CITY OF MILL CITY

PUBLIC WORKS DESIGN STANDARDS

November 1998

Last Updated December 1998

City of Mill City
PO Box 256
252 SW Cedar Street
Mill City, OR 97360
(503) 845-9291

PUBLIC WORKS DOCUMENTS ORDER FORM

Name: _____

Company/Organization: _____

Address: _____

City: _____ State: _____ Zip _____

Phone: _____ Fax: _____

____ Copies of Mill City Development Ordinance @ $20.00 . . . . . $_____

____ Copies of Mill City Zoning & Utility Maps @ $25.00 . . . . . $_____

____ Copies of Public Works Design Standards @ $35.00 . . . . . $_____

Postage & Shipping . . . . . $_____

Total $_____

Make Checks Payable to the City of Mill City. **Prepaid Orders Only**
Add $5.00 postage/shipping for orders which must be shipped (standard U.S. mail or UPS ground service).

Mail Orders to: City of Mill City
PO Box 256
Mill City, OR 97360

Available at: Mill City City Hall
252 SW Cedar Street
Mill City, OR 97360

TABLE OF CONTENTS

DIVISION 2 - STREETS

DIVISION 4 - SANITARY SEWERS

PARAGRAPH 4.11 THROUGH 4.20 SHALL APPLY TO ALL NEW CONSTRUCTION OR IMPROVEMENTS TO THE CONVENTIONAL GRAVITY SEWER SYSTEM (CG).

NOTE: PARAGRAPH 4.x THROUGH 4.x, WHEN ADOPTED, SHALL APPLY TO ALL

NEW CONSTRUCTION OR IMPROVEMENTS TO THE STEP SEWER SYSTEM (STEP). UNTIL THESE SECTIONS ARE ADOPTED BY THE CITY, REFER TO PARAGRAPH 4.3, SPECIAL ITEMS.

NOTE: PARAGRAPH 4.x THROUGH 4.x, WHEN ADOPTED, SHALL APPLY TO ALL NEW CONSTRUCTION OR IMPROVEMENTS TO THE SMALL DIAMETER GRAVITY SYSTEM (SDG). UNTIL THESE SECTIONS ARE ADOPTED BY THE CITY, REFER TO PARAGRAPH 4.3, SPECIAL ITEMS.

DIVISION 5 - WATER DISTRIBUTION

APPENDIX A - STANDARD DETAILS

• Division 1 - General Requirements

• Division 2 - Streets

Last Revision

• **Division 3 - Stormwater Management**

Test Reports

• **Division 4 - Sanitary Sewers**

- For trench backfill and surface restoration, see Details 301 - 304
- Details designated (CG) are for conventional gravity sewer systems.
- Details for small diameter gravity and STEP systems will be added at a later date.

Test Reports

- Manhole Vacuum Test Report
- Manhole Hydrostatic Test Report
- Sanitary Sewer Air Test Report
- Sanitary Sewer Mandrel Test Report
- Pipeline TV Inspection Report

PREFACE

These design standards have been developed by the City of Mill City to provide a uniform set of standards for public improvements. The intent of these standards is to provide guidelines for the construction of public facilities which will provide an adequate service level for the present as well as for future development. The format has been kept brief and no attempt has been made to cover all possible situations or to provide lengthy explanations.

These design standards are intended to be used in conjunction with the City's Public Works Construction Standards. In the event of discrepancies between these standards and the Public Works Construction Standards (PWS) or between the text of these standards and the standard details, the more stringent requirements as determined by the Public Works Director shall apply.

Copies of these design standards can be obtained from Mill City City Hall, PO Box 256, 252 SW Cedar Street, Mill City, OR 97360.

It is anticipated that revisions to the design standards will be made from time to time. The date appearing on the title page is the date of latest revision of the text portion of the standards. The date appearing on the details is the date of latest revision of that particular detail.

PUBLIC WORKS DESIGN STANDARDS

DIVISION 1

GENERAL REQUIREMENTS

DIVISION 1
GENERAL REQUIREMENTS

1.1 GENERAL

a. These Public Works Design Standards will be cited routinely in the text as the "Standards."

b. Wherever specific supplementary standards are indicated (ie. ASTM C-150), it shall be understood to mean the latest revision thereof.

c. In interpreting these Standards, it is understood that: (1) if the context so requires: (a) the singular pronoun shall be taken to mean and include the plural pronoun; (b) the masculine pronoun shall be taken to mean the feminine and the neuter pronoun; and (2) all captions used therein are intended solely for the convenience of reference and shall in no way limit any of the provisions of these Standards.

d. These Standards shall apply to all improvements within existing and proposed public right-of-way and public utility easements, to all improvements to be maintained by the City, and to all improvements for which the Zoning and Subdivision Codes requires approval by the City. These Standards are to be guidelines for designers and developers in preparing their drawings and for City staff in reviewing drawings. Where minimum values are stated, greater values should be used whenever practical; where maximum values are stated, lesser values should be used whenever practical.

e. Requests for variances to these Standards shall be based on topography, right-of-way, geography or existing physical conditions which impose an economic hardship on the applicant. Request must show that the variance meets the intent of the standards and will not compromise safety, impact other properties or cause an increase in maintenance.

f. The City currently has physical Standards for the construction of streets and related work, sanitary sewers, storm drains and structures and waterlines which cover the standard construction requirements for these facilities within the City of Mill City. Standard Specifications are hereinafter referred to as Public Works Standards (PWS) and can be purchased at Mill City, City Hall.

g. In the case of conflicts between the text of these design standards and the standard details, or between the provisions of these design standards and the PWS, the more stringent as determined by the City Engineer shall apply. Acceptable materials shall be as outlined in these Design Standards.

h. All other utility improvements, including telephone, electrical power, gas and cable

TV shall meet the current standards of the appropriate agency as well as City standards.

i. Traffic Control Devices shall meet the standards of the current Manual on Uniform Traffic Control Devices, including Oregon amendments.

j. All other work not covered by the above standards shall conform to the Oregon State Highway Division (OSHD) Standard Specifications for Highway Construction and Standard Drawings for Design and Construction.

1.2 PURPOSE

a. The purpose of these Standards is to provide a consistent policy under which certain physical aspects of public utility design will be implemented. Most of the elements contained in this document are Public Works oriented and most are related to the development or platting process. However, it is intended that they apply to both public and private work designated herein.

b. These Standards cannot provide for all situations. They are intended to assist but not to substitute for competent work by design professionals. The Standards are also not intended to limit unreasonably any innovative or creative effort which could result in better quality, better cost savings, or both. Any proposed departure from the Standards will be judged on the likelihood that such variance will produce a compensating or comparable result, in every way adequate for the user and City resident.

c. The objective is to develop Standards which will:

1) be consistent with current City Ordinances.

2) provide design guidance criteria to the private sector for the design of public improvements within the City of Mill City.

3) provide public utility improvements designed in a manner to allow economical future maintenance.

4) Develop minimal private utility standards for systems which will impact or potentially impact public streets and/or public utility systems.

1.3 ENGINEERING POLICY

a. The engineering policy of the City of Mill City requires strict compliance with Oregon Revised Statute 672 for professional engineers. The following requirements shall be applicable to the design of streets, grading plans, sanitary sewers, storm drain systems (including detention systems), and water distribution and storage facilities.

1) All engineering drawings, reports, or documents designated herein shall be prepared by a professional Civil Engineer registered in the State of Oregon, or by a subordinate employee under his direction, and shall be signed by him and stamped with his seal to indicate responsibility for them.

2) It shall be the Design Engineer's responsibility to review any proposed extension, modification or improvement of a public utility system with the City prior to final engineering and design work to determine any special requirements or whether the proposal is permissible. A preliminary review and/or approval of the drawings for construction for any project does not in any way relieve the Design Engineer of his responsibility to meet all requirements of the City or the obligation to protect life, health and property of the public. The drawings for any project shall be revised or supplemented at any time it is determined that the full requirements of the City have not been met.

3) Any engineer having submitted to the City false or inaccurate information of a material nature will be warned of their conduct, and the Oregon State Board of Engineering Examiners will also be advised.

1.4 DEFINITIONS AND TERMS

a. Unless otherwise defined in these Standards, the following definitions, terms and abbreviations shall apply whenever used.

1) As-built Drawings: Drawings prepared by the Design Engineer, signed and dated by the city representative indicating the drawings have been reviewed and revised, if necessary, to accurately show all as-built conditions and construction details.

2) City: The City of Mill City, Oregon.

3) Complex: A group of structures or other development that is functionally or conceptually integrated, regardless of the ownership of the development or underlying land.

4) Construction drawings: Drawings prepared by a registered professional engineer, including site plans, plan and profile views of utilities, cross sections, detailed drawings, etc., or reproductions thereof, approved by the City Engineer, which show the location, character, dimensions and details for the work to be done.

5) Cut Sheets: Sheets of tabulated data, indicating stationing, structures, fittings, angel points, beginning of curve, points on curve, end of curves, staking offset, various elevations and offset utility cuts.

6) Definition of Words: Wherever, 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, order or designation of the City Engineer. Similarly, the words approved, acceptable, satisfactory, shall mean approved by, acceptable to, or satisfaction to the City Engineer.

7) Design Engineer: The engineer licensed by the State of Oregon as a Civil Engineer under whose direction plans, profiles and details for work are prepared and submitted to the City for review and approval.

8) Director/Director of Public Works/Public Works Supervisor: As used herein, these titles refer to the person(s) designated by the City Council with responsible charge of the public infrastructure under City jurisdiction, or his/her authorized representative. For purposes of this document, the terms are considered to be interchangeable.

9) Easement: Areas along the line of public utilities which are outside of dedicated right-of-way. Easements shall be prepared on City forms granting rights along the public utility line to the City.

10) Manufacturer's Name: Any manufacturer's name, specification, catalog number, or type used herein is specified by make in order to establish the standard requirements of the City. Other equivalent makes will be considered for approval, providing they are comparable with this established standard.

11) Owner: Any individual, partnership, firm or corporation by whom the Design Engineer has been retained or who, as a property owner, is making arrangements with the City.

12) Person: Individual, firm, corporation, association, agency or other legally authorized entity.

13) Plans: See Construction Drawings.

14) Preliminary Review: Review of the construction drawings by the City as outlined in these standards. All City comments and provisions of these design standards must be addressed prior to final review and approval for construction.

15) 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 general public free of all encumbrances, within which the City shall have the exclusive right to install and maintain streets and public utilities.

16) Roadway: All of that portion of the right-of-way used, for vehicle movement, which exists between the curbs or proposed curbs or proposed curb lines.

17) Standard Details: The drawings of structures or devices commonly used on City work and referred to on the construction drawings. Also called Standard Plans.

18) Street or Road: Any public highway, road, street, avenue, alley, way, easement or right-of-way to be used for vehicle movement.

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

1.5 LOCATION OF UTILITIES WITHIN RIGHT-OF-WAY

a. The standard details indicate the general required location for each utility within the public right-of-way.

b. Installation of private utilities in a common trench with water, sanitary sewer or storm drain mainlines is prohibited. A minimum of 3 feet of horizontal separation must be maintained between public and private utilities except at crossings.

c. Utility service companies proposing to install major utility systems larger than typically required to serve local users and which cannot conveniently be relocated in the future will be required to prepare detailed drawings showing how the proposed system can be installed within the right-of-way without conflicting with existing or proposed City utilities. Drawing requirements may include but not be limited to plan and profile of proposed systems based on a detailed topographic survey.

1.6 PROVIDING FOR FUTURE DEVELOPMENT

a. All public improvements shall be designed as a logical part of the development of the surrounding area.

b. Storm drain systems and sanitary sewers shall be sized to accommodate the entire drainage basin which they will ultimately serve.

c. Utilities and street improvements shall be extended to the boundaries of the development to provide for future extensions to the adjoining areas and prevent adjoining properties from becoming landlocked.

d. The City may require over-sizing of utility lines to accommodate future growth of the City.

e. Where existing City utility lines do not adjoin the proposed development or the capacity of existing lines is inadequate, the developer will be required to extend new utility lines to the development as necessary.

f. Where existing roadway improvements do not extend to the proposed development or the existing roadways to the proposed development are not adequate to serve the development, the developer may be required to improve the roadways to the development.

1.7 TIME LIMITS FROM DRAWING APPROVAL TO CONSTRUCTION

a. The Developer shall obtain a construction permit and begin construction within six (6) months from the time the construction drawings are approved by the City Engineer. If construction does not begin within this period, the approvals of the construction drawings shall be null and void. Renewal of the approval for the construction drawings may result in additional conditions to meet new standards, changed conditions or new information discovered since the original approval.

1.8 PHASED DEVELOPMENT

a. In the case of a development approved to be constructed in phases, the construction drawings for each phase shall be capable of standing alone.

b. Approval by the City of construction drawings for each phase of a phased development shall be independent of the approval for all other phases.

c. The intent of these requirements is that the time limits between approval of the construction drawings by the City and the time by which construction must begin

shall apply to each phase independently.

1.9 REVIEW PROCEDURE

a. Pre-design Conference: The developer is encouraged to meet with the Director of Public Works and the City Engineer prior to final design of the proposed improvements. It shall be the developer's responsibility to provide the City Engineer with base maps showing existing utilities and proposed street improvement limits prior to the pre-design conference.

b. Three (3) sets of complete construction drawings shall be submitted to the City for preliminary review. Submittal requirements are as outlined herein, and shall include a unit price engineer's estimate acceptable to the City Engineer and any required review fees. Incomplete submittals will be returned without review.

c. Upon completion of the preliminary review, the City will return one (1) set of drawings outlining the required revisions. In order to be entitled to further review, the applicant's engineer must respond to each comment of the prior review. All submittals and responses to comments must appear throughout to be a bona fide attempt to result in complete drawings. Resubmittals shall consists of a minimum of three (3) sets of drawings.

d. Once the preliminary review has been completed and required revisions made, the Developer shall circulate the drawings to all utility service companies within the City and other agencies as required.

e. Prior to final approval of the construction drawings, all proposed drawings from utility service companies must be received and approved by the City. Approvals from other agencies with jurisdiction must also be received, including but not limited to the Oregon Health Division (OHD), Department of Environmental Quality (DEQ), Department of Transportation (ODOT), Marion County, Linn County and railroads wherein each has jurisdiction.

f. The applicant is responsible for the coordination with the various utilities and agencies during design and construction. The utilities and agencies may include those shown in Appendix C.

g. Upon final approval of the drawings, submit a minimum of ten (10) copies of the revised drawings to the City to be stamped as approved for construction. Additional sets may be submitted at the developer's option.

h. Prior to issuance of the public utility construction permits, the Developer shall provide the City with the following:

1) Copy of an approved (by City Attorney) Developer/City Agreement for Improvements signed and notarized by the Developer and the Developer's engineer.

2) Any required permit fees.

3) Recorded copies of all off-site easements. Executed and notarized copies of easements for all public utilities which are constructed prior to the recording of a final plat.

4) Proposed Construction Schedule.

5) Certificates of insurance, minimum limits as outlined in Appendix E. City of Mill City and City Engineer shall be named as additional insured.

6) Evidence of Workman's Compensation coverage from contractor performing the work.

7) Any required Waiver of Remonstrance agreements.

8) Signed certification that the Developer has copies of and will conform to requirements of the most current revision of the Mill City Public Works Construction Standards (PWS).

9) Copies of required permits or authorization to proceed from utilities and/or agencies with jurisdiction over the project.

10) Other submittals specific to this project.

1.10 SUBMITTAL REQUIREMENTS

a. Survey: All designs shall be based off of a complete topographic survey, including but not limited to the following:

1) Surface features.
2) Subsurface features.
3) Existing utilities (public and private).
4) Property lines/monuments.
5) Right-of-way lines & centerline monuments.

b. Drawing Submittal: The drawing submittal shall include the following as applicable unless otherwise approved by the City Engineer. The following is a general overview of drawing requirements, but is not intended to be exclusive. All requirements of the individual divisions of the standards shall be satisfied.

1) Construction drawings shall be submitted on 22" x 34" blueline or blackline sheets unless otherwise approved by the City Engineer.

2) City plan review fees as required.

3) Cover Sheet

4) Overall drainage, utility and street lighting plan.

5) Site grading plan where applicable.

6) Plan and profile for the following public utilities:

a) Streets
b) Water as specified
c) Sanitary sewers
d) Storm drains

7) Stamped storm drainage calculations, including storm drainage basin maps.

8) Erosion control plan.

9) Standard details shall be included on the construction drawings.

10) Copies of all easements, including slope easements, for all utilities to be constructed. Easements shall be executed and notarized for all public utilities which are constructed prior to the recording of a final plat. Easements shall be worded such that no trees, permanent structures or improvements including parallel fences shall be placed or constructed on

the easement. Easements shall be a constant width between manholes, valves or other in-line structures. Easement width shall be based on the deepest portion of the line between such structures. See the Appendix for standard easement forms.

11) Proposed private utility plans (final review).

12) Engineer's unit price construction cost estimate acceptable to the City Engineer or bid results (preliminary and final review). Cost estimates shall include a line item for street lighting.

13) The submittal may also be required to include a traffic study and a traffic control plan.

c. General

1) A title block shall appear on each sheet of the drawing set and shall be placed in the lower right-hand corner of the sheet, across the bottom edge of the sheet or across the right-hand edge of the sheet. The title block shall include the name of the project, the sheet title and number, the name of the engineering firm, engineer's stamp, date and revision blocks.

2) A north arrow shall be shown on each sheet containing plan views and adjacent to any other drawing which is not oriented the same as other drawings on the sheet.

3) The scale shall be 1"=10', 20', 40' or 50' horizontal and 1"=2', 4' or 5' vertical for all drawings except structural or mechanical drawings. The scale of corresponding plan views and profiles shall be the same.

4) **In cases where streets or public utilities exist or will be reconstructed, plan view scales shall not exceed 1" = 20'.**

5) Each plan, profile and detail shall be labeled under the drawing. The scale for the plan, profile, or detail shall be noted under the title. Details not drawn to scale shall be so noted.

6) All detail drawings, including standard detail drawings, shall be included on the drawing sheets.

7) A complete legend of all symbols used shall be provided at the front of each drawing set or on the appropriate pages. In general, existing utilities shall be shown with a lighter line weight than proposed utilities.

8) Letter size shall not be smaller than 0.10-inch high.

d. Cover Sheet

1) The first sheet (Cover Sheet) of all drawing sets shall include the following as a minimum:

a) Project name.
b) Design Engineer's name, address, telephone and fax number.
c) Developer's name, address and telephone number.
d) Vicinity Maps showing the location of the project in respect to the nearest major street intersection and a minimum of 500 feet around the site.
e) Legend including all symbols and line types used on the construction drawings.
f) General construction notes matching format and content of notes in the Appendix.
g) Sheet index located near lower right corner.

e. Overall Drainage, Utility and Street Lighting Plan.

1) The overall drainage and utility plan shall show the following as a minimum:

a) The location and elevation of a National Geodetic Survey, United States Geological Survey, State Highway, Marion County, Linn County or City of Mill City bench mark which the elevations shown are based shall be shown or noted. Temporary bench marks on or near the project site shall also be shown.

b) Right-of-way lines, property lines, easement lines including those outside the project but intersecting or within 150 feet of the project boundaries.

c) Existing and proposed streets, curbs, sidewalks, handicap ramps and driveways within the project and within 150 feet of the project boundaries.

d) Existing and proposed sanitary sewers, storm drains, waterlines and appurtenances within the project and within 150 feet of the project boundaries.

e) Existing private utilities within the project and within 150 feet of the project boundaries.

f) Lot or parcel numbers, street names and other identifying labels. New street names are subject to the approval of the City.

g) Location and description of existing survey monuments, including but not limited to section corners, quarter corners and donation land claim corners within the limits of the work area.

h) Public and private utilities and other facilities to be relocated.

i) Street light and area light pole locations.

j) Methodology proposed for individual lot drainage. Direction of drainage arrows and the following letter legend shall be used:

Symbol	Lot drains to:
C	Curb
P	Piped Storm Drain
DB	Detention Basin
S	Subsurface Disposal
→	Flow Direction

k) The location of all curb weepholes shall be shown.

l) Existing drainage patterns within the project and within 150 feet of the project boundaries.

m) Wetland boundaries, including elevations.

f. Site Grading Plan

1) A site grading plan is required for residential subdivisions, major partitions or minor partitions involving street improvements with cuts or fills exceeding 2 feet.

2) A site grading plan is required for projects other than single family residential, including but not limited to commercial, industrial, or multi-family developments.

3) The site grading plan shall show proposed finished grade and parcel corner elevations, with the existing and proposed contours shown at one (1) foot intervals and extended a minimum of 100 feet beyond the improvements.

4) The site grading plan shall show all drainage systems and proposed erosion control facilities.

g. Plan Views

1) General: Information required on the overall utility plan shall be shown on the plan views as applicable. In addition, the following shall be shown:

a) Utilities and vegetation in conflict with the construction or operation of the street and public utilities. Vegetation to include trees greater than 6 inches in diameter and landscape plantings within the right-of-way and easement areas.

b) Public and private utilities to be relocated.

c) Match lines with sheet number references.

d) Additional information as outlined below or as required by the City based on unique or unusual features of the project.

2) Streets

a) Street stationing shall be tied to existing property corners, centerline of intersections, and/or existing street monuments.

b) Location, alignment and stationing of existing streets and proposed street centerline and curb faces. Location of all curbs, driveways, edge of pavement, etc. shall be dimensioned from right-of-way centerline, easement boundary or other means so that its location is clearly defined.

c) Bearing of all street centerlines.

d) Horizontal curve data of street centerline and curb returns, including stationing of point of tangency and point of curvature, length of tangent, length of centerline curve, delta angle, radius point, and centerline radius.

e) Location of existing and proposed street centerline monuments.

f) Centerline stationing of all intersecting streets.

g) Top of curb elevations along curb returns at quarter-points or curb return profiles.

h) Location of the low points of street grades and curb returns.