

## **CITY OF NORTH PLAINS PLANNING COMMISSION**

### **Workshop Agenda**

North Plains Senior Center

31450 NW Commercial Street

WEDNESDAY, June 3, 2015 - 6:00 P.M.

1. **CALL TO ORDER**

2. **FLAG SALUTE**

3. **ROLL CALL**

4. **PUBLIC COMMENTS**

*(This time is provided for questions or statements by persons in the audience on any item of Planning Commission business, except those items that appear on this agenda. Comments shall be limited as determined by the Chairperson.)*

5. **WORKSHOP BUSINESS**

- A. Residential Design Guidelines (Hierarchy List)
- B. Chapter 3.30 – Public Works Design Standards
- C. Chapter 16.45 – Neighborhood Community
- D. Chapter 16.60 – Community Service Overlay
- E. Chapter 16.150 – Street Standards
- F. Chapter 16.170 – Application Requirements
- G. Chapter 16.205 – Annexations
- H. Transportation System Plan (TSP)

6. **ADJOURNMENT**

The Planning Commission meetings are normally held at the North Plains Senior Center, 31450 NW Commercial Street, North Plains, Oregon. Meetings will be held on the following dates at 7:00 p.m. Meeting location is subject to change.

*Wednesday, June 10, 2015*

*Wednesday, July 8, 2015*

*Wednesday, August 12, 2015*



## CITY OF NORTH PLAINS

31360 NW Commercial Street, North Plains, Oregon 97133

Date: April 1, 2015  
To: North Plains Planning Commission  
From: City Manager Martha DeBry  
Subject: Discussion of Residential Design Guidelines

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**Background:** Commissioner Eimers has requested that the Commission consider a “Hierarchy of controls” for residential building. Included in the Commission’s packet is information provided by the Commissioner.

The existing codes for residential zones provide little guidance regarding the quality and scale of buildings. Development standards are stated as:

*The following standards will be applied to all single family dwellings (site-built, modular and manufactured homes) to be constructed or located in the City of North Plains:*

- A. *All units shall utilize at least two of the following design features to provide visual relief along the front of the home:*
  - A. *dormers;*
  - B. *gables;*
  - C. *recessed entries;*
  - D. *covered porch entries;*
  - E. *cupolas;*
  - F. *pillars or posts;*
  - G. *bay or bow windows;*
  - H. *eaves (minimum 6" projection);*
  - I. *offsets on building face or roof (minimums 16");*
  
- B. *All manufactured homes shall also comply with the requirements of the Manufactured Homes section of this chapter.*

These standards are very minimal and make no distinction between infill and new neighborhood development.

Many communities have adopted residential design guidelines to assist with determining appropriate styles of designs within existing neighborhoods and new areas. Examples of design guidelines from the cities of Seattle, Los Altos and San Carlos are included in the Planning Commission's packet. Each provides different kinds of guidance, set forth the kinds of permits that would trigger a design review and generally encourage good architectural design that is consistent with community development.

**Recommendation:** The Commission discuss what kind of design controls it would like to consider and if those should be incorporated into a guidelines document more similar to the downtown guidelines or continue to be listed in the code.

Hierarchy of Development controls.

Eaves (minimum 6" projection) **North Plains: current code**

Different paint color per dwelling, base and trim

**Hillsboro: Orenco Station**

Restriction on curb cut to less than 40% of frontage

Use of exterior cosmetic features (minimum of 2)

**North Plains: current code**

Dormers

Gables

Recessed entries

Covered porch entries

Cupolas

Pillars or posts

Bay or Bow windows

Offset on building face or roof (minimums 16")

Use of different exterior cosmetic features per dwelling (minimum of 3)

**Hillsboro: Orenco Station**

Dormers

Gables

Recessed entries

Covered porch entries

Cupolas

Pillars or posts

Bay or Bow windows

Offset on building face or roof (minimums 16")

Trim material (rock, tile, brick, etc)

Addition of front porch width > 3X of entrance

**Hillsboro: Orenco Gardens, Dogwood St and 63rd Ave**

Restriction on curb cut to less than 30% of frontage

**Hillsboro: Orenco Station, Edgefield St. Orenco Gardens**

Parking spaces on street at 1 per 1000 sq ft of each dwelling and fraction

**Hillsboro: SE Madsen Ct, SE Bliss Ct, SE Bluebonnet Ct, SE Sunflower Ct**

Aspect ratio on lot dimensions of less than 2:1

Different designs (minimums) (as measured by different roof lines and/or window placement and/or entrance placement) (reverses don't count)

2 for developments <5

3 for developments <12

4 for developments >12

at least 25% single level

**Hillsboro: Orenco Station**

Single theme designs

**Leavenworth, WA**

**16.20-1**

**ORDINANCE NO. 410**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF NORTH PLAINS, OREGON, AMENDING CHAPTER 3.3 OF THE NORTH PLAINS MUNICIPAL CODE REGARDING PUBLIC WORKS STANDARDS**

**THE NORTH PLAINS CITY COUNCIL FINDS:**

**WHEREAS**, the City of North Plains adopted Ordinance 391 regarding Public Works Design Standards on November 15, 2010; and

**WHEREAS**, streamlining the process for amending the Public Works Design Standards will enable the City Engineer to adopt best practices and incorporate them into the engineering standards more efficiently;

**NOW THEREFORE, THE CITY OF NORTH PLAINS ORDAINS AS FOLLOWS:**

Section 1. Chapter 3.3 of the North Plains Municipal Code is amended in its entirety to read:

**3.30.10 PUBLIC WORKS STANDARDS**

**3.30.101 - AUTHORITY AND PURPOSE**

The City Engineer, in consultation with the Public Works Director is authorized to adopt, maintain and modify Public Works Design Standards (“Design Standards” or “Standards”) for use in and throughout the City. These Design Standards govern all construction modifications and upgrading of public facilities in the City and work within its service areas. All construction design detail, workmanship and materials are to be done consistent with the current edition of the Design Standards.

**3.30.102 - SPECIAL DESIGN PROBLEMS**

Special applications not covered in the Design Standards require review and approval by the Public Works Director and City Engineer. Submittal of full design calculations, supplemental drawings and information will be required. Applications requiring special review include, but are not limited to the following:

- A. Water Distribution Pump Stations
- B. Relining of Existing Water Mains
- C. Water Pressure Regulating Devices
- D. Energy Dissipaters
- E. Water Reservoirs
- F. Water Treatment Plants
- G. Water Flow Measurement/Monitoring Devices

### 3.30.103 – EXCAVATION AND GRADING PERMITS REQUIRED

1. Except as specified in subsection 2(B) below, no person shall do any work within the right-of-way without first obtaining a right-of-way permit from the City. Grading permits may also be required by Washington County. This provision is applicable to utility work and construction.
2. Exempted Work - A right-of-way permit will not be required for the following:
  - A. When approved by the City Engineer and Public Works Director, construction or work in an isolated, self-contained area if there is no danger to private or public property.
  - B. Excavations for wells, tunnels or utilities, when approved under related permits.
  - C. Exploratory excavations under the direction of soil engineers or engineering geologists.

Exemption from the permit requirements is not and shall not be deemed authorization for work done in any manner in violation of this chapter or other applicable law.

### 3.30.104 - PERMIT FOR WORK ON PUBLIC FACILITIES

A permit shall be obtained before beginning construction, alteration or repairs of public facilities, using application forms furnished by the City of North Plains.

### 3.30.105 - RIGHT-OF-WAY PERMIT REQUIREMENTS

Except as may be exempted in the Standards, no person shall do work in the right-of-way without first obtaining a City-issued right-of-way permit. A separate permit shall be obtained for each site.

### 3.30.106 - FEES

1. Fees shall be assessed as set forth in the fee schedule adopted by the City Council.
2. Pass-through fees collected on behalf of other jurisdictions at rates determined by the governing boards of those jurisdictions shall be paid at the time of submitting plans and specifications for review.
3. In addition to the permit fee, an investigation fee may be collected whether or not a permit is then or subsequently issued equal to the amount of the permit fee. The payment of such fee does not exempt any person from compliance with all other provisions of this code nor from any penalty prescribed by law.

### 3.30.107 - BONDS

1. The City requires performance bonds in an amount of not less than One Hundred Twenty-Five percent (125%) of the Engineer's estimate of the cost of said work to assure the work, if not completed consistent with approved plans and specifications can be completed.

2. In lieu of a bond, the applicant may provide an irrevocable standby letter of credit or other evidence of financial security in a form and manner approved by the City Attorney and City Manager.

### 3.30.109 – PERMIT EXPIRATION

1. Every permit issued by the City expires and become null and void if the building or work authorized by such permit is not commenced within 12 months from its issue date, or if the building or work authorized by such permit is suspended or abandoned after work is commenced for a period of six consecutive months. Before work can be resumed, a new permit must be obtained. New permit fees will be assessed when the permit is issued.
2. A Permittee holding an unexpired permit may apply for a one-time extension up to six (6) months provided it can be satisfactorily shown why the work cannot be commenced within the twelve month period.

Section 2. Severability. If any provision of this Ordinance or its application to any person or circumstances is held to be unconstitutional or invalid for any reason, the remainder of this Ordinance or the application of the provisions to other persons or circumstances shall not be affected.

Section 3. Effective Date. This Ordinance shall become effective within thirty days from the date of adoption; i.e. December 6, 2012.

INTRODUCED for first reading on the 15th day of October, 2012, for second reading AND ADOPTION on November 5, 2012.

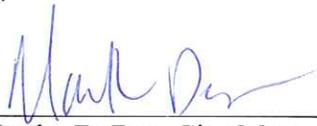
CITY OF NORTH PLAINS, OREGON

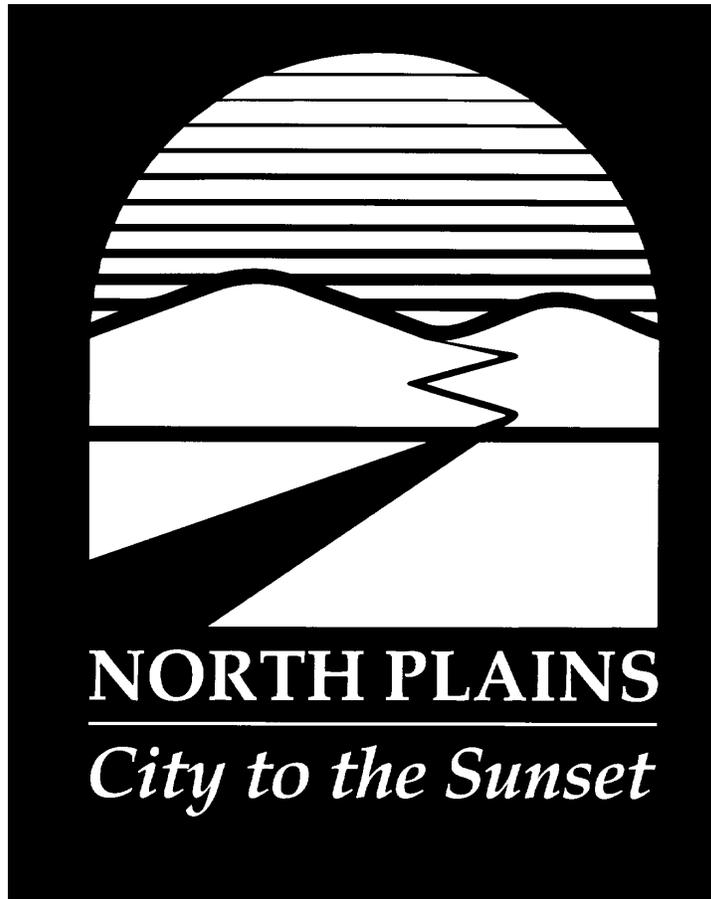
By:

  
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David Hatcher, Mayor

ATTEST:

By:

  
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Martha DeBry, City Manager/City Recorder



# PUBLIC WORKS DESIGN STANDARDS

Ordinance No. 342  
adopted November 21, 2005  
Ordinance 374  
adopted August 4, 2008

**Ordinance No. 391  
adopted November 15, 2010**

**CHAPTER 3.30**  
**PUBLIC WORKS DESIGN STANDARDS**

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**CITY OF NORTH PLAINS**

# PUBLIC WORKS DESIGN STANDARDS

## 3.30.100 - GENERAL

### 3.30.101 - AUTHORITY AND PURPOSE

On July 17, 2003, the City of North Plains adopted the North Plains Comprehensive Plan, which addresses land use and development issues within the City. This comprehensive planning document is a single document with references to many Ordinances, Resolutions, and of the Uniform Construction Standards manuals.

Zoning and Development Code Section 16.32 regulates the divisions of land and the creation of public facilities. The Design Standards section of this ordinance, discusses generalized public facility design requirements.

The purpose of these Design Standards is to provide a consistent policy under which certain physical aspects of public facility design shall be implemented. The elements contained in this document are Public Works oriented and it is intended that they apply to both public improvements under City contract and public improvements under private contract designated herein and constructed under approved permits.

These Design Standards cannot provide for all situations. They are intended to assist but not to substitute for competent work by design professionals. It is expected that engineers will bring to each project the best of skills from their respective disciplines.

The Design Standards are also not intended to limit unreasonably any innovative or creative effort which could result in better quality, cost savings, or both. However, any alternative must meet or exceed the minimum requirements set forth in these standards.

Alternate materials and methods will be considered for approval by the Public Works Director on the basis of the intent, objectives, and applications set forth in these standards and other City rules and regulations. This consideration will be on a case-by-case basis and require sufficient justification prior to approval. (See Section 3.30.105)

Unless otherwise specified below, this document is to be used in conjunction with the current editions of the following adopted codes and standards:

- ! Oregon Revised Statutes
- ! Oregon Administrative Rules
- ! City of North Plains Municipal Code
- ! City of North Plains Development Code
- ! Clean Water Services Resolutions and Orders
- ! Manual of Uniform Traffic Control Devices
- ! AASHTO "A Policy of Geometric Design of Highway and Streets"
- ! American Water Works Association Standards
- ! American Public Works Association Standards and Specification for Public Works Construction

Additional notes:

- ! If work proposed in Washington County or the Oregon Department of Transportation right of ways, the applicable standards from that agency will govern, including applicable permit requirements.
- ! Work in or near wetlands, sensitive areas, floodplains, and floodways may require permits and/or approvals from the Army Corps of Engineers and/or the Oregon Division of State Lands (DSL).
- ! Other permits and standards may be applicable to specific projects. The applicant bears the responsibility to obtain all necessary permits and to apply with all the applicable standards related to any specific project.
- ! If work is proposed on private property, including grading, excavation and fill, Washington County Building Code requirements apply and may require permits from Washington County, Department of Land Use and Transportation.

### 3.30.102 - ENGINEERING POLICY

The City of North Plains requires strict compliance with Oregon Revised Statute 672 for professional engineers.

All engineering plans, reports, documents, calculations and other technical submittals shall be prepared and sealed by a registered professional engineer, or by a subordinate employee under the engineer's direction, and shall be signed by the engineer and stamped with the engineer's seal to indicate the engineer's responsibility for them. It shall be the engineer's responsibility to review any proposed public facility extension, modification or other change with the City, prior to engineering or proposed design work, to determine any special requirements or whether the proposal is permissible. A "Preliminary Review" and/or a "Plans Approved for Construction" stamp of the City, on the plans, and other submittals, does not in any way relieve the engineer of responsibility to meet all requirements of the City or obligation to protect life, health, and property of the public. The plan for any project shall be revised or supplemented at any time it is determined by the Public Works Director, the full requirements of the City have not been met.

### 3.30.103 - APPLICABILITY

These Design Standards shall govern all construction modifications and upgrading of all public facilities in the City of North Plains and applicable work within its service areas.

### 3.30.104 - STANDARD SPECIFICATIONS

Except as otherwise provided by these Design Standards, all construction design detail, workmanship and materials shall be in accordance with the current edition of the City of North Plains Standard Specifications and drawings.

### 3.30.105 - APPROVAL OF ALTERNATE MATERIALS OR METHODS

Any substitution material or alternate method not explicitly approved herein will be considered for approval as set forth in Section 3.30.101. Persons seeking such approvals shall make application in writing. Approval of any deviation from these Design Standards will be in written form. Approval of minor matters will be made in writing if requested.

Any alternate must meet or exceed the minimum requirements set in these Design Standards. The written application is to include, but is not limited to, the manufacturer's specifications and testing results, design drawings, calculations, reason and justification, and other pertinent information.

Any deviations or special problems shall be reviewed on a case-by-case basis and approved by the Public Works Director. When requested by the City, full design calculations shall be submitted for review with the request for approval.

#### 3.30.106 - SPECIAL DESIGN PROBLEMS

Special applications not covered in these Design Standards require review and approval by the Public Works Director and the City Engineer. Submittal of full design calculations, supplemental drawings and information will be required prior to any approval.

Such applications which may occur requiring special review and approval are included, but are not limited to, the following:

- Water Distribution Pump Stations
- Relining of Existing Water Mains
- Water Pressure Regulating Devices
- Energy Dissipaters
- Water Reservoirs
- Water Treatment Plants
- Water Flow Measurement/Monitoring Devices

#### 3.30.107 - REVISIONS TO DESIGN STANDARDS

It is anticipated that revisions to these Design Standards will be made from time to time. The date appearing on the bottom of each page is the date of the latest revision. Users should apply the latest published issue to the work contemplated.

Parenthetical notations at the end of sections indicate the most recent change to those sections. All sections without notations are from the original Design Standards as adopted. Some sections may be changed more than once and it shall be the user's responsibility to maintain his/her copy of these Design Standards with the latest changes.

#### 3.30.108 - DEFINITIONS

Alley - A public access easement or right-of-way not more than 20 feet and not less than 12 feet in width, which intersects with a public street.

Approved - Back flow Prevention Device - A device that has been researched, tested and approved by the USC Hydraulic Research Dept. and adopted by the Oregon State Health Division.

Arterial Street - A major facility for moving intra-area traffic and for moving traffic to and from the highway/expressway system.

As-Built Plans - Plans signed and dated by the project engineer indicating that the plans have been reviewed

and revised, if necessary, to accurately show all as-built construction details and changes.

Back flow - The flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any sources other than its intended source.

Back flow Preventer - A device or means to prevent back flow into the potable water system.

Back Siphonage - The flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel into a water supply pipe due to a negative pressure in such pipes.

Bike Lanes - A designated travel-way for bicyclists which is established within the road way directly adjacent to the outside vehicular lane or on the shoulder.

Bike Path - A designated travel-way for bicycling which is completely separated from the vehicular travel lanes and is within independent right-of-ways.

Bike Route - A designated travel-way for bicyclists which is shared with vehicular traffic. The roadway is designated with signs for bicycling (no pavement markings for the bike route or delineation of parking spaces are used).

Building Service Lateral - A public sanitary sewer beginning at the property line or public easement line and extending to the sanitary sewer main.

Building Sewer - A private sanitary sewer beginning five (5) feet outside the building and extending to the property line or public easement line, connecting to the building service lateral.

Building Supply - The pipe carrying potable water from the water meter or other source of water supply to a building or other point of use or distribution on the lot. Building supply shall also mean customer line.

City - The City of North Plains, Oregon.

City Engineer - The individual designated by the City Manager to have the authority for review and approval on public works construction.

Collection Systems - Facilities maintained and operated by Clean Water Services connected thereto for the collecting, pumping, conveying, and controlling of wastewater.

Collector Sewer - The portion of the public sewerage system which is primarily installed to receive waste water directly from individual residences and other individual public or private structures.

Collector Street - A facility that allows traffic within an area or neighborhood to connect to the arterial system.

Core - To cut and remove a circular portion of concrete, pavement, pipe or soil.

Cross Connection - Any connection or arrangement, physical or otherwise, between a potable water supply system and any plumbing fixture or any tank, receptacle, equipment or device, through which it may be possible for non potable, used, unclean, polluted and contaminated water, or other substances, to enter into any part of such potable water system under any condition.

Cul-de-sac - A dead-end street having a turnaround area at the end.

Curb - The line indicating the edge of the vehicular roadway within the overall right-of-way.

Cut Sheets - Sheets of tabulated data, indicating stationing, structures, /et fittings, angle points, beginning of curve, points on curve, end of curves, storm drain slope, staking offset, various elevations, offset cuts, and storm drain depths for streets, water lines, sanitary sewers, and storm drains.

Datum - The vertical elevation control for the City of North Plains is "The National Geodetic Vertical Datum of 1929" which corresponds to the USC&GS 1947 Datum.

Dead-end Street - A street or series of streets which can be accessed from only one point. Dead-end streets can be either temporary (intended for future extension as part of a future street plan) or permanent.

Permanent dead-end streets must provide adequate turnaround capability.

Definition of Words - That, whenever, in these Standards, the words "directed," "required," "permitted," "ordered," "designated," or words of like importance are used, they shall be understood to mean the direction, requirement, permission, or order of designation of the City Engineer. Similarly, the words "approved," "acceptable," or "satisfactory," shall mean approved by, acceptable to, or satisfactory to the City Engineer and Public Works Director.

Designated Arterial or Collector Street - A street designated as an arterial or collector in the Comprehensive Plan.

Detention - The holding of runoff for a short period of time and then releasing it to the natural water course where it returns to the hydrologic cycle.

Development- All human-induced changes to improved or unimproved real property, including;

- 1) Construction of structures requiring a building permit.
- 2) Land division, including subdivisions, partitions, and lot line adjustments.
- 3) Grading.
- 4) Excavation.
- 5) Clearing.
- 6) Drilling.
- 7) Construction of utility infrastructure.
- 8) Public works improvement.
- 9) Redevelopment.

Domestic Sewage - The liquid and water borne waste derived from the ordinary living processes, free from industrial wastes, and of such character to permit satisfactory disposal, without special treatment into the public sewer or by means of private sewage disposal system.

Double Check valve Assembly - An assembly composed of two single, independently acting, approved check valves, including tightly closing shut-off valves located at each end of the assembly and fitted with properly located test cocks.

Double Check - Detector Check Valve Assembly - A line-sized approved, double check valve assembly with a parallel meter and meter-sized approved double check valve assembly. The purpose of this assembly is to provide back flow protection for the distribution system and at the same time provide a metering of the fire system showing any system leakage or unauthorized use of water.

Drainage Facilities - Pipes, ditches, detention basins, creeks, culvert bridges, etc., used singularly or in combination with each other for the purpose of conveying or storing storm water runoff.

Easement - Areas located outside of dedicated rights-of-way, which are granted to the City for special uses.

Engineer - The engineer, including the City's engineer, licensed by the State of Oregon as a Professional Engineer under whose direction plans, profiles, and details for the work are prepared and submitted to the City for review and approval, or who is in charge of and responsible for construction management of the improvement.

Expansion Joint - A joint to control cracking in the concrete surface structure and filled with preformed expansion joint filler.

Fire Hydrant Assembly - The fire hydrant and attached auxiliary valve.

Fire Protection Service - A metered connection to the public water main intended only for the extinguishment of fires and the flushing necessary for its proper maintenance.

French Drain or Leach Line - A covered underground excavated trench filled with washed gravel that surrounds a perforated delivery pipe used to receive storm water, wherein the sides and bottom of the trench are porous, permitting the storm water to seep into the ground.

Grade - The degree of inclination of a road or slope.

Hydrant Lead - The water line connecting the fire hydrant to the auxiliary valve on the City distribution main.

Impervious Areas - Those hard surface areas located upon real property which either prevent or retard saturation of water into the land surface, as existed under natural conditions preexisting to development, and cause water to run off the land surface in greater quantities or at an increased rate of flow from that present under natural conditions preexisting to development.

Industrial Waste - Solid, liquid, or gaseous waste resulting from any industrial, manufacturing, trade, or business process or from development, recovery, or processing of natural resource.

Interceptor Sewer - The primary public sanitary sewer which conveys waste water directly into the Waste water Treatment Plant.

Irrigation Service - A metered connection intended for seasonal use and delivering water which is not discharged to the sanitary sewer.

Lateral Sewer - A Building Service Lateral.

Local or Residential Street - A facility designated to serve primarily direct access to abutting land and offers

the lowest level of traffic mobility. Through-traffic movement is deliberately discouraged.

Longitudinal Joint - A joint which follows a course approximately parallel to the centerline of the roadway.

Major Partitioning - A partition which includes the creation of a road or street.

Major Trees - "Major trees" within the right-of-way are those which have a caliper of 4" or larger. Street improvement plans will identify major trees by location, caliper, and specie.

Major tree species are those which contribute to the landscape character of the area to include: Douglas Fir, Cedar, Redwood, Sequoia, Oak, Ash, Birch, Walnut, Maple. The identification of major trees should distinguish species generally suitably for retention adjacent to streets and those species with growth habits that create nuisances, unusual maintenance problems, or hazards to the public. Major trees exist in clusters, groves or rows within the right-of-way.

Manufacturer's Name - Any manufacturer's name, specification, catalog, number or type used herein is specified by make and order to establish the standard requirements of the City. Other equivalent makes may be considered for approval, providing they are comparable with this established standard and are approved by the City Engineer and Public Works Director .

Minor Partition - A partition which does not include the creation of a road or a street.

Natural Grade - The grade of the land in an undisturbed state.

On-Site Detention - The storage of excess runoff on the development site prior to its entry into a public storm drain system and gradual release of the stored runoff after the peak of the runoff has passed.

Or Equal, Or Approved Equal, Or Equivalent- These terms indicate that the "equal" product is the same or better than the product or standard named or prescribed in function, performance, reliability, quality, and general configuration. Determination of the quality in reference to the project design requirements will be made by the Public Works Director. Contractor shall not use such "equal" products without prior written approval of the Public Works Director.

Owner - The owner of record of real property as shown on the latest tax rolls or deed records of the county, and includes a person who furnishes evidence that he is purchasing a parcel of property under a written recorded land sale contract.

Partition - To divide an area or tract of land into two or three parcels within a calendar year when such area or tract of land exists as a unit or contiguous units of land under single ownership at the beginning of such year.

Peak Runoff - The maximum water runoff rate (cfs) determined for the design storm.

Person - Individual, firm, corporation, association, agency, or other entity.

Plans - Construction plans, including system plans, sewer plans, and profiles, cross sections, detailed drawings, etc., or reproductions thereof, approved or to be approved by the City Engineer, which show the location, character, dimensions, and details for the work to be done, in which constitute a supplement to these standards.

Potable Water - Water which is satisfactory for drinking, culinary, and domestic purposes and meets the requirement of the health authority having jurisdiction.

Private Collection System - A privately owned and maintained sewer system installed to serve multi unit structures on single ownership properties, which cannot legally be divided further.

Private Storm Drain - A storm drain located on private property serving more than one structure on the same premises or parking lot catch basins.

Public Sanitary Sewer - Any sewer in public right-of-way or easement operated and maintained by Clean Water Services for carrying sewage and industrial wastes.

Public Storm Drain - Any storm sewer in public right-of-way or easement operated and maintained by Clean Water Services and or the City of North Plains.

Release Rate - The controlled rate of release of drainage, storm, and runoff water from property, storage pond, runoff detention pond, or other facility during and following a storm event.

Redevelopment- Any activity that alters existing improved area on a subject property, including:

- 1) Expansion of or change to an existing structure or building footprint.
- 2) Reconfiguration of existing roadways, driveways, or parking lots.
- 3) Land disturbing activities related to structural or impervious area modifications.

Right-of-Way - All land or interest therein which by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the use of the public for sidewalk, utility, and/or roadway purposes, which the City has sole responsibility to maintain.

Roadway - All of that portions of the right-of-way used or to be used for vehicle movement which exists between the curbs or proposed curb lines.

Sedimentation - Disposition of erosional debris-soil sediment transported by water from a higher elevation to an area of lower gradient where sediments are deposited as a result of slack water.

Sewage - A combination of the water-carried wastes from residences, business buildings, institutions, and industrial establishments, except industrial wastes.

Sidewalk - A walk or path along the side of a road for pedestrians. A right-of-way deeded, dedicated, and designated for the use of non motorized vehicles and pedestrians.

Silt - Fine textured soil particles including clay and sand as differentiated from coarse particles of sand and gravel.

Siltation - Deposition of (silt) water borne sediments - fine textured sedimentation - terms used to describe the smoothing or cementing effect of a blanket of silt deposited over sand and gravel areas used by migratory fish for spawning (includes colloidal material when the transporting water evaporates).

Standard Drawings - The drawings of structures or devices commonly used on public improvements and referred to on construction plans.

Streets or Roads - Any public highway, road, street, avenue, alleyway, easement or right-of-way used or to be used for vehicle movement.

Structures - Those structures designated on the standard plans such as catch basins, manholes, etc.

Subdivision - To divide an area or tract of land into four or more lots within a calendar year when such area or tract of land existed as a unit or contiguous units of land under a single ownership at the beginning of such year.

Super elevation - The vertical distance between the heights of the inner and outer edges of a highway pavement.

Transverse Joint - A joint which follows a course approximately perpendicular to the centerline of the roadway.

Traveled Way - That portion of the roadway for the movement of vehicles, exclusive of shoulder and auxiliary lanes.

Turnaround Area - An area of sufficient size and configuration that a motor vehicle may maneuver so as to travel in the opposite direction.

Trunk Sewer - (Interceptor) A sanitary sewer which is primarily intended to receive waste water from a collector sewer, another trunk sewer, an existing major discharge of raw or inadequately treated wastewater, or water pollution control facility.

Uniform Plumbing Code - The Uniform Plumbing Code adopted by the current edition of the International Association of Plumbing and Mechanical Officials, as revised by the State of Oregon, called the "Oregon State Plumbing Specialty Code."

Waste water - The total fluid flow in the sanitary sewerage system which includes industrial waste-sewage, or any other waste including that which may be combined with any ground water, surface water, or storm water that may be discharged into the sanitary sewerage system.

Water Distribution System - Water distribution pipelines, pumping stations, valves, and ancillary equipment used to transmit water from the supply source to the service line.

Water Main - The water-supply pipes for public or community use.

Water Service Line - The pipe connection from the City water main to the users' water meter, hydrant, back flow prevention device, or fire sprinkler double check valve.

Wetlands - Those lands adjacent to watercourses or isolated therefrom which may normally or periodically be inundated by the waters from the watercourse or the drainage waters from the drainage basin in which it is located. These include swamps, bogs, sinks, marshes and lakes, all of which are considered to be part of the watercourse and drainage system of the City and shall include the headwater areas where the watercourse first surfaces. They may be, but are not necessarily, characterized by special vegetation or soils

such as peat, muck, and mud.

### 3.30.109 - CONSTRUCTION PLANS

#### 3.30.109.001 - GENERAL INFORMATION.

Prior to any construction work plan approval, or issuance of permits; complete construction plans, specifications and all other necessary submittals shall be submitted to the City Engineer and the Public Works Director for review.

#### 3.30.110 - PLAN PREPARATION

Construction plans and specifications shall be prepared as specified in Sections **3.30.109.001 - 3.30.111.004** by a professional engineer licensed in the State of Oregon.

##### 3.30.110.001 - SHEET SIZE

All construction plans shall be clearly and legibly drawn in ink on sheets measuring 24 x 36 inches.

##### 3.30.110.002 - SETS OF PLANS

When plans are prepared for developer financed projects, the following scale of drawings shall be as follows. Horizontal scales shall be 1" =10',20',30',40',or 50', vertical scales shall be 1" =2',4',5' or 10'. For subdivision plans all plans views and profile views of the plan set should be drawn at a common scale, if more than one scale is necessary, the difference should be large enough to be noticeable (e.g.1" = 20' & 1" = 50'). When a scale is used which is smaller than 1" = 20' (e.g. 1" = 40') ,specify the desired scale, if different for type of work(ie. water, street, sewer, etc.) have a standard for each.

Architectural scales (i.e., 1/4" = 1'-0") are not permitted unless approved.  
Letter size shall not be smaller than 0.10 inch.

##### 3.30.111- REQUIRED SHEETS

Construction plan submittals shall contain the following minimum sheets: title sheet (unless not required by the City Engineer) plan and profile sheets, detail sheets, erosion control plan sheet, grading plan sheet with topog. A title block shall appear on each sheet of the plan set and shall be placed on the lower right-hand corner of the sheet, across the bottom edge of the sheet or across the right-hand edge of the sheet. The title block shall include the names of the project, the engineering firm, the owner, the sheet title, and the page number.

The seal and signature of the Design Engineer responsible for the preparation of the plans shall appear on each sheet as well as the Design Engineer's phone number.

The description and date of all revisions shall be shown on each sheet affected, and shall be approved and dated by the Design Engineer as evidenced by signature or initial.

For lighting requirements, all developments will be required to submit three (3) copies of the final plat (residential and major land partitions) to the City Engineer. Commercial and industrial developments, in addition to the above requirement, shall submit three (3) copies of the site plan to the City Engineer.

##### 3.30.111.001 - TITLE SHEET

All subdivision projects and multiple street improvement projects shall have a title sheet as the first page of the construction plans. This sheet shall contain the following minimum information.

1. Site plans of the entire project with street right-of-way and/or subdivision layout at a 1" = 100' scale. A 1" = 200' scale may be used if project size is too large. The site plan shall also be a composite utility plan showing all properties served by proposed sewer, water and storm facilities, in addition to the proposed facility and all easements. The site plan shall also include all adjacent public facilities within 100' of the proposed project.
2. Vicinity map at a 1" = 1000' scale, or greater.
3. Index of sheets.
4. Complete legend of symbols used.
5. General and construction notes pertinent to project.
6. Temporary and/or permanent bench marks used along with their descriptions, elevations of benchmark and datum.
7. Engineer's name, address and phone number & seal.
8. Developer's/owner's name, address and phone number for public improvements with private financing.
9. Statement referencing City of North Plains Design Standards and Specifications.
10. Provide contact phone number for all affected utility companies.
11. Show tax lot numbers or lot and block designations.

3.30.111.002 - PLAN SHEET

The plan view of each sheet shall be drawn at the appropriate scale showing the following minimum information:

1. Adjacent street curbs, property lines, right-of-way lines, utility easements referenced to property lines, street centerline and intersections. Show property corner and curb elevations to determine water service level, serviceability of lot/property and sanitary sewer, points of disposal for building storm drains, and how new curbs will join to existing curbs.
2. Location of all underground utilities within 100 ft. of the project (if they are affected by the project), existing power/telephone poles and guy anchors, valves, manholes, catch basins, fire hydrants, meter boxes and vaults, signs, etc.
3. Location of all water courses, railroad crossings, culverts, bridges, large water transmission pipes and gravity sewers and/or storm drains within 200 feet of proposed gravity sewer and storm drain extensions if they affect the design of the project. All water courses shall show the 100-year flood plain as indicated on the UPS. Army Corps of Engineers and Federal

Emergency Management Agency (F.E.M.A.) maps.

4. On sewer and storm drain plans, each manhole, catch basin, and clean-out shall be numbered and stationed. Stationing shall tie to existing street monuments, property corners or manholes. Each line shall be stationed continuously upgrade and go from left to right on the plan sheet. Each separate line shall be separately designated (e.g., sewer line 'A', storm line 'A', etc.)
5. On street plans, horizontal stationing shall show points of tangent and curvature for centerline curve data shall show tangent length, radius distance, centerline curve length, and delta angle. Centerline intersection stationing, in both directions, shall be shown.
6. Where streets are being widened, edge of pavement elevations shall be shown to determine pavement cross-slope to new curb or pavement edge.
7. On water plans, all fittings shall be shown and identified by type (i.e., MJ x MJ, FLG X MJ, etc.). Fire hydrants and intersection details for valves and fittings are required when scale of plans is smaller than 1" = 20' (i.e., 1" = 40'). All valves, fittings and pipes conditions shall be indicated.
8. On erosion control plans, the location of silt fences, inlet barriers, gravel entry ways, temporary ditches and detention ponds and surface preparation shall be shown. The plan shall show the entire development. Details of erosion control devices can be shown on this sheet.
9. On Topog plans, use 1' or 2' contours at 5' intervals when slope exceeds 15%

#### 3.30.111.003 - PROFILE SHEET.

Profiles for construction plans shall be the same horizontal scale as the plan sheet. Where profiles are drawn on the same sheet as the plan view, the profile shall be immediately below the plan view. Stationing shall be continuously upgrade from left to right with lower stations to the left. Unless otherwise approved by the City Engineer, plan and profile views shall be displayed one over the other on the sheet. The following minimum information shall be shown:

1. For sewers and storm drains, show locations of manholes, catch basins, clean outs with each numbered and stationed as indicated in Section **3.30.111.003(4)**.
2. Existing profile at centerline of proposed utility or street.
3. Proposed profile grade, as appropriate, for all sewers, storm drains and water lines giving pipe size, length between structures, slope, backfill type, surface restoration type, and pipe materials, sewer inverts, rim elevations, etc.
4. Existing underground utility that crosses the alignment of the proposed facility.
5. Beginning of all vertical curves, points of vertical intersection, end of vertical Curve, low point of sag curve and length of vertical curve. Profiles of existing centerline grade shall extend a minimum of 250 feet beyond the end of the improvement.

6. Clearly show all potential conflicts with existing public and private utilities (i.e. pipes, conduits, vaults, etc.) that impact proposed design.

**SPECIAL NOTE:** The City of North Plains as-builts are only to be used as an aid to the engineer. When a potential conflict may occur, the engineer shall field locate, or cause to be located, and verify the alignment, depth, inverts, materials and size (horizontal & vertical dimensions) of all existing facilities shown on the plans that will be crossed by the proposed facility.

#### 3.30.111.004 - DETAIL SHEETS

Detailed drawings shall be included with all construction plans where City of North Plains Standard drawings do not exist. If a standard drawing, such as sewer manholes, must be modified to fit existing, or unique conditions, the modified drawing shall be shown on the plans. When appropriate, due to required detail complexity, a separate detail sheet shall be drawn. When City standard drawing appurtenances or construction installations are to be used, a reference to the specific Standard Drawing number shall be made on the title sheet, plan sheet and profile sheet.

#### 3.30.112 - SUPPORTING INFORMATION

The Design Engineer shall submit sufficient supporting information to justify the proposed design. Such information shall include, but not be limited to, the following:

1. Design calculations. (i.e., Street pavement calculations, Street lighting illumination)
2. Hydrology and hydraulic calculations with basin maps.
3. Alternate materials specifications including manufacturers' design application recommendations.
4. Grading plan support information to include as appropriate:
  - A. Soils engineering report.
  - B. Hydrology report.
  - C. Geotechnical Engineer's report.
  - D. Proposed topog.
  - E. Existing site topog , min 2' < 15% slope, 5' > 15% slope.
  - F. Adjacent offsite drainage patterns.
  - G. Wetlands, 100 year floodplain, drainage hazard area.
  - H. Natural drainage features.

#### 3.30.112.001 - FRANCHISE UTILITY PLANS

Franchise utility company plans, including, but not limited to; telephone, natural gas, power and cable television shall be submitted to and approved by the City Engineer and Public Works Director prior to any construction of these utilities.

**Include location of existing structures and public and private utilities.**

#### 3.30.113 - PLAN SUBMITTAL

Construction plans for all privately financed public works facility improvements shall be submitted to the City. The City Engineer, City Planner and the Public Works Director will coordinate the plan review and approval of all construction plans which will include review for compliance with all North Plains Design Standard, the North Plains Community Development Plan, City Code and Ordinances, and other city requirements.

All plan submittals shall include information required in Section: **3.30.112 and 3.30.112.001** of these Design Standards along with all other information requested by the City Engineer, City Planner and the Public Works Director. This information is to include, but not be limited to, construction cost estimates, easement documents, right-of-way dedications, executed agreements, and a plan check and inspection fee. All submittals will be reviewed for completeness and the engineer notified if required information is missing. Submittals should be made in a timely manner as lack of information to the City may impede the review process.

Upon completion of the detailed review, the City will notify the Design Engineer, in writing, any revisions the City may find necessary. The Design Engineer will revise plans, addressing all items, and return revised plans to the city for review and approval.

### 3.30.114 - AS-BUILT PLAN REQUIREMENTS

For all public works facility improvements, the engineer shall submit certified as-built drawings for all plans which were approved for construction. This includes storm drainage and sanitary sewer drawings as approved by Clean Water Services. As-built drawings shall meet the requirements of Sections **3.30.110, 3.30.110.001, 3.30.110.002, 3.30.111 - 3.30.111.004** and **3.30.114 - 3.30.114.004** of these Design Standards and shall be Mylar reproducible & an electronic copy. As-builts survey notes may be required by the city if any discrepancy is noted.

The engineer shall submit, along with the As-Built drawings, a statement certifying that all work for which plans were approved has been completed in accordance with the North Plains Public Works Design Standards and Standard Specifications and design documents.

The words "As-Built Drawing" shall appear as the last entry in the revision block along with the month, day and year the as-built drawing was prepared.

**NOTE:** Actual location and depth from finish grade of any other utilities encountered during construction shall be noted on as-built plans.

#### 3.30.114.001 - STREET

The following minimum information shall be noted on the street as-builts:

1. Change in horizontal alignment, curve data and stationing of primary control points (e.g., PC, PI, PT, PRC).
2. Vertical curve or grade changes; change in location of low point in sag vertical curve.
3. Change to approved thickness for street structural section components. Show station limits where changes in structural section have occurred.
4. Change to driveway locations or widths.

5. Other change(s) altering the approved plans, including but not limited to; curbs, sidewalks, wheelchair ramps.
6. Street lighting.

3.30.114.002 - STORM DRAINS

The following minimum information shall be noted on storm drain as-built drawings:

1. Work omitted or added during construction.
2. Surface drainage compounds (inlets, ditches, etc.).
3. Reference Clean Water Services Standards.

3.30.114.003 - SANITARY SEWER

The following minimum information shall be noted on sanitary sewer as-built drawings:

1. Reference Clean Water Services Standards.

3.30.114.004 - WATER MAIN

The following minimum information shall be noted on water main as-built drawings:

1. Station and/or property line/corner to valves (not at standard location), all fittings, blow-offs and dead-ended lines.
2. All changes from standard 36-inch depth cover. Limits shall be shown on all plans with annotated reason for change. Actual pipe elevation (top of pipe) will be taken at each fitting.  
\* This change should be approved prior to acceptance of work.
3. Show alignment changes, grade changes, pipe size changes and changes in construction materials, if changed alignment results in station changes. A station equation shall be shown as appropriate at a valve.
4. Provide types of all valves, identify types of fittings (i.e., MJ X MJ, FLG x MJ, etc.); provide information in the form of an inventory list on construction drawings.
5. Other change altering the approved plans.
6. Document and provide complete test results to the Public Works Director.
7. Provide photographs of all installed valves and fittings in place before backfill.  
\*This should be submitted during construction & prior to acceptance of the work.

### **3.30.200 - EXCAVATION AND GRADING**

#### 3.30.201 - PURPOSE

The purpose of this section is to safeguard life, limb, property and the public welfare by regulating grading within public right of way and other work under an approved development permit. Separate grading permits may be required for work on private property.

#### 3.30.202 - SCOPE

This section sets forth rules and regulations to control excavation, grading and earthwork and utility construction; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of right-of-way construction.

#### 3.30.203 - PERMITS REQUIRED

1. **Permits Required.** Except as specified in Subsection (B) of this section, no person shall do any work within the right-of-way without first having obtained a right-of-way permit from the City. Grading permits may also be required by Washington County. Contact Washington County, Land Use & Transportation, Building Services.  
\*Ensure compliance with Erosion Control Regulations & Permits.
2. **Exempted Work.** A right-of-way permit may not be required for the following:
  - A. When approved by the City Engineer and Public Works Director, construction or work in an isolated, self-contained area if there is no danger to private or public property.
  - B. Excavations for wells, tunnels or utilities, when approved under related permits.
  - C. Exploratory excavations under the direction of soil engineers or engineering geologists.

Exemption from the permit requirements of this chapter shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this chapter or any other laws or ordinances of this jurisdiction.

#### 3.30.204 - HAZARDS

Whenever the City Engineer and or Public Works Director determines that any existing excavation or embankment or fill on private property has become a hazard to life and limb, or endangers property, or adversely affects the safety, use or stability of a public way or drainage channel, the owner of the property upon which the excavation or fill is located, or other person or agent in control of said property, upon receipt of notice in writing from the City Engineer and or Public Works Director, shall within the period specified therein repair or eliminate such excavation or embankment so as to eliminate the hazard and be in conformance with the requirements of this code. Coordination with Washington County Building Services are required when work takes place on private property.

#### 3.30.205 - DEFINITIONS

For the purpose of this section the definitions listed hereunder shall be construed as specified in this section.

APPROVAL - shall mean the proposed work or completed work conforms to this chapter in the opinion of the City Engineer and Public Works Director.

AS-GRADED - is the extent of the surface conditions on completion of grading.

BEDROCK - is in-place solid rock.

BENCH - is a relatively level step excavated into earth material on which fill is to be place.

BORROW - is earth material acquired from an off-site location for use in grading on a site.

CIVIL ENGINEERING - The engineer, including the City's engineer, Licensed by the State of Oregon as a Professional Engineer under whose direction plans, profiles, and details for the work are prepared and submitted to the City for review and approval, or who is in charge of and responsible for construction management of the improvement.

COMPACTION - the densification of a fill by mechanical means.

EARTH MATERIAL - any rock, natural soil or fill or any combination thereof.

ENGINEERING GEOLOGIST - a geologist experienced and knowledgeable in engineering geology.

ENGINEERING GEOLOGY - the application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

EROSION - the wearing away of the ground surface as result of the movement of wind, water or ice.

EXCAVATION - the mechanical removal of earth material.

EXISTING - grade is the grade prior to grading.

FINISH - grade is the final grade of the site which conforms to the approved plan.

FILL - the deposit of earth material placed by artificial means.

GEOTECHNICAL ENGINEER - See "soils engineer."

GRADE - the vertical location of the ground surface.

GRADING - any excavating or filling or combination thereof.

KEY - a designed compacted fill placed in a trench excavated in earth material beneath the toe of a proposed fill slope.

PROFESSIONAL INSPECTION - is the inspection required by this code to be performed by the civil engineer, soils engineer or engineering geologist. Such inspections include that performed by persons supervised by

such engineers or geologists and shall be sufficient to form an opinion relating to the conduct of the work.

ROUGH - grade is the stage at which the grade approximately conforms to the approved plan.

SITE - any lot or parcel of land or contiguous combination thereof, under the same ownership, where grading is performed or permitted.

SLOPE - an inclined ground surface the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

SOIL - is naturally occurring superficial deposits overlying bedrock.

SOILS ENGINEER (GEOTECHNICAL ENGINEER) - an engineer experienced and knowledgeable in the practice of soils engineering (GEOTECHNICAL) engineering.

SOILS ENGINEERING (GEOTECHNICAL ENGINEERING) - the application of the principles of soils mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and the inspection or testing of the construction thereof.

TERRACE - a relatively level step constructed in the face of a graded slope surface for drainage and maintenance purposes.

### 3.30.206 -RIGHT-OF-WAY PERMIT REQUIREMENTS

1. **Permits Required.** Except as exempted in Section 3.30.203(2) of this code, no person shall do any work within the right-of-way without first obtaining a right-of-way permit from the City of North Plains. A separate permit shall be obtained for each site.
2. **Application.** The provisions of Section 3.30.203(1) are applicable to utility work and construction and in addition the application shall state the estimated quantities of work involved.

Specifications shall contain information covering construction and material requirements.

Plans shall be prepared in accordance with Section 3.30.100 of this of the document and shall be of sufficient clarity to indicate the nature and extent of the work proposed and shown in detail that they will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall give location of the work, the names and address of the owner and the person by whom they were prepared.

The plans shall include the following information:

- A. General vicinity of the proposed site.
- B. Property limits and accurate contours of existing ground and details of terrain and area drainage.
- C. Limiting dimensions, elevations or finish contours to be achieved by the work, and proposed drainage channels and related construction.

- D. Detailed plans of all surface and subsurface devices, walls, piping and other underground utilities to be constructed with, or as a part of, the proposed work together with a map showing the constructed area.
  - E. Locations of any building or structures on the property where the work is to be performed and the location of any buildings or structures on land of adjacent owners which are within 15 feet of the property or which may be affected by the proposed construction.
  - F. Topography/Contours                      2' < 15% or 5' > 15%
3. **Right-of-way Requirements.** Each application for a right-of-way permit shall be accompanied by a plan in sufficient clarity to indicate the nature and extent of the work. The plans shall give the location of the work, the names of the owner and the name of the person who prepared the plan. Plan shall be in accordance with Section 3.30.109 Construction Plans. The plan shall include the following information:
- A. General vicinity of the proposed site.
  - B. Limiting dimensions and description of project.
  - C. Location of any buildings or structures where work is to be performed, and the location of any buildings or structures within 15 feet of the proposed work.
  - D. An engineering soils and geology report may be required by the City depending upon site conditions such as steep slopes, evidence of slippage or slides, high ground water, location of improvements, geologic conditions, bed rock near surface, rock outcroppings, hazardous materials/contamination etc.
  - E. Associated land use approvals-copies of permits by others (DSL, COE, Clean Water Services, Washington County, etc).

3.30.207 -RIGHT-OF-WAY FEES

- 1. **General.** Fees shall be assessed in accordance with the provisions of this section or shall be as set forth in the fee schedule adopted by the jurisdiction.
- 2. **Plan Review Fee.** When a plan or other data are required to be submitted, a plan review fee shall be paid at the time of submitting plans and specifications for review. Said plan review fee shall be set forth by City Resolution.
- 3. **Right-of-way Permit Fees.** A fee for each right-of-way permit shall be paid to the City prior to any work on site.

3.30.208 - BONDS

The City of North Plains requires performance bonds in such form and amounts as may be deemed necessary

to assure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions.

In lieu of a surety bond the applicant may file a cash bond or instrument of credit with the City in an amount equal to that which would be required in the surety bond.

### 3.30.209 - INSPECTION

1. **General.** Operations for which a permit is required shall be subject to inspection by the City. Professional inspection of operations shall be provided by the civil engineer, soil engineer, and the engineering geologist retained to provide such services in accordance with Section 3.30.209(5) for engineered grading and as required by the city for regular grading.
2. **Civil Engineer.** The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.
3. **Soils Engineer.** The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permitted, the city inspector and the civil engineer.
4. **Engineering Geologist.** The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report, revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.
5. **Permitted.** The permitted shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this code, and the permitted shall engage consultants, if required, to provide professional inspections on a timely basis. The permitted shall act as a coordinator between the consultants, the contractor and the city inspector. In the event of changed conditions, the permitted shall be responsible for informing the city inspector of such change and shall provide revised plans for approval.
6. **City inspector.** The city inspector shall inspect the project at the various stages of work requiring approval to determine that adequate control is being exercised by the professional consultants.
7. **Notification of Noncompliance.** If, in the course of fulfilling their respective duties under this chapter the civil engineer, the soils engineer or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permitted and to the city inspector.

8. **Transfer of Responsibility.** If the civil engineer, the soils engineer, or the engineering geologist of record is changed during construction, the work shall be stopped until the replacement has agreed in writing to accept their responsibility within the area of technical competence for approval upon completion of the work.

It shall be the duty of the permitted to notify the city inspector in writing of such change prior to the recommencement of such work.

#### 3.30.210 -COMPLETION OF WORK

##### **Notification of Completion.**

The permitted shall notify the city inspector when the operation is ready for final inspection.

Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices, and all erosion-control measures have been completed in accordance with the approved designs, and the post construction required reports have been submitted. Erosion control measures no longer needed shall be removed.

#### 3.30.211- EROSION CONTROL

Erosion control shall follow Clean Water Services Standards of the Erosion Control Manual December 2000 or the latest revision.

### 3.30.300 - STORM DRAINAGE

#### 3.30.301- GENERAL DESIGN REQUIREMENTS

Performance Standards - Storm drainage design within a development area must include provisions to adequately control runoff from all public and private streets and the roof, footing, and area drains of residential, multi family, commercial, or industrial buildings. The design must ensure future extension of the drainage system to the entire drainage basin in conformance with these Design Standards. **The City of North Plains storm system is controlled and maintained by Clean Water Services. All surface run off (storm drainage) issues must meet current Clean Water Services Design and Construction Standards for sanitary sewer and surface water management.**

**In addition to meeting all Clean Water Services Standards & Approvals, the following applies:**

1. Surface or subsurface drainage, caused or affected by the changing of the natural grade of the existing ground or removal of natural ground cover or placement of impervious surfaces, shall not be allowed to flow over adjacent public or private property in a volume or location materially different from that which existed before development occurred, but shall be collected and conveyed in an approved manner to an approved point of disposal.
2. Surface water entering the subject property shall be received at the naturally occurring locations and surface water exiting the subject property shall be discharged at the natural locations with adequate energy dissipaters within the subject property to minimize downstream damage and with no diversion at any of these points in full compliance with Oregon state water law/OARS.
3. The approved point of disposal for all storm water may be a storm drain, dry wells, existing open channel, creek, detention, or retention pond approved by the Clean Water Services. Acceptance of proposed systems will depend upon the prevailing site conditions, capacity of existing downstream facilities, and feasibility of the alternate design. Building permits by Washington County may be necessary on private property.
4. When private property must be crossed in order to reach an approved point of disposal, it shall be the developer's responsibility to acquire a recorded drainage easement (of dimensions in accordance with those included in Section 3.30.304.004). The drainage facility installed must be a closed conduit system. Temporary drainage ditch facilities, when approved, must be engineered to convey and contain the storm water without causing erosion or other adverse effects to the private property. State a design event (10 or 25 yr event) for duration of use for temporary ditch.
5. The design peak discharge from the subject property may not be increased from conditions existing prior to the proposed development except where it can be satisfactorily demonstrated by the applicant that there is no adverse impact.
6. Retention/detention facilities will be required where necessary to maintain surface water discharge rates at or below the existing design storm peak discharge except where it can be demonstrated by the applicant that no adverse impact will result from not providing said facilities.
7. Minimum width of an access easement from an existing public road to a drainage facility shall be fifteen (15) feet.

8. Drainage from roofs, footings, and downpours may drain directly to a street through the curb under the following circumstances:
  - A. The building pad ground elevation is at least two (2) feet above the existing street curb, and
  - B. The existing street is adequately crowned to avoid sheet flow across the street. This requirement will be waived if curb and gutter is existing or installed.
9. Vegetation shall be established on areas disturbed by/or on areas of construction as necessary to minimize erosion, in accordance with Section 3.30.305 of these standards.

All storm drain system designs shall make adequate provisions for collecting all storm water runoff. The system shall accommodate all runoff from upstream tributary areas whether or not such areas are within the proposed development. The amount of runoff to be accommodated shall be based upon ultimate development of all upstream tributary areas.

Where storm drains are constructed on slopes greater than 20%, in areas designated as hazardous or where there are site conditions that may cause damage to improvements, slippage or slides or determined by the City Engineer, a soils and/or geologic report may be required.

For erosion control requirements refer to Clean Water Services Standards- Erosion Control Manual, December 2000 or the latest revision.

Where the finished graded surface has a greater than 20% slope, or as required, soil stabilization fabric shall be placed over the entire disturbed area.

Proposed storm drain systems shall not discharge flows into inadequate downstream systems, a drainage report with down stream analysis shall be reviewed and approved by the Clean Water Services.

Public storm lines shall be located within the public right-of-way as directed by the City and approved by Clean Water Services. These lines are placed in the public right-of-way for ease of maintenance access, control of the facility, operation of the facility, and to provide required replacement and/or repair.

#### 3.30.301.001 - SITE DRAINAGE PLANS

**All site drainage plans must be submitted to and approved by Clean Water Services in compliance with the current Clean Water Services.**

Proposed Drainage Plan - Show proposed site grading and drainage facilities on a topographical contour map. Unless the detail for proposed improvements will obscure the conditions shown on the existing drainage plan, proposed site grading and drainage may be shown on the existing drainage plan. The following minimum information shall also be shown.

1. Finished contours of the property after development shall be at two-foot (2') contour intervals, slopes over 10% may use 5-foot (5') intervals, extend contours a minimum of 100 feet beyond property.
2. Percent grade, for graded slopes, elevations, dimensions and locations for all graded slopes.
3. Cut/fill areas, structural fill placement areas, erosion/sedimentation control methods, receding areas.

4. All proposed drainage facilities - public and private systems; drainage ditches, culverts. All facilities shall be clearly labeled Public or Private

Drainage Calculations - Furnish such supporting information as required per Clean Water Services Design Standards.

Detention Requirements - All proposed development will be required to use adequate drainage management practices. Developments located within a master planned drainage basin will follow the recommendations adopted to that plan. Developments not located within master planned drainage basins will minimize the rate and amount of runoff to receiving systems and streams. On-site storm detention may be required in the No-name tributary and may be required in other basins to ensure that new development does not increase flooding downstream.

#### 3.30.301.002 - PIPE MATERIALS AND SIZE

**To be specified by Clean Water Services Design and Construction Standards.**

Public storm drain pipe shall meet Clean Water Services Design and Construction Standards for sanitary and surface water management. Private storm drain pipe shall meet the appropriate sections of the Uniform Plumbing Code.

#### 3.30.301.003- MINIMUM DESIGN CRITERIA

**To be specified by Clean Water Services Design and Construction Standards.**

Minimum acceptable design criteria is set forth in the current Clean Water Services Design & Construction Standards for sanitary and surface water management.

#### 3.30.302 - ALIGNMENT AND COVER

**To be specified by Clean Water Services Design and Construction Standards.**

Minimum acceptable design criteria is set forth in the current Clean Water Services Design & Construction Standards for sanitary and surface water management.

#### 3.30.302.001 - RIGHT-OF-WAY LOCATION

Storm drain lines shall be located within public right of way or as directed by Clean Water Services. All changes in direction of pipe shall be made at an approved structure, except as provided in Section: 3.0022.

#### 3.30.302.002 - CURVATURE

Storm drain lines shall not be curved between structures. If unusual circumstances are present, only as determined by the Clean Water Services, small diameter storm drains may be curved. Such curves shall conform to the street curvature.

#### 3.30.302.003 - MINIMUM COVER

All storm drains shall be laid at a depth sufficient to protect against damage by traffic and to drain building footings where practical. Sufficient depth shall mean the minimum cover from the top of the pipe to finish grade at the storm drain alignment.

The design engineer must show that sufficient depth is provided at the boundary of the development to

properly drain the remainder of the upstream basin area tributary to the site.

#### 3.30.302.004 - EASEMENTS

1. When it is necessary to locate storm drains in easements, the storm drain shall be centered in the easement. All storm drain easements shall be exclusive and shall not be used for any purpose which would interfere with the unrestricted use of the storm drain line. Exceptions to this requirement will be reviewed on a case by case basis, (e.g., a utility corridor in a new subdivision).
2. Easements for storm drain lines thirty-six inches (36") or less in diameter shall have a minimum width of fifteen feet (15'). All pipe lines greater than thirty-six inches (36") in diameter, shall have a minimum width of twenty feet (20'). Larger widths may be required for special circumstances, such as excessively deep pipe or location of structures or other improvements to the easement or as directed by Clean Water Services.
3. Open channels shall have easements sufficient in width to cover the 100-year Floodplain Line when a 100-year design storm is required or fifteen feet (15') from the waterway centerline or ten feet (10') from the top of the recognized bank, whichever is greater. A fifteen-foot (15') wide access easement shall be provided on both sides of the channel for channel widths greater than fourteen feet (14') at the top of the recognized bank.
4. Easement locations for public storm drains serving a PUD, apartment complex, or commercial/industrial development shall be in parking lots, private drives, or similar open areas which will permit unobstructed vehicle access for maintenance.
5. Structures cannot be built over the easements, and trees and large bushes cannot be planted in the easement.
6. All easements must be furnished to the City for review and approval prior to recording platted tract.

#### 3.30.302.005 - RELATION TO WATER COURSES

Storm drain lines shall enter a creek or drainage channel at 90° or Less to the direction of flow. The outlet shall have a head wall and scour pad or rip rap to prevent erosion of the existing bank or channel bottom. The size of pipe or channel being entered will govern which protective measures are required. All protective measures must conform to the requirements of Section 3.0050 of these Design Standards and/or as set forth by Clean Water Services.

#### 3.30.303 - STRUCTURE LOCATION

##### 3.30.303.001 - MANHOLES

Manholes shall be located at all changes in slope, alignment, pipe size, and at all pipe junctions with present or future storm drains. Manhole spacing shall not be greater Clean Water Services Standards.

Standard manholes are required when rim to crown of pipe elevations exceed four feet (4') at pipe junctions. Flat-top manholes shall be used when rim to crown of pipe elevations are less than four feet (4').

When the downstream pipe size increases, the crown of all upstream pipes shall not be lower than the crown of the larger downstream pipe.

**Design criteria set forth by Clean Water Services current Design and Construction Standards for Sanitary Sewer and Surface Water Management apply.**

**3.30.303.002 - CATCH BASINS**

Catch basins shall be located in streets at the curb line to receive storm water runoff and convey it to the main storm drain.

Catch basins shall be located at the following locations but in no case be spaced further than 300 feet:

1. At curb returns on the upstream side of an intersection.
2. At the ends of all dead-end streets with a descending grade.
3. At intermediate locations so that storm flows at the curb line do not exceed three feet (3') in width (measured from the curb face) or three inches (3 ) in depth (measured at the curb face,) whichever is less.
4. At all low points.
5. On street grades grater than 10 % the maximum spacing shall be 150 feet.
6. On street grades less than 1% the maximum spacing shall be 150 feet.

Catch basins shall be capable of intercepting, completely, the design storm flows at the curb.

**3.30.303.003 - DRY WELLS**

Where there are no natural or constructed drain ways, or an existing storm water system, dry wells can be used as a discharge point with the approval of Clean Water Services. Private systems shall require building permits and approval from Washington County.

**Design criteria to be set forth by Clean Water Services.**

**3.30.303.004 - ANCHOR BLOCKS**

**Design criteria to be set forth by Clean Water Services.**

**3.30.303.005 - WATER BARS**

**Design criteria to be set forth by Clean Water Services.**

**3.30.304 - STORM DETENTION**

**As required by Clean Water Services.**

**3.30.304.001 - DEVELOPMENT NOT REQUIRING DETENTION**

**As determined by Clean Water Services**

**3.30.304.002 - FLOODPLAIN INFORMATION**

Floodplain information, delineating the 100-year floodplain limits, shall be shown where it occurs within the

development. Floodplain limits shall be based on maps prepared by the US. Army Corps of Engineers and the Federal Emergency Management Agency (F.E.M.A.) Where better information is available, it shall be used by the Design Engineer.

#### 3.30.304.003 - DETENTION VOLUME

When detention is required, the volume to be detained shall be determined by Clean Water Services calculations.

#### 3.30.304.004 - EMERGENCY OVERFLOW

The Design Engineer shall assess the impacts of system failure for on-site detention. Overflows may occur due to rainfall intensity which exceeds the design storm, debris blockage of storm drain system, or some other reason. The design engineer shall identify the overflow route based on a 100 year event.

If a system overflows, it shall not cause inundation of neighboring properties. Potential overflow routes shall be protected from erosion by adequate means.

#### 3.30.304.005 - DETENTION FACILITIES

Detention volume storage methods in order of preference are the following:

1. Surface storage

#### 3.30.305 - EROSION CONTROL

Developments shall provide erosion control methods to limit the removal of soil materials by storm runoff during the construction phases of a project. **Erosion control practices must meet Clean Water Services erosion control standards. An Erosion Control Permit is required prior to any construction or grading within the right of way or on private property.**

#### 3.30.305.001 - EROSION CONTROL - APPLICATION

1. For subdivision plats temporary erosion control measures also shall be utilized by the applicant during installation of plat improvements and by subsequent builders during construction of dwellings and other lot improvements.
2. Prior to the initial clearing and grading of any land development, provisions shall be made for the interception of all potential silt-laden runoff that could result from clearing and grading. Interception shall preclude any silt-laden runoff from discharging from the proposed land development to downstream properties unless previously approved by the City Engineer. Interception shall cause all silt-laden runoff to be conveyed by open ditch or other means to whatever temporary facility is necessary to remove silt prior to discharge to downstream properties.
3. Prior to initial clearing and grading of construction site, an evaluation of the following factors must be carried out:
4. In addition a 1200-C permit, as approved by Clean Water Services, is required for a disturbed area of 1 acre or greater.
  - A. Soil Erodibility - Soil credibility should be identified using Soil Conservation Service

credibility ratings. Erosion control techniques shall be designed accordingly.

- B. Slope and Runoff - Cleared areas will require protection from erosion.
- C. Cover - Erosion protection will be required for all disturbed areas.

Temporary facilities may include silt fences, drain barriers, gravel entries, ditches, sedimentation ponds, surface stabilization or other devices as necessary.

Temporary/permanent hydro-seeding or acceptable seeding and mulching must be provided whenever perennial cover cannot be established on sites which will be exposed after September 1 or prior to June 1.

### 3.30.306 - PRIVATE DRAINAGE SYSTEMS

#### 3.30.306.001 - SUBDIVISIONS

When subdivision lots drain to the rear, it may be necessary to provide an easements. This system shall be for collection of roof drains, footing drains and surface runoff. This system shall be designed to meet the Uniform Plumbing Code requirements. Clean Water Services Standards do not allow private drainage systems with service for multiple lots.

#### 3.30.306.002 - SUBSURFACE DRAINAGE

Subsurface drains (under drains) shall be provided at the following locations:

1. For all existing springs and field tile intercepted during construction activity for other facilities, i.e. sewer, water, mains, street excavations, foundations, etc. Subsurface drains are not needed if the tile is removed.
2. Where high ground water exists or when it is necessary to reduce the piezometric surface to an acceptable level to prevent land slippage or under floor flooding of buildings.
3. The drainage line installed shall begin at a clean-out and terminate at an approved point of disposal. Open jointed storm drain lines will not be considered as an acceptable solution.
4. Public drainage system (pipes) shall be designed to convey subsurface water in addition to surface water.

### **3.30.400 - SANITARY SEWERS**

#### 3.30.401 - GENERAL DESIGN REQUIREMENTS

Performance Standards - Sanitary sewer system design shall meet the policies and guidelines of the current Clean Water Services Designs and Construction Standards for Sanitary Sewer and Surface Water Management.

Sanitary sewer systems shall be designed to provide gravity service to all areas of development where public Pump stations are acceptable only if it is not possible to provide gravity service.

Sanitary sewer system capacity shall be designed for ultimate development density of the tributary area as determined by Clean water Services. The system shall allow for future system extension and for future development.

Sanitary sewers shall be designed to remove the domestic sewage and industrial wastes from basements of houses, where practical, commercial or industrial buildings, and all public and private establishments where possible.

Storm water, including street, roof or footing drainage, shall not be discharged into the sanitary sewer system, but shall be removed by a system of storm drains or by some other method, as approved, separate from the sanitary sewer system.

Unpolluted or non contact cooling waters shall not be discharged into sanitary sewers. The overflow drains and filter backwash lines of swimming pools and "hot tubs" shall drain into a sanitary sewer.

As a condition of sewer service, all developments will be required to provide public sewers to adjacent upstream parcels in order to provide for an orderly development of the drainage area. This shall include the extension of sewer mains in easements across the property to adjoining properties and across the street frontage of the property to adjoining properties when the main is located in the street right-of-way. This shall include trunk sewers that are oversized to provide capacity for upstream development.

All public sewer service mains shall be extended a minimum of ten ft. (10') beyond the last property serviced within a subdivision.

All sewer lines shall be located within the public right-of-way or as directed by Clean Water Services and approved by the city. These lines are placed in the public right-of-way for ease of maintenance, access, control of the facility operation of the facility, and to provide required replacement and/or repair.

The sewer main shall be extended to the far property line of any property to be developed.

Design shall comply with Oregon Department of Environmental Quality and current Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management.

For erosion control requirements, see Section 3.0050.

#### 3.30.401.001 - PIPE MATERIALS AND SIZE

All public sanitary sewers shall be constructed with concrete, PVC, or HDPE pipe as specified in the

appropriate section of the Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management.

Private sanitary sewers shall meet the appropriate sections of the Uniform Plumbing Code (UPC.)

All sanitary sewer main lines shall be a minimum diameter of eight inches or as specified in .Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management

3.30.401.002 - MINIMUM DESIGN CRITERIA

Velocity - All sanitary sewers shall be designed on a grade which produces a mean velocity, when flowing half full or full, of no less than two feet (2') per second at a minimum slope of .004ft/ft.

Manning Equation- When calculating minimum pipe slopes and velocities, the engineer shall use the Manning pipe friction formula.

Pipe Coefficient - The minimum pipe roughness coefficient for all sanitary sewers shall be 0.013.

3.30.402 - ALIGNMENT AND COVER

3.30.402.001 - RIGHT OF WAY LOCATION

Sanitary sewer lines shall be located in the street right-of-way, unless easements are granted. All changes in direction of pipe shall be made at a manhole.

Curved alignments in sanitary sewers are not permitted.

3.30.402.002 - MINIMUM COVER

All sanitary sewers shall be laid at a depth sufficient to drain building sewers, to protect against damage by frost or traffic, and to drain basement sewers, where practical. Sufficient depth shall mean the minimum cover from the top of the pipe to finish grade at the sewer alignment. In new residential hillside subdivisions, mainline and lateral sewers shall be placed in the street at a depth sufficient to drain building sewers on the low side of the street.

Minimum cover standards are addressed in Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management.

Where pipes cross under ditches or streams and the cover is less than three feet (3'), additional protection will be required as discussed in Section 3.30.403.005.

3.30.402.003 - SEPARATION WITH WATER LINES

Mains shall be installed a minimum clear distance of ten feet (10') horizontally from water lines and shall be installed to go under water lines with a minimum of 18 inches of clearance at intersections of these pipes. Exceptions shall first be approved by the City Engineer. In all instances the distances shall be measured edge to edge. The minimum spacing between water mains and storm drains, gas lines, and other underground utilities, excepting sanitary sewers, shall be three feet (3') horizontally when the standard utility location cannot be maintained.

3.30.402.004 - EASEMENTS

Sewers placed in easements along a property line shall have the easement centered on the property line, the sewer shall be offset 18 inches from the property lines. For sewers placed in easements located other than along a property line, the sewer shall be placed in the center of the easement. The conditions of the easement shall be such that the easement shall not be used for any purpose which would interfere with the unrestricted use for sewer main purposes. Under no circumstances shall a building or structure be placed over a sanitary sewer main or sewer easement. This shall include overhanging structures with footings located outside the easement. Further, no trees or large bushes shall be planted in the easement.

Easement locations for public sewer mains serving a PUD, apartment complex, or commercial/industrial development shall be in parking lots, private drives, or similar open areas which will permit unobstructed vehicle access for maintenance by Clean Water Services personnel.

All sanitary and surface water easements shall be dedicated to Clean Water Services  
All easements must be furnished to the City for review and approval prior to recording.

### 3.30.402.005 - RELATION TO WATERCOURSES

Generally, the top of all sanitary sewers entering, crossing or adjacent to streams shall be at a sufficient depth below the natural bottom of the stream bed to protect the sewer line. One foot (1') of cover is required where the sewer is in rock, three feet (3') of cover is required in other materials. In paved channels, the top of the sewer line shall be placed at least six inches (6 ) below finish grade of the batten of the channel, except as provided above.

Sewers located along streams shall be located outside of the stream bed and sufficiently removed therefrom to provide for future possible stream channel widening. All manhole covers shall be watertight, at or below the 100 year flood elevation.

Design criteria set forth by Clean Water Services.

### 3.30.403 - STRUCTURES

#### 3.30.403.001 - MANHOLES

Manholes shall conform to ASTM C-478.

Manholes shall be located at changes in slope, alignment, pipe size, and at all pipe junctions with present or future sanitary sewers.

Manhole spacing shall not be greater than 500 feet as per Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management .

The angle between incoming and out going sewer lines shall be 80° or greater.

Design criteria set forth by Clean Water Services.

#### 3.30.403.002 - CLEAN OUTS

Cleanouts will not be approved as substitutes for manholes on public sewer lines. Clean outs are permitted at the upper end of a sewer that will be extended during a future construction phase. When the sewer is extended, the clean out will be removed and a manhole shall be installed in the appropriate location. If future extension requires a change in sewer alignment or grade, a manhole will be required at the clean out location.

**Design criteria set forth by Clean Water Services.**

3.30.403.003 - ANCHOR BLOCKS

**As required by Clean Water Services**

3.30.403.004 - WATER BARS

**As required by Clean Water Services**

3.30.404 - STRUCTURE DESIGN

3.30.404.001 - MANHOLES

Designs for manholes are shown in the current Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management. They are suitable for most conditions. New designs or revisions should, on the construction drawings, unless the standard designs are not suitable. New or revised designs may be necessary if:

1. One or more of the sewers to be connected to the manhole is over 36 inches in diameter. Smaller diameters may require a special design if the manhole is at an alignment change.
2. Several sewers will be connected to the manhole.
3. There is less than 80 degrees between the incoming and outgoing sewer.
4. The manhole will be subject to unusual structural loads.
5. Diversion or other flow control measures are required.

Where one or more of conditions 1), 2), or 3) are encountered, a drawing of the manhole base should be made to determine if it is feasible to use designs shown in the Standard Drawings. It may be necessary to restrict the options to a specific Standard Drawing specified by a note on the construction drawings. If a special design is required for any reason, it will be necessary to show the details on the construction drawings and to provide structural calculations as needed.

1. Watertight manhole frames and covers are to be used if flood waters are expected to cover the manhole top or if the manhole must be located in the street gutter. Such conditions should be avoided wherever feasible.
2. Tamper-proof manhole frames and covers are required in areas subject to vandalism, such as areas which are not readily visible to the general public or the property occupants.

3.30.405 - SERVICE LATERAL

Service laterals are those public sewer lines to which a private building sewer connects. They shall be constructed to Clean Water Services Design and Construction Standards.

Each individual building site shall be connected by a separate private building sewer service line connected

to the public sewer. Combined sewer service lines will be permitted only when the property cannot legally be further divided. Examples of this is a residential lot with a house and an unattached garage or shop with plumbing facilities.

The minimum inside diameter of a sewer service lateral shall be determined by Clean Water Services and shall be equal to or greater than the building sewer diameter. Service laterals are to be built of the same construction standards and of the same materials as the sewers mainline. Service laterals in general shall be placed at 90° to the main sewer line to avoid excessive exposure to other utilities during excavation for construction or maintenance of the service lines. Angles other than 90° may be approved for special conditions such as cul-de-sac lots. In no case shall the angle between the main and the service be less than 90°. Service line connections shall not be made at manholes except at cul-de-sacs.

#### 3.30.406 - CONNECTION TO EXISTING SEWERS

Connections to, and extensions of, existing sewers will occur to facilitate new development.

Connections to existing manholes shall be made following Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management guidelines:

When sewers are extended from Cleanouts, the entire cleanout assembly, including the wye, shall be removed.

New building service laterals will be made at existing tees where possible.

When tees do not exist on the Public Sanitary Sewer System, the new lateral sewer will enter the collection system through a "cored" opening with a saddle approved by Clean Water Services. All connections shall be inspected by a representative of Clean Water Services prior to back filling.

#### 3.30.407 - PRIVATE SEWER LINES

Private sewer systems are not allowed for multiple connections of lots (services) under separate ownership. Private sewer systems shall be constructed in accordance with the UPC.

#### 3.30.408 - SYSTEM TESTING

All pipe shall be pressure tested and manholes leak tested per the latest edition of the Clean Water Services Standard Specifications.

#### 3.30.409 - SEWAGE PUMP STATION DESIGN STANDARDS

**Pump stations are to be designed to Clean Water Services Design Standards and require prior approval from Clean Water Services.**

##### 3.30.409.001 - GENERAL

The pump station shall be as approved by Clean Water Services.

##### 3.30.409.002 - CONSTRUCTION

Station construction will meet all current Clean Water Services Design and Construction Standards and as a minimum include: wet well, pump enclosure, associated piping and valves, electrical controls, automatic

dialer, visual alarm, emergency power transfer switch and connection receptacle, lighting, heater, ventilating fan, instrumentation, access road fencing, landscaping, potable water supply, and shall conform to the Department of Environmental Quality (DEQ) standards and Oregon Administrative Rules (OAR) Chapter 340, Division 52.

### 3.30.409.003 - CAPACITIES

Pump station shall be designed to pump the peak waste water flow from the service areas approved by Clean Water Services. When the service area is not built out, staging of pump station capacity will be allowed. The wet well shall be sized to allow for a minimum number of starts per hour. Inlet piping will not be used as a portion of the wet well. Calculations for hydrogen sulfide will be provided and appropriate design measures included.

### 3.30.409.004 - POWER GENERATION

Where the flow is substantial or where environmental damage may occur due to power failure, Clean Water Services may require permanent standby power.

### 3.30.410 - DESIGN

#### **Design criteria set forth by Clean Water Services.**

### 3.30.410.001 - APPROVALS

Service area peak flows, pump station cycle and hydrogen sulfide calculations shall be submitted to the Clean Water Services.

### 3.30.411- MATERIALS

### 3.30.411.001 - PUMPS

#### **Design criteria set forth by Clean Water Services.**

A minimum of two pumps shall be supplied. Each pump shall be capable of pumping the peak waste water flow. Where more than two pumps are used, the station shall be able to pump peak waste water flow when the largest pump is out of service.

### 3.30.411.002- PIPING AND VALVES

#### **Design criteria set forth by Clean Water Services.**

Piping and fittings shall be ductile iron to a point at least two (2) feet outside the station. Valves shall be metal, suitable for wastewater use. Valves shall be designed for waste water service. Provide pressure gages with isolation and purge valves on pump discharge piping.

### 3.30.411.003 - ELECTRICAL

#### **Design criteria set forth by Clean Water Services.**

Electrical controls shall be located above ground mounted in a waterproof enclosure. Electrical panels shall be UL listed. The pump station wet well shall be considered a hazardous location. Level controls in the wet well shall be intrinsically safe.

### 3.30.411.004 - CONTROLS

#### **Design criteria set forth by Clean Water Services.**

Controls may be mechanical relays or programmable logic-controllers. Pumps shall automatically alternate

lead-lag position with each pumping cycle.  
Pump level control shall be by mercury float switches.  
Float activated alarm shall indicate high water level.  
An auxiliary power connector shall be mounted on the exterior of the station with a manual transfer switch mounted in the interior.

3.30.411.005 - ALARMS AND TELEMETRY  
**Design criteria set forth by Clean Water Services.**

Alarms shall be telemetered to Clean Water Services Maintenance by dedicated telephone line with automatic dialer.

Alarms include:  
Pump failure  
Power failure  
Telemetry failure  
High water level

3.30.411.006 - LANDSCAPING AND FENCING  
Design criteria shall meet Clean Water Services Design and Construction Standards for Sanitary Sewer and Surface Water Management.

3.30.411.007 - ADDITIONAL FEATURES  
**Design criteria set forth by Clean Water Services.**  
Provide 1-inch anti-freeze hose bib. Potable water shall be provided by an above ground reduced pressure back flow Preventer. Provide positive ventilation in the enclosure. Provide odor control as required.

3.30.411.008 - FORCE MAIN

3.30.412 - CONSTRUCTION

3.30.412.001 - ELECTRICAL  
Pump station and related facilities will be constructed to Electrical and Building Codes.

3.30.412.002 - PIPING  
Steel fabrications shall be hot dipped galvanized, painting is required on valves, piping, and pipe fittings.

3.30.412.003 - OPERATING AND MAINTENANCE DATA

3.30.412.004 - SPARE PARTS

### **3.30.500 - WATER MAINS**

#### **3.30.501 - GENERAL DESIGN REQUIREMENTS**

Performance Standards - Water distribution systems shall be designed to meet Oregon Administrative Rules, AWWA & APWA Standards and guidelines of the City of North Plains Water System Master Plan - 2005 and its updates.

Water system design shall provide adequate flow for fire protection and maximum water usage and consumption. Required water system demands shall be met by maintaining the minimum operating pressures required by the City. For single Family residential areas the minimum static pressure shall be 40 psi, and the minimum fire flow shall be 1000 gpm. For all other developments, the required fire flow shall be as determined by the Fire Chief.

Water system design shall meet distribution needs for maximum water usage and consumption within a given service area. New water Systems shall be extended to the far side of the property to allow for future extensions beyond present development and to be consistent with the latest version of the Water System Master Plan.

All water lines shall be located within the public right-of-way or as directed by the City Engineer. These lines are placed in the public right-of-way for ease of maintenance and access, control of the facility, operation of the facility, and to permit required replacement and/or repair. Water mains shall be a minimum of 4' clear of curb in street, no water mains shall be installed behind curbs or sidewalks. The City Engineer, under special conditions, may allow a public water line to be located within a public water easement as referenced in Section 3.30.402.

Where water lines are constructed on slopes greater than 20%, in areas designated as hazardous or where there are site conditions that may cause damage to improvements, slippage or slides as determined by the City Engineer, a soils and/or geologic report may be required.

For erosion control requirements, see Section 3.30.305.

Where the finished graded surface is greater than twenty percent (20%), or as required by the City Engineer, soil stabilization fabric shall be placed over the entire disturbed area.

#### **3.30.501.001 - PIPE MATERIALS AND SIZE**

All public water distribution systems shall be constructed with ductile iron pipe, minimum thickness Class 52. All such pipes shall be cement mortar-lined pipe with push-on or mechanical type joints. When a corrosive potential condition is encountered, all ductile iron pipe and fittings will be polyethylene encased with a 8 mil tubing meeting manufacturer and AIWA standards. PVC pipe may be considered as an alternate material only on a case-by-case basis. Where an active cathodic protection system is encountered as a result of other utilities, a deviation from the normal pipe design material/installation practice may be required by the City Engineer and Public Works Director. Polyvinyl chloride (PVC) pipe may be considered as an alternate to ductile iron pipe where an active cathodic protection system is encountered.

Polyvinyl Chloride (PVC) Pipe and Tracer Wire Installation - PVC pipe 4-12 shall conform to AIWA C900-81. PVC pipe 14" - 36" shall conform to AIWA C905-88 standards. All PVC pipes shall have a dimension ratio no greater than 18, with an outside diameter identical to cast iron. Tracer wire shall be a minimum 12 gauge

coated copper wire ,colored blue and installed with all PVC water pipes. Warning tape shall also be installed within 24" of surface if PVC pipe is required.

All pipe shall be pressure rated for at least 150 psi, valves shall be of ductile iron, rated at 250psi and fittings shall be pressure rated at 350 psi for ductile iron. All fittings shall be factory cement lined and coated. Pipe constructed per Section 3.30.502.005 will require the use of restrained pipe joints or ball and socket river pipe.

Service lines 3/4" & 1" shall be type k soft copper. Service lines 1" & 2" shall be type K ridged copper . The tubing shall be cut with square ends, reamed, cleaned and made up tightly. Care shall be taken to prevent the tube from kinking or buckling on short bends. Kinked or buckled sections of copper tube shall be cut and tube spliced with the proper brass fittings.

Water distribution main sizes shall conform to the following:

**Installation of distribution mains smaller than 8 inches will not be permitted.**

Non-looped water mains may only be used with approval of the City Engineer in residential zones on dead-end streets less than a distance of 250 feet measured from the center of the intersection street to the radius point of the cul-de-sac of a dead-end street with service to not more than 12 residences and shall be connected to a looped minimum six-inch main. All 8-inch lines shall terminate with a standard two (2) inch blow off.

8-inch Minimum size residential subdivision distribution water main for the grid (looped) system and for fire protection, not to exceed an unsupported length of 600 feet and shall not be permanently dead-ended. Looping of the distribution grid shall be at least every 600 feet.

8-inch Minimum size for permanently dead-ended mains supplying fire hydrants with a fire flow less than 1,500 gpm and for primary feeder mains in residential subdivisions.

10" & up As required for primary feeder lines in subdivisions, industrial and commercial areas.

Water service lines shall conform to the following:

3/4" Residential services.

1" Two residential services. Service line shall have a tee with two (2) 3/4-inch lines connected to it such that each lot is served by a separate 3/4 inch line and meter. No more than two (2) residential services can be combined in this manner.

1" and up Public, Commercial, Industrial and other non-residential uses shall be sized per actual usage.

Velocity in distribution mains shall be designed not to exceed five feet (per second). Velocity in service lines (as defined in Section: 3.30.505) shall not exceed ten feet (10') per second.

3.30.501.002 - GRID SYSTEM

The distribution system mains shall be looped at all possible locations. All developments will be required to extend mains across existing or proposed streets for future extensions by the City or other developments. All terminations shall be planned and located such that new or existing pavement will not have to be cut in the

future when the main is extended. The installation of permanent dead-end mains greater than 250 feet upon which fire protection depends and the dependence of relatively large areas on single mains will not be permitted.

### 3.30.501.003 - DEAD-END MAINS

Dead-end mains which will be extended in the future shall be provided with a line-size gate valve and MJ plug at the end and mechanically restrained. The mj plug shall be tapped 2" and provided with a Standard Blow-Off, except that the 2" gate valve shall not be installed.

Permanent dead-end mains shall terminate with a Standard Blow-Off Assembly.

### 3.30.502 - ALIGNMENT AND COVER

#### 3.30.502.001 - RIGHT-OF-WAY LOCATION

Water systems shall be located twelve feet (12') south and east from the right-of-way centerline or as directed by the City Engineer. Except as provided in Section: 3.30.502.004, all water lines shall be in the public right-of-way. All abrupt changes in vertical or horizontal alignment shall be made with a fitting and an "approved" mechanical joint restraint.

Curved alignment for water lines or mains is permitted and shall follow the street centerline when practical. The minimum allowed radius shall be based on allowable pipe deflection for the pipe diameter and the pipe laying length but not to exceed 3° joint deflection.

#### 3.30.502.002 - MINIMUM COVER

The standard minimum cover over buried water mains within the street right-of-way or easements shall be thirty-six inches (36") from finish grade.

Finish grade shall normally mean the proposed pavement or ground elevation where the main is located.

Deviation from the above standards will be considered on a case-by-case basis when the following exists:

1. When there is underlying rock strata that prohibits placement of the water main thirty-six inches (36") below finish grade, a written request must be submitted to the City Engineer together with submission of a soils report with a plan and profile certifying that bed rock exists less than three feet (3') below the undisturbed ground surface.

#### 3.30.502.003 - SEPARATION WITH SEWER LINES

Water mains shall be installed a minimum clear distance of ten feet (10') horizontally from sanitary sewers and shall be installed to go over the top of such sewers with a minimum of 18 inches of clearance at intersections of these pipes. Exceptions shall first be approved by the City Engineer. In all instances, the distances shall be measured edge to edge. The minimum spacing between water mains and storm drains, gas lines, and other underground utilities, excepting sanitary sewers, shall be three feet (3') horizontally when the standard utility location cannot be maintained.

Where water lines are being designed for installation parallel with the other water mains, utility pipe, or conduit lines, the vertical separation shall be twelve inches (12") below or in such a manner which will permit future side connections of mains, hydrants, or services and avoid conflicts with parallel utilities without abrupt changes in vertical grade of the above mentioned main, hydrant, or service. Where crossing of utilities are

required, the minimum vertical clearance shall be six inches (6").

#### 3.30.502.004 - EASEMENTS

Mains placed in easements along a property line, shall have easements centered on the property line and shall be offset 18 (18") inches from the property line. For mains placed in easements located other than along a property line, the main shall be placed in the center of the easement. Easements, when required, shall be exclusive and a minimum of fifteen feet (15') in width. The conditions of the easement shall be such that the easement shall not be used for any purpose which would interfere with the unrestricted use for water main purposes. Under no circumstances shall a building or structure be placed over a water main or water main easement. This includes overhanging structures with footings located outside the easement. Further, no trees or large bushes shall be planted in the easement.

Easement locations for public mains serving a PUD, apartment complex, or commercial/industrial development shall be in parking lots, private drives, or similar open areas which will permit unobstructed vehicle access for maintenance by City personnel.

Any water main placed within a water main easement will be permanently marked with steel posts and metal signs at all angle points and no less than every 100 feet. In addition, such posts and signs shall be placed where the water line intersects the public right-of-way at the easement location. A monument cap set in the pavement of parking lots shall be an acceptable alternative to the sign. The City shall provide wording for the sign/monument.

All easements must be furnished to the City for review and approval prior to recording.

#### 3.30.502.005 - RELATION TO WATERCOURSES

New water mains may cross over or under existing streams, ponds, rivers, or other bodies of water.

1. Above Water Crossings - The pipe shall be engineered to provide support, anchorage, and protection from freezing and damage, yet shall remain accessible for repair and maintenance. All above water crossings will require review and approval by the City Engineer.
  - A. Valves shall be provided at each end.
  - B. Air/Vacuum relief valves shall be provided.
2. Underwater Crossings
  - A. Mains crossing stream or drainage channels shall be designed to cross as nearly perpendicular to the channel as possible.
  - B. Valves shall be provided at both ends of the water crossing so that the section can be isolated for testing or repair. The valves shall be easily accessible and not subject to flooding. The valve nearest to the supply source shall be in a manhole. Permanent taps shall be made on each side of the valve within the manhole to allow insertion of a small meter for testing to determine leakage and for sampling.
  - C. The minimum cover from the bottom of the stream bed or drainage channel to the top of pipe shall be thirty inches (30").

- D. A scour pad centered on the water line will be required for the top of the pipe to the bottom of the stream bed or-drainage channel is thirty inches (30") or less. The scour pad shall be concrete, six inches (6") thick and six feet (6') wide, reinforced with number four bars twelve inches (12") on center both ways and shall extend to a point where a one-to-one slope, that begins at the top of the bank and slopes down from the bank away from channel centerline intersects the top of the pipe. Control density fill may also be used if prescribed by the City Engineer.
3. The following surface water crossings will be reviewed and approved on a case-by-case basis:
- A. Stream or drainage channel crossing for pipes twelve inches (12") inside diameter and greater.
  - B. River or creek crossings requiring special approval from the Oregon Division of State Lands.

### 3.30.503 - APPURTENANCES

#### 3.30.503.001 - VALVES

In general, valves shall be the same size as the mains in which they are installed. Valve types and materials shall conform to the City of North Plains Design Standard Specifications.

Distribution system valves shall be located at all tee or cross fittings. There shall be a sufficient number of valves so located that not more than four (4) and preferably three (3) valves must be operated to effect any one particular shutdown. The spacing of valves shall be such that the length of any one shutdown in commercial or industrial areas shall not exceed 500 feet or 800 feet in other areas.

In general, a tee-intersection shall be valved in two branches and a cross-intersection shall be valved in three branches. Transmission water mains shall have valves at not more than 1,000 foot spacing unless designated by City Engineer. Hazardous crossings, such as creek, railroad, and freeway crossings, shall be valved on each side.

Distribution tees and crosses for future branch lines on transmission mains may be required at the direction of the City Engineer and Public Works Director.

Valves shall be ductile iron resilient wedge (AIWA C-515) rated for 250 psi cold water working pressure. Valve body and all other ferrous material shall be ductile iron, the wedge shall be encapsulated with EPDM rubber (2"-larger sizes).

Butterfly valves shall only be used if and when designated by City Engineer and Public Works Director.

#### 3.30.503.002 - FIRE HYDRANTS

The public fire hydrant system shall be designed to provide up to a maximum of 3,500 GPM. The distribution system shall be designed in commercial/industrial areas to accommodate fire flows up to 4,500 GPM or as required by the Fire Chief. Minimum fire flow in single family residential areas shall be 1000 GPM.

The distribution of hydrants shall be based upon the required average fire flow for the area served. Design

coverage shall result in hydrant spacing of approximately 500 feet in residential areas, approximately 300 feet in commercial or industrial subdivisions or as approved by the Fire Chief and City Engineer. In addition, sufficient hydrants shall be available within 1000 feet of a building in commercial/industrial areas to provide its required fire flow.

Residential hydrants shall be located as near as possible to the corner of street intersections and not more than 500 feet from any cul-de-sac radius point.

No fire hydrant shall be installed on a main of less than eight inches (8") inside diameter unless it is in a looped system of six-inch (6") mains. The hydrant lead shall be minimum six-inch (6") inside diameter.

All fire hydrants will be located behind the existing or proposed sidewalk. If any public hydrant encroaches on private property an easement will be provided as directed by the City Engineer.

No hydrant shall be installed within five feet (5') of any existing aboveground utility nor shall any utility install facilities closer than five feet (5') from an existing hydrant.

Full-depth hydrants will be required in all installations. Installation of hydrant extensions will require approval from the Public Works Director.

Each fire hydrant shall have an auxiliary valve and valve box, which will permit repair of the hydrant without shutting down the main supplying the hydrant. Such auxiliary valves shall be resilient seat gate valves (AIWA C-515). The auxiliary valve shall have Mjx flange ends. The valve shall be connected directly to the water main using a MJ X flange joint tee with mechanical joint restraints.

Hydrants shall meet or exceed AIWA C-502, latest revision. Rated working pressure shall be 250 psi test pressure shall be 500psi, and hydrants shall include the following specific design criteria:

- # The nozzle section, upper and lower stand pipes and hydrant base shall be ductile iron.
- # The main valve closure shall be of the compression type, opening against pressure and closing with the pressure.
- # Nozzle section to be designed for easy 360 degree rotation by loosening of no more than four bolts.
- # The draining system of the hydrant shall be bronze and be positively activated by the main operating rod.
- # Hydrant to be furnished with a sliding bronze drain valve. Sliding drain valves made of rubber, plastic or leather will not be allowed.
- # Hydrant must have an internal travel stop nut located in the top housing of the hydrant.

**HYDRANT SHALL BE WATEROUS PACER (Model number WB-67-250 with integral 4" storz nozzle).**

Hydrants shall not be located within twenty feet (20') of any building, nor will they be blocked by parking. The large hydrant port should face the road or travel way.

Guard posts a minimum of three feet (3') high shall be required for protection from vehicles when necessary. Such protection shall consist of four-inch (4") diameter steel pipes, six feet (6') long filled with concrete and buried a minimum of three (3') feet deep in concrete, and located at the corners of a six (6') foot square with the hydrant located in the center. Use of posts other than at the four corners may be approved by the City Engineer and Public Works Director.

### 3.30.503.003 - PRESSURE-REDUCING AND AIR RELEASE VALVES

The specific design and location for such valves will be reviewed and approved by the City Engineer and Public Works Director.

When designated by the City Engineer, air release valves shall be installed. Such valves will be required on large and small diameter lines at all high points in grade.

### 3.30.503.004 - DUCTILE IRON FITTINGS

All fittings shall conform to ANSI/AIWA Specification C110/A21.10 or ANSI/AIWA Specification C153/A21.53. All ductile iron fittings shall be rated at 350 psi working pressure. Fittings shall be factory lined with cement mortar or cement lined to factory standards. Fittings are to be cement lined and seal coated in accordance with ANSI/AIWA C 104/A21.4. All coated fittings must meet requirements of NSF-61. No field coating with cement will be approved, other than minor repairs. Fittings shall be new and free of defects in coating, body, and lining. During installation, fittings shall be properly aligned, and bolted securely to provide watertight joints.

### 3.30.503.005 - MECHANICAL JOINT RESTRAINT

The Contractor shall provide restrained joints at all tees, crosses, caps and bends.

Mechanical joint restraints should not be used on plain end fittings. Mechanical Joint restraints shall be: **MEGALUG brand, as manufactured by Ebaa Iron Sales Inc or Romogrip, as manufactured by Romac.**

### 3.30.503.006- SERVICE BRASS

All underground service line valves and fittings shall meet ANSI/AIWA C-800-89 Standards or latest version. Fittings shall be compression type with stainless steel gripping restraint. Fittings with spilt clamps will not be allowed. Corporation stops will be plug valve type in sizes 3/4" & 1" and ball valve type corporation stops in 1 1/2" & 2" sizes. Angle meter valves (3/4" & 1" SIZE) shall be full or reduced port angle ball valves rated at 300psi with copper tube size compression x swivel meter nut configuration. Flanged angle valves 1 1/2" & 2" shall be ball style rated at 300psi with lockwing.

### 3.30.503.007 -VALVE BOXES

Cast iron valve boxes shall be furnished with all valves 2" and larger and shall conform to the "Vancouver" style 910 valve box@ style with 3034 PVC bottom extensions. Valve lids shall be marked "WATER".

### 3.30.503.008 - BACKFLOW DEVICES

Devices shall be listed on latest edition of the University of Southern California (USC) Cross Connection Control list of approved backflow devices. The application must meet the Oregon Administration Rule on Cross Connection Control Requirements- Oregon Administrative Rules, Chapter 333.

OAR 333-61-070. Services larger than 1" shall have a premise isolation at the meter, services of this size are usually used for other than residential use. The degree of hazard shall be determined by the City of North Plains Cross Connection Inspector, thus determining the type of device needed.

### 3.30.504 - RAILROAD OR HIGHWAY CROSSINGS

All such crossings defined above, or as determined by the City to be of a hazardous nature, shall be valved on both sides of the crossing. Casing of railroad or highway crossings, if required, shall be as noted in the permit from the respective agency. It shall be the applicants responsibility to obtain such permits prior to city

approval of plans.

### 3.30.505 - WATER SERVICE LINES

The sizes of water service lines which may be used are 3/4", 1", 1-1/2", 2", 4", 6", 8", 10", and 12". Water service lines will be reviewed for effects on the distribution system and shall not be greater in size than the distribution main.

For services greater than two-inch (2"), a design drawing must be submitted showing the vault, fitting requirements and backflow device, with the expected flow (normal and maximum daily flow) requirements and proposed usage.

Domestic service lines 3/4" through 2" shall normally extend from the main to behind the curb with an angle meter stop and meter box located at the termination of the service connection. Meter to be provided and installed by City. Meter boxes are to be specified by the City of North Plains and provided by the developer. In general, individual service connections shall terminate in front of the property to be served and shall be located approx. two (2) feet on each side of a common property line.

Private plumbing permits from Washington County are required on private property.

When the service line is 1" or less, **Mid-States Plastics model MSBCF1118-12 with ductile iron reader lid, Amorcast 10x15 part no P600192x12 with reader lid part no A6001922R** or a **Christy FL12BOX meter box with a FL12F hinged lid cover** shall be provided.

Fire Service - There are three categories of private fire services: 1) hydrants, 2) fire sprinkler lines, and 3) combination hydrant and fire sprinkler lines.

The water fire service line shall normally extend from the main to the property line and end with a vault, metering device and valves. An approved back flow prevention device shall be required of the property being served.

Fire Vaults - A vault will be installed when a structure requires fire sprinklers. The vault drawing will be included on construction drawings submitted to the City. The vault shall contain all valves, fittings, meters, sump pump and appurtenances required for fire service to the development.

### 3.30.506 - SYSTEM TESTING

All new water systems (lines, valves, hydrants, & services) shall be individually pressure tested, chlorinated and tested for bacteria. All testing shall be performed in accordance with the AIWA Standards, North Plains Standard Specifications, OAR's and in the presence of a City inspector.

### 3.30.600 - STREETS

#### 3.30.601 - GENERAL DESIGN REQUIREMENTS

Performance Standards - All street designs shall provide for the safe and efficient travel to the motoring public. Streets shall be designed to carry the recommended traffic volumes identified for each street classification. Street classifications are set forth in Section **3.30.611** STREET SYSTEM DESCRIPTION AND FUNCTION.

**No road or utility construction shall commence prior to City approval of all of the following:**

- # **Construction plans**
- # **Payment of all applicable fees**
- # **Issuance of all applicable permits**

Designs submitted shall be stamped by a Registered Professional Engineer licensed to practice in the State of Oregon.

Streets shall be designed to meet or exceed minimum guidelines. These guidelines are set forth in the "AASHTO Policy on Geometric Design of Highways and Streets" (latest edition). Traffic Control Devices shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," Federal Highway Administration, with Oregon Supplements, Oregon Dept. of Transportation's (latest edition) and the Washington County Uniform Road Improvement.

All vertical and horizontal curves shall meet the guidelines of the AASHTO Policy and the design speed for each street classification. Where practical, the Design Engineer shall provide the desirable stopping sight distance set forth in the AASHTO Policy. But in no case shall it be less than the minimum stopping sight distance given be permitted.

#### 3.30.601.001 - RIGHT-OF-WAY AND PAVEMENT WIDTH

Right-of-way and minimum pavement widths for each street classification shall be as follows:

##### **Arterial:**

Right-of-way = 80'-100'

Pavement width = 48'

Sidewalk minimum 5' width

Commercial and Industrial areas no Parkway (grass strip) allowed between curb and sidewalk

##### **Collector:**

Right-of-way = 60'-80'

Pavement width = 50'

Sidewalk minimum 5' width

Commercial and Industrial areas no Parkway (grass strip) allowed between curb and sidewalk

##### **Local Residential:**

##### **Parking both sides of street**

Right-of-way = 50'-60'

Pavement width = 36'

Sidewalk minimum 5' width

**Parking on 1 side of street only**

Right-of-way = 46'  
Pavement width = 28'  
Sidewalk minimum 5' width

**Parkway (grass strip) allowed between curb and sidewalk**

**Cul-de-sac (option A)**

Right-of-way = 38'  
Pavement width = 28'  
Sidewalk minimum 5' width  
Min. 45' radius to curb

**Cul-de-sac (option B)**

Right-of-way = 34'  
Pavement width = 28'  
Sidewalk minimum 5' width  
Side walk limited to one side of street  
Min. 45' radius to curb

For street designated collector and below, the City Engineer may consider design modifications to conserve major trees in the public right-of-way. Subject to approval by the City Engineer, pavement width on a collector may be reduced to no less than 28 feet, pavement width on a local street or cul-de-sac may be reduced to no less than 28 feet.

**3.30.601.003 - ACCESS**

All development shall be provided public street access. Access roads - public and/or private, driveways, and easements shall be as set forth in other sections of these Design Standards.

**3.30.601.004 - TRAFFIC ANALYSIS**

The City Engineer and City Planner will require a traffic analysis report as determined by the type of development and its potential impact to existing street systems. A traffic analysis may be required for a development 1) when it will generate 1,000 vehicle trips per weekday or more, or 2) when a development's location, proposed site plan, traffic characteristics could affect traffic safety, access management, street capacity, or known traffic problems or deficiencies in a development's study area.

The report will be prepared by a licensed traffic engineer in the State of Oregon. At a minimum, the report shall contain the following:

1. Purpose of Report and Study Objectives

A discussion of key traffic issues to be addressed and the transportation system and development objectives related to a specific development.

General transportation system objectives are:

# To maintain easy and safe traffic flow on surrounding street system.

- # To provide effective and safe transfer of vehicle traffic between the site and the street system.
- # To provide convenient, safe and efficient on-site and off-site movement of vehicles, pedestrians, transit, service and delivery vehicles, and bicycles.
- # To effectively mitigate adverse site-generated traffic impacts on affected streets, and intersections. Site-specific objectives may be established by the City for each study.

2. Executive Summary

A concise summary of the study purpose/objectives, site location and study area, development description, key assumptions, findings, conclusions and recommendations.

3. Description of Site and Study Area Roadways

A description of the site and study area, existing traffic conditions in the study area, and anticipated nearby development and committed roadway improvements which would affect future traffic in the study area.

The study area will be defined by:

All roads, ramps and intersections through which peak hour site traffic composes at least 5% of the existing capacity of an intersection approach, or roadway sections on which accident character or residential traffic character is expected to be significantly impacted.

On-site Traffic Evaluation

An evaluation of the proposed (and alternative) site access locations, the adequacy of access drive depth, driveway lanes, and queuing storage, the safety and efficiency of proposed vehicular circulation, parking layout, pedestrian and service vehicle routes/facilities, together with recommendations for on-site traffic markings and controls.

Technical Appendix.

A technical appendix including work sheets, charts, traffic count, drawings to support findings as described in the body of the report.

2. Recommendations for Public Improvements

Recommendations should be made for external roadway improvements, such as additional through lanes and turn lanes, and traffic control devices necessitated as a result of the development. Recommended improvements to transit facilities, and pedestrian and bike circulation should also be reported.

The recommendations should specify the time period within which improvements should be made, particularly if improvements are associated with a phased development, the estimated cost of improvements, and any monitoring of operating conditions and improvements that may be needed. If needed street improvements, unrelated to the development, are identified during the analysis, such improvements should be reported.

3. Access Management.

On sites with arterial and collector street frontages, the report shall evaluate and recommend the use of access management plans or techniques:

# To separate basic conflict areas. Reduce number of driveways or increase spacing between driveways and intersections.

# To remove turning vehicles or queues from the through lanes. (Reduce both the frequency and severity of conflicts by providing separate paths and storage area for turning vehicles and queues.) These techniques may include turn restrictions, striping, medians, frontage roads, channeling of lanes or driveways, shared driveways and access between similar uses, access consolidation, lanes for left or right turns, and other transportation system management (TSM) actions.

4. A review of alternative access points for site access to highways, city streets, and county roads.

5. The analysis of alternate access proposals should include:

A. Existing daily and P. M. peak hour counts, by traffic movements, at intersections effected by generated traffic from the development. (Use traffic flow diagrams).

B. Projected daily and P.M. peak hour volumes for these same intersections and proposed access points when the development is in full service. (Use traffic flow diagrams.)

C. A determination of the existing levels of service and projected levels of service at each intersection and access points studied.

D. A discussion of the need for traffic signals. This should include a traffic warrant computation based on the National Manual on Uniform Traffic Control Devices.

1. The recommendations made in the report should be specific, and should be based on a minimum level of service when the development is in full service. As an example, if a traffic signal is recommended, the recommendation should include the type of traffic signal control and what movements should be signalized. If a storage lane for right turn or left turn is needed, the recommendation should include the amount of storage needed. If several intersections are involved for signalization, and an interconnect system is considered, specific analysis should be made concerning progression of traffic between intersections.

2. The report should include a discussion of bike and pedestrian usage and the facilities provided along with the availability of mass transit to serve the development, if appropriate.

3.30.601.004 - INTERSECTIONS

Connecting street intersections: shall be located to provide for traffic flow, safety, and turning movements, as

conditions warrant.

Arterial Intersections: Exclusive left and right turn lanes will be provided, bus turnouts will be provided if traffic flow and safety conditions warrant and designated crosswalks will be provided at controlled locations and street alignments across intersections shall be continuous.

Collector and Local Street Intersections: Street and intersection alignments should facilitate local circulation but avoid alignments that encourage non-local through traffic.

Streets shall be aligned so as to intersect at right angles (90°). Angles of less than 75° will not be permitted. Intersection of more than two streets at one point will not be permitted.

New streets shall intersect with existing street intersections so that centerline is not offset, except as provided below. Where existing streets adjacent to a proposed development do not align properly, conditions may be required of the development to provide for proper alignment.

For intersections which are not directly aligned with street centerline, the centerline spacing must meet the following minimum separation distance:

| <u>Street Class</u> | <u>Intersection Spacing (ft)</u> |
|---------------------|----------------------------------|
|                     | 500*                             |
| Collector           | 400*                             |
| Local               | 300*                             |
| Cul-de-sac          | 150                              |

\* The City Engineer may permit a minimum spacing of not less than 300 feet (Arterial), 200 feet (Collector), 200 feet (Local), when findings are made to establish that:

1. Without the change, there could be no public street access from the parcel(s) to the existing street, and
2. All other provisions of the street design requirements can be met.

### 3.30.601.005 - HALF-STREET CONSTRUCTION

Half-street construction is generally acceptable with prior approval from the City. Where such a street is justified, the right-of-way and pavement width will be approved by the City Engineer. In no case shall the pavement width required be less than that required to provide two lanes of traffic to pass at a safe distance. For a 32-foot local street the half-street pavement width will be 20-feet. Half-streets will only be approved when the abutting or opposite frontage property is undeveloped and the full improvement will be provided with development of the abutting or opposite (upon right-of-way dedication) frontage property.

Half-street improvements shall include curb, sidewalk and storm drainage on one side of the street. When a half-street improvement is required, the entire street shall be designed. Storm drainage shall require approvals of Clean Water Services.

A development on an unimproved street shall be responsible for constructing a continuous City standard street to a connection with the nearest standard (publicly-maintained) street.

3.30.601.006 - STREET CLASSIFICATION

All streets within the City shall be classified as listed in Section **6.0110** STREET SYSTEM DESCRIPTION AND FUNCTION. The classification for any street not listed shall be that determined by the City Engineer.

3.30.601.007 - DESIGN SPEED

Design speeds for classified streets shall be as follows:

|            |           |
|------------|-----------|
| Collector  | 35-45 mph |
| Local      | 25-40 mph |
| Cul-de-sac | 25 mph    |
|            | 25 mph    |

3.30.602 - HORIZONTAL/VERTICAL CURVES, AND GRADES

3.30.602.001 - HORIZONTAL CURVES

Horizontal curve radius (on centerline) for each street classification shall be designed according to the roadway design speed. The radius shall not be less than the following:

|            |          |
|------------|----------|
|            | 415-600' |
| Collector  | 165-275' |
| Local      | 100'     |
| Cul-de-sac | 100'     |

3.30.602.002 - VERTICAL CURVES

Vertical curve length shall be based on the design criteria which includes: (1) design speed, (2) crest vertical curve, and (3) sag vertical curve. Stopping sight distance for crest and sag vertical curves shall be based on sight distance and headlight sight distance, respectively.

All vertical curves shall be parabolic and the length shall be computed for each location.

3.30.602.003 - GRADES

Maximum grades for each street classification shall be as follows:

|            |             |
|------------|-------------|
|            | 0.060 ft/ft |
| Collector  | 0.080 ft/ft |
| Local      | 0.100 ft/ft |
| Cul-de-sac | 0.120 ft/ft |

Local and cul-de-sac streets may exceed 12%, but in no case permitted to exceed 16%. The City Engineer may approve a grade greater than 12% when all of the following conditions exist:

1. Topographic constraints do not allow the development to be served by a street with a maximum grade of 12% without causing de-stabilization of soils by excessive cuts and fills.
2. There is no access to the property being developed through adjacent properties at a maximum 12% grade.
3. The section of local street will not exceed a combination of length, horizontal alignment, and/or grades exceeding 12% which will create hazardous traffic conditions.
4. In no case shall the maximum street grade exceed 16%.

Minimum grade for all streets shall be 0.0050 feet per foot (0.50%) however, in all cases, street grades shall allow for proper and adequate drainage. Cul-de-sac "bulbs" shall have a minimum slope of 0.0060 feet per foot (0.60%).

Street cross-slopes shall be two (2) percent. Where there are site constraints the cross slope can vary from one (1) to three (3) percent.



3.30.603 - PAVEMENT DESIGN

In general, all streets shall be constructed with asphaltic concrete type "C"; however, Portland Cement Concrete (PCC) streets are permitted as approved by the City Engineer.

Typical flexible pavement thickness= will be as shown in the. This will apply only to local streets and lower classifications.

The Engineer will provide a street structural design section for all roadways classified Neighborhood Collector and higher, and local streets in industrial zones. A structural design section will also be required when the soils report indicates poor soil.

3.30.604 - CONCRETE CURB

All development projects will be required to construct street improvements with concrete curbs. Standard Curb shall only be used on streets classified Collector and lower when the longitudinal street grade is 0.10 feet per foot (1.0%) or greater. All others curb and sidewalks shall be separated by a planter stip. Monolithic Curb and Gutter shall be used on streets classified Collector and higher and when the longitudinal street grades less than 1.0%. Curb exposure for Standard Curb is seven (7) inches, and nine (9) inches at catch inlets. Curb exposure for monolithic curb and gutter shall be six (6) inches, and eight (8) inches at catch insets. Joint spacing in curbs shall be 15-foot maximum for contraction joints and 45-foot maximum for expansion joints. In addition, expansion joints shall be located at all curb return points and at driveway curb drop transition points.

A minimum of two drainage block-outs to accommodate 3" drain pipe shall be provided for each lot. Typically, these block-outs are located five feet (5') from each side property line.

3.30.604.001 - CURB RETURN RADIUS

Curb return radius at street intersections shall be designed to accommodate all expected traffic. Minimum curb radius required shall be as follows:

| <u>Intersection</u>                         | <u>Radius</u> |
|---|---------------|
| Local/Cul-de-sac with Local/Cul-de-sac      | 20'           |
| Local/Cul-de-sac with Collector             | 20'           |
| Local/Cul-de-sac with Collector or Arterial | 30'           |
| Collector with Collector or Arterial        | 30'           |
| Collector/Arterial with Collector/Arterial  | 30'           |

Streets serving commercial/industrial properties may be required to install larger curb radius as required for vehicle movements.

3.30.605 - PARKING

| <u>Street Class</u> | <u>Parking Lanes</u> | <u>Parking Required</u>      |
|---------------------|----------------------|------------------------------|
| Arterial            | None                 | May be allowed in some areas |
| Collector           | 2                    | Variable (1)(2)              |

Local 2 Yes (3)(4)

Cul-de-sac 1 Yes (3)(4)

1. Where bike lanes exist on collectors, parking may be prohibited.
2. Collector - No parking within 45' of curb return.
3. Local - No parking within 30' of curb return.
4. Local Streets and Cul-de-sacs which are approved for reduced 40 feet right-of-way and 28 feet pavement, will be required to have one parking lane to assure that on-street parking is adequate for adjacent uses, a reduced street design will consider clustered parking bays adjacent to the street, if needed. Parking will not be allowed in a reduced radius cul-de-sac bulb. SEE SECTION 3.30.601.001.

For streets designated collector and below, the City Engineer may consider design modifications to conserve major trees in the public right-of way. Subject to approval by the City Engineer, parking lanes may be removed on one or on both sides of a street.

Design standards - parking and loading.

1. Scope.
  - A. These design standards shall apply to all parking, loading and maneuvering areas.
  - B. All parking and loading areas shall provide for the turning, maneuvering and parking of all vehicles in the lot.
2. Access.
  - A. Where a parking or loading area does not abut directly on a public street there shall be provided an unobstructed drive and not less than 20 feet in width for two-way traffic, leading to a public street, and traffic directions shall be plainly marked.

Parking area improvements. All public or private parking areas which contain three or more parking spaces and outdoor vehicle areas shall be improved according to the following.

1. All parking areas shall have durable, dust free surfacing of asphaltic concrete, Portland cement concrete or other approved materials. The design section shall conform to the use and the soils report. All parking areas, including those in conjunction with a single family or two-family dwelling, shall be graded so as not to drain excess storm water over the public sidewalk or onto any abutting public or private property.
2. All parking areas, except those required in conjunction with single family or two-family dwellings or vehicle sales areas, which abut a residential district, shall conform to the screening requirements as set forth in the city's site design ordinance.

3. All parking areas, except those required in conjunction with single family or two-family dwellings or vehicle sales areas may contain a maximum of 25% of the parking spaces sized for compact vehicles.
4. All required handicapped parking space shall conform to ORS 447.210 and shall be a minimum of 14 feet in width.
5. All parking areas, except those required with single family or two family dwellings or vehicle sales areas, shall have physically marked individual parking spaces such as painted lines, lettering, curbs and landscaping.

Table of Standards. The following table provides the minimum dimensions of parking stall's, length and width, aisle width and maneuvering space, of public or private parking areas. All parking facilities shall meet these minimum standards. The width of each parking space includes a four inch (4") wide stripe which separates each space. Compact spaces are noted in parenthesis:

| Angle from Curb | Stall Width "A" | Channel Width "B" | Aisle Width "C" | Curb Length per stall "D" |
|-----------------|-----------------|-------------------|-----------------|---------------------------|
| Parallel        | 9' 0" (8'6")    | 9' 0" (8' 6")     | 12' 0" (12' 0") | 23' 0" (20' 0")           |
| 30°             | 9' 0" (8'6")    | 16' 10" (14' 10") | 12' 0" (12' 0") | 18' 0" (17' 0")           |
| 45°             | 9' 0" (8'6")    | 19' 1" (16' 7")   | 14' 0" (14' 0") | 12' 9" (12' 0")           |
| 60°             | 9' 0" (8'6")    | 20' 1" (17' 3")   | 18' 0" (18' 0") | 10' 5" (10' 3")           |
| 90°             | 9' 0" (8'6")    | 18' 0" (15' 0")   | 24' 0" (24' 0") | 9' 0" (8' 6")             |

SEE SAMPLE ILLUSTRATION

### 3.30.606 - SIDEWALKS

In general, new sidewalks are required for all development requiring a development permit.

#### Minimum Sidewalk Width

| Street Class/Location | Not Including 6" curb |
|-----------------------|-----------------------|
|-----------------------|-----------------------|

|            |    |                       |
|------------|----|-----------------------|
| Arterial   | 5' |                       |
| Collector  | 5' | Residential           |
|            | 5' | Commercial/Industrial |
| Local      | 5' | Residential           |
|            | 5' | 40' R/W - Residential |
|            | 5' | Commercial/Industrial |
| Cul-de-sac | 5' | Residential           |
|            | 5' | 40' R/W - Residential |
|            | 5' | Commercial/Industrial |

Sidewalks **do not** include a six inch curb as a portion of the minimum width. Sidewalks may be required to meander within the dedicated right-of-way or outside of the right-of-way within an easement with the approval of the City Engineer.

For streets designated collector and below, the City Planning Commission may consider design modifications to conserve major trees in the public right-of-way. Subject to approval by the City Planning Commission, sidewalks may be deleted on one side of a street. Pedestrian paths shall also be a minimum of 5' in width.

3.30.606.001 - WHEELCHAIR RAMPS

Each corner at all intersections shall contain wheelchair ramps for handicapped access located within the curb return. Ramps shall also be located wherever an accessible route crosses a curb. In residential areas the ramp will be located at the midpoint of the curb return. On streets classified above local or cul-de-sac, ramps may be required at different locations within the curb return. It may also be required to construct two (2) ramps at a curb return when a different location is required.

Locations of sidewalk ramps shall be designed with regard to storm water flows, street grades, and pole locations. Other factors may also dictate sidewalk ramp location.

3.30.607 - BIKEWAYS

This summarizes the City's policy and implementation strategies for bike ways within the City and for connection with metropolitan bike ways. The City's plan has adopted both AASHTO and ODOT standards and criteria as the minimum guidelines for bike way design, construction and control.

The City's adopted guidelines for bike ways consist of the following:

1. Guide for Development of New Bicycle Facilities 1981
2. AASHTO, Oregon Supplements and Exceptions to AASHTO Guide
3. Manual on Uniform Traffic Control Devices with Oregon supplements by Oregon Transportation Commission

3.30.607.001 - BIKEWAY LOCATION, WIDTH

| <u>Bikeway Location</u> | <u>Minimum Width</u> | <u>Comments</u> |
|-------------------------|----------------------|-----------------|
|-------------------------|----------------------|-----------------|

6\*\*\*

Each direction of travel

One way pavement width greater

than 12' - desirable one way pavement width is 14' or greater

\* Paths are constructed with 2' gravel shoulders on both sides.

\*\* An eight-foot section is required unless this width is not practical because of physical or economic constraints. A minimum width of four feet may be designated as a bicycle lane.

3.60.607.002 - DESIGN CRITERIA

In general, bikeway design shall meet the adopted standards referred to in Section 3.30.606.

All bike ways shall have a minimum cross-slope of two percent (2%) and a maximum cross-slope of five percent (5%). On curved alignments, the cross-slope shall be to the inside of the curve.

Bikeway curvature will be based on a minimum design speed of 20 mph. Bikeway grades shall be limited to a maximum of five percent (5%). Where topography dictates, grades over five percent (5%) are acceptable when a higher design speed is used and additional width is provided.

3.60.607.003 - CONSTRUCTION

Off-street bike ways shall be constructed for two different situations. The two situations are: Where limited maintenance vehicle (City-owned) use will occur, and where heavy maintenance vehicle use will occur. In both cases, sub grade preparation will require removal of existing organic material and compaction.

**Bikeway Thickness**

| <u>Use</u> | <u>Asphalt</u> | <u>Aggregate</u> |
|------------|----------------|------------------|
|            | 2"             | 6"               |
| Heavy      | 3"             | 8"               |

When drainage, such as side ditches, is required parallel with the bike way, the ditch centerline shall be at least five feet (5') from the edge of the pavement. Ditch side slope adjacent to the bike way shall be no steeper than 2:1 when measuring the horizontal distance to the vertical distance.

When culverts cross bike ways, the ends of the pipe shall be no closer than five feet (5') from the edge of the bike way.

3.30.607.004 - LIGHTING

Lighting should be included in the bikeway design when nighttime security could be a problem and a high nighttime use is expected (i.e., paths serving students, commuters). The horizontal illumination levels shall be .05 foot candle (5 lux) to 2 foot candles (22 lux) except when security problems exist. Higher illumination levels should be considered in these locations. The placement of the light standards (poles) shall meet all vertical and horizontal clearances.

3.30.607.005- DETERRING MOTOR VEHICLE USE

Bike paths intersecting with roadways require physical barriers to deter use by unauthorized motor vehicles. A lockable, removable post(s) may be used to discourage such use and still permit authorized vehicles to access the paths. The post shall be brilliantly colored and permanently reflectorized. If more than one (1) post is required, the spacing shall not exceed a separation of more than five (5) feet.

An alternative to deterring the motor vehicles is to design two (2) five (5) foot wide lanes separated by low landscaping at the intersection.

3.30.608 - DRIVEWAYS

Access to private property shall be permitted with the use of driveway curb cuts. The access points with the street shall be the minimum necessary to provide access while not inhibiting the safe circulation and carrying capacity of the street.

On Collector streets and above, one driveway per site frontage will be the normal maximum number. Double frontage lots and corner lots on these streets may be limited to access from a single street, usually the lower classification street. If additional driveways on a frontage are approved by the City Engineer, a finding shall be made that no eminent traffic hazard would result and impacts on through traffic would be minimal. Restrictions may be imposed on additional driveways, such as limited turn movements, shared access between uses, closure of existing driveways, or other access management actions.

Driveway approach types, Residential Driveway, Commercial/Industrial Driveways, must be approved by the City Engineer.

Should the length of a driveway be greater than fifty (50) feet in length and the driveway has only one (1) access to the street or does not loop to the street, a turnaround shall be provided. The minimum inside radius of the turn around shall be fifteen (15) feet with a width at the turnaround point of thirty (30) feet for maneuvering.

TABLE 6 - I

Driveway Widths (Min-Max)

| <u>Street Class.</u> | <u>Res.</u> | <u>Comm/ Ind.</u> | <u>No. Allowed</u>                                 |
|----------------------|-------------|-------------------|--|
| Arterial             | 12/24(2)    | 15/40             | Res.- 1/ 250' frontage<br>Com.- 1/<br>250'frontage |
| Collector            | 12/24 (2)   | 15/40             | Res.- 1/ frontage<br>Com.- 1/ frontage<br>(5)      |
| Local                | 12/24 (2)   | 15/40             | Res.- 1/ frontage<br>Com.- 1/ frontage             |
| Cul-de-sac           | 12/24 (2)   | 15/40             | Res. 1/ frontage                                   |

Res. = Residential Zone      Com.= Commercial Zone      Ind.= Industrial Zone

- Notes: (1) Special conditions may warrant access.  
 (2) 24=width up to 50 > of lot frontage. (Wider than 50= of frontage- 24= + 1 foot/foot of lot frontage driveway not to exceed 35= in width)  
 (3) Frontage greater than 130' permitted one additional curb cut.  
 (4) Build to Collector standard.  
 (5) Certain businesses may warrant one additional curb cut for service driveways .

TABLE 6 - 2

Driveway Locations (minimum distance to curb return)

| <u>Street Classification</u> | Residential | Commercial | Industrial |
|------------------------------|-------------|------------|------------|
|                              | 100' (1)(3) | 100'       | 100'       |
| Collector                    | 45'(3)      | 100'       | 100'       |
| Local                        | 45'(2)      | 45'        | 45'        |
| Cul-de-sac                   | 45'(2)      | 45'        | 45'        |

- Notes:** (1) Minimum distance from curb return unless this prohibits access to the site.  
 (2) 25 feet will be allowed for corner lots with limited frontage where distance requirements cannot be met.  
 (3) Direct access to this street will not be allowed, if an alternative exists or is planned.

For classification of Collector and above, driveways adjacent to street intersections shall be located beyond the required queue length for traffic movements at the intersection. If this requirement prohibits access to the site, a driveway with restricted turn movements may be allowed.

Within commercial, industrial and multi family areas shared driveways and internal access between similar uses are encouraged to reduce the access points to the higher classified roadways, to improve internal site circulation, and to reduce local trips or movements on the street system. Shared driveways or internal access between uses will be established by means of common access easements at the time of development.

Driveway grades shall not exceed twelve percent (12%) from the curb line to the property line.

3.30.609 - STREET LIGHTING, NAMES AND SIGNAGE

3.30.609.001 - ~~STREET LIGHTING~~ LIGHT FIXTURE AND POLES

A complete street lighting system shall be the responsibility of the development. All streets fronting the property shall be provided with adequate lighting. Developer is required to provide lighting for public convenience and safety.

All street lighting shall be designed using the illuminating Engineering Society guidelines. All street light poles

should be located near property lines and at least 25 feet from any trees, unless otherwise pre approved in writing by the Public Works Director.

All electrical components shall be UL approved or approved equal and testing lab approved from labs accepted by the State of Oregon.

All street light plans shall include: pole locations, conduit locations, junction box locations, transformer/controller cabinet locations, photometrics (or P.E. Certification)

The contractor shall be responsible to provide all required traffic control.

The contractor shall be responsible for making arrangements with PGE for connecting the street lighting system to the local distribution system.

The following codes and references shall be used in designing all street light systems:

1. State and National Electric Code (current edition). Engineer to obtain copy of final electrical inspection from the contractor and submit to the City along with his daily inspection reports.
2. An Information Guide for Street Lighting by AASHTO.
3. Fundamentals of Traffic Engineering by the Institute of Transportation Studies (current edition).

Street lighting shall be provided as part of the street design process. Design illumination levels shall be in accordance with the recommendations if the "Illuminating Engineering Society" and are summarized in the following table.

RECOMMENDATIONS FOR ROADWAY AVERAGE  
MAINTAINED HORIZONTAL ILLUMINATION

| Roadway<br>Classification | Foot Candles      |                           |                    |
|---------------------------|-------------------|---------------------------|--------------------|
|                           | <u>Commercial</u> | <u>Urban Intermediate</u> | <u>Residential</u> |
| Highway                   | 1.4               | 1.2                       | 1.0                |
| 2.0                       | 1.4               | 1.0                       |                    |
| Collector                 | 1.2               | 0.9                       | 0.6                |
| Local/Cul de sac          | 0.9               | 0.9                       | 0.6                |

The average-to-minimum uniformity ratios for roadways in commercial and intermediate areas shall be 4:1 or better. In residential areas this uniformity ratio shall be 6:1 or better.

The street lighting system shall be provided using high pressure sodium vapor luminaries. The design average horizontal illumination and uniformity ratio shall be obtained by considering together the factors of lamp wattage, pole support spacing, maintaining height and luminaire of the street lights to locate poles at lot line extensions and not in the middle of a lot, and to locate poles at corners.

Light fixtures and poles shall be one of two types depending on location and required illumination pattern:

1. For lighting with poles of a maximum height of less than twenty-five feet (20'5), the ~~Acorn Streetlight with Acrylic Roof mounted on fluted cast aluminum post shall be used.~~ Hado Utility Westbrooke, black flared lamp, mounted on the cast aluminum fluted pole with grape leaf logo shall be used.
2. For illumination patterns requiring poles of heights greater than twenty-five feet (20'5), the Gray Cobrahead Flat Lens shall be mounted on an aluminum pole with a regular mast arm.

Lamp wattage and pole locations shall be determined by Illuminating Engineering Society guidelines. No substitutions of pole materials will be allowed without Public Works Director and City Engineer approval.

**No substitutions of pole material will be allowed without written approval of the Public Works Director and City Engineer.**

### 3.30.609.002 - STREET NAMES AND TRAFFIC CONTROL

Street names for all new development will be approved by the City prior to recording of any maps or plats. The development shall pay for all street name and traffic control signage prior to the signing of the final plat or map by the City. All new Signage will be provided by the developer and installed by the City in new developments.

Street names shall conform with the established grid system(s) in the City and its UGB. No new street name shall be used which will duplicate or be confused with the name of existing streets in the UGB area.

Building numbering will be issued by the City of North Plains.

### 3.30.610 - MAILBOXES

Mailboxes located within the right-of-way shall be either gang box style or an Oregon Spec Multiple Mailbox Support. Location of each type shall be set by the North Plains Postmaster and the Public Works Director.

### 3.30.611 - STREET SYSTEM DESCRIPTION AND FUNCTION

#### 3.30.611.001 - GENERAL GUIDELINES

The urban boundary map, policies and access requirements for various land uses, as adopted by Ordinance **288**, shall serve as guidelines for the functional classifications, definitions and standards requirements and rules adopted under this chapter.

#### 3.30.611.002 - FUNCTIONAL CLASSIFICATIONS

Functional classification categorizes roads and streets by their operational purpose. Some of the key factors considered when adopting the functional classifications were the following:

1. Relation between street traffic and land use of the abutting properties.
2. Volume and kinds of traffic.
3. Relative origins and destinations of traffic and lengths of trips.

The basic hierarchy of functional classification is Arterial streets, Collector streets and Local/Cul-de-sac streets. These categories are defined as follows:

Arterial streets: Arterial streets carry higher volumes of traffic, usually over 4,000 vehicles/day and are generally consist of three or more lanes, with the third lane being a common turn lane. Their function is to serve intra-county trips; that is, trips which have at least one end trip within the county.

Collector streets: Collector streets gather area traffic from local streets within a one-half mile radius and connect it to the arterial system. They are not intended to serve through traffic, and they are the lowest order of streets designed to carry transient vehicles. Collector streets generally have a traffic volume rate of 1,000 to 4,000 vehicles/day. Abutting land uses are generally residential.

Local streets: Local streets provide access to abutting property and do not serve to move through traffic. Local streets standards will be further categorized by adjacent land use into residential, commercial and industrial local streets.

Local streets - (Commercial/Industrial): Within the local street classification, there may be considerable difference between the kind of improvement specified where commercial or industrial land uses access a local street, as compared to the kind of improvement specified for residential access. Generally, a local street classification in commercial or industrial areas will require an improvement equal to that specified for a collector classification.

Cul-de-sac streets: Cul-de-sac streets provide access to abutting property only and will be as short as possible, in no event shall a Cul-de-sac be more than 600' in length and shall not serve more than 20 dwelling units.

The length of a Cul-de-sac shall be measured along the centerline of the roadway from the near side of the intersecting street to the farthest point of the Cul-de-sac.

All Cul-de-sac streets shall terminate in a circular turnaround.

Minimum radius for cul-de-sacs shall be no less than 45 feet from center of turn around to face of curb.

### 3.30.612 - PERMANENT DEAD-END STREETS

A standard cul-de-sac turnaround shall be provided at the end of a permanent dead-end street that does not provide looped circulation. Permanent dead-end streets shall be limited to serving no more than twenty dwellings and shall not exceed six hundred feet in length from the point of the nearest centerline/centerline intersection.

A permanent dead-end street is measured from the right-of-way line at the nearest intersecting street, which has at least two points of access, to the right of way line at the furthest end of the dead-end street. Exceptions to the dead-end street standard must comply with the Community Development Plan.

An existing dead-end street system which is more than 600 feet long or which serves more than 20 dwelling units may be terminated in a cul-de-sac if no Future Street Plan has been adopted and the following criteria are met:

1. Alternative emergency vehicle access or fire protection is provided satisfactory to the local Fire Authority and;
2. Neighborhood traffic circulation needs are not adversely impacted by the proposed cul-de-sac termination of the street.

Temporary dead-end streets more than one-hundred-fifty (150) feet in length shall be provided with an approved turn-around for emergency vehicles.

### 3.30.613 - ALLEYWAYS AND PRIVATE RESIDENTIAL STREETS/ACCESS WAYS

#### 3.30.613.001 - ALLEYWAYS

Alleyways may be provided in commercial and industrial developments with approval by the City Engineer. When approved, alleyways shall be dedicated to the city. The right of way width shall be 20 feet with a 20 foot pavement width.

Design for alleyways shall meet the same criteria as other public streets. The exceptions to those criteria may be centerline radius and design speed. Generally, alleyways shall be designed for one-way operations.

#### 3.30.613.002 - PRIVATE RESIDENTIAL ACCESS WAYS

In general, private residential streets and access ways shall be provided for multi family developments such as condominiums and apartments. Interior design for private access ways in a manufactured home park shall meet standards for private residential access ways include:

1. Dead-end access ways shall not exceed 600 feet in length nor serve more than 25 dwellings units. Dead-end access ways which exceed 150 feet in length shall be provided with an approved turnaround.
2. "Private Street" Signage and driveway approach shall be placed at the intersection with the

public street to clearly identify the private access way.

3. Private maintenance of the private streets/access ways shall be provided by a Homeowner's Association or other appropriate entity. Maintenance shall insure continual emergency access at all times.
4. Location of private access ways shall meet the Uniform Fire Code and meet the minimum pavement section of local residential streets.
5. Private residential access ways shall not be allowed in Manufactured Home Parks or Subdivisions.
6. Private residential access ways require Washington County building permits.

#### 3.30.613.004 - PAVEMENT CUTS

Where pavement is installed next to existing pavement and at all trench cuts, the existing pavement shall be saw cut. The face of the joint between the new and existing pavement shall be coated with asphalt emulsion and the surface of the joint shall be sand sealed.

#### 3.30.613.005 - SHOULDERS

Where sidewalks and pavement end or where there is no curb and sidewalk (such as half-street improvements) shoulder rock shall be provided to grade with the pavement. Shoulder rock shall be a minimum of six (6") inches in depth, thirty six inches (36") wide and shall be 3/4-inch minus crushed.

#### 3.30.613.006 - CULVERTS

Streets without curbs and gutters are designed to carry run-off to adjacent ditch lines. When ditch lines are filled and culverts installed the run-off water is conveyed and velocities and hydraulics increase to adjacent ditch lines, thus causing erosion and flooding problems.

If a property has an open ditch line in the right of way area the maximum culvert crossing shall be set forth by the width of the driveway approach (Section 3.30.608).

All pipes and culverts shall be a minimum of twelve(12) inches in diameter. For pipes and culverts not of circular cross-section the minimum clear dimension that crosses the centroid shall be twelve (12) inches.

Washington County Uniform Road Improvement Design Standards and Clean Water Services Drainage Standards, minimum pipe size is 12" in diameter.

Pipe and culverts may be constructed of the following materials:

- # concrete
- # asphalt coated corrugated steel
- # polymer coated corrugated steel
- # corrugated aluminum
- # polyvinyl chloride
- # corrugated polyethylene
- # cast iron
- # ductile iron

The material used shall be adequate to carry anticipated dead and live loads within deflection limits specified by the manufacture. All pipe and culverts shall have a minimum design service life of seventy five (75) years based on manufacture recommendations and be per applicable ASTM (American Society of Testing Material) standards. All pipes and culverts shall be strong enough to withstand stresses created by cleaning equipment. Installation techniques shall be documented and follow manufacturers recommendation.

Minimum cover for plastic pipes shall be three (3) feet to finish grade.

### **3.30.700 - PERMIT**

A permit shall be obtained before beginning construction, alteration or repairs, using application forms furnished by the City of North Plains.

#### 3.30.701 - APPLICATION FOR PERMIT

Reference City of North Plains Comprehensive Plan and Zoning Development Code, Chapter 16.39

##### 3.30.701.001- APPLICATION

To obtain a permit, the applicant shall first file an application therefore in writing on a form furnished by the City of North Plains for that purpose. Every such applicant shall:

1. Identify and describe the work to be covered by the permit for which application is made.
2. Describe the land on which the proposed work is to be done by legal description and street address or similar description that will readily identify and definitely locate the proposed work location.
3. Indicate the purpose, justification & reason for which the proposed work is intended.
4. Be accompanied by plans, diagrams, computations, specifications and other data as required.
5. Be signed by the Permitted, or his authorized agent.
6. Give such other data and information as may be required by the City.

##### 3.30.701.002 - PERMIT FEES

Permit fees are established by the Washington County and the City of North Plains.

##### 3.30.702.003 - EXPIRATION

Every permit issued by the City of North Plains under the provisions of the Codes and/or Ordinances of the City shall expire by limitation and become null and void if the building or work authorized by such permit is not commenced within 12 months from the issue date of the permit, or if the building or work authorized by such permit is suspended or abandoned at any time after work is commenced for a period of six months. Before work can be resumed, a new permit shall be obtained to do so, and the fee therefore shall be one-half the amount required for a new permit for such work, provided no changes have been made in the original plans and specifications for such work; and provided further that such suspensions or abandonment has not exceeded twelve months.

A Permitted holding an unexpired permit may apply for a one-time extension, provided he can show good and satisfactory reasons, and beyond his control the work cannot be commenced within the twelve month period from the issue date. In order to renew work on a permit after it has expired, the Permitted shall pay a new full permit fee.

##### 3.30.701.004 - INVESTIGATION FEE

An investigation fee, in addition to the permit fee, may be collected whether or not a permit is then or subsequently issued. The investigation fee shall be equal to the amount of the permit fee required by this code. The minimum investigation fee shall be the same as the minimum fee set forth in Table No. 1. The payment of such fee shall not exempt any person from compliance with all other provisions of this code nor from any penalty prescribed by law.

#### 3.30.701.005 - PENALTY

Any person, firm or corporation violating any of the provisions of the Codes and/or Ordinances of the City, shall be guilty of a misdemeanor and each such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of the codes and/or City Ordinances is committed, continued or permitted, and upon conviction of any such violation such person shall be punishable by a fine, or by imprisonment, or by both such fine and imprisonment as established by local applicable laws.

#### 3.30.701.006 - RIGHT OF APPEAL

#### 3.30.701.007 - PLANS

When required by the City, plans shall be drawn to scale and shall be of sufficient clarity to indicate the nature and extent of the work proposed and shall show in detail that it will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations. Plans shall include a plot plan drawn to scale showing the locations of all easements, drainage facilities, adjacent grades, property lines, the proposed building and of every existing building on the property. Two sets of plans required. One additional complete set of plans shall be kept on the job site at all times and made readily accessible to the inspector. Plans shall be meet requirements set forth in Section 3.30.100 of these construction standards.

#### 3.30.702 - INSPECTIONS

#### 3.30.702.001 - GENERAL

All construction or work for which a permit is required shall be subject to inspection by the City and all such construction or work shall remain accessible and exposed for inspection purposes until approved by the City Inspector. In addition, certain types of construction shall have continuous inspection.

Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of the Codes and/or Ordinances of the City of North Plains. Inspections presuming to give authority to violate or cancel the provisions of the Codes and/or Ordinances of the City of North Plains shall not be valid.

It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the Inspector nor the City of North Plains shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

A survey of the job site may be required by the City to verify that the improvement is located in accordance with the approved plans.

#### 3.30.702.002 - INSPECTIONS FOR RIGHT - OF - WAY IMPROVEMENTS

#### 3.30.702.003 - INSPECTION RECORD CARD

3.30.702.004 - INSPECTION REQUESTS

It shall be the duty of the person doing the work authorized by a permit to notify the City that such work is ready for inspection. The City may require that every request for inspection be filed at least one working day before such inspection is desired. Such request may be in writing or by telephone at the option of the City.

It shall be the duty of the person requesting any inspections required to provide access to and means for inspection of such work.

3.30.702.005 - REQUIRED INSPECTIONS

Pipelines, culverts, reinforcing steel or structural framework of any part of any walkway or structure shall not be covered or concealed without first obtaining the approval of the Public Works Inspector and Clean Water Services Field Inspectors.

The City of North Plains, upon notification, shall make the following inspections and shall either approve that portion of the construction as completed or shall notify the permit holder or his agent wherein the same fails to comply with the code. This action is in addition to inspections by Clean Water Services and Washington County.

3.30.703 - INSPECTIONS

3.30.703.001 - INSPECTIONS BY BUILDING INSPECTOR

3.30.703.002 - INSPECTIONS BY CITY OF NORTH PLAINS

Right-of-way work

Concrete

- A. Driveways
- B. Sidewalks
- C. Curbs
- D. Aprons
- E. Water Lines
- F. Street Lighting
- G. Street Trees
- H. Bike/ Ped. Paths
- I. Street/ Grading/ Base/ Pavement. etc.
- J. Culverts
- K. Trench Compaction

# **Clean Water Services inspects all sanitary and storm pipelines, a CWS field inspector must be present during main tapping.**

**NOTE: BEFORE ANY CONCRETE IS POURED ALL FORMS AND REBAR MUST BE INSPECTED.**

**NOTE: ALL PLANNING REQUIREMENTS MUST BE MET BEFORE ANY PERMITS WILL BE ISSUED**

## Chapter 16.45 Neighborhood Community Zone (NC)

### 16.45.000 Purpose

The Neighborhood Community zone (NC) incorporates a number of design, development and infrastructure features indicative of a self-reliant neighborhood, including but not limited to: quality and craftsmanship in the built environment; an appropriate mix of architectural styles, residential types and densities and neighborhood commercial opportunities to serve the surrounding neighborhood; advantageous and sensitive use of natural resource features and open space; and innovative and imaginative site planning in order to develop a sense of place where amenities, facilities, features and overall urban design could not be achieved through application of individual or combinations of zones. The NC zone shall be used to implement the Neighborhood Community Comprehensive Plan designation.

Master planning of the non-exception expansion areas is necessary to achieve a cohesive vision for the build out of these areas. No development may occur within the subject non-exception expansion areas prior to master plan approval. Master plans in these areas shall generally reflect the land use pattern and density ranges illustrated on the "Density/Land Use Plans" adopted as part of the Comprehensive Plan. Identification of multiple use areas and adjustments to the specific locations of proposed uses and/or street pattern may be considered during the master plan process.

### 16.45.005 Objectives

The following objectives shall be considered in reviewing an application for a master plan:

- A. To provide for a master planned neighborhood(s) that provide a mix of uses and densities ~~as illustrated on the Density/Land Use Plans prepared for the north and east non-exception expansion areas and adopted by reference in that~~ are consistent with the Comprehensive Plan.
- B. To encourage complete, pedestrian-oriented neighborhoods with a variety of housing types, neighborhood-scale commercial uses, open spaces and parks, and appropriate institutional uses.
- C. To encourage development of the Urban Growth Boundary expansion areas consistent with Chapter 15 of the Comprehensive Plan.

### 16.45.010 Permitted Uses

The following uses are permitted outright within the NC zone when associated with an approved master plan:

- A. Single family detached housing.

**16.45-1**

- B. Single family attached housing.
- C. Duplexes.
- D. Row homes/Town homes.
- E. Multifamily dwellings.
- F. Mixed-Use. (In this case, mixed-use is defined as a development in which a site or building provides more than one type of use, such as commercial, residential, or institutional.)
- G. Permanent open space.
- H. Neighborhood commercial uses. ~~(Neighborhood commercial uses are defined as small to medium sized shopping and service facilities and limited office use. Neighborhood commercial uses are intended for the shopping and service needs of the immediate urban neighborhood. Neighborhood commercial locations should be easily accessible by car and foot from neighborhoods in the area. These uses should have minimal negative impact on surrounding residential properties.)~~

#### **16.45.015 Conditional Uses**

The following uses and their accessory structures may be permitted in the NC zone when authorized by the Planning Commission pursuant to this chapter.

- A. Church / Religious Institution.
- B. Governmental structure or use, including a fire station, library or museum.
- C. School: nursery, elementary, junior high, senior high, college or university.
- D. Geriatric care or assisted living facility.
- E. Community service facility.

#### **16.45.020 Standards and Off Street Parking Requirements**

Development within the NC District shall comply with the standards for lot size and dimensional requirements, lot coverage, building height and setbacks as contained within Table NC-1: Development Standards, or as modified and approved during the Master Plan process.

Development within the NC District shall provide off street vehicular and bicycle parking as addressed in table NC-2: Off Street Parking Requirements, or as modified and approved during the Master Plan process.

**16.45-2**

### **16.45.030 Standards and Requirements for Master Plans**

The following standards and requirements shall govern the application for master plan approval within the NC zone:

- A. The land uses in a master plan shall be those identified on the corresponding Density/Land Use Plan for each of the expansion areas. Flexibility in arrangement of uses and densities is permitted provided that the overall master plan is in substantial compliance with the area totals and density ranges as identified in Chapter 15 of the Comprehensive Plan.
- B. A master plan application must address the entirety of each expansion area individually or may combine the two.
- C. Neighborhoods shall have defined centers which include public spaces such as a plaza, park, school, or community square.
- D. Residential uses are encouraged to be designed so that garage doors and driveways face rear alleys where practicable to diminish conflicts with sidewalks along the public streets.
- E. Commercial buildings shall be designed to front on pedestrian-friendly streets rather than parking lots or arterial roadways.

### **16.45.040 Procedure**

The following procedure shall be observed when a Master Plan proposal is submitted for consideration:

- A. The applicant shall submit 1 copy of a master plan application and 20 copies of all exhibits to the City for study at least 45 days prior to the scheduled public hearing. The master plan submittal shall include the following information in graphic and written form:
  - 1. Proposed land uses and housing unit densities.
  - 2. Tables detailing the dimensional, area, and setback requirements for each of the proposed use categories.
  - 3. Proposed access and circulation.
  - 4. Proposed open space uses.
  - 5. Preliminary grading and drainage pattern.

**16.45-3**

6. Preliminary utility plan for sanitary sewer and water.
  7. Relation of the proposed master plan to the surrounding area and the Comprehensive Plan.
  8. Phasing schedule identifying anticipated sequence and timing of each phase or phases.
- B. Public notice of the proposed Master Plan shall be provided in accordance with the public notice provision of this chapter.
- C. In considering the Master Plan, the Commission shall determine whether:
1. The minimum residential density of the north and east non-exception expansion areas shall be ~~8.4 units per net acre~~ consistent with the Comprehensive Plan. If an applicant is seeking Master Plan approval for a single expansion area, the applicant must demonstrate that the single Master Plan achieves a minimum 8.4 residential units per net acre.
  2. The distribution of land uses and their associated acreage for each expansion area is consistent with Chapter 15 of the Comprehensive Plan.
  3. The proposed circulation system (including proposed street sections) is adequate to support the anticipated traffic and the development will not overload the streets outside the boundaries of the Master Plan.
  4. Proposed utility and drainage facilities are adequate for the population densities and type of development proposed.
- D. If, in the opinion of the Commission, the provisions of Section 16.145.040 (C) are satisfied, the proposal shall be approved. If the Commission finds the provisions are not satisfied, it may deny the application or return the plan to the applicant for revision. In addition to the requirements of this section, the Commission may attach conditions it finds are necessary to carry out the purposes of this Ordinance
- E. Applications for individual phases within the Master Plan may be applied for concurrently with or subsequent to Master Plan approval. Applications for individual phases within the Master Plan shall be reviewed under the provisions and requirements of this chapter.
- F. In the process of reviewing applications for individual phases within an approved Master Plan, the Commission may approve the refinements to the Master Plan. Refinements to the Master Plan are defined as:

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1. Changes to the street network or functional classification of streets that do not significantly reduce circulation system function or connectivity for vehicles, bicycles or pedestrians.
  2. Changes to the nature or location of park type, trails, or open space that do not significantly reduce function, livability, usability, connectivity, or overall distribution or availability of these uses in the Master Plan area.
  3. Changes to the location or mix of land uses that do not significantly alter the overall distribution or availability of uses in the Master Plan area.
- G. Refinements meeting the above definition may be approved by the Commission upon finding that:
1. The refinement(s) will equally or better meet the conditions of the approved Master Plan.
  2. The refinement will not preclude an adjoining phase from development consistent with the approved Master Plan.

Significant changes to an approved Master Plan shall be submitted to the Planning Commission for processing as an amendment to an approved Master Plan. Significant changes would be defined as any change not covered by Subsection F (1-3) above.

**16.45-5**

**TABLE NC-1: DEVELOPMENT STANDARDS**

| <b>Building Type</b>                | <b>Min. Lot Size (sq. ft.)</b> | <b>Min. Lot Width (feet)</b> | <b>Min. Lot Depth (feet)</b> | <b>Max. Lot Coverage (percent)</b> | <b>Max. Building Height (feet)</b> | <b>Min. Front Setback<br/>Front / Alley Loaded</b> | <b>Min. Rear Setback<br/>Front / Alley Loaded</b> | <b>Min. Side Setback</b> | <b>Min. Street Side Setback</b> |
|-------------------------------------|--------------------------------|------------------------------|------------------------------|------------------------------------|------------------------------------|--|---|--------------------------|---------------------------------|
| Single Family – small lot           | <del>2,540</del> 000           | 30                           | 70                           | <del>75</del> 65                   | 35                                 | 12 / 10  | 5 / 0   | 0                        | 7                               |
| Single Family – med. lot            | <del>4,200</del> 5000          | 45                           | 85                           | 65                                 | 35                                 | 15 / 12  | 15 / 0  | 0                        | 7                               |
| Single Family – large lot           | 6,500                          | 55                           | 90                           | <del>55</del> 65                   | 35                                 | 15 / 12  | <del>15</del> 10 / 0                              | 5                        | 10                              |
| Duplexes (includes ancillary units) | 4,000                          | 45                           | 85                           | 65                                 | 35                                 | 12 / 10  | 10 / 0  | 4                        | 7                               |
| Townhomes                           | N/A                            | 15                           | 50                           | 80                                 | 45                                 | 12 / 10  | none  | none                     | 7                               |
| Multifamily/Apartments              | 5,000                          | 50                           | 85                           | 50                                 | 45                                 | 15 / 12  | 10 / 0  | 5                        | 10                              |
| Mixed Use Buildings                 | 6,000                          | 55                           | 85                           | 50                                 | 45                                 | none   | none  | none                     | none                            |
| Commercial/Institutional            | <del>75</del> ,000             | <del>60</del> 30             | <del>85</del> 70             | 50                                 | 45                                 | none   | none  | none                     | none                            |

Notes:

- 1 The garage setback from an alley shall be between 3 and 5 feet, or if providing an off-street parking space between the garage and alley the garage must be setback from the alley a minimum of 20 feet.
- 2 Street-loaded garages shall have a minimum 20-foot setback to the face of garage and the garage face must be set back a minimum of 5 feet from nearest front façade, front porch or stoop. In no cases shall the garage face extend beyond the front façade of the residential structure.
- 3 Porches, stoops, decks, balconies, and other similar building projections may extend 4 feet beyond a front setback.
- 4 Commercial/institutional/mixed use structures adjacent to a residential use shall have a minimum setback of 10 feet along the adjoining yard.
- 5 Lot sizes, widths and/or depths may be reduced to 90% of the standard provided the overall lot average meets the corresponding lot size requirement.

**16.45-6**

TABLE NC-2: OFF STREET PARKING REQUIREMENTS

| <b>Permitted or Conditional Uses</b>                                   | <b>Min. Vehicle Spaces</b>  | <b>Min. Bike Spaces</b>                      |
|--|---|--|
| Single Family Detached Dwellings                                       | 2.0 / dwelling  | none   |
| Duplex *   | 2.0 / dwelling  | none   |
| Townhome   | 1.0 / 1 bedroom<br>1.5 / 2 bedroom<br>2.0 / 3 bedroom   | none   |
| Multifamily/Apartment  | 1.0 / 1 bedroom<br>1.5 / 2 bedroom<br>2.0 / 3 bedroom   | 1 per 10 units<br>minimum of <del>24</del>   |
| <b>Commercial Uses</b>   |   |  |
| Convenience store  | 3 / 1000 square feet  | 1 per 5000 s.f.<br>minimum of <del>24</del>  |
| Restaurant / Pub   | 3 / 1000 square feet  | 1 per 5000 s.f.<br>minimum of <del>24</del>  |
| Child Day Care   | 0.2 per student/staff   | <del>Non</del> minimum 4                     |
| Medical / Dental   | 3 / 1000 square feet  | 1 per 10000 s.f.<br>minimum of <del>24</del> |
| All other commercial uses  | 3 / 1000 square feet  | 1 per 10000 s.f.<br>minimum of <del>24</del> |
| <b>Conditional Uses</b>  |   |  |
| Church / Religious Institution   | .25 per seat  | 1 per 2000 s.f.<br>minimum of <del>24</del>  |
| Elementary or Middle Schools   | 1 per classroom plus 1 per administrative employee, or 1 per 4 seats or 8 feet of bench length in the auditorium whichever is greater | 6 per classroom                              |
| High School  | .20 per student and staff member  | 4 per classroom                              |
| Government structure or use, including fire station, library or museum | 3 / 1000 square feet  | 1 per 2000 s.f.<br>minimum of 4              |
| All other Conditional Uses   | 3 / 1000 square feet  | 1 per 10000 s.f.<br>minimum of <del>24</del> |

\* Ancillary dwelling units require 1 off-street parking space

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**Chapter 16.60**  
**Community Service Overlay District (CS)**

**16.60.00**     **Purpose**

The purpose of the Community Service Overlay District (CS) is to identify and protect public and private facilities that serve a community educational, cultural, recreational, social, or governmental function, subject to other sections of this chapter including Design Review, if applicable. Uses authorized in the CS Overlay District include:

- A. Churches.
- B. Public or private schools.
- C. Public or private non-profit social service, community, or recreational facilities.
- D. Governmental structures such as city offices, fire station, library, post office, and public parks.
- E. Public utilities including wells, water storage tanks, and sanitary sewer pump stations.
- F. Private utilities including electric power substations; telephone exchanges; television, radio or microwave transmission facilities.
- G. Other similar uses deemed appropriate by Planning Commission.

**16.60.005**     **Application**

At the time a conditional use is approved, or, in the case of an outright use, at the time a building permit is issued, for a facility named in 16.60.000, said property shall be placed in a Community Service Overlay District on the Zoning Map. In taking any subsequent action which affects a property so designated, the Planning Commission shall consider the special community value and benefits of the facility. The use shall be subject to all standards and requirements of the underlying zone.

**16.60.010**     **Discontinuation of Community Use**

At such time a use designated as a community service is discontinued and a use other than one listed in Chapter 16.60.000 is established on the site, the CS Overlay designation shall be removed.

## Chapter 16.150 Street Standards

### 16.150.000 Purpose

- A. To provide for safe efficient, and convenient vehicular movement in the City of North Plains.
- B. To provide adequate access to all proposed developments in the City of North Plains.
- C. To provide adequate area in all public rights-of-way for sidewalks, sanitary sewers, storm sewers, waterlines, natural gas lines, power lines and other utilities commonly and appropriately placed in such rights-of-way.

### 16.150.005 Scope

The provisions of this Subsection shall be applicable to:

- A. The construction, dedication or creation of all new public or private streets in all subdivisions, partitions or other developments in the City of North Plains.
- B. The extension or widening of existing public or private street rights-of-way, easements, or street improvements, including those which may be proposed by an individual or the City, or which may be required by the City in association with other development approvals.
- C. The construction or modification of any utilities or sidewalks in public rights-of-way or private street easements.

### 16.150.010 General Provisions

The following general provisions shall apply to the dedication, construction, improvement or other development of all public streets in the City of North Plains:

- A. **The location, width, and grade of streets** shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and to the proposed use of the land to be served by the streets.
- B. **Development proposals** shall provide for the continuation of existing principal streets where necessary to promote appropriate traffic circulation in the vicinity of the development.

- C. **Reserve strips**: Reserve strips or street plugs controlling the access to streets will not be approved unless necessary for the protection of the public welfare or of substantial property rights, and in these cases they may be required. The control and disposal of the land composing such strips shall be placed within the jurisdiction of the City under conditions approved by the Planning Commission.
- D. **Alignment**: All streets other than minor streets or cul-de-sacs, as far as practical, shall be in alignment with existing streets by continuation of the center lines thereof. The staggering of street alignments resulting in "T" intersections shall, wherever practical, leave a minimum distance of 200 feet between the center lines of streets having approximately the same direction and otherwise shall not be less than 100 feet.
- E. **Future extension of streets**: Where necessary to give access to or permit a satisfactory future development of adjoining land, streets shall be extended to the boundary of a tract being developed and the resulting dead-end streets may be approved without turnarounds. Reserve strips and street plugs may be required to preserve the objectives of street extensions.
- F. **Intersection angles**: Streets shall be laid out to intersect at angles as near to right angles as practical, except where topography requires lesser angle, but in no case shall the acute angle be less than 80 degrees unless there is a special intersection design. An arterial or collector street intersecting with another street shall have at least 100 feet of centerline tangent adjacent to the intersection unless topography requires a lesser distance. Other streets, except alleys, shall have at least 50 feet of tangent adjacent to the intersection unless topography requires a lesser distance. Intersections which contain an acute angle of less than 80 degrees or which include an arterial or collector street shall have a minimum corner radius sufficient to allow for a roadway radius of 20 feet and maintain a uniform width between the roadway and the right-of-way line. All other intersections shall have a minimum corner radius sufficient to allow for a roadway radius of 10 feet and maintain a uniform width between the roadway and the right-of-way line. Ordinarily, the intersection of more than two streets at any one point will not be approved.
- G. **Existing streets**: Whenever existing public streets adjacent to or within a tract are of inadequate width, additional right-of-way shall be provided at the time of subdivision or development.
- H. **Cul-de-sacs**: Cul-de-sacs shall be as short as possible, and shall have maximum lengths of 600 feet and shall not serve more than 20 dwelling units. All cul-de-sacs shall terminate with circular turnarounds. Commercial and industrial cul-de-sacs shall have a minimum 55' bulb radius. Additional cul-de-sac specifications, including specifications for residential cul-de-sacs, are

contained within the most recently adopted public works/street standards of the City of North Plains and/or Washington County development standards.

- I. **Street names**: No street names shall be used which will duplicate or be confused with the names of existing streets, except for extensions of existing streets. Street names and number shall conform to the established pattern in the City and shall be subject to the approval of the Planning Commission.
- J. **Grades and curves**: Grades shall not exceed 6 percent on arterials, 10 percent on collector streets or 12 percent on any other street. Center line radii of curves shall not be less than 300 feet on arterials, 200 feet on collectors or 100 feet on other streets, and shall be to an even 10 feet. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable sites, the Planning Commission may accept steeper grades and sharper curves. In flat areas, allowance shall be made for finished street grades having a minimum slope of 0.5 percent.
- K. **Marginal access streets**: If a development abuts or contains an existing or proposed arterial street, the Planning Commission may require marginal access streets, reverse frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear or side property line, or such other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic.
- L. **Alleys**: Alleys shall be provided in commercial and industrial districts unless other permanent provisions for access to off-street parking and loading facilities are made as approved by the Planning Commission. While alley intersections and sharp changes in alignment shall be avoided, the corners of necessary alley intersections shall have radii of not less than 10 feet.
- M. **Sidewalks** shall be a minimum of five feet in width. Curbs and sidewalks shall be required along both sides of all public streets. All new development upon lots, tracts or parcels of land adjacent to a public street will be required to construct curbs and sidewalks.
- N. Street trees, where provided, shall not be of a species which has a shallow spreading root system which is likely to disturb sidewalk or street improvements.
- O. **Access Spacing Standards** shall, to the greatest extent possible, comply with Washington County's standards and the most recently adopted public works/street standards of the City of North Plains. Washington County's access spacing standards by street functional classification are as follows:

Major Arterial: 1,000 feet

Minor Arterial: 600 feet

Major Collector: 150 feet  
Minor Collector: 50 feet  
Local Street: 10 feet

### **16.150.115 General Right-of-Way and Improvement Widths**

Construction specifications for all street and right-of-way improvement widths shall comply with the criteria of the most recently adopted public works/street standards of the City of North Plains, the North Plains Transportation System Plan, and/or Washington County standards. These standards shall be the minimum requirements for all streets, except where modifications are permitted under this chapter or the Street Standard adopted by the City Council of North Plains, whichever is less restrictive. Refer to Figures 5-2A-5-2P in the Transportation System Plan for detailed diagrams depicting street right-of-way, improved, and roadway width requirements.

### **16.150.020 Modification of Right-of-Way and Improvement Width**

The Planning Commission may allow modification to the public street standards of this chapter when both of the following criteria are satisfied.

- A. The modification is necessary to provide design flexibility in instances where:
  - 1. Unusual topographic conditions require a reduced width or grade separation of improved surfaces; or
  - 2. Parcel shape or configuration precludes accessing a proposed development with a street which meets the full standards of the City of North Plains or
  - 3. A modification is necessary to preserve trees or other natural features determined by the Planning Commission to be significant to the aesthetic character of the area; or
  - 4. A Planned Unit Development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.
- B. Modification of the Street Standards of this chapter shall only be approved if the Planning Commission finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes. If there is insufficient area of on-street parking, the Planning Commission may require additional off-street parking and require that the street be posted to prohibit parking along one or both sides of the street.

### **16.150.025 Construction Specifications**

Construction specifications for all public improvements shall comply with the criteria of the most recently adopted public works/street standards of the City of North Plains.

### **16.31.070 Bikeways and Sidewalks Required on Arterials and Collectors**

- A. Glencoe Road: Include bicycle lanes and sidewalks on both sides of the road. This would provide connectivity to the existing sidewalks and future growth to the east of Glencoe Road.
- B. Commercial Street: Include bicycle lanes and sidewalks on both sides of the road. A detailed plan should be developed to make sure these facilities coexist with parking demand in the downtown area.
- C. North Avenue: On the near term a sidewalk should be constructed on the south side of North Avenue to connect the existing sidewalk to Gordon Road. Sidewalks should also be added on the south side of North Avenue between NW 309<sup>th</sup> Avenue and Glencoe Road. These improvements would complete a system of sidewalks on North Avenue in addition to providing connectivity to the adjacent street system. In the Long term sidewalks should to added to the north side of North Avenue also.
- D. Gordon Road: Provide sidewalk on the east side. This improvement will facilitate a connection to the future extension of sidewalk on the south side of North Avenue and to sidewalks along Commercial Street.

**Chapter 16.170**  
**APPLICATION REQUIREMENTS AND REVIEW PROCEDURES**  
**Administrative, Limited Land Use, Quasi-Judicial& Legislative Decisions**

**16.170.000 General Provisions**

The following lists set forth the type of review procedure for administrative and land use applications:

A. Type I Administrative Permits by City Staff

1. Accessory Structures, residential
2. Building Permit
3. Dwelling, Single Family and Duplex
4. Extension for a Type I Permit
5. Fence, Wall and Hedge Permit
6. Grading Permit
7. Home Occupation Permit type 1)
8. Lot Line Adjustment Permit
9. Right-of-way Permit
10. Sign Permit
11. Temporary Use Permit for a sales office or model home

B. Type II Land Use Permit by the City

1. Accessory Structures, non-residential up to 500 square feet or 20% of existing structure, whichever is greater
2. Code Interpretation
3. Heritage Tree
4. Historic Overlay Alterations
5. Lot of Record Determination
6. Minor Design Review

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7. Minor Modifications to development approvals per code
8. Minor Variance Permit
9. Other application not specifically described
10. Temporary use for seasonal and special events

C. Type III Quasi-Judicial Permits by Planning Commission

1. Appeal of Type II Land Use Decisions
2. Conditional Use Permit
3. Design Review Permit
4. Extensions for Type II and Type III Permits
5. Flood Plain Development Permit
6. Historic Overlay Demolitions
7. Home Occupation (type 2)
8. Minor Land Partition Permit
9. Multi-family Dwellings
10. Nonconforming Structure/Use Permit
11. Planned Unit Development Permit
12. Significant Natural Resource Permit
13. Similar Use Permit
14. Subdivision Permit
15. Temporary Use Permit for a building, kiosk or structure
16. Variance Permit

D. Type IV Legislative & Other Decisions made by both the Planning Commission and City Council

1. Appeal from Planning Commission

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2. Annexation
3. Comprehensive Plan Map or Text Amendment
4. Zoning Code Map or Text Amendment

#### **16.170.001 Pre-application Conference**

A pre-application conference is required for Type II, III and IV permits. The City Manager may waive this requirement. The applicant shall file the appropriate application, pay the review fee and meet with the City Planner, other city staff and affected agencies. At the conference the City Planner shall identify the relevant comprehensive plan policies, map designations, zone and development standards and procedural requirements applicable to the application. The planner and affected agencies shall provide technical data and identify opportunities or constraints concerning the application.

Failure of the City to provide any information required by this section does not constitute a waiver of any of the standards, criteria or requirements for the application. Due to possible changes in federal, state, regional and local law, the applicant is responsible for assuring the application complies with all applicable laws on the day the application is deemed complete.

#### **16.170.002 Neighborhood Meeting**

Applicants or their representatives are encouraged to meet with adjacent property owners and neighborhood representatives prior to submitting an application to the City in order to solicit input and exchange information about the proposed development. The applicant for a Type III application is encouraged to hold a neighborhood meeting with a recognized neighborhood or community organization. If no organization exists, then the applicant is encouraged to hold a meeting with adjacent property owners within a radius of 250 feet who will receive public notice.

#### **16.170.003 Traffic Impact Study**

The purpose of this section of the code is to assist in determining which road authorities participate in a land use decision, and to implement Section 660-012-0045 (2) of the State Transportation Planning Rule that requires the City to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. This Chapter establishes the standards for when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Study must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; what must be in a Traffic Impact Study; and who is qualified to prepare the Study.

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- A. When a Traffic Impact Study is required. The City or other road authority with jurisdiction may require a Traffic Impact Study (TIS) as part of an application for development, a change in use, or a change in access. A TIS may ~~shall~~ be required when a land use application involves one or more of the following actions:
1. A change in zoning or a plan amendment designation;
  2. Any proposed development of land use action that a road authority states may have operational or safety concerns along its facility;
  3. An increase in site traffic volume generation by 300 Average Daily Trips (ADT) or more; or
  4. An increase in site traffic volume of a particular movement to and from the State Highway by 20 percent or more; or
  5. An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day; or
  6. The location of the access driveway does not meet minimum sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State Highway, creating a safety hazard; or
  7. A change in internal traffic patterns that may cause safety problems, such as back up onto a street or greater potential for traffic accidents.
- B. Traffic Impact Study Preparation. A Traffic Impact Study shall be prepared by a professional engineer in accordance with the requirements of the road authority. If the road authority is the Oregon Department of Transportation (ODOT), consult ODOT's regional development review planner and OAR 734-051-180.
- C. City Street Improvement Requirements. In addition to street improvement requirements in this code for new development, see Chapters 16.145 and 16.150 for street improvement requirements related to single family homes and commercial and industrial expansions.

#### **16.170.010 Type I Administrative Review by City Planner**

Type I administrative applications are reviewed under clear and objective criteria that do not involve the exercise of discretion. If a Type I application requires the exercise of discretion, the City shall process the request as a Type II application. Review of a Type I administrative applications described in Section 16.170.000A shall be reviewed by the City Planner or Public Works Director according to the following procedures:

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- A. An application shall be made on forms provided by the City and shall include the property owners signature of consent. Entities with condemnation authority are not required to provide a consent signature.
- B. A dated notice shall be given to the applicant when the application is deemed complete. Within 120 days of this notification, unless extended with the consent of the applicant, the City Planner shall issue a written decision.
- C. The decision shall be based on all applicable provisions of this development code and accompanied by written findings of fact which support the decision, where applicable.
- D. Written notice of the decision shall be provided to the applicant and anyone who requested notice of the decision in writing.
- E. The decision of the City Planner or Public Works Director shall be final. The decision may be appealed to the circuit court in the manner provided in ORS 30.010 to 30.100.

**16.170.011 Type II Land Use Decisions by City Planner**

A Type II land use application described in Section 16.170.000.A shall be reviewed according to the following procedures. A pre-application conference is required pursuant to Section 16.170.001. The City Manager may waive this requirement.

- A. Application Requirements.
- B. Application forms. An application shall be made on forms provided by the City Planner or designee. If the application is referred to a quasi-judicial hearing, either voluntarily by the applicant or staff, or upon appeal, a new application is not required.
- C. Submittal Information.

The application shall:

- 1. Be made on forms provided by the City and shall include the property owner's signature of consent. Entities with condemnation authority are not required to provide a consent signature
- 2. Be filed with one copy of a narrative statement that explains how the application satisfies each and all of the relevant criteria and standards in sufficient detail for review and decision-making.
- 3. Be accompanied by the required fee pursuant to Chapter 16.00.070; and

4. Include one set of pre-stamped and pre-addressed envelopes for all real property owners of record who will receive a notice of the application within 250 feet. The records of the Washington County Assessor's office are the official records for determining ownership. The applicant shall produce the notice list. At the applicant's request, and upon payment of a fee noted on the City's fee list, the City may prepare the public notice mailing list. The City or the applicant shall use the most current County real property assessment records to produce the notice list. The City shall mail the notice of application.

D. Completeness.

Within 30 days of receiving the application, the City shall provide a dated notice to the applicant indicating whether the application is deemed complete or incomplete. If the application is incomplete the City shall notify the applicant in writing of exactly what information is missing. If deemed incomplete, the applicant has 180 days to submit the missing information, or 14 days to submit a refusal statement or withdraw the application. If the applicant refuses to submit the required information and does not withdraw, the application shall be deemed complete upon receipt of the refusal letter.

E. Final Action.

Final action on the application shall occur within 120 days of the date the application is deemed complete unless extended by the applicant in writing.

F. Hearing Option.

The City Planner may request a public hearing on the application before the Planning Commission. The applicant may also request a public hearing before the Planning Commission. The procedures for the public hearing are described in Section 16.170.012 C. The applicant is responsible for the additional city costs associated with the public hearing.

G. Notice.

The City shall mail notice of the application to:

1. All owners of record or real property within 250 feet of the subject site.
2. Any person who submits a written request to receive a notice and any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the City, or required by State statute.
3. The road authority, and/or rail authority and owner, when there is a proposed development abutting or affecting the transportation facility.
4. The City may notify other affected agencies, as appropriate, of the application.

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#### H. Contents of Notice.

The notice shall:

1. Provide a 14-day period for submitting written comments.
2. Identify the specific land use decision or decisions requested.
3. Describe the street address or other easily understandable reference to the location of the site.
4. List the relevant criteria by name and number of Code sections.
5. State the place, date and time the comments are due and the person to whom the comments should be addressed.
6. Include the name and telephone number of a contact person regarding the Decision.
7. State that the failure to address an issue with enough detail may preclude an appeal to the Land Use Board of Appeals or Appeals or Circuit Court on that issue. Only comments on the applicable criteria are considered relevant evidence.
8. State that all evidence relied upon by the City to make this decision is in the public record and available for public review. Copies of the evidence may be obtained at a reasonable cost from the City.
9. State that after the comment period closes, the City shall issue a decision. The decision shall be mailed to the applicant and to anyone else who submitted written comments or who is otherwise legally entitled to notice.

#### I. Decision.

The City Planner shall review the application and make a decision based on an evaluation of the application, the evidence and the applicable criteria as set forth in this Code.

#### J. Conditions of Approval.

1. Authorization of Approval. Approval of a land use application may be granted subject to conditions. Conditions shall be designed to protect public health, safety and general welfare from potential adverse impacts caused by a proposed land use described in an application. Findings shall either assure

compliance with standards of the Code or conditions may be added to fulfill the need for public service demands created by the proposed use.

2. Timing of Conditions and Development Agreement. All conditions of approval required by the City shall be completed prior to the issuance of an occupancy permit. When an applicant provides information which demonstrates that it is not practical to fulfill all conditions prior to issuance of such permit, the City Planner may require a performance bond or other guarantee to assure compliance with zoning regulations or fulfillment of required conditions. The City may also require a development agreement between the City and the owner or developer to specify the developer's or owner's obligations for completing construction and any public improvements.
3. Modify Conditions. A request to change or alter conditions of approval shall be processed as a new land use action under the same procedure that was used for the initial approval.

K. Notice of Decision.

1. Within five (5) working days after a decision is made, a Notice of Decision shall be sent by mail to:
  - a. The applicant and all property owners or contract purchasers of record.
  - b. Any person who submits a written request to receive notice, or provides comments during the application review period.
  - c. Any governmental agency entitled to notice under an intergovernmental agreement entered into with the City, and other agencies that were notified or provided comments during the application review period.
2. The City Planner or designee shall cause an affidavit of mailing the notice to be prepared and made a part of the file. The affidavit shall show the date the notice was mailed, demonstrate that the notice was mailed to the parties above and was mailed within the time required by law.
3. The Notice of Decision shall contain a description of the proposal, where to obtain the decision, the date the decision becomes final unless appealed, and a statement of who may file an appeal, how to file an appeal and the deadline to file an appeal.
4. Effective Date: The Decision is final for purposes of appeal, when it is mailed by the city. The decision is effective the day after the appeal period expires or as otherwise provided in the decision.

L. Appeals. A decision issued by the City Planner under this section may be appealed to the Planning Commission as follows:

1. Who may appeal. The following people have legal standing to appeal a Type II Limited Land Use Decision:

- a. The applicant or owner of the subject property;
- b. Any person who was entitled to written notice of the decision;
- c. Any other person who participated in the proceeding by submitting written comments.

2. Appeal filing procedure.

- a. Notice of appeal. Any person with standing to appeal, as provided in subsection 1, above, may appeal the decision by filing a Notice of Appeal according to the following procedures;
- b. Time for filing. A Notice of Appeal shall be filed with the City Planner or designee within 14 days of the date the Notice of Decision was mailed;
- c. Content of notice of appeal. The Notice of Appeal shall contain:
  - i. An identification of the decision being appealed, including the date of the decision;
  - ii. A statement demonstrating the person filing the Notice of Appeal has standing to appeal;
  - iii. A statement explaining the specific issues being raised on appeal;
  - iv. Filing fee.

3. Scope of appeal.

The appeal of a Type II Limited Land Use Decision by a person with standing shall be a hearing de novo before the Planning Commission. The appeal shall not be limited to the application materials, evidence and other documentation, and specific issues raised in the review by the City Planner. The Planning Commission may allow additional evidence, testimony or argument concerning any relevant standard, criterion, condition, or issue.

4. Appeal procedures.

Quasi-Judicial notice, hearing procedures and decision process shall also be used for all appeals under this section;

5. Further Appeal to City Council.

The decision of the Planning Commission regarding an appeal of a Type II Limited Land Use Decision is the final decision of the City unless appealed to City Council. An appeal to City Council shall be de novo and follow the same notification and hearing procedures as for the Planning Commission hearing. The decision of the City Council on an appeal is final and effective on the date it is mailed by the City. The City Council's decision may be appealed to the State Land Use Board of Appeals pursuant to ORS 197.805 – 197.860.

**16.170.012 Type III Quasi-Judicial Decisions by the Planning Decision**

Pre-application Conference. A pre-application conference is required for all Type III quasi-judicial applications under this Section. The City Manager may waive this requirement.

A. The requirements and procedures for a pre-application conference are described in Chapter 16.170.001.

B. Application Requirements.

1. Application form. A quasi-judicial application shall be made on forms provided by the City Planner or designee. The application shall include the property owner's signature of consent. Entities with condemnation authority are not required to provide a consent signature.
2. Submittal Information. When a quasi-judicial application is required, it shall include:
  - a. The information requested on the application form;
  - b. One copy of a narrative statement that explains how the application satisfies each of the relevant criteria and standards insufficient detail for review and decision-making.
  - c. The required fee pursuant to Chapter 16.00.070; and
  - d. One set of pre-stamped and pre-addressed envelopes for all real property owners of record who will receive a notice of the application within 250 feet. The records of the Washington County Assessor's office are the official records for determining ownership. The applicant shall produce the notice list. At the applicant's request, and upon payment of a fee noted on the City's fee list, the City may prepare the public notice mailing list. The City or the

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applicant shall use the most current County real property assessment records to produce the notice list. The City shall mail the notice of application.

3. Completeness. Within 30 days of receiving an application for a Type III application, the City staff shall provide a dated notice to the applicant indicating whether the application is deemed complete or incomplete. If the application is incomplete the City Planner shall notify the applicant in writing of exactly what information is missing. If deemed incomplete, the applicant has 180 days to submit the missing information, a refusal statement, or to withdraw the application. If the applicant refuses to submit the required information and does not withdraw, the application shall be deemed complete upon receipt of the refusal letter.
4. Final Action. Final action on an application under this Section shall occur within 120 days of completeness pursuant to Chapter 16.00.090.

C. Notice of Hearing.

1. Mailed notice. The City shall mail the notice of the Type III application. The records of the Washington County Assessor's Office are the official records for determining ownership. Notice of the initial hearing or an appeal hearing shall be given by the City in the following manner:
  - a. At least 20 days before the hearing date, notice shall be mailed to:
    - i. The applicant and all owners or contract purchasers of record of the property that is the subject of the application;
    - ii. All property owners of record within 250 feet of the site;
    - iii. Any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the City. The City may notify other affected agencies. The City shall notify the road authority, and rail authority and owner, when there is a proposed development abutting or affecting their transportation facility and allow the agency to review, comment on, and suggest conditions of approval for the application.
    - iv. Owners of airports in the vicinity shall be notified of a proposed zone change in accordance with ORS 227.175;
    - v. Any neighborhood or community organization recognized by the City Council and whose boundaries include the property proposed for development;
    - vi. Any person who submits a written request to receive notice;

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- vii. For appeals, the appellant and all persons who provided testimony in the original decision; and
  - viii. For a land use district change affecting a manufactured home or mobile home park, all mailing addresses within the park, in accordance with ORS227.175.
  - ix. The City Planner or designee shall prepare an affidavit of notice. The affidavit shall state the date that the notice was mailed to the persons who must receive notice.
  - x. At least 14 business days before the hearing, notice of the hearing shall be printed in a newspaper of general circulation in the City. The newspaper's affidavit of publication of the notice shall be made part of the administrative record.
- b. Content of Notice. Notice of appeal of an application or notice of a public hearing to be mailed and published per Subsection 1 above shall contain the following information:
- i. The nature of the application and the proposed land use or uses that could be authorized for the property;
  - ii. The applicable criteria and standards that apply to the application;
  - iii. The street address or other easily understood geographical reference to the subject property;
  - iv. The date, time, and location of the public hearing;
  - v. A statement that the failure to raise an issue in sufficient detail to afford the decision-maker an opportunity to respond to the issue may preclude an appeal based on that issue with the State Land Use Board of Appeals or the circuit court;
  - vi. The name of a City representative to contact and the telephone number where additional information on the application may be obtained;
  - vii. A statement that a copy of the application, all documents and evidence submitted by or for the applicant, and the applicable criteria and standards can be reviewed at North Plains City Hall at no cost and that copies shall be provided at a reasonable cost;
  - viii. A statement that a copy of the City's staff report and recommendation to the hearings body shall be available for review at no cost at least

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seven days before the hearing, and that a copy shall be provided on request at reasonable cost;

- ix. A general explanation of the requirements to submit testimony, and the procedure for conducting public hearings; and
- x. The following notice: “Notice to mortgagee, lien holder, vendor, or seller: The City of North Plains Development Code requires that if you receive this notice it shall be promptly forwarded to the purchaser.”

#### D. Conduct of the Public Hearing

1. At the commencement of the hearing, the hearings body shall state:
  - a. The applicable approval criteria and standards that apply to the application or appeal;
  - b. That testimony and evidence must address the approval criteria described in the staff report, or other criteria in the comprehensive plan or land use regulations that the person testifying believes to apply to the decision;
  - c. That failure to raise an issue with sufficient detail to give the hearings body and the parties an opportunity to respond to the issue, means that no appeal may be made to the State Land Use Board of Appeals on that issue;
  - d. Before the conclusion of the initial evidentiary hearing, any participant may ask the Planning Commission for an opportunity to present additional relevant evidence or testimony that is within the scope of the hearing. The hearings body shall grant the request by scheduling a date to finish the hearing (a “continuance”) per paragraph 2 of this subsection, or by leaving the record open for additional written evidence or testimony per paragraph 3 of this subsection.
2. If the Planning Commission grants a continuance, the completion of the hearing shall be continued to a date, time, and place at least seven days after the date of the first evidentiary hearing. An opportunity shall be provided at the second hearing for persons to present and respond to new written evidence and oral testimony. If new written evidence is submitted at the second hearing, any person may request, before the conclusion of the second hearing, that the record be left open for at least seven days, so that they can submit additional written evidence or testimony in response to the new written evidence;
3. If the Planning Commission leaves the record open for additional written evidence or testimony, the record shall be left open for at least seven days after the hearing. Any participant may ask the City in writing for an opportunity to

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respond to new evidence submitted during the period that the record was left open. If such a request is filed, the Planning Commission shall reopen the record.

4. When the Planning Commission reopens the record to admit new evidence or testimony, any person may raise new issues that relate to that new evidence or testimony;
5. An extension of the hearing or record is subject to the limitations of ORS 227.178 (“120-day rule”), unless the continuance or extension is requested or agreed to by the applicant;
6. If requested by the applicant, the City shall allow the applicant at least seven (7) days after the record is closed to all other persons to submit final written arguments in support of the application, unless the applicant expressly waives this right. The applicant’s final submittal shall be part of the record but shall not include any new evidence;
7. The record shall contain all testimony and evidence that is submitted to the City and that the hearings body has not rejected;
8. In making its decision, the hearings body may take notice of facts not in the hearing record (e.g., local, state, or federal regulations; previous city decisions; case law; staff reports).
9. Participants in a land use hearing are entitled to an impartial review authority as free from potential conflicts of interest and pre-hearing ex parte contacts as reasonably possible.
  - a. At the beginning of the public hearing, hearings body members shall disclose the substance of any pre-hearing ex parte contacts concerning the application or appeal. The member shall state whether the contact has impaired the member’s impartiality or their to vote on the matter and shall participate or abstain accordingly;
  - b. A member of the hearings body shall not participate in any proceeding in which they have a direct or substantial conflict of interest. Any actual or potential conflict of interest shall be disclosed at the hearing;
  - c. A member of the hearings body may be disqualified due to contacts or conflict and may be ordered not to participate in the vote by a majority of the members present and voting. The person who is the subject of the motion may not vote on the motion to disqualify;
  - d. If a member of the hearings body abstains or is disqualified, the City may provide a substitute in a timely manner subject to the impartiality rules in this

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section. In this case, a member of the City Council appointed by the Mayor may substitute for a member of the Planning Commission.

- e. If all members of the Planning Commission abstain or are disqualified, the City Council shall be the hearing body. If all members of the City Council abstain or are disqualified, a quorum of those members present who declare their reasons for abstention or disqualification shall be re-qualified to make a decision;
- f. Any member of the public may raise conflict of interest issues prior to ordering the hearing, to which the member of the hearings body shall reply in accordance with this section.

#### E. Ex parte communications

No decision or action of the hearings body shall be invalid due to ex parte contacts or bias resulting from ex parte contacts, if the person receiving contact:

- 1. Places in the record the substance of any written or oral ex parte communications concerning the decision or action; and
- 2. Makes a public announcement of the content of the communication and of all participants' right to dispute the substance of the communication made. This announcement shall be made at the first hearing following the communication during which action shall be considered or taken on the communication.
- 3. Communication between City staff and the hearings body is not considered an ex parte contact.

#### F. Presenting and receiving evidence.

- 1. The hearings body may set reasonable time limits for oral presentations and may limit or exclude cumulative, repetitious, irrelevant or personally derogatory testimony or evidence;
- 2. Verbal testimony shall not be accepted after the close of the public hearing. Written testimony may be received after the close of the public hearing, only as provided in Section D. Conduct of Hearing;
- 3. Members of the hearings body may visit the property and the surrounding area, and may use information obtained during the site visit to support their decision, if the information relied upon is disclosed at the beginning of the hearing and an opportunity is provided to dispute the evidence.

#### G. The Decision Process.

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1. Basis for decision. Approval or denial of an appeal of a land use application shall be based on standards and criteria in the development code. The standards and criteria shall relate approval or denial of a discretionary development permit application to the development regulations and, when appropriate, to the comprehensive plan for the area in which the development would occur and to the development regulations and comprehensive plan for the City as a whole;
2. Findings and conclusions. The written decision shall include written findings that explain the relevant criteria and standards, state the facts relied upon in rendering the decision, and justify the decision according to the criteria, standards, and facts;
3. Form of decision. The Planning Commission shall issue a final written order containing the findings and conclusions stated in subsection 2. The Planning Commission may also issue appropriate intermediate rulings when more than one permit or decision is required;
4. Decision-making time limits. A final order for an action under this Section shall be filed with the City Planner or designee within ten business days after the close of the deliberation;
5. Notice of Decision. Written notice of a decision under this Section shall be mailed to the applicant and to all participants of record within ten business days after the hearings body decision. Failure of a person to receive mailed notice shall not invalidate the decision, provided that a good faith attempt was made to mail the notice.
6. Final Decision and Effective Date. The decision of the hearings body on an application is final for purposes of appeal on the date it is mailed by the City. The decision is effective on the day after the appeal period expires. If an appeal is filed, the decision becomes effective on the day after the appeal is decided by the City Council. The notice and hearings procedures for a quasi-judicial application on appeal to the City Council shall be the same as for the initial hearing. An appeal of a land use decision to the State Land Use Board of Appeals must be filed within the period required by state law.

### **16.170.013 Type IV Legislative Decisions**

#### **A. Pre-Application Conference**

A pre-application conference is required for all Type IV legislative applications initiated by a party other than the City of North Plains. The City Manager may waive this requirement.

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1. The requirements and procedures for a pre-application conference are described in Chapter 16.170.001.

**B. Timing of Requests.**

The City accepts legislative requests at any time. The City Council may initiate its own legislative proposals at any time.

**C. Application Requirements.**

1. Application forms. A legislative application shall be made on forms provided by the City.
2. Submittal Information. The application shall contain:
  - a. The information requested on the application form;
  - b. A map and/or plan addressing the appropriate criteria and standards insufficient detail for review and decision (as applicable);
  - c. The required fee pursuant to Chapter 16.00.070; and
  - d. One copy of a letter or narrative statement that explains how the application satisfies all of the relevant approval criteria and standards.

**D. Notice of Hearing**

1. Required hearings. A minimum of two hearings, one before the Planning Commission and one before the City Council, are required for all legislative applications.
2. Notification requirements. Notice of public hearings for the application shall be given by the City in the following manner: At least 20 days, but not more than 40 days, before the date of the first hearing on an ordinance that proposes to amend the comprehensive plan or any element thereof, rezone property, or amend the development code a notice shall be mailed to:
  - a. Each owner whose property would be rezoned in order to implement the ordinance (including owners of property subject to a comprehensive plan amendment if a zone change will be required to implement the proposed comprehensive plan amendment);
  - b. Any affected governmental agency;
  - c. Any person who requests notice in writing;

- d. For a zone change affecting a manufactured home or mobile home park, all mailing addresses within the park, in accordance with ORS 227.175;
  - e. For a zone change affecting an airport, the owners of the airport in accordance with ORS 227.175.
3. At least 10 days before the scheduled Planning Commission public hearing date and 14 days before the City Council hearing date, public notice shall be published in a newspaper of general circulation in the City.
4. The City Planner or designee shall:
- a. For each mailing of notice, file an affidavit of mailing in the record as provided by subsection 2.a; and
  - b. For each published notice, file in the record the affidavit of publication in a newspaper that is required in subsection 3.
  - c. The Oregon Department of Land Conservation and Development (DLCD) shall be notified in writing of proposed comprehensive plan and development code amendments at least 35 45-days before the first public hearing at which public testimony or new evidence will be received, or at such lesser time as the law may allow. The notice to DLCD shall include a DLCD Certificate of Mailing.
  - d. Notice of a proposed annexation shall follow the provisions of Chapter 16.205.
  - e. Content of notices. The mailed and published notices shall include the following information:
    - i. The number and title of the file containing the application, and the address and telephone number of the City Planner or designee's office where additional information about the application can be obtained;
    - ii. The proposed site location;
    - iii. A description of the proposed site and the proposal in enough detail for people to determine what change is proposed, and the place where all relevant materials and information may be obtained or reviewed;
    - iv. The time(s), place(s), and date(s) of the public hearing(s); a statement that public oral or written testimony is invited; and a statement that the hearing will be held under this title and rules of procedure

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adopted by the Council and available at City Hall (See Section 3. below); and

- v. Each mailed notice required by Section D above shall contain the following statement: "Notice to mortgagee, lien holder, vendor, or seller: The City of North Plains Development Code requires that if you receive this notice it shall be promptly forwarded to the purchaser."
- f. Failure to receive notice. The failure of a person to receive notice shall not invalidate the action, provided:
  - i. Personal notice is deemed given where the notice is deposited with the United States Postal Service;
  - ii. Published notice is deemed given on the date it is published.

#### E. Hearing Process and Procedures

Unless otherwise provided in the rules of procedure adopted by the City Council:

1. The presiding officer of the Planning Commission and of the City Council have the authority to:
  - a. Regulate the course, sequence, and decorum of the hearing;
  - b. Direct procedural requirements or similar matters;
  - c. Impose reasonable time limits for oral presentations.
2. A person may not address the Commission or the Council without:
  - a. Receiving recognition from the presiding officer; and
  - b. Stating the person's full name and address.
3. Disruptive conduct such as applause, cheering, or display of signs may because for expulsion from the hearing, termination or continuation of the hearing, or other appropriate action determined by the presiding officer.
4. Unless otherwise provided in the rules of procedures adopted by the Council, the presiding officer of the Commission and of the Council shall conduct the hearing as follows:
  - a. The presiding officer shall begin the hearing with a statement of the nature of the matter before the body, a general summary of the procedures, a summary of the standards for decision-making, and whether the decision

**16.170 - 19**

which will be made is a recommendation to the City Council or the final decision of the Council;

- b. The City Planner or designee's report and other applicable staff reports shall be presented;
- c. The public shall be invited to testify. The public hearing may be continued to allow additional testimony or it may be closed; and
- d. The body's deliberation may include questions to the staff, comments from the staff, and inquiries directed to any person present.

F. Continuation of the Public Hearing

The Planning Commission or the City Council may continue any hearing and no additional notice of hearing shall be required if the matter is continued to a specified place, date, and time.

G. Approval Process and Authority

1. The Planning Commission shall:

- a. After notice and a public hearing, prepare and vote on a recommendation to the City Council whether to approve, approve with modifications, approve with conditions or deny the proposed change, or adopt an alternative; and
- b. Within 14 business days of adopting a recommendation, the presiding officer shall sign the written recommendation and it shall be filed with the City Planner or designee.
- c. Any member of the Planning Commission who votes in opposition to the Planning Commission's majority recommendation may file in the City planning file a written statement of opposition prior to the hearing on the proposal before the City Council. City planning staff shall send a copy to each Council member and place a copy in the record;

2. If the Planning Commission fails to adopt a recommendation to approve, approve with modifications, approve with conditions, deny the proposed change, or adopt an alternative proposal within 60 days of its first public hearing on the proposed change, City staff shall:

- a. Report the failure together with the proposed change to the City Council; and

- b. Provide notice and put the matter on the City Council's agenda for the City Council to hold a public hearing and make a decision. Thereafter, no further action shall be taken by the Commission.
3. The City Council shall:
- a. Approve, approve with modifications, approve with conditions, deny, or adopt an alternative to an application for legislative change. The City Council also may remand the application to the Planning Commission for rehearing and reconsideration on all or part of the application;
  - b. Consider the recommendation of the Planning Commission; however, the City Council is not bound by the Commission's recommendation; and
4. The City Council shall approve any legislation by ordinance, which shall be signed by the Mayor after adoption.

H. Vote Required for a Legislative Change

- 1. A vote by a majority of the qualified voting members of the Planning Commission present is required for a recommendation for approval, approval with modifications, and approval with conditions, denial or adoption of an alternative.
- 2. A vote by a majority of the qualified members of the City Council present is required to decide any motion made on the proposal.

I. Notice of Decision

Notice of a Legislative decision shall be mailed to the applicant, all participants of record, and the Department of Land Conservation and Development, within five (5) business days after the City Council's decision. The City shall also provide notice to all persons as required by other applicable laws.

J. Final Decision and Effective Date

A Legislative decision, if approved, shall take effect and shall become final as specified in the enacting ordinance, or if not approved, upon mailing of the notice of decision to the applicant.

K. Record of the Public Hearing.

- 1. A verbatim record of the proceeding shall be made by stenographic, mechanical or electronic means. It is not necessary to transcribe an electronic record. The minutes and other evidence presented as a part of the hearing shall be part of the record;

**16.170 - 21**

2. All exhibits received and displayed shall be marked to provide identification and shall be part of the record;
3. The official record shall include:
  - a. All materials considered by the hearings body;
  - b. All materials submitted by City staff to the hearings body regarding the application;
  - c. The verbatim record made by the stenographic, mechanical or electronic means; the minutes of the hearing; and other documents considered;
  - d. The final ordinance;
  - e. All correspondence; and
  - f. A copy of the notices that were given as required by this Chapter.

## **Chapter 16.205 ANNEXATIONS**

### **16.205.000 Statement of Purpose.**

The City of North Plains finds annexation is the first step to converting future urbanizable lands to urban land within the North Plains Urban Growth Boundary and as such, it is an important part of the process of providing timely and orderly urban development. The City also recognizes that development of lands at urban densities must include the consideration of the provision of adequate levels of required urban services and infrastructure such as police, fire, sanitary sewer, water, roads, storm water disposal. Policies and procedures adopted in this Chapter are intended to carry out the purposes of the North Plains Comprehensive Plan and ensure that annexation of lands to the City is done timely and orderly and consistent with the Charter which requires that, unless otherwise mandated by State law, all annexation proposals must be approved by a majority vote of the City's citizens before the annexation becomes effective.

### **16.205.005 Conditions for Annexation.**

The following conditions must be met prior to or concurrent with City processing of any annexation request:

- A. The subject site must be located within the North Plains Urban Growth Boundary.
- B. The subject site must be contiguous to the existing City limits.

### **16.205.010 Criteria**

The following criteria shall apply to all annexation requests:

- A. The proposed use for the site complies with the North Plains Comprehensive Plan and with the designation(s) thereon. If a re-designation of the plan map is requested concurrent with annexation, the uses allowed under the proposed designation must comply with the Comprehensive Plan.
- B. An adequate level of urban services and infrastructure must be available or made available in a specified time period determined by Council. An adequate level of urban services is defined as:

1. Municipal sanitary sewer, storm drainage and water service meeting the requirements enumerated in the Comprehensive Plan for provision of those services.
  2. Rights of way with adequate design capacity for the proposed use and projected future uses.
  3. Where construction of improvements necessary for delivery of the urban services identified in subsection (1) above or the rights-of-way identified in subsection (2) above are not thought to be immediately necessary, the applicant shall note the methods that are proposed to be used for providing and/or financing those services/improvements including (but not limited to )dedication of right-of-way, granting waiver(s) of remonstrance against possible future local improvement districts created or other approaches/devices to pay for improvement costs.
- C. Findings documenting the availability of police, fire, parks, school facilities and all related services shall be made allowing for conclusive findings either for or against the proposed annexation. The adequacy of each of these services shall be considered in relation to each annexation proposal.
- D. The burden of providing evidence supporting the findings for Section 16.205.070 A-C is upon the applicant.

Improvements for needed infrastructure may be secured by a funding mechanism that will place the primary economic burden on the territory proposed for annexation and not on the City of North Plains generally.

#### **16.205.015 Application Filing, Publication and Posting Deadlines.**

Annexation elections can be scheduled on any election date set by law. An application deadline is established to permit public hearings by both the Planning Commission and City Council so as to allow for meeting the election date. Application, publication, and posting deadlines for annexations are as follows:

- A. Applications for annexation shall be filed with the City before the close of business on the 145<sup>th</sup> day prior to the date on which the election is scheduled.
- B. Notice of public hearing shall be published once each week for two successive weeks prior to the day of hearing before the legislative body, in a newspaper of general circulation in the city, and shall be posted in three public places in the city for a like period.

**16.205 - 2**

- C. Notice of Measure Election shall be published in a newspaper of general circulation as required by State Law. In addition, a map depicting the property proposed to be annexed shall be published in the County Voters' Pamphlet along with an unbiased Explanatory Statement.
- D. The City shall cause the property proposed to be annexed to be posted with a minimum of one sign not greater than six square feet in size. The sign shall provide notice of the annexation election, a map of the subject property and other relevant information regarding the proposed annexation.
- E. The decision to set the annexation for an election shall be at the discretion of the City Council and shall be approved by resolution. All costs associated with placing the matter on the ballot shall be paid by the applicant or owner of the property proposed to be annexed.

**16.205.020 Application Requirements**

- A. Applications for annexation shall be made on forms provided by the City and include, at a minimum, the following material:
  - 1. Written consent to the annexation signed by the affected property owners.
  - 2. Legal description of the property to be annexed and a boundary survey certified by a registered engineer or surveyor licensed in the State of Oregon.
  - 3. Vicinity map and map of the area to be annexed including adjacent City territory.
  - 4. General land use plan indicating types and intensities of proposed development, transportation corridors, watercourses, significant natural features, and adjoining development.
  - 5. Payment of annexation fees, as the same are set by Council resolution.
- B. In addition to the information and fees required under subsection (A) above, an applicant shall also be required to provide the following information:
  - 1. A statement of the overall development concept and methods by which the physical site, surrounding area and community will be affected as well as proposed actions designed to mitigate negative effects from the development, if any.

**16.205 - 3**

2. A statement addressing the availability, capacity and status of existing water, sanitary sewer, drainage, transportation, park and school facilities as determined and an analysis as to the anticipated increased demand for said facilities generated by the proposed development.
3. A statement analyzing anticipated additional facilities required to meet the increased demand and proposed phasing of such facilities in accordance with projected demand.
4. A statement setting out proposed method(s) and source(s) of financing required to provide the additional facilities identified in the analysis described in subsection (3) above.
5. A narrative demonstrating the need for the urban development proposed for the annexation area analyzing the following:
  - a. Availability within the City of undeveloped land designated for proposed urban development.
  - b. Analysis of immediate, short-term (1 to 5 years) demand for proposed urban development.
  - c. Probable phasing of proposed urban development consistent with projected demand for period in which the annexation area is expected to develop.

**16.205.025 Acceptance of Application; Staff Evaluation.**

- A. The City Planner shall review the application in accordance with Sections 16.205.005-16.205.020 to ensure that the application complies with the conditions and criteria set out therein, is complete and that all appropriate fees have been paid.
- B. After accepting a complete application, the City Planner shall prepare a report evaluating the proposal's compliance with the Review Criteria set out in Section 16.205.030 and provide his/her recommendation thereon to the Planning Commission and schedule a hearing to be held by the Planning Commission. Notice of the hearing shall be provided in accordance with the Application Review section of this chapter.

**16.205.030 Review Criteria.**

Annexation shall be reviewed to assure consistency with the purposes of this Chapter, the Comprehensive Plan and other applicable policies and standards adopted by either the City and the State. In addition, a finding shall be made that the City is capable of providing services to the subject property(ies) commensurate with the needs of existing property(ies) and any proposed increases.

**16.205.035 Action By The Planning Commission.**

The Planning Commission shall conduct a public hearing consistent with the Application Review section of this chapter to evaluate the proposed annexation and determine the appropriate zoning classification that should apply upon annexation of the territory. The Planning Commission shall conduct its hearing at the next available meeting that complies with the notice requirements of Section 16.205.015.

Following the close of the public hearing, the Planning Commission shall designate the development district(s) that will apply to the area proposed to be annexed and forward that recommendation to the City Council. The Commission's recommendation shall include Findings of Fact and Conclusions of Law specifying how the proposal has or has not complied with the Application Requirements and Review Criteria. The Planning Commission shall specify such consideration as in its findings and conclusions of law.

**16.205.040 Annexation Declaration.**

The City Council shall by ordinance declare annexation only after determining that all requirements of the Oregon Revised Statutes have been met, all requirements of this ordinance have been met, all applicable fees have been paid, and the annexation request has been approved by a majority of those voting.

**16.205.045 Health Hazard Annexation.**

The City Council shall annex those areas constituting a health hazard in accordance with Oregon Revised Statutes, taking into consideration the ability of the City to provide necessary services. Annexation of areas constituting a health hazard is not subject to voter approval.

**16.205.050 Island Annexation.**

The City shall not allow islands or enclaves of unincorporated territory surrounded by or within the city limits.

**16.205.055 Coordination.**

All annexation requests shall be coordinated with affected public and private agencies, including, but not limited to Washington County, Portland General Electric, Northwest Natural Gas, Hillsboro School District, Washington County Fire District No. 2 and, where appropriate, state agencies. Coordination shall be made by referral of annexation request to all appropriate entities sufficiently in advance of proposed final City action to allow for review by those entities and incorporation of their recommendation(s) into the City's records.

**16.205.060 Effective Date of District Designation.**

The decision of the City regarding establishment of the district designation shall become effective upon expiration of the appeal period unless an appeal has been filed in accordance with the Application Review section of this chapter.

**16.205.065 Action by City Council.**

- A. The recommendations of the Planning Commission on an annexation proposal will be set for a public hearing before the City Council pursuant to the Application Review section of his chapter. The Council shall review the Planning Commission's recommendation(s) on all annexation proposals prior to said proposal(s) being referred for a vote of the electors. The Council shall only refer those annexation proposals where the proposal complies with the criteria established Section 16.205.010.
  
- B. The decision of the City Council regarding referral of the proposed annexation measure for election shall be supported by written Findings of Fact and Conclusions of Law including a Finding that the proposed annexation is in the best interests of the City and its residents considering the timing of and extent to which municipal services and infrastructure can be provided.

## **5.05.00 ROADWAY DESIGN STANDARDS**

Roadway design standards are based upon the function and operational characteristics of streets such as travel volume, capacity, operating speed and safety. The City of North Plains existing standards for design and classification of public streets, summarized in the Existing Conditions section of this plan, were defined and implemented to provide for a system of streets to safely and efficiently serve the traveling public.

The roadway design standards consist of the following parameters:

- Typical Roadway Section
- Alignment and Operational Characteristics
- Access Management

### **5.05.10 Typical Roadway Section**

The typical roadway section includes all of the following components: right-of-way, number of vehicle travel lanes, bicycle/pedestrian facilities, drainage system and other public amenities. The specific parameters of the typical roadway section components will vary depending upon the functional classification of the street. Figures 5-2a through 5-2p (pages 24 - 39) illustrates the typical roadway sections for each of the functional classifications.

### **5.05.20 Alignment and Operational Characteristics**

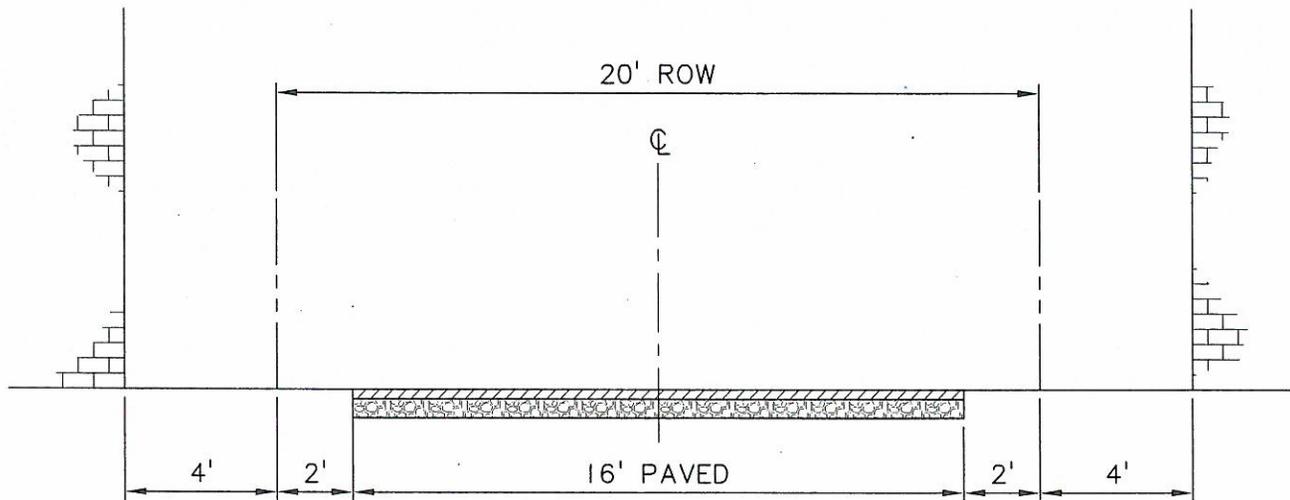
The safety and efficiency of travel on the City's roadways will be highly affected by the alignment and operational characteristics. The alignment and operational characteristics include the design and operating speed, horizontal and vertical curvature, lane usage, and parking usage.

### **5.05.30 Access Management**

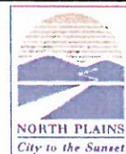
As the North Plains urban area continues to develop the City's collector and arterial street system will become more heavily used and relied upon for a variety of travel needs. As such, it will become increasingly important to manage access on the existing and future collector/arterial street system as new development occurs. Experience throughout the United States has shown that a well managed access plan for a street system can: 1) minimize the number of potential conflicts between all users of the street system, and as a consequence provide for safer and more efficient traffic operations; and 2) minimize local cost for transportation improvements needed to provide additional capacity and/or access improvements along unmanaged roadways.

Figure 5-3 (page 40) illustrates the relationship between the function of land use access control, travel movement, and the types of roadways best serving each. In general, local streets serve local access needs and carry primarily local traffic at lower speeds. Conversely, freeways operate best at higher speeds, serving non-local traffic under full access control.

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 Portland, Oregon



**CITY OF NORTH PLAINS**  
**ALLEY 20' RIGHT-OF-WAY**  
**ROAD SECTION**

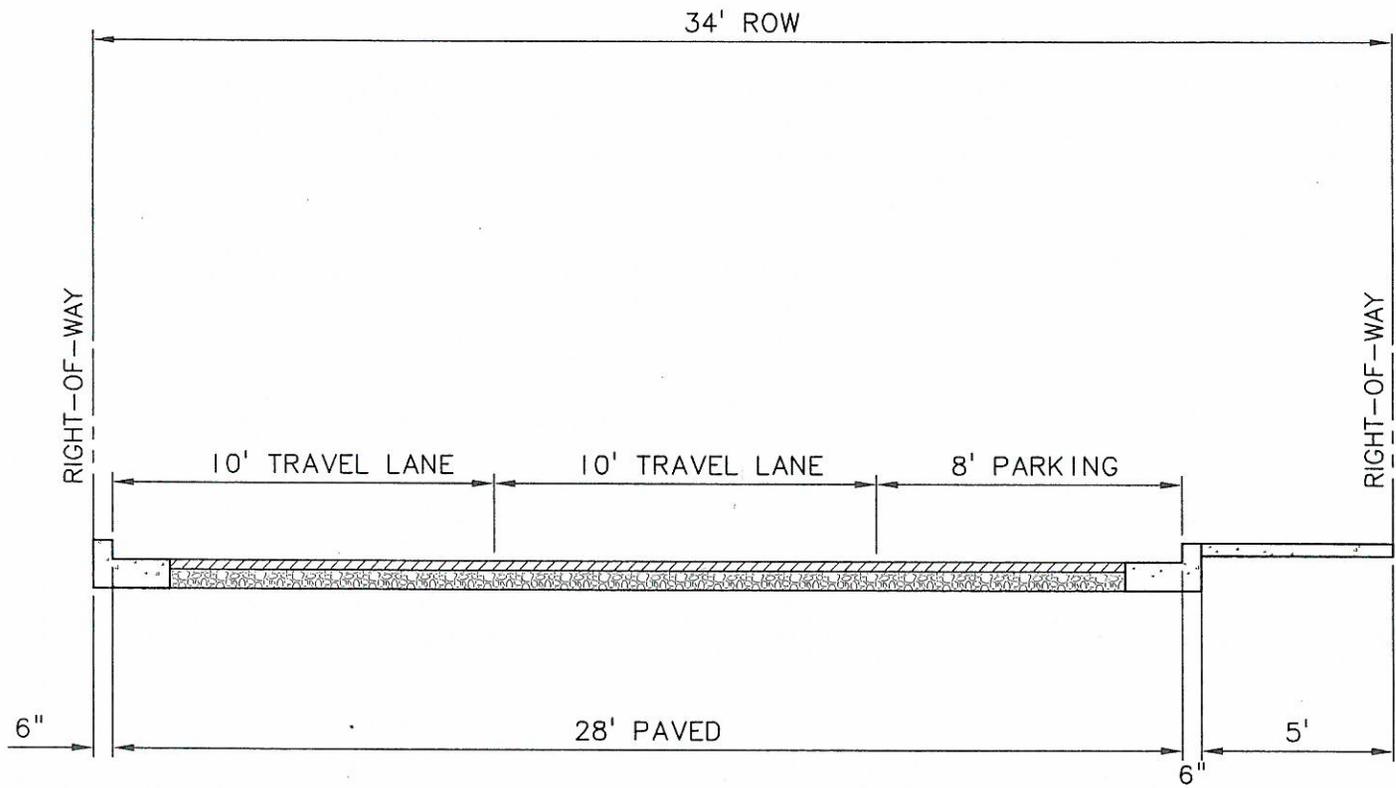
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FIGURE: 5-2a

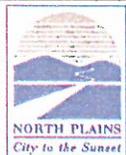
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 Portland, Oregon

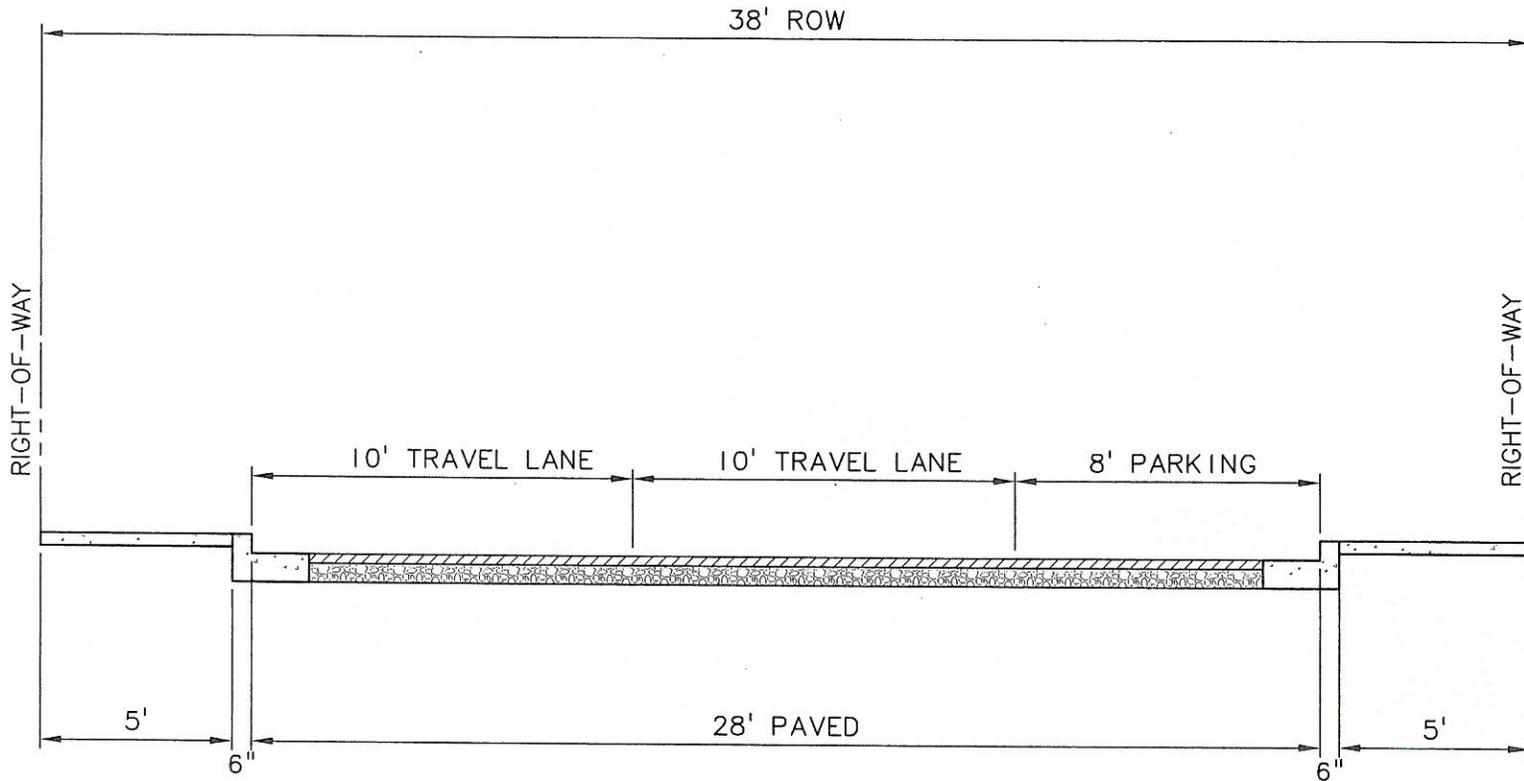


CITY OF NORTH PLAINS  
 LOCAL 34' RIGHT-OF-WAY  
 ROAD SECTION

SCALE: NTS

FIGURE: 5-2b

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**CITY OF NORTH PLAINS**  
**LOCAL 38' RIGHT-OF-WAY**  
**ROAD SECTION**

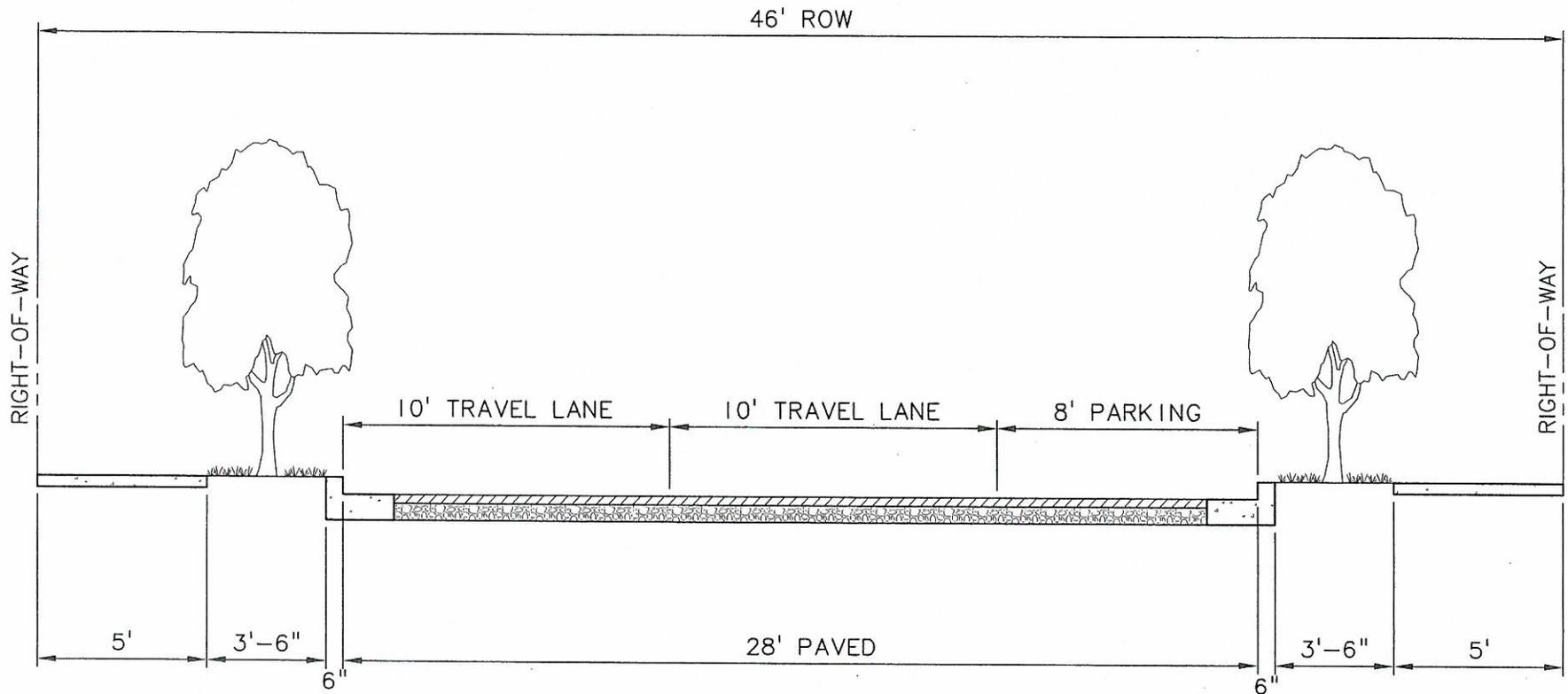
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FIGURE: 5-2c

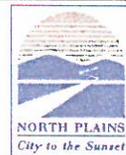
DATE 11/05

PAGE 26

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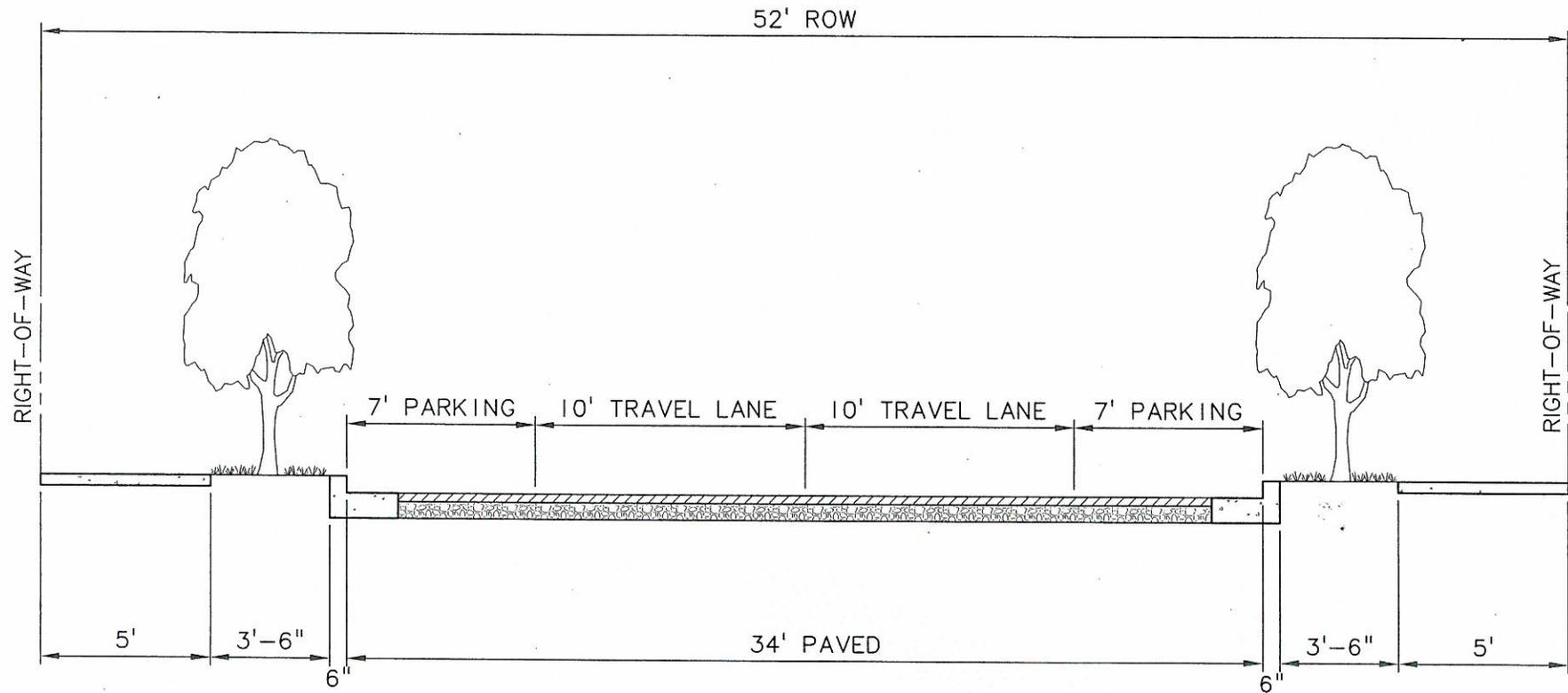


**CITY OF NORTH PLAINS**  
**LOCAL 46' RIGHT-OF-WAY**  
**ROAD SECTION**

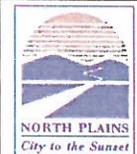
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FIGURE: 5-2d

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 Portland, Oregon



**CITY OF NORTH PLAINS**  
**LOCAL 52' RIGHT-OF-WAY**  
**ROAD SECTION**

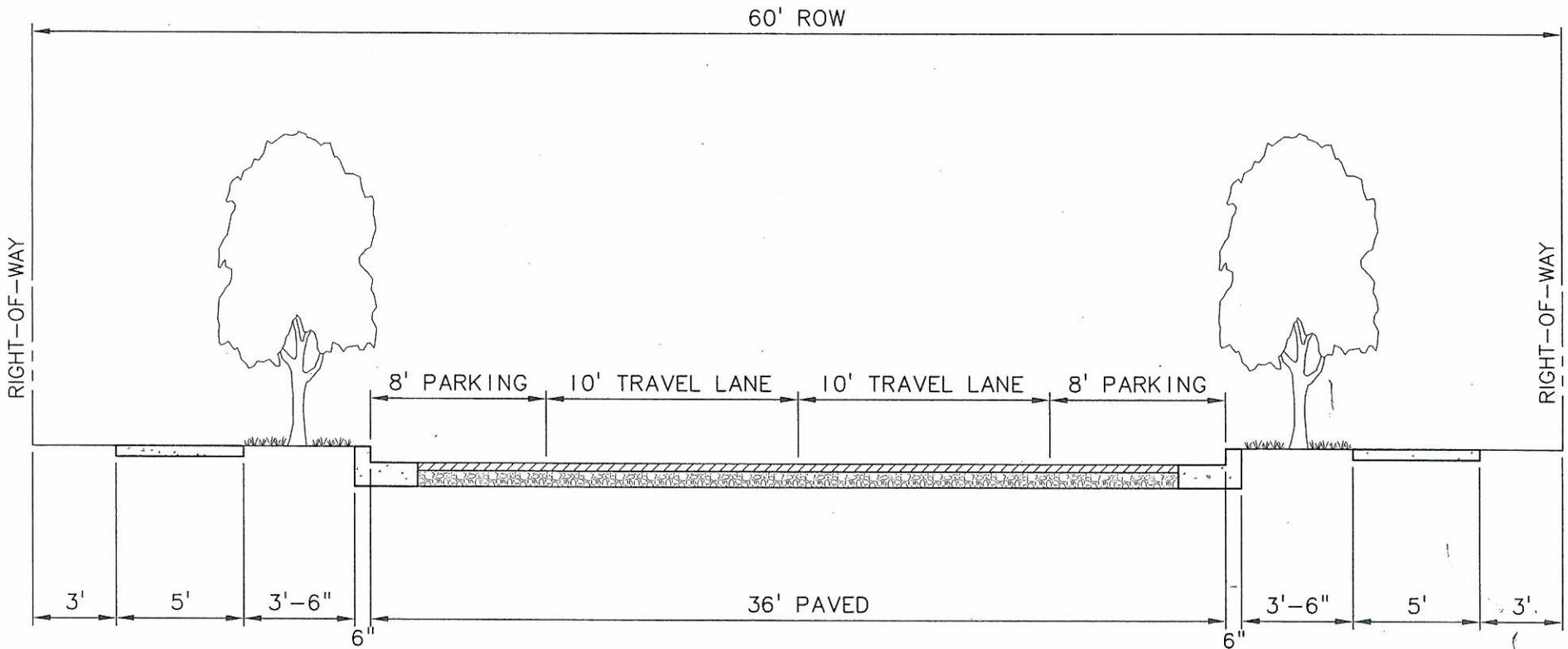
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FIGURE: 5-2e

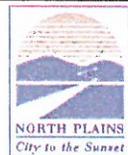
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**CITY OF NORTH PLAINS**  
**LOCAL EXISTING 60' RIGHT-OF-WAY**  
**ROAD SECTION**

SCALE: NTS

FIGURE: 5-2f

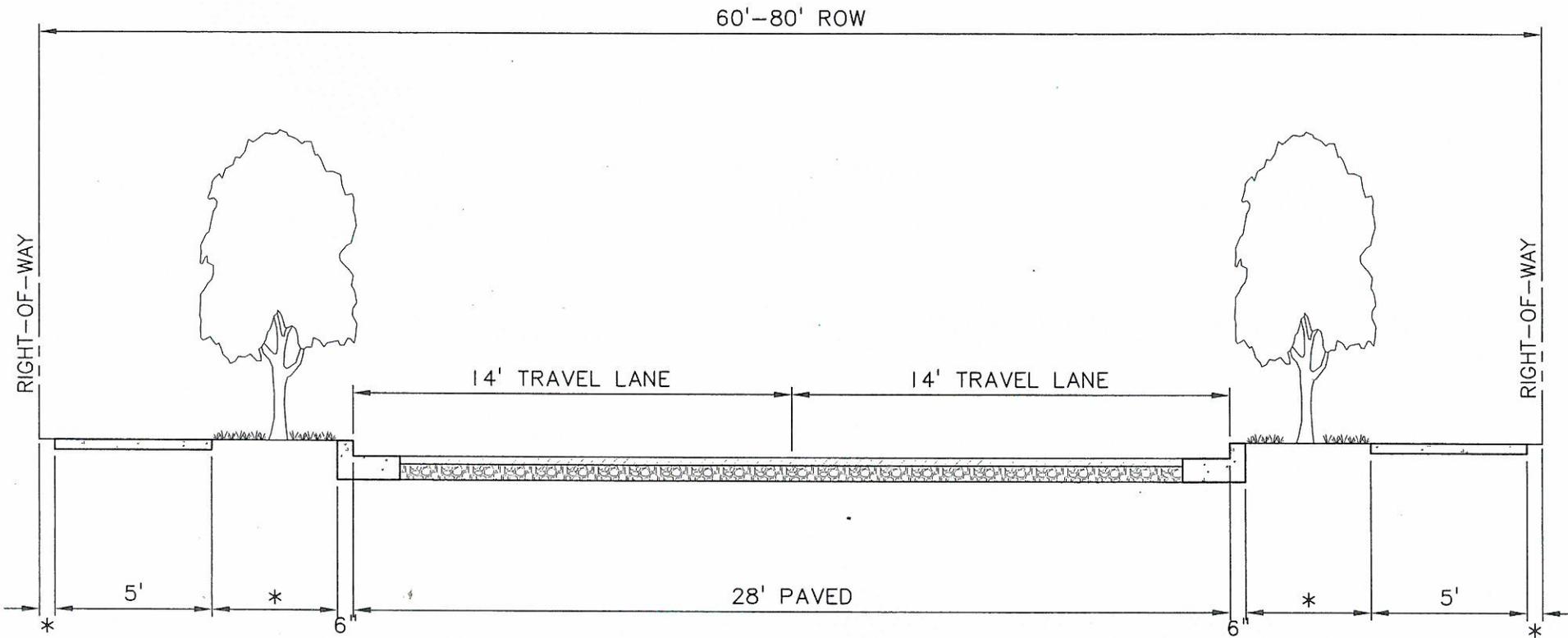
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PAGE: 20

NORTH PLAINS PLANNING COMMISSION WORKSHOP AGENDA PACKET

Wednesday, June 3, 2015

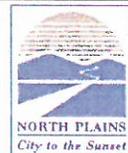
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NOTE: TRAVEL LANES ARE SHARED BICYCLE AND MOTOR VEHICLE LANES.

\* DIMENSION VARIES WITH RIGHT-OF-WAY

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**CITY OF NORTH PLAINS**  
**COLLECTOR (RESIDENTIAL)**  
**60'-80' RIGHT-OF-WAY ROAD SECTION**

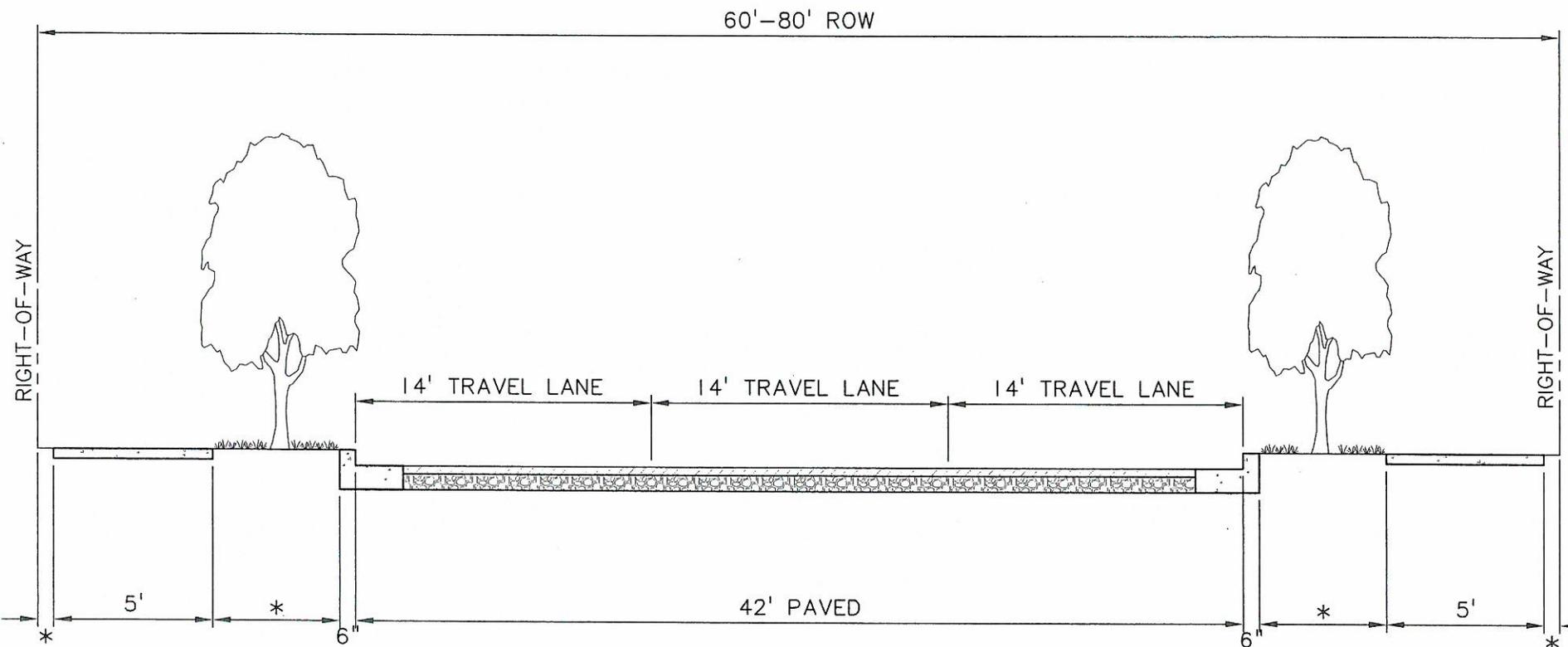
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FIGURE: 5-2g

DATE 11/05

PAGE 30

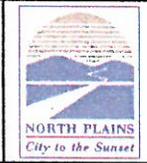
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NOTE: OUTSIDE TRAVEL LANES ARE SHARED BICYCLE AND MOTOR VEHICLE LANES.

\* DIMENSION VARIES WITH RIGHT-OF-WAY

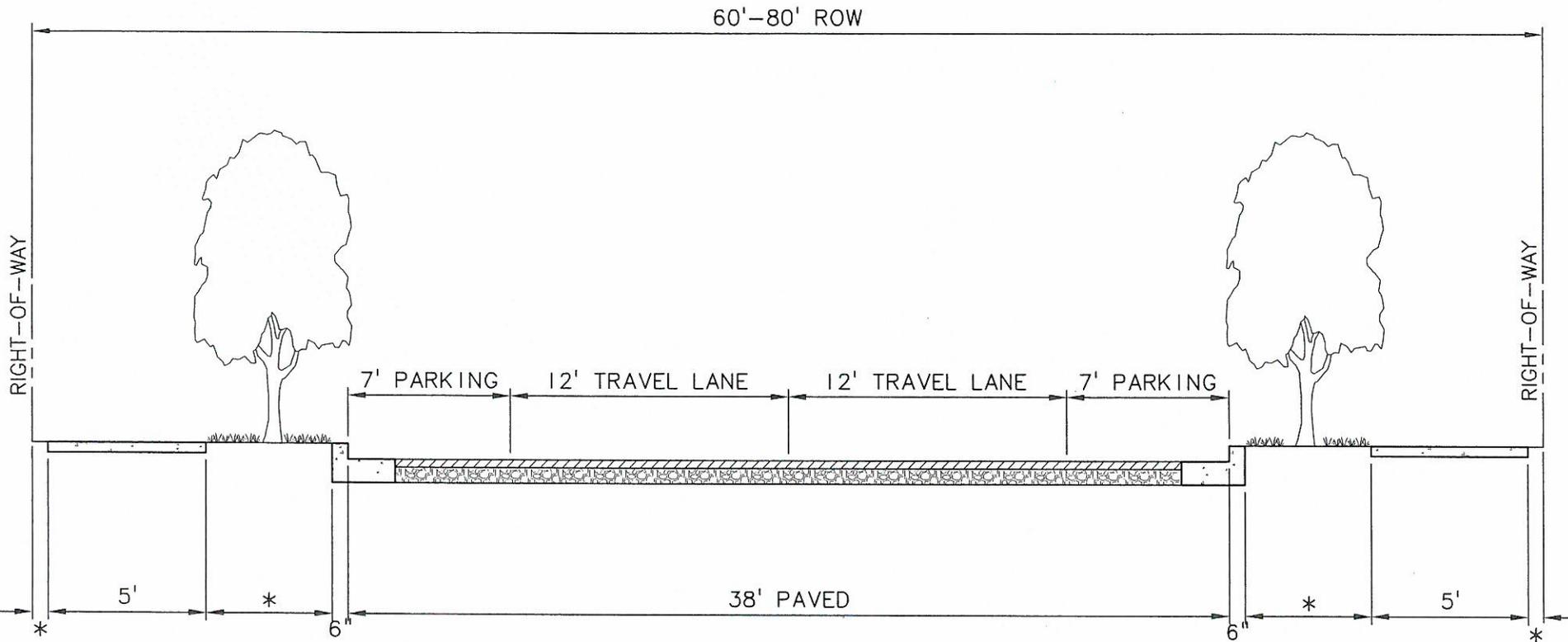
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Portland, Oregon



**CITY OF NORTH PLAINS  
COLLECTOR (COMMERCIAL)  
60'-80' RIGHT-OF-WAY ROAD SECTION**

|            |              |
|------------|--------------|
| SCALE: NTS | FIGURE: 5-2h |
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\* DIMENSION VARIES WITH RIGHT-OF-WAY

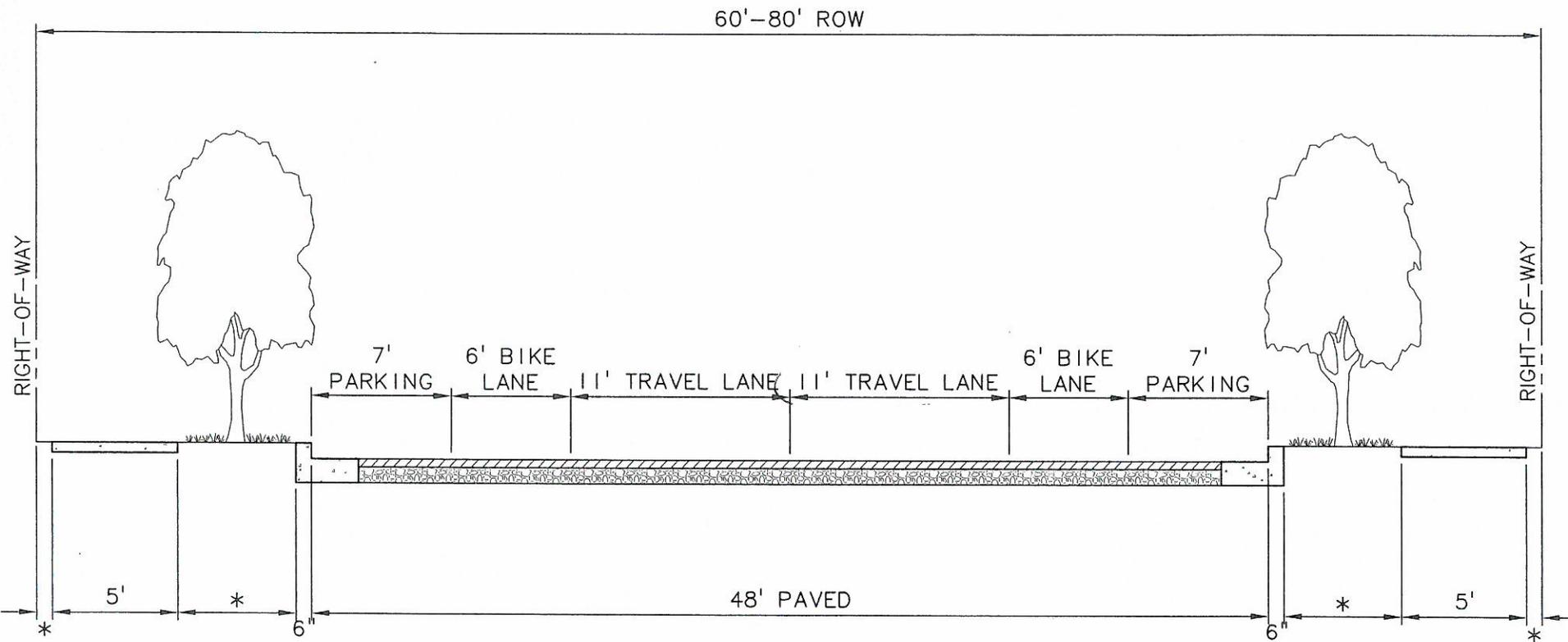
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 Portland, Oregon



**CITY OF NORTH PLAINS**  
**COLLECTOR 60'-80' RIGHT-OF-WAY**  
**ROAD SECTION**

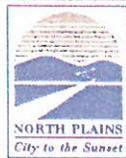
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| SCALE: NTS  | FIGURE: 5-2i |
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\* DIMENSION VARIES WITH RIGHT-OF-WAY

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Portland, Oregon

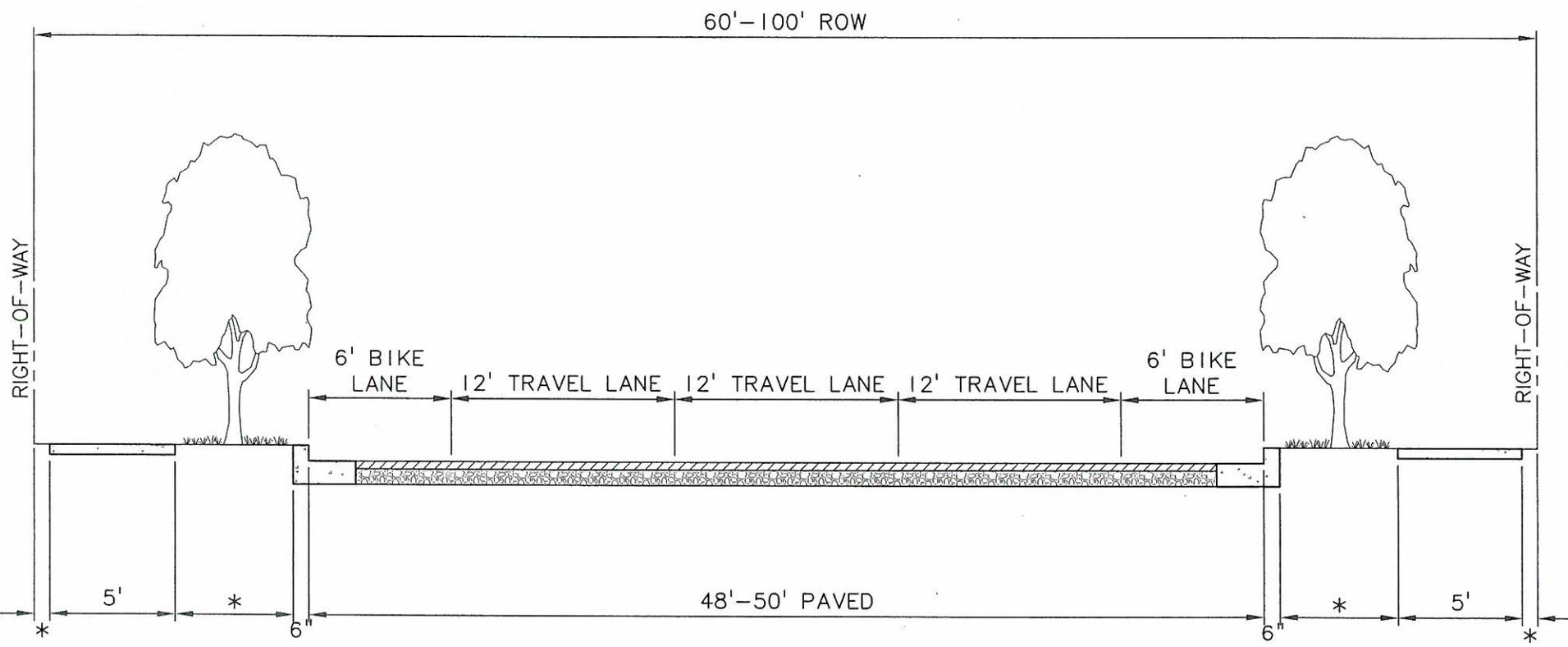


**CITY OF NORTH PLAINS**  
**COLLECTOR (BOULEVARD) 60'-80'**  
**RIGHT-OF-WAY ROAD SECTION**

SCALE: NTS

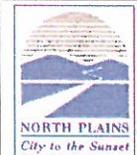
FIGURE: 5-2j

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\* DIMENSION VARIES WITH RIGHT-OF-WAY

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 Portland, Oregon

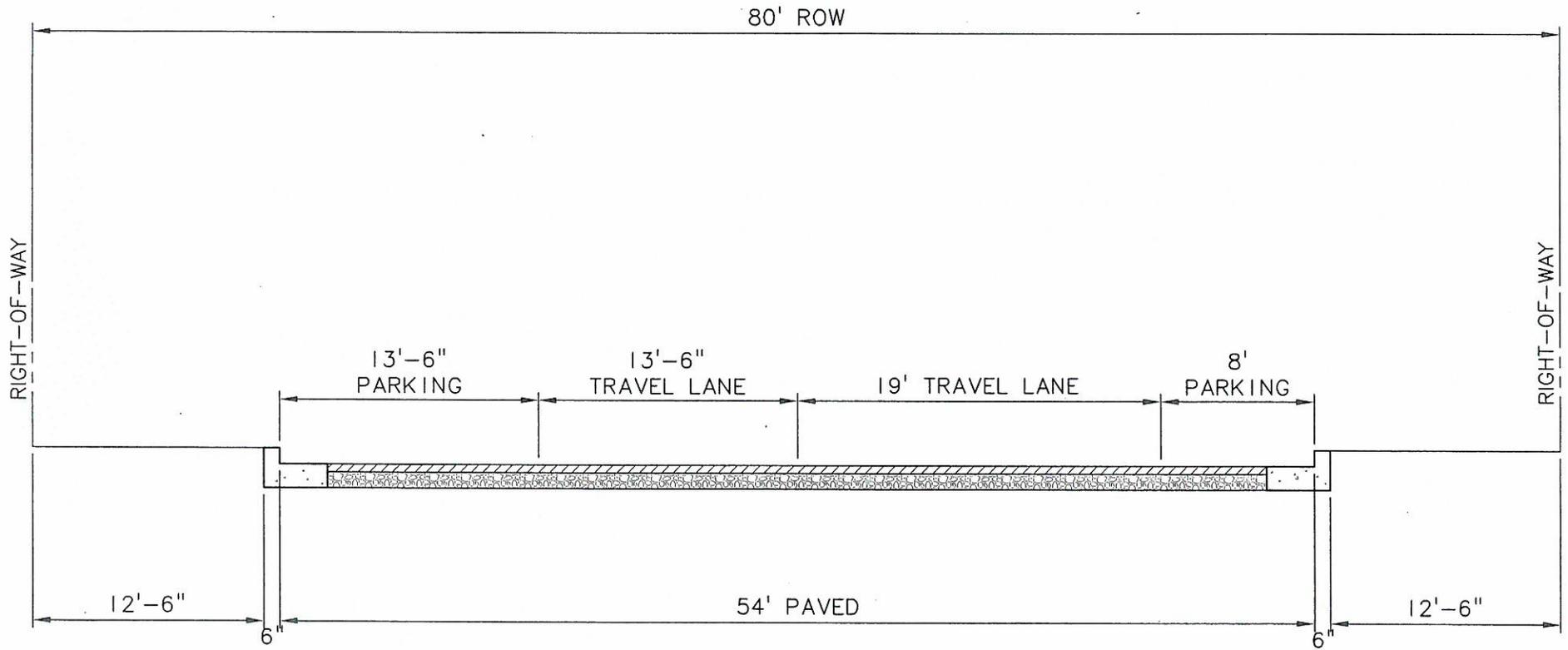


**CITY OF NORTH PLAINS**  
**ARTERIAL 60'-100' RIGHT-OF-WAY**  
**ROAD SECTION**

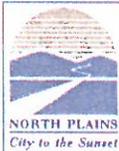
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 NORTH PLAINS PLANNING COMMISSION WORKSHOP AGENDA PACKET  
 Wednesday, June 3, 2015

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 Engineers/Planners  
 Portland, Oregon



CITY OF NORTH PLAINS  
 COMMERCIAL ST -- MAIN ST TO 313TH  
 EXISTING RIGHT-OF-WAY ROAD SECTION

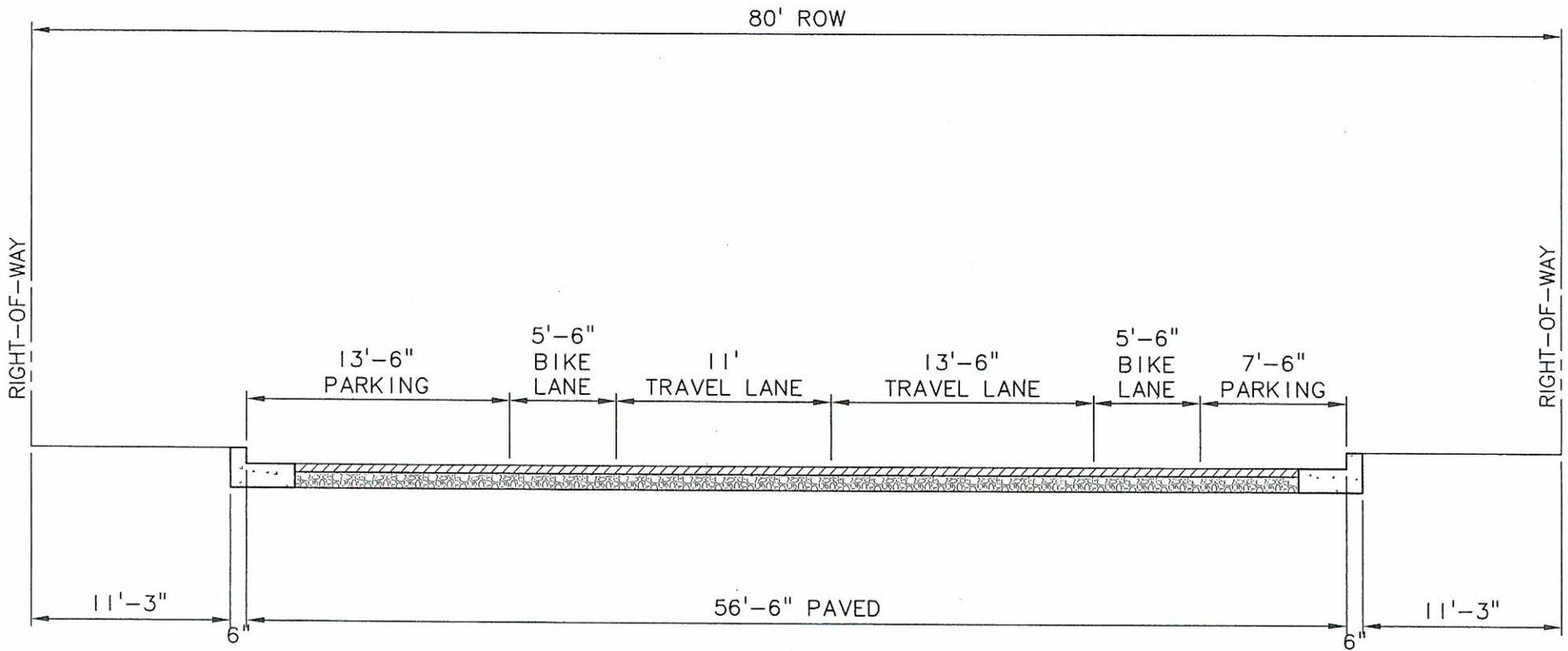
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FIGURE: 5-2L

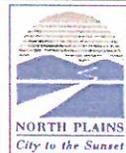
DATE: 11/05

PAGE: 35

G:\04\0682\102-06-PD-SECTION DET\_11-30-05.dwg E:\ST-MA\11 ST 80' ROW-ALT A 11/30/05 09:49 (mbk)



**MSA** Murray, Smith & Associates, Inc.  
 Engineers/Planners  
 Portland, Oregon



**CITY OF NORTH PLAINS**  
**COMMERCIAL ST -- MAIN ST TO 313TH**  
**"ALTERNATIVE A" RIGHT-OF-WAY ROAD SECTION**

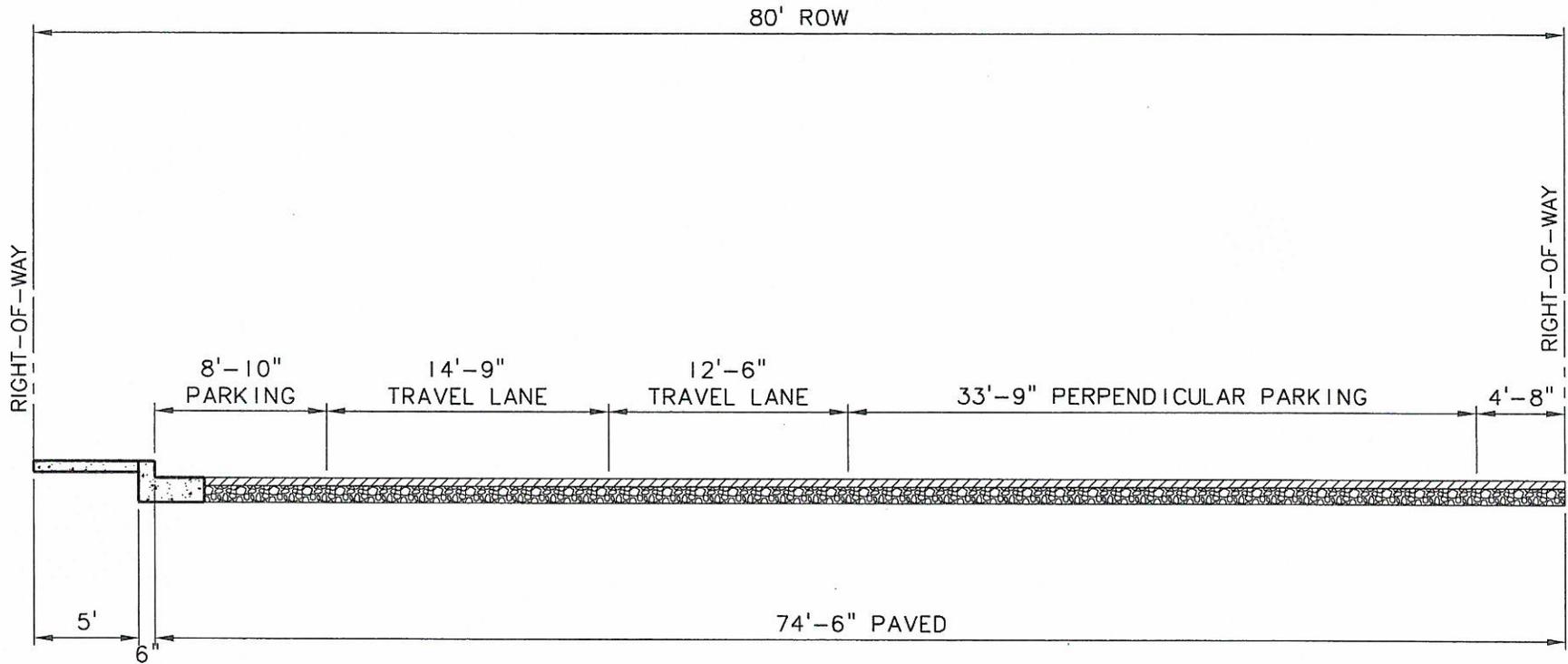
SCALE: NTS

FIGURE: 5-2m

DATE 11/05

PAGE 36

C:\04\0882\102\_General\_Services - Transportation\CAD\04-0882-102-CR-RD\_SECTION\_DET\_11-30-05.dwg EXIST MAIN TO 318TH 80' ROW 12/6/05 14:05 (mbe)



**MSA** Murray, Smith & Associates, Inc.  
 Engineers/Planners  
 Portland, Oregon



**CITY OF NORTH PLAINS**  
**COMMERCIAL ST -- MAIN ST TO 318TH AVE**  
**EXISTING RIGHT-OF-WAY ROAD SECTION**

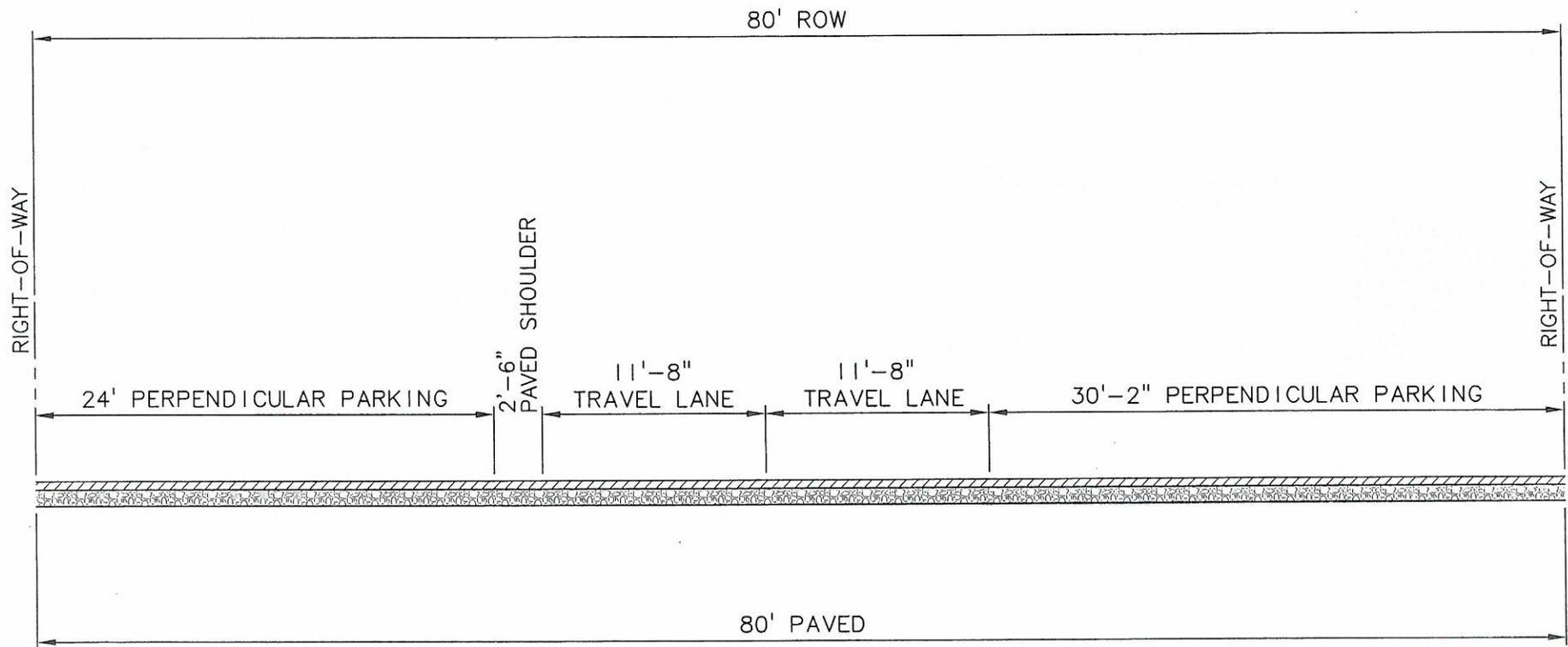
SCALE: NTS

FIGURE: 5-2n

DATE: 12/05

PAGE: 37

G:\04\0662\102\_General\_Services - Transportation\CA0\04-0662-102-OP-PD\_SECTION DET\_11-30-05.dwg EXIST 318TH TO 321ST 80' ROW 11/30/05 09:49 (mba)



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Portland, Oregon



CITY OF NORTH PLAINS  
COMMERCIAL ST -- 318TH AVE TO 321ST AVE  
EXISTING RIGHT-OF-WAY ROAD SECTION

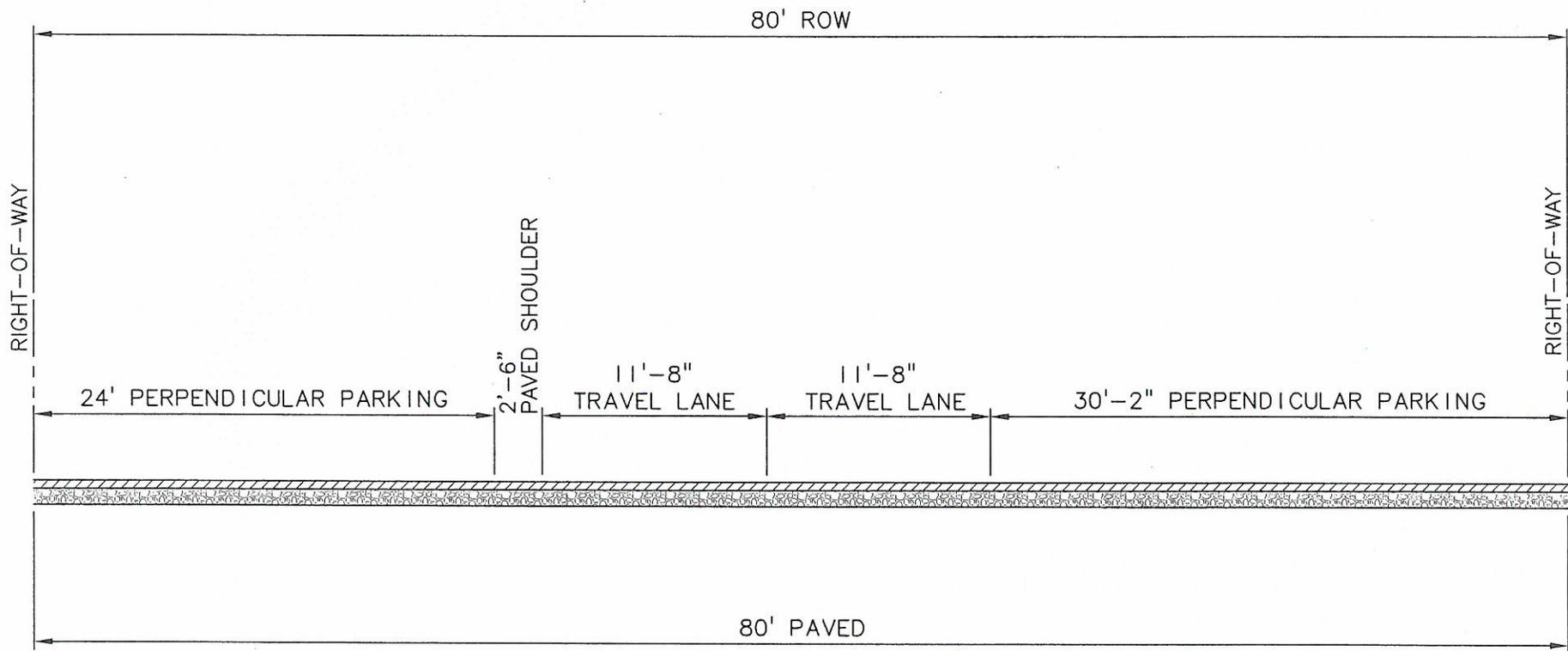
SCALE: NTS

FIGURE: 5-20

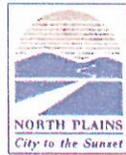
DATE: 11/05

PAGE: 38

G:\04\0682\102 General Services - Transportation\C:\04-0682-102-06-RD SECT\01 DET\_11-30-05.dwg E:\11-30-05.dwg E:\11-30-05.dwg RD 30' PD: 11/30/05 09:49 (mbe)



Murray, Smith & Associates, Inc.  
Engineers/Planners  
Portland, Oregon



CITY OF NORTH PLAINS  
COMMERCIAL ST -- 321ST AVE TO GORDON  
RD EXISTING RIGHT-OF-WAY ROAD SECTION

SCALE: NTS

FIGURE: 5-2p

# RELATIONSHIP BETWEEN CONTROL OF ACCESS AND TRAFFIC MOVEMENT

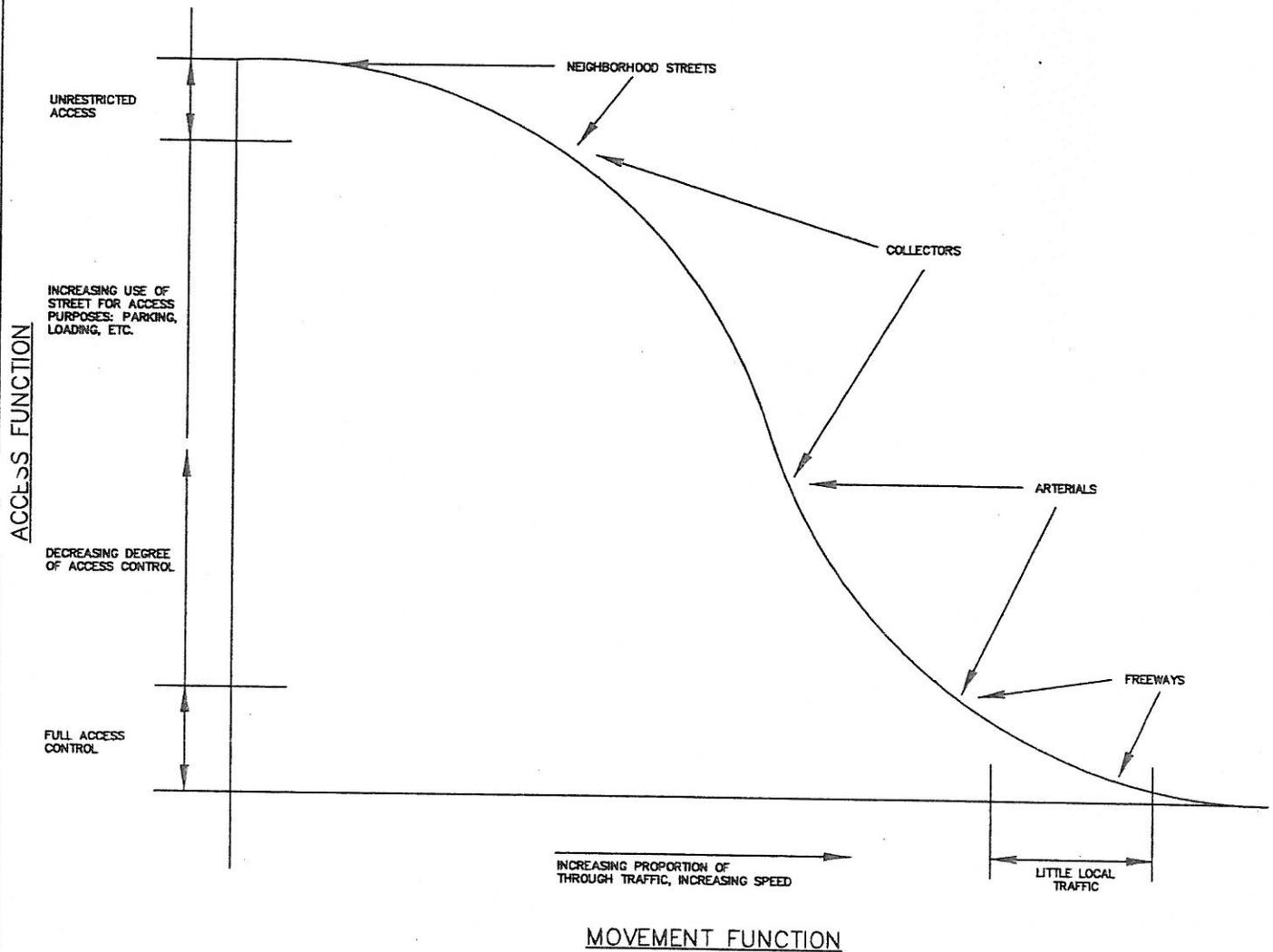


FIGURE:5-3

TRANSPORTATION SYTEM PLAN  
CITY OF NORTH PLAINS

DES.  
DRW. RDH 4/30/01  
CHK.  
APP.



The design standards for access in the City of North Plains roadway system have been developed to maximize the safety and efficiency of the entire transportation system. The street design standards are listed in the following table:

**TABLE 3  
STREET DESIGN STANDARDS**

| <b>FUNCTIONAL CLASSIFICATION</b>         | <b>MINIMUM ACCESS SPACING</b> | <b>SPACING</b> | <b>POSTED SPEED</b>           | <b>ADJACENT LAND USE</b>   |
|--|-------------------------------|----------------|-------------------------------|--|
| Arterial                                 | 600 feet                      | 1 Mile         | 35-50 MPH                     | Light Industrial/Office.<br>Low to Medium Density Residential<br>Neighborhood Commercial |
| Collector<br>- Boulevard<br>- Commercial | 100 feet                      | 1/4 -1/2 mile  | 25-35 MPH<br>25 MPH<br>25 MPH | Low/Medium Density   |
| Local Street                             | Individual lots               | 300-500 feet   | 25-35 MPH                     | Residential<br>Low density residential   |

These roadway design standards are to be used as a guideline for the development of future roadway facilities within North Plains. As the City continues to develop, there may be the need to provide some flexibility in the City's road design standard, especially on local streets; assuming that the collector and arterial street system is functioning properly. The purpose of a flexible design standard is to accommodate development needs within the City in a consistent manner but also allow for individual consideration of unique issues such as, but not limited to, land access, non-auto travel modes, right-of-way constraints, terrain, vegetation and building orientation.

#### **5.05.40 Neighborhood Traffic Management**

If local traffic conditions arise that conflict with adopted roadway design and policies, the City should review ongoing research regarding roadway design and adopt new or improved design features when available, and if applicable, to the City of North Plains standards. In addition, there are provisions that could be added to the City development code to provide the desired flexibility. For example, the City of Portland established and adopted traffic control measures to identify and deal with problems related to safety, travel speed and

travel volume on local streets. These measures are generally policy-oriented but allowed the City to test and implement traffic control devices sought to achieve stated goals and policies (i.e. routing through-traffic from local streets onto arterials) through such measures as speed humps and turning circles.

Research and implementation of traffic calming devices used to control traffic on local streets have shown some success outside the United States. At a minimum, there are four important references that should be used to assist in road design. These include:

- *Roadside Design Guide* by the American Association of State Highway and Transportation Officials (AASHTO).
- *A Policy on Geometric Design of Highways and Streets* by AASHTO.
- *Residential Streets - Second Edition* by the American Society of Civil Engineers (ASCE), National Association of Home Builders and the Urban Land Institute (ULI).
- *Residential Street Design and Traffic Control* by the Institute of Transportation Engineers (ITE).

For streets designed as Collector or lower, the City should be given the latitude to consider street modifications to preserve trees. In conclusion, consideration of such policies will help the City to allow flexibility in the design of roads but still maintain a standard set of design parameters.

Neighborhood Traffic Management measures alter the physical street and driving environment to encourage or require a desired driving action. Many of the techniques listed below are known as traffic calming devices. These efforts can be used to reduce speeds to those posted or below as desired:

**5.05.42 Speed Humps:** Speed humps have become a valuable traffic management device in the public right-of-way. They have been studied for many years and have shown positive results. A speed hump differs from a speed bump by its size. A speed hump is 12 to 14 feet long and three to four inches high while a speed bump may be only two to three feet long and three to four inches high. A properly designed speed hump causes a sudden, potentially dangerous jar to the vehicle. Properly designed speed humps have mild effects that tend to slow drivers down without losing control when crossing a hump. Raised crosswalks or intersections can be designed to have similar effects.

Speed humps are much cheaper than traffic circles and may prove to be as effective. Guidelines should be established for the testing and evaluation of speed humps on local neighborhood streets where speed appears to be a problem.

**5.05.44**     **Traffic Circles:** Traffic circles reduce vehicle speeds and slow down fast moving vehicles on local residential streets. Traffic circles do not divert local traffic and do not restrict access to adjacent streets or land uses. They are usually installed in a series or two or more adjacent intersections to create a reduced-speed corridor. Traffic circles are commonly used in European cities, as well as Portland and other cities in Oregon. Traffic circles reduce speed while maintaining a high level of service and capacity.

A traffic circle may cost as much as 510,000 to construct. Development of a plan for the use of traffic circles in a particular neighborhood (public meetings, testing, and traffic engineering evaluation of testing and final design) adds to the total cost of installing a traffic circle. These devices have landscape interiors, requiring ongoing irrigation and maintenance.

**5.05.46**     **Diverters, Forced-Turn Channelization and Cul-de-Sacs:** Diagonal diverters involve the installation of a diagonal barrier in the intersection. This forces vehicles to make a 90-degree turn. These devices permit better circulation than cul-de-sacs and can be designed to allow the passage of emergency vehicles. Certain maintenance aspects, such as manhole cover access, should be considered when applying this type of device.

Semi-diverters limit access to a street by blocking one direction of travel at an intersection. Semi-diverters reduce traffic volumes and retain easy access for emergency vehicles. However, because half of the street is still open to traffic, the violation rate can be high.

Forced-turn channelization generally involves the installation of traffic islands to prohibit certain movements. For example, to force right turns at an intersection, an island could be installed to make left or through movement difficult. This installation can increase safety at an intersection by discouraging unsafe movements. Cul-de-sacs involve closure of a street, either midblock or adjacent to an intersection. Their purpose is to fully block access to the adjacent street. Cul-de-sacs can have the largest negative impact on emergency vehicle access time. Use of cul-de-sacs reduces the permeability of the street network and force drivers to use a limited number of routes to reach their destinations. In effect, the traffic removed from a cul-de-sac is forced on to other streets, potentially causing traffic problems in these locations.

**5.05.48**     **Chokers:** Chokers are also called curb extensions, narrow the street by widening the sidewalk area or landscaping to provide safer pedestrian crossings. Additionally, the narrowed street reminds drivers that they are not on a major thoroughfare. Chokers may effectively reduce speeds on local streets in neighborhoods or commercial areas, while increasing pedestrian

safety. North Plains should experiment with chokers in the public right-of-way. Guidelines should be established for the testing and evaluation of chokers on local neighborhood streets.

All of these traffic management devices force changes in the flow of traffic and create obstacles for emergency vehicles. They should be considered only where a significant traffic problem could be greatly reduced or eliminated and adequate access for emergency service can be maintained. They should be considered on a case-by-case basis and used only with a consensus of the affected residents.

Many methods can play a role in traffic management. Narrowing streets or making them feel narrower with placement of parking or planting of trees along the sides or in median strips can slow traffic. Below is a summary of proposed actions regarding traffic management devices.

- Standards for uniform application of traffic control devices are important.
- Standards for traffic signals, -stop signs and yield signs are contained in the Manual of Uniform Traffic Control Devices (MUTCD) and should be adhered to.
- Standards for the application of stop sign plans should be developed for the City of North Plains.
- Standards should be developed for the uniform application of intersection control flashing beacons and crosswalks in North Plains.
- Speed zones are established by the State Traffic Engineer and should be reevaluated as conditions change.
- Speed humps and similar design techniques should be tested and evaluated in North Plains.
- Traffic circles are effective at reducing speed and are expensive. Their use should be considered after speed humps have been evaluated, because speed humps are potentially more economical.
- Diverters, force-turn channelization and cul-de-sacs should be considered only where a significant problem could be greatly reduced or eliminated by their use and adequate access for emergency services can be maintained.
- Chokers should be tested and evaluated in North Plains.
- A consensus within an affected neighborhood should be reached before implementing stop sign plans, or installing traffic circles, speed humps, diverters, forced-turn channelization, cul-de-sacs, and chokers.