

**PRELIMINARY DRAINAGE REPORT
FOR**

**Prineville Apartment Complex
Prineville, Oregon**

**Prepared For:
Harrison Industries, LLC
10355 Liberty Road S.
Salem, Oregon 97306**

March 20, 2019



1155 13th Street SE
Salem OR 97302
www.mtengineering.net

PHONE: (503) 363-9227
FAX: (503) 364-1260
EMAIL: mgrenz@mtengineering.net

Contents

Introduction	1
Existing Conditions	1
Soils	2
Infiltration	2
Water Quality Methodology	2
Water Quality Analysis	2
Infiltration Swale Analysis	2
Stormwater Quantity Analysis	3
Conclusion	4

Appendix A	Supporting Data
Appendix B	Soils Report
Appendix C	Analysis

INTRODUCTION

The Prineville Apartment Complex is a proposed 135-unit apartment development located near the intersection of NE Black Bear Street and NE Buckboard Lane. The parcel of land to be developed is Tax Lots 102 & 103 of Crook County Assessor's Map 14S16E29CC. A vicinity map and supporting maps are in Appendix A of this report.



Project Site

Basic Requirement Infrastructure to the Maximum Extent Feasible (MEF) is being used for the new developed area per the City of Prineville Standards and Specifications (Specifications) and Central Oregon Stormwater Manual (Standards). Stormwater treatment and flow control facilities will be constructed to meet the standards.

EXISTING CONDITIONS

The 6.16-acre site is rectangular in the shape. Surface conditions consists of grass, brush and minimal trees. There are no identified wetlands or sensitive areas located on the property. Per the City



Stormwater Master Plan, the site is within drainage basin RG-4 and there are no identified deficiencies or recommended improvements for stormwater management.

A topographical high point is located on the northerly side of the site. Drainage from this high point flows southerly. The maximum relief is approximately 16-feet with a high point elevation of 2951. The abutting properties are zoned General Residential (R2) with public improvements that include storm water management systems. Appendix A contains multiple maps of the site.

Soils

The Natural Resources Conservation Service (NRCS) Soil Resource Report for Crook County was used to determine a Hydrological Soil Group classification for runoff calculations. The report identifies the predominant site soil to be Ochoco-Prinville complex 0 to 3 percent slopes. The soil is in Hydrologic Soil Group (HSG) C. The report is in Appendix B.

Infiltration

A Geotechnical Site Characterization (GSC) will be performed at the site that will include infiltration testing to determine percolation rates of the soil. It is anticipated that test results soil will yield rates between 3-5 inches per hour. This will allow the use of infiltration systems to manage and control stormwater runoff.

WATER QUALITY METHODOLOGY

Stormwater facilities within the development will be infiltration type facilities.

WATER QUALITY ANALYSIS

Water quality treatment for the proposed development will be via water infiltration swales. Flow rates will be calculated with HydroCAD 10.00. The SCS TR-20 Unit Hydrograph method will be used to generate the hydrographs. A Type I storm and a 24-hour rainfall depth of 1.20 inches will be used to determine the water quality flow rate. It should be noted that per Figure B-2 of the Urban Hydrology for Small Watersheds (TR-55), Prinville straddles the demarcation line between Type IA and Type II Rainfall Distribution zones. Because the City Stormwater Master plan identifies a Type I distribution, it was used in the analysis.

INFILTRATION SWALE ANALYSIS

The proposed infiltration swales will provide water quality treatment by slowing the stormwater down, allowing for the removal of pollutants through sedimentation, adsorption onto surrounding vegetation,

filtration, infiltration and biological uptake. The swale will be designed per the Central Oregon Stormwater Manual (COSM) design standards.

STORMWATER QUANTITY ANALYSIS

Stormwater quantity (Flow Control) is proposed to be handled by on-site detention and infiltration facilities. Runoff from the developed basins will be routed to the facilities that ultimately controls runoff to allow runoff to be infiltrated in infiltration swales.

Per Subsection II (B) (2) of the City specifications, detention shall be provided for the 50-year, 24-hour storm event with infiltration factored in. The facility will also be required to provide a safe overflow route for the 100-year, 24-hour storm event

The developed flow rates were calculated using HydroCAD 10.00. Table 1 below lists the 24-hour rainfall depths used for the analysis of each storm event.

Table 1

Storm Event	24-hour Rainfall Depth (in)
2	4.29
50	5.79
100	6.67

For developed conditions, a time of concentration of 7 minutes was assumed for the Basin. The calculations are incorporated in the HydroCAD output located in Appendix A. The entire developing area was classified as ">75% Grass cover - Good, HSG C & Impervious surface" with a Weighted Curve Number of 89.

The SCS TR-20 Unit Hydrograph method was used to generate the hydrographs. A Type I rainfall distribution was used with the above rainfall depths. Table 2 below identifies the developed runoff rates for each storm event that will be detained and infiltrated into the ground. Appendix C contains the analysis.

Table 2

Storm Event	Runoff Rate (cfs)
2-year	4.29
25-year	12.39
100-year	6.67

CONCLUSION

Based on the presented information, the proposed design will meet the water quality and quantity standards. If there are any questions regarding this analysis or the design, please contact Matthew Hendrick at Multi/Tech Engineering by phone at (503) 363-9227 or via e-mail at mhendrick@mtengineering.net.

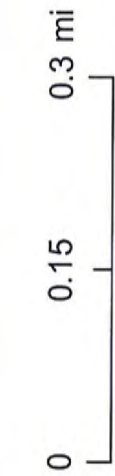


Appendix A

Crook County, Oregon



DISCLAIMER: CROOK COUNTY MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER. THE COUNTY IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY OCCUR IN THE PREPARATION, INTERPRETATION, COUNTY DIGITAL INFORMATION IS PREPARED FOR THE PURPOSE OF PROVIDING A GENERAL OVERVIEW OF THE COUNTY AND IS NOT INTENDED FOR, NOR SHOULD IT BE USED, FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS PREPARED. THE COUNTY MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER. THE COUNTY IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY OCCUR IN THE PREPARATION, INTERPRETATION, COUNTY DIGITAL INFORMATION IS PREPARED FOR THE PURPOSE OF PROVIDING A GENERAL OVERVIEW OF THE COUNTY AND IS NOT INTENDED FOR, NOR SHOULD IT BE USED, FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS PREPARED.



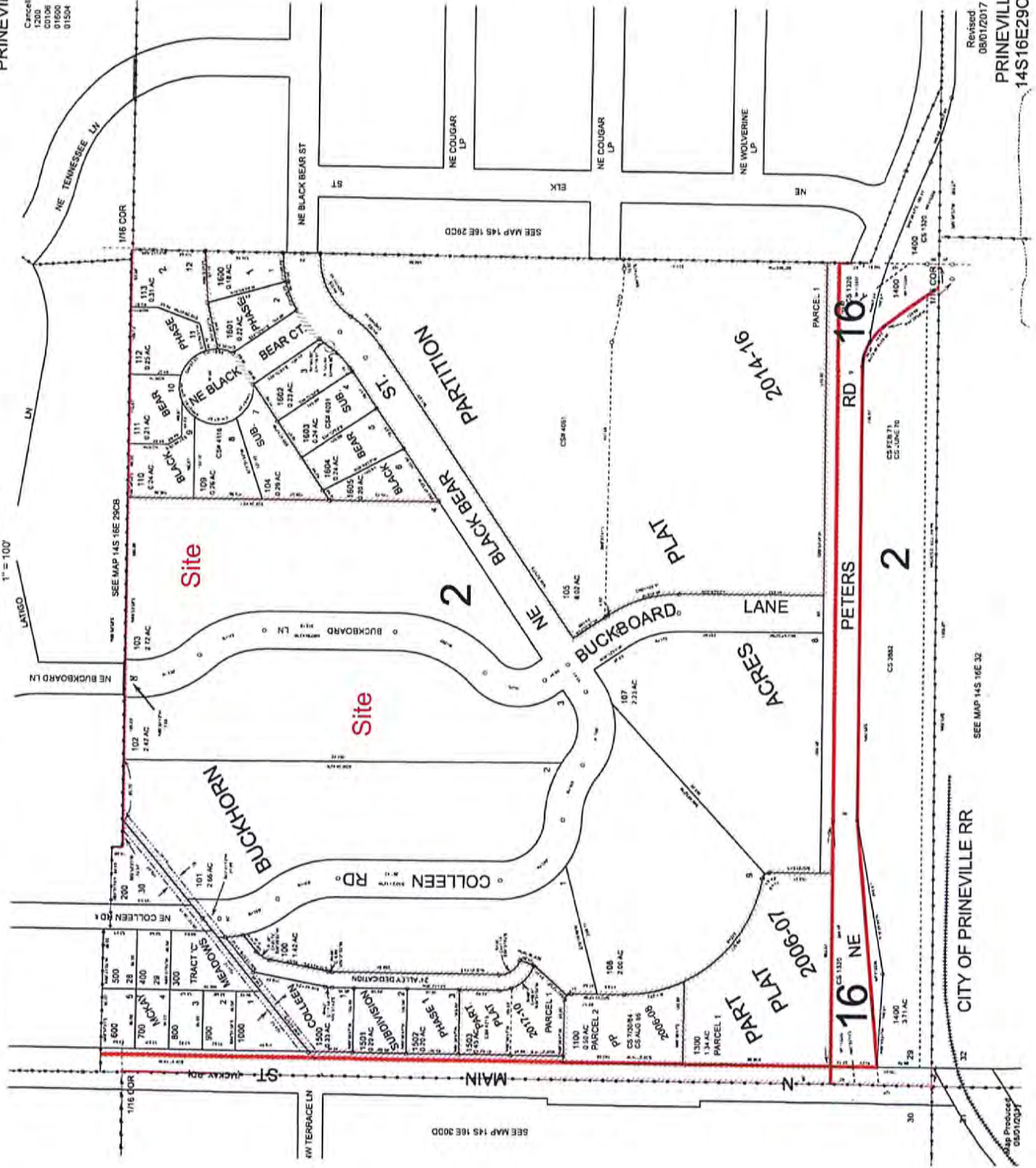
THIS MAP WAS PREPARED FOR
ASSESSMENT PURPOSE ONLY

0 50 100 150 200 Feet

S.W.1/4 S.W.1/4 SEC.29 T.14S. R.16E. W.M.
CROOK COUNTY

14S16E29CC
PRINEVILLE

Cancelled
1200
00106
01600
01504



Revised
08/01/2017
PRINEVILLE
14S16E29CC

SEE MAP 14S 16E 32

CITY OF PRINEVILLE RR

Map Produced
08/01/2017

MINIMUM STANDARD
SINGLE-ACCESSIBLE PARKING SPACE
(VAN-ACCESSIBLE DESIGNATION REQUIRED)

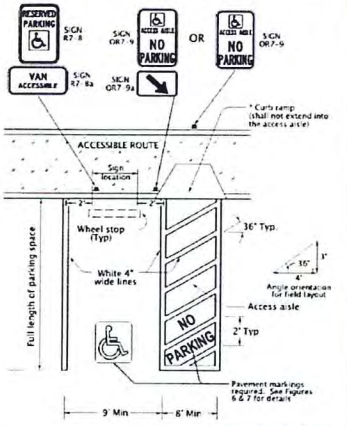


Figure 1

ADA HANDICAP ACCESSIBILITY NOTES:

1. ALL ON-SITE WALKWAYS, PEDESTRIAN CONNECTIONS TO THE PUBLIC SIDEWALK AND ROUTES TO BUILDING ENTRANCES ARE ACCESSIBLE WITH RUNNING SLOPES LESS THAN 5% AND CROSS SLOPE LESS THAN 2% MAX. LANDINGS AT BOTTOM OF STAIRS AND EXT. FACE OF ENTRANCE DOORS SHALL HAVE A SLOPE IN THE DIRECTION OF TRAVEL NOT TO EXCEED 2%.
2. HANDICAP PARKING STALLS AND ACCESS AISLES ARE TO HAVE SLOPES IN ANY DIRECTION OF LESS THAN 2% MAX. GRAPHIC MARKINGS & SIGNAGE FOR HANDICAP AND VAN ACCESSIBLE STALLS WILL BE PER OSSC 2014 CHAPTER 11 AND ORS. REQUIREMENTS.
3. HANDICAP ACCESSIBLE CURB RAMP SHALL HAVE A RUNNING SLOPE NOT TO EXCEED 1:12 MAX. AND A CROSS SLOPE NOT TO EXCEED 1%.
4. THE COMMUNITY BUILDING & ON-SITE LAUNDRY FACILITIES WILL BE FULLY HANDICAP ACCESSIBLE IN ACCORDANCE WITH ANSI A117.1 AND CHAPTER 11 OF THE 2014 OSSC.
5. 2% OF THE LIVING UNITS OR (3) UNITS WILL BE TYPE 'A' HANDICAP ACCESSIBLE. THESE INCLUDE A 1, 2 AND 3 BEDROOM UNIT AS INDICATED ON THIS SITE PLAN. THE BALANCE OF THE GROUND FLOOR LIVING UNITS WILL BE TYPE 'B' ADAPTABLE UNITS IN ACCORDANCE WITH ANSI A117.1.

- Ⓟ - POLE LIGHT MAXIMUM 14' TALL
- Ⓢ - POST LIGHT MAXIMUM 5' TALL
- - LOCATION OF ELECTRICAL SEPARATION WALL
- ① - MAXIMUM 1:12 SLOPE ON SIDEWALK END RAMP
- - COMMON OPEN SPACE
- - USABLE OPEN SPACE
- - RECREATION BUILDING

- 135 TOTAL APARTMENT UNITS
39 TYPE "B" 2-Bd, 2-Ba UNITS (1,005 S.F.)
36 TYPE "C" 2-Bd, 2-Ba UNITS (1,139 S.F.)
36 TYPE "D" 3-Bd, 2-Ba UNITS (1,127 S.F.)
24 TYPE "E" 2-Bd, 2-Ba UNITS (1,029 S.F.)

- 256 TOTAL PARKING STALLS
244 STANDARD STALLS
4 COMPACT STALLS
8 HANDICAP STALLS

- 23 BIKE PARKING (ONE PER STAIRWELL)
3 TRASH / RECYCLE
1 RECREATION BUILDING W/ POOL
1 PLAY / RECREATION AREA
1 U.S. MAIL BOX AREA

** THE INDICATED LOWER FLOOR UNITS IN BUILDINGS 5, 7 & 12 ARE TO BE TYPE B UNITS IN ACCORDANCE WITH THE 2014 OSSC SEC. 1107.6.2.1.1 (NOTED ON FLOOR PLANS). ALL OTHER LOWER FLOOR UNITS TO BE TYPE B UNITS IN ACCORDANCE WITH THE 2014 OSSC SEC. 1107.6.2.1.2

SITE AREAS:

- BOUNDARY — 268,254 S.F.
DEVELOPABLE — 268,254 S.F. (100%)

- BUILDING COVERAGE — 51,672 S.F. (19%)
LANDSCAPING — 100,507 S.F. (37%)
PARKING & DRIVEWAY — 87,722 S.F. (33%)
CURBS & PATIOS — 28,353 S.F. (11%)

- TOTAL OPEN SPACE — 127,054 S.F. (47%)
USABLE OPEN SPACE — 52,488 S.F. (20%)
REC. BUILDING — 2,646 S.F. (1%)

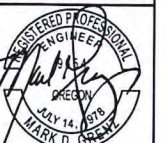


SITE PLAN

PRINEVILLE APARTMENT
COMPLEX

NO CHANGES, MODIFICATIONS
OR REPRODUCTIONS TO BE
MADE TO THESE DRAWINGS
WITHOUT THE WRITTEN
AUTHORIZATION FROM THE
DESIGN ENGINEER.
DIMENSIONS & NOTES TAKE
PRECEDENCE OVER
GRAPHICAL REPRESENTATION.

Design: M.D.G.
Drawn: P.H.S.
Checked: B.M.G.
Date: FEB 19
Scale: AS SHOWN



EXPRES. 06-30-2019

JOB # 6801

SDR3

EXISTING CONDITIONS PLAN

PRINEVILLE APARTMENT COMPLEX

NO CHANGES, MODIFICATIONS
OR REPRODUCTIONS TO BE
MADE TO THESE DRAWINGS
WITHOUT WRITTEN
AUTHORIZATION FROM THE
DESIGN ENGINEER.

DIMENSIONS & NOTES TAKE
PRECEDENCE OVER
GRAPHICAL REPRESENTATION.

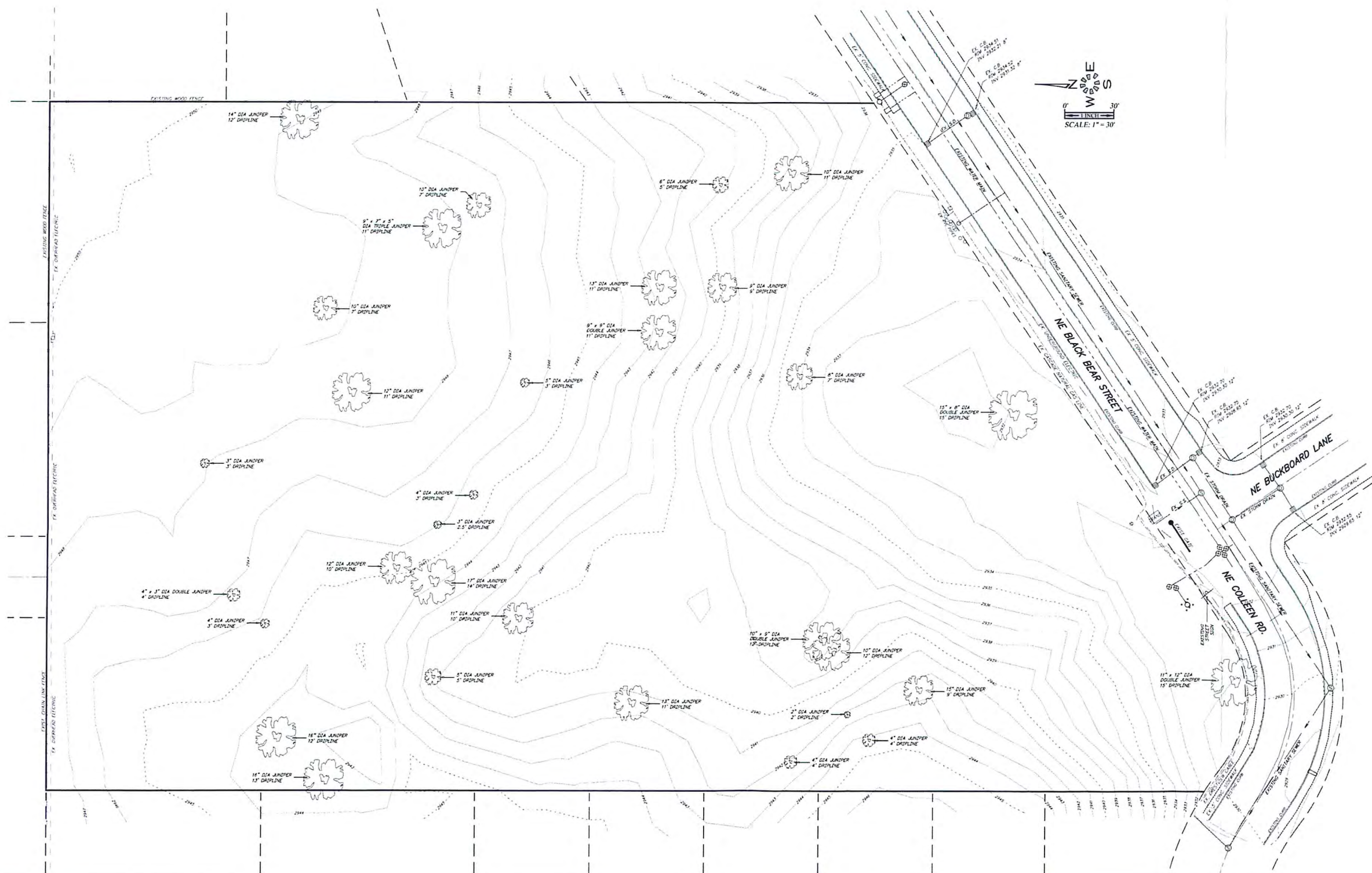
Design: M.D.G.
 Drawn: P.H.S.
 Checked: B.M.G.
 Date: FEB 19
 Scale: AS SHOWN



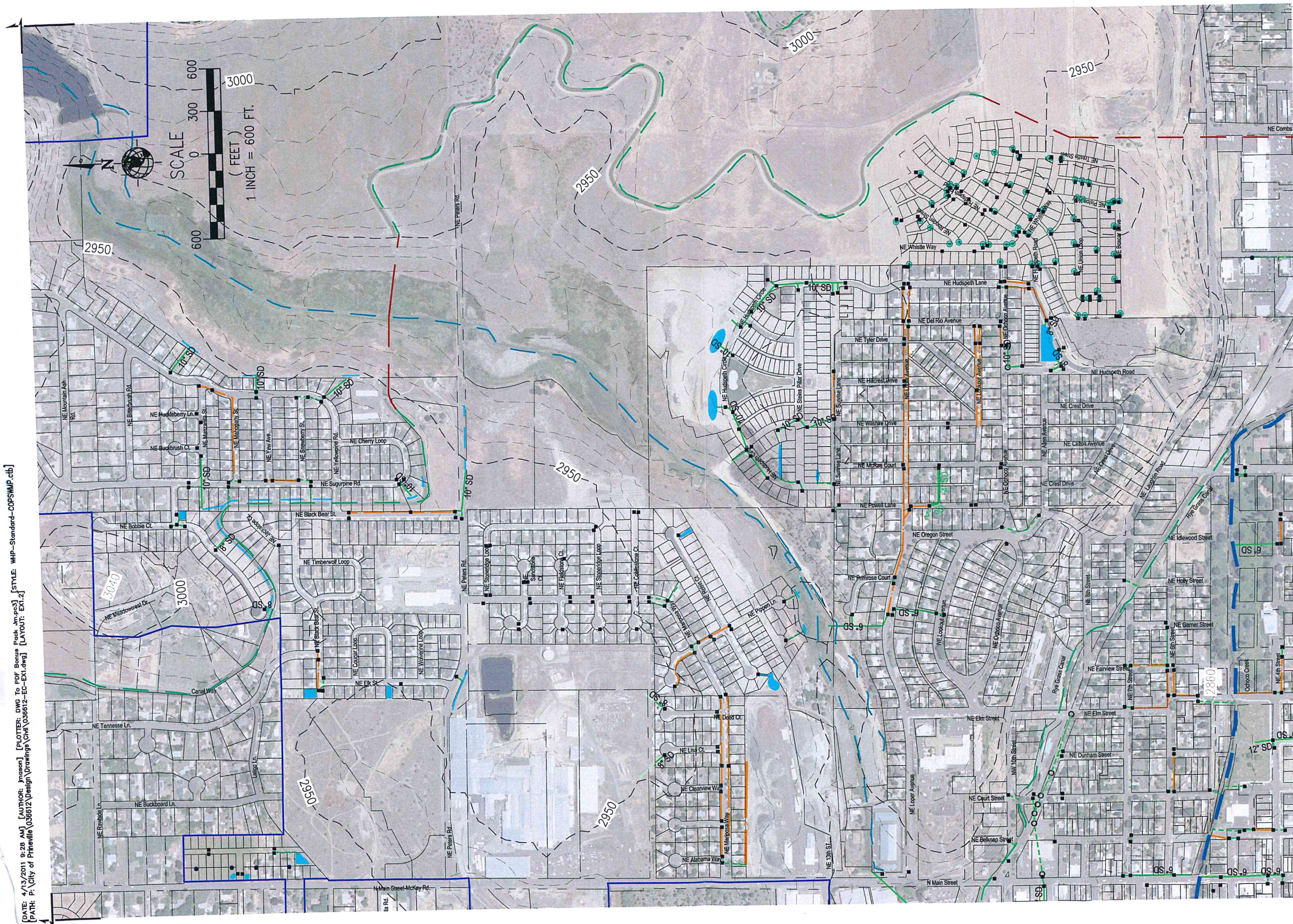
EXPIRES: 06-30-201

JOB # 680

SDR2



[DATE: 4/13/2011 9:28 AM] [AUTHOR: Invision] [PLOTTER: DWG To PDF Bonus Pack - In v3] [STYLE: WHP-Standard-COPSWMP.ctb]
 B:\cadd\1056612\Design\Drawings\Civil\036612-EC-EXT.dwg [LAYOUT: EXT.2]



**EXISTING CONDITIONS
NORTH OF OCHOCO CREEK - EAST
CITY OF PRINEVILLE
STORMWATER MASTER PLAN**

PROJECT NUMBER	DRAWING FILE NAME
036612	036612-EC-EX1

SCALE
1" = 600'



WHPacific

EX1.2



PROJECT NUMBER	DRAWING FILE NAME
036612	036612-IM-EX3

SCALE
1" = 600'

EX3.2

DRAINAGE
PLAN

PRINEVILLE APARTMENT
COMPLEX

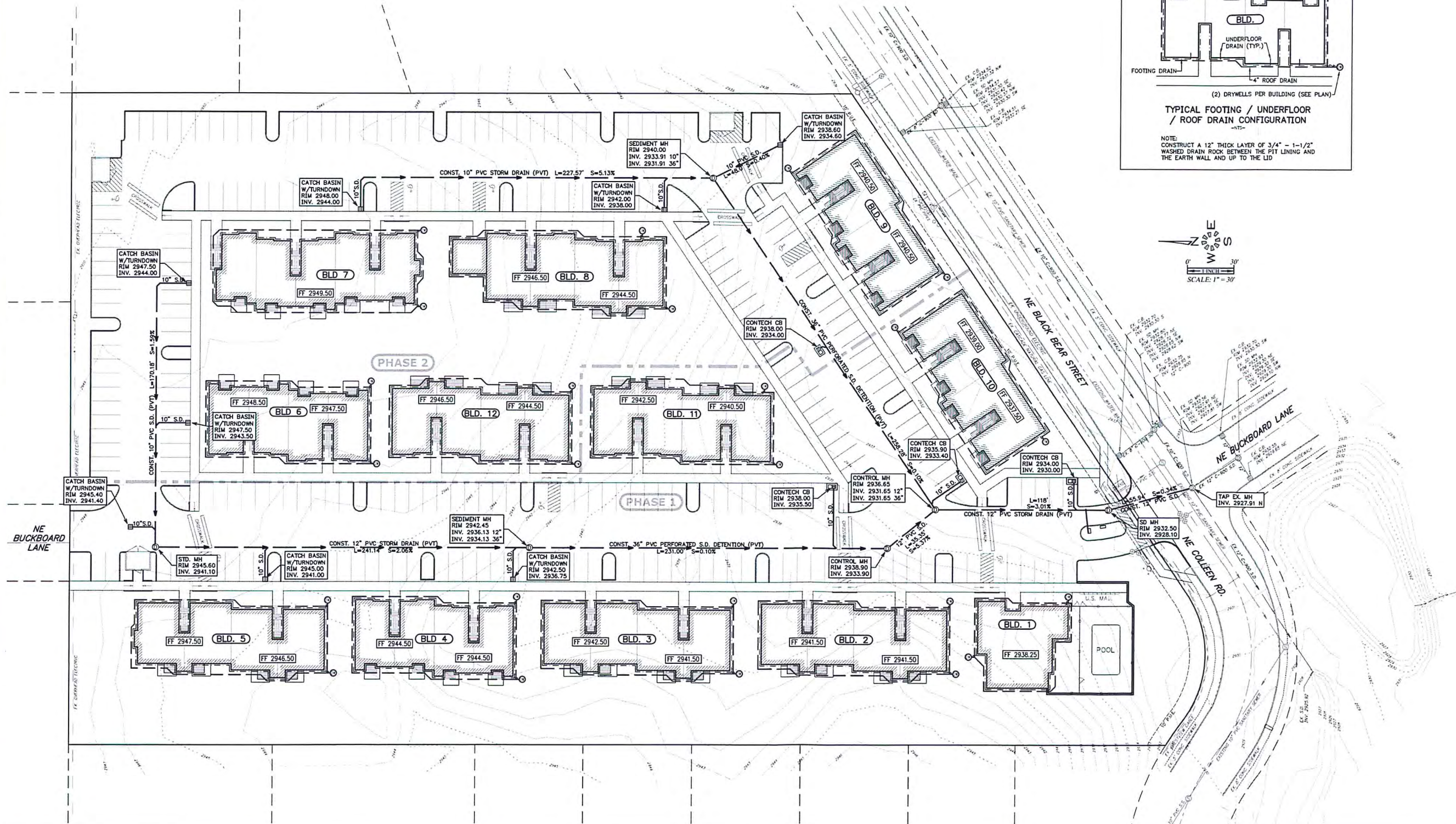
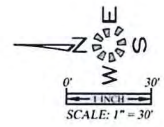
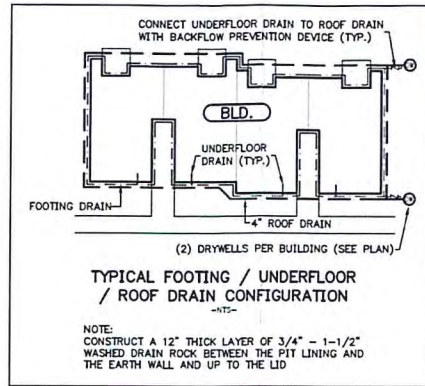
NO CHANGES, MODIFICATIONS
OR REPRODUCTIONS TO BE
MADE TO THESE DRAWINGS
WITHOUT WRITTEN
AUTHORIZATION FROM THE
DESIGN ENGINEER.
DIMENSIONS & NOTES TAKE
PRECEDENCE OVER
GRAPHICAL REPRESENTATION.

Design: M.D.G.
Drawn: P.H.S.
Checked: B.M.G.
Date: FEB 19
Scale: AS SHOWN

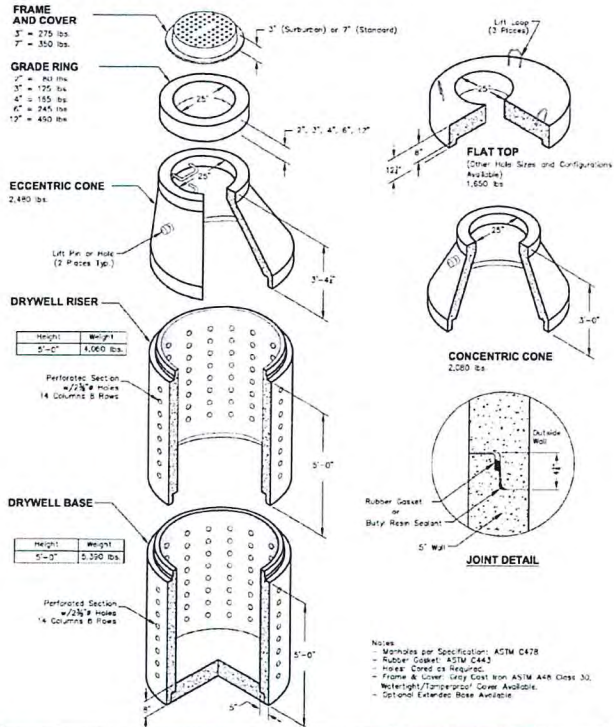


EXPRES 06-30-2019
JOB # 6801

SDR6

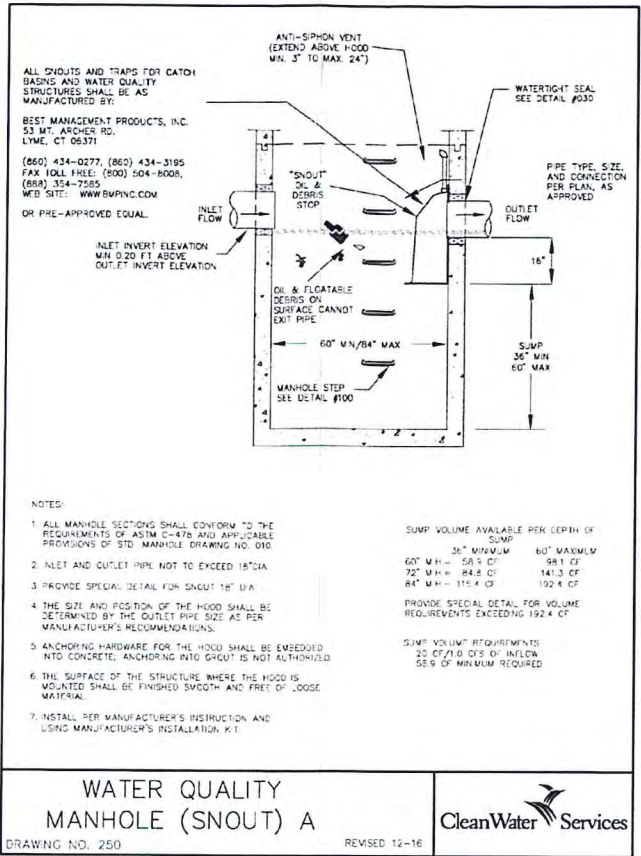


48" DRYWELL MANHOLE



Oldcastle Precast PO Box 333, Wilsonville, Oregon 97070-0333 Tel: (503) 682-2844 Fax: (503) 682-2657	
48" DRYWELL MANHOLE File Name: 020-48M-H-D Issue Date: 2018 oldcastleprecast.com/wilsonville	48" DRYWELL MANHOLE

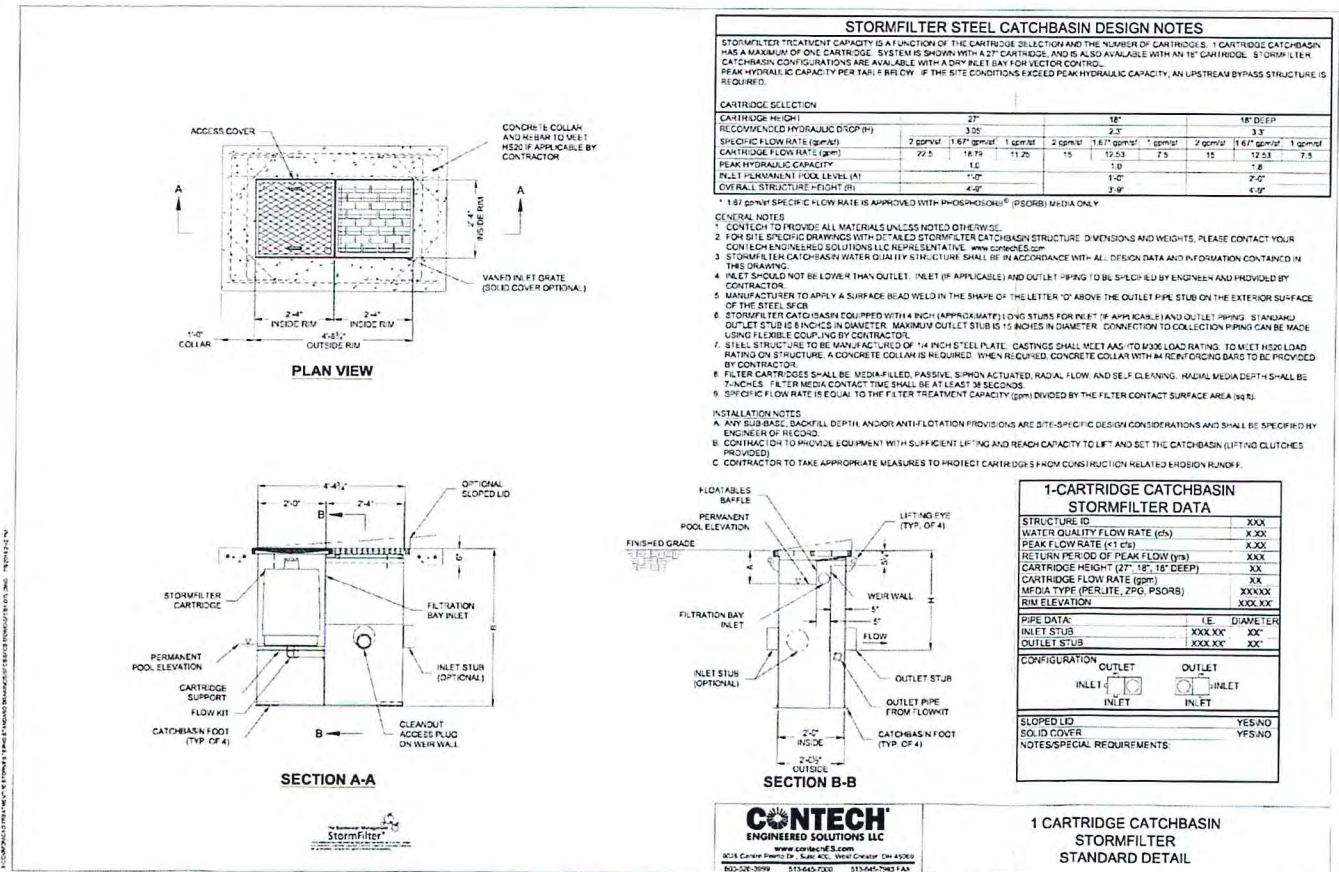
2.0



WATER QUALITY MANHOLE (SNOOT) A

DRAWING NO. 250

REVISED 12-16



1 CARTRIDGE CATCHBASIN STORMFILTER STANDARD DETAIL



ENGINEERING SERVICES, INC.
 8155 S. 31st ST., STE. 100, SALEM, OH, 44705
 PH: (503) 363-1922 FAX: (503) 364-1240
www.mtengineering.net office@mtengineering.net

DRAINAGE DETAILS

PRINEVILLE APARTMENT COMPLEX

NO CHANGES, MODIFICATIONS OR REPRODUCTIONS MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM THE DESIGN ENGINEER. DIMENSIONS & NOTES TAKE PRECEDENCE OVER GRAPHICAL REPRESENTATION.

Design: M.D.G.
 Drawn: P.H.S.
 Checked: B.M.G.
 Date: FEB 19
 Scale: AS SHOWN



EXPIRES: 06-30-2019
 JOB # 6801

SDR7



Appendix B



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

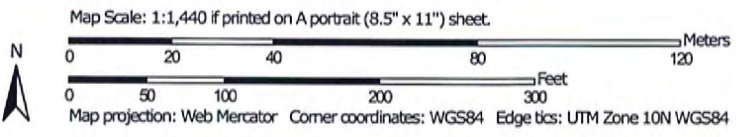
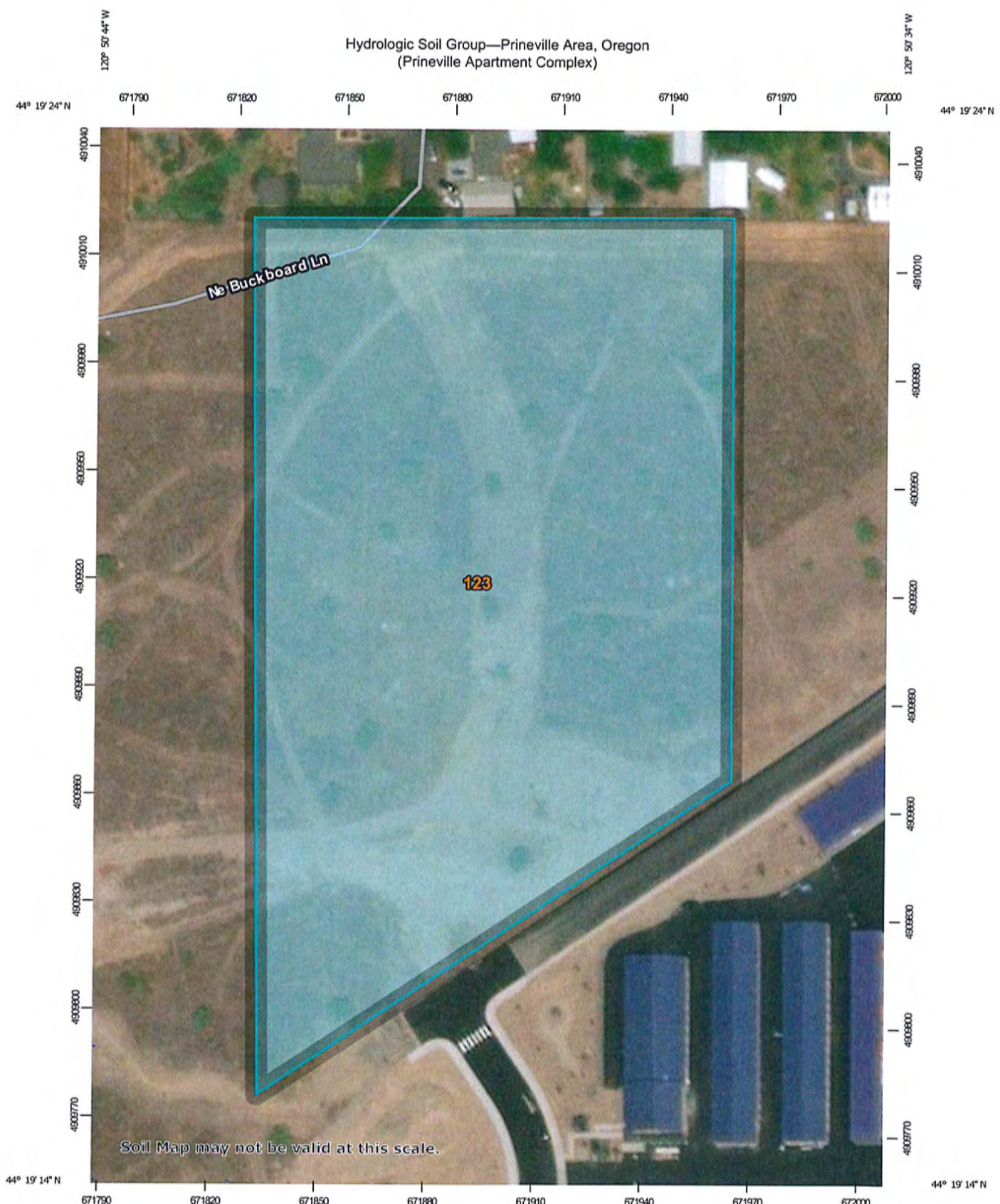
Custom Soil Resource Report for **Prineville Area, Oregon**

Prineville Apartment Complex

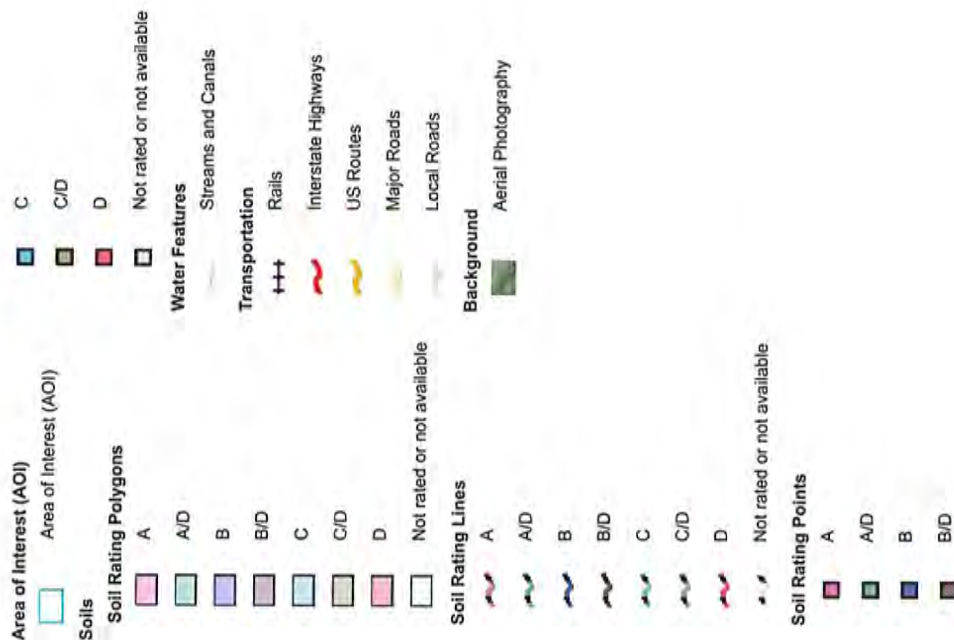


March 18, 2019

Hydrologic Soil Group—Prineville Area, Oregon
(Prineville Apartment Complex)



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.
Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Prineville Area, Oregon
Survey Area Data: Version 16, Sep 17, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 11, 2014—Aug 17, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
123	Ochoco-Prineville complex 0 to 3 percent slopes	C	6.7	100.0%
Totals for Area of Interest			6.7	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition



Appendix C



Developed Conditions



Routing Diagram for Prineville Apartments

Prepared by Multitech Engineering Services, Inc., Printed 3/19/2019
HydroCAD® 10.00-17 s/n 09412 © 2016 HydroCAD Software Solutions LLC

Prineville Apartments

Prepared by Multitech Engineering Services, Inc.

HydroCAD® 10.00-17 s/n 09412 © 2016 HydroCAD Software Solutions LLC

Type II 24-hr 2-year Rainfall=1.20"

Printed 3/19/2019

Page 2

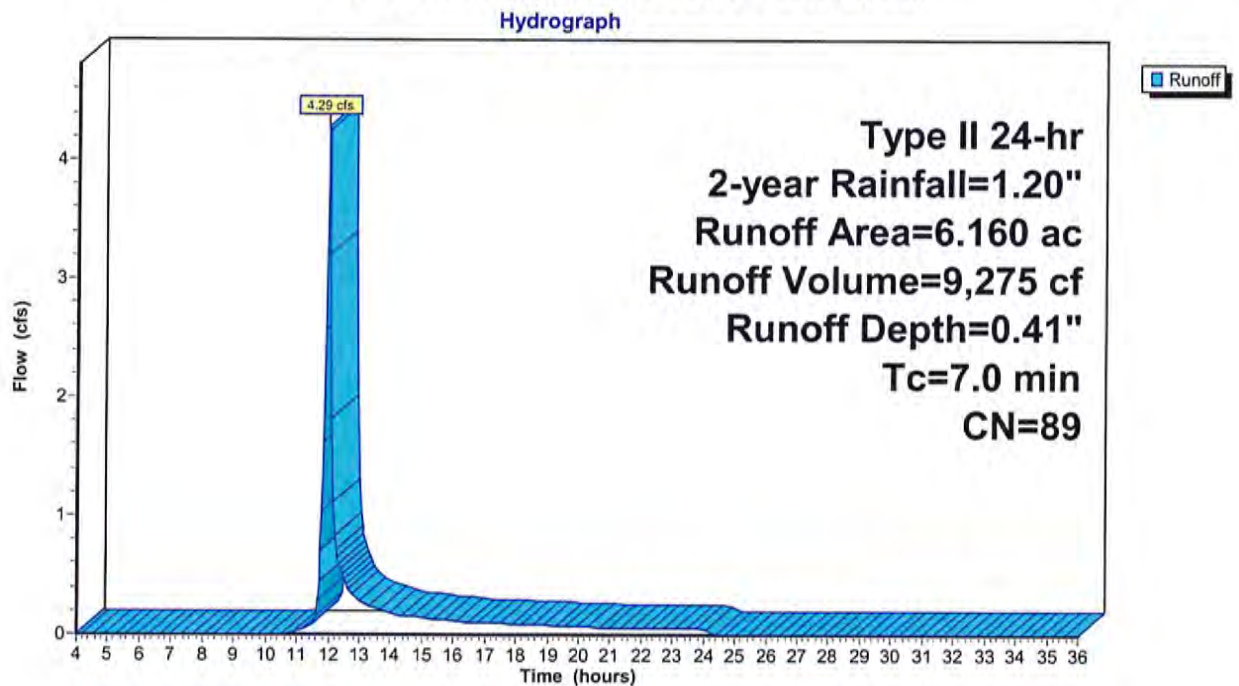
Summary for Subcatchment 1D: Developed Conditions

Runoff = 4.29 cfs @ 11.99 hrs, Volume= 9,275 cf, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=1.20"

Area (ac)	CN	Description
2.310	74	>75% Grass cover, Good, HSG C
* 3.850	98	Paved parking, roofs & sidewalk, HSG C
6.160	89	Weighted Average
2.310	74	37.50% Pervious Area
3.850	98	62.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 1D: Developed Conditions

Prineville Apartments

Prepared by Multitech Engineering Services, Inc.

HydroCAD® 10.00-17 s/n 09412 © 2016 HydroCAD Software Solutions LLC

Type I 24-hr 50-year Rainfall=2.20"

Printed 3/19/2019

Page 3

Summary for Subcatchment 1D: Developed Conditions

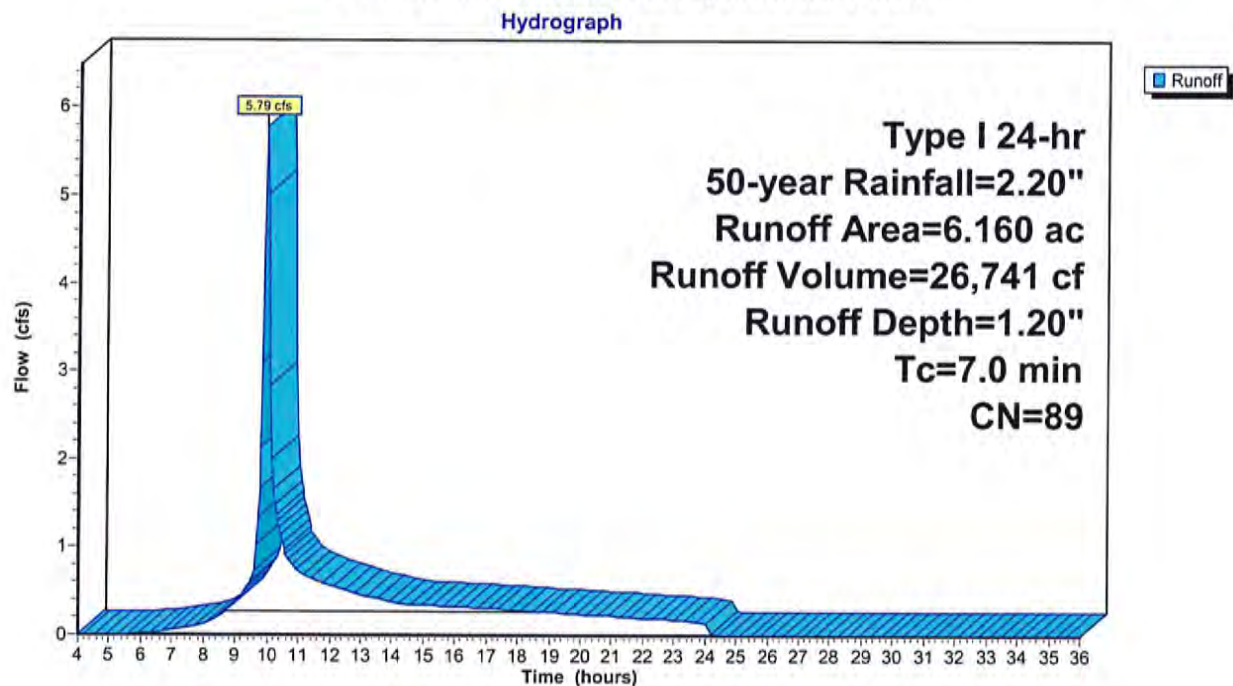
Runoff = 5.79 cfs @ 9.98 hrs, Volume= 26,741 cf, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-36.00 hrs, dt= 0.05 hrs
Type I 24-hr 50-year Rainfall=2.20"

Area (ac)	CN	Description
2.310	74	>75% Grass cover, Good, HSG C
* 3.850	98	Paved parking, roofs & sidewalk, HSG C
6.160	89	Weighted Average
2.310	74	37.50% Pervious Area
3.850	98	62.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 1D: Developed Conditions



Prineville Apartments

Prepared by Multitech Engineering Services, Inc.

HydroCAD® 10.00-17 s/n 09412 © 2016 HydroCAD Software Solutions LLC

Type I 24-hr 100-year Rainfall=2.40"

Printed 3/19/2019

Page 4

Summary for Subcatchment 1D: Developed Conditions

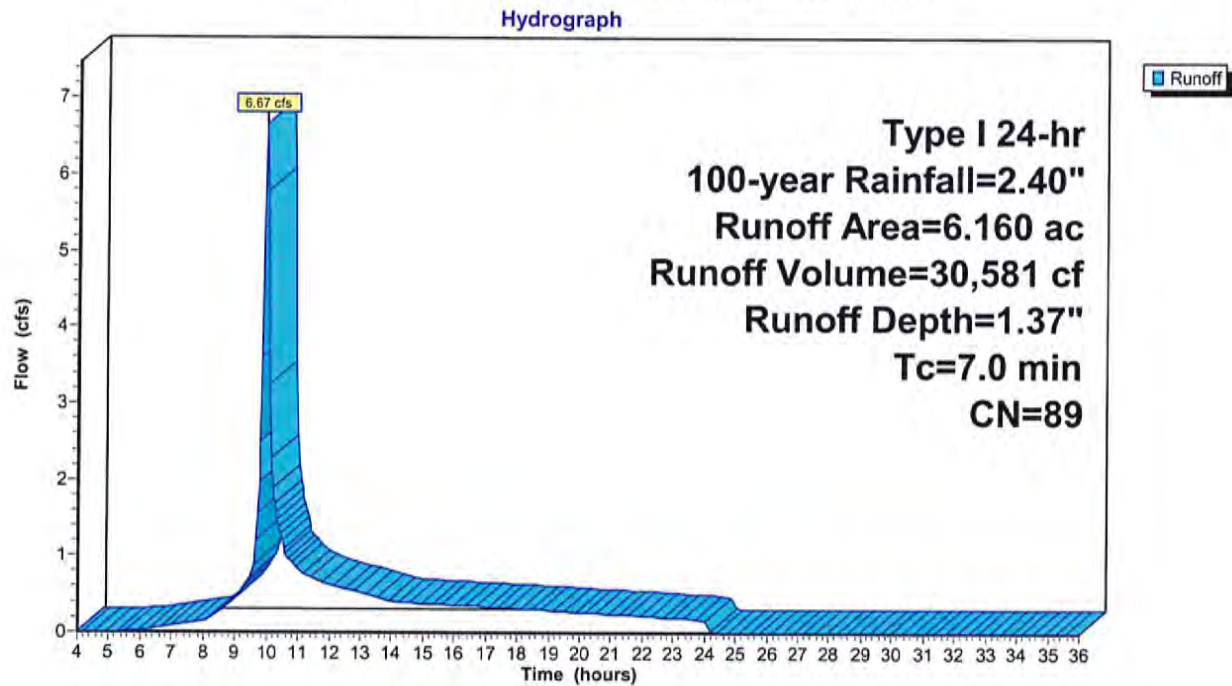
Runoff = 6.67 cfs @ 9.98 hrs, Volume= 30,581 cf, Depth= 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-36.00 hrs, dt= 0.05 hrs
Type I 24-hr 100-year Rainfall=2.40"

Area (ac)	CN	Description
2.310	74	>75% Grass cover, Good, HSG C
* 3.850	98	Paved parking, roofs & sidewalk, HSG C
6.160	89	Weighted Average
2.310	74	37.50% Pervious Area
3.850	98	62.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					Direct Entry,

Subcatchment 1D: Developed Conditions



B. DRAINAGE CONTROL

1. GENERAL

All drainage control shall be designed in accordance with the specifications described in the adopted City of Prineville Stormwater Pollution Reduction Plan and all applicable state (Department of Environmental Quality) and Federal regulations. Except as modified or amended by these Standards and Specifications, storm sewers shall be designed according to the current ODOT Hydraulics Manual (2011). Storm sewers shall conform to the same specifications as sanitary sewers. In the ODOT specifications, any references to "mainline" shall apply to all storm sewers serving City streets. All references to "highway" shall also mean City streets.

Runoff from Public roadways shall be disposed of by utilizing the existing storm water collection system or by conveyance to publicly controlled detention and retention areas.

Privately held properties shall contain stormwater runoff on site to the greatest degree practicable, and design facilities to accommodate the "Detention Storm" prior to any discharge to the public right of way or public drainage system. All new development and redevelopment shall manage all storm water runoff onsite. Some developed lots in the urban core may not be practicably developed in accordance with this requirement. In these instances, the City Engineer may allow development to discharge stormwater offsite. Any impacts to the public system shall be identified and mitigated.

2. DESIGN STORM

- The Water Quality Storm shall be the 2 year 24 hour storm. Verify the facilities can hold the water quality storm without considering infiltration.
- The Detention Storm shall be the 50 year 24 hour storm. Verify the facilities can hold the detention storm with infiltration factored in.
- The Overflow Storm shall be the 100 year 24 hour storm. Verify the facilities can hold the overflow storm with infiltration factored in. If the facilities are predicted to overflow, verify the excess water is maintained onsite without causing any damage to the site. If the site overflows to the public right of way, design outlet control to minimize the impact on existing facilities. If the overflow exceeds the capacity of existing downstream facilities, determine required improvements to maintain the existing service level of the public system.

A summary of the precipitation depths for different frequency events are summarized below.

<u>Frequency Events</u>	<u>Rainfall Accumulated Depth</u>
2-yr, 24-hour	1.2 inches
5-yr, 24-hour	1.5 inches
10-yr, 24-hour	1.7 inches
25-yr, 24-hour	2.0 inches
50-yr, 24-hour	2.2 inches
100-yr, 24-hour	2.4 inches

The following methods may be used for the design of flow control and conveyance systems, or as approved by the City Engineer.