

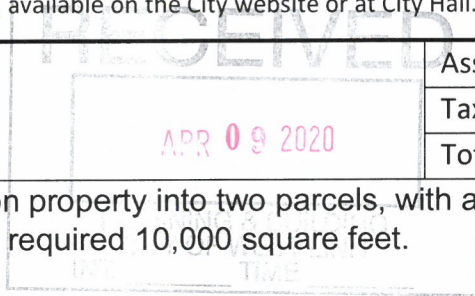
## DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT	PROJECT NO(S). MP-20-01      VAR-20-01	
NON-REFUNDABLE FEE(S) \$ 825	REFUNDABLE DEPOSIT(S) \$ 2800	TOTAL \$ 3625

**Type of Review** (Please check all that apply):

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Annexation (ANX)<br><input type="checkbox"/> Appeal and Review (AP) *<br><input type="checkbox"/> Conditional Use (CUP)<br><input type="checkbox"/> Design Review (DR)<br><input type="checkbox"/> Easement Vacation<br><input type="checkbox"/> Extraterritorial Ext. of Utilities<br><input type="checkbox"/> Final Plat or Plan (FP)<br><input type="checkbox"/> Flood Management Area<br><input type="checkbox"/> Hillside Protection & Erosion Control | <input type="checkbox"/> Historic Review<br><input type="checkbox"/> Legislative Plan or Change<br><input type="checkbox"/> Lot Line Adjustment (LLA) */**<br><input checked="" type="checkbox"/> Minor Partition (MIP) (Preliminary Plat or Plan)<br><input type="checkbox"/> Non-Conforming Lots, Uses & Structures<br><input type="checkbox"/> Planned Unit Development (PUD)<br><input type="checkbox"/> Pre-Application Conference (PA) */**<br><input type="checkbox"/> Street Vacation | <input type="checkbox"/> Subdivision (SUB)<br><input type="checkbox"/> Temporary Uses *<br><input type="checkbox"/> Time Extension *<br><input checked="" type="checkbox"/> Variance (VAR)<br><input type="checkbox"/> Water Resource Area Protection/Single Lot (WAP)<br><input type="checkbox"/> Water Resource Area Protection/Wetland (WAP)<br><input type="checkbox"/> Willamette & Tualatin River Greenway (WRG)<br><input type="checkbox"/> Zone Change |
|--|---|--|

Home Occupation, Pre-Application, Sidewalk Use, Sign Review Permit, and Temporary Sign Permit applications require different or additional application forms, available on the City website or at City Hall.



**Site Location/Address:**  
1434 DOLLAR STREET

Assessor's Map No.: 3S-1E-02BB

Tax Lot(s): 1600

Total Land Area: 21,269 square feet

**Brief Description of Proposal:** Partition property into two parcels, with a Class I Variance Request for Parcel 1 to be 1.3 percent under the required 10,000 square feet.

**Applicant Name:** Don Burke  
(please print)  
**Address:** 15604 SE Ruby Drive  
**City State Zip:** Milwaukie, OR 97267

Phone: 503-572-8522  
 Email: [don@burkeddevelopments.net](mailto:don@burkeddevelopments.net)  
[don@digdbec.com](mailto:don@digdbec.com)

**Owner Name** (required): Don Burke  
(please print)  
**Address:** 15604 SE Ruby Drive  
**City State Zip:** Milwaukie, OR 97267

Phone: 503-572-8522  
 Email: [don@burkeddevelopments.net](mailto:don@burkeddevelopments.net)  
[don@digdbec.com](mailto:don@digdbec.com)

**Consultant Name:** Paul Roeger, CMT Surveying & Consulting  
(please print)  
**Address:** 20330 SE Hwy. 212  
**City State Zip:** Damascus, OR 97089

Phone: 503-860-2545  
 Email: [paul@cmtsc.net](mailto:paul@cmtsc.net)

1. All application fees are non-refundable (excluding deposit). **Any overruns to deposit will result in additional billing.**
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
4. **Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application.**  
**One (1) complete set of digital application materials must also be submitted on CD in PDF format.**  
**If large sets of plans are required in application please submit only two sets.**

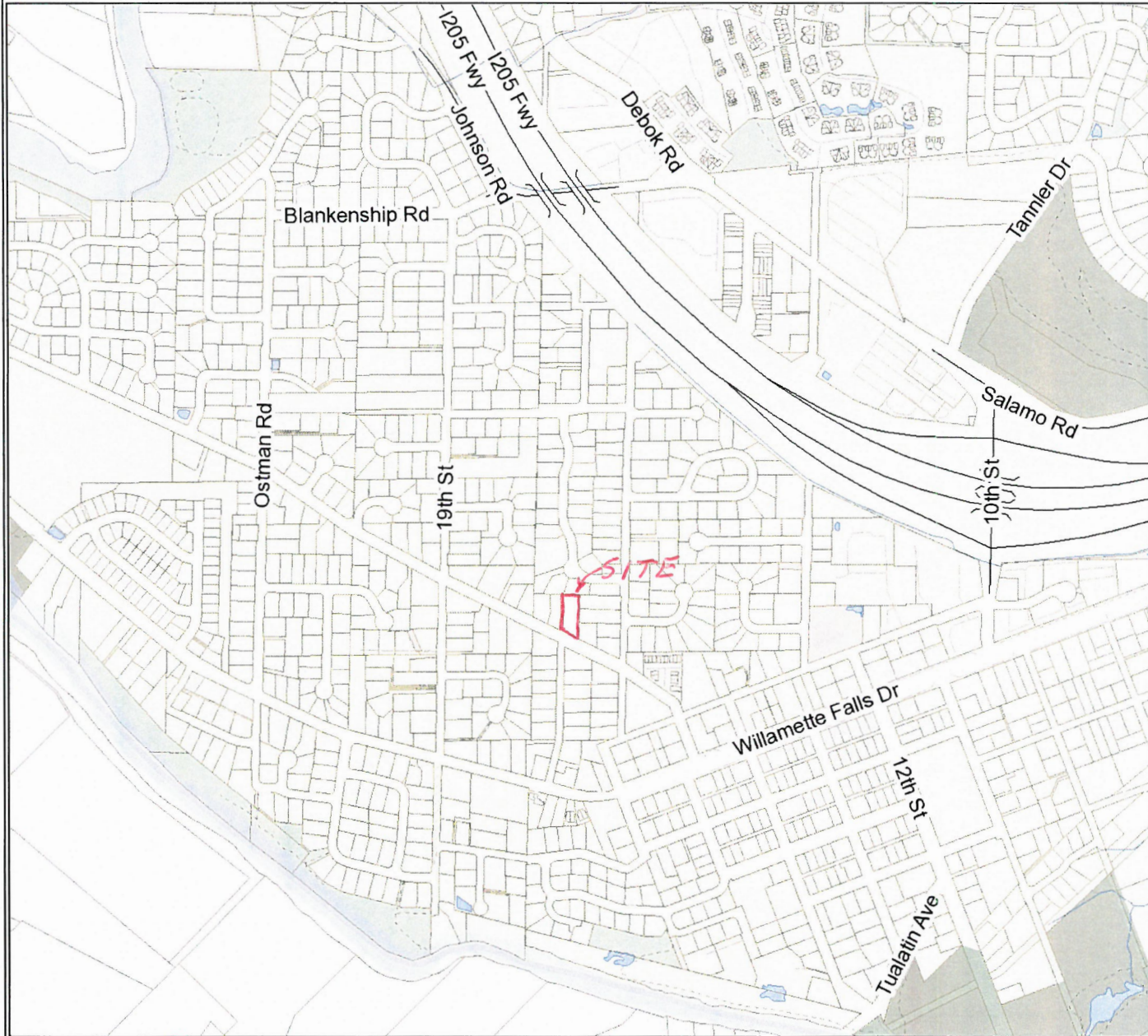
\* No CD required / \*\* Only one hard-copy set needed

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Community Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.

 Applicant's signature	4-8-20 Date	 Owner's signature (required)	4-8-20 Date
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# Vicinity Map - 1434 Dollar St



## Legend

Subdivisions Outlines



Lot Line Adjustments



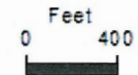
Plat Lot Numbers Points



West Linn City Limits



West Linn City Limits Shaded



Scale 1:9,600 - 1 in = 800 ft  
Scale is based on 8-1/2 x 11 paper size



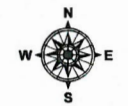
Map created by: public  
Date Created: 07-Apr-20 01:35 PM

**WEST LINN GIS**

DISCLAIMER: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Map scale is approximate. Source: West Linn GIS (Geographic Information System) MapOptix.



# VICINITY MAP



Scale 1:38,400 - 1 in = 3,200 ft  
Scale is based on 8-1/2 x 11 paper size



Map created by: public  
Date Created: 06-Feb-20 11:24 AM

**WEST LINN GIS**

DISCLAIMER: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Map scale is approximate. Source: West Linn GIS (Geographic Information System) MapOptix.



**PARTITION NARRATIVE  
1434 Dollar Street**

**I. GENERAL INFORMATION**

**Applicant:** Don Burke  
15604 SE Ruby Drive  
Milwaukie, OR 97267  
503-572-8522

**Applicant's Representative:** Paul H. Roeger  
CMT Surveying & Consulting  
20330 SE Hwy. 212  
Damascus, Oregon 97089  
503-850-4672  
503-860-2545 Cell

**Civil Engineer:** Kelli A. Grover, P.E.  
Firwood Design Group  
359 East Historic Columbia River Hwy.  
Troutdale, OR 97060  
503-668-3737

**Surveyor:** David Roeger, PLS  
CMT Surveying & Consulting  
20330 SE Hwy. 212  
Damascus, OR 97089  
503-850-4672

**Property Owners:** Donald D. Burke  
15604 SE Ruby Drive  
Milwaukie, OR 97267  
503-572-8522

**Tax Lot Information:** Tax Map 3S-1E-02BB, Tax Lot 1600

**Location:** 1434 Dollar Street

**Current Zoning:** R-10, Single-Family Residential Detached – 10,000 sq. ft.

**Site Area:** 21,269 square feet

**Water District:** City of West Linn

**Sanitary Sewer:** City of West Linn

**Surface Water Mgmt.:** City of West Linn

**Fire District:** Tualatin Valley Fire & Rescue



**PARTITION NARRATIVE**  
**1434 Dollar Street**

**Power:** Portland General Electric

**Telephone:** Century Link

**Cable:** Comcast

**Gas:** Northwest Natural

**II. REQUEST – APPROVALS SOUGHT**

The Applicant, Don Burke, is requesting Land Use approval for a **2-Parcel Partition Plat** of this property. The subject site is approximately 21,269 square feet (0.49 Acres) in size and is located at 1434 Dollar Street (Tax map 3S-1E-02BB, tax lot 1600). The parcel currently has one single-family house with no garage. The existing house will remain on Parcel 1 with direct frontage on Dollar Street, and will be approximately 9,869 square feet, for which we are requesting a Class I Variance to be 1.3-percent under the required 10,000 square feet. The other parcel will be 10,000 square feet, plus the 15-foot wide flag pole to access Dollar Street. Both parcels will access Dollar Street from the flag pole on a shared access. The shared driveway will be paved 12-foot wide

**III. SITE DESCRIPTION AND SURROUNDING AREA**

Location and Parcel Description:

The site is generally located on the North side of Dollar Street directly across from Britton Street. The property is described as Tax Lot 1600 of Tax map 3S-1E-02BB.

The site is bordered to the South by Dollar Street and completely surrounded by other R-10, Single-Family Residential Detached properties. The front parcel of the property slopes up from East to West at approximately 5-percent, and the back parcel slopes up front South to North for the first 70-feet at approximately 8-percent, and the back 30-feet of the parcel slopes up from South to North at approximately 43-percent. The property currently has a single-family residence approximately in the front center, with no garage. The house is setback 35.7-feet from the front property line, 32.1-feet from the East property line, and 38.9 feet from the West property line, leaving a very large back yard.

The site is zoned R-10 (Single-Family Residential Detached – 10,000 sq. ft.) on the City of West Linn Zoning Map. The site is surrounded by developed single-family residential land with very little potential for additional development on any of the surrounding properties.

Dollar Street is classified as a Local Street with a current right-of-way width of 60-feet.

Site access:



**PARTITION NARRATIVE**  
**1434 Dollar Street**

Access to the property is directly from Dollar Street with a concrete driveway approach into the West side of the property on a gravel driveway. Access for the new parcel will be on a shared private driveway on a 15-foot wide flag pole on the West side of the property.

**IV. PROPOSAL SUMMARY**

The applicant wants to retain the existing house on the front parcel and create one new parcel behind the existing house. Then a new house will be built on the new parcel which will share a private driveway with the existing home. Along with this Partition Application, we have included an application for a Class I Variance for the front parcel to be 1.3-percent under the required 10,000 square feet, due to the flag pole for Parcel 2.

Transportation:

A Transportation Impact Analysis is not required for this Partition. Only one additional dwelling unit will be added to the site.

Street:

Dollar Street is an existing 35-foot asphalt paved street with curb and sidewalk on the North side only, along the frontage of this property. The sidewalk is 5.5-feet wide and there is a bike lane adjacent to the curb. This is curb-tight sidewalk. There is no curb or sidewalk on the South side of Dollar Street.

It is our understanding that Street frontage improvements will not be required along the frontage of Dollar Street, except to bring the driveway approach up to current ADA requirements. No additional right-of-way dedication will be required, either.

Storm Drainage:

Storm drainage facilities for rain drains for the new home will be an infiltration trench installed per the City of West Linn standards. Storm drainage for the driveway will be handled by a collection swale or catch basin and installation of a second infiltration trench in an easement on Parcel 1, per the City of West Linn standards. A Storm Report is included with this Application.

Water:

The property is served domestic water by the City of West Linn. There is a 6-inch water main on the South side of Dollar Street. The existing house is served by a meter near the middle of the property. This service will continue to serve the existing house. One new service will be installed in Dollar Street right-of-way with a service line in the flag pole to serve the new parcel. The nearest existing fire hydrant is located directly across the street on the Southwest corner of Dollar Street and Britton Street.

**PARTITION NARRATIVE**  
**1434 Dollar Street**

Sanitary Sewer:

Sanitary sewer is available from an 8-inch PVC line under the sidewalk. There is an existing 4-inch lateral to the existing house near the middle of the property. One new individual lateral will be installed from this main for the new parcel along the flag pole.

Other Utilities

There is an existing power pole near the Southeast corner of the intersection of Dollar Street and Britton Street from which overhead power is supplied to the Easterly side of the existing house. Telephone and/or Cable is also provided to the property from that same pole to the middle of the front porch. All new power, telephone and cable will be installed underground, per City of West Linn requirements.

There is existing 4-inch gas main on the Southwest side of Dollar Street with a service into the East side of the existing house. Any new gas service will come directly from this gas main on the Southwesterly side of Dollar Street.



**PARTITION NARRATIVE**  
**1434 Dollar Street**

**Chapter 11**  
**SINGLE-FAMILY RESIDENTIAL DETACHED, R-10**

**11.030 PERMITTED USES**

**Response:** It is the intent to construct one new single-family detached residential unit on Parcel 2. There is already one single-family detached residential unit on Parcel 1.

**11.070 DIMENSIONAL REQUIREMENTS, USES PERMITTED OUTRIGHT AND USES PERMITTED UNDER PRESCRIBED CONDITIONS**

Except as may be otherwise provided by the provisions of this code, the following are the requirements for uses within this zone:

1. The minimum lot size shall be 10,000 square feet for a single-family detached unit.

**Response:** Parcel 2 will be 10,000 square feet, plus the flag pole. Parcel 1, with the existing house, will be 9,869 square feet, for which we are applying for a Class 1 Variance, less than 5-percent under the required 10,000 square feet.

2. The minimum front lot line length or the minimum lot width at the front lot line shall be 35 feet.

**Response:** The front lot line length of Parcel 1 will be 93.46-feet. Parcel 2 is proposed to be a flag lot with a 15-foot wide flag pole.

3. The average minimum lot width shall be 50 feet.

**Response:** The average lot width for Parcel 1 is 85-feet, and the average lot width for Parcel 2 is 100-feet.

5. Except as specified in CDC [25.070](#)(C)(1) through (4) for the Willamette Historic District, the minimum yard dimensions or minimum building setback area from the lot line shall be:

- a. For the front yard, 20 feet; except for steeply sloped lots where the provisions of CDC [41.010](#) shall apply.
- b. For an interior side yard, seven and one-half feet.
- c. For a side yard abutting a street, 15 feet.
- d. For a rear yard, 20 feet.

**PARTITION NARRATIVE**  
**1434 Dollar Street**

**Response:** The existing front yard on Parcel 1 is 29.6-feet, and the front yard setback on Parcel 2 will be a minimum of 20-feet. Interior side yards on Parcel 1 are 23.9-feet on the West side and 32.1-feet on the East side of the existing house. Interior side yards on Parcel 2 will be a minimum of 7.5-feet. There are no side yards abutting a street. The rear yard for the existing house on Parcel 1 is 30.6-feet. The rear yard on Parcel 2 will be a minimum of 20-feet.

6. The maximum building height shall be 35 feet, except for steeply sloped lots in which case the provisions of Chapter [41](#) CDC shall apply.

**Response:** The existing house on Parcel 1 is a single story, well under the maximum height of 35-feet. Any house built on Parcel 2 will be under 35-feet. It is not anticipated that the builder will need to take advantage of CDC Chapter 41, since only the back 30-feet of Parcel 2 is steep.

7. The maximum lot coverage shall be 35 percent.

**Response:** The house on Parcel 1 is only 853 square feet, including the covered front porch, and covers less than 10-percent of the parcel. Any house built on Parcel 2 will not exceed the lot coverage standard of 35-percent.

8. The minimum width of an accessway to a lot which does not abut a street or a flag lot shall be 15 feet.

**Response:** The flag pole width for Parcel 2 will be 15-feet.

9. The maximum floor area ratio shall be 0.45. Type I and II lands shall not be counted toward lot area when determining allowable floor area ratio, except that a minimum floor area ratio of 0.30 shall be allowed regardless of the classification of lands within the property. That 30 percent shall be based upon the entire property including Type I and II lands. Existing residences in excess of this standard may be replaced to their prior dimensions when damaged without the requirement that the homeowner obtain a non-conforming structures permit under Chapter [66](#) CDC.

**Response:** The floor area ratio of 0.45 will not be exceeded on either of these parcels.

10. The sidewall provisions of Chapter [43](#) CDC shall apply. (Ord. 1175, 1986; Ord. 1298, 1991; Ord. 1377, 1995; Ord. 1538, 2006; Ord. 1614 § 2, 2013; Ord. 1622 § 24, 2014; Ord. 1675 § 8, 2018)

**Response:** These sidewall provisions are dealt with at the time of Building permit application.



**PARTITION NARRATIVE**  
**1434 Dollar Street**

**Chapter 48**  
**ACCESS, EGRESS AND CIRCULATION**

**48.010 PURPOSE**

The purpose of this chapter is to ensure that efficient, safe, and well-directed vehicular, bicycle, and pedestrian access, circulation, and egress are designed into development proposals. Access management seeks to balance mobility, the need to provide efficient, safe and timely travel with the ability to allow access to individual properties. Proper implementation of access management techniques should guarantee reduced congestion, reduced accident rates, less need for roadway widening, conservation of energy, and reduced air pollution. (Ord. 1584, 2008)

**Response:** Access to this parcel will remain at the same location, with the addition of a second parcel sharing the access point.

**48.020 APPLICABILITY AND GENERAL PROVISIONS**

A. The provisions of this chapter do not apply where the provisions of the Transportation System Plan or land division chapter are applicable and set forth differing standards.

B. All lots shall have access from a public street or from a platted private street approved under the land division chapter.

E. Owners of two or more uses, structures, lots, parcels, or units of land may agree to utilize jointly the same access and egress when the combined access and egress of both uses, structures, or parcels of land satisfies the requirements as designated in this code; provided, that satisfactory legal evidence is presented to the City Attorney in the form of deeds, easements, leases, or contracts to establish joint use. Copies of said instrument shall be placed on permanent file with the City Recorder.

**Response:** Both parcels will access Dollar Street via a shared driveway located at the flag pole for Parcel 2 along the West property line. An access and utility easement will be provided at the flag pole along with a Maintenance Agreement for the shared driveway.

**48.025 ACCESS CONTROL**

A. Purpose. The following access control standards apply to public, industrial, commercial and residential developments including land divisions. Access shall be managed to maintain an adequate level of service and to maintain the functional classification of roadways as required by the West Linn Transportation System Plan.

B. Access control standards.

1. Traffic impact analysis requirements. The City or other agency with access jurisdiction may require a traffic study prepared by a qualified professional to

**PARTITION NARRATIVE**  
**1434 Dollar Street**

determine access, circulation and other transportation requirements. (See also CDC [55.125](#), Transportation Impact Analysis.)

**Response:** A traffic impact analysis is NOT required for this Partition since only one new home will be added, and Dollar Street is classified as a local street.

2. The City or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas shall not permit backing onto a public street.

3. Access options. When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods (planned access shall be consistent with adopted public works standards and TSP). These methods are “options” as approved by the City Engineer.

c) Option 3. Access is from a public street adjacent to the development lot or parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing standards in subsection (B)(6) of this section.

**Response:** Access to both parcels will be shared at the flag pole for Parcel 2. Dollar Street is classified as a local street so there are no limitations to access locations, other than only one access point per parcel. The proposal is to access both parcels at one location.

6. Access spacing.

a. The access spacing standards found in the adopted Transportation System Plan (TSP) shall be applicable to all newly established public street intersections and non-traversable medians. Deviation from the access spacing standards may be granted by the City Engineer if conditions are met as described in the access spacing variances section in the adopted TSP.

b. Private drives and other access ways are subject to the requirements of CDC [48.060](#).

**Response:** Dollar Street is classified as a local street and this is not a corner lot, so there are no access spacing requirements for this parcel.



## PARTITION NARRATIVE

### 1434 Dollar Street

7. Number of access points. For single-family (detached and attached), two-family, and duplex housing types, one street access point is permitted per lot or parcel, when alley access cannot otherwise be provided; except that two access points may be permitted corner lots (i.e., no more than one access per street), subject to the access spacing standards in subsection (B)(6) of this section. The number of street access points for multiple family, commercial, industrial, and public/institutional developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with subsection (B)(8) of this section, in order to maintain the required access spacing, and minimize the number of access points.

**Response:** We are proposing one shared access driveway for both parcels at the flag pole for Parcel 2.

8. Shared driveways. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The City shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:

a. Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street temporarily ends at the property line, but may be extended in the future as the adjacent lot or parcel develops. "Developable" means that a lot or parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

b. Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

**Response:** We are proposing a shared driveway to access both parcels at the flag pole for Parcel 2.

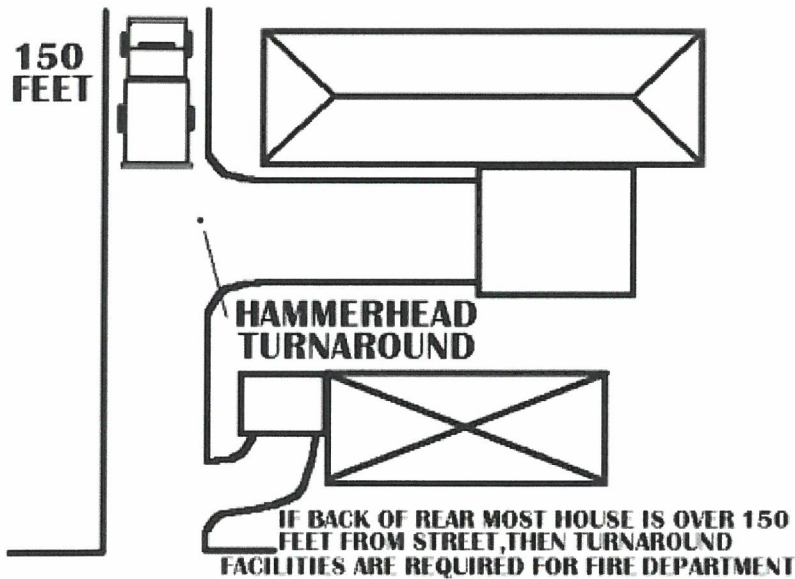
#### **48.030 MINIMUM VEHICULAR REQUIREMENTS FOR RESIDENTIAL USES**

B. When any portion of any house is less than 150 feet from the adjacent right-of-way, access to the home is as follows:

1. One single-family residence, including residences with an accessory dwelling unit as defined in CDC [02.030](#), shall provide 10 feet of unobstructed horizontal clearance. Dual-track or other driveway designs that minimize the total area of impervious driveway surface are encouraged.

**PARTITION NARRATIVE**  
**1434 Dollar Street**

2. Two to four single-family residential homes equals a 14- to 20-foot-wide paved or all-weather surface. Width shall depend upon adequacy of line of sight and number of homes.
3. Maximum driveway grade shall be 15 percent. The 15 percent shall be measured along the centerline of the driveway only. Variations require approval of a Class II variance by the Planning Commission pursuant to Chapter [75](#) CDC. Regardless, the last 18 feet in front of the garage shall be under 12 percent grade as measured along the centerline of the driveway only. Grades elsewhere along the driveway shall not apply.
4. The driveway shall include a minimum of 20 feet in length between the garage door and the back of sidewalk, or, if no sidewalk is proposed, to the paved portion of the right-of-way.



- C. When any portion of one or more homes is more than 150 feet from the adjacent right-of-way, the provisions of subsection B of this section shall apply in addition to the following provisions.
1. A turnaround may be required as prescribed by the Fire Chief.
  2. Minimum vertical clearance for the driveway shall be 13 feet, six inches.
  3. A minimum centerline turning radius of 45 feet is required unless waived by the Fire Chief.
  4. There shall be sufficient horizontal clearance on either side of the driveway so that the total horizontal clearance is 20 feet.

**PARTITION NARRATIVE**  
**1434 Dollar Street**

**Response:** Since the driveway will be used for access to both parcels, the driveway will be paved a minimum of 14-feet wide. The portion of the driveway in the flag pole will be basically flat. The portion of the driveway in the flag portion of Parcel 2 will not exceed 10-percent slope. There will be a minimum of 20-feet from any garage constructed on Parcel 1 and Parcel 2 to the access driveway within the flag pole. The house built on the Parcel 2, the back parcel, will have a Residential Fire Suppression installed, so a Fire Department Turnaround will not be required. A minimum vertical clearance for the driveway will be 13.5-feet, and there will be a minimum of 20-feet of horizontal clearance for the driveway area.

**48.060 WIDTH AND LOCATION OF CURB CUTS AND ACCESS SEPARATION REQUIREMENTS**

- A. Minimum curb cut width shall be 16 feet.
  
- C. No curb cuts shall be allowed any closer to an intersecting street right-of-way line than the following:
  - 6. On a local street when intersecting any other street, 35 feet.

**Response:** The closest intersecting street on the same side as this partition is 250-feet to the East. Britton Avenue is directly across the street from this partition.

- D. There shall be a minimum distance between any two adjacent curb cuts on the same side of a public street, except for one-way entrances and exits, as follows:
  - 3. Between any two curb cuts on the same lot or parcel on a local street, 30 feet.

**Response:** There will be only one curb cut for both parcels, a shared driveway at the flag pole for Parcel 2.

- G. Adequate line of sight pursuant to engineering standards should be afforded at each driveway or accessway. (Ord. 1270, 1990; Ord. 1584, 2008; Ord. 1636 § 35, 2014)

**Response:** Dollar Street is straight for well over 400-feet in each direction from the proposed shared access driveway with no vertical curves that would restrict sight distance, so trimming of shrubs would be the only requirement to keep good sight distance along Dollar Street.



**VARIANCE NARRATIVE  
FOR  
PARTITION OF 1434 DOLLAR STREET**

**Chapter 75  
VARIANCES AND SPECIAL WAIVERS**

**75.010 PURPOSE**

The purpose of this chapter is to provide standards for granting variances and special waivers from the applicable requirements of this code. However, this chapter may not be used to allow a use that is not a specified use in the zone where the land is located or to modify density provisions. (Ord. 1442, 1999; Ord. 1622 § 9, 2014)

**75.020 CLASSIFICATION OF VARIANCES**

A. Class I Variance. Class I variances provide minor relief from certain code provisions where it can be demonstrated that the modification will not harm adjacent properties, and it conforms with any other code requirements. Class I variances are allowed for the following code provisions:

1. Required Yard and Minimum Lot Dimensional Requirements. Required yards may be modified up to 20 percent, lot dimensions by up to 10 percent and lot area by up to five percent if the decision-making authority finds that the resulting approval:
  - a. Provides for a more efficient use of the site;
  - b. Preserves and incorporates natural features into the overall design of the project;
  - c. Does not adversely affect adjoining properties in terms of light, air circulation, noise levels, privacy, and fire hazards; and
  - d. Provides for safe vehicular and pedestrian access to the site and safe on-site vehicular and pedestrian circulation.

**Response:** The requested Variance is to allow Parcel 1 of the proposed Partition to be under the required 10,000 square feet of the R-10 zone, by 131 square feet, or 1.3 percent. Parcel 2 is proposed to be 10,000 square feet, plus a 15-foot wide flag pole to access it. The flag pole is 1,400 square feet, which is taken out of Parcel 1, reducing it below the required 10,000 square feet. The intent is to use the flag pole as common access for both parcels, thus improving the efficient use of the site access and reducing the pedestrian and vehicular conflicts. The requested Variance does not adversely affect adjoining properties in terms of light, air circulation, noise levels, privacy, or fire hazards.

**75.030 ADMINISTRATION AND APPROVAL PROCESS**

**VARIANCE NARRATIVE  
FOR  
PARTITION OF 1434 DOLLAR STREET**

A. Class I variances shall be decided by the Planning Director in the manner set forth in CDC [99.060](#)(A). An appeal may be taken as provided by CDC [99.240](#)(A).

**75.040 TIME LIMIT ON A VARIANCE AND SPECIAL WAIVERS**

Approval of a variance or special waiver shall be void after three years unless substantial construction has taken place or an extension is granted per Chapter [99](#) CDC. (Ord. 1408, 1998; Ord. 1589 § 1 (Exh. A), 2010; Ord. 1622 § 9, 2014)

**75.050 APPLICATION**

A. A variance request shall be initiated by the property owner or the owner's authorized agent.

C. An application for a variance shall include the completed application form and:

1. A narrative which addresses the approval criteria set forth in CDC [75.020](#), and which sustains the applicant's burden of proof.
2. A site plan as provided by CDC [75.060](#).

One original application form must be submitted. One copy at the original scale and one copy reduced to 11 inches by 17 inches or smaller of all drawings and plans must be submitted. One copy of all other items must be submitted. The applicant shall also submit one copy of the complete application in a digital format acceptable to the City. When the application submittal is determined to be complete, additional copies may be required as determined by the Community Development Department.

F. The applicant shall pay the requisite fee. (Ord. 1442, 1999; Ord. 1621 § 25, 2014; Ord. 1622 §§ 9, 18, 2014; Ord. 1636 § 47, 2014)

**Response:** The property owner is initiating this Variance request with a completed Land Use Application and this narrative which addresses the approval criteria of CDC 75.020, as well as a site plan per CDC 75.060.

**75.060 SITE PLANS AND MAP**

A. All plot plans and maps shall include the name, address, and telephone number of the applicant; the scale; north arrow; and a vicinity map.

B. The applicant shall submit a plot plan drawn to an appropriate scale (in order of preference: one inch equals 10 feet to one inch equals 30 feet) which shows the following:

1. The subdivision name, block, and lot number or the section, township, range, and tax lot number.

**VARIANCE NARRATIVE  
FOR  
PARTITION OF 1434 DOLLAR STREET**

2. In the case of a request for a variance to a lot or parcel dimensional or building setback requirement:

a. The lot or parcel configuration and dimensions, and the location of all existing structures; the setback distances and the location of all structures on abutting units of land, and the setback distances; and

b. The proposed variances.

**Response:** A plot plan at 1 inch equals 30 feet, with the requirements of this section is included with this Variance and Partition Application.



**PARTITION NARRATIVE**  
**1434 Dollar Street**

**Chapter 85**

**GENERAL PROVISIONS**

**85.010 PURPOSE**

A. The purpose of the land division provisions of this code is to implement the Comprehensive Plan; to provide rules and standards governing the approval of plats of subdivisions (four lots or more) and partitions (three lots or fewer); to help direct the development pattern; to lessen congestion in the streets; to increase street safety; to efficiently provide water, sewage, and storm drainage service; and to conserve energy resources.

B. The purpose is further defined as follows:

1. To improve our sense of neighborhood and community and increase opportunities for socialization.
2. To comply with the State's Transportation Planning Rule (TPR), which seeks to encourage alternate forms of transportation and reduce reliance upon the private automobile and vehicle miles traveled by increasing accessibility within and between subdivisions and neighborhoods. This may be accomplished by designing an easily understood, interconnected pattern of streets, bicycle and foot paths, and accommodation of transit facilities. Cul-de-sacs are to be discouraged unless site conditions dictate otherwise.
3. To reduce pedestrian/vehicle conflicts and create a safe and attractive environment for pedestrians and bicyclists.
4. To protect natural resource areas such as drainageways, Willamette and Tualatin River greenways, creeks, habitat areas, and wooded areas as required by other provisions of this code or by the layout of streets and graded areas so as to minimize their disturbance.
5. To protect the natural features and topography by minimizing grading and site disturbance and by requiring proper erosion control techniques.
6. To arrange the lots and streets so as to minimize nuisance conditions such as glare, noise, and vibration.
7. To maximize passive solar heating benefits by orienting the streets on an east-to-west axis which increases exposure to the sun.
8. To arrange for the efficient layout of utilities and infrastructure as well as their extension to adjacent properties in a manner consistent with either adopted utility plans or sound engineering practices.
9. To arrange lots and roads to create reasonably buildable lots and acceptable driveway grades.
10. To encourage the arrangement of increased densities and smaller lots in proximity to needed services and schools as well as transportation corridors so as to reduce vehicle miles traveled and to encourage alternate modes of travel.
11. To encourage design experimentation and creativity.
12. To arrange for the mitigation of impacts generated by new development. These impacts include increased automobile, foot, and bicycle traffic. These impacts are to be mitigated at the developer's cost, by the provision of streets, sidewalks, bicycle and foot paths, and traffic control devices within, contiguous to, and nearby the development site. Similarly, increased demand on local infrastructure such as water lines, sanitary sewer lines, and storm drainage and detention facilities, should be offset by improving existing facilities or providing new ones. (Ord. 1636 § 49, 2014; Ord. 1647 § 7, 2016)

**PARTITION NARRATIVE**  
**1434 Dollar Street**

**85.140 PRE-APPLICATION CONFERENCE REQUIRED**

- A. An applicant shall participate in a pre-application conference with staff prior to the submission of a complete tentative plan.
- B. The Planning staff shall explain the applicable plan policies, ordinance provisions, opportunities, and constraints which may be applicable to the site and type of proposed land division.
- C. The City Engineering staff shall explain the public improvement requirements which may be applicable to the site and type of proposed land division, including potential for the applicant to apply for a waiver of street improvements. (Ord. 1544, 2007)

**Response:** Pre-Application Conference PA-19-24 was held on December 19, 2019.

**85.150 APPLICATION – TENTATIVE PLAN**

- A. The applicant shall submit a completed application which shall include:
  - 1. The completed application form(s).
  - 2. Copies of the tentative plan and supplemental drawings shall include one copy at the original scale plus one copy reduced in paper size not greater than 11 inches by 17 inches. The applicant shall also submit one copy of the complete application in a digital format acceptable to the City. When the application submittal is determined to be complete, additional copies may be required as determined by the Community Development Department.
  - 3. A narrative explaining all aspects of land division per CDC 85.200.
- B. The applicant shall pay the requisite fee. (Ord. 1401, 1997; Ord. 1408, 1998; Ord. 1442, 1999; Ord. 1613 § 19, 2013; Ord. 1621 § 25, 2014; Ord. 1622 § 19, 2014)

**Response:** A completed application form is included with this submittal, along with one copy of the tentative plan and supplemental drawing (one sheet entitled Proposed Partition, Variance & Existing Conditions) at the original scale in paper size of 11 inches by 17 inches, a Narrative, and the requisite fee.

**85.160 SUBMITTAL REQUIREMENTS FOR TENTATIVE PLAN**

- A. A City-wide map shall identify the site. A vicinity map covering one-quarter-mile radius from the development site shall be provided in the application showing existing subdivisions, streets, and unsubdivided land ownerships adjacent to the proposed subdivision and showing how proposed streets and utilities may be extended to connect to existing streets and utilities.

**Response:** Vicinity maps are included. No streets or mainline utilities will be extended. Only new services to the new parcel will be installed.

- B. The tentative subdivision plan shall be prepared by a registered civil engineer and/or a licensed land surveyor. A stamp and signature of the engineer or surveyor shall be included on the tentative subdivision plan. A tentative minor partition plan (three lots or less) is only required to be drawn to scale and does not have to be prepared by an engineer or surveyor.

**Response:** A tentative Partition Plat drawn to scale is included with this application

- C. The tentative plan of a subdivision or partition shall be drawn at a scale not smaller than one inch equals 100 feet, or, for areas over 100 acres, one inch equals 200 feet.

**Response:** The tentative plan of this Partition is drawn at 1-inch equals 30 feet.

- D. The following general information shall be shown on the tentative plan of subdivision or partition:

**PARTITION NARRATIVE**  
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1. Proposed name of the subdivision and streets; these names shall not duplicate nor resemble the name of any other subdivision or street in the City and shall be determined by the City Manager or designee. Street names should be easily spelled, pronounced, and of limited length. All new street names must, to the greatest extent possible, respect and be representative of the surrounding geography and existing street names. Street names should consider any prominent historical City figures or neighborhood themes that exist. Subdivision street names may not reference names of the builder or developer.

2. Date, north arrow, scale of drawing, and graphic bar scale.

3. Appropriate identification clearly stating the drawing as a tentative plan.

4. Location of the proposed division of land, with a tie to the City coordinate system, where established, and a description sufficient to define its location and boundaries, and a legal description of the tract boundaries.

5. Names and addresses of the owner, developer, and engineer or surveyor.

**Response:** No new streets are included in this Partition. All above information required is on the tentative plan, except there is no tie to the City coordinate system, since we were told there is none in the area.

E. The following existing conditions shall be shown on the tentative plan of a subdivision or partition:

1. The location, widths, and names of all existing or platted streets and rights-of-way within or adjacent to the tract (within 50 feet), together with easements and other important features such as section lines, donation land claim corners, section corners, City boundary lines, and monuments.

2. Contour lines related to the U.S. Geological Survey datum or some other established benchmark, or other datum approved by the Planning Director and having the following minimum intervals:

a. Two-foot contour intervals for ground slopes less than 20 percent.

b. Five-foot contour intervals for ground slopes exceeding 20 percent.

3. The location of any control points that are the basis for the applicant's mapping.

4. The location, by survey, and direction of all watercourses and areas subject to periodic inundation or storm drainageway overflow or flooding, including boundaries of flood hazard areas as established by the U.S. Army Corps of Engineers or the City zoning ordinance.

5. Natural features such as rock outcroppings, wetlands tied by survey, wooded areas, heritage trees, and isolated trees (six-inch diameter at five feet above grade) identified by size, type, and location. All significant trees and tree clusters identified by the City Arborist using the criteria of CDC 55.100(B)(2), and all heritage trees, shall be delineated. Trees on non-Type I and II lands shall have their "dripline plus 10 feet" protected area calculated per CDC 55.100(B)(2) and expressed in square feet, and also as a percentage of total non-Type I and II area.

6. Existing uses of the property, including location of all existing structures. Label all structures to remain on the property after platting.

7. Identify the size and location of existing sewers, water mains, culverts, drain pipes, gas, electric, and other utility lines within the site, and in the adjoining streets and property.

8. Zoning on and adjacent to the tract.

9. Existing uses to remain on the adjoining property and their scaled location.

10. The location of any existing bicycle or pedestrian ways.



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11. The location of adjacent transit stops.

**Response:** Dollar Street is shown on the tentative Partition Plan with a 60-foot right-of-way. There are no existing easements on this property, however, there will be an access and utility easement along the flag pole area for the shared driveway and undergrounding of utilities. Contour lines are shown at 1-foot intervals. Found property pins are shown on the boundaries of this property, however, there are additional property pins that will be used to resolve the boundaries of this property in relation to surrounding properties. No watercourses, flood area, or area subject to inundation are on this property. No heritage trees are on this site, however, there are a number of isolated trees that are shown on the tentative plan. The owner had an Arborist identify all of the trees on the site and evaluate each as to condition. The owner then invited the City Arborist (Mike Perkins) to visit the site to see if he concurred with the Arborist and identify which trees are significant. None of the trees are on Type I or II lands. Only one single-family detached structure is on this property, as shown on the tentative plan. It will remain on Parcel 1. All know utilities are shown on the tentative plan. Zoning of this property and all surrounding properties is R-10, Single-Family Residential Detached – 10,000 sq. ft. The existing sidewalk in Dollar Street is shown on the tentative plan. There is no signed bike lane on Dollar Street, however, there is a fog line defining the travel lane. Public Transit does not operate on Dollar Street. The nearest bus line, No. 154, is on Willamette Falls Drive.

- F. The following proposed improvements shall be shown on the tentative plan or supplemental drawings:
1. The street – street location, proposed name, right-of-way width, and approximate radius of curves of each proposed street and street grades. Proposed street names shall comply with the street naming method explained in CDC 85.200(A)(12).
  2. The type, method, and location of any erosion prevention and sediment control measures and/or facilities in accordance with the most current version of Clackamas County’s *Erosion/Sedimentation Control Plans Technical Guidance Handbook*, which are necessary to prevent and control visible or measurable erosion as determined by the following criteria:
    - a. Deposition of soil, sand, dirt, dust, mud, rock, gravel, refuse, or any other organic or inorganic material exceeding one cubic foot in volume in a public right-of-way or public property, or into the City surface water management system either by direct deposit, dropping, discharge, or as a result of erosion; or
  3. Any proposed infrastructure improvements that address those identified in the City Transportation System Plan.
  4. Any proposed bicycle or pedestrian paths. The location of proposed transit stops.
  5. Any easement(s) – location, width, and purpose of the easement(s).
  6. The configuration including location and approximate dimensions and area of each lot or parcel, and in the case of a subdivision, the proposed lot and block number.
  7. A street tree planting plan and schedule approved by the Parks Department.

**Response:** No new streets are being created. An erosion control plan will be provided with the Engineering Plans, which will include the upgrade of the existing driveway approach to meet current ADA standards, the new water service, sanitary sewer lateral and the Stormwater Management Plan. An 8-foot Public Utility Easement will be dedicated along the entire frontage of Dollar Street.

**85.170 SUPPLEMENTAL SUBMITTAL REQUIREMENTS FOR TENTATIVE SUBDIVISION OR PARTITION PLAN**

The following information shall be submitted to supplement the tentative subdivision plan:

- A. General.

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1. Narrative stating how the plan meets each of the applicable approval criteria and each subsection below.
2. Statement or affidavit of ownership of the tract (County Assessor's map and tax lot number).
3. A legal description of the tract.
4. If the project is intended to be phased, then such a proposal shall be submitted at this time with drawing and explanation as to when each phase will occur and which lots will be in each phase.
5. Where the land to be subdivided or partitioned contains only a part of the contiguous land owned by the developer, the Commission or Planning Director, as applicable, shall require a master plan of the remaining portion illustrating how the remainder of the property may suitably be subdivided.
6. Where the proposed subdivision site includes hillsides, as defined in CDC 02.030 Type I and II lands, or any lands identified as a hazard site in the West Linn Comprehensive Inventory Plan Report, the requirements for erosion control as described in CDC 85.160(F)(2) shall be addressed in a narrative.
7. Table and calculations showing the allowable number of lots under the zone and how many lots are proposed.
8. Map and table showing square footage of site comprising slopes by various classifications as identified in CDC 55.110(B)(3).

**Response:** This is part of the narrative stating how the plan meets the applicable approval criteria. A deed showing ownership is included along with a copy of the Assessor's map and tax lot number. A copy of the deed for this property is included with a legal description of the property. Overall, this site would be classified as Type IV land, since more than 50-percent of the property has slopes under 10-percent. Parcel 2, by itself, would be considered Type III land, since there are slopes over 10-percent on more than 50-percent of the parcel, but under 25-percent. However, there are portions of Parcel 2 that exceed 25 and 35 percent, however, it is less than 50-percent of Parcel 2, and these areas primarily in the rear yard setback and will be left undisturbed.

C. Grading.

1. If areas are to be graded, a plan showing the location of cuts, fill, and retaining walls, and information on the character of soils, shall be provided. The grading plan shall show proposed and existing contours at intervals per CDC 85.160(E)(2).
2. The grading plan shall demonstrate that the proposed grading to accommodate roadway standards and create appropriate building sites is the minimum amount necessary.
3. The grading plan must identify proposed building sites and include tables and maps identifying acreage, location and type of development constraints due to site characteristics such as slope, drainage and geologic hazards. For Type I, II, and III lands (refer to definitions in Chapter 02 CDC), the applicant must provide a geologic report, with text, figures and attachments as needed to meet the industry standard of practice, prepared by a certified engineering geologist and/or a geotechnical professional engineer, that includes:
  - a. Site characteristics, geologic descriptions and a summary of the site investigation conducted;
  - b. Assessment of engineering geological conditions and factors;
  - c. Review of the City of West Linn's Natural Hazard Mitigation Plan and applicability to the site; and
  - d. Conclusions and recommendations focused on geologic constraints for the proposed land use or development activity, limitations and potential risks of development, recommendations for mitigation approaches and additional work needed at future development stages including further testing and monitoring.

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**Response:** Most site grading will take place at building permit time, however, there will need to be some grading at the time of construction of the new driveway serving Parcel 2. A plan for this will be provided with the Engineering Construction Plans for improvements, including upgrading of the driveway approach to meet current ADA standards, driveway installation, water service, sanitary sewer lateral, and Stormwater Management for the site.

D. Water.

1. A plan for domestic potable water supply lines and related water service facilities, such as reservoirs, etc., shall be prepared by a licensed engineer consistent with the adopted Comprehensive Water System Plan and most recently adopted updates and amendments.
2. Location and sizing of the water lines within the development and off-site extensions. Show on-site water line extensions in street stub outs to the edge of the site, or as needed to complete a loop in the system.
3. Adequate looping system of water lines to enhance water quality.
4. For all non-single-family developments, calculate fire flow demand of the site and demonstrate to the Fire Chief. Demonstrate to the City Engineer how the system can meet the demand.

**Response:** The only new water will be the service to serve Parcel 2.

E. Sewer.

1. A plan prepared by a licensed engineer shall show how the proposal is consistent with the Sanitary Sewer Master Plan and subsequent updates and amendments. Agreement with that plan must demonstrate how the sanitary sewer proposal will be accomplished and how it is efficient. The sewer system must be in the correct zone.
2. Sanitary sewer information will include plan view of the sanitary sewer lines, including manhole locations and depths. Show how each lot or parcel would be sewered.
3. Sanitary sewer lines shall be located in the public right-of-way, particularly the street, unless the applicant can demonstrate why the alternative location is necessary and meets accepted engineering standards.
4. Sanitary sewer line should be at a depth that can facilitate connection with down-system properties in an efficient manner.
5. The sanitary sewer line should be designed to minimize the amount of lineal feet in the system.
6. The sanitary sewer line shall minimize disturbance of natural areas and, in those cases where that is unavoidable, disturbance shall be mitigated pursuant to the appropriate chapters (e.g., Chapter 32 CDC, Water Resource Area Protection).
7. Sanitary sewer shall be extended or stubbed out to the next developable subdivision or a point in the street that allows for reasonable connection with adjacent or nearby properties.
8. The sanitary sewer system shall be built pursuant to Department of Environmental Quality (DEQ), City, and Tri-City Service District sewer standards. This report should be prepared by a licensed engineer, and the applicant must be able to demonstrate the ability to satisfy these submittal requirements or standards at the pre-construction phase.

**Response:** The only new sanitary sewer will be the lateral to serve Parcel 2.

F. Storm. A storm detention and treatment plan and narrative compliant with CDC 92.010(E) must be submitted for storm drainage and flood control including profiles of proposed drainageways with reference to the most recently adopted Storm Drainage Master Plan. (Ord. 1382, 1995; Ord. 1401, 1997; Ord. 1425, 1998; Ord. 1442, 1999; Ord.



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1584, 2008; Ord. 1604 § 65, 2011; Ord. 1635 § 33, 2014; Ord. 1636 § 54, 2014; Ord. 1650 § 1 (Exh. A), 2016; Ord. 1662 § 15, 2017)

**Response:** Storm drainage for rain drains on the new house will be handled by an infiltration trench. The stormwater from the shared driveway will be handled by a collection swale or catch basin and another infiltration trench to be installed in an easement on Parcel 1. Flood control is not needed, so there are no profiles of proposed drainageways.

**85.200 APPROVAL CRITERIA**

No tentative subdivision or partition plan shall be approved unless adequate public facilities will be available to provide service to the partition or subdivision area prior to final plat approval and the Planning Commission or Planning Director, as applicable, finds that the following standards have been satisfied, or can be satisfied by condition of approval.

A. Streets.

1. General. The location, width and grade of streets shall be considered in their relation to existing and planned streets, to the generalized or reasonable layout of streets on adjacent undeveloped lots or parcels, to topographical conditions, to public convenience and safety, to accommodate various types of transportation (automobile, bus, pedestrian, bicycle), and to the proposed use of land to be served by the streets. The functional class of a street aids in defining the primary function and associated design standards for the facility. The hierarchy of the facilities within the network in regard to the type of traffic served (through or local trips), balance of function (providing access and/or capacity), and the level of use (generally measured in vehicles per day) are generally dictated by the functional class. The street system shall assure an adequate traffic or circulation system with intersection angles, grades, tangents, and curves appropriate for the traffic to be carried. Streets should provide for the continuation, or the appropriate projection, of existing principal streets in surrounding areas and should not impede or adversely affect development of adjoining lands or access thereto.

3. Street widths. Street widths shall depend upon which classification of street is proposed. The classifications and required cross sections are established in the adopted TSP.

10. Additional right-of-way for existing streets. Wherever existing street rights-of-way adjacent to or within a tract are of inadequate widths based upon the standards of this chapter, additional right-of-way shall be provided at the time of subdivision or partition.

16. Sidewalks. Sidewalks shall be installed per CDC 92.010(H), Sidewalks. The residential sidewalk width is six feet plus planter strip as specified below. Sidewalks in commercial zones shall be constructed per subsection (A)(3) of this section. See also subsection C of this section. Sidewalk width may be reduced with City Engineer approval to the minimum amount (e.g., four feet wide) necessary to respond to site constraints such as grades, mature trees, rock outcroppings, etc., or to match existing sidewalks or right-of-way limitations.

17. Planter strip. The planter strip is between the curb and sidewalk providing space for a grassed or landscaped area and street trees. The planter strip shall be at least 6 feet wide to accommodate a fully matured tree without the boughs interfering with pedestrians on the sidewalk or vehicles along the curbline. Planter strip width may be reduced or eliminated, with City Engineer approval, when it cannot be corrected by site plan, to the minimum amount necessary to respond to site constraints such as grades, mature trees, rock outcroppings, etc., or in response to right-of-way limitations.

**Response:** Dollar Street is a local street with a 60-foot wide right-of-way and curb and curb-tight sidewalk along the entire frontage of this property. No additional right-of-way will be dedicated, however an 8-foot wide PUE will be dedicated along the entire frontage. In addition, the driveway approach will be updated to current ADA standards. A planter strip does not exist along this frontage, and there are some existing trees behind the sidewalk. If required, additional trees will be planted behind the sidewalk.

4. Access. Access to subdivisions, partitions, and lots shall conform to the provisions of Chapter 48 CDC, Access, Egress and Circulation.

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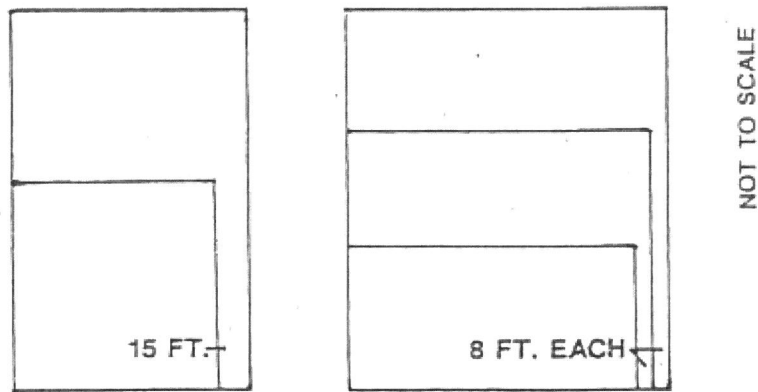
**Response:** Access to both parcels will be on the West side of the property on a shared access and utility easement on the flag pole for Parcel 2.

6. **Lot and parcel side lines.** The lines of lots and parcels, as far as is practicable, should run at right angles to the street upon which they face, except that on curved streets they should be radial to the curve.

**Response:** The existing side lot lines are not at right angles to Dollar Street. Therefore, it is not possible to create any new parcels that meet these criteria.

7. **Flag lots.** Flag lots can be created where it can be shown that no other reasonable street access is possible to achieve the requested land division. A single flag lot shall have a minimum street frontage of 15 feet for its accessway. Where two to four flag lots share a common accessway, the minimum street frontage and accessway shall be eight feet in width per lot. Common accessways shall have mutual maintenance agreements and reciprocal access and utility easements. The following dimensional requirements shall apply to flag lots:

**FLAGLOT STEMS**



- a. Setbacks applicable to the underlying zone shall apply to the flag lot.
- b. Front yard setbacks may be based on the rear property line of the lot or parcel which substantially separates the flag lot from the street from which the flag lot gains access. Alternately, the house and its front yard may be oriented in other directions so long as some measure of privacy is ensured, or it is part of a pattern of development, or it better fits the topography of the site.
- c. The lot size shall be calculated exclusive of the accessway; the access strip may not be counted towards the area requirements.
- d. The lot depth requirement contained elsewhere in this code shall be measured from the rear property line of the lot or parcel which substantially separates the flag lot from the street from which the flag lot gains access.
- e. As per CDC 48.030, the accessway shall have a minimum paved width of 12 feet.
- f. If the use of a flag lot stem to access a lot is infeasible because of a lack of adequate existing road frontage, or location of existing structures, the proposed lot(s) may be accessed from the public street by an access easement of a minimum 15-foot width across intervening property.

**Response:** The only way to access the rear portion of this parcel is with a flag pole for a new buildable parcel. The flag pole will be 15-foot wide and paved a minimum of 12-foot wide. This will be a shared

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driveway with the front parcel which has an existing house. The rear lot will be 10,000 square feet, exclusive of the flag pole, and be generally square at 100-feet by 100-feet.

E. Grading. Grading of building sites shall conform to the following standards unless physical conditions demonstrate the propriety of other standards:

2. The character of soil for fill and the characteristics of lot and parcels made usable by fill shall be suitable for the purpose intended.
3. If areas are to be graded (more than any four-foot cut or fill), compliance with CDC 85.170(C) is required.
4. The proposed grading shall be the minimum grading necessary to meet roadway standards, and to create appropriate building sites, considering maximum allowed driveway grades.
5. Type I lands shall require a report submitted by an engineering geologist, and Type I and Type II lands shall require a geologic hazard report.
6. Per the submittals required by CDC 85.170(C)(3), the applicant must demonstrate that the proposed methods of rendering known or potential hazard sites safe for development, including proposed geotechnical remediation, are feasible and adequate to prevent landslides or other damage to property and safety. The review authority may impose conditions, including limits on type or intensity of land use, which it determines are necessary to mitigate known risks of landslides or property damage.
7. On land with slopes in excess of 12 percent, cuts and fills shall be regulated as follows:
  - a. Toes of cuts and fills shall be set back from the boundaries of separate private ownerships at least three feet, plus one-fifth of the vertical height of the cut or fill. Where an exception is required from that requirement, slope easements shall be provided.
  - b. Cuts shall not remove the toe of any slope where a severe landslide or erosion hazard exists.
  - c. Any structural fill shall be designed by a registered engineer in a manner consistent with the intent of this code and standard engineering practices, and certified by that engineer that the fill was constructed as designed.
  - d. Retaining walls shall be constructed pursuant to Section 2308(b) of the Oregon State Structural Specialty Code.
  - e. Roads shall be the minimum width necessary to provide safe vehicle access, minimize cut and fill, and provide positive drainage control.
8. Land over 50 percent slope shall be developed only where density transfer is not feasible. The development will provide that:
  - a. At least 70 percent of the site will remain free of structures or impervious surfaces.
  - b. Emergency access can be provided.
  - c. Design and construction of the project will not cause erosion or land slippage.
  - d. Grading, stripping of vegetation, and changes in terrain are the minimum necessary to construct the development in accordance with subsection J of this section.

**Response:** Grading will only be done at site development time, i.e. Building Permit. The accessway will be reasonably flat. Only the back portion of the new parcel has some steep grades that will be dealt with during the Building Permit process.



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H. Storm detention and treatment. All proposed storm detention and treatment facilities comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards, there will be no adverse off-site impacts caused by the development (including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream), and there is sufficient factual data to support the conclusions of the submitted plan.

**Response:** There are no public stormwater facilities proposed. There will be a Maintenance Agreement for the driveway and any storm facilities for it.

I. Utility easements. Subdivisions and partitions shall establish utility easements to accommodate the required service providers as determined by the City Engineer. The developer of the subdivision shall make accommodation for cable television wire in all utility trenches and easements so that cable can fully serve the subdivision.

**Response:** An 8-foot PUE will be provided along the entire frontage, as required by the City. There will also be an access and utility easement along the flag pole.

J. Supplemental provisions.

3. Street trees. Street trees are required as identified in the appropriate section of the municipal code and Chapter 54 CDC.

4. Lighting. All subdivision street or alley lights shall meet West Linn Public Works Design Standards.

6. Underground utilities. All utilities, such as electrical, telephone, and television cable, that may at times be above ground or overhead shall be buried underground in the case of new development. The exception would be in those cases where the area is substantially built out and adjacent properties have above-ground utilities and where the development site's frontage is under 200 feet and the site is less than one acre. High voltage transmission lines, as classified by Portland General Electric or electric service provider, would also be exempted. Where adjacent future development is expected or imminent, conduits may be required at the direction of the City Engineer. All services shall be underground with the exception of standard above-grade equipment such as some meters, etc.

7. Density requirement. Density shall occur at 70 percent or more of the maximum density allowed by the underlying zoning. These provisions would not apply when density is transferred from Type I and II lands as defined in CDC 02.030. Development of Type I or II lands are exempt from these provisions. Land divisions of three lots or less would also be exempt.

9. Heritage trees/significant tree and tree cluster protection. All heritage trees, as defined in the municipal code, shall be saved. Diseased heritage trees, as determined by the City Arborist, may be removed at his/her direction. All non-heritage trees and clusters of trees (three or more trees with overlapping dripline; however, native oaks need not have an overlapping dripline) that are considered significant by virtue of their size, type, location, health, or numbers shall be saved pursuant to CDC 55.100(B)(2). Trees are defined per the municipal code as having a trunk six inches in diameter or 19 inches in circumference at a point five feet above the mean ground level at the base of the trunk. (Ord. 1377, 1995; Ord. 1382, 1995; Ord. 1401, 1997; Ord. 1403, 1997; Ord. 1408, 1998; Ord. 1425, 1998; Ord. 1442, 1999; Ord. 1463, 2000; Ord. 1526, 2005; Ord. 1544, 2007; Ord. 1584, 2008; Ord. 1590 § 1, 2009; Ord. 1604 § 64, 2011; Ord. 1613 § 20, 2013; amended during July 2014 supplement; Ord. 1635 § 34, 2014; Ord. 1636 § 56, 2014; Ord. 1647 § 8, 2016; Ord. 1650 § 1 (Exh. A), 2016; Ord. 1662 § 16, 2017; Ord. 1675 § 53, 2018; Ord. 1695 § 4, 2019)

**Response:** Street trees will be added along the frontage as necessary. There is an existing street light on the pole at the Southeast corner of Dollar Street and Britton Street. Existing overhead utilities serving the existing house will remain. All new power, telephone, and cable will be installed underground. This existing parcel is just over 20,000 square feet in this R-10 zone, and we are ending up with two parcels. That puts our density right at 100 percent of the maximum density allowed. As far as we know, there are NO heritage trees on this site, per the City of West Linn Arborist, Mike Perkins.

**PARTITION NARRATIVE**  
**1434 Dollar Street**

**Chapter 92**  
**REQUIRED IMPROVEMENTS**

**92.010 PUBLIC IMPROVEMENTS FOR ALL DEVELOPMENT**

The following improvements shall be installed at the expense of the developer and meet all City codes and standards:

E. Storm detention and treatment. For Type I, II and III lands (refer to definitions in Chapter [02](#) CDC), a registered civil engineer must prepare a storm detention and treatment plan, at a scale sufficient to evaluate all aspects of the proposal, and a statement that demonstrates:

1. The location and extent to which grading will take place indicating general contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed.
2. All proposed storm detention and treatment facilities comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards.
3. There will be no adverse off-site impacts, including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream.
4. There is sufficient factual data to support the conclusions of the plan.
5. Per CDC [99.035](#), the Planning Director may require the information in subsections (E)(1), (2), (3) and (4) of this section for Type IV lands if the information is needed to properly evaluate the proposed site plan.

**Response:** This property would be considered Type IV lands due to the fact that more than 50-percent of the site has slopes of less than 10-percent.

F. Sanitary sewers. Sanitary sewers shall be installed to City standards to serve the subdivision and to connect the subdivision to existing mains.

**Response:** This is NOT a subdivision. It is a two-parcel partition. The existing house is already connected to the City sanitary sewer. One new lateral will be installed from the City main under the sidewalk along the frontage of this parcel to serve the flag lot.

G. Water system. Water lines with valves and fire hydrants providing service to each building site in the subdivision and connecting the subdivision to City mains shall be installed.

**PARTITION NARRATIVE**  
**1434 Dollar Street**

**Response:** The existing house is served by City water from a meter behind the sidewalk approximately in the center of the parcel. A new service will be installed behind the sidewalk at the flag pole to serve Parcel 2.

H. Sidewalks.

2. On local streets serving only single-family dwellings, sidewalks may be constructed during home construction, but a letter of credit shall be required from the developer to ensure construction of all missing sidewalk segments within four years of final plat approval pursuant to CDC [91.010\(A\)\(2\)](#).

3. The sidewalks shall measure at least six feet in width and be separated from the curb by a six-foot minimum width planter strip. Reductions in widths to preserve trees or other topographic features, inadequate right-of-way, or constraints, may be permitted if approved by the City Engineer in consultation with the Planning Director.

**Response:** There is an existing curb-tight 5.5-foot wide sidewalk along the frontage of this property. The only requirement the City has placed on the development of this partition is to upgrade the driveway approach to current ADA standards.

I. Bicycle routes. If appropriate to the extension of a system of bicycle routes, existing or planned, the Planning Commission may require the installation of separate bicycle lanes within streets and separate bicycle paths.

**Response:** Dollar Street is a local street with no bike lanes. There are fog lines on both sides of the street designating the travel lanes, but not signed as a Bike Lane.

M. Street lights. Street lights shall be installed and shall be served from an underground source of supply.

**Response:** There is an existing street light on the power pole across the street from this property at the Southeast corner of Dollar Street and Britton Street.

N. Utilities. The developer shall make necessary arrangements with utility companies or other persons or corporations affected for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting, and cable television, shall be placed underground.

**Response:** The existing house on Parcel 1 is served overhead from the power, telephone and cable lines in Dollar Street. All new power, telephone, and cable services for Parcel 2 will be installed underground.



## PARTITION NARRATIVE

### 1434 Dollar Street

O. Curb cuts and driveways. Curb cuts and driveway installations are not required of the subdivider at the time of street construction, but, if installed, shall be according to City standards. Proper curb cuts and hard-surfaced driveways shall be required at the time buildings are constructed.

**Response:** The existing driveway approach will be replaced to fit the flag pole location and will be upgraded to meet current ADA standards. This single driveway approach will be used as a shared driveway for both parcels.

P. Street trees. Street trees shall be provided by the City Parks and Recreation Department in accordance with standards as adopted by the City in the Municipal Code. The fee charged the subdivider for providing and maintaining these trees shall be set by resolution of the City Council.

**Response:** Street trees will be paid for, if required by the City. There is one existing tree just East of the existing driveway just behind the right-of-way line, and a couple of trees further East that are within 15-feet of the right-of-way line.

#### 92.020 IMPROVEMENTS IN PARTITIONS

The same improvements shall be installed to serve each parcel of a partition as are required of a subdivision. However, if the approval authority finds that the nature of development in the vicinity of the partition makes installation of some improvements unreasonable, at the written request of the applicant those improvements may be waived. If the street improvement requirements are waived, the applicant shall pay an in-lieu fee for off-site street improvements, pursuant to the provisions of CDC [85.200\(A\)\(1\)](#).

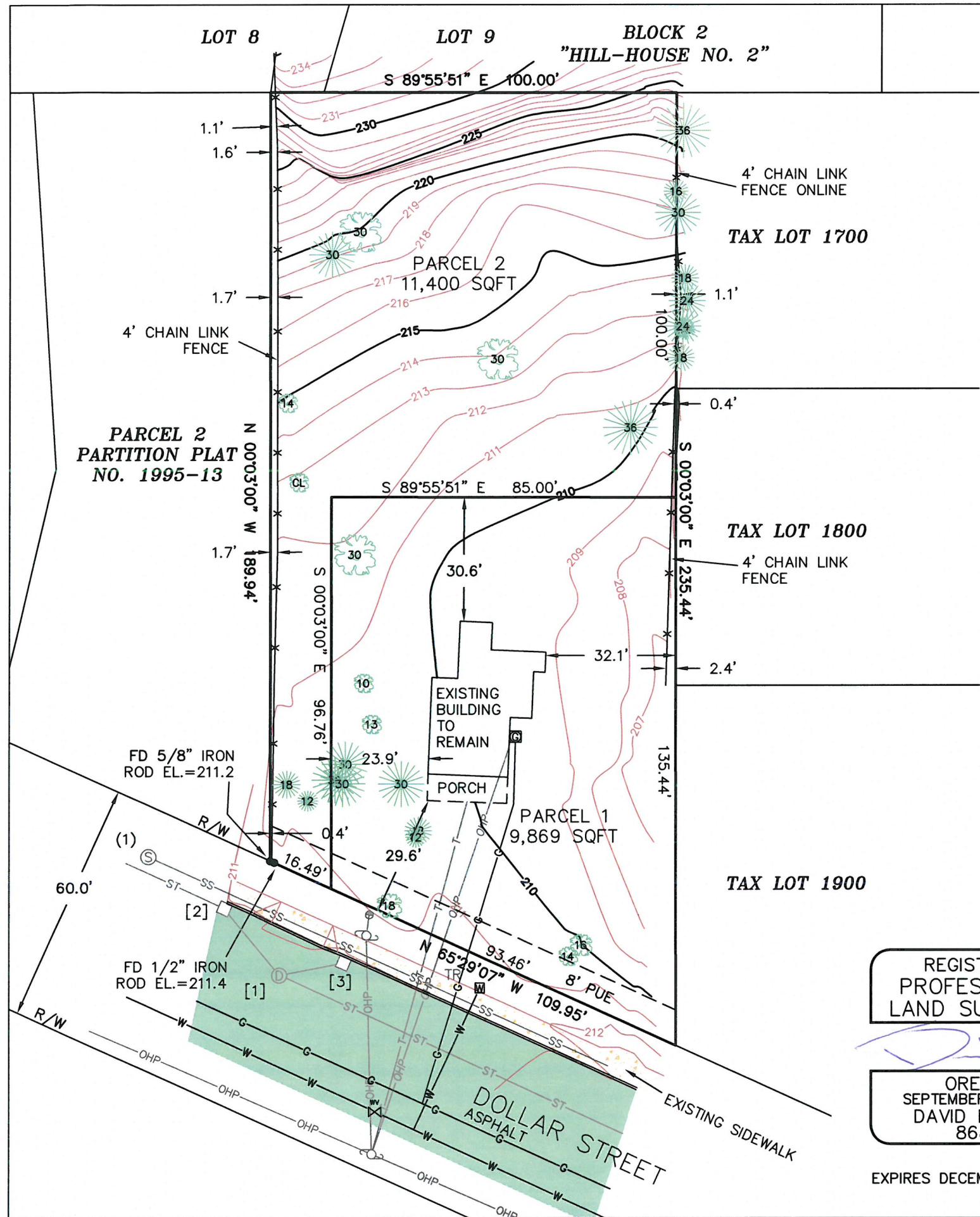
**Response:** Improvements for this partition have been addressed above. Since the curb and sidewalk already exist along this frontage, no in-lieu fee is anticipated.

#### 92.030 IMPROVEMENT PROCEDURES

In addition to other requirements, improvements installed by the developer, either as a requirement of these regulations or at the developer's own option, shall conform to the requirements of this title and permanent improvement standards and specifications adopted by the City and shall be installed in accordance with the following procedure:

**Response:** The only anticipated improvements to be installed by this partition development are an upgrade to the driveway approach to meet current ADA Standards, a sanitary sewer lateral, a water service, and underground installation of new power, telephone, and cable for Parcel 2, and possibly a gas service.

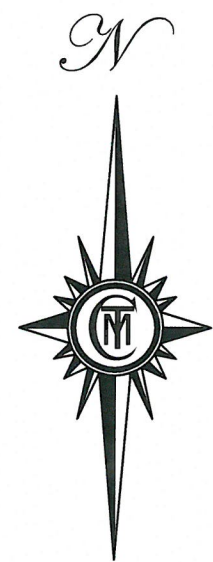




**LEGEND**

- # EXISTING DECIDUOUS TREE W/ TRUNK DIAMETER (INCHES)(CL=CLUSTER)
- # EXISTING CONIFEROUS TREE W/ TRUNK DIAMETER (INCHES)(CL=CLUSTER)
- TR EXISTING TELECOMM RISER
- T— EXISTING OVERHEAD TELECOMM
- ⊕ EXISTING POWER POLE
- ⊙ EXISTING GUY ANCHOR
- OHP— EXISTING OVERHEAD POWER LINES
- ⊠ EXISTING WATER METER
- ⊠ EXISTING WATER VALVE
- W— EXISTING UNDERGROUND WATER
- ⊠ EXISTING GAS METER
- G— EXISTING UNDERGROUND GAS LINE
- EXISTING CATCH BASIN
- ⊙ EXISTING SANITARY MANHOLE
- ⊙ EXISTING STORM MANHOLE
- SS— EXISTING SANITARY SEWER LINE
- ST— EXISTING STORM SEWER LINE
- X— EXISTING FENCE
- FOUND MONUMENTS
- EXISTING CONCRETE
- EXISTING ASPHALT

- (1) SANITARY MANHOLE  
RIM EL.=211.8  
10" I.E. IN (E)=205.8  
10" I.E. OUT (W)=205.6
- [1] STORM MANHOLE  
RIM EL.=211.3  
12" I.E. IN (E)=207.9  
12" I.E. IN (W)=207.9  
18" I.E. OUT (SE)=207.7
- [2] CATCH BASIN  
RIM EL.=210.8  
12" I.E. IN (W)=208.0  
12" I.E. OUT (SE)=207.8  
SUMP=207.2
- [3] CATCH BASIN  
RIM EL.=210.8  
12" I.E. OUT (W)=208.2  
SUMP=207.6



SCALE 1" = 30'

**NOTES**

1. THE PURPOSE OF THIS MAP IS TO SHOW THE EXISTING CONDITIONS FOR 1434 DOLLAR STREET.
2. THE BASIS OF BEARINGS WAS PER PP NO. 1995-013 CLACKAMAS COUNTY RECORDS.
3. LOCAL DATUM WAS ESTABLISHED PER GPS OBSERVATION NAVD 88.
4. THIS MAP WAS PREPARED FOR THE EXCLUSIVE USE OF DON BURKE, OWNER AND DEVELOPER, 15604 SE RUBY DRIVE, MILWAUKIE, OR 97267.
5. THIS MAP WAS PREPARED BY PLAT RECORDS, CALCULATED DATA, AND FIELD MEASUREMENTS, A RECORDED BOUNDARY SURVEY WILL BE FILED AT A DATE TO BE DETERMINED.
6. ALL UTILITY LOCATIONS ARE SHOWN BY ABOVE GROUND FEATURES AND LOCATION OF PAINT MARKS SUPPLIED BY THE LOCAL UTILITY COMPANIES. CMT TAKES NO RESPONSIBILITY OF UNDERGROUND LOCATION. PLEASE NOTIFY THE UTILITY NOTIFICATION CENTER BEFORE ANY DIGGING 1-800-332-2344.
7. ZONING OF THIS SITE AND ALL SURROUNDING PROPERTIES IS R-10.

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

OREGON  
SEPTEMBER 11, 2018  
DAVID ROEGER  
86811

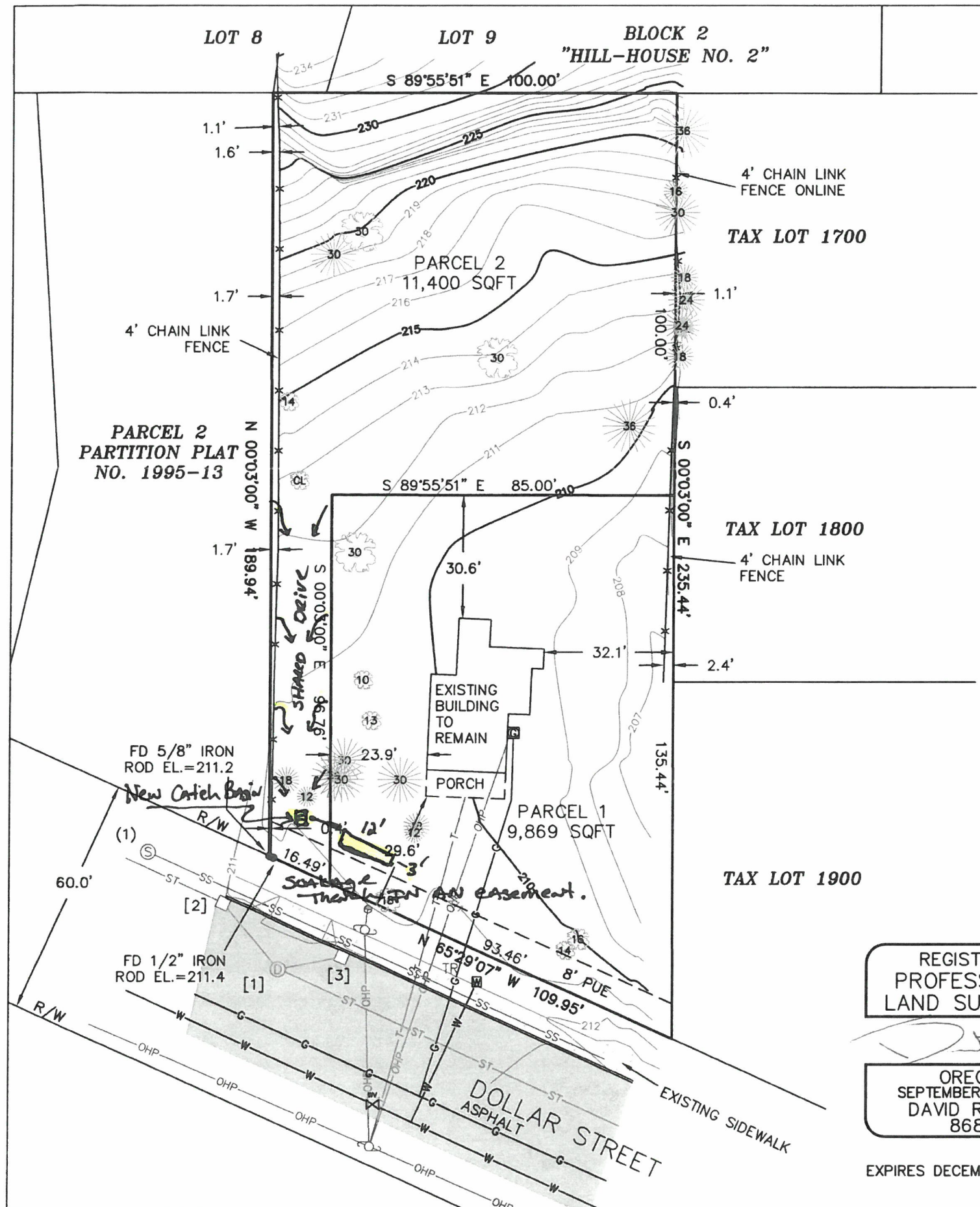
EXPIRES DECEMBER 31, 2020

PROPOSED PARTITION, VARIANCE & EXISTING CONDITIONS	
NW 1/4 SEC 2, T3S, R1E, W.M.	
MAP 35-1E-02BB, TL1600	
CITY OF WEST LINN	
CLACKAMAS COUNTY, OREGON	
DECEMBER 30, 2019	
DRAWN: JMR	CHECKED: SPF
SCALE 1"=30' ACCOUNT # 500-821	
Y:\500-821\DWG\500821BASE	

**1434 DOLLAR STREET**

**CMT SURVEYING AND CONSULTING**  
20330 SE HIGHWAY 212  
DAMASCUS, OR 97089  
PHONE (503) 850-4672 FAX (503) 850-4590

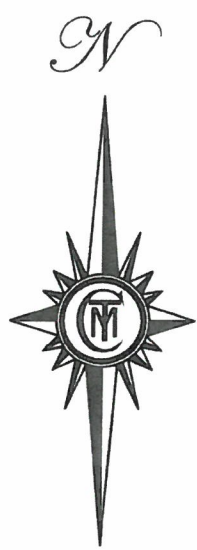




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REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

OREGON  
SEPTEMBER 11, 2018  
DAVID ROEGER  
86811

EXPIRES DECEMBER 31, 2020

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MAP 35-1E-02BB, TL1600	
CITY OF WEST LINN	
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DECEMBER 30, 2019	
DRAWN: JMR	CHECKED: SPF
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**1434 DOLLAR STREET**



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20330 SE HIGHWAY 212  
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PHONE (503) 850-4672 FAX (503) 850-4590





Hydro Geo & Environmental, Inc  
8525 SW 67<sup>th</sup> Ave.,  
Portland, OR 97223  
Phone: 503. 892.2000  
Fax:503.246.6021  
e-mail: hydrogeo@comcast.net

# Hydro Geo & Environmental, Inc.

March 7, 2020  
Project # 2825.20  
Don Burke Excavation  
Attn: Don Burke

RE: SUMMARY OF SOIL INFILTRATION TESTING FOR SITE @ 1434 DOLLAR ST., WEST LINN, OREGON 97068

In accordance with your authorization Hydro Geo & Environmental, Inc., (HGE) has completed soil infiltration testing at the subject property in the approximate locations indicated on the attached site plan. The purpose of the infiltration testing was to provide field infiltration rates for use in design of a storm water disposal system for the proposed parking lot. The scope of work for this project consisted of excavation of one shallow test pit, augering of exploratory borehole advanced from the bottom of the test pit, evaluation of field infiltration rates using standardized methods and equipment, and preparation of this letter report.

This letter report has been prepared for exclusive use of the owner and their agents, for specific application to the referenced scope of services, in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made. In the event that changes in the nature, usage, or layout of the proposed site improvements are made the conclusion contained in this report shall not be considered valid unless the changes are reviewed by HGE in writing.

The field work was conducted on March 5, 2020 consisting of excavating of one shallow test pit and conducting the percolation tests at the depth of 7.5 feet. Following the infiltration test completion, the hand-augered exploratory borehole was advanced from the bottom of test pit to a depth of 10 feet. An engineering associate from HGE coordinated and observed the subsurface conditions and infiltration testing.

The site is located at 1434 Dollar St., at the northeast corner of the intersection with Britton St., in West Linn OR 97068 (Figure1). The site is fairly level at 210-216' above Mean Sea Level (Canby Quad, USGS 7.5 Minute Map) and slopes slightly at 3-5 % northward with slope break along the northern property line, The slope uphill highest gradient area starts along the northern property line where slope is approximately 10-15% . A two story wood frame house exists on the site and located in the south half section of the site. The site is bounded on the south by paved Dollar St., on the north, west and east by the adjacent residences (see Figure 1, Vicinity Map).





## GEOLOGY & SUBSURFACE CONDITIONS

The near-surface geology of the project area consists of Late Pleistocene age (recent to approximately 1.5 million years ago) sediments which were deposited by catastrophic floods of the Columbia River. The site lies in an area, which has been mapped as Coarse-Grained Facies consisting of pebble to boulder gravel with silt and coarse sand matrix. The coarse sediments are poorly sorted and sub-rounded to well- rounded and range from openwork gravel to gravel with considerable fine-grained matrix material. Mainly basalt, but other lithologies may dominate downstream from bedrock exposures. The coarse flood sediments are up to 60 m (200 ft) thick in the map area.

Based on a review of the Soil Survey of Clackamas County, the near-surface soils at the site are mapped as Woodburn silt loam and Cascade silt loam. This deep moderately well drained soil is on broad valley terraces that formed in stratified glaciolacustrine deposits. This deep, moderately to well drained soil is on broad valley terraces and rolling uplands that formed in silty material and colluvium derived dominantly from basalt. Soil has moderately slow permeability as 0.6-2.0 inches per hour for shallow soil (up to 2 feet deep) and 0.2- 0.6 per hour for deeper layers. Cascade silt loam developed along the northern property line is deep, somewhat poorly drained soil on rolling uplands that formed in silty material. Surface runoff is medium, and the hazard of erosion is moderate. Permeability is 0.06-0.2 inches per hour.

At the time of our visit we hand dug one test pit to a depths 7.5 feet. Subsurface materials represented in the test pit # 1 consisted of a 1.5- foot surface layer of dark-brown dry to damp organic silt **fill** with some grass and tree roots. Underlying the fill and organic topsoil, the native soil consists of yellowish-brown to dark-brown, moist to wet stiff to soft, low plasticity, sandy **silt**, underlain at the depth of 7.5 feet by yellowish-brown moist to wet dense fine-grained, well –graded silty **sand**, exposed to a depth of 10 feet below the surface. The test pit/boring was terminated at the depth of 10 feet below the surface.

No evidence of perched or static groundwater or seasonal perched subsurface water was encountered in the test pit and exploratory boring.

Based on Oregon Water Resources Department data, groundwater in the vicinity was encountered in 140 feet deep water well report at the depth of 13 feet below the surface. (See Clackamas County Monitoring Well Report # 008838 attached).

**INFILTRATION TESTS-** The test was conducted by driving a six-inch diameter infiltrometer stand pipe into the soil at the above pointed interval. The infiltration test was conducted as Encased Falling Head tests based on methodology of Clackamas county Stormwater Management Manual – January 2016.

We have embedded a solid 6-inch diameter casing into the native fine-grained silty sand soil at the elevation of 7.5 feet below the surface. That embedment has provided a good seal around the pipe casing so that percolation was limited to the 6-inch plug of the material within the casing. The pipe with clean water approximately of 12 inches above the soil was maintained at this depth for at least 4 hours to presoak the native fine-grained sand soil. Total of three trials of infiltration test were conducted. After each trial, the water level was readjusted to the 12 inch level.

The water level was measured to the nearest 0.01 foot ( $\frac{1}{8}$  inch) at 10-minute intervals for a total period of 2 hours. Successive trials were run until the percent change in measured



March 8, 2020

Page 3

infiltration rate between two successive trials is minimal. All test results are summarized in the data table. The infiltration rate noted below is a last of three observations of actual infiltration rate measured in the field in undisturbed fine-grained silty sand and do not include a factor of safety.

Location	Soil	Test depth	Field infiltration rate
TP-1	silty sand	7.5 feet	4 inches/hour

After infiltration testing, test pit was further augured to verify soil conditions beneath the test location. The soils observed below the test depth appeared consistent with gravelly sand soil above and across the site.

In accordance with AASHTO classification, tested soils refer to A-4 groups of this classification. In accordance with Unified Soil Classification System, tested soil refer to ML class group symbol (well-graded silty sand).

**CONCLUSIONS-** Based on the results of the infiltration test, observation of subsurface conditions, and our office review, the native site soils appear to have low permeability at the depth of silty sand with gravel soils encountered and are suitable for limited subsurface discharge of storm water. We believe that the onsite infiltration capability has not been compromised by the past construction use on the site and is suitable for subgrade of pervious pavement.


Field infiltration rates recorded during this study generally correspond to the range of permeability values reported in the Soil Survey of Clackamas County, Oregon.

Differences in infiltration test results noted above may be due to slight areal and depth variations in soil gradation, density, and *in-situ* moisture content. In addition, it has been observed that the permeability of undisturbed native soils such as those found on this site can be substantially different than soils that have been disturbed by construction activities.

It is recommended that HGE be contacted to observe subsurface conditions at the time of construction to correlate actual soil conditions with those observed during this study. It is also advisable to test the infiltration system to confirm adequate capacity.

We appreciate the opportunity to assist you on this project. If you have any questions or would like additional information please feel free to contact the undersigned at (503) 892-2000.

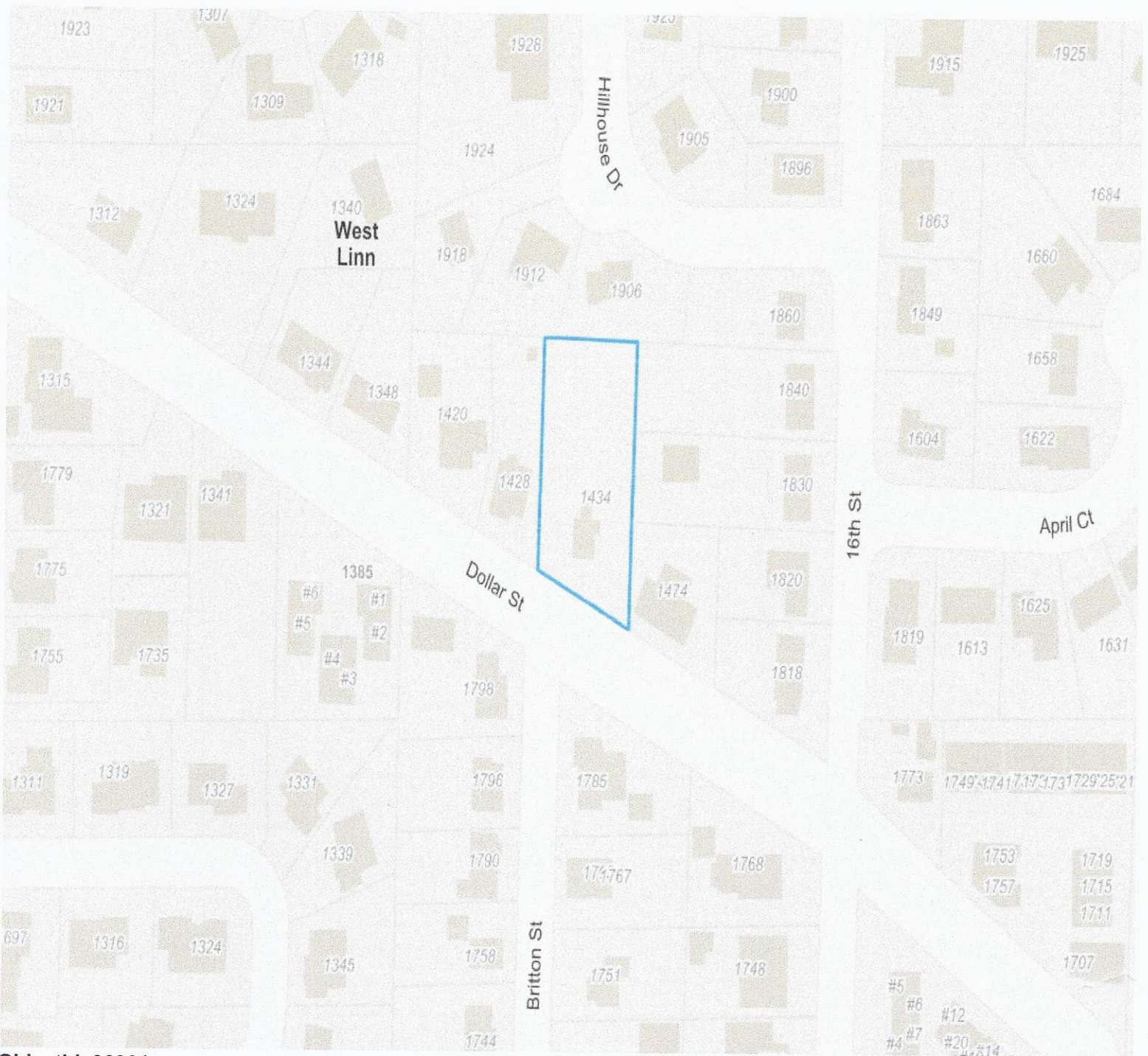
Truly yours,  
Hydro Geo & Environmental, Inc.

  
Mike Golberg, C.E.G.  
Principal Engineering Geologist



Expires 10/31/2020





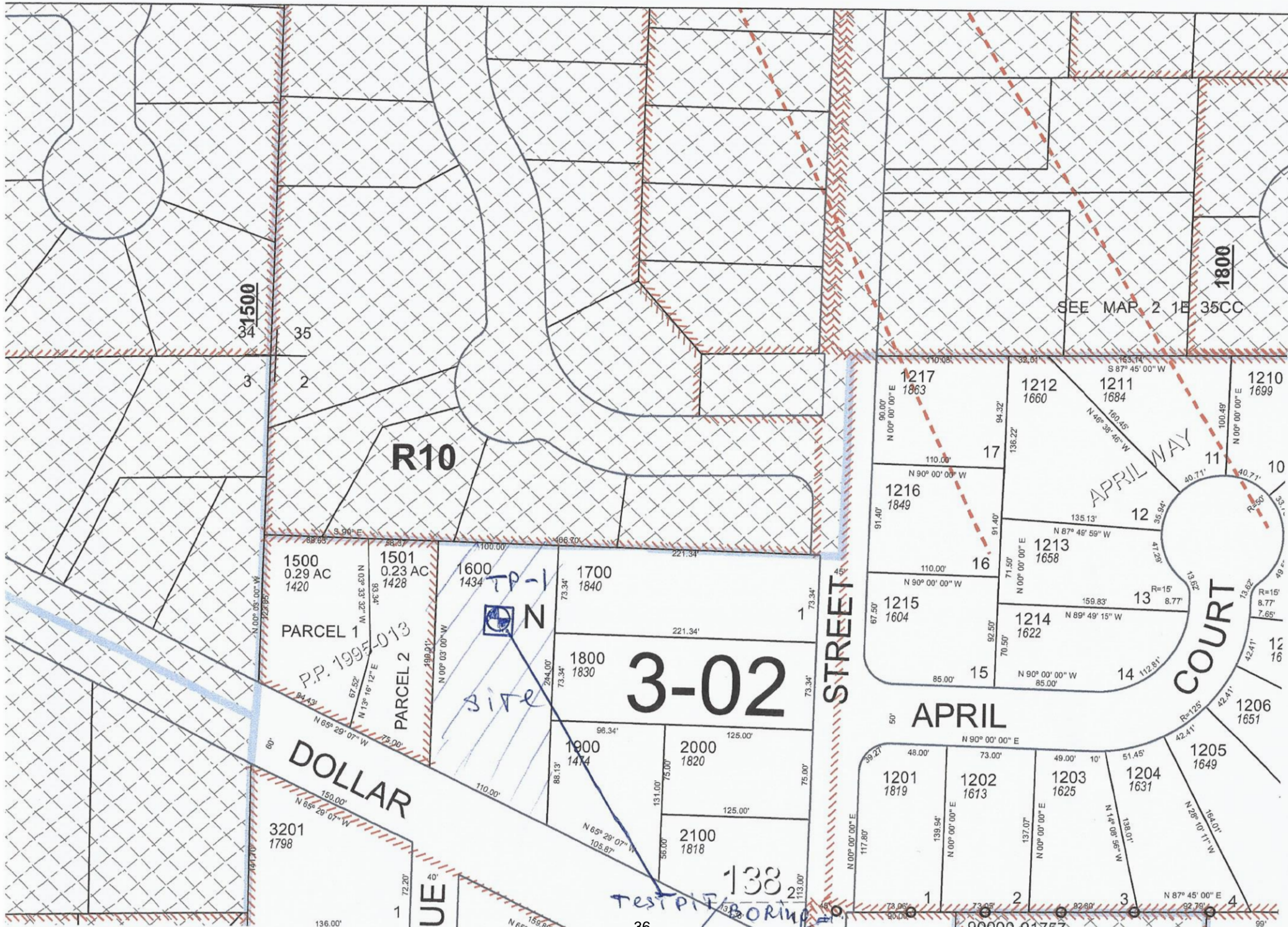
**Objectid:** 86364  
**Primary Address:** 1434 Dollar St, West Linn, 97068  
**Jurisdiction:** West Linn (<https://westlinnoregon.gov>)  
**Map Number:** 31E02BB  
**Taxlot Number:** 31E02BB01600  
**Parcel Number:** 00749952  
**Document Number:** 2019-071789  
**Census Tract:** 020700

**Assessment**

**Estimated Acres:** 0.49  
**Current Year Assessed Value:** \$132,912.00  
**Market Building Value:** \$42,420.00  
**Market Land Value:** \$229,398.00

*Figure 1*





1500

R10

1500  
0.29 AC  
1420

1501  
0.23 AC  
1428

PARCEL 1  
P.P. 1995-013

PARCEL 2

3-02

DOLLAR

STREET

APRIL WAY

COURT

APRIL

TEST PIERCE

Figure 2

136.00'

36

90000-91757

1800

SEE MAP 2 1E 35CC

N 0° 00' 00" W

N 13° 16' 12" E

N 0° 03' 00" W

N 0° 03' 00" W

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## **STORMWATER DRAINAGE REPORT**

<b>Burke – Site Improvements</b>
----------------------------------

**1434 Dollar St.  
West Linn, OR 97068**

**March 19<sup>th</sup>, 2020  
FDG Project # E20-023**

**Prepared for:**

Don Burke  
don@digdbec.com

**Prepared by:**



**Firwood Design Group, LLC**  
SURVEYING • ENGINEERING • PLANNING

359 E. Historic Columbia River Highway  
Troutdale, OR 97060  
503.668.3737- fax 503.668.3788

## OBJECTIVE

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Per City of West Linn Public Works Design Standards (PWDS), any new or replaced impervious surfaces of over 1000 square feet require an on-site stormwater drainage control system to meet water quality and detention standards. Both standards follow the City of Portland Stormwater Management Manual, as adopted by the City of West Linn and specified in Section 2.0013 of the PWDS. For the proposed site improvements associated with the two-lot partition at 1434 Dollar St., stormwater runoff from the new impervious area will be directed to one of two infiltration trenches. Stormwater from the building's roof drains will be directed to trench A, while driveway runoff will be collected in a collection swale along the driveway, and directed to trench B. Collectively, the infiltration trenches are designed to retain and infiltrate runoff such that peak flows from storm events up to the 25-year storm are reduced to the pre-development peak runoff rates. Overflow runoff from events up to the 100-year storm will be conveyed via the collection swale and discharge into the existing catch basins in front of the property, matching existing site drainage patterns.

## METHODOLOGY

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The Santa Barbara Urban Hydrograph Method (calculated with HydroCAD with SCS Type 1A rainfall distribution) was used to create the hydrographs and to estimate the peak flows for the design storms. A curve number of 98 was assigned to the proposed impervious roof top and driveway areas. A curve number of 74 was assigned to the site before improvements, modeling "good" condition grass cover with hydrologic soil group condition C soils. Site soil testing conducted by Hydro Geo and Environmental, Inc. found the field infiltration rate to be 4.0 in/hr. With an applied safety factor of 2, a design infiltration rate of 2.0 in/hr. was used. The infiltration trenches contain drain rock with an assumed void space of 40%.

## SITE DESCRIPTION

---

The 0.49-acre property has one existing residential building with an unimproved driveway providing access from the north side of Dollar St. The lot is proposed to partition into two parcels; the first will be 0.23 acres and contains the front portion of the lot with the existing building, while the second parcel will be a 0.26-acre flag lot containing the back portion of the property. Site improvements are proposed for the site, which include a paved shared driveway and a new residential building on Parcel 2. It is

estimated that the site improvements will introduce at most 5,000 sq. ft of impervious area to the site.

The property slopes moderately to the southeast, with the rear area having steeper slopes than the front of the property. There are two existing catch basins in the right-of-way on each side of the driveway approach to the site. The area where the driveway will be located has an existing grade of 2-4% to the south. See site plan for a more detailed layout of existing site conditions, area, and utilities.

## DESIGN PARAMETERS

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### *Runoff Curve Number*

A curve number of 74 was used to model the site before improvements. A curve number of 98 was used to model the impervious building area.

### *Impervious Area*

The stormwater management facilities were designed to manage runoff from 5,000 sq. ft of impervious area total. This includes 3,500 sq. ft of roof area from the proposed building, which will be managed by infiltration trench A, and a 12' wide by 125' long driveway (1,500 sq. ft) which will be managed by infiltration trench B. These are conservative estimates based on information provided by the client.

### *Soils*

Per the Geotechnical Report conducted by Hydro Geo and Environmental Inc, the site contains two soil types: Woodburn silt loam and Cascade silt loam. Woodburn silt loam is a moderately to well-drained soil and covers most of the site. Cascade silt loam is found along the northern property line and is a poorly drained soil. Both are of Hydrologic Soil Group C condition. See attached report for more detail on the soil types and general geologic conditions on site.

### *Design Infiltration Rate*

Measured Infiltration rate = 4.0 in/hr

Design Infiltration Rate (w/ safety factor of 2 applied) = 2.0 in/hr

### *Precipitation*

Per West Linn Storm Drainage Master Plan (2019), the applicable storm event depths for this design are shown below.

<b>Storm Event</b>	<b>24-hour Depth</b>
<i>Water Quality (WQ)</i>	1.00
<i>2-year</i>	2.50
<i>10-year</i>	3.45
<i>25-year</i>	3.90
<i>100-year</i>	4.40

### *Time of Concentration*

A minimum time of concentration of 5 minutes was used for runoff collection for both pre- and post-improvement site conditions.

## STORMWATER MANAGEMENT DESIGN

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Stormwater from the proposed building roof area will be routed to infiltration trench A. Stormwater from the driveway will be collected in the collection swale and conveyed to infiltration trench B. Dimensions for both trenches are seen below.

	<b>Trench A</b>	<b>Trench B</b>
<i>Length (ft)</i>	40.0	12.0
<i>Height (ft)</i>	3.5	2.5
<i>Width (ft)</i>	4.0	3.0
<i>Available Storage (cf)</i>	224.0	36.0

### *Water Quality*

The proposed infiltration trenches will meet water quality requirements by completely infiltrating the design water quality storm. The table below shows the results of the design from the WQ event.

	<b>Trench A</b>	<b>Trench B</b>
<i>Peak Inflow (cfs)</i>	0.02	0.01
<i>Peak Outflow via Exfiltration (cfs)</i>	0.01	0.00
<i>Peak Elevation (ft)</i>	0.26'	0.76'
<i>Peak Storage (cf)</i>	16	11



### Detention

West Linn PWDS detention standards require runoff to be reduced to the post-development peak discharge from the 2-, 10-, and 25-year, 24-hour storm events to pre-development conditions. Infiltration trench A is designed to over-detain and infiltrate up to the 25-year storm. Infiltration trench B is designed to reduce peak flows such that the site conditions meet the requirements mentioned above. The tables below show the results of the design from each respective storm event, with the peak runoff from the entire site before improvements listed for reference.

<b><u>2-year</u></b>	<b>Trench A</b>	<b>Trench B</b>
<i>Peak Inflow (cfs)</i>	0.05	0.02
<i>Peak Outflow via Exfiltration (cfs)</i>	0.01	0.01
<i>Peak Outflow via Overflow Discharge (cfs)</i>	0.00	0.01
<i>Peak Elevation (ft)</i>	1.71'	2.47'
<i>Peak Storage (cf)</i>	109	36

Peak runoff from the site before improvements is 0.01 cfs. The combined peak discharge from the trenches of 0.01 cfs is less than or equal to this, meeting detention requirements.

<b><u>10-year</u></b>	<b>Trench A</b>	<b>Trench B</b>
<i>Peak Inflow (cfs)</i>	0.06	0.03
<i>Peak Outflow via Exfiltration (cfs)</i>	0.02	0.01
<i>Peak Outflow via Overflow Discharge (cfs)</i>	0.00	0.02
<i>Peak Elevation (ft)</i>	2.90'	2.48'
<i>Peak Storage (cf)</i>	186	36

Peak runoff from the site before improvements is 0.03 cfs. The combined peak discharge from the trenches of 0.02 cfs is less than or equal to this, meeting detention requirements.

<b>25-year</b>	<b>Trench A</b>	<b>Trench B</b>
<i>Peak Inflow (cfs)</i>	0.07	0.03
<i>Peak Outflow via Exfiltration (cfs)</i>	0.02	0.01
<i>Peak Outflow via Overflow Discharge (cfs)</i>	0.00	0.03
<i>Peak Elevation (ft)</i>	3.46'	2.48'
<i>Peak Storage (cf)</i>	221	36

Peak runoff from the site before improvements is 0.04 cfs. The combined peak discharge from the trenches of 0.03 cfs is less than or equal to this, meeting detention requirements.

### *Conveyance*

West Linn PWDS requirements for on-site stormwater conveyance are to safely convey up to the 100-year design storm to an approved discharge point. A collection swale along the driveway is proposed to collect stormwater from the driveway to route to trench B, as well as convey overflow runoff to the existing catch basins in Dollar St. In HydroCAD, the swale is modeled as two separate reaches, each with adequate capacity for up to the 100-year design storm. It is recommended for the ditch to have a cross-sectional flow area of at least 1.0 sq. ft and a slope of at least 2% for proper drainage.

See HydroCAD report for more details on the design, including hydrographs, calculations, and a system routing diagram.

## CONCLUSION

---

For the proposed site improvements, construction of two on-site stormwater infiltration trenches and a collection swale to meet water quality, detention, and conveyance standards is required. The first trench, of size 40' length x 4' width x 3.5' height, is designed to manage the roof runoff, while the second trench, of size 12' length x 3' width x 2.5' height is designed to manage the driveway runoff. The first trench shall be located in front of the house on Parcel 2, meeting required setbacks for infiltration facilities. A collection swale shall be located alongside the driveway, with the driveway graded to shed towards the swale. The swale will convey runoff from the driveway into Trench B, which shall be located near the front of the property alongside the driveway. Overflow

from both facilities will continue along this swale to discharge into the existing catch basins in Dollar St. Post-development runoff up the 25-year storm will match existing flow and site drainage conditions.

See typical detail for the trenches attached. Supporting calculations are enclosed along with the site plans reviewed and referenced for this report.

## REFERENCES

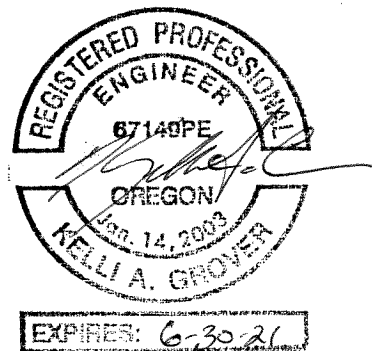
---

- City of West Linn Public Works Design Standards
- City of West Linn Storm Drainage Master Plan (2019)
- City of Portland Stormwater Management Manual (2016)
- Site Plans provided by CMT Surveying & Consulting

## APPENDIX

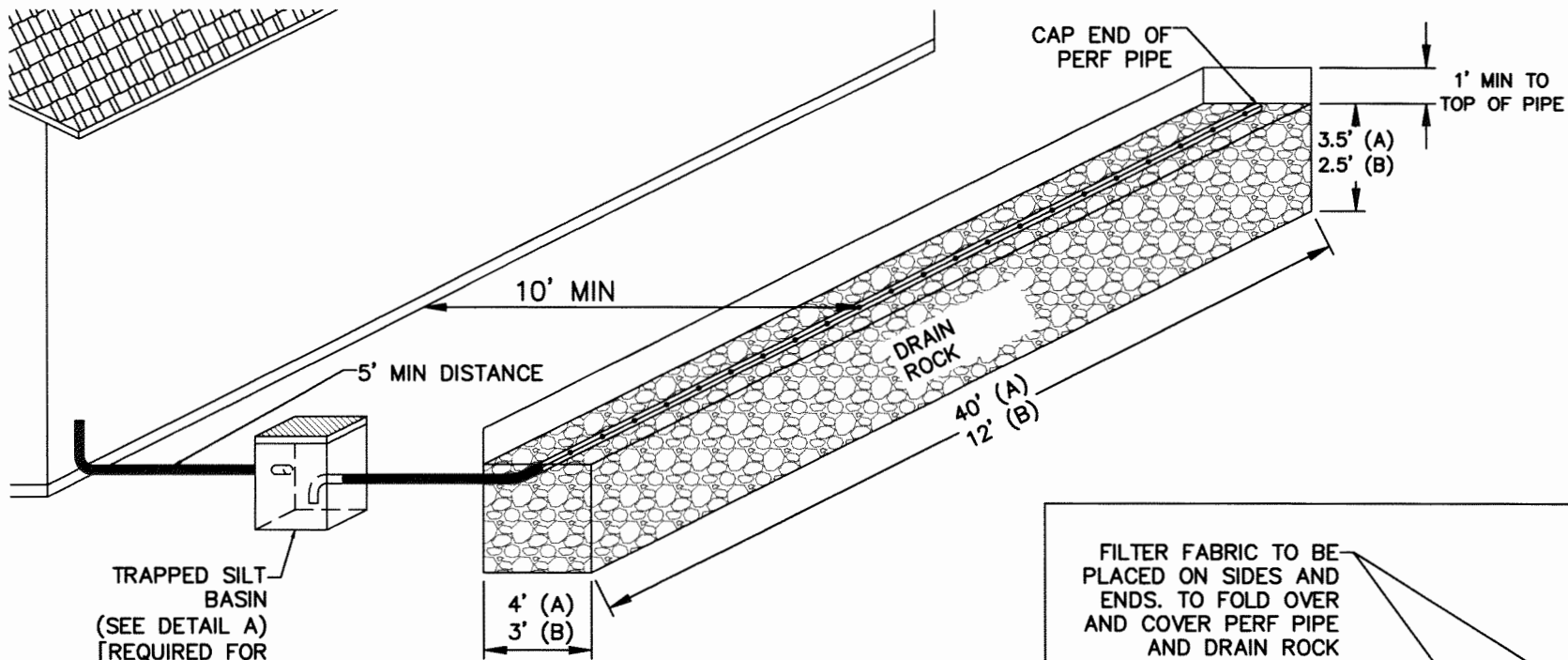
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- HydroCAD Report
- Soakage Trench Detail(s)
- Site Infiltration Test: dated 03/07/2020 by Mike Golberg, C.E.G., Hydro Geo & Environmental, Inc.

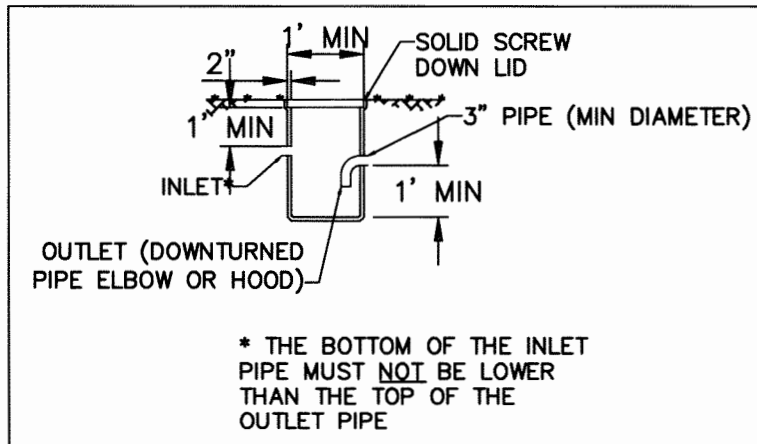




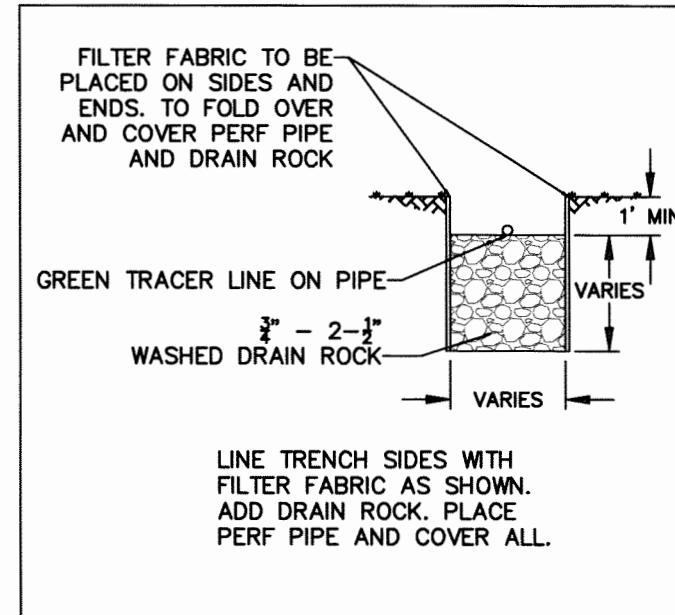
INFILTRATION TRENCH DETAIL - SITE IMPROVEMENTS  
1434 DOLLAR ST, WEST LINN, OR 97068



TRAPPED SILT BASIN  
(SEE DETAIL A)  
[REQUIRED FOR TRENCH A ONLY]



DETAIL A: TRAPPED SILT BASIN  
SCALE: NTS



DETAIL B: TYPICAL TRENCH SECTION  
SCALE: NTS



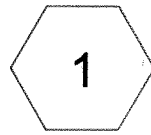
Firwood Design Group, LLC  
SURVEYING ♦ ENGINEERING ♦ PLANNING

359 E HISTORIC COLUMBIA HIGHWAY  
TROUTDALE, OREGON 97060  
BUS: (503) 668-3737 ♦ FAX: (503) 668-3788

SHEET 1 OF 1

FILE: E20-023 SOAKAGE TRENCH.dwg  
PLOT DATE: 3/16/20

Before Improvements



Site Area

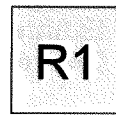
After Improvements



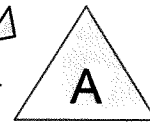
House Roof Area



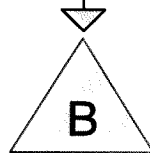
Driveway Area (125 LF)



Collection Swale



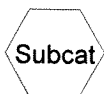
Infiltration Trench A



Infiltration Trench B



Discharge Conveyance  
to CB



**Routing Diagram for E20-023 Prelim Storm Calcs**  
Prepared by Firwood Design Group, Printed 3/18/2020  
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**E20-023 Prelim Storm Calcs**

Type IA 24-hr WQ Rainfall=1.00"

Prepared by Firwood Design Group

Printed 3/18/2020

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Page 2

**Summary for Pond A: Infiltration Trench A**

Inflow Area = 3,500 sf, 100.00% Impervious, Inflow Depth = 0.79" for WQ event  
 Inflow = 0.02 cfs @ 7.90 hrs, Volume= 231 cf  
 Outflow = 0.01 cfs @ 8.29 hrs, Volume= 231 cf, Atten= 49%, Lag= 23.2 min  
 Discarded = 0.01 cfs @ 8.29 hrs, Volume= 231 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 209.26' @ 8.29 hrs Surf.Area= 160 sf Storage= 16 cf

Plug-Flow detention time= 9.6 min calculated for 231 cf (100% of inflow)  
 Center-of-Mass det. time= 9.6 min ( 722.3 - 712.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	224 cf	<b>4.00'W x 40.00'L x 3.50'H Prismaoid</b> 560 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	209.00'	<b>2.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	212.45'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.01 cfs @ 8.29 hrs HW=209.26' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=209.00' (Free Discharge)  
 ↑2=Orifice/Grate ( Controls 0.00 cfs)



**E20-023 Prelim Storm Calcs**

Prepared by Firwood Design Group

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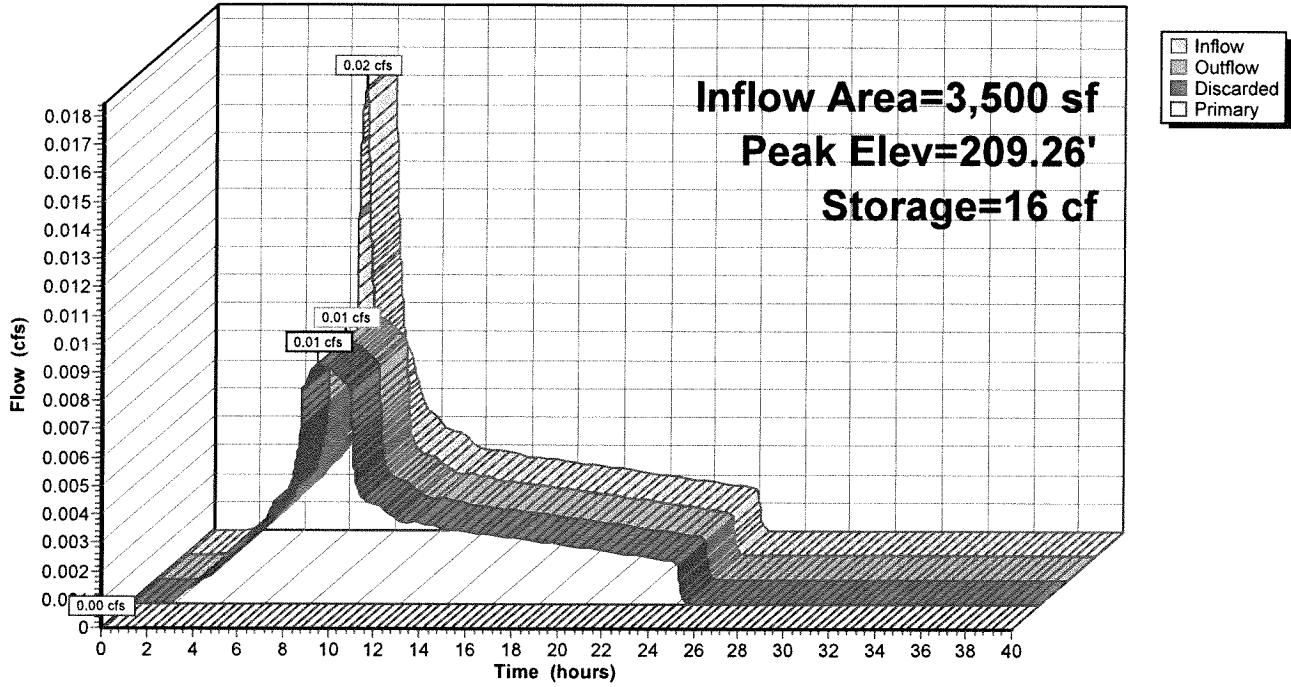
Type IA 24-hr WQ Rainfall=1.00"

Printed 3/18/2020

Page 3

**Pond A: Infiltration Trench A**

Hydrograph



**E20-023 Prelim Storm Calcs**

Type IA 24-hr WQ Rainfall=1.00"

Prepared by Firwood Design Group

Printed 3/18/2020

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Page 4

**Summary for Pond B: Infiltration Trench B**

Inflow Area = 5,000 sf, 100.00% Impervious, Inflow Depth = 0.24" for WQ event  
 Inflow = 0.01 cfs @ 7.95 hrs, Volume= 99 cf  
 Outflow = 0.00 cfs @ 8.73 hrs, Volume= 99 cf, Atten= 61%, Lag= 46.6 min  
 Discarded = 0.00 cfs @ 8.73 hrs, Volume= 99 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Peak Elev= 209.26' @ 8.73 hrs Surf.Area= 36 sf Storage= 11 cf

Plug-Flow detention time= 23.0 min calculated for 99 cf (100% of inflow)  
 Center-of-Mass det. time= 23.0 min ( 740.8 - 717.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	208.50'	36 cf	<b>3.00'W x 12.00'L x 2.50'H Prismatic</b> 90 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.50'	<b>2.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	210.95'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.00 cfs @ 8.73 hrs HW=209.26' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=208.50' (Free Discharge)  
 ↑2=Orifice/Grate ( Controls 0.00 cfs)

**E20-023 Prelim Storm Calcs**

Prepared by Firwood Design Group

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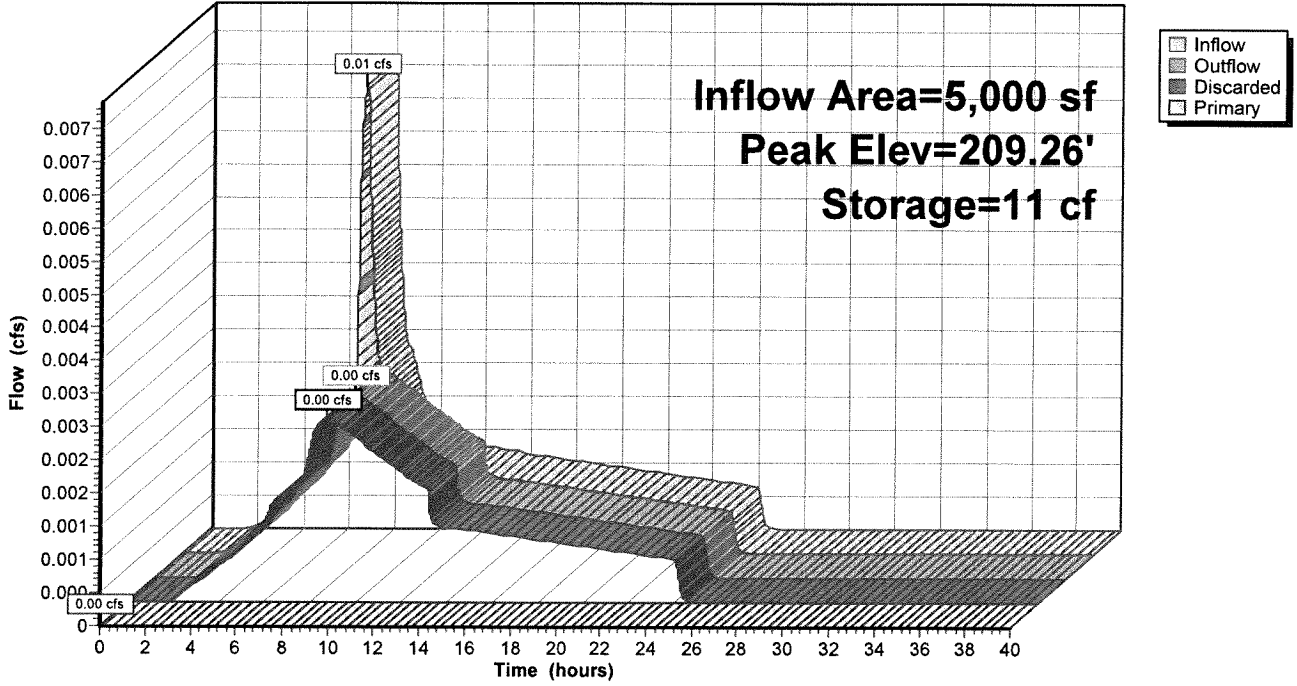
Type IA 24-hr WQ Rainfall=1.00"

Printed 3/18/2020

Page 5

**Pond B: Infiltration Trench B**

Hydrograph





**E20-023 Prelim Storm Calcs**

Type IA 24-hr 2-year Rainfall=2.50"

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Page 1

**Summary for Subcatchment 1: Site Area**

Runoff = 0.01 cfs @ 8.00 hrs, Volume= 253 cf, Depth= 0.61"

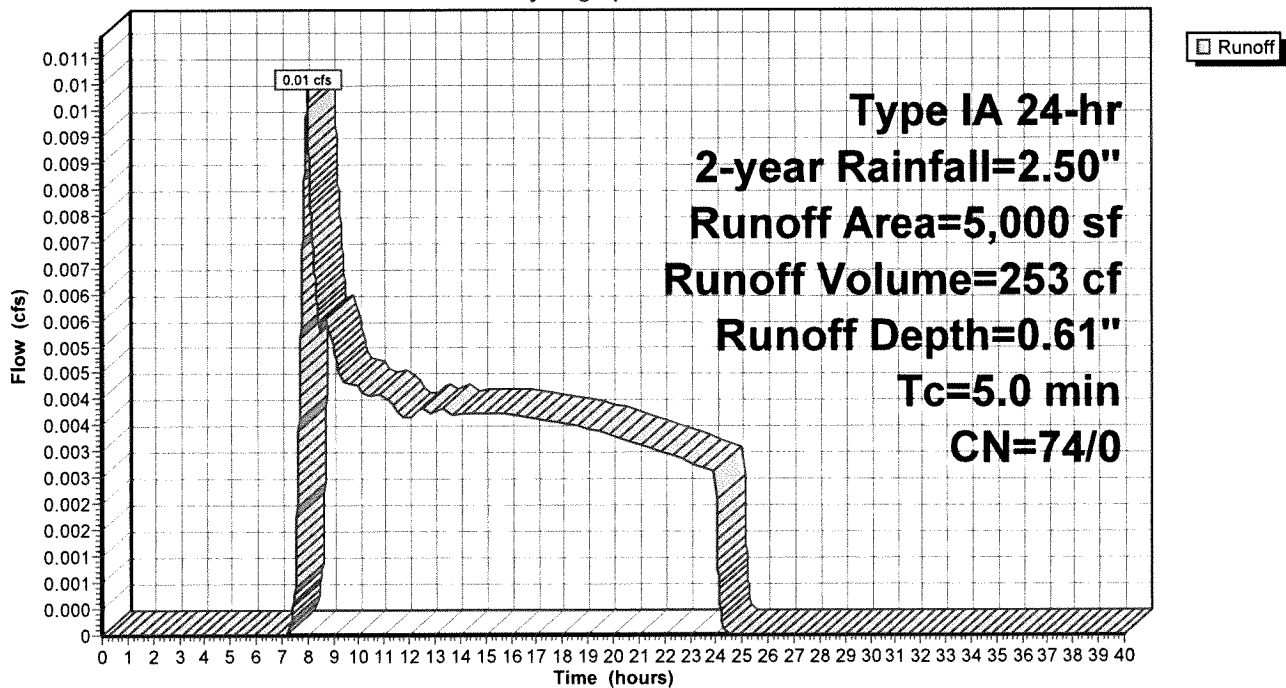
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 2-year Rainfall=2.50"

Area (sf)	CN	Description
5,000	74	>75% Grass cover, Good, HSG C
5,000	74	100.00% Pervious Area

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

**Subcatchment 1: Site Area**

Hydrograph



**E20-023 Prelim Storm Calcs**

Type IA 24-hr 2-year Rainfall=2.50"

Prepared by Firwood Design Group

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Page 2

**Summary for Subcatchment 2A: House Roof Area**

Runoff = 0.05 cfs @ 7.88 hrs, Volume= 662 cf, Depth= 2.27"

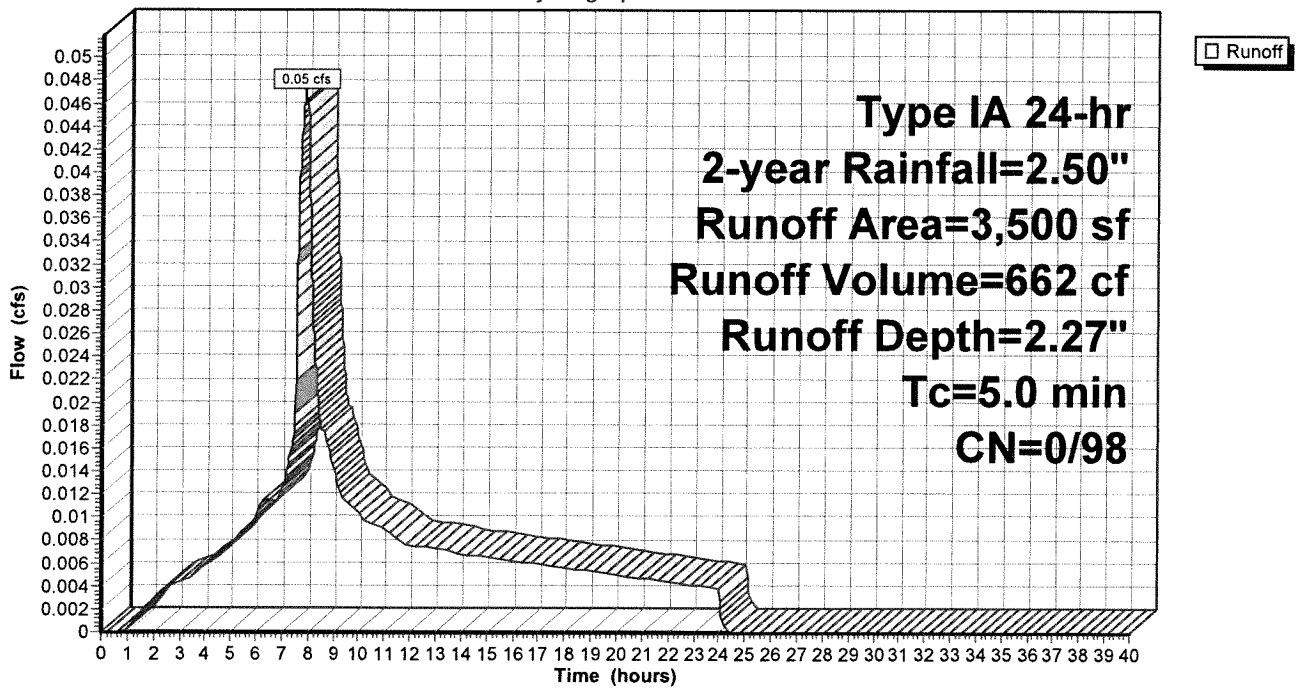
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
Type IA 24-hr 2-year Rainfall=2.50"

Area (sf)	CN	Description
* 3,500	98	
3,500	98	100.00% Impervious Area

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

**Subcatchment 2A: House Roof Area**

Hydrograph



**E20-023 Prelim Storm Calcs**

Type IA 24-hr 2-year Rainfall=2.50"

Prepared by Firwood Design Group

Printed 3/18/2020

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Page 3

**Summary for Subcatchment 2B: Driveway Area (125 LF)**

Runoff = 0.02 cfs @ 7.88 hrs, Volume= 284 cf, Depth= 2.27"

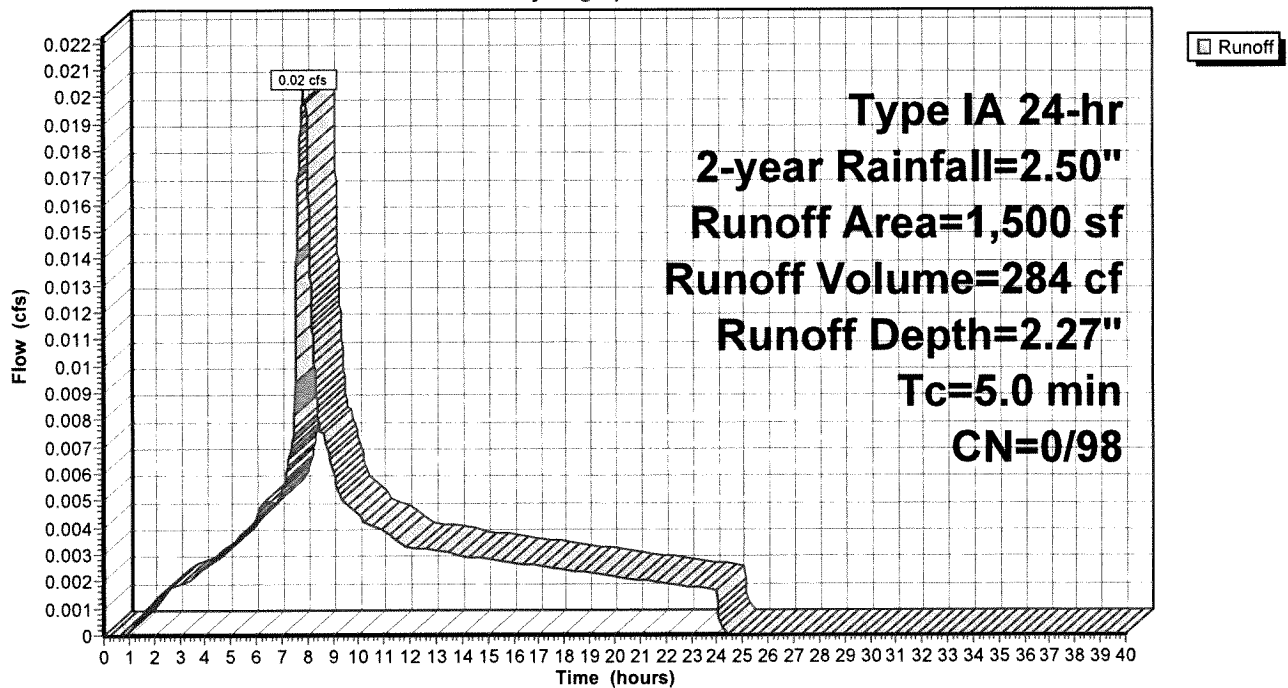
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
Type IA 24-hr 2-year Rainfall=2.50"

Area (sf)	CN	Description
* 1,500	98	
1,500	98	100.00% Impervious Area

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

**Subcatchment 2B: Driveway Area (125 LF)**

Hydrograph





**E20-023 Prelim Storm Calcs**

Type IA 24-hr 2-year Rainfall=2.50"

Prepared by Firwood Design Group

Printed 3/18/2020

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Page 4

**Summary for Pond A: Infiltration Trench A**

Inflow Area = 3,500 sf, 100.00% Impervious, Inflow Depth = 2.27" for 2-year event  
 Inflow = 0.05 cfs @ 7.88 hrs, Volume= 662 cf  
 Outflow = 0.01 cfs @ 8.99 hrs, Volume= 662 cf, Atten= 69%, Lag= 66.9 min  
 Discarded = 0.01 cfs @ 8.99 hrs, Volume= 662 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 210.71' @ 8.99 hrs Surf.Area= 160 sf Storage= 109 cf

Plug-Flow detention time= 59.5 min calculated for 662 cf (100% of inflow)  
 Center-of-Mass det. time= 59.5 min ( 732.1 - 672.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	224 cf	<b>4.00'W x 40.00'L x 3.50'H Prismaoid</b> 560 cf Overall x 40.0% Voids

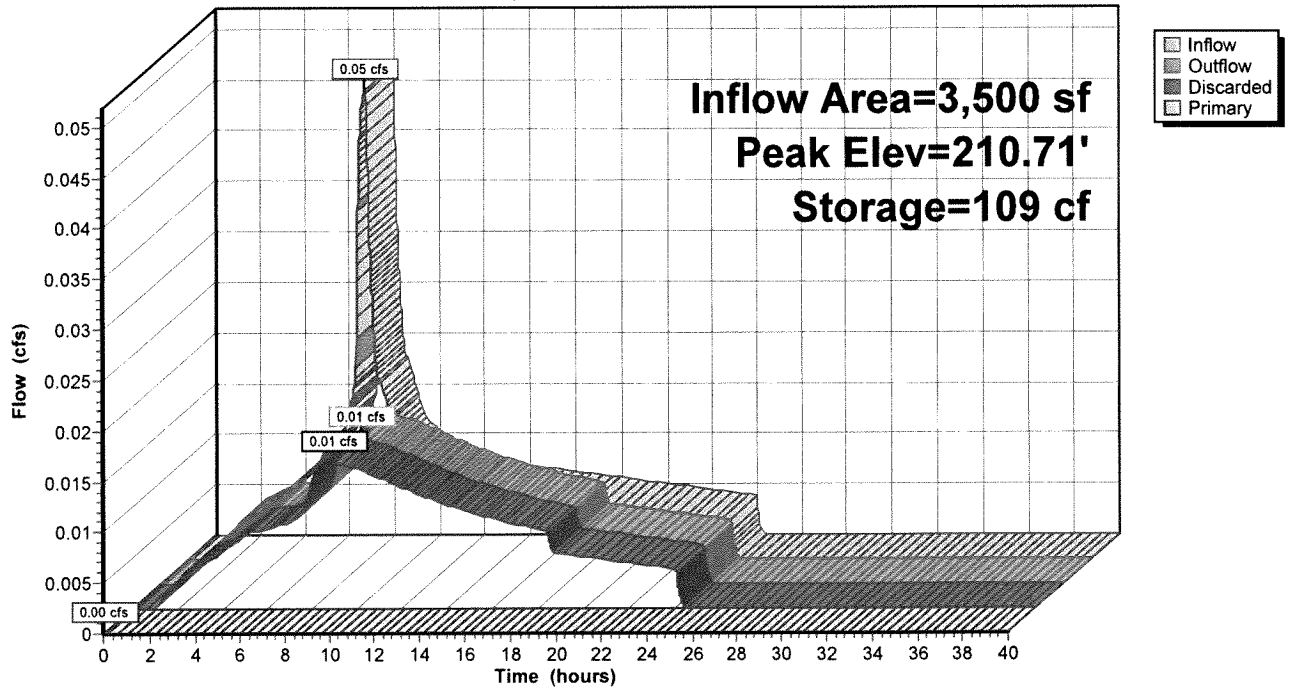
Device	Routing	Invert	Outlet Devices
#1	Discarded	209.00'	<b>2.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	212.45'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.01 cfs @ 8.99 hrs HW=210.71' (Free Discharge)  
 ↳ **1=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=209.00' (Free Discharge)  
 ↳ **2=Orifice/Grate** ( Controls 0.00 cfs)

### Pond A: Infiltration Trench A

Hydrograph



**E20-023 Prelim Storm Calcs**

Type IA 24-hr 2-year Rainfall=2.50"

Prepared by Firwood Design Group

Printed 3/18/2020

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Page 6

**Summary for Pond B: Infiltration Trench B**

[62] Hint: Exceeded Reach R1 OUTLET depth by 1.43' @ 8.05 hrs

Inflow Area =	5,000 sf, 100.00% Impervious,	Inflow Depth = 0.68"	for 2-year event
Inflow =	0.02 cfs @ 7.92 hrs,	Volume=	284 cf
Outflow =	0.02 cfs @ 7.92 hrs,	Volume=	284 cf, Atten= 0%, Lag= 0.3 min
Discarded =	0.01 cfs @ 7.92 hrs,	Volume=	259 cf
Primary =	0.01 cfs @ 7.92 hrs,	Volume=	25 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Peak Elev= 210.97' @ 7.92 hrs Surf.Area= 36 sf Storage= 36 cf

Plug-Flow detention time= 73.8 min calculated for 284 cf (100% of inflow)  
 Center-of-Mass det. time= 73.8 min ( 750.0 - 676.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	208.50'	36 cf	<b>3.00'W x 12.00'L x 2.50'H Prismatic</b> 90 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.50'	<b>2.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	210.95'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

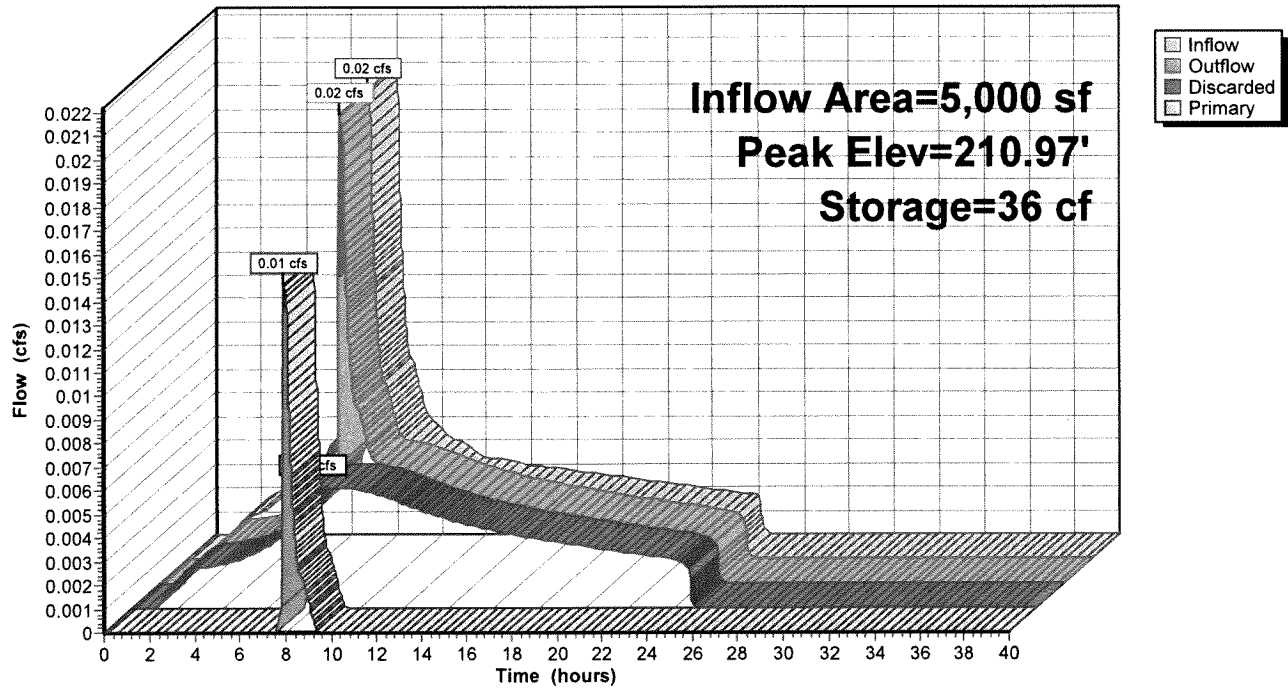
**Discarded OutFlow** Max=0.01 cfs @ 7.92 hrs HW=210.97' (Free Discharge)  
 ↖ **1=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.01 cfs @ 7.92 hrs HW=210.97' (Free Discharge)  
 ↖ **2=Orifice/Grate** (Weir Controls 0.01 cfs @ 0.44 fps)



### Pond B: Infiltration Trench B

Hydrograph



**E20-023 Prelim Storm Calcs**

Prepared by Firwood Design Group

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Type IA 24-hr 10-year Rainfall=3.45"

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**Summary for Subcatchment 1: Site Area**

Runoff = 0.03 cfs @ 8.00 hrs, Volume= 502 cf, Depth= 1.21"

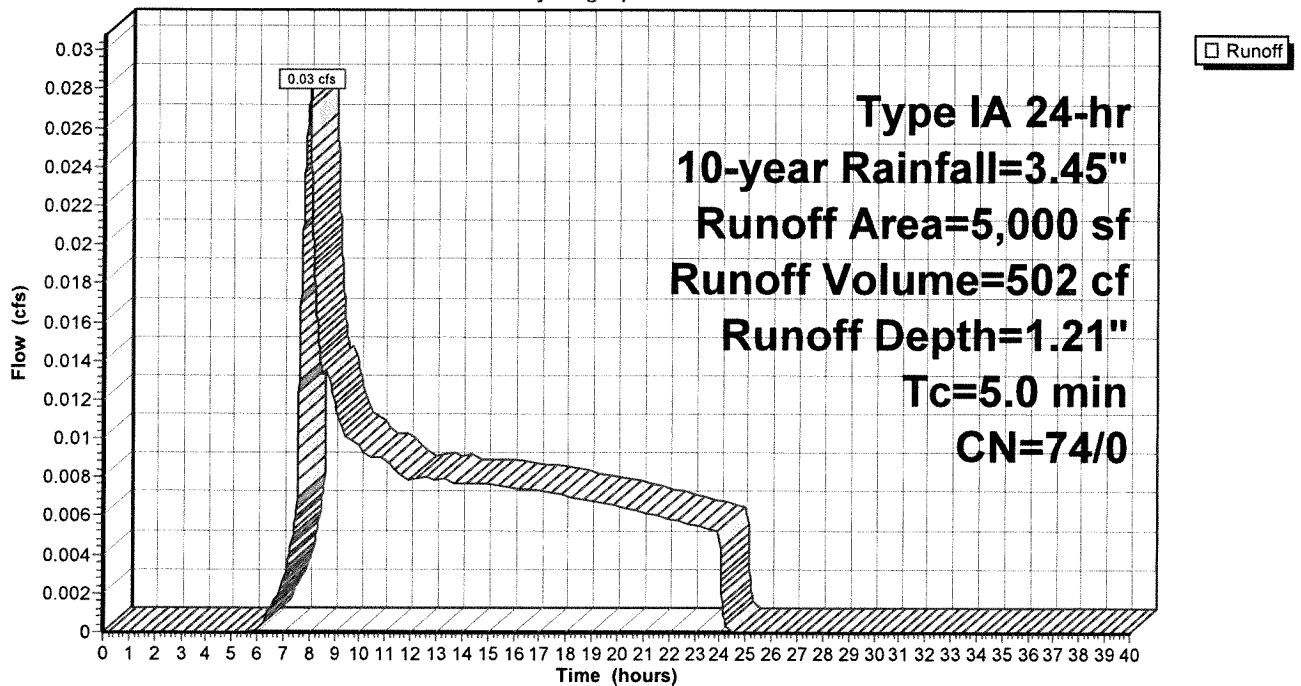
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
Type IA 24-hr 10-year Rainfall=3.45"

Area (sf)	CN	Description
5,000	74	>75% Grass cover, Good, HSG C
5,000	74	100.00% Pervious Area

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

**Subcatchment 1: Site Area**

Hydrograph



**E20-023 Prelim Storm Calcs**

Prepared by Firwood Design Group

HydroCAD® 10.00-25 s/n M05029 © 2019 HydroCAD Software Solutions LLC

Type IA 24-hr 10-year Rainfall=3.45"

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**Summary for Subcatchment 2A: House Roof Area**

Runoff = 0.06 cfs @ 7.88 hrs, Volume= 938 cf, Depth= 3.22"

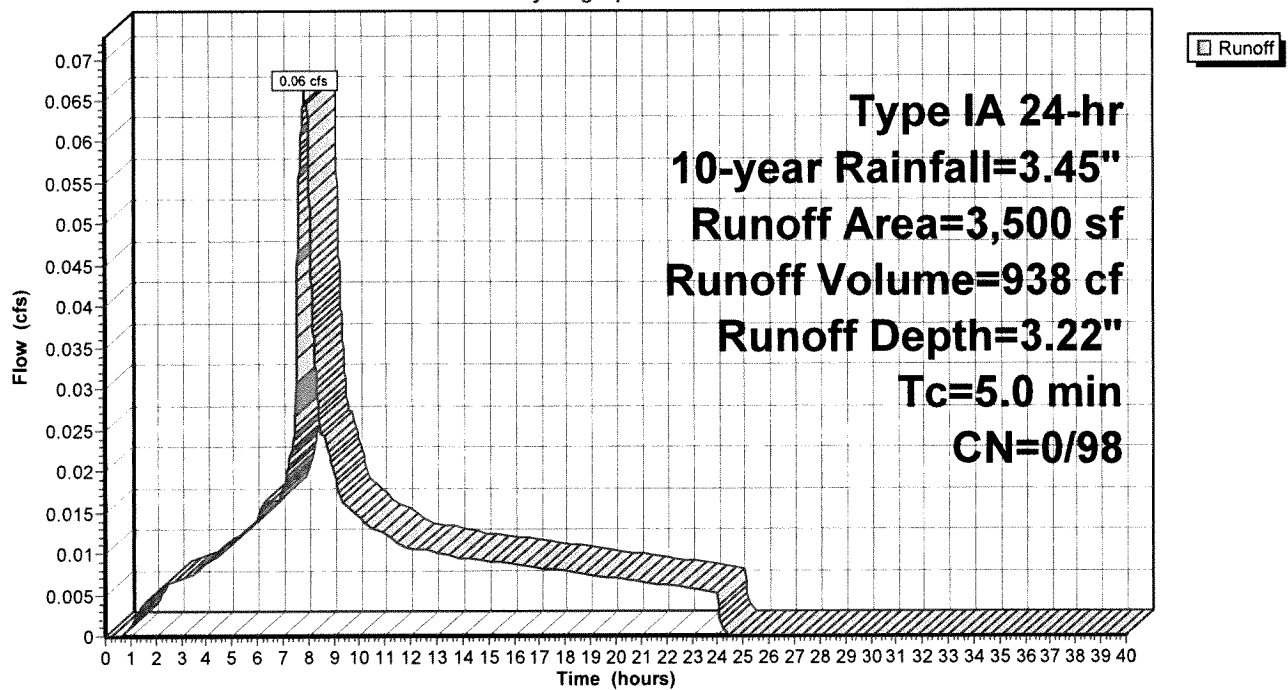
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 10-year Rainfall=3.45"

Area (sf)	CN	Description
* 3,500	98	
3,500	98	100.00% Impervious Area

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

**Subcatchment 2A: House Roof Area**

Hydrograph



**E20-023 Prelim Storm Calcs**

Prepared by Firwood Design Group

HydroCAD® 10.00-25 s/n M05029 © 2019 HydroCAD Software Solutions LLC

Type IA 24-hr 10-year Rainfall=3.45"

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**Summary for Subcatchment 2B: Driveway Area (125 LF)**

Runoff = 0.03 cfs @ 7.88 hrs, Volume= 402 cf, Depth= 3.22"

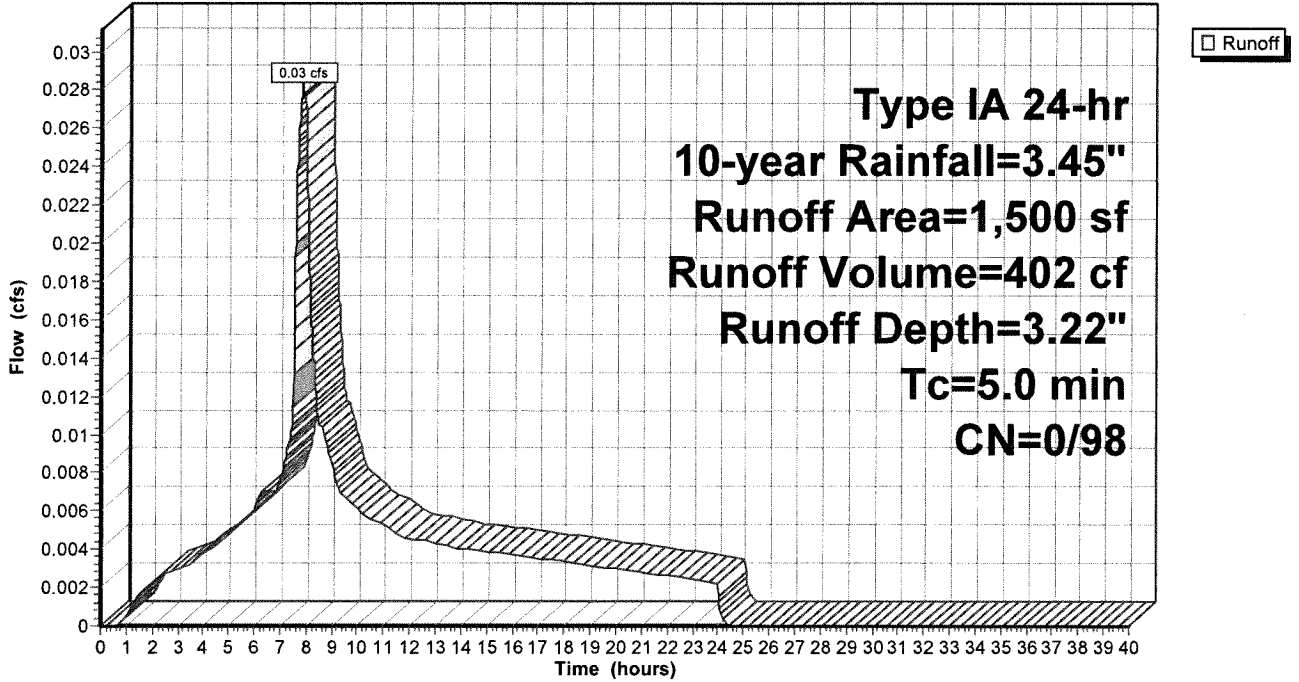
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
Type IA 24-hr 10-year Rainfall=3.45"

Area (sf)	CN	Description
* 1,500	98	
1,500	98	100.00% Impervious Area

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

**Subcatchment 2B: Driveway Area (125 LF)**

Hydrograph





**E20-023 Prelim Storm Calcs**

Type IA 24-hr 10-year Rainfall=3.45"

Prepared by Firwood Design Group

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**Summary for Pond A: Infiltration Trench A**

Inflow Area = 3,500 sf, 100.00% Impervious, Inflow Depth = 3.22" for 10-year event  
 Inflow = 0.06 cfs @ 7.88 hrs, Volume= 938 cf  
 Outflow = 0.02 cfs @ 9.06 hrs, Volume= 938 cf, Atten= 70%, Lag= 70.7 min  
 Discarded = 0.02 cfs @ 9.06 hrs, Volume= 938 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 211.90' @ 9.06 hrs Surf.Area= 160 sf Storage= 186 cf

Plug-Flow detention time= 96.2 min calculated for 938 cf (100% of inflow)  
 Center-of-Mass det. time= 96.1 min ( 759.4 - 663.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	224 cf	<b>4.00'W x 40.00'L x 3.50'H Prismatic</b> 560 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	209.00'	<b>2.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	212.45'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.02 cfs @ 9.06 hrs HW=211.90' (Free Discharge)  
 ↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=209.00' (Free Discharge)  
 ↑**2=Orifice/Grate** ( Controls 0.00 cfs)

**E20-023 Prelim Storm Calcs**

Prepared by Firwood Design Group

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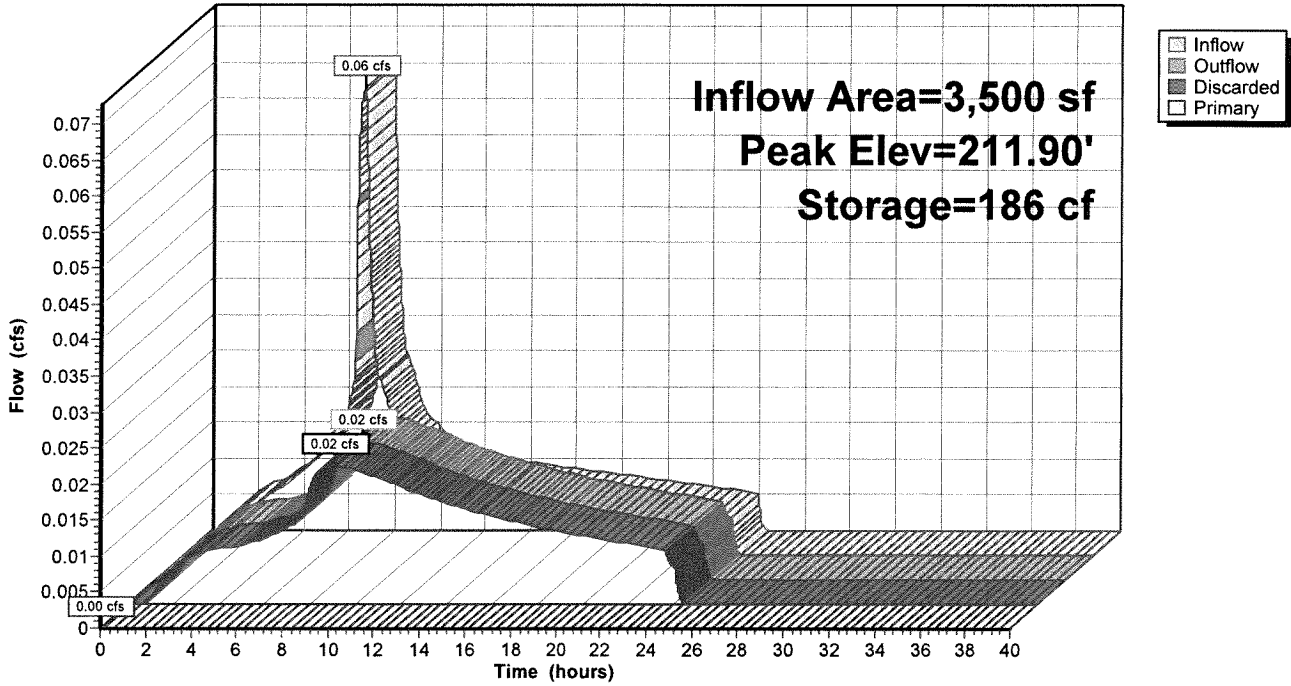
Type IA 24-hr 10-year Rainfall=3.45"

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**Pond A: Infiltration Trench A**

Hydrograph



**E20-023 Prelim Storm Calcs**

Type IA 24-hr 10-year Rainfall=3.45"

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**Summary for Pond B: Infiltration Trench B**

[62] Hint: Exceeded Reach R1 OUTLET depth by 1.44' @ 8.06 hrs

Inflow Area = 5,000 sf, 100.00% Impervious, Inflow Depth = 0.96" for 10-year event  
 Inflow = 0.03 cfs @ 7.91 hrs, Volume= 402 cf  
 Outflow = 0.03 cfs @ 7.91 hrs, Volume= 402 cf, Atten= 0%, Lag= 0.2 min  
 Discarded = 0.01 cfs @ 7.91 hrs, Volume= 327 cf  
 Primary = 0.02 cfs @ 7.91 hrs, Volume= 75 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Peak Elev= 210.98' @ 7.91 hrs Surf.Area= 36 sf Storage= 36 cf

Plug-Flow detention time= 77.9 min calculated for 402 cf (100% of inflow)  
 Center-of-Mass det. time= 77.9 min ( 744.3 - 666.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	208.50'	36 cf	<b>3.00'W x 12.00'L x 2.50'H Prismatic</b> 90 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.50'	<b>2.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	210.95'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.01 cfs @ 7.91 hrs HW=210.98' (Free Discharge)  
 ↖1=Exfiltration (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.02 cfs @ 7.91 hrs HW=210.98' (Free Discharge)  
 ↖2=Orifice/Grate (Weir Controls 0.02 cfs @ 0.53 fps)

**E20-023 Prelim Storm Calcs**

Prepared by Firwood Design Group

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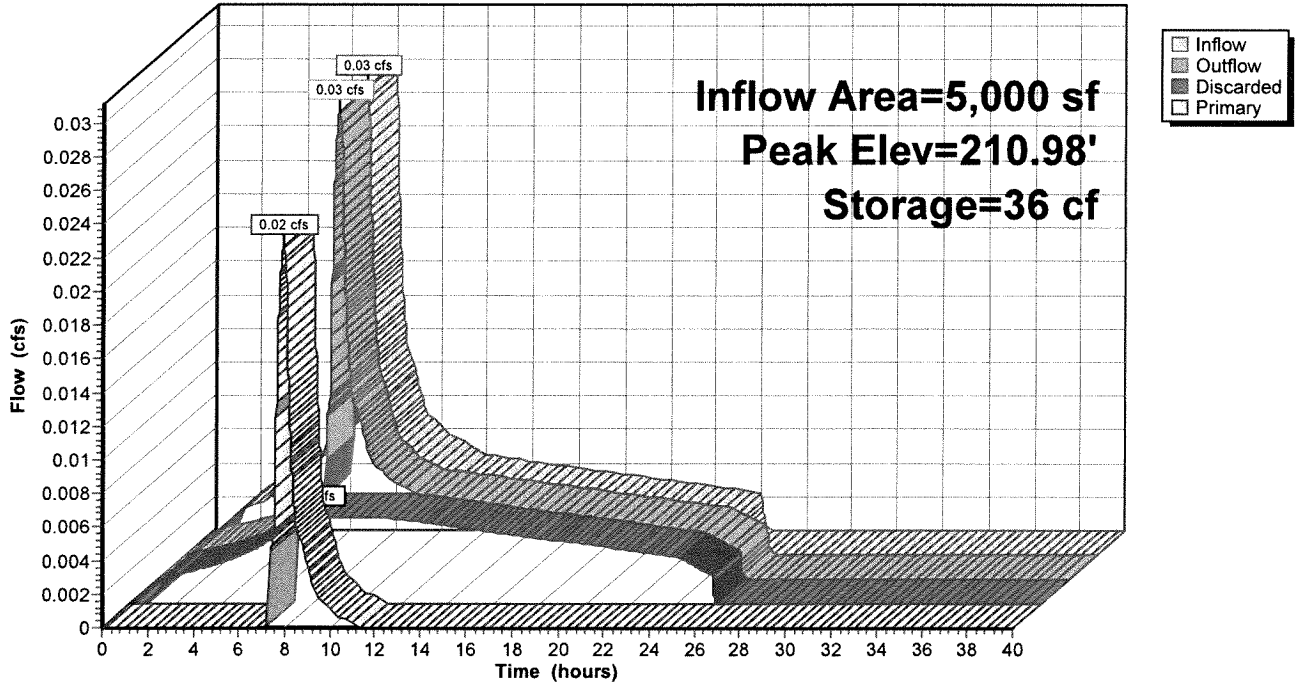
Type IA 24-hr 10-year Rainfall=3.45"

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**Pond B: Infiltration Trench B**

Hydrograph





**E20-023 Prelim Storm Calcs**

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Type IA 24-hr 25-year Rainfall=3.90"

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**Summary for Subcatchment 1: Site Area**

Runoff = 0.04 cfs @ 8.00 hrs, Volume= 635 cf, Depth= 1.52"

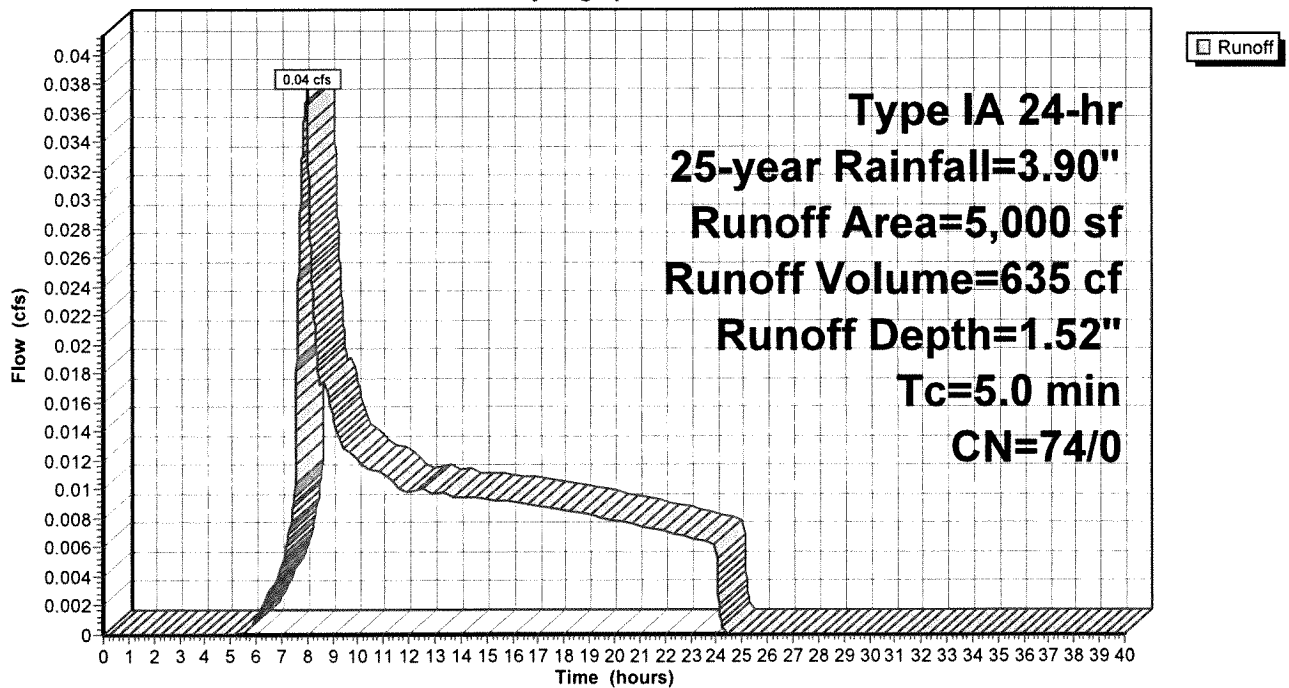
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
Type IA 24-hr 25-year Rainfall=3.90"

Area (sf)	CN	Description
5,000	74	>75% Grass cover, Good, HSG C
5,000	74	100.00% Pervious Area

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

**Subcatchment 1: Site Area**

Hydrograph



**E20-023 Prelim Storm Calcs**

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Type IA 24-hr 25-year Rainfall=3.90"

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**Summary for Subcatchment 2A: House Roof Area**

Runoff = 0.07 cfs @ 7.88 hrs, Volume= 1,069 cf, Depth= 3.67"

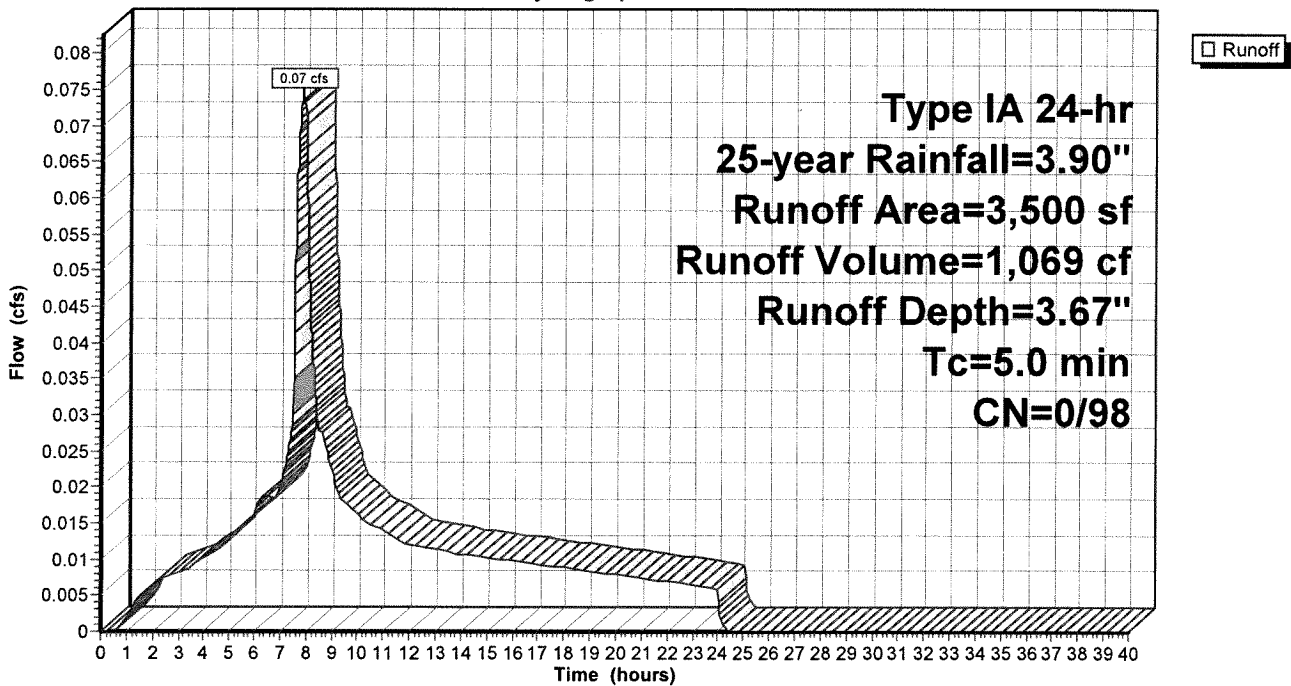
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
Type IA 24-hr 25-year Rainfall=3.90"

Area (sf)	CN	Description
* 3,500	98	
3,500	98	100.00% Impervious Area

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

**Subcatchment 2A: House Roof Area**

Hydrograph



**E20-023 Prelim Storm Calcs**

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Type IA 24-hr 25-year Rainfall=3.90"

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**Summary for Subcatchment 2B: Driveway Area (125 LF)**

Runoff = 0.03 cfs @ 7.88 hrs, Volume= 458 cf, Depth= 3.67"

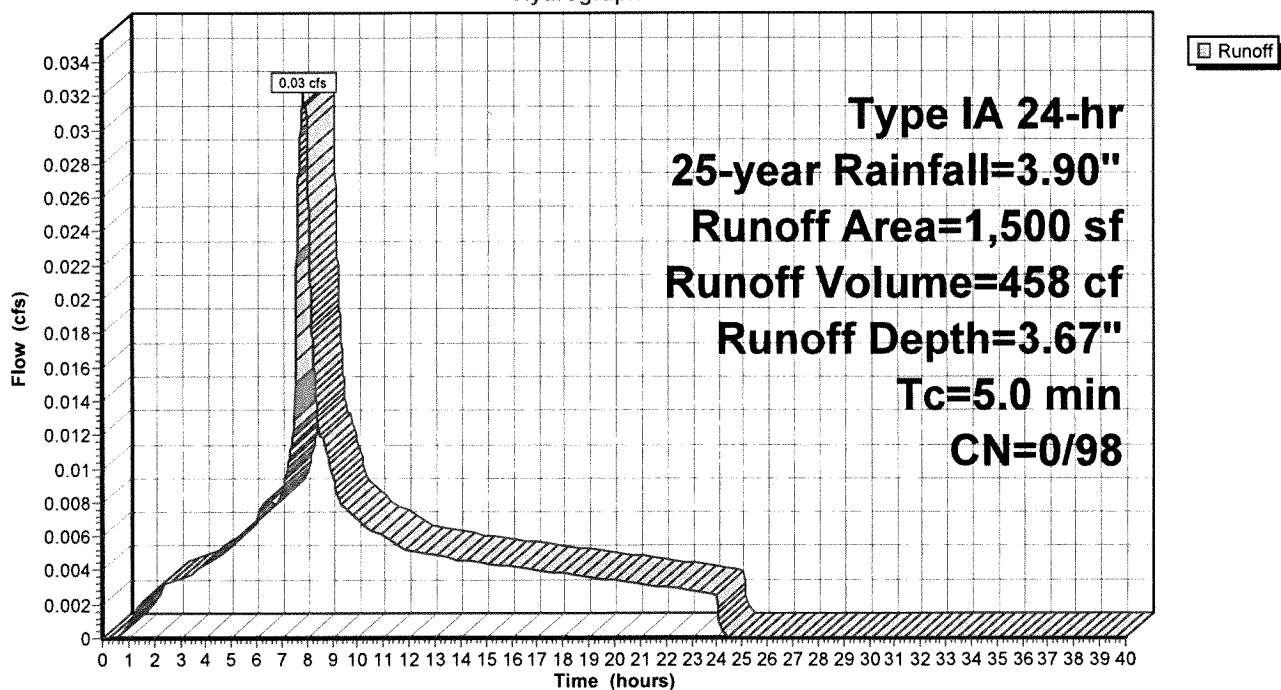
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Type IA 24-hr 25-year Rainfall=3.90"

Area (sf)	CN	Description
* 1,500	98	
1,500	98	100.00% Impervious Area

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

**Subcatchment 2B: Driveway Area (125 LF)**

Hydrograph



**E20-023 Prelim Storm Calcs**

Type IA 24-hr 25-year Rainfall=3.90"

Prepared by Firwood Design Group

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**Summary for Pond A: Infiltration Trench A**

Inflow Area = 3,500 sf, 100.00% Impervious, Inflow Depth = 3.67" for 25-year event  
 Inflow = 0.07 cfs @ 7.88 hrs, Volume= 1,069 cf  
 Outflow = 0.02 cfs @ 8.84 hrs, Volume= 1,069 cf, Atten= 66%, Lag= 58.0 min  
 Discarded = 0.02 cfs @ 8.84 hrs, Volume= 1,067 cf  
 Primary = 0.00 cfs @ 8.84 hrs, Volume= 2 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 212.46' @ 8.84 hrs Surf.Area= 160 sf Storage= 221 cf

Plug-Flow detention time= 110.4 min calculated for 1,069 cf (100% of inflow)  
 Center-of-Mass det. time= 110.4 min ( 770.5 - 660.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	209.00'	224 cf	<b>4.00'W x 40.00'L x 3.50'H Prismaoid</b> 560 cf Overall x 40.0% Voids

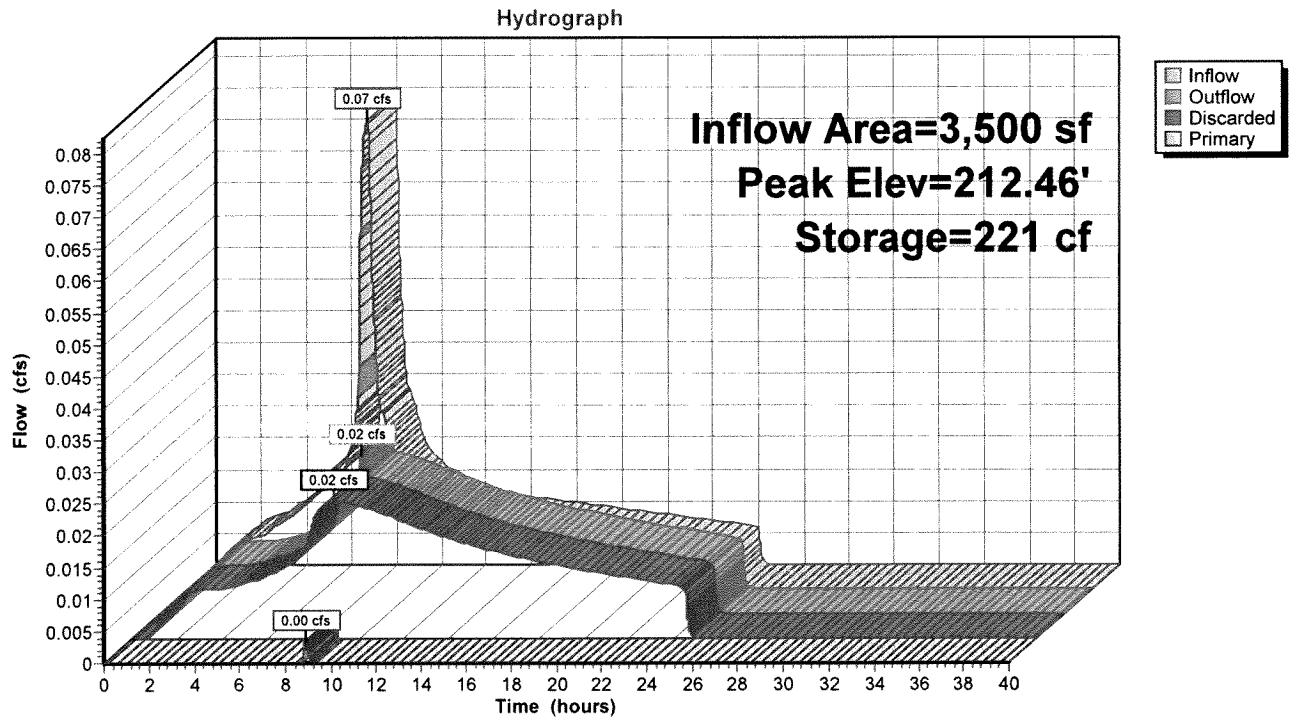
Device	Routing	Invert	Outlet Devices
#1	Discarded	209.00'	<b>2.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	212.45'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.02 cfs @ 8.84 hrs HW=212.46' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.00 cfs @ 8.84 hrs HW=212.46' (Free Discharge)  
 ↑2=Orifice/Grate (Weir Controls 0.00 cfs @ 0.24 fps)



### Pond A: Infiltration Trench A



**E20-023 Prelim Storm Calcs**

Type IA 24-hr 25-year Rainfall=3.90"

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**Summary for Pond B: Infiltration Trench B**

[62] Hint: Exceeded Reach R1 OUTLET depth by 1.44' @ 8.09 hrs

Inflow Area = 5,000 sf, 100.00% Impervious, Inflow Depth = 1.11" for 25-year event  
 Inflow = 0.03 cfs @ 7.91 hrs, Volume= 461 cf  
 Outflow = 0.03 cfs @ 7.91 hrs, Volume= 461 cf, Atten= 0%, Lag= 0.2 min  
 Discarded = 0.01 cfs @ 7.91 hrs, Volume= 355 cf  
 Primary = 0.03 cfs @ 7.91 hrs, Volume= 105 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Peak Elev= 210.98' @ 7.91 hrs Surf.Area= 36 sf Storage= 36 cf

Plug-Flow detention time= 77.3 min calculated for 461 cf (100% of inflow)  
 Center-of-Mass det. time= 77.3 min ( 739.9 - 662.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	208.50'	36 cf	<b>3.00'W x 12.00'L x 2.50'H Prismaoid</b> 90 cf Overall x 40.0% Voids

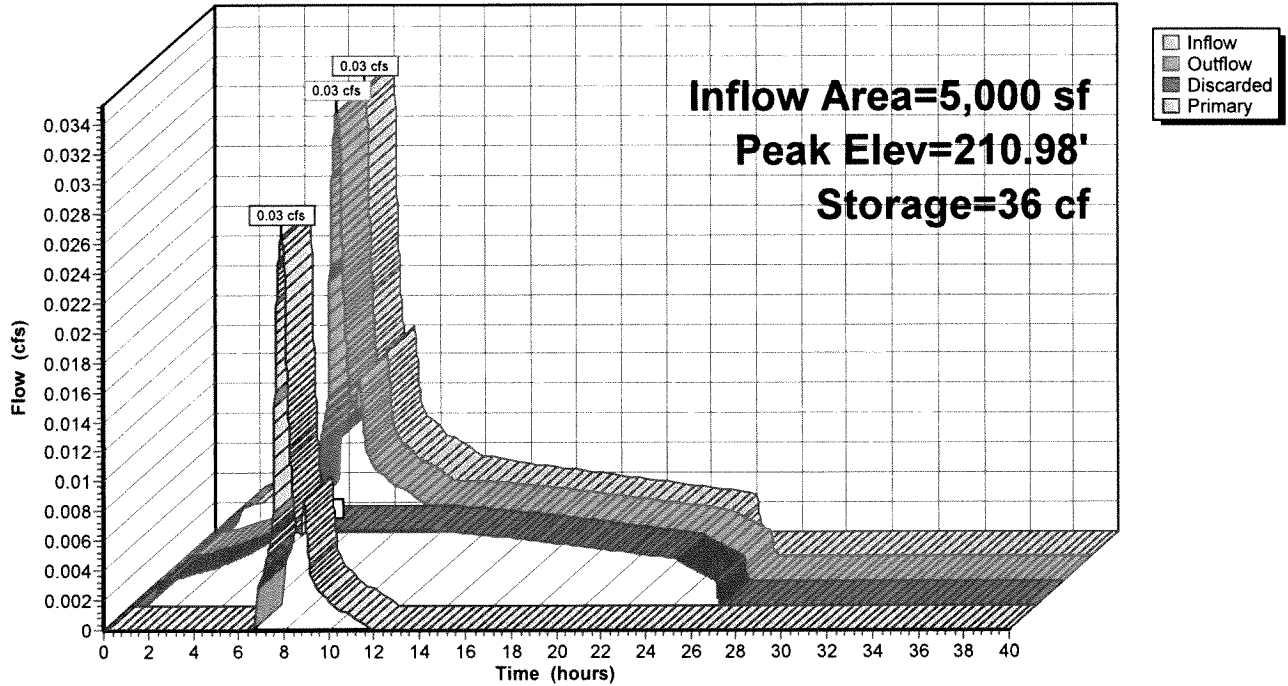
Device	Routing	Invert	Outlet Devices
#1	Discarded	208.50'	<b>2.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	210.95'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.01 cfs @ 7.91 hrs HW=210.98' (Free Discharge)  
 ↖ **1=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.03 cfs @ 7.91 hrs HW=210.98' (Free Discharge)  
 ↖ **2=Orifice/Grate** (Weir Controls 0.03 cfs @ 0.56 fps)

### Pond B: Infiltration Trench B

Hydrograph



**E20-023 Prelim Storm Calcs**

Type IA 24-hr 100-year Rainfall=4.40"

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Page 1

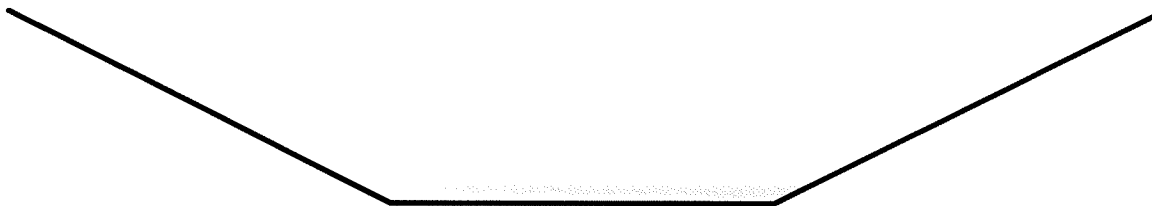
**Summary for Reach R1: Collection Swale**

Inflow Area = 5,000 sf, 100.00% Impervious, Inflow Depth = 1.38" for 100-year event  
 Inflow = 0.07 cfs @ 8.09 hrs, Volume= 574 cf  
 Outflow = 0.06 cfs @ 8.13 hrs, Volume= 574 cf, Atten= 3%, Lag= 2.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 1.19 fps, Min. Travel Time= 1.1 min  
 Avg. Velocity = 0.48 fps, Avg. Travel Time= 2.8 min

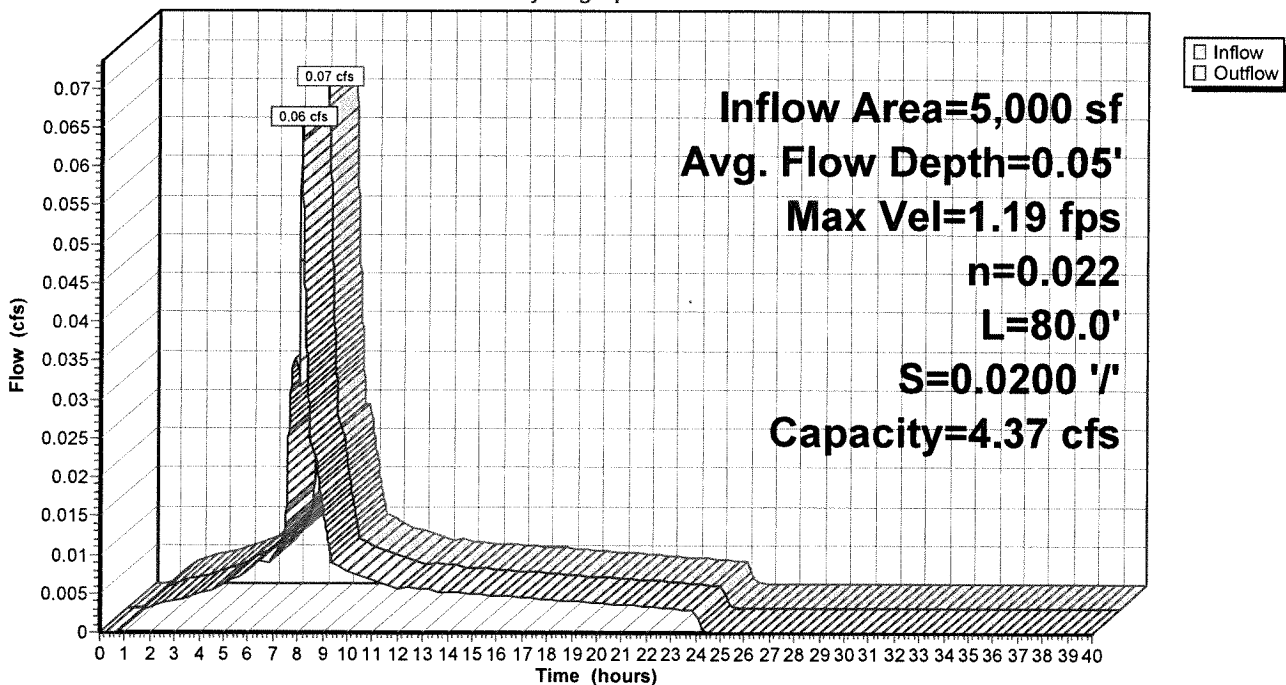
Peak Storage= 4 cf @ 8.11 hrs  
 Average Depth at Peak Storage= 0.05'  
 Bank-Full Depth= 0.50' Flow Area= 1.0 sf, Capacity= 4.37 cfs

1.00' x 0.50' deep channel, n= 0.022 Earth, clean & straight  
 Side Slope Z-value= 2.0 ' / ' Top Width= 3.00'  
 Length= 80.0' Slope= 0.0200 ' / '  
 Inlet Invert= 211.50', Outlet Invert= 209.90'



**Reach R1: Collection Swale**

Hydrograph





**E20-023 Prelim Storm Calcs**

Type IA 24-hr 100-year Rainfall=4.40"

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Page 2

**Summary for Reach R2: Discharge Conveyance to CB**

Inflow Area = 5,000 sf, 100.00% Impervious, Inflow Depth = 0.46" for 100-year event  
 Inflow = 0.06 cfs @ 8.12 hrs, Volume= 194 cf  
 Outflow = 0.06 cfs @ 8.14 hrs, Volume= 194 cf, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 1.16 fps, Min. Travel Time= 0.3 min  
 Avg. Velocity = 0.44 fps, Avg. Travel Time= 0.8 min

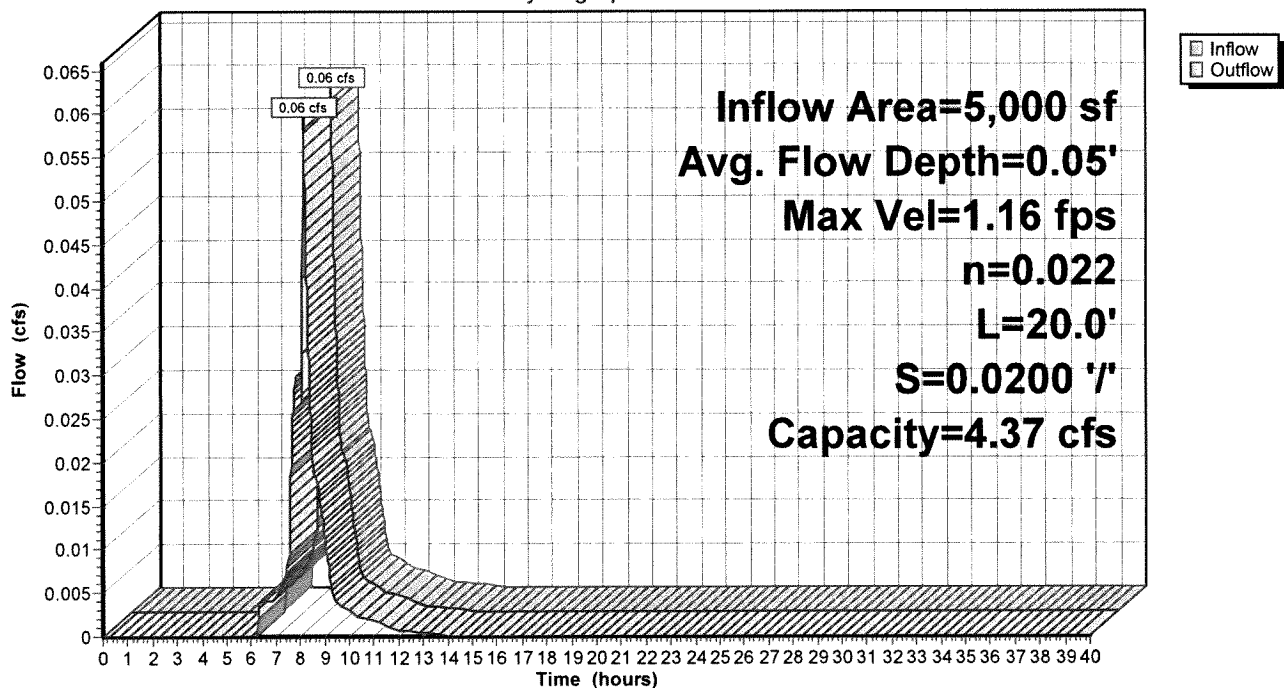
Peak Storage= 1 cf @ 8.13 hrs  
 Average Depth at Peak Storage= 0.05'  
 Bank-Full Depth= 0.50' Flow Area= 1.0 sf, Capacity= 4.37 cfs

1.00' x 0.50' deep channel, n= 0.022 Earth, clean & straight  
 Side Slope Z-value= 2.0 '/' Top Width= 3.00'  
 Length= 20.0' Slope= 0.0200 '/'  
 Inlet Invert= 209.50', Outlet Invert= 209.10'



**Reach R2: Discharge Conveyance to CB**

Hydrograph



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Hydro Geo & Environmental, Inc  
8525 SW 67<sup>th</sup> Ave.,  
Portland, OR 97223  
Phone: 503. 892.2000  
Fax: 503.246.6021  
e-mail: hydrogeo@comcast.net

# Hydro Geo & Environmental, Inc.

March 7, 2020  
Project # 2825.20  
Don Burke Excavation  
Attn: Don Burke

RE: SUMMARY OF SOIL INFILTRATION TESTING FOR SITE @ 1434 DOLLAR ST., WEST LINN, OREGON 97068

In accordance with your authorization Hydro Geo & Environmental, Inc., (HGE) has completed soil infiltration testing at the subject property in the approximate locations indicated on the attached site plan. The purpose of the infiltration testing was to provide field infiltration rates for use in design of a storm water disposal system for the proposed parking lot. The scope of work for this project consisted of excavation of one shallow test pit, augering of exploratory borehole advanced from the bottom of the test pit, evaluation of field infiltration rates using standardized methods and equipment, and preparation of this letter report.

This letter report has been prepared for exclusive use of the owner and their agents, for specific application to the referenced scope of services, in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made. In the event that changes in the nature, usage, or layout of the proposed site improvements are made the conclusion contained in this report shall not be considered valid unless the changes are reviewed by HGE in writing.

The field work was conducted on March 5, 2020 consisting of excavating of one shallow test pit and conducting the percolation tests at the depth of 7.5 feet. Following the infiltration test completion, the hand-augered exploratory borehole was advanced from the bottom of test pit to a depth of 10 feet. An engineering associate from HGE coordinated and observed the subsurface conditions and infiltration testing.

The site is located at 1434 Dollar St., at the northeast corner of the intersection with Britton St., in West Linn OR 97068 (Figure1). The site is fairly level at 210-216' above Mean Sea Level (Canby Quad, USGS 7.5 Minute Map) and slopes slightly at 3-5 % northward with slope break along the northern property line. The slope uphill highest gradient area starts along the northern property line where slope is approximately 10-15% . A two story wood frame house exists on the site and located in the south half section of the site. The site is bounded on the south by paved Dollar St., on the north, west and east by the adjacent residences (see Figure 1, Vicinity Map).

.....

## GEOLOGY & SUBSURFACE CONDITIONS

The near-surface geology of the project area consists of Late Pleistocene age (recent to approximately 1.5 million years ago) sediments which were deposited by catastrophic floods of the Columbia River. The site lies in an area, which has been mapped as Coarse-Grained Facies consisting of pebble to boulder gravel with silt and coarse sand matrix. The coarse sediments are poorly sorted and sub-rounded to well- rounded and range from openwork gravel to gravel with considerable fine-grained matrix material. Mainly basalt, but other lithologies may dominate downstream from bedrock exposures. The coarse flood sediments are up to 60 m (200 ft) thick in the map area.

Based on a review of the Soil Survey of Clackamas County, the near-surface soils at the site are mapped as Woodburn silt loam and Cascade silt loam. This deep moderately well drained soil is on broad valley terraces that formed in stratified glaciolacustrine deposits. This deep, moderately to well drained soil is on broad valley terraces and rolling uplands that formed in silty material and colluvium derived dominantly from basalt. Soil has moderately slow permeability as 0.6-2.0 inches per hour for shallow soil (up to 2 feet deep) and 0.2- 0.6 per hour for deeper layers. Cascade silt loam developed along the northern property line is deep, somewhat poorly drained soil on rolling uplands that formed in silty material. Surface runoff is medium, and the hazard of erosion is moderate. Permeability is 0.06-0.2 inches per hour.

At the time of our visit we hand dug one test pit to a depths 7.5 feet. Subsurface materials represented in the test pit # 1 consisted of a 1.5- foot surface layer of dark-brown dry to damp organic silt **fill** with some grass and tree roots. Underlying the fill and organic topsoil, the native soil consists of yellowish-brown to dark-brown, moist to wet stiff to soft, low plasticity, sandy **silt**, underlain at the depth of 7.5 feet by yellowish-brown moist to wet dense fine-grained, well –graded silty **sand**, exposed to a depth of 10 feet below the surface. The test pit/boring was terminated at the depth of 10 feet below the surface.

No evidence of perched or static groundwater or seasonal perched subsurface water was encountered in the test pit and exploratory boring.

Based on Oregon Water Resources Department data, groundwater in the vicinity was encountered in 140 feet deep water well report at the depth of 13 feet below the surface. (See Clackamas County Monitoring Well Report # 008838 attached).

**INFILTRATION TESTS-** The test was conducted by driving a six-inch diameter infiltrometer stand pipe into the soil at the above pointed interval. The infiltration test was conducted as Encased Falling Head tests based on methodology of Clackamas county Stormwater Management Manual – January 2016.

We have embedded a solid 6-inch diameter casing into the native fine-grained silty sand soil at the elevation of 7.5 feet below the surface. That embedment has provided a good seal around the pipe casing so that percolation was limited to the 6-inch plug of the material within the casing. The pipe with clean water approximately of 12 inches above the soil was maintained at this depth for at least 4 hours to presoak the native fine-grained sand soil. Total of three trials of infiltration test were conducted. After each trial, the water level was readjusted to the 12 inch level.

The water level was measured to the nearest 0.01 foot ( $\frac{1}{8}$  inch) at 10-minute intervals for a total period of 2 hours. Successive trials were run until the percent change in measured

March 8, 2020

Page 3

infiltration rate between two successive trials is minimal. All test results are summarized in the data table. The infiltration rate noted below is a last of three observations of actual infiltration rate measured in the field in undisturbed fine-grained silty sand and do not include a factor of safety.

Location	Soil	Test depth	Field infiltration rate
TP-1	silty sand	7.5 feet	4 inches/hour

After infiltration testing, test pit was further augured to verify soil conditions beneath the test location. The soils observed below the test depth appeared consistent with gravelly sand soil above and across the site.

In accordance with AASHTO classification, tested soils refer to A-4 groups of this classification. In accordance with Unified Soil Classification System, tested soil refer to ML class group symbol (well-graded silty sand).

**CONCLUSIONS-** Based on the results of the infiltration test, observation of subsurface conditions, and our office review, the native site soils appear to have low permeability at the depth of silty sand with gravel soils encountered and are suitable for limited subsurface discharge of storm water. We believe that the onsite infiltration capability has not been compromised by the past construction use on the site and is suitable for subgrade of pervious pavement.

Field infiltration rates recorded during this study generally correspond to the range of permeability values reported in the Soil Survey of Clackamas County, Oregon.

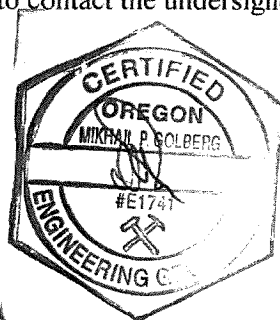
Differences in infiltration test results noted above may be due to slight areal and depth variations in soil gradation, density, and *in-situ* moisture content. In addition, it has been observed that the permeability of undisturbed native soils such as those found on this site can be substantially different than soils that have been disturbed by construction activities.

It is recommended that HGE be contacted to observe subsurface conditions at the time of construction to correlate actual soil conditions with those observed during this study. It is also advisable to test the infiltration system to confirm adequate capacity.

We appreciate the opportunity to assist you on this project. If you have any questions or would like additional information please feel free to contact the undersigned at (503) 892-2000.

Truly yours,  
Hydro Geo & Environmental, Inc.

Mike Golberg, C.E.G.  
Principal Engineering Geologist







**Objectid:** 86364  
**Primary Address:** 1434 Dollar St, West Linn, 97068  
**Jurisdiction:** West Linn (<https://westlinnoregon.gov>)  
**Map Number:** 31E02BB  
**Parcel Number:** 31E02BB01600  
**Parcel Number:** 00749952  
**Document Number:** 2019-071789  
**Assessment Tract:** 020700

**Assessment**

**Estimated Acres:** 0.49  
**Current Year Assessed Value:** \$132,912.00  
**Market Building Value:** \$42,420.00  
**Market Land Value:** \$220,000.00

*Figure 1*



**WATER WELL REPORT**  
STATE OF OREGON

CLAC  
008838

**RECEIVED**

JAN 6 1983

State Well No. 351E-2

**WATER RESOURCES DEPT.**  
**SALEM, OREGON**

State Permit No. \_\_\_\_\_

**(1) OWNER:**

Name GERALD T. and MARYANN LISAC  
Address 21480 S.W. PETES MT. ROAD  
City WEST LINN State OREGON

**(2) TYPE OF WORK (check):**

New Well  Deepening  Reconditioning  Abandon   
If abandonment, describe material and procedure in Item 12.

**(3) TYPE OF WELL:**

Rotary Air  Driven  Domestic  Industrial  Municipal   
Rotary Mud  Dug  Irrigation  Test Well  Other   
 Bored  Thermal: Withdrawal  Reinjection

**(4) PROPOSED USE (check):**

**(5) CASING INSTALLED:** Steel  Plastic   
Threaded  Welded   
6" Diam. from Plus 1 ft. to 41 ft. Gauge 250  
" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Gauge \_\_\_\_\_

**INNER INSTALLED:**  
4 1/2 ID" Diam. from (0) ft. to 140 ft. Gauge Schdl. 80

**(6) PERFORATIONS:** Perforated?  Yes  No

Type of perforator used Skillsaw  
Size of perforations 1/8 in. by 6 in.  
90 perforations from 80 ft. to 139 ft.  
perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**(7) SCREENS:** Well screen installed?  Yes  No

Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. \_\_\_\_\_ Slot Size \_\_\_\_\_ Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam. \_\_\_\_\_ Slot Size \_\_\_\_\_ Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**(8) WELL TESTS:** Drawdown is amount water level is lowered below static level

When pump test made?  Yes  No. If yes, by whom? Haakon Bottner  
26 gal/min with 86 ft. drawdown after 5 hrs.  
Air test \_\_\_\_\_ gal/min. with drill stem at \_\_\_\_\_ ft. hrs.  
Bailer test \_\_\_\_\_ gal/min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m.  
Temperature of water \_\_\_\_\_ Depth artesian flow encountered \_\_\_\_\_ ft.

**(9) CONSTRUCTION:** Special standards: Yes  No

Well seal—Material used Portland Cement  
Well sealed from land surface to 41 ft.  
Diameter of well bore to bottom of seal 17 in.  
Diameter of well bore below seal 6 in.  
Number of sacks of cement used in well seal 13 sacks  
How was cement grout placed? From bottom up with grout pump  
Was pump installed? Yes Type Sub HP 1 1/2 Depth 130 ft.  
Was a drive shoe used?  Yes  No Plug \_\_\_\_\_ Size: location \_\_\_\_\_ ft.  
Did any strata contain unusable water?  Yes  No  
Type of Water? \_\_\_\_\_ depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_  
Was well gravel packed?  Yes  No Size of gravel: \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**(10) LOCATION OF WELL:**

County CLACKAMAS Driller's well number \_\_\_\_\_  
Tax Lot # \_\_\_\_\_ % Section 2 T. 3S R. 1E W.M. \_\_\_\_\_  
Address at well location: 21480 S.W. PETES MT. RD.

**(11) WATER LEVEL: Completed well.**

Depth at which water was first found 132 ft.  
Static level 13 ft. below land surface. Date 12/10/82  
Artesian pressure \_\_\_\_\_ lbs. per square inch. Date \_\_\_\_\_

**(12) WELL LOG:** Diameter of well below casing 6 inch  
Depth drilled 140 ft. Depth of completed well 140 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top Soil	0	22	
Clay Brown	2	21	
Clay Gray, Sandy	21	28	
Rock Gray, Mdm. Hard	28	34	
Rock Gray, Hard	34	58	
Rock Gray, Soft	58	69	
Rock Gray, Hard	69	81	
Rock Gray, Mdm. Soft	81	107	
Rock Gray, Hard	107	132	
Rock Lava, Gray Soft W.B.	132	140	13

Work started Sept. 23 1982 Completed Dec. 10 19 82  
Date well drilling machine moved off of well Dec. 17 19 82

**Drilling Machine Operator's Certification:**

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.  
[Signed] Haakon Bottner Date 12/22/82  
(Drilling Machine Operator)

Drilling Machine Operator's License No. 431

**Water Well Contractor's Certification:**

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.  
Name HAAKON BOTTNER DRILLING CO.  
(Person, firm or corporation)

Address 10230 S.E. CINDY LANE BORING, OR. 97009

[Signed] Haakon Bottner  
(Water Well Contractor)  
Contractor's License No. 109 Date DEC. 22 19 82

**NOTICE TO WATER WELL CONTRACTOR**  
The original and first copy of this report are to be filed with the

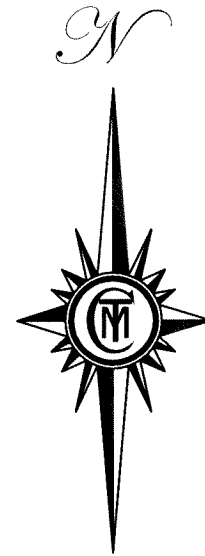
**WATER RESOURCES DEPARTMENT,**  
SALEM, OREGON 97310  
within 30 days from the date of well completion.

SP\*12658-690

# LEGEND

- # EXISTING DECIDUOUS TREE W/ TRUNK DIAMETER (INCHES)(CL=CLUSTER)
- # EXISTING CONIFEROUS TREE W/ TRUNK DIAMETER (INCHES)(CL=CLUSTER)
- TR EXISTING TELECOMM RISER
- T— EXISTING OVERHEAD TELECOMM
- ⊕ EXISTING POWER POLE
- ⊖ EXISTING GUY ANCHOR
- OHP— EXISTING OVERHEAD POWER LINES
- ⊠ EXISTING WATER METER
- ⊗ EXISTING WATER VALVE
- W— EXISTING UNDERGROUND WATER
- ⊕ EXISTING GAS METER
- G— EXISTING UNDERGROUND GAS LINE
- EXISTING CATCH BASIN
- ⊙ EXISTING SANITARY MANHOLE
- ⊕ EXISTING STORM MANHOLE
- SS— EXISTING SANITARY SEWER LINE
- ST— EXISTING STORM SEWER LINE
- X— EXISTING FENCE
- FOUND MONUMENTS
- ▒ EXISTING CONCRETE
- ▒ EXISTING ASPHALT

- (1) SANITARY MANHOLE  
RIM EL.=211.8  
10" I.E. IN (E)=205.8  
10" I.E. OUT (W)=205.6
- [1] STORM MANHOLE  
RIM EL.=211.3  
12" I.E. IN (E)=207.9  
12" I.E. IN (W)=207.9  
18" I.E. OUT (SE)=207.7
- [2] CATCH BASIN  
RIM EL.=210.8  
12" I.E. IN (W)=208.0  
12" I.E. OUT (SE)=207.8  
SUMP=207.2
- [3] CATCH BASIN  
RIM EL.=210.8  
12" I.E. OUT (W)=208.2  
SUMP=207.6



SCALE 1" = 30'


## NOTES

1. THE PURPOSE OF THIS MAP IS TO SHOW THE EXISTING CONDITIONS FOR 1434 DOLLAR STREET.
2. THE BASIS OF BEARINGS WAS PER PP NO. 1995-013 CLACKAMAS COUNTY RECORDS.
3. LOCAL DATUM WAS ESTABLISHED PER GPS OBSERVATION NAVD 88.
4. THIS MAP WAS PREPARED FOR THE EXCLUSIVE USE OF DON BURKE, OWNER AND DEVELOPER, 15604 SE RUBY DRIVE, MILWAUKIE, OR 97267.
5. THIS MAP WAS PREPARED BY PLAT RECORDS, CALCULATED DATA, AND FIELD MEASUREMENTS, A RECORDED BOUNDARY SURVEY WILL BE FILED AT A DATE TO BE DETERMINED.
6. ALL UTILITY LOCATIONS ARE SHOWN BY ABOVE GROUND FEATURES AND LOCATION OF PAINT MARKS SUPPLIED BY THE LOCAL UTILITY COMPANIES. CMT TAKES NO RESPONSIBILITY OF UNDERGROUND LOCATION. PLEASE NOTIFY THE UTILITY NOTIFICATION CENTER BEFORE ANY DIGGING 1-800-332-2344.
7. ZONING OF THIS SITE AND ALL SURROUNDING PROPERTIES IS R-10.

ERED  
SIONAL  
RVEYOR

SON  
11, 2018  
OEGER  
311

BER 31, 2020

<b>PROPOSED PARTITION, VARIANCE &amp; EXISTING CONDITIONS</b>	<b>1434 DOLLAR STREET</b>
NW 1/4 SEC 2, T3S, R1E, W.M.	 <b>CMT SURVEYING AND CONSULTING</b> 20330 SE HIGHWAY 212 DAMASCUS, OR 97089 PHONE (503) 850-4672 FAX (503) 850-4590
MAP 35-1E-02BB, TL1600	
CITY OF WEST LINN	
CLACKAMAS COUNTY, OREGON	
DECEMBER 30, 2019	
DRAWN: JMR CHECKED: SPF	
SCALE 1"=30' ACCOUNT # 500-821	
Y:\500-821\DWG\500821BASE	

LOT 8

LOT 9

BLOCK 2  
"HILL-HOUSE NO. 2"

S 89°55'51" E 100.00'

1.1'

1.6'

4' CHAIN LINK  
FENCE ONLINE

TAX LOT 1700

PARCEL 2  
11,400 SQFT

1.7'

4' CHAIN LINK  
FENCE

PARCEL 2  
PARTITION PLAT  
NO. 1995-13

N 00°03'00" W 189.94'

S 89°55'51" E 85.00'

TAX LOT 1800

4' CHAIN LINK  
FENCE

1.7'

EXISTING  
BUILDING  
TO  
REMAIN

PORCH

PARCEL 1  
9,869 SQFT

FD 5/8" IRON  
ROD EL.=211.2

S 00°03'00" E 96.76'

S 00°03'00" E 135.44'

TAX LOT 1900

60.0'

FD 1/2" IRON  
ROD EL.=211.4

N 65°29'07" W 109.95'

REGIS  
PROFES  
LAND SI

ORE  
SEPTEMBE  
DAVID  
86

DOLLAR STREET  
ASPHALT

EXISTING SIDEWALK

EXPIRES DECE



## Paul Roeger

---

**From:** P Roeger <roegerp@comcast.net>  
**Sent:** Tuesday, April 7, 2020 8:41 PM  
**To:** Paul Roeger  
**Subject:** FW: 1434 Dollar Street - Trees

-----Original Message-----

**From:** Michael Perkins <mikedpsb@gmail.com>  
**Sent:** Thursday, March 26, 2020 5:34 PM  
**To:** Paul Roeger <paul@cmtsc.net>  
**Subject:** Re: 1434 Dollar Street - Trees

I determine which trees are significant, the planning dept will take it from there. I'll get involved if we need to look at tree protection.

Sent from my iPhone

> On Mar 26, 2020, at 3:12 PM, Paul Roeger <paul@cmtsc.net> wrote:

>

> Mike,

>

> Thanks for visiting the site. Not sure what you mean by "19-26 would be significant". We will need to remove trees 9, 10, and 14 for sure to construct the driveway to Parcel 2, and probably 7 and 8. Then 18 is in the middle of the parcel where a house would go, and maybe 16 and 17, too. Not sure about 13, also. We will definitely be in the RPZ of 13 for our driveway. I have not talked to Don Burke, the owner, yet, about this. Do you get involved in determining what can and cannot be removed??? What will be our process. Can this be determined after approval of the Partition at the Building Permit stage, or ???

>

> Paul H. Roeger, P.E.

> Civil Engineer

> CMT Surveying & Consulting

> 20330 SE Highway 212

> Damascus, OR 97089

> (O) 503-850-4672

> (F) 503-850-4590

> (C) 503-860-2545

> paul@cmtsc.net

>

> -----Original Message-----

> **From:** Michael Perkins <mikedpsb@gmail.com>

> **Sent:** Thursday, March 26, 2020 3:00 PM

> **To:** Paul Roeger <paul@cmtsc.net>

> **Subject:** Re: 1434 Dollar Street - Trees

>

> Hi Paul looks like probably 19-26 would be significant. With the  
> virus thing going on I wanted to be respectful to folks that live  
> there as it looked like they were home. It seems that the arborist

> report concurs so let's go w that. Let me know if you need anything  
> else  
>  
> Sent from my iPhone  
>  
>> On Mar 26, 2020, at 10:06 AM, Paul Roeger <paul@cmtsc.net> wrote:  
>>  
>> Mike,  
>>  
>> Please see the attached. Let me know if you need anything else. Thanks.  
>>  
>> Paul H. Roeger, P.E.  
>> Civil Engineer  
>> CMT Surveying & Consulting  
>> 20330 SE Highway 212  
>> Damascus, OR 97089  
>> (O) 503-850-4672  
>> (F) 503-850-4590  
>> (C) 503-860-2545  
>> paul@cmtsc.net  
>>  
>> -----Original Message-----  
>> From: P Roeger <roegerp@comcast.net>  
>> Sent: Thursday, March 26, 2020 8:25 AM  
>> To: Paul Roeger <paul@cmtsc.net>  
>> Subject: FW:  
>>  
>>  
>>  
>> -----Original Message-----  
>> From: Michael Perkins <mikedpsb@gmail.com>  
>> Sent: Thursday, March 26, 2020 7:56 AM  
>> To: P Roeger <roegerp@comcast.net>  
>> Subject: Re:  
>>  
>> Hi Paul can you send me the tree related documents to this email address?  
>>  
>> Sent from my iPhone  
>>  
>>>> On Mar 24, 2020, at 5:48 PM, P Roeger <roegerp@comcast.net> wrote:  
>>>>  
>>>> Thanks Mike. Please send to "paul@cmtsc.net", which is my office. This is my home e-mail. Thanks.  
>>>> Paul  
>>>>  
>>>> -----Original Message-----  
>>>> From: Michael Perkins <mikedpsb@gmail.com>  
>>>> Sent: Tuesday, March 24, 2020 2:08 PM  
>>>> To: roegerp@comcast.net  
>>>> Subject:  
>>>>  
>>>> Hi Paul this is mike perkins from the city of west linn. I was out  
>>>> last week and today dealing w some personal things. I'll try to go

>>> by tomorrow and get you the info you need

>>>

>>> Sent from my iPhone

>>>

>>

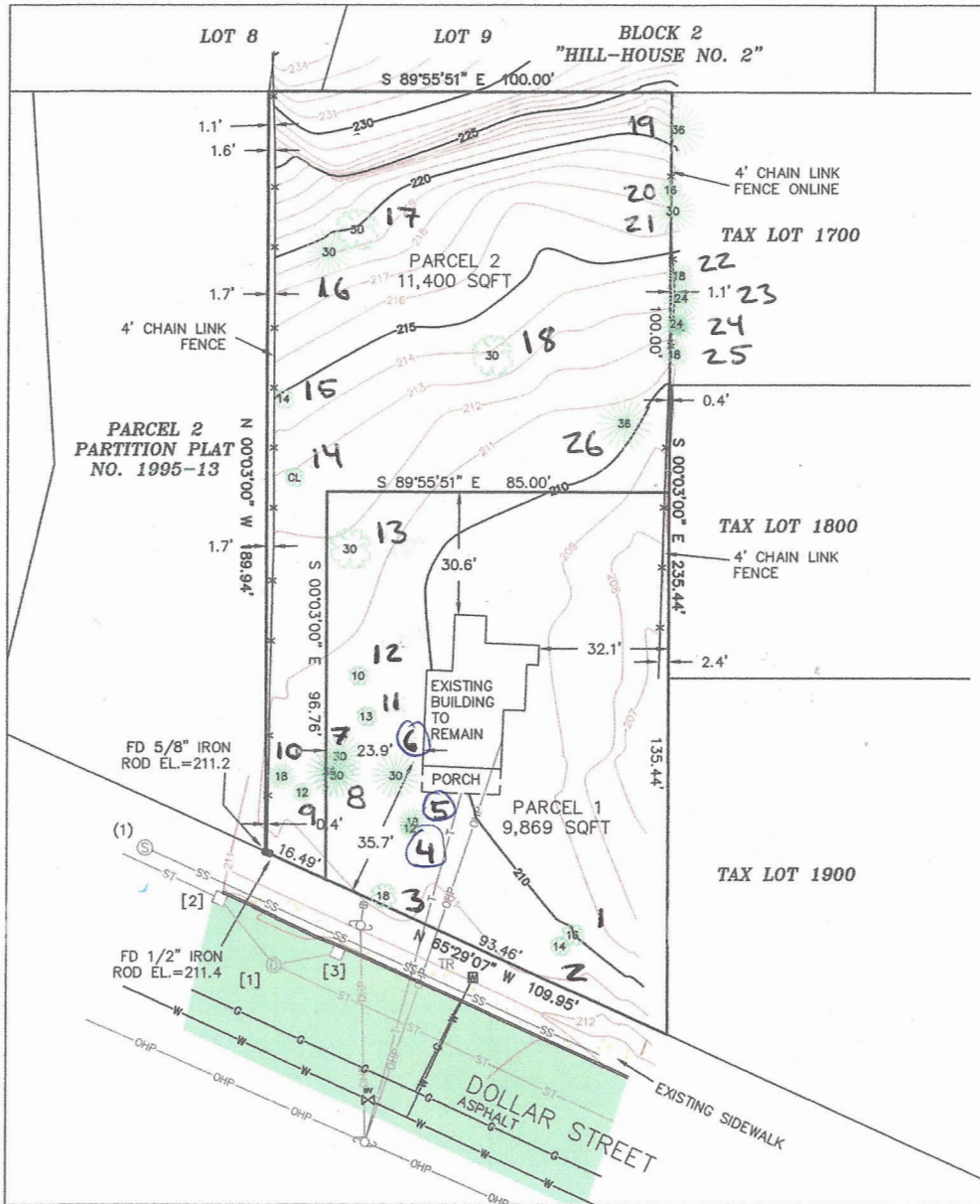
>> <Tree Inventory - 1434 Dollar St - WL.pdf> <Tree Inventory Map - 1434

>> Dollar St - WL.pdf>

# TREE CARE

UNLIMITED

#	Species	DBH	Condition	Comments
1	Laurel	16"	Good	
2	Laurel	14"	Good	
3	Holly	18"	Good	
4	no tree	n/a	n/a	
5	no tree	n/a	n/a	
6	no tree	n/a	n/a	
7	Western Red Cedar	30"	Fair	codominant stem, same tree 8
8	Western Red Cedar	30"	Fair	codominant stem, same tree 7
9	Western Red Cedar	12"	Fair	self rooted
10	Western Red Cedar	18"	Fair	self rooted
11	Holly	13"	Fair	suppressed
12	Holly	10"	Fair	suppressed
13	Willow	30"	Good	
14	Filbert	cluster	Poor	suppressed, major deadwood
15	Walnut	14"	Good	
16	Western Red Cedar	30"	Good	
17	Poplar	30"	Very Poor	dead
18	Willow	30"	Poor	leaning, major deadwood, decay
19	Douglas Fir	36"	Good	codominant stem
20	Western Red Cedar	16"	Good	
21	Western Red Cedar	30"	Good	
22	Western Red Cedar	18"	Good	
23	Western Red Cedar	24"	Good	
24	Western Red Cedar	24"	Good	
25	Spruce	18"	Good	
26	Grand Fir	36"	Good	



**LEGEND**

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12" I.E. OUT (N)=207.8  
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SUMP=207.2
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RIM EL.=210.8  
12" I.E. OUT (N)=208.2  
SUMP=207.6



SCALE 1" = 30'


REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

OREGON  
SEPTEMBER 11, 2018  
DAVID ROEGER  
86811

EXPIRES DECEMBER 31, 2020

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EXISTING CONDITIONS	1434 DOLLAR STREET
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CLACKAMAS COUNTY, OREGON	
DECEMBER 30, 2019	
DRAWN: JMR CHECKED: SPF	
SCALE 1"=30' ACCOUNT # 500-821	
Y:\500-821\DWG\500B21BASE	
	 <b>CMT SURVEYING AND CONSULTING</b> 20330 SE HIGHWAY 212 DAMASCUS, OR 97089 PHONE (503) 850-4672 FAX (503) 850-4590