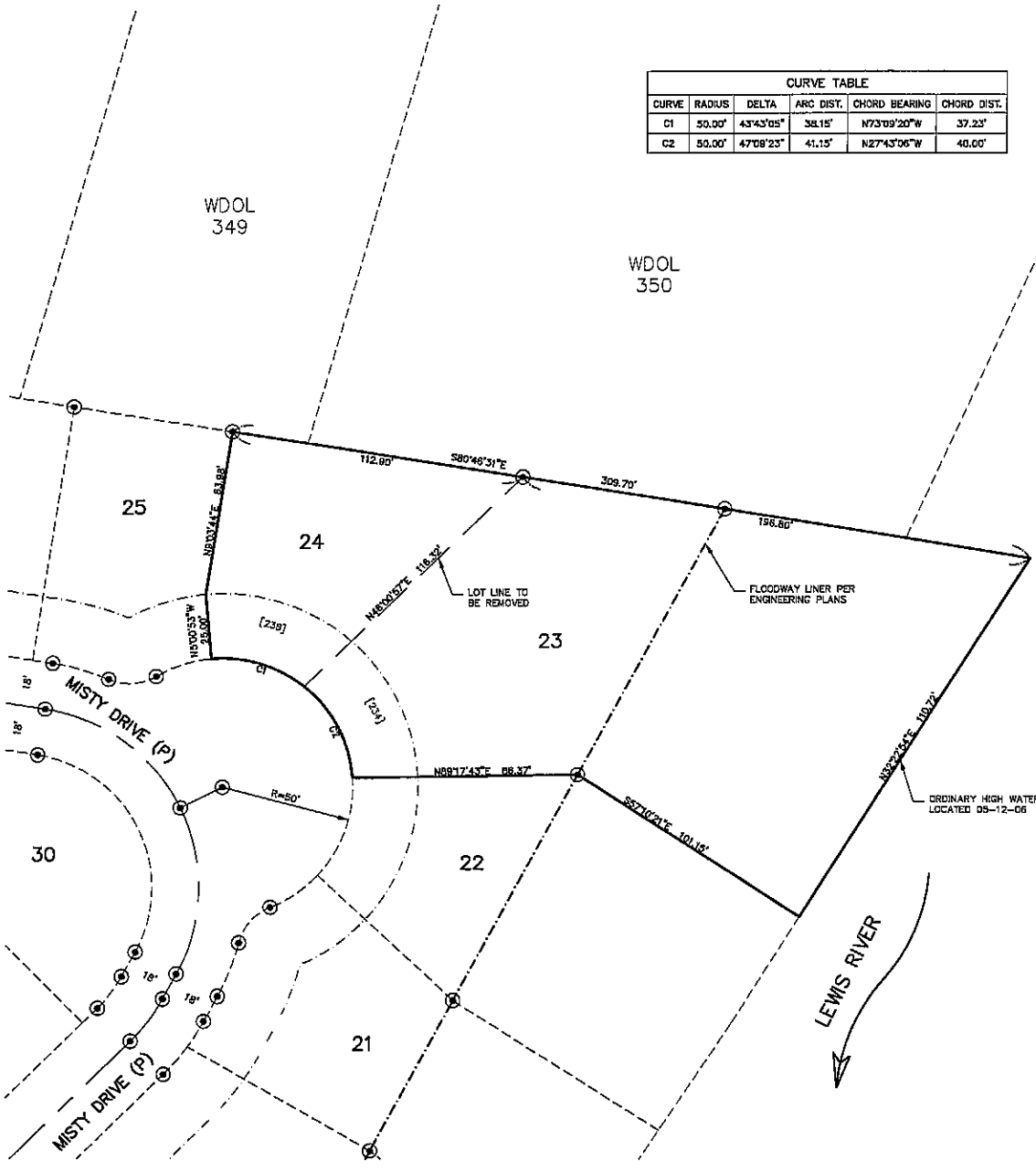
PAID
MAR 20 2014
CITY OF WOODLAND

Property Owner Name Rick and Cynthia Haddock		
Phone 360-696-4571	Mobile 360-607-2314	E-Mail Address haddockr@fbrrealty.com
Applicant Name Rick Haddock		
Mailing Address 6100 Hwy 99, Vancouver, Wa. 98665		
Phone 360-696-4571	Mobile 360-607-2314	E-Mail Address haddockr@fbrrealty.com
Contact Name & Address (If other than applicant)		
Phone	Mobile	E-Mail Address
Site Address		
Parcel Number 504214423 and 504214424		
Comprehensive Plan/Zoning Designation LDR-6		
Flood Zone Designation	FIRM Map Panel #	Map Date
Critical Area or Shoreline within 200' [ ] Yes [ ] No		

ROAD ACCESS
[ ] Private
[ ] County
[ ] State
[ ] City

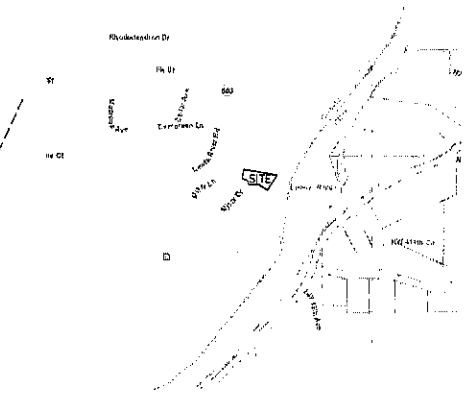
Property Owners Signature — Date 3-20-14

Applicant Signature — Date March 11, 2014



CURVE TABLE					
CURVE	RADIUS	DELTA	ARC DIST.	CHORD BEARING	CHORD DIST.
C1	50.00'	43°43'05"	38.15'	N73°09'20"W	37.23'
C2	50.00'	47°09'23"	41.15'	N27°43'06"W	40.00'

VICINITY MAP



SITE DATA:

LEGAL: LOTS 23 & 24 OF RIVER MIST SUBDIVISION
QUARTER SECTION: NE 1/4 OF SEC. 18, T5N R1E, W.M.
ZONING: LDR-6
COMPREHENSIVE PLAN DESIGNATION: LDR
PARCEL NUMBER: 504214423 & 504214424
SITE ADDRESS: 234 & 238 MISTY DRIVE
AREA: LOT 23=6975 S.F. LOT 24=26,235 S.F.

NOTES:
-THERE ARE NO EXISTING STRUCTURES ON SITE.
-TOPOGRAPHIC & BOUNDARY DATA PROVIDED BY MINISTER-GLAESER SURVEYING, INC.

DANIEL ADOLPH RENTON
STATE OF WASHINGTON
37535
REGISTERED
PROFESSIONAL LAND SURVEYOR

30 15 0 30 45 60
SCALE 1 INCH = 30 FEET

N

OWNER/APPLICANT/CONTACT:
RICK & CYNTHIA HADDOCK
6100 HWY 99
VANCOUVER, WA 98665
(360) 696-4571

MINISTER-GLAESER SURVEYING, INC.
2200 E. EVERGREEN BLVD.
VANCOUVER, WA 98661
(360) 694-3313

M S

PROJECT DESCRIPTION:

THE PROPERTY OWNER REQUESTS TO CONSOLIDATE LOTS 23 & 24 OF RIVER MIST SUBDIVISION IN TO ONE PARCEL

LOT CONSOLIDATION PLAN:

RIVER MIST LOTS 23 & 24

JOB #: 14-074
FILE: 14074SP1
DATE: 03/17/14
DRAWN BY: CSA
SHEET 1 OF 1

3309541 Vol 14 Pg 37

RIVER MIST

A SUBDIVISION IN A PORTION OF THE JOSEPH EATON D.L.C IN A PORTION OF THE NE 1/4 AND THE SE 1/4 OF SECTION 18 T. 5 N., R. 1 E., W.M. CITY OF WOODLAND COWLITZ COUNTY, WASHINGTON

JOB NO: 05-411 JULY 26, 2006

SHEET 3 OF 4

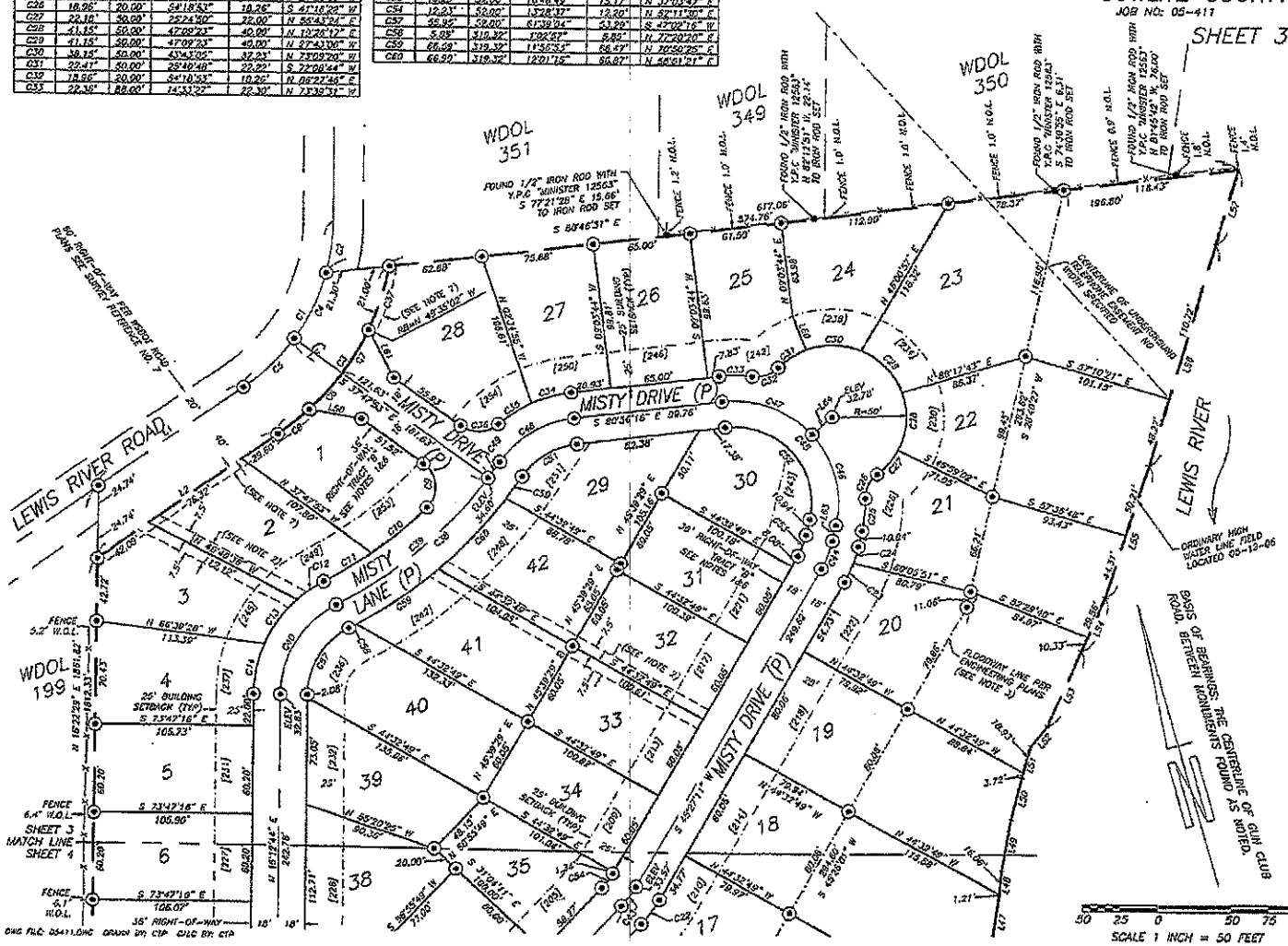
CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD	CHORD BEARING
C1	1.44.83'	143.24'	53°05'00"	139.81'	N 43°20'20" E
C2	35.03'	143.24'	14°24'42"	35.24'	N 23°34'53" E
C3	141.96'	183.24'	44°23'18"	138.43'	N 46°06'52" E
C4	50.42'	143.24'	20°09'52"	50.16'	N 40°52'16" E
C5	48.39'	143.24'	19°21'14"	48.16'	N 60°37'52" E
C6	53.81'	183.24'	16°34'14"	53.26'	N 56°30'45" E
C7	34.52'	183.24'	10°48'38"	34.52'	N 45°46'17" E
C8	22.23'	183.24'	6°30'40"	37.19'	N 66°03'09" E
C9	34.31'	20.00'	98°17'28"	30.25'	N 11°40'01" E
C10	48.66'	283.32'	9°50'27"	48.60'	N 63°24'09" E
C11	37.23'	283.32'	7°31'46"	37.21'	N 74°05'53" E
C12	21.71'	88.00'	14°07'52"	21.65'	S 70°47'50" W
C13	37.20'	88.00'	24°12'41"	37.41'	S 51°27'31" W
C14	35.29'	88.00'	22°53'28"	35.05'	S 27°41'52" W
C22	20.70'	88.00'	13°28'33"	20.65'	N 52°11'30" E
C23	14.15'	88.00'	9°11'20"	14.11'	N 40°51'16" E
C24	11.66'	88.00'	7°34'56"	11.66'	N 32°27'52" E
C25	22.36'	88.00'	14°33'22"	22.30'	N 21°33'18" E
C26	18.96'	20.00'	54°18'53"	18.26'	S 41°16'22" W
C27	22.18'	50.00'	25°24'30"	22.00'	N 55°43'24" E
C28	41.15'	50.00'	47°08'23"	40.00'	N 10°26'12" E
C29	41.15'	50.00'	47°08'23"	40.00'	N 37°42'06" W
C30	38.15'	50.00'	43°43'05"	37.23'	N 73°09'20" W
C31	22.41'	50.00'	25°40'48"	22.22'	S 72°08'44" W
C32	18.66'	20.00'	54°18'53"	18.26'	N 86°27'46" E
C33	22.36'	88.00'	14°33'22"	22.30'	N 73°39'31" W

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD	CHORD BEARING
C34	27.01'	88.00'	18°10'00"	22.79'	S 69°08'40" W
C35	26.06'	88.00'	17°22'21"	26.26'	S 77°08'35" W
C36	27.61'	20.00'	79°47'53"	25.39'	S 77°11'39" E
C37	46.36'	183.24'	14°29'43"	46.23'	N 33°10'07" E
C38	148.29'	301.32'	28°17'34"	147.00'	N 63°43'01" E
C39	134.28'	301.32'	25°10'00"	133.08'	N 65°01'46" E
C40	72.32'	70.00'	61°39'04"	71.74'	S 47°02'16" W
C43	16.47'	70.00'	13°28'37"	16.43'	N 59°11'30" E
C44	20.50'	70.00'	16°46'46"	20.43'	N 57°03'47" E
C45	133.81'	70.00'	109°16'38"	114.41'	N 26°07'59" W
C46	66.66'	70.00'	54°48'15"	64.43'	N 01°16'13" E
C47	68.06'	70.00'	57°48'18"	65.43'	N 53°12'06" W
C48	60.47'	70.00'	49°52'30"	58.60'	S 24°18'59" W
C49	13.81'	301.32'	2°37'33"	13.81'	N 52°53'01" E
C50	18.95'	319.32'	3°16'29"	18.23'	N 67°12'29" E
C51	44.92'	52.00'	49°29'30"	43.53'	S 24°18'59" W
C52	98.40'	52.00'	109°38'39"	84.90'	N 26°07'57" W
C53	15.93'	52.00'	16°46'49"	15.17'	N 37°03'47" E
C54	12.31'	52.00'	13°28'37"	12.30'	N 52°11'30" E
C57	35.95'	52.00'	61°39'04"	33.29'	S 47°02'16" W
C58	5.83'	319.32'	1°02'57"	5.83'	N 77°20'20" E
C59	66.59'	319.32'	11°56'55"	66.47'	N 70°50'25" E
C60	66.50'	319.32'	12°01'16"	66.37'	N 58°21'21" E

LEGEND:

- ● INDICATES MONUMENT FOUND AS NOTED
- ⊙ INDICATES 1/2" x 24" IRON ROD WITH (D.DENNY 35477) CAP SET
- ○ INDICATES CALCULATED POSITION, NOT SET
- Y.P.C. INDICATES YELLOW PLASTIC CAP
- RB INDICATES RADIAL BEARING
- [ ] INDICATES ADDRESS

ROCK NAIL WITH BRASS WASHER INSCRIBED NO. 35477 SET AT THE EXTENSION OF LOT LINE IN THE CURB FOR THE PURPOSE OF LINE NOT DISTANCE



LINE TABLE		
LINE	LENGTH	BEARING
L1	118.87'	N 70°18'28" E
L2	148.01'	N 70°18'22" E
L47	31.12'	N 24°06'59" E
L48	12.22'	N 21°37'00" E
L49	35.74'	N 25°59'04" E
L50	28.12'	N 29°55'28" E
L51	23.62'	N 31°25'31" E
L52	17.60'	N 55°15'59" E
L53	28.42'	N 39°18'45" E
L54	39.00'	N 39°32'50" E
L55	24.92'	N 33°50'12" E
L56	158.99'	N 37°22'51" E
L57	53.10'	N 32°34'42" E
L58	35.53'	N 63°57'14" W
L59	25.00'	N 05°00'53" W
L61	26.89'	N 11°38'03" W
L63	10.94'	S 28°40'25" W
L64	10.00'	S 63°52'04" W

DAVID ALLAN DENNY STATE OF WASHINGTON 35477 REGISTERED PROFESSIONAL LAND SURVEYOR EXPIRES: 8-15-2007

7-25-06

PREPARED BY:
MINISTER AND GLAESER SURVEYING, INC.
2200 E. EVERGREEN BLVD.
VANCOUVER, WA. 98661
(360) 694-3313

DWG FILE: 05411.DWG DRAWN BY: CTP CALC BY: CTP

Woodland 2016 Comprehensive Plan Update: Public Participation Plan

REVIEW DRAFT 1

Purpose

The Washington State Growth Management Act (GMA) requires cities and counties to conduct outreach to ensure "early and continuous public participation" in developing and amending comprehensive plans and development regulations (RCW 36.70A.140). The GMA also requires that local programs clearly identify schedules and procedures for public participation in the periodic update process (RCW 36.70.A.130(2)(a)). The purpose of this Public Participation Plan (PPP) is to ensure compliance with the statute by identifying the scope of proposed activity and potential timeframes for participation and decision making.

Goals

1. Ensure broad participation by identifying key interest groups and soliciting input from the public.
2. Maintain effective communication and coordination.
3. Focus resources on issues most likely to be of interest to the public.
4. Distribute information and public notices early and efficiently.

Scope of Work

The Scope of Work is segregated into three phases:

Phase I: Review Comprehensive Plan and Development Code for compliance with state law; identify plan areas to be amended; scope the breadth of the update publicly.

Phase II: Address the issues identified in Phase I.

Phase III: Conduct public hearings and take legislative action.

Phase I

- Conduct a thorough review of GMA requirements and compilation of amendments since the 2007 update, using the GMA Periodic Update Checklist and other resources.
- Review the Comprehensive Plan and development regulations to determine whether revisions will be required to ensure consistency with GMA amendments.
- Re-asses the vision expressed in the Comprehensive Plan; has it changed?

- Analyze the Urban Growth Area (UGAs) to ensure it is sized to accommodate 20 years of population and employment growth, based on the adopted Office of Financial Management (OFM) range.
- Identify corrective actions, if necessary, such as, altering the size of the UGA or changing the allowed uses and densities or planning assumptions.
- Inventory and assess Capital Facilities necessary to implement the 20-year plan.
- Provide a status report to the public, the Planning Commission and the City Council.

Phase II

- Adopt an ordinance or resolution stating that the City has reviewed its Comprehensive Plan, consistent with RCW 36.70A.130, and finds that no amendments are necessary or some amendments are required.
- Propose updates and amendments to the Comprehensive Plan through public work sessions and hearings before the Planning Commission and City Council.
- Conduct SEPA review in conjunction with Clark County.

Phase III

- Planning Commission will conduct public hearings on the proposed Comprehensive Plan amendments and will forward a recommendation to the City Council.
- The City will provide notify the Department of Commerce with notice and text of the proposed amendments at least 60-days prior to final adoption.
- The City Council will conduct separate public hearings on the proposed amendments and will take legislative action.
- Forward adopted amendments to the Department of Commerce and Clark County.

Public Participation Program Structure

Techniques and Strategies

The public participation methods employed may include:

- Use innovative technologies whenever possible, such as, posting meeting notices online, interactive surveys, and links to informative programming.
- Provide public notices and information releases through print, posting, mail and email. Publicize through community channels such as schools, social clubs, and local websites as well. Post all hearing notices and materials on the City's website.
- Maintain an email distribution list and database to disseminate public information and notices of meetings.
- Identify and reach out to stakeholders, such as, the school district, neighborhood associations, business groups, and civic organizations.

DRAFT

- Conduct public workshops, public meetings, and open houses at times convenient to the public and at locations that are accessible. Workshops and/or listening posts may involve presentations by staff and consultants, question and answer sessions or interactive activities.
- Use informal gatherings and planned community events to solicit public feedback on City planning efforts, such as, Hot Summer Nights, Planters Days, club meetings, and similar opportunities.
- Depending upon the scope of the update, consider the creation of technical advisory groups composed of persons with specific technical expertise to assist the staff, consultants, and Planning Commission.

Preliminary Schedule

- Phase I: March 2014 – Fall 2014

  Establish preliminary scope of work and public participation plan and adopt same; select population and employment targets; assess regional growth trends; inventory and assess capital facilities; inventory vacant and buildable lands; assess existing Comprehensive Plan and Development Code for compliance with GMA; Council to adopt resolution stating GMA review has occurred.

- Phase II: January 2015 – December 2015

  Accelerate public outreach on plan vision and policies; evaluate UGA and planning assumptions; initiate revisions to plan policies and make recommendations for changes to the development regulations, if necessary; develop revised plan that incorporates community vision, planning assumptions, and plan policies; communicate and coordinate with County and State agencies regarding SEPA and proposed plan amendments.

- Phase III: January 2016 – February 2016

  Conduct public hearings before the Planning Commission; send notice to Commerce of proposed amendments 60 days prior to adoption; City Council to conduct public hearings and take legislative action; notify Commerce of final action.

Prepared by:
E^2 Land Use Planning Services, LLC
e.eisemann@e2landuse.com

DRAFT

2016 Woodland Comprehensive Plan Update
Project Schedule (April 2014 DRAFT)
Prepared for Planning Commission

Activity	Start Date	Finish Date	Notes
Initial Overview and Public Participation			
Create draft PPP	4/14/14	4/30/14	Incorporate PC comments after 4/24 meeting, submit to Commerce for 60-day review on 4/17
Planning Commission work session: overview of comp plan process, review PPP	4/24/14		
Planning Commission hearing to adopt PPP	5/15/14		Advertise public hearing by 4/25
Council adoption of PPP	6/16/14		Adopt by resolution
Inventory			
Commerce Checklist	7/1/14	7/31/14	Begin in July in order to be eligible for Commerce grant funds
Current assumptions	4/14/14	7/31/14	
Preliminary VBL analysis	4/14/14	7/31/14	
Assess current plans & regulations	4/14/14	7/31/14	
Adequacy of current CFPs (coordinate with subs)	4/14/14	7/31/14	
Meeting w/City staff to review inventory findings	7/24/14	7/31/14	
Scoping			
Create draft Scope of Update	8/1/14	8/31/14	Based on inventory, staff input
Review Scope of Update with PC	9/17/14		
Review Scope of Update with Council	10/6/14		
Analysis & Public Process			
Identify & initiate communication with key stakeholders	7/1/14	9/30/14	
Population & employment forecasts	9/1/14	11/30/14	
Refine VBL analysis	9/1/14	11/30/14	
Review possible policy amendments	9/1/14	11/30/14	
Consider UGA expansion	9/1/14	11/30/14	
PC work session on background data, analysis	11/19/14		
Re-evaluate CFPs in light of assumptions & policy	1/1/15	6/30/15	
Update CFPs as needed	7/1/15	12/31/15	

Activity	Start Date	Finish Date	Notes
Gather feedback at 6 community meetings	9/1/14	6/1/15	Educate, engage at different stages
Develop draft policies	1/1/15	3/30/15	
PC work session on draft policies, initial public feedback	1/21/15		
Council meeting to review data and policies	3/2/15		
Develop draft plan	4/1/15	6/30/15	Grant deadline for first draft
Revise draft plan	7/1/15	12/31/15	Grant deadline for final draft
PC work session to review draft (2)	7/1/15	12/31/15	Schedule dates later
Council meeting to review draft	7/1/15	12/31/15	Schedule dates later
Initiate SEPA process	by 7/1/15 if needed		
Legislative Action to Adopt			
Planning Commission work session & hearings (2)	1/1/16	2/28/14	Schedule dates later
Commerce Notice	1/1/16	1/14/16	
Conclude SEPA process	3/31/16		
Prepare draft ordinance for City Attorney	2/1/16	3/14/16	
City Council work session & hearings (2)	1/1/16	3/31/16	Schedule dates later
Coordination with Clark County including TAC meetings, PC and Council worksession and hearings - on-going throughout project	Ongoing		
Close out			
Send final notice, plans to Commerce	5/1/16	6/30/16	
Disseminate final plan to City & County stakeholders	5/1/16	6/30/16	

Prepared by:

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JET Planning