Development Services

From Concept to Construction

Phone: 503-823-7300 Email: bds@portlandoregon.gov 1900 SW 4th Ave, Portland, OR 97201
More Contact Info (http://www.portlandoregon.gov//bds/article/519984)

APPEAL SUMMARY

Status: Decision Rendered

Appeal ID: 14720	**Project Address:** 6204 NE 8th Ave (South Lot 3)
Hearing Date: 3/8/17	**Appellant Name:** Roseann Johnson
Case No.: P-003	**Appellant Phone:** 9712216734
Appeal Type: Plumbing	**Plans Examiner/Inspector:** LUR Planner: Sean Williams; BES LUR: Ben Kersens; FP: Unknown
Project Type: residential	**Stories:** 2 **Occupancy:** Residential Housing **Construction Type:** Residential
Building/Business Name:	**Fire Sprinklers:** Yes - Lot 2 & 3 Homes to be determined at final plat
Appeal Involves: other: Shared Drywell for Stormwater Management	**LUR or Permit Application No.:** 16-182762 LDS
Plan Submitted Option: pdf [File 1] [File 2] [File 3] [File 4]	**Proposed use:** Shared drywells for Lots 2&3 with attached homes

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	308.1
Requires	Section 308.1 Except as otherwise provided in this code, no plumbing system, drainage system, building sewer, private sewage disposal system, or parts thereof shall be located in any lot other than the lot that is the site of the building, structure, or premises served by such facilities. The stormwater management facility for each lot shall be entirely independent.
Proposed Design	The subject site is currently under consideration for a three-lot land division with a private tract 'A' private street. One shared dry well is proposed to serve Lots 2 and 3. (An individual dry well is proposed to serve Lot 1, and an individual dry well is proposed to serve the private tract 'A' street; private street SD permit 123240). The shared dry well for lots 2 and 3 is proposed to be located within a reciprocal 10 foot X 10 foot easement. The dry well itself will be located a minimum of 10 feet from the building structure and 5 feet from any property line as measured to the center of the facility. Connections between each unit of each structure and the associated dry well will not cross property lines.
Reason for alternative	Lots 2 and 3 will be developed with an attached homes structure consisting of two units sharing a common wall. These units will function as individual dwelling units. Given the relatively narrow widths of the proposed lots 2 and 3, shared dry wells will allow for increased Title 11 tree density, feasible front yard tree planting required by community design standards (33.218.100), as well as private street trees to be planted within 5' of the street tract, required by the administrative rule for private rights-of-way. Due to the smaller size of the proposed lots, the common wall

construction of the two-unit attached structure, and the tree requirements, a shared dry well in the front of lots 2 and 3 seems most practical. The dry well will only pick up roof runoff and will meet sizing requirements based on roof area of the two-unit attached structure. At a 6/12 roof pitch, the total roof area of the attached structure is proposed to be approximately 2,110 square feet, certainly within the capacity for a 4 foot X 5 foot dry well.

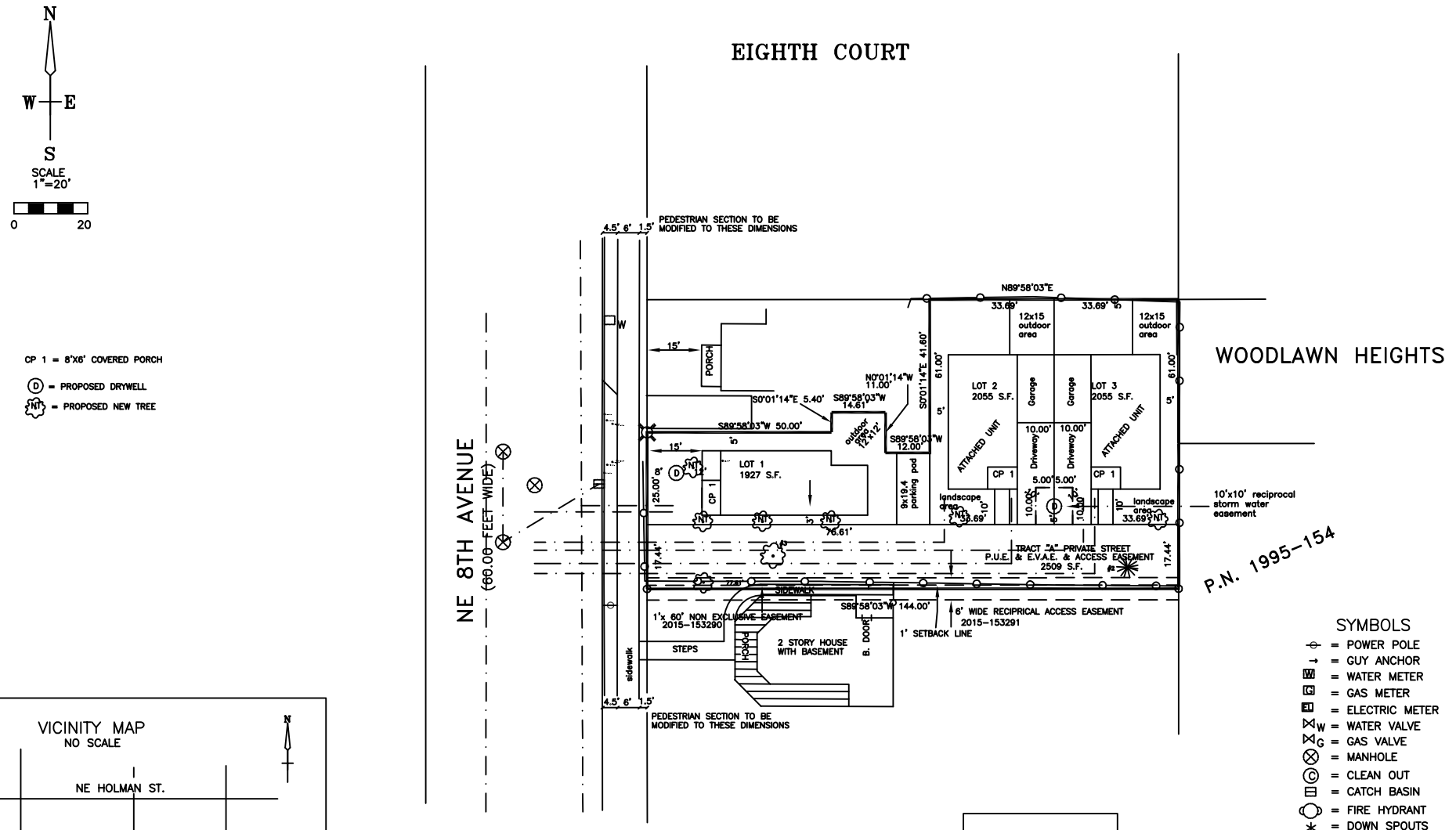
APPEAL DECISION

Shared Drywell: Granted provided an Operations and Maintenance agreement and easement are recorded.

Maintenance agreement and easement must be reviewed and approved by Bureau of Development Services prior to recording. Appellant shall contact Sean Williams (503-823-7612) for information.

The Administrative Appeal Board finds that the information submitted by the appellant demonstrates that the approved modifications or alternate methods are consistent with the intent of the code; do not lessen health, safety, accessibility, life, fire safety or structural requirements; and that special conditions unique to this project make strict application of those code sections impractical.

Pursuant to City Code Chapter 25.07, you may appeal this decision to the Plumbing Code Board of Appeal within 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.

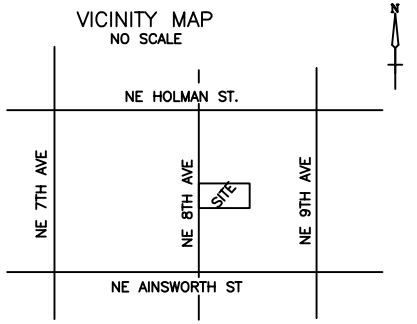


NOTE: ELEVATION DATUM IS ASSUMED

SYMBOLS

- = POWER POLE
- = GUY ANCHOR
- W = WATER METER
- G = GAS METER
- EL = ELECTRIC METER
- W = WATER VALVE
- G = GAS VALVE
- = MANHOLE
- = CLEAN OUT
- = CATCH BASIN
- = FIRE HYDRANT
- = DOWN SPOUTS
- "EPL" = LINE TO CONFIRM
- —W— = WATER LINE
- —G— = GAS LINE
- —E— = ELECTRIC LINE
- —S— = SAN. SEWER

VICINITY MAP
NO SCALE



REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1990
JOE H. FERGUSON
2445
RENEWAL DATE 12/31/17

SUPPLEMENTAL LU 16-182762 LDS

Ferguson Land Surveying, Inc.
646 SE 106TH AVE. PORTLAND, OR 97216
Phone (503) 408-0601 Fax (503) 408-0602
www.FergusonLandSurveying.com

PROPOSED CONDITIONS
LOTS 3 AND 5, BLOCK 5, "WOODLAND HEIGHTS"
IN THE SW 1/4, SECTION 14, T.1N., R.1.E., W.M.
CITY OF PORTLAND, MULTNOMAH COUNTY, OREGON

CLIENT:
BLUESTONE HOMES

DATE: MARCH 24, 2016

JOB NO. 16-030
DRAFTED 2.20.17

SHEET 1 OF 1

CITY OF PORTLAND
Stormwater Management Manual

FORM 1

SIMPLIFIED APPROACH FORM

PROJECT INFORMATION WORKSHEET

PROJECT INFORMATION

Submittal Date: 2/29/16 **Permit Application Number:** _____

Owner Name: BLUESTONE HOMES INC

Owner Phone: _____ **Owner Email:** _____

Designer Name: _____ **Designer Firm:** _____

Designer Phone: _____ **Designer Email:** _____

Designer License Number: _____ **License Type:** _____

Applicant Name *(if different from owner or designer)* _____

Applicant Phone: _____ **Applicant Email:** _____

SITE INFORMATION

Site Address: 6204 S/ NE 8TH AVE

_____

State Property ID *(six-digit R number)* **for all parcels** included in development proposal**:**
R311882

Brief Description of Proposed Development:

Build Three New Homes on Vacant lot.

Soil Classifications: NRCS Wetted Drainage Class: _____

NRCS Hydrologic Soil Group: _____

Site Characteristics:

S.1 Do slopes exceed 20% anywhere within the project area?
☐ yes ☐ no

S.2 Are there springs, seeps, or a high groundwater table within the project area? ☐ yes ☐ no

If the answer to either S.1 or S.2 is **YES**, then a flow-through or partial infiltration facility with an overflow to an approvable discharge point is required.

Required Infiltration Testing

Date of Test: 2/28/16 Depth of Excavation (ft): 4'

	TEST 1	TEST 2	TEST 3
A. Time *(of day)*	9:00	10:05	11:10
B. Duration *(hours)* *(1 hour minimum)*	1hr	1hr	1hr
C. Initial Water Depth *(inches)*	12	12	12
D. Final Water Depth *(inches)*	6(W)/8(E)	8(W)/9(E)	6(W)/8(E)
E. Infiltration Rate* *(inches/hour)*	(W) 6"/hr (E) 4"/hr	(W) 4"/hr (E) 3"/hr	(W) 4"/hr (E) 3"/hr **Final Infiltration Rate**

*Infiltration Rate = Initial Depth *(in)* – Final Depth *(in)* / Duration of Test *(hours)*

I acknowledge the accuracy of these infiltration testing results.

_____
Signature of tester *(required)*

Dave Carver
Print Name

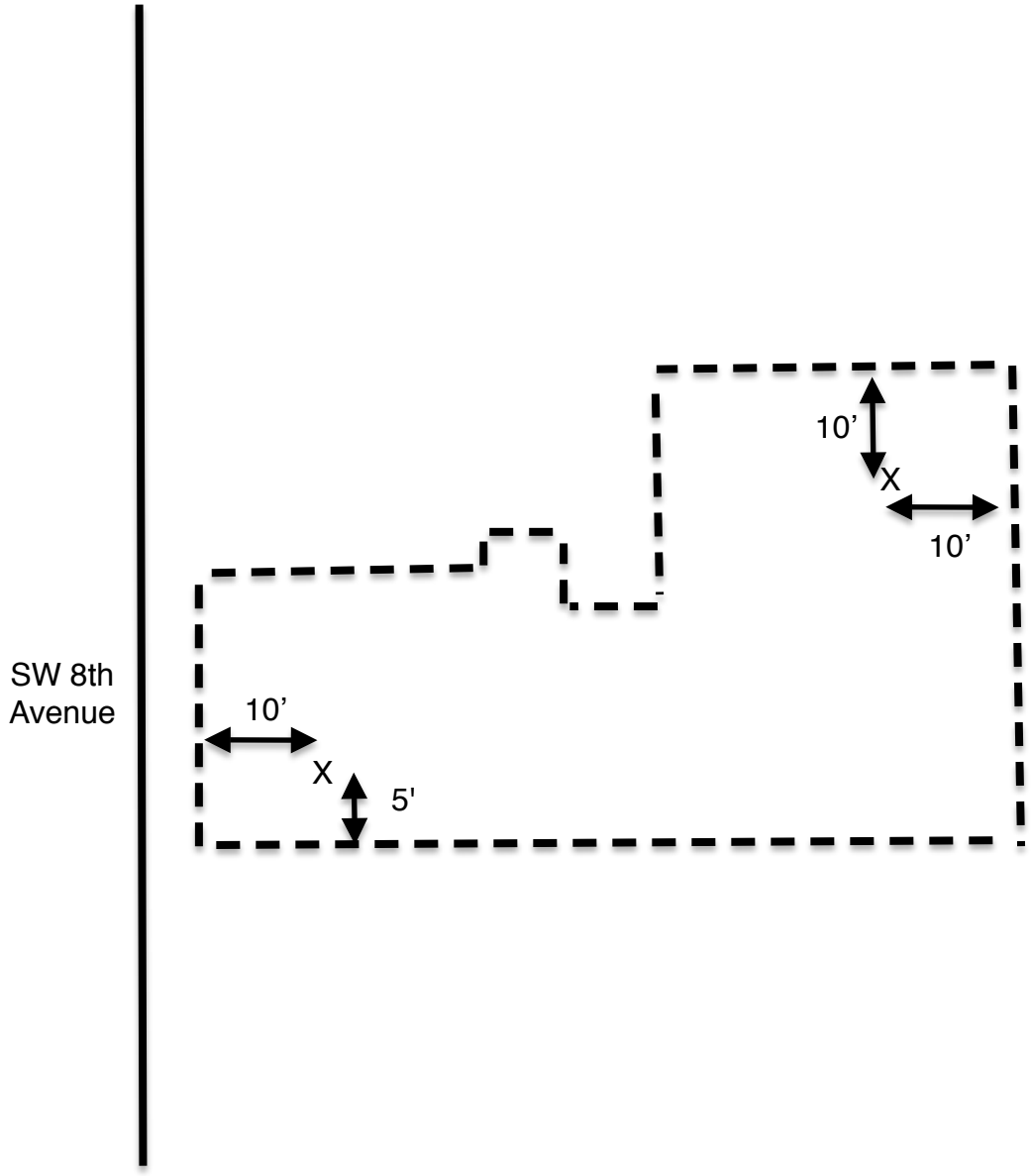
2/29/16
Date

SIMPLIFIED APPROACH FORM

REQUIRED INFILTRATION TESTING SITE PLAN

TEST PIT LOCATION (SITE PLAN SKETCH)

Key information to include: 1) Site or parcel, 2) Adjacent road(s) or cross street(s), 3) Test pit location with dimensions



X = Infiltration Dig (4’x12”x12”)

north

SIMPLIFIED APPROACH FORM

TREE CREDIT WORKSHEET

Not all sites are eligible for tree credit. See 2.3.3 for specific applicability.

1 New Coniferous Trees

Enter number of NEW coniferous trees that meet qualifying requirements ..... ▶ BOX A

Multiply Box A by **200** and enter results in Box B ..... ▶ BOX B

2 New Broadleaf Trees

Enter number of NEW broadleaf trees that meet qualifying requirements ..... ▶ BOX C

Multiply Box D by **100** and enter results in Box D ..... ▶ BOX D

3 Existing Tree Canopy

Enter number of EXISTING trees with caliper of 1.5 to 6 inches ..... ▶ BOX E1

Multiply Box E by **200** and enter results in Box E2 ..... ▶ BOX E2

For each tree larger than 6.1 caliper inches, there is **400** square feet of credit **per each 6 caliper inches**. List each tree *(on a separate page, if necessary)* larger than 6 caliper inches, include the actual caliper size, and determine the stormwater credit allowed per tree. Do not round up.

Trees *(include only trees larger than 6 caliper inches)*	**Caliper Size** *(in inches)*	**Credit Units** *(divide by 6 to get units to calculate credit)*		**Credit**	**Stormwater Credit**
		/6 =		x 400 sf	sf
		/6 =		x 400 sf	sf
		/6 =		x 400 sf	sf
		/6 =		x 400 sf	sf
		/6 =		x 400 sf	sf
		/6 =		x 400 sf	sf
				TOTAL	sf ▶ BOX F

4 TOTAL TREE CREDIT

Add boxes B, D, E2 and F2, enter the TOTAL in Box G ..... ▶ **BOX G**

For sites with **LESS than 1,000 SF** of new or redeveloped impervious area:

The amount in Box G is to be entered on Page 4, 1 Tree Credit.

For sites with **MORE than 1,000 SF** of new or redeveloped impervious area:

Multiply Box 1 on Page 4 by 0.1 and enter result in Box H ..... ▶ BOX H

Enter the LESSER of Box G and Box H in Box I. ..... ▶ **BOX I**

The amount in Box G is to be entered on Page 4, 1 Tree Credit.

SIMPLIFIED APPROACH FORM

FACILITY SIZING WORKSHEET

1 Total impervious area being developed or redeveloped ..... BOX 1

Tree Credit: Enter total from Page 3, Box G or Box I _____ SF

Impervious Area Reduction Techniques Proposed:

A. Ecoroof _____ SF

B. Pervious Pavement _____ SF

2 Total impervious area reductions ..... BOX 2
(Add tree credit and impervious area reduction techniques square footage)

3 Total impervious area requiring stormwater management ..... BOX 3
(Subtract Box 2 from Box 1)

4 Surface facilities proposed

	Impervious Area Managed			Sizing Factor		Facility Surface Area
A. Planter	SF	x	0.06	=	SF
B. Swale	SF	x	0.09	=	SF
C. Basin	SF	x	0.09	=	SF
D. Downspout Extension	SF	x	0.10	=	SF
E. Vegetated Filter Strip for walks and driveways	SF	x	0.20	=	SF

Overflow will be directed to *(check all that apply):* ☐ Subsurface Facility ☐ Surface Water ☐ Stormwater Sewer ☐ Combined Sewer

5 Total surface facility impervious area managed ..... BOX 4
(Add square footage from planters, swales, basins, downspout extensions, etc.)

6 Subsurface facilities proposed

The following subsurface facilities can receive overflow from the facilities listed above or can be used independently to manage stormwater from roofs. If stormwater is generated from anything other than roof area, the facilities are subject to the UIC (Underground Injection Control) requirements.

	(See Section 2.3.3 for sizing information)	**Facility Size**	
A. Drywell	_____sf	_____Diameter	_____Depth
B. Soakage Trench	_____ sf	_____Length	_____Width

7 Total subsurface facility impervious area managed ..... BOX 5
(Add square footage from proposed drywell, soakage trench)

8 Total stormwater facility impervious area managed ..... BOX 6
(Add totals from Box 4 and Box 5)

9 Total impervious area without management ..... **BOX 7**
(Subtract Box 6 from Box 3)

Escape Route: If the stormwater facility temporarily fails or rainfall exceeds the facility design capacity, describe where flows will drain to in order to maintain public safety and avoid property damage. Depending on site conditions, this may include storage in an overflow structure, parking lot, street, or landscaped area.

I certify the accuracy of this application.

Signature: _____ Date: _____

Printed Name: _____

HARDMAN GEOTECHNICAL SERVICES INC.
Practical, Cost-Effective Geotechnical Solutions

July 29, 2016 (updated August 18, 2016)
Project No. 16-2065

Roseann Johnson
Bluestone Homes

roseann@bluestonehomes.net
971.221.6734

Via e-mail with hard copies mailed on request

Subject: **Infiltration Testing Results**
6204 NE 8th Avenue
Portland, Oregon

As requested, Hardman Geotechnical Services Inc. (HGSI) performed soil infiltration testing for the property located at 6204 NE 8th Avenue in the City of Portland, Oregon (Figure 1). The purpose of this study was to evaluate infiltration rates for subsurface disposal of stormwater. We understand that design of the stormwater infiltration system is to be completed by others. During our initial testing using hand auger borings we were unable to reach the target infiltration zone due to gravelly soils with cobbles. An additional test pit was subsequently excavated to achieve deeper test results as reported in this updated report. This report completely replaces the previous report dated July 29, 2016.

SITE AND PROJECT DESCRIPTION

An existing house is located in the northwestern portion of the site. Vegetation consists primarily of weeds and grasses. Site topography slopes gently down to the west. We understand that the property will be subdivided for construction of two new residential structures in the northeastern portion of the site and a private street is planned in the southern portion of the site. Underground utilities are also planned.

FIELD EXPLORATION AND SUBSURFACE CONDITIONS

On July 20, 2016, HGSI attempted to excavate eleven hand auger borings in the vicinity of the planned private street. Due to soil conditions, only one of the hand auger borings, HA-1, was able to achieve a depth greater than 1 foot. Hand Auger HA-1 was terminated at a depth of 3 feet due to practical refusal in silt with gravel. An infiltration test was performed in Hand Auger HA-1 at a depth of 3 feet below ground surface (bgs).

On August 9, 2016, HGSI excavated a test pit designated TP-1 to achieve a deeper infiltration test. This test pit was advanced to a depth of approximately 8 feet bgs using a mini trackhoe subcontracted to HGSI. Figure 1 shows the approximate test pit and hand auger boring locations. It should be noted that exploration locations were determined in the field by pacing or taping distances from apparent property corners and other site features shown on the plans provided and should therefore be considered approximate. During the exploration, HGSI observed and recorded pertinent soil information such as color, stratigraphy, strength, and soil moisture. Soils were classified in general accordance with the Unified Soil Classification System

(USCS). At the completion of the infiltration test, the excavation was backfilled using the excavated soils, and tamped into place.

SOIL CONDITIONS

On-site soils encountered in the borings are described below:

Topsoil: Approximately 3 inches of topsoil was encountered in hand auger boring HA-1 and consisted of soft, highly organic silt with sparse gravel (OL), dark brown, slightly moist.

Undocumented Fill: Directly beneath the topsoil, all explorations encountered gravel and construction debris (wood, concrete, brick, glass, some trash). This fill extended to approximately 5 feet bgs in test pit TP-1.

Gravelly Sand with Cobbles: Underlying the fill, TP-1 encountered gravelly sand with cobbles. Gravel and cobbles were sub-rounded to rounded. This unit was moist, dark gray, and extended to the termination of the test pit at 8 feet bgs.

GROUNDWATER

A static groundwater table was not encountered in the hand auger borings conducted for this study, which were excavated to a maximum depth of 8 feet bgs. United States Geological Survey mapping of the subject area indicates groundwater lies at an estimated depth of 140 to 160 feet bgs (Snyder, 2008).

INFILTRATION TESTING

Soil infiltration testing was performed using the open hole, falling head method in the hand auger boring and test pit. Soil in the boring and test pit was pre-saturated for several hours prior to testing. Following the soil saturation, infiltration tests were conducted. The change in water level was measured to the nearest 0.1 inch from a fixed point at regular time intervals. Table 1 presents the results of the falling head infiltration tests.

Table 1. Summary of Infiltration Test Results

Test Pit	Depth (feet)	Soil Type	Infiltration Rate (in/hr)	Approx. Hydraulic Head Range (inches)
HA-1	3.0	Fill	6	18 – 14
TP-1	8.0	Gravelly Sand with Cobbles	>50	NA

CONCLUSIONS AND RECOMMENDATIONS
INFILTRATION RATES AND STORMWATER SYSTEM DESIGN

Based on results of the soil infiltration testing, native soils on site exhibit high infiltration rates (>50 inches/hour at a depth of 8 feet bgs). We do not recommend an infiltration system that discharges water into undocumented fill. We recommend a system that extends below the fill, at least 6 feet bgs at the location of test pit TP-1. Dry wells or other facilities located deeper than 6 feet bgs may be designed for an infiltration rate of 50 inches/hour. The infiltration rates do not incorporate a factor of safety. For the design infiltration rate, the system designer should incorporate an appropriate factor of safety against slowing of the rate over time due to biological and sediment clogging.

Infiltration test methods and procedures attempt to simulate the as-built conditions of the planned disposal system. However, due to natural variations in soil properties, actual infiltration rates may vary from the measured and/or recommended design rates. All systems should be constructed such that potential overflow is discharged in a controlled manner away from structures, and all systems should include an adequate factor of safety. Infiltration rates presented in this report should not be applied to inappropriate or complex hydrological models such as a closed basin without extensive further studies. Evaluating environmental implications of stormwater disposal at this site are beyond the scope of this study.

UNCERTAINTIES AND LIMITATIONS

We have prepared this report for the owner and his/her consultants for use in design of this project only. The conclusions and interpretations presented in this report should not be construed as a warranty of the subsurface conditions. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between explorations that may not be detected by a geotechnical study. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, HGSI should be notified for review of the recommendations of this report, and revision of such if necessary.

Within the limitations of scope, schedule and budget, HGSI executed these services in accordance with generally accepted professional principles and practices in the field of geotechnical engineering at the time the report was prepared. No warranty, expressed or implied, is made. The scope of our work did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic substances in the soil, surface water, or groundwater at this site.

We appreciate this opportunity to be of service.

Sincerely,

HARDMAN GEOTECHNICAL SERVICES INC.

REGISTERED PROFESSIONAL ENGINEER
64,422PE
OREGON
SEPTEMBER 26, 2000
SCOTT L. HARDMAN

8-18-16

Scott L. Hardman, P.E., G.E.
Geotechnical Engineer

EXPIRES: 06-30-2017

Attachments: Reference
Figure 1 – Site and Exploration Plan

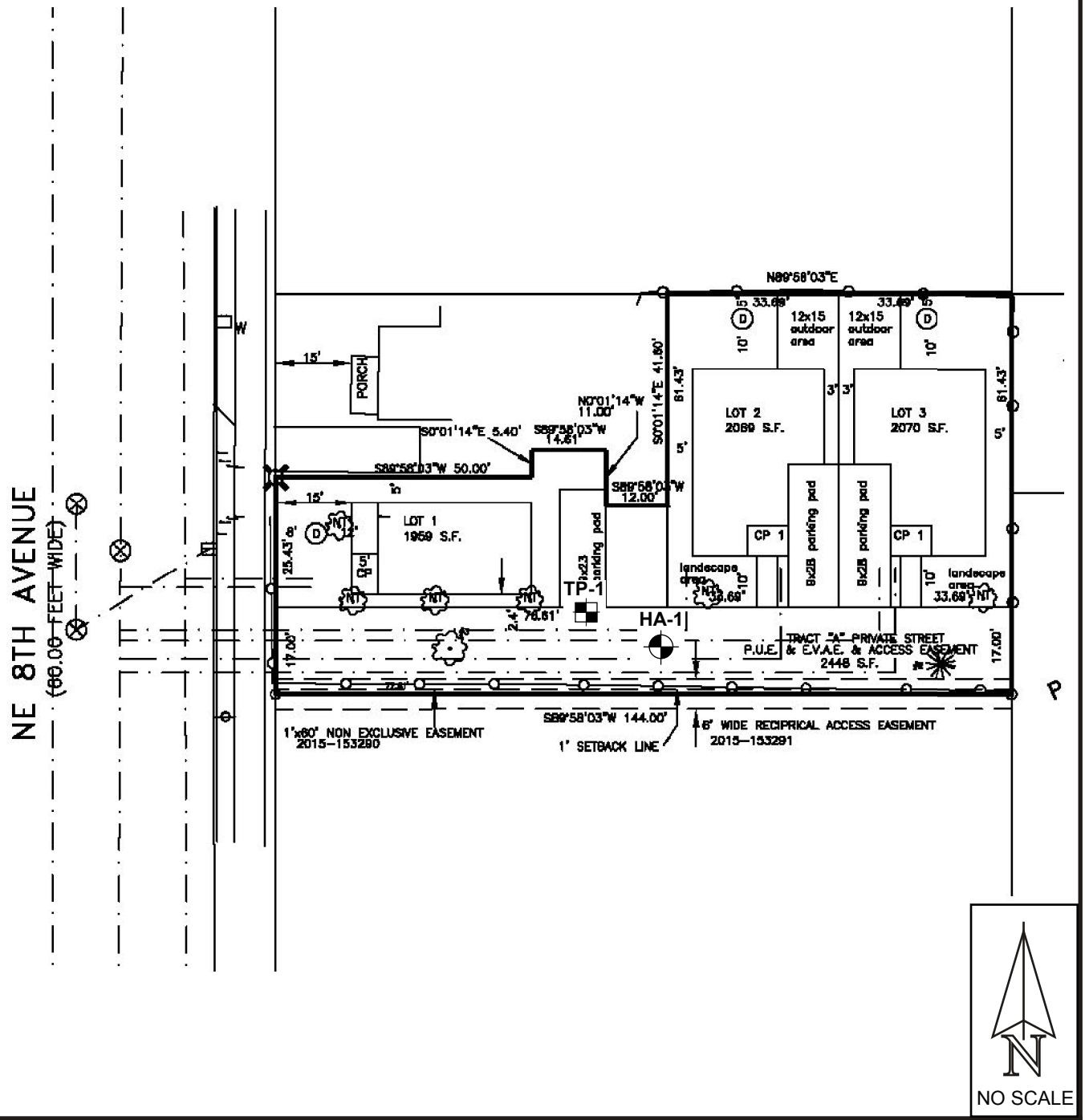
REFERENCE

Snyder, D.T., 2008, Estimated Depth to Ground Water and Configuration of the Water Table in the Portland, Oregon Area: U.S. Geological Survey Scientific Investigations Report 2008–5059, 41 p., 3 plates.

HARDMAN GEOTECHNICAL SERVICES INC.

Practical, Cost-Effective Geotechnical Solutions

Site and Exploration Plan



Base map provided by Ferguson Land Surveying, Inc.

Legend

HA-1 Hand Auger Boring

TP-1 Test Pit

Project: 6204 NE 8th Avenue Portland, Oregon	Project No. 16-2065	FIGURE 1

TCC Associates, Inc.
5821 SE 82nd Ave
Suite 111
Portland, OR 97266
Phone(503) 277-8143
Email: etawiah@TCCENGR.com

Prepared for:

Bluestone Homes, Inc
16081 S. Moore Rd
Oregon City, Oregon 97045

Stormwater Report

6204 NE 8th Ave Partition
Portland, Oregon 97206

T1N R1E SEC 18DA TL 16100, Multnomah County, OR TCC Project No.: 16-006

REGISTERED PROFESSIONAL ENGINEER
18,631
OREGON
JULY 10, 1995
EDMUND K. TAWIAH
EXPIRES 06-30-08

I hereby certify that this Stormwater Management Report for 6204 NE 8th Ave Partition has been prepared by me and meets minimum standards of the City of Portland and normal standards of engineering practice. I hereby acknowledge and agree that the jurisdiction does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities designed by me.

Prepared By: Edmund Tawiah, PE

Contents

Appendix

Chapter 1

Background

This 8,549 sf (0.20) acre parcel is located four lots southeast of the intersection of NE 8th Avenue and Holman Street. It is located adjacent to an existing single-family residential house at 6204 NE 8th, in a developed residential neighborhood.

Proposed Development

The proposed partition will divide the lot into three lots single-family dwellings with a common driveway tract located at the south property line, accessing NE 8th Avenue.

Existing Drainage Facilities

There is an existing public storm drainage facility in the frontage street of NE 8th Avenue. There are no bodies of water such as streams in the vicinity of the site. The existing drainage facilities in the street dispose stormwater by means catch basins situated on NE 8th Avenue that dispose stormwater by drywell.

Proposed Stormwater Management

Stormwater from the roof of each proposed residential building will be directed to a drywell to be located 10ft from the building and 5 ft from the property line. The runoff from the proposed 17ft wide X 138ft long driveway will be disposed by a Lynch type catch basin and drywell system to be located in the driveway.

Field Test Infiltration Rate

Infiltration testing on the site was conducted by Hardman Geotechnical Services, Inc. (See attached, under separate cover). The unfactored infiltration rate from two test locations were 6-inches per hour and over 50 inches per hour. According to the report no groundwater was encountered at depths below 6ft. Thus the site's soil is suitable for infiltraton.

Hydrologic Areas

Areas:	**Pervious**	**Impervious**
Pre Development	8,549 sf (grassy vegetation)	0
	Total = 8,549 sf	

2

Roof Areas Disposal Methodology

Roof runoff is exempt from treatment, if directed to a private drywell for disposal.

Therefore, Stormwater Disposal Hierarchy Category 1 will be adopted. Roof runoff disposal is not rule-authorized or permitted by DEQ. Based on the site location, and soil report, subsurface soils infiltrate well.

- The runoff from the proposed building's roof will be directed to a drywell, to be located at 10ft from the building and over 5ft from the property line.

- The total roof areas are as follows for the lot building areas are as follows:

Lot 1 = 635 sf; Lot 2= 806 sf; Lot 3 = 806 sf.

- **Using Private Drywell sizing Chart (Exhibit 2-31) of the Stormwater Management Manual, a 28-inch Diameter Dry Well installed to a depth of 6 ft will be used for the roof runoff disposal for each building on the lot.**

Lot #	Building Area	Drywell Size	Drywell Rim Below Surface
1	663 sf	28-inch Dia x 5ft depth	6ft
2	920 sf	48-inch Dia x 5ft depth	6ft
3	920 sf	48-inch Dia x 5ft depth	6ft

3

Drywell Sizing Chart

Exhibit 2-31: Drywell Sizing Chart

Drywell Sizing: Once BDS has issued approval for on-site infiltration, the following chart shall be used to select the number and size of drywells. Gray boxes indicate acceptable.

Impervious Area (sq-ft)	28" Diameter Drywell Depth				48" Diameter Drywell Depth			
	5'	10'	15'	20'	5'	10'	15'	20'
1000								
2000								
3000								
4000								
5000								
6000								
7000								
8000								
9000								
10000								
11000								
12000								
13000								
14000								
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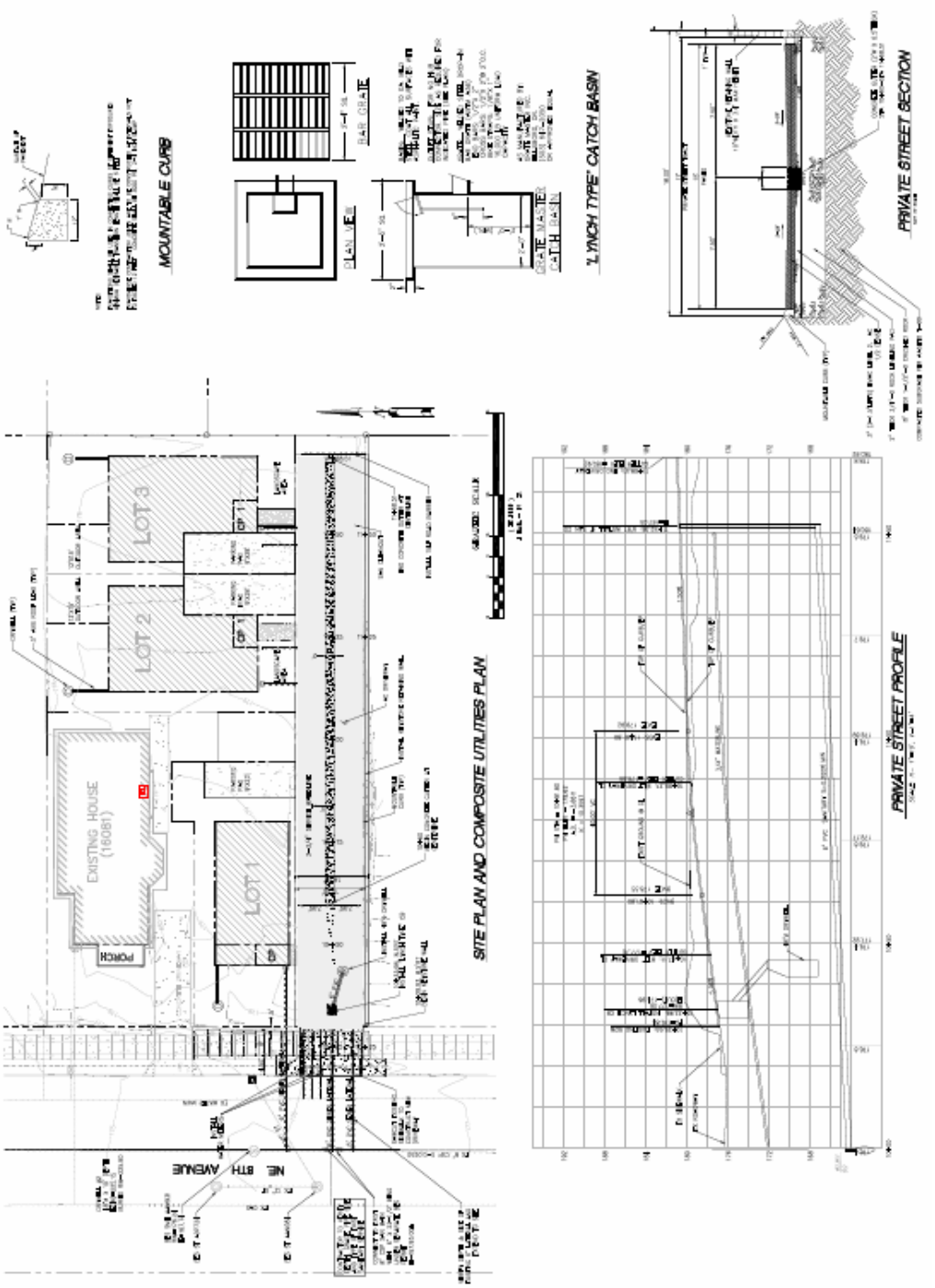
16000								
17000								
18000								
19000								
20000								

4

Drywell Location



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On-Site Soil Infiltration Information

NRCS Wetted Drainage Class:

Well drained Hydrologic Soil Group B

BES Sump Capacity Data by Quarter Section n/a

Groundwater USGS Depth to Seasonal High Groundwater 120-140 ft

BES Supplemental Depth to Groundwater n/a

Columbia South Shore Well Field Wellhead Protection Area No

Plan Districts n/a

Port of Portland Design Standards Manual Boundary No

Fine-grained facies Depth to Fragipan 6 ft

6 ft Infrastructure Areas that Drain Directly to the Willamette or Columbia Rivers

No Combined Sewer Basin Taggart B/C

6

Driveway Runoff Disposal

No additional stormwater from other impervious areas, such as rooftops is directed to the pervious pavement system. Further, the impervious pavements are not located over cisterns, utility vaults, underground parking, or other impervious surfaces.

Infiltration:

The tested infiltration rate is 6 inches/hour, and the traverse section of the driveway sheet flows towards the centerline in an inverse crown design.

Disposal by Drywell:

The driveway paved area of AC is 17ft wide X 138ft long (2,346 sf). The runoff will be collected by a Lynch Type catch basin situated near the right-of-way line by the driveway entrance. It will further be conveyed to a drywell located 10ft away from the catch basin and buried 6ft below the driveway surface for disposal.

Driveways will drain partly to the vegetated area and onto the private street.

This will be in conformance with the revised stormwater management manual, 2016 Ed.